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VOL. XX, No. 1

ARCHAEOLOGY OF SANTA MARTA
COLOMBIA
THE TAIRONA CULTURE

PART I
REPORT ON FIELD WORK

BY
J. ALDEN MASON

FORMERLY ASSISTANT CURATOR OF MEXICAN AND SOUTH AMERICAN
ARCHAEOLOGY IN FIELD MUSEUM OF NATURAL HISTORY

MARSHALL FIELD ARCHAEOLOGICAL EXPEDITION TO COLOMBIA
1922-23

64 Plates in Photogravure and 2 Maps

BERTHOLD LAUFER
CURATOR, DEPARTMENT OF ANTHROPOLOGY
EDITOR



CHICAGO, U. S. A.

1931

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FOREWORD

This report embodies the archaeological results of a year of anthropological field research in the region of Santa Marta and the foothills of the Sierra Nevada de Santa Marta in the state of Magdalena, northern Colombia, South America.

The expedition was financed and made possible by the generosity of Marshall Field III, to whom belongs the maximum credit for the results. The personnel, apart from those persons engaged in Colombia, consisted only of myself, as Assistant Curator of Mexican and South American Archaeology at that time.

Among those dozens of friends, old and new, American and foreign, to whom I wish to express my gratitude and obligations for their kindly advice, assistance and hospitality, which rendered the work both profitable and pleasant, it is difficult to single out a few for particular mention, yet impossible to name all. It would be ungrateful, however, not to signify my especial obligations to Professor Franz Boas of Columbia University, who first suggested the advisability of Santa Marta as a field for research, and to Francis C. Nicholas of the Maryland Academy of Sciences, whose pioneer work in the Santa Marta region from 1895 to 1901 formed the foundation on which this advice was based and who placed at the disposal of the expedition for investigation large tracts of land of which he is trustee.

Among the many residents of Santa Marta whose helpful assistance solved many difficult problems and rendered the long journey enjoyable, especial gratitude is expressed to Mr. William A. Trout, who offered the hospitality of his delightful home and was never too busy to be of assistance; to Mr. and Mrs. O. L. Flye and their large family, hosts to all American visitors; to Mr. and Mrs. M. A. Carriker, who need no introduction to ornithologists; to Messrs. Dozwell, Hatch, Bremner, and Crawford and their families and many other officials of the United Fruit Company, as well as to the company itself; to Mr. Manuel Chediak, local merchant and antiquarian, who gave me my first introduction to the archaeology of the region; to Mr. C. F. Deeter, former Consul and Mrs. Leroy Sawyer and former Consul Charles H. Derry; to Mr. Eduardo Bermudez; to the hospitable Britons of the Santa Marta Railroad; finally to my assistants, Messrs. James Hawkins and Bernardo Mendoza; and to a host of unlettered and unhonored natives whose naked feet were never too bruised or irritated by ticks and jigger-fleas and whose dusky bodies never too

tortured with fever and anemia to stop a happy smile and a pleasant word. To these humble natives great credit is due for the results of the expedition.

Finally, I wish to express my obligations to my former chief, Dr. Berthold Laufer, for invaluable advice and assistance throughout the work.

The termination of my connections with Field Museum of Natural History in May, 1924, and my consequent separation from the collections secured by the expedition have naturally delayed and rendered more difficult the preparation of this report. For these and other reasons it is the present intention to publish the results of the expedition in three parts, Part I to contain the detailed report of the field work and excavations, Part II the description of the material, and Part III the scientific results and deductions. The first section of Part II, to consist of a description of the material in stone, shell, bone and metal, is now in course of preparation. The bibliography and index will be printed at the end of the volume.

J. ALDEN MASON,
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August, 1930

ARCHAEOLOGY OF SANTA MARTA, COLOMBIA THE TAIRONA CULTURE

PART I REPORT ON FIELD WORK

INTRODUCTION

The desirability of pursuing archaeological researches in the Santa Marta region, the habitat of the long-extinct Tairona Indians, was first impressed on me as far back as 1914 and suggested as a promising field for work. The reasons leading to this proposal were, briefly, as follows.

Although Colombia is generally regarded as having enjoyed the third highest of the aboriginal cultures of America, exceeded only by the Maya-Mexican and the Peruvian cultures, yet extremely little is scientifically known about it, far less than is known of these other two, and less than many less highly advanced regions. Collections from the Chibcha and the Quimbaya of the Andean highlands exist in most large museums, and several reconstructive and largely theoretical works have been written on these nations, mainly by Colombian scientists, but, except for some work in the region of San Agustín, in the south of Colombia, practically no careful scientific archaeological excavation has ever been done in this great region. Indeed, the same statement may probably be made of the entire stretch from Costa Rica, where Hartman made thorough researches, to the region of Manabí and Esmeraldas in Ecuador where the expeditions of the Museum of the American Indian, Heye Foundation, conducted careful excavations. Since the conclusion of my work, however, intensive work has been done in Panama by E. Nordenskiöld, S. Linne and H. Roberts.

Of the ancient Tairona culture of the Santa Marta region, practically nothing was known. No trained archaeologist had ever visited the region, but occasional artifacts and small collections had reached metropolitan museums, particularly a collection secured by F. C. Nicholas, at present in the American Museum of Natural History of New York, and one in the Carnegie Museum of Pittsburgh, which was made by H. H. Smith. These specimens indicate a very high plane of culture, in no way inferior to the cultures of the interior of Colombia and yet decidedly unique, being characterized by quantities of beads and small objects of carnelian and agate, by unpainted black

pottery with delicately incised designs, and by excellent work in stone, as represented, for example, by monolithic ax-heads. Well-made stone roads were known to exist in the country, but, further than this, the soil was untouched.

The Sierra Nevada de Santa Marta had long been a focus of interest for geographers, botanists, and zoologists on account of the peculiar geological and ecological conditions found in this isolated island mass, rising abruptly from tropical seacoast to eternal snow, and belonging to a separate system from the adjacent but independent Andes. For these reasons it had attracted the interest of Sievers, Reclus and Simons, geographers of the nineteenth century, and of Smith, Ruthven, and Todd and Carriker, botanists and zoologists of the twentieth century. Ethnographers, too, had investigated the several Indian tribes of the region. De Brettes, Celedon, Nicholas, Bolinder and Preuss had visited and studied the Arhuaco, Goajiro, and Motilone Indians, and De Booy had visited the adjacent Macoa of the Venezuelan Andes. But, with the exception of Smith, who secured and sent a collection to the Carnegie Museum of Pittsburgh, and Nicholas, who, by excavation and purchase, secured the collection now in the American Museum, no archaeological work had been done by others than treasure hunters. Among the most prominent of the latter may be mentioned the Marquis Baronceilli and Mr. Manuel Chediak, the local antiquarian of Santa Marta.

Yet, from an archaeological point of view, the region of Santa Marta offered problems for investigation at least as important as from a biological standpoint. Being an isolated mountain mass, it is cut off from the great Andean highland region, the home of the higher, sedentary, corn-culture nations of America, though displaying the same environmental conditions, and practically surrounded by peoples of the more primitive eastern lowland hunting and manioc-culture type. It was therefore important to secure data on the interplay of these two cultures in connection with the physical type of the inhabitants. Moreover, in view of the proximity of the region to the Isthmus of Panama, it was hoped that the investigation might throw some light on migrations and prehistoric ethnic relations between the two Americas.

HISTORY AND ITINERARY

In January, 1922, I visited the eastern cities and made a brief study of Colombian material in eastern museums, in addition to securing important information and advice. The acquaintance was made of F. C. Nicholas who gladly conceded to the expedition the right to make excavations on the lands controlled by him between Santa Marta and Rio Hacha.

After spending some time in the preparation of equipment and official papers, I left Chicago, April 10, 1922, for New Orleans. The next day was spent in last-minute preparations in that city, and the following day saw me off on one of the white steamers of the United Fruit Company, the *Heredia*. Five days later the harbor of Colon, Panama, was entered. A stop of three days there afforded ample opportunity to cross the isthmus to Panama City and establish relations with the governmental authorities there in case any work should be done in the Republic of Panama, and to become superficially acquainted with the Panama region, once so sleepy, foul and pest-ridden, now so modern and sanitary.

On April 20, transferring to the New York boat of the same company, the *Carillo*, the expedition left for Colombia. Though the northeast trade winds made the sea rough, the famous old port of Cartagena was reached the following day. Cartagena, founded in 1535, is one of the oldest and most picturesque ports of the Spanish Main. From there sailed most of the treasure ships laden with the gold loot from the interior of Colombia which formed the tempting prize of the English gentleman-pirates of three centuries ago. To protect this treasure, immense walls which still exist in practically perfect condition were built at a tremendous expense. The harbor is an excellent one, but the city contains little of interest. Leaving the following day, April 23, the seaport of Puerto Colombia was reached.

Puerto Colombia is the main seaport of Colombia but an unpromising introduction to the nation for the arriving tourist. The mouth of the Magdalena River, on which travel all the freight and passengers to Bogotá, the capital, and the interior, was impassable at that time (1922) on account of huge bars which are now being dredged, and all navigation from the interior ends at the city of Barranquilla, from which point transportation is by a little railroad to Puerto Colombia, where a long pier has been built out to deep water. The town

itself is new, poor, small, and uninteresting except for picturesque poverty. But, as I landed on Sunday morning and there was no train till late afternoon, the day had to be spent in profitless laziness. Taking the afternoon train, Barranquilla was reached in an hour or so. Barranquilla is a relatively new commercial city with some fine buildings and considerable commerce.

From here practically all the commerce of Colombia proceeds in flat-bottomed, stern-wheeled boats on the great Magdalena River, where, by dint of several changes between broad and narrow gauge railroads, and after ten days or two weeks of travel according to the height of the river, Bogotá, the capital, the "Athens of South America," is reached. But travelers in haste may now make the trip in a few days by taking the airplanes of a German company. After a night in a hotel, the following day was spent largely in business affairs, the afternoon train taken again to Puerto Colombia, and the final lap of the journey to Santa Marta begun.

From Puerto Colombia to Santa Marta is a journey of only some fifty miles and the next morning, April 25, found the vessel in the quiet enclosed waters of Santa Marta Bay. The low white and tinted houses shone brightly in the morning sun, and the white cathedral, as in all Latin-American cities, dominated the aspect. Beyond, the high wooded peaks of San Lorenzo and the Horqueta rose in verdant beauty, their tops shrouded in clouds. But they obscured the view of the higher Sierra Nevada which, in the dry season, is plainly visible from farther out to sea, and on clear days even from Barranquilla.

Fortunately, the consul at Santa Marta then, Mr. Leroy Sawyer, was aboard the boat, and through his influence baggage and equipment were passed through customs without duty, and the freedom of the city was gained.

Santa Marta is a quiet place of little interest. Although the oldest city on the South American mainland, founded in 1525 (according to some authorities, the first settlement was made there in 1502), the city was burnt so often by marauding pirates that no old houses or evidences of great age remain, except the ruins of old Spanish forts and aqueducts on the outskirts of the city. Although originally the principal seaport of the country from which sailed the Spanish treasure ships until the rise of Cartagena, shortly after the time of the conquest, the city had sunk into somnolent quiescence and remained so until a decade or more ago when the United Fruit Company discovered the value of the neighboring fertile warm low-

lands, fed by abundant mountain streams, for the cultivation of bananas, and today an average of two hundred thousand bunches of bananas is shipped every week on two or three vessels to the United States and Europe. This industry has awakened an era of prosperity and a number of Americans are employed by the company, both in Santa Marta proper and along the line of the Santa Marta Railroad, which exists almost exclusively for the transportation of bananas from plantation to pier, but which is a British corporation and employs mainly Englishmen. The United Fruit Company maintains a large compound on the outskirts of Santa Marta for its employees and offices and a store in the city proper.

Many natives have become very wealthy as banana planters, and expensive high-powered automobiles lend a strange air of modernity to the narrow, unpaved streets. Ice, electric light, and piped water conduce to the comfort of the tourist, but the growth of the city is largely limited by the insufficiency of the water supply, which is entirely provided by the Manzanares River and is deficient in the dry season. The present population (1930) is probably more than 30,000.

A week was spent in getting acquainted and settled and in making preparations for work. Mr. Manuel Chediak, a Syrian merchant with antiquarian interests and a wide acquaintance among the country people, gave me my first introduction to the archaeology of the region in several interesting trips to the neighboring villages of Mamatoco, Bonda, and Taganga, and urged an immediate trip along the coast to take advantage of the season of calms then prevailing. However, it seemed best first to pay a visit to the near-by mountains; and on May 2, in company with Mr. O. L. Flye, I set out for Mr. Flye's coffee plantation of Cincinnati, at an elevation of 4,500 feet in the San Lorenzo Mountains. Here, and at the higher neighboring plantation of Vista Nieve of Mr. M. A. Carriker, well known as the ornithological authority on Santa Marta,¹ another week was spent. Mr. and Mrs. Carriker were absent on an ornithological expedition to Venezuela, but in their absence true hospitality was offered by their temporary manager, Mr. Matthews. At Cincinnati, coffee grows without shade; and at Vista Nieve, Mr. Carriker succeeds in raising practically any plant of the temperate zone as well as sugarcane. A glorious view of the Ciénaga Grande, the great swamp and lake tract at the western foot of the mountains, is obtained from Vista Nieve, and on clear nights the lights of Barranquilla may be

¹ Now (1930) ornithologist at the Academy of Natural Sciences, Philadelphia.

distinguished. From surrounding heights, and particularly from the summit of San Lorenzo Peak on clear days, a majestic view may be obtained of the great snow peaks to the southeast, whence the name Vista Nieve ("Snow View").

Both at Cincinnati and at Vista Nieve evidences of early Indian occupation were noted everywhere in the form of paved stone paths, house-sites with retaining walls, quantities of potsherds, and broken ax-heads, but labor was scarce. Moreover, it was the season of the spring rains in the mountains, and clammy mist and drizzling rain every afternoon prevented much work. It was therefore deemed best first to commence work along the arid coast, as suggested by Mr. Chediak, and to return later in the dry season to the mountains—an intention which was never realized.

Returning to Santa Marta in poor health on May 8, I spent ten days in preparation for the trip along the uninhabited coast, and on May 18, in company with Mr. Chediak, the start was made from Taganga in a dugout canoe 6 meters long, manned by four oarsmen and a steersman. Calm water prevailed as the canoe was urged northward to the Punta Aguja. Turning this, the sweep of the trade winds from the northeast was encountered; and, although it was still the season of calms, the sight of the great swells battering against the precipitous cliffs and disclosing submerged rocks at every recession, caused the two unaccustomed voyagers to fear for their lives and equipment. A stop was made for lunch in the third bay, Gairaca, where evidences of aboriginal occupation and of more recent digging for treasure were numerous. Then, while the canoe rounded a projecting point, the passengers walked over the trail to the next bay, Nahuange, through arid, cactus-covered foothills.

That night was spent in Nahuange, where a cattle corral requires a few men. Some evidences of aboriginal occupation were observed, including a fine mound which was later excavated. The following morning a start was made again, but the sea was so threatening that the expedition turned into the next bay, Cinto, where the day was spent quietly, there being few archaeological evidences. The sea being still too rough, the next morning was spent in fruitless archaeological excavations, but in the afternoon, the wind abating somewhat, a voyage was made to the next bay, Guachaquita, where the night was spent and the many interesting archaeological evidences were observed the following morning. That afternoon, May 21, the sea calming considerably, the canoe was urged past the cape of San

Juan de Guía, and safely landed on the sandy beach at Cañaveral, at the mouth of the Rio Piedras, where the trail from Santa Marta to Rio Hacha descends to the sea. Camp was pitched on the sandy beach near three little huts and, tormented by mosquitoes and gnats, I passed a miserable night.

Cañaveral is a little settlement of three or four miserable palm-leaf huts on the seacoast, sheltering possibly five families. Each man has his *roza*, a little piece of cleared land wrested from the dense forest, on which he cultivates yucca, plantains, bananas, sweet potato, malanga, and similar tropical food plants. Occasionally fish or even more rarely sea-turtles and turtle eggs help out the meager diet. The men were engaged as laborers and an old woman as cook.

Archaeological work was begun in earnest on Monday, May 22. Deep in the woods, an hour's journey from the beach and at a considerable elevation, Bernardo Mendoza, one of the residents who became foreman for the next six months, had informed Mr. Chediak of an old village he had found which was the immediate objective. This site occupied the main attention of the expedition for three weeks. Every morning at seven o'clock the camp on the beach was left, and an hour's arduous climb up the steep trail through the dense forest brought the workers to the old village. Frequently howler monkeys, turkeys, *pajuales* or curassows, and *sahinos* or peccaries were sighted and shot en route. Working until four, the camp was reached again about five o'clock. The site, being nameless, was named Pueblo Bernardo, in honor of its discoverer. It contains many interesting features, excellent paved trails, the best long staircase seen in the region and well-built sites with retaining walls. Many good pottery vessels hidden in rock shelters or fallen into ravines, and mealing *manos* were found. But not a thing of value was excavated during the period of work there. Almost daily rains interfered considerably with the work, and on threatening days a little work was done on the coast in the vicinity of the camp, but with unsatisfactory results. At first, the trail was thick with the minute ticks which make exploration in these parts a torture, but after several days of travel they all became dislodged from the underbrush bordering the trail and only bothered one when leaving it.

On June 2, Mr. Chediak decided that he could no longer neglect his business and returned to Santa Marta, leaving me to carry on the work alone. A few days more of work and rain at Pueblo Bernardo only emphasized the fruitlessness of continued work there,

and inquiries were made for a better site. A better-known ancient village named Pueblito lying a few miles to the west, and an hour's hard travel back into the wooded hills from the cape of San Juan de Guía was suggested. A day's survey verified the size and importance of this site. On June 13 the expedition moved by canoe to the settlement at the cape and camp was made there in an abandoned hut, the tent being unbearably hot during the daytime.

The cape of San Juan de Guía marks the limit of the rocky spurs which run down from the Sierra Nevada and the San Lorenzo Mountains into the sea, and the beginning of the sandy beach. Here were four huts, two of which were occupied by natives. The expedition occupied the other two. Here the expedition remained from June 13 until August 23 and did the best part of its work. Every day at seven o'clock the men, varying in number from three to eight, left and climbed the steep, forested slopes to the sites, commencing work about eight o'clock. With an hour's rest at midday, work continued until four o'clock, and camp was reached again about five. The torrid coast was thus escaped during the heat of the day, and the heavy shade of Pueblito, the sufficiency of cool running water, and the quantities of oranges which covered the site made work there very pleasant. As at Pueblo Bernardo, monkeys, turkeys, curassows, and peccaries were frequently shot, turtles and turtle eggs occasionally found, and fish sometimes secured. But even at that, canoes had frequently to be despatched to Santa Marta at considerable expense to bring rice, plantains, and salted meat, which were the main staples of the men.

Arriving at the coast after the day's work, I was drenched with sweat and plastered with dirt. The plunging breakers offered a delightful refreshment, and the evening meal of plain, yet palatable food was eaten with enjoyment. Sunday was the busiest day of all for me, as the week's harvest had to be washed, mended, and catalogued. Rains interfered considerably with the progress of the work for the first ten days. Several of these were spent in profitless work near the cape and at the neighboring site of Arcife, but from June 23 to August 22 hardly a drop of rain fell, and not a day was lost from this cause.

Pueblito was by far the largest and best prehistoric town seen by the expedition, quantities of sites being found over a large stretch of heavily forested hills and small streams, only a few of which had been molested in recent years. Paved roads, bridges, walls, covered drains, staircases, circular sites, and stone-lined graves were found,

only a few of the best and most central ones being excavated. The majority of these were covered with an impenetrable thicket of *pita*, an agave, presumably spread from pre-Columbian cultivated plots, and on this account had not been touched by native treasure-hunters.

The two months at Pueblito were broken by two trips to Santa Marta for the purpose of shipment of collections, purchase of supplies, and medical attention, one of ten days in early July and one of five days in early August.

Toward the latter part of August the rains of the fall rainy season began to threaten, and a heavy downpour on August 22 established the fact that the steep muddy trails could not be traversed much longer. Consequently, although only the most promising of the many sites of this great settlement had been excavated, it was deemed best to seek new fields. On account of the greater aridity of the seacoast in the neighborhood of Santa Marta and the porousness of the sandy soil, it was decided to spend the rainy season in work in the many coastal bays between Taganga and the cape of San Juan de Guía. Twenty days, between August 23 and September 11, were spent in transferring collections and equipment to Santa Marta, this operation requiring six days, mainly due to the misfortune of being marooned by contrary winds in the bay of Guachaquita, in packing the collection after great difficulty in securing boxes and packing materials, in purchasing supplies and securing permission of the proprietor of these lands, Mr. Galo Alzamorra, to excavate. This permission was immediately and unreservedly granted. On September 12 a start was again made and camp pitched in the bay of Gairaca.

Gairaca is an uninhabited bay a few hours' journey to the east of Santa Marta. Only after heavy rainfalls is running water available, and only in the rainy season can brackish water be secured by digging in the stream bed. It was therefore necessary to send a canoe every other day to the neighboring bay of Nahuange for water. In the meanwhile the canoe was busy transporting loads of funerary urns to Santa Marta, thus greatly reducing the working force. Showers frequently interfered with the work and with comfort. Quantities of great funerary urns were found, but almost all were cracked or broken and contained little except skeletal remains and ax-heads. Nineteen days were spent in work here.

On October 1 the expedition moved to the neighboring bay of Nahuange, a larger bay with a permanent stream and a cattle corral

of the owner, Mr. Alzamorra. Here twelve most successful days were spent. Most of the time the regular workers were attending a fiesta in their native town of Taganga, and I worked with three local cattlemen. October is the rainiest month of the year, and showers interfered with work nearly every afternoon. Little gnats known by the graphic name of *plaga* made the camp on the seacoast miserable. While external evidences of occupation were few in Nahuange, an excavation of a large mound revealed the best stone-lined grave found on the entire trip, affording quantities of beads, some gold ornaments, nephrite and other stone ornaments, and the only specimens of painted pottery secured by the expedition. Ten days were then spent in making a trip to Santa Marta to ship the best of the objects, to secure treatment for an ulcerated toe, and to prepare for the next trip.

As I had heard promising reports of the little-visited bay of Palmarito, one of the most distant bays near the cape of San Juan de Guía, it was chosen as the next field of operations. Palmarito is a small bay, exposed to the full force of the trade winds. Having no entering trail by land, it can be entered and left only in the height of the rainy, which is also the calm, season. Five profitless days were spent there. The external evidences of occupation were many, but excavation revealed nothing of value. The dampness, constant rains, gnats, and mosquitoes rendered the stay unpleasant. Finally, as I was fearful of shortness of provisions and of rising winds, the place was abandoned, and a return made to Nahuange. Here another week was spent in excavating other sites which, though of little external promise, revealed many excellent objects of carved shell work, beads, and pottery.

The rainy season being then supposed to be near its close, work on the coast was declared ended on November 4, and the men discharged. I returned to Santa Marta to pack a large shipment of material and to arrange for work farther inland. A large room was rented, and seventeen days spent in packing the large collection, boxes and packing materials being difficult to secure, as little is exported from Santa Marta except bananas. Permission to ship this and further collections without express permission from the federal government was then refused by the Santa Marta customs authorities. This was immediately requested, and further work was contingent upon the necessity of keeping in contact with Santa Marta in order to carry on these negotiations. Another week was spent in preliminary explorations and preparations. On November 29 a start

was again made into the woods east of Bonda, a village a few miles inland from Santa Marta.

All the country around Bonda is thick with evidences of aboriginal occupation, but all of the known sites have been looted, and search must be made in the deep woods. These are infested with incredible quantities of tiny ticks which are found in animated masses on the underbrush, from which they are scattered on to the clothing of the explorer, and in a short time spread over the entire body, rendering life in these woods a torture. After six days of such misery, augmented by a damp camp in rain-soaked woods, the laborers all deserted, and the expedition returned to Bonda. Then followed twenty-three days of largely profitless exploration and work in the region of Bonda with frequent trips to Santa Marta in an endeavor to expedite the question of the shipment of material, and an exploring trip of four days to the Río Frío region in search of better sites.

From December 28 to January 4 work was done at Terán, a small place not far from Santa Marta, but one showing some of the best architectural features seen by the expedition. Nevertheless, excavations added few objects to the collection.

Archaeological work being thus prohibited, impatient at the delay in the negotiations, I planned an ethnological excursion to the Arhuaco Indians of the high Sierra Nevada. Leaving Río Frío toward the end of January, the expedition ascended and traversed the high mountains, descending at Dibulla on the Caribbean coast. No archaeological work was done on this trip until March 21, when a week was spent in relatively fruitless exploration and excavation at Bongá, in the woods south of Dibulla.

Reaching Dibulla about April 1, two weeks were spent in making a trip to Rio Hacha for supplies, mail, and funds, and in exploring the neighborhood of Dibulla for promising places for archaeological work. On April 13, archaeological work was recommenced in earnest in the neighborhood of Dibulla, but on April 15 word was at last received from Bogotá that the exportation of the archaeological specimens had finally been prohibited, and work was definitely declared at an end.

Proceeding to Rio Hacha, I spent a week with the Goajiro Indians of the Goajira Peninsula, and on May 1 reached Santa Marta again. That very day I was taken ill and spent ten days in the hospital of the United Fruit Company, the cause being probably paratyphoid resulting from the bad water of the Goajira Peninsula. It was many weeks before full strength was regained, during which period of

convalescence Mr. William Trout generously offered the hospitality of his home.

I waited in Santa Marta until July 10 endeavoring to obtain some official action as to the disposition of the interdicted collection and then returned to Chicago, leaving the collection in storage in Santa Marta. However, shortly after my return, the Colombian Minister of Public Instruction, overruling the decision of the National Academy of History, decreed that the collection might be exported.

DESCRIPTION OF THE LOCALITIES INVESTIGATED

COAST SITES

Ciénaga. "Santa María de la Ciénaga" in "La Floresta."¹ Ciénaga is now a large straggling town on the flat, sandy, arid coast, on the east shore of the Ciénaga Grande. There was an Indian settlement there up to the middle of the eighteenth century. Now all surface indications are destroyed.

Gaira. "San Jacinto de Gayra" in "La Floresta." Gaira is a small town just south of Santa Marta on the flat, arid, sandy coast. It was apparently an Indian settlement in 1740. Evidences of occupation are found in the neighborhood.

Durcino. "San Pedro Martir del Durcino" in "La Floresta." An uninhabited spot on the dry, flat, sandy coast between Gaira and Santa Marta. Apparently it was an Indian settlement in 1740. Several specimens were presented to the expedition as of this provenience.

Santa Marta. Santa Marta, while not one of the largest bays, has the largest flat hinterland along the coast. The site of the present city was doubtless occupied in part by a native village at the time of the conquest, and Indian pottery vessels are frequently encountered by laborers and contractors.

San Pedro Alejandrino. A few miles inland from Santa Marta, across the Manzanares River from the villa where the liberator Simon Bolivar died, is found a small hill, covered with cactus and thorny vegetation, which was evidently used as a cemetery by the pre-Columbian population. Many of the graves have been excavated though doubtless others are yet to be found. They are said to have been marked by upright stones. Near the base of the hill are found small flat terraces, but whether they were originally house-sites or not is, of course, uncertain. In these terraces, vertical shafts were sunk in the decomposed rock to a depth of from 1.75 to 2.5 meters. They are quadrangular or, in one case, triangular, with straight vertical sides and sharp corners, and average 90 by 120 cm in diameter. At the base of these shafts short tunnels of circular section and narrow diameter, about 50 cm, run into the hill, apparently opening up into

¹José Nicolas de la Rosa: "La Floresta de la Santa Iglesia catedral de la ciudad de Santa Marta" (1739); Valencia, 1833. This is the best-known work on the region. Parts of it were translated by F. C. Nicholas and published in the *American Anthropologist*, n. s. III, 1901, under the title "The Aborigines of the Province of Santa Marta, Colombia."

larger chambers at the end. Judging by the rubbish from these excavated graves found on the surface, they contained skeletal remains and pottery. The pottery is mainly of undecorated red ware of medium size, no sherds of large burial urns being found. The most usual type is apparently a flat-bottomed, cylindrical vase with an encircling lip for the support of a cover, such as I found in other graves, containing beads and other ornaments. Other types are globular vases with narrow necks and mouths. A few sherds of incised black ware were seen. Most, if not all, of these chamber graves were opened by F. C. Nicholas in 1895, and their contents now form a large part of his Santa Marta collection in the American Museum of Natural History of New York. Since no chamber graves were found by the present expedition and the researches of Nicholas are therefore unique in this region, I hope some time to publish a study of his work and collection.

Closer to Santa Marta is another similar hill in which are said to be rows of similar covered pots, fragments of some of which are to be seen on the surface.

Taganga. "San Francisco de Taganga" in "La Floresta." Taganga is a deep bay closely adjoining Santa Marta to the north. The present village is occupied mainly by uncultured fishermen who supply the fish for the Santa Marta market; they still retain a large proportion of Indian blood. They are the voyagers for this entire coast in their large dugout canoes. The village is without any water supply, and water must be brought on burro-back or by canoe from the Manzanares River at Santa Marta. Nevertheless, there is much evidence of a large population in pre-Columbian days. Broken ax-heads are frequently found on the surface. More valuable objects are occasionally excavated by the natives in the very village or found washed out of the soil in the rainy season. No architectonic or engineering features are visible at present.

Concha. This is the first of eight successive bays between the Punta Aguja and the cape of San Juan de Guía. It has a large flat hinterland and a permanent stream with many archaeological sites. It was not visited by me although work was done along the upper part of this stream at Los Cóngeolos. There were originally an Indian town and a colonial church there, but it was uninhabited in 1740 when "La Floresta" was written.

Chengue. The next bay. It was not visited by the expedition, which heard of no remains there, but "La Floresta" names it as one of the abandoned Indian villages at that time.

Gairaca (Gayraca or Guairaca). Probably the best-known of the archaeological sites in the region of Santa Marta. The Marquis Baronceilli did considerable work there. The Carnegie Museum of Pittsburgh possesses a collection consisting chiefly of large funerary urns and their contents from this bay, excavated by Herbert H. Smith in 1898.

Gairaca is a dry bay, the stream at present flowing only after heavy showers. Nevertheless, the entire flat plain and many of the surrounding low hills are covered with the evidences of aboriginal occupation. The quantities of funerary urns found suggest that it was used as a cemetery for much of the surrounding region, but the number of terraced sites, water-reservoirs, and mealing stones seen is good evidence for the fact that it was also a large settlement, at least during certain periods of the year.

Gairaca contains no architectonic or engineering features of interest except two water-reservoirs (*aljibes*). Near the dry stream bed are found traces of lines of low upright stones generally disrupted or fragmentary, apparently without any uniform plan, and possibly delimiting burial plots. Within these, in scattered localities, are groups of large burial urns, buried close together, but without any surface indications. It might be hazarded that these represent the burial plots of the less-favored individuals, families, or groups. At a greater distance from the stream, and especially close to the beach, are found better-made sites, occasionally with complete encircling rings of upright stone slabs, one of which measured 9 meters in diameter. These have practically all been excavated by treasure-hunters. In this section also are found occasional depressed roads or streets, lined with upright stones, and several reservoirs for the storage of water.

The water-reservoirs are of rather small size and capacity, are not connected with the main stream, and apparently have a small drainage area. Both are roughly of oblong-rectangular shape, 1.5 to 2.5 meters deep and, respectively, 4.5 by 5.4 meters and 2.5 by 4 meters at the base. The sides of both are made of small, thin, natural slabs or blocks of stone piled horizontally but with a retreating front so as to form a slanting wall. Many worn-out mealing stones are employed in one reservoir. These slanting walls continue to a height of from 1 to 2 meters, from which point the earth slopes back at a steep grade to the edge of the declivity. In the case of one reservoir, the earth excavated was piled in a mound at the lower edge. Both have paths leading down to the water's edge, and in one case traces of stone steps are seen.

The roads or streets are most evident in one small region where there seem to be several paths parallel and about 30 meters apart, the best one being lined with upright stones on either side.

The largest number of burial urns are found in groups without surface indications close to the stream bed, evidently the least favored portion of the cemetery. Here they are very numerous and close together, frequently less than 25 cm apart and almost touching. In one group (Plate LXI) seven large urns were found in an excavation about 2.5 meters square; in another, eight large urns occupied a space about 1.5 by 2.5 meters; and in a third, eleven were taken from an excavation about 2.5 by 3 meters. The tops of these, or of their cover-bowls, were generally found at a depth of about 30 cm from the surface. Most of the urns were cracked from the pressure of the earth and their great weight, and were full of earth which had seeped in, probably in the form of mud. Many or most of them had covers (Plate LXIII, Fig. 1) of inverted pottery bowls which, in a few cases, had effectually preserved the skeletal remains from decay or covering by earth, but in the majority of cases had cracked. The skeletal remains were generally desiccated or had entirely disappeared, and the artifacts found with them were few and of slight intrinsic value.

Three main types of burial urns were found, all of thick, coarse, reddish pottery, often with an unbaked black core and occasionally reaching a thickness of about 2 or 3 cm, especially on the bottom. All three types were found in practically every group without special arrangement and under conditions which indicated contemporaneity and similarity of origin.

Type A (Plates LXII, Fig. 1, and LXIII, Fig. 2) of which thirty-one examples were excavated, a large majority, is of massive type, and comprises the largest of the urns found, averaging 75 cm in height and of equal width. The body is like two joined truncated cones, widest at the middle where the more or less straight slanting sides meet at an obtuse angle which is scalloped with finger-pinched serrations. The base and the mouth are about equal in width, the former with a massive annular ring, the latter with equally massive everted lip rim. Two of the thirty-one examples had rude relief human faces on the shoulder, an unusual feature for this type.

The urns of type B (Plate LXIII, Fig. 3) are the most graceful and artistic, being bottle-shaped with quasi-globular or ovoid bodies and necks of relatively short length. Of equal, or, in rare cases greater, height than type A urns, averaging about 80 cm, they are

of less width, about 60 cm, though of equal massiveness as regards basal ring and orifice rim. Nine examples were found, four of them with stylistic human features in low applied relief on neck and adjacent body. Facial features with nose ring, ears with ear ornament, necklace with pendent ornament, apparently generally representing a gold eagle of Chiriqui type, and frequently arms are the usual details. Judging from the number of massive neck potsherds with relief faces found, this type with relief is the most characteristic of the region, possibly occurring in greater quantities in other sites.

Type C (Plate LXIII, Fig. 5), occurring in quantities about equal to B, twelve examples having been excavated, is a flattened globular bowl-pot with a width nearly double the height, averaging 50 by 80 cm. The ware is massive, the orifice wide, though little more than half the diameter of the bowl, and the rim everted as in the other types. Apparently no relief ornament is ever found on these.

Apparently all three types of urns are found in all groups, but in somewhat varying proportions. Thus in group 1, six of type C were found, three of A and two of B, while in groups 2, 3, and 5, a total of twenty-three of A were found as opposed to three of B and three of C. The urns of type A were found in largest proportion in compact groups in the poorly marked sites near the stream bed, while those of type B occurred more often alone in the better-marked sites.

All the evidence of contents, surroundings, distribution, and other data indicated plainly that the interment of the urns was relatively contemporaneous, and their origin more or less uniform, the minor variations being ascribed to differences in age, sex, social position, or other similar undetermined factors rather than to differences in people or culture.

In all three types, urns were found which apparently had never been covered, as well as those with covers. Almost all, ten out of twelve, of type C urns possessed covers which in almost every case was an inverted, wide, flaring bowl with narrow annular base and wide orifice, made of thick red pottery. These fitted accurately within the rims of the urns. In one case, another urn of similar type and size served the purpose of a cover. Less than one-half of type A urns, thirteen out of thirty-one, were noted as possessing covers. Most of these were typical bowls, one of them possessing a grater-bottom, but in one case a small type C urn was utilized as a cover, and in another instance, a large sherd was employed.

Only two of the nine type B urns were recorded with covers, both typical bowls.

The majority of the urns of all types contained traces of bones. It is most probable that every one originally held one or more interments, apparently of secondary nature, but differences of position, drainage, nature of surrounding soil, and presence or absence of covers permitted the complete disintegration and disappearance of the skeletal remains in some cases, while preserving them in good condition in others. The little definite evidence indicated secondary burial, since in no case were bones found in articulated position. One instance was noted in which the cranium lay in normal position on the bottom of the urn with the lower maxillary placed upon it. In almost every other case, however, merely the presence of bones could be noted. Of the few cases in which any determination was made, the majority of the interments were of adults; the minority, of children. No difference in this respect was found among the three types. In one instance, apparently two adults were interred in one urn. In four cases animal bones were found as well as human, once apparently a bird and once a fish. In one case the remains within a large urn were covered and mixed with a black substance, apparently charcoal, which also surrounded the urn on the exterior.

In regard to artifacts within or accompanying the urns, the difference was only quantitative. In every case the yield was slight, both in quantity and quality. As might be expected from their superior artistic quality, the urns of type B were the richest, those of type A the poorest in this respect.

Fourteen urns of type A were recorded as without artifacts, three of type C and two of type B. In only one case was any considerable number of artifacts noted. This was an urn of C (possibly A) type, protected by a cover, and containing traces of bones, probably those of a child, in the earth which filled about a quarter of the urn. Lying on the surface of this earth was a small red pottery bowl of slightly unusual type, full of earth, and a typical vase of polished black ware containing fragments of another broken smaller black pottery bowl. In the earth of the urn, in addition to the human bones, were found five black pottery whistles, two large quartz crystal beads, a few small carnelian beads, a small stone ax-head, a copper frog, the bones of a small animal, and two small typical vases of black pottery with gray earth inside. This inventory is included in the detailed account given below. It was the largest find made at Gairaca.

Objects of gold were found in three of the nine B urns, one of the twelve C urns, and none of the thirty-one A urns. Copper objects were found in two C urns and one of each of the other types. Beads of carnelian or quartz crystal, generally undrilled, were found in six C urns, five B urns and nine A urns, shell objects in one B, two C and five A urns; a fine carved bone figure was found in an A urn. Fine stone ax-heads were found in six B urns, four C urns and eight A urns. In several cases three or four were found in one urn. Five black pottery whistles were found in one C urn, apparently with a burial of a child, but no small pottery objects in the other types.

A slight variation is noted as regards small pottery vessels occurring within the urns, none being found in urns of type B. Three urns of type C contained smaller vessels, three black and one red vessel being found within one urn, and one black vessel within each of two others. Only two small vessels, one red and one black, were found within the many urns of type A. The two vessels of red pottery were apparently empty, but probably originally contained perishable objects, possibly food. The six black vessels were mainly also empty, but two contained traces of bones, probably animal, one a few beads, another a quantity of shells trenched to be strung on a necklace, and one another tiny black pottery vessel.

On the other hand, the proportion of small vessels closely accompanying the burial urns on the exterior was far greater in the case of urns of type B, five of the nine cases, and least in the case of A, three of the thirty-one; two of the twelve C urns had accompanying small vessels. Four red and four black vessels accompanied the five B urns, four black vessels accompanied the three A urns, and one red and one black the two C urns.

Including the above fourteen small vessels which were sufficiently close to certain urns to warrant their classification as accompanying vessels, about thirty small pottery vessels which were apparently not burial urns were excavated among the groups of urns. These were about equally divided between red and black vessels. Four of the black vessels had covers of small black bowls and one of the base of a red vessel. Of the red vessels, which in many instances were but smaller replicas of types A and C urns, two were covered by black bowls, one with a red bowl, three with potsherds, one with a stone disk and others with covers of unrecorded nature. Not one of the black vessels showed any trace of bones, but four of the red vessels contained traces of bones, in two cases a fish and an unidentified animal, in the other two instances either

animal or child bones. One of the red vessels contained a smaller vessel of black pottery. The only other artifacts found within any of these thirty vessels were two black pottery whistles found in black vessels. Black seeds were found in one red and one black vessel; in one case they were said by the workmen to be those of *ciruela joba*. One of the red vessels was of unusual shape, was covered with a small stone slab, contained a metate *mano* and other stones—all unique features—and rested against the neck and shoulder of one of the best of the B-type urns with a relief face on the neck.

Among the unusual features in connection with pottery vessels it may be noted that one of the B-type urns with relief face on the neck had been broken before interment and the fractures lined on both sides with a number of drilled holes, through which obviously originally passed mending thongs (Plate LXII, Fig. 2); it was also braced with a ring of stones around the body. Several of the urns contained natural stones too large to have entered through the natural breaks. These stones were evidently placed within them. One of the urns of unusual type was covered by the typical bowl and contained the bones of a child, a small cup of unusual type, and several shells, trenched for stringing as a necklace.

On one site a large covered urn of type A was found surrounded by a ring of seven smaller coverless A-type urns at a slightly higher level. Around the base of the central urn were several fine stone ax-heads and beads, and beneath it were human bones and a copper animal figure.

A few primary burials were found, generally at slight depth and associated with stone beads. One was found in extended position at a depth of 110 cm, the hand grasping a conical stone object of uncertain purpose.

In one spot a number of supposed horizontal stone slabs were excavated together with about two hundred undrilled stone beads. Other beads, drilled and undrilled, and many fine stone ax-heads were found in the open soil as well as metate *manos*, pestles, and a large "canoe-anchor." Many metates, completely worn through, were found on the surface or partly buried as pillars or in lines. But practically no potsherds, broken ax-heads, or other refuse which would have accumulated on a village site, were excavated.

The deductions to be drawn from the foregoing data may briefly be summed up as follows: Gairaca was evidently primarily if not exclusively a cemetery, possibly serving a large part of the surround-

ing country, though it may have been occupied at certain periods of the year. The interments date from approximately the same period, though occasional evidences may be ascribed to later or earlier occupation. No certain evidence of post-Columbian use was found. The urn burials were of secondary nature (i.e., a reinterment of disarticulated bones), though occasional primary burials also are found. Both adults and children were thus buried, and pet animals may have been sacrificed. The implements and ornaments of the deceased were probably buried with him, either in the urns or, less often, in smaller vessels accompanying the urns or in the surrounding soil. Food for the deceased was apparently also placed with him, generally in small pottery vessels within or accompanying the urns. The association of vessels of coarse red pottery with appliqué relief and of thin, polished black vessels with incised and molded relief ornament proves the contemporaneity of these two types. The three types of urns are likewise probably of contemporaneous origin, but may denote differences of sex, age, social position, wealth or other unknown factors. Those of type B seem to be superior in these respects. Apparently the cemetery was divided into plots, the less favored sections being on the lowest ground close to the stream where large groups of urns with slight surface indications, close together, of inferior types and containing few artifacts, are found. The more favored sites are on higher ground, the urns less crowded, frequently marked by a circular ring of stones and with richer contents.

Nahuange. The next bay east of Gairaca is one of the largest and best protected on this coast, being probably several kilometers in length and a kilometer in width in places. At the time of my visit it was the only inhabited place between Taganga and the cape of San Juan de Guía, there being here a small house sheltering the stock-tenders of Mr. Galo Alzamorra of Santa Marta, the owner of this great stretch of coast, who considerately gave the expedition full and unrestricted permission to excavate on his lands. A relatively large stream, flowing in slight degree during the dry season, increasing markedly in the rainy season with occasional torrential freshets, renders the bay suitable for continuous residence. Tiny gnats, locally known as *jején*, and also by the appropriately graphic term *plaga*, make life there a torture, but this may be due at present to the presence of quantities of cattle and other stock. The relatively flat hinterland is of rather small extent, and the steep ascent of the mountains commences within a few kilometers of the ocean.

Nahuange is the last bay from which an overland trail to Santa Marta exists at present.

On the west side of Nahuange Bay, possibly no farther from Gairaca across the peninsula spur than from the head of Nahuange Bay, is an exposed sandy beach of large extent known as Playa Brava. Though not visited by me, it is a site well known to the local *huaqueros* or treasure-hunters, who have apparently excavated many pottery vessels, presumably burial urns, there. It was probably a cemetery like Gairaca.

Owing to the constant presence of employes of Mr. Alzamorra, Nahuange has been long protected from modern treasure-hunters, but was not suspected of containing any buried wealth.

Surface evidences of occupation and architectonic remains are scarce at Nahuange. Lines of low stones are frequently encountered as at Gairaca, but without any obvious arrangement or purpose.

Seven sites within a space of possibly one square kilometer were worked upon by the expedition.

Site 1 was the richest and most interesting and unique individual site discovered by the expedition. This is an isolated circular mound 14 x 15 meters in diameter with a summit at the height of about a meter above the surrounding ground at its lowest point, and 30 cm at the highest. At the former point, the mound is bounded by a low sloping wall which is about 30 cm in height, made of piled stones, poorly made, while at the latter point it is bounded by a fairly well-made ring of irregular small blocks and long stones, set on edge and partly interred. No certain entrance to this site was noted.

In the exact center and beneath the summit of this mound was found an excellent stone-lined grave locally known as a *boveda* ("vault"), the main axis of which runs approximately east and west (Plate LX). The bottom of this lies at a depth of 210 cm from the summit of the mound and therefore considerably below the level of the surrounding ground. The bottom of the original excavation for the grave was but a few inches below the grave floor, the intervening stratum obviously being an artificially deposited basal layer. The grave measures about 200 x 110 cm at the base, but is slightly constricted and narrowed at each end. The sides are composed of a number of upright pillar-like stone blocks, seven to each side and apparently interred a few inches beneath the floor of the grave. At either end, to head and foot, the pillar stones are replaced by large rectangular blocks with smooth inner faces. That at the

east end measures 75 x 45 cm, that at the west end 70 x 30 cm. The thickness was not ascertained. The larger eastern block is inclined slightly inward at the top, the base being beyond the end of the side lines of stones. The smaller western block is especially well cut. These two end blocks do not reach the roof of the grave, which was composed of many unshaped horizontal pillar-like stones similar to the vertical stones forming the sides of the grave, on whose tops they rested at a height of 90 cm above the bottom of the grave. These pillar-like stones are unworked and of irregular size and shape, averaging 60 to 150 cm in length and 15 to 30 cm in width. Twelve of them were piled horizontally, one above another, parallel, and transverse to the long diameter of the grave, reaching to within about 80 cm of the surface of the summit of the mound and therefore making a pile about 40 cm in thickness.

Traces of bones and teeth were found throughout the grave, but in such poor condition that it was impossible to determine any facts regarding the number of individuals or their age, race, or sex. A fragment of a cranium appeared to be unusually thick.

The objects interred in this grave are exceptional, both in number, type and quality, many of them being very different from any others found by the expedition. The inventory, taken from the field-notes, is as follows:

1. Barrel-shaped cup and cover of red pottery. Apparently one of a type common in this region and peculiar to it. The base is slightly convex, the vertical sides very slightly concave, the orifice wide with a broad horizontal lip on the exterior on which rests a cover of inverted bowl shape with slightly convex base. It contained about eighteen stone beads, some of them large and globular.

2. Fine pot-vase of polished black pottery with lattice-work ring base and incised designs. A unique type. It contained merely one unworked stone.

3. Wide bowl of black pottery with ring base, containing a few human bones with mandible and teeth.

4. Small tall vase of black ware, partly broken, containing unidentified bones including parts of cranium.

5. Wide bowl of black pottery with ring base, badly broken, containing traces of bones.

6. Fine artistic bowl of black pottery with broad annular base and animal heads in relief. No contents were evident.

7. Tall cup of the general type of No. 1, but of fluted black pottery and without cover. It contained a fragment of a cranium and one large globular stone bead.

8. Large artistic bowl of fluted black pottery, lying on its side. It contained traces of bones and one large globular stone bead.

9. Small bowl of black ware with ring base, broken, containing traces of bones, a gold boss and gold bracelets.

10. Fine large pot with black bowl cover, incised.

11. Contained quantities of fine beads and some gold objects. (This may be the same vessel as No. 10 above.)

12. Beautiful large vase of black pottery of unique type with relief knobs. No contents.

13. Cup-vase of type of No. 1 of black pottery without cover. Full of stone beads.

14. Oval urn with two animal heads in relief and four legs. Contained a few fine beads.

15. Large pot of type of No. 1, without cover. No contents.

16. Large cup-vase of modified type of No. 1, of thin poorly-baked and rotten black pottery, with designs of broad incised lines and a crude relief face on one side. A unique type but probably disintegrated beyond repair. It contained three smaller vessels, two of them small black vases, the other a very shallow black bowl. In the bottom of this large cup, below the small vessels, was a thin stratum of a waxy black clay in which were many fine stone beads.

17. Large cup-vase like No. 1 with cover. It contained quantities of stone beads, long ornaments of jade somewhat resembling the *klangplatten* of Venezuela, a large jade figurine and a bracelet of copper wire.

18. Broad bowl of black pottery with incised designs on side. It contained a small vase of yellow-buff pottery painted with designs in red, one of the few vessels of painted pottery which were found, and the best. These red painted designs were apparently not baked in. This small vessel contained many beads.

19. Artistic, zoomorphic vase of black pottery with relief knobs in the shape of animal heads, and four legs, containing a few fine beads.

20. Olla of thin fragile brown pottery containing traces of bones and, on the bottom, a layer of black clay in which were many beads.

A small pot with incised designs, probably among those noted above, contained a few bones, a molar tooth and traces of other

bones. After they had been washed, several cup-vases of No. 1 type were found to have painted decorations on their surfaces, but none was so well made as the small vessel found in No. 18. Except for one sherd found on a near-by site, the painted vessels found in this grave were the only painted pottery objects found during the entire expedition. In the soil of the grave, which had, of course, been completely filled up with earth, either intentionally or, more likely, by natural causes during the centuries since the abandonment of the site, were found, in addition to traces of human bones, numerous stone beads and a jade pendent ornament.

In this same mound, a number of other traces of burials were found in the soil, as well as vessels containing ornaments, and other ornaments in the free soil. At a depth of 130 cm bones which possibly represented two individuals were found, one of them apparently a child, as the molar teeth were not worn. It was impossible to deduce more conclusions from them. More human bones were encountered in another excavation at a depth of 120 cm, and several other traces of bones were found at a depth of less than 100 cm.

The isolated pottery vessels found in this mound were as follows:

1. Round-bottomed pot of black pottery with a cover of red pottery at a depth of 140 cm. It contained a gold ornament of thin metal and a gold ring.

- 2 and 3. Fragments of two artistic polished brown vases at a depth of 70 cm, one being a large deep bowl with scalloped edge. The circumstances seemed to indicate that they were broken before interment.

4. Small vase of red pottery with interesting incised design, broken.

5. Bowl of polished red and black ware with annular base and scalloped medial ring, containing traces of bones.

6. Vessel of red ware; empty and broken.

7. Artistic vase of polished black pottery containing quantities of tiny beads; broken.

8. Artistic vase-bowl with latticed annular base, empty.

9. Vessel of polished black pottery with cover of same ware, broken.

Several other vessels with gold ornaments and beads were later excavated in this mound by one of the cattlemen and bought from him. A number of stone beads and broken stone ornaments were also found in the free soil of the mound.

Altogether, the mound yielded upward of eight thousand stone beads of carnelian, agate, quartz crystal, a red sandstone like catlinite, and a green stone, possibly malachite; a number of nephrite ornaments and figurines, a number of gold objects, and upward of thirty pottery vessels, almost all of exceptional quality and many of types not encountered elsewhere.

Site 2 is a large, low mound or house-site, quasi-rectangular, but with slightly curving sides, 20 to 25 meters in diameter and from 40 to 85 cm in height, practically surrounded by what is either a sunken road or the space from which the soil for making the mound was taken. A peripheral ring is noticeable in most places, but is poorly made, in some parts a ring of unshaped stones and in others a low wall. No specific entrance was noted anywhere.

In the east-central part of this site a number of interments were found, all in the free soil, not in burial urns. In every case the bones were too much decayed to permit of saving and in most cases to permit of accurate notes. Most of them were found at a depth of about a meter but some at half this depth. One was certainly in horizontal position.

The pottery objects found on this site are as follows:

A number of artistic vessels of black pottery, one with double spouts. Many were in fragments, a few whole, or practically so.

A large quasi-globular pot, possibly a burial urn, with cover, containing a few bones, probably those of a child, and many tiny cigar-shaped brown beads.

A small olla of the type of No. 1 in the mound grave, with cover resting on lip. It contained tiny beads including many of shell or bone.

A sherd of painted pottery like the best painted vessel found in the grave, the only other piece of painted pottery found on the entire expedition.

Together with the skeletal remains and the pottery vessels, and possibly in many cases escaped from broken vessels, were found a considerable number of excellent artifacts. These include six or eight most artistic heads of crocodiles, made of the interior of a large univalve mollusk shell in a very stylized and conventionalized art, crescentic pendants of shell, long tubular beads of shell, several very long fine tubular beads of carnelian, two plaques of gold-copper alloy and a few other gold objects, many ordinary beads of carnelian and green stone, tiny tubular shell beads, quantities of cut thin flat

rectangular buttons of shell with twin perforations, probably for attachment to fabrics, and quantities of small white univalve shells with a sawn orifice for attachment or stringing, possibly for use as rattles on clothing.

Site 3. Somewhat closer to the beach is a large, slightly elevated site, partly rectangular but nearly circular, 20 meters in diameter. In place of the usual encircling ring of stones, it is bounded by a low wall of natural oblong flat slabs placed flat with their shorter edges to the periphery of the circle. In some places, several are placed one above the other, while in other places a single horizontal slab serves to form the boundary.

A large number of interments were found on this site, but the humidity of the soil is such that it was impossible to record much data on them or to preserve any of the remains. Apparently, all were in extended position or at least interred lying on the back. None was specifically noted as a child. A few appeared to be in pairs. A considerable number of ornaments were found in the free soil together with these interments. These are mostly of shell and include large quantities of thin, rectangular buttons of white and pink shell, each with decorative notches and twin drilled holes for attachment to a base, and also quantities of natural small univalve mollusk shells, each trenched with a slot for attachment or stringing. Two monolithic stone axes and several fine stone ax-heads were also found accompanying the burials.

One mortuary urn was excavated on this site. This was a round-bottomed urn like type C of Gairaca, with typical inverted bowl cover. It lay near the center of the site, the top of the cover at a depth of 60 cm, and contained a few beads and the bones of a child. Several small pottery vessels were also excavated on this site. One small flat-bottomed vessel of black pottery with a bowl cover of the same ware contained many tubular beads of carnelian. A larger fragmentary vessel contained small beads of gold, small tubular beads of carnelian and large tubular beads of shell. Other small vessels contained carnelian beads and ornaments of gold-copper alloy, one vessel being of black pottery in the form of a coiled snake.

Site 4 was the most interesting site seen at Nahuange from an architectural point of view, but yielded no artifacts.

The site is roughly rectangular, but with curving corners which make it approach a circular shape, 19 meters in diameter, and is relatively level with a slight summit in the center. To three sides, east, west and south, the surrounding ground is of approximately

the same level and the line of stones marking the boundary of the site, of irregular natural stones set on edge, is poor and frequently interrupted.

To the north, the site is bounded by a retaining wall, 18.5 meters long and slightly curving, like the other three sides of the site. It is 50 cm high, the top on a level with the floor of the site, the base on the level of the lower ground to the north. It is composed of thin, flat, naturally oblong slabs of stone piled horizontally in a slightly sloping wall, their short faces to the front. No steps enter the wall, but in the center, for a space of 150 cm, the wall of flat slabs is missing, its place being taken by a line of tall vertical pillars of natural stone sunk in the ground at the inner line of the wall and consequently causing a central niche in it. This line of pillars is 260 cm long, extending on both sides behind the wall for a distance of 50 cm. It is possible that there were entrances to the side at either end of the stone wall, but this is uncertain.

Another stone ring is located 150 cm north of this wall on the natural ground level. Some of the upright slabs composing this line are 40 to 60 cm high, but the majority are only 10 to 15 cm above the surface. Many are missing so that the exact nature of the line could not be traced; it may curve around to meet the corners of the retaining wall. An imperfect line of irregular blocks was traced a short distance to the north of this. The purpose of these lines and of the large upright columns or pillars found near the center of them could not be ascertained or guessed.

From the west end of the wall another line of stones runs at an angle into the forest. This consists of small upright stones interspersed with larger ones. One of the latter, at a distance of 350 cm from the edge of the wall, is a well-cut flat block like the threshold stones of Pueblito to be described later, 270 cm long, 115 cm wide, and about 25 cm thick. The broad top face is flat, the front edge markedly convex and with round corners to the short end edges.

Excavations on this site revealed no surface potsherds, and only a handful of sherds and a few stone beads above the original hard soil which was generally at a depth of 90 cm. Charcoal is frequent. In one place, at a depth of 30 to 50 cm, a stratum of hard, red, compact, probably burnt, clay was encountered.

Sites 5, 6, and 7 are poorly marked and afforded no artifacts. All are relatively circular and of the same level as the surrounding soil. One is 13, and one 15 meters in diameter.

Nahuange differs decidedly from the neighboring bay of Gairaca. Only one burial urn was discovered here, in marked contrast to the quantities at Gairaca. On the other hand, a number of primary burials were here noted as compared with very few at Gairaca. The sites are mainly quasi-rectangular, while the few sites noted as of any particular shape at Gairaca are round. Quantities of shell objects were found as opposed to very few at Gairaca. Small drilled beads of carnelian are the characteristic type, while those at Gairaca are mainly large undrilled beads of many kinds of stone. But the pottery objects are of the same type and mainly of identical shape. In particular, site 1, the mound, is unique in many respects, affording the only painted pottery, half of the beads, a large part of the gold objects, and practically all the jade objects found during the entire expedition. This was apparently exclusively a burial mound, while site 4 was probably a ceremonial site not used for burial.

Cinto. This is the large bay next east of Nahuange. The relatively flat area is of good extent, the stream slightly smaller than that at Nahuange with a slight flow in the summer, the mouth being covered with a bar which forms a lagoon behind it. Evidences of occupation are slight and the architectural features of little interest. In a few hours of work a number of potsherds were excavated, a broken urn, a whistle of black pottery and a broken stone chisel.

Guachaquita. This is a large bay, east of Cinto, but the stream is dry in the arid season and the bay uninhabitable at the present time. In earlier days this difficulty was surmounted by the building of reservoirs or *aljibes* like those at Gairaca, for the conservation of the water supply. Two of these reservoirs exist at Guachaquita. Neither is in the stream bed, but not far removed from it. The drainage areas are not great, but were probably sufficient to fill the reservoirs during the torrential storms of the rainy season. The larger one (Plate VIII, Fig. 1) measures about 30 by 18 meters in length and width and over 3 meters in depth. The lower third of the reservoir was apparently excavated in the clay which was presumably thrown up in a ridge around the edge of the depression, thus increasing the depth, overcoming the unevenness of the surface and forming a ring around the reservoir of greater height than the surrounding soil. In this ring are four breaks, apparently for the draining of water from the surrounding region. The smaller reservoir is of oval shape, about 12 x 9 meters and 2.5 meters in maximum depth.

The architectural features of Guachaquita are much superior to those heretofore described in any of the bays to the west. Near the

beach several circular sites were noted, surrounded by rings of selected thin slabs half buried with their long edges in the ground. One measures about 5 meters in diameter with entrances at opposite sides to northeast and southwest (Plate XXXVI, Fig. 1). The best site is 12 meters in diameter, well made with a ring of stone slabs broken at the four corners (that to the south being uncertain) and with entrances over a meter in width (Plate XXXVI, Fig. 2). The stones of the ring are small and lean slightly outwards. It had already been excavated and, according to the workmen, had afforded a rich yield. A mealing stone lay on the surface. Quantities of smaller stone rings, 3 to 4 meters in diameter, none particularly well made, were found at a greater distance from the beach. In one a second enveloping concentric ring lies about 40 cm outside of the main ring. Two breaks in these rings, about 75 cm in width and on opposite sides, probably represent the entrances and to one of these a rude flight of steps leads up, made of crude uncut slabs, several slabs to a step.

Many other sites are apparently bounded by straight lines of stones, but almost always incomplete or disrupted. Such places almost invariably contain hillocks within the sites and larger placed stones, and frequently milling stones or metates, the latter generally broken.

One large ring near the beach, about 11.5 meters in diameter, was excavated, the surrounding ring being poorly marked and the level only about 40 cm above that of the surrounding soil. An inner ring was encountered at a distance of 360 cm from the outer one. Potsherds and charcoal were found to a considerable depth, and at a depth of 120 cm an interment was met. It was of an adult, buried in flexed position on the back so that the knees were uppermost. All the long bones were practically parallel except the ulnae and radii which were folded across the chest. The humeri lay beneath the femora. The head had been bent far forward so that the occiput was uppermost. The bones were very much decayed in the damp soil, and only a few of them could be saved. A few fine beads were found with the body. In other excavations on this site potsherds occurred to a depth of 150 cm, and a few fine polished red carnelian tubular beads and stone ax-heads were found. Near this site is a stone-lined vault which had been excavated, measuring about 250 cm in length by 100 in width.

The sites of greater architectural merit are found at a distance of a quarter to half a mile from the beach. For a part of this distance a road about 2 meters in width runs down the stream bed which in places is artificial and bordered with crude retaining walls of small

flat stones piled at a slight angle, apparently to form a levee to prevent the stream from overflowing the ground to the sides in seasons of freshets.

The place of greatest architectural importance is illustrated in Plate XIV, consisting of the following features:

On a flat space near the base of a steep declivity a flat circular site 15 meters in diameter (A) was laid out. A single ring of stone slabs placed on edge forms the boundary of the site, good and plainly visible in certain parts, poor and invisible in others, and apparently missing in some places. Surrounding this is a path or road (B), practically level and a few inches below the level of the central site. The width of this path is slightly variant, but averages 5 meters. To the northeast the steep bank of the natural slope (C) is retained by a high wall (D), this slope having apparently been to some extent cut back in order to widen and level the path (B) at this point. This wall is built in the main of small natural stones of rectangular fracture placed regularly with the broad flat faces nearly horizontal, but slightly sloping, the face of the wall therefore sloping backward at an angle of possibly sixty degrees (Plate XIII). The maximum height of this wall is 230 cm. The base is strengthened by a few low slabs buried in a perpendicular position. Farther to the west, due north of the circular site, where the slope is less abrupt, this wall is replaced by a line of large, partially buried, natural stone slabs at an average height of 1 meter above ground (E). Against the top of these rests a series of large horizontal slabs, a typical one of which measures 100 x 60 x 15 cm, and a little higher and farther back a similar second line of lower upright slabs and caps had been placed, thus forming twin long steps with a total height of about 150 cm (Plate LVII, Fig. 2). The junction of the slab wall and the wall of twin steps is at a slight angle (F), and the slab wall continues for a short distance behind and above the lower line of upright slabs.

Two staircases (G, H), now almost totally disrupted, pierce these lines of slabs, one near either end and leading in divergent directions. Upright slantingly tilted slabs line their sides. Above them, a depressed road runs up the hillside. At the west end of this twin line of slabs a similar, but smaller pair of lines (I) breaks away at an angle of nearly ninety degrees, running approximately south. It consists of a line of low vertical slabs 50 cm high, partially interred and capped with similar horizontal slabs to form a long seat or curb. Behind and above this is a similar second line of upright slabs, the caps of which have fallen and the ground been eroded.

An architectural site (J) probably once occupied the flat space above at a height of 1 meter above the road. In one place this curb is pierced by steps (K) in which two worn-out milling stones were utilized. At the southern end of this straight stretch of curb (L) the latter swings in a semicircle and then continues westward, bounding on the north a narrow depressed road (M), about 2 meters wide, which leads to the beach to the west, and on the east meets the path which encircles the circular site at the same point where another depressed road (N) enters from the southwest. Three minor sites on higher ground (O, P, Q) are thus bounded by these roads on two of which vague and untraceable vestiges of architectural features appear.

The road leading to the southwest descends a slope, the descent of which was apparently accomplished by means of two steps in the road (R, S), the caps now washed away and only traces of the upright slabs remaining. The difference between the level of this road and the path encircling the central circular site is approximately 1 meter. The space between these two steps on the road is sloping, but may originally have been flat. The small site (Q) to the southeast of the road running southwest is approximately at the level of the encircling walk and consequently some 150 cm higher than the level of the road. At the edge of the road this site is retained by a low wall (T) of small irregularly piled stones some 80 cm high, the rest of the slope being gradual. The boundary of the encircling walk is unmarked and imaginary to the south. To the east side of it and at the eastern foot of the steep slope a secondary depressed road (U), or possibly a little ravine, runs off to the east, and between this and the high slab wall is a steep slope covered with stones, possibly the remnants of a fallen wall (V).

The large central site A possesses a main entrance (W) a little west of north and opposite the line of large slabs. Here is a gap 2 meters wide in the stone ring. Though very much disrupted and destroyed, apparently a corridor runs from this entrance for a distance of about 5 meters towards the center of the site. This corridor was apparently originally lined with a curb on either side consisting of a line of oblong slabs set on edge with similar horizontal caps resting on their tops. This latter feature, while entirely disrupted, was deduced from the number of scattered stone slabs found throughout the site. Excavations on this site revealed nothing of importance.

On another site a fallen stone pillar of triangular cross-section, 120 cm in length by 30 cm in width, was found. On one of the three sides eight small pitted depressions had been made (Plate V, Fig. 1).

Palmarito. Palmarito is the seventh and next to the last of the bays which indent the rocky coast between the Punta Aguja and the cape of San Juan de Guía. It is a shallow bay on whose sandy beach the high surf, impelled by the constant trade winds, beats heavily, rendering it inaccessible through possibly ten months in the year. In the brief period of accessibility it is frequented for the purpose of obtaining leaves from the palms for which the bay is named which are employed for thatching houses in Santa Marta and Taganga. On account of its inaccessibility it has been largely neglected by treasure-hunters and hopes were entertained of profitable results there. Though the bay itself is small, the flat hinterland is larger than in most of the other bays, well watered and heavily wooded. Though close to the other bays, which are essentially arid, Palmarito is relatively damp and humid with a stream which apparently flows throughout the year, affording an excellent site for aboriginal occupation. Though conditions may have been different when the bay was inhabited and the ground largely cleared, today it is characterized by an abundance of game, snakes, and noxious insects.

A large number of sites with excellent architectural features are found at Palmarito, which is the best of all the bays from an architectural point of view. Of maximum interest are several large water-reservoirs. Many sites with stone rings, depressed paths and roads, mounds, and walls are found not far from the beach. The main and tributary stream beds are in many places protected and leveed with long mounds of stones probably cleared from the adjacent ground. In low places frequently a ditch from which the material for the levee was apparently excavated intervenes between levee and hinterland. The surface is intersected by many depressed narrow roads and paths, frequently lined with stones, which apparently served as drainage ditches as well. These frequently fork and enclose wedge-shaped or triangular mounds. Rings of stone slabs are frequent, marking sites of some nature, but these are generally incomplete, and not elevated. A few good elevated sites were observed but these had all been previously excavated. The largest, broadest and best road runs up a side ravine westward in the direction of Guachaquita Bay. Although the ravine is broad and relatively flat, yet the road is made on the slope into which it was partially cut, artificially flattened and lined on the lower side with an excellent line of large stone boulders and high slabs. Fairly well-shaped cylindrical stones of 60 to 75 cm in length, three-quarters interred in the soil, are frequent, but apparently without relation to the sites. Few mealing

stones are found, but excavations revealed many of the mullers or *manos*. It was apparently a well-populated village.

The largest of the water-reservoirs (Plates VI, VII, and VIII, Fig. 2) is of triangular shape and measures about 6 x 9 meters at water level, the water being apparently about 1 meter in depth. The sides, which are made of large piled water-worn boulders and pebbles, slope back at an angle of possibly forty-five degrees to a height of 2 to 2.5 meters above water level. The principal stairway, with well-made steps, descends to the water at the obtuse angle of the triangle and at a descent of possibly thirty degrees. At the top a side stairway branches off to the east. At the more acute angle to the north, a poorer stairway descends, and a good slope with a few steps at the water's edge is found in the third angle.

The main architectural features of Palmarito center in one group of sites where excavations were conducted. The following description is based on the accompanying plan (Plate XXXV).

The central site (A) is a circular low mound 950 cm in diameter and of very slight height, bounded by a ring of stones, principally composed of buried upright slabs, fairly well made. This ring is broken by entrances in two places, asymmetrically placed to north and southwest. That to the north is apparently the main entrance, 160 cm wide and lined on either side with a large slab placed on edge at right angles to the periphery and extending for 65 cm into the circle (Plate XXXVI, Fig. 3). At the inner end of this entrance is a large threshold slab, 195 x 55 cm in dimensions, and probably thin, placed flat on the ground. Though well squared, it is apparently a natural unfaced slab. The other entrance is probably similar though smaller and buried, measuring 110 cm in width. An excavation in the center of this site revealed merely dark earth above, with sherds and charcoal to a depth of 75 cm.

Fifteen meters from this site, to the northeast across an intervening level space, is another circular site (B), smaller and poorly made, about 8 meters in diameter and bounded for about half the periphery by a ring of stone slabs. It likewise is of very slight height. Two entrances appear to northwest and southwest, the boundary ring being well made between them and a little to the side of each, but wanting for the rest of the circumference. The main entrance appears to be that to southwest, 110 cm in diameter and indented as in the case of the preceding site. Close to the boundary ring on the opposite side from the entrances were found three columnar stones about 60 to 80 cm long and buried to within 10 or 20 cm of

their tops. Close to them was found a metate *mano*, and in front of them a short buried line of stones. Under one of the columns were found traces of a broken olla with small bones, probably those of a child. An excavation in the center of the site revealed nothing.

A third site (C), 2 meters to the west of the preceding, is smaller, 440 to 450 cm in diameter, the well-made boundary ring consisting of small slabs hardly showing above the surface. It is but slightly higher than the level of the plaza. The entrance is uncertain. Near the center of this site a stone slab 60 cm long, 10 cm wide, and 3 cm thick, was excavated, buried on the long thin side with the upper edge just below the surface. Nothing else was excavated here.

The general plan of this region is somewhat as follows: The main entrance is from the north at the south end of a depressed path about 250 cm wide. This is lined with sloping walls of piled rocks on either side which increase in height as the structures are approached. It then rises 50 cm by means of several large steps (D) to gain the level of the plaza (E). This plaza is level and of varying width, completely surrounding the main site (A), and is bounded by other mounds, sites and terraces at a higher level. These surrounding mounds are, however, at very varying distances from the main site (A) and are of different heights. They are separated from each other by paths running out from the main plaza and of the same height as the latter.

Site C is the first of these mounds to the east of the main entrance. This circular site is at the southern end of a low oval mound, 80 cm in height, the north and east sides of which are bounded by a line of stone slabs. Site B is the next of the encircling structures to the east. Next follow two large irregular mounds (F, G), of a maximum height of 40 cm and separated by a narrow depressed road. Both of these are partly bounded by stones, especially along the dividing depressed road.

To the south is a relatively high terrace (H) which rises abruptly from the level of the main plaza (which was doubtless excavated to uniform level) to the level of the natural higher ground. This terrace is bounded to the north by a well-made wall of irregular frontage which approaches very close to the ring of the central site (A). The general trend, however, is east and west for a distance of 38 meters, thus extending far beyond the central site (A) and separated by a depressed path (N), formed by a tongue of the low level plaza, from the western terrace. At the western end, this wall (Plate XXXIV) begins with very low height, which increases as the path

descends toward the central plaza, the top of the wall being approximately level. Opposite the prolongation of the east wall of the western terrace it changes to a fine line of upright stone slabs with flat caps, thus forming a long seat or curb. This swings in an arc outwards toward site A and, at the point nearest the southern entrance of site A, is broken by a good ascending stairway (I).

A short distance to the east beyond the stairway, the curb ceases and is again succeeded by a wall of piled stones. This pursues a curving path until close to mound G, from which it is separated by a narrow depressed path of the same level as the plaza, 2 meters wide and 100 to 125 cm deep. Here the terrace wall swings abruptly to south and southwest, forming a long point or tongue of high ground. The narrow depressed road continues in a general southern direction and constantly bifurcates, surrounding minor and more distant mounds and sites such as J and K. This road gradually rises to the height of the natural ground, the mounds being lined with low sloping walls.

On this terrace is found a small circular site (L), opposite the entering stairway. This has a diameter of 670 cm, and is bounded by a fairly well-made ring of low upright slabs. Two entrances are found to north and south, indented as usual as shown in Plate XXXVI, Fig. 4. An excavation in the center revealed nothing.

On the western side of the plaza is a second terrace (M) with approximately level natural surface some 125 cm above the level of the plaza which was doubtless excavated in this part. The front edge of the terrace, like that to the south, is irregular and meandering. Opposite site A, from which it is separated by only 4 meters at the minimum point, it is straight for a distance of 10 meters and retained by a good sloping wall approximately 1 meter in height, lined with slabs. At both north and south ends this wall turns westward at a right angle, thus forming a quasi-rectangular terrace. To the south, it is separated from the south terrace by the depressed descending path (N). At the northern side it continues westward for 10 meters, and then ceases at a rude stairway (O), from which point the edge of the terrace, now at a slightly lower level, runs generally northward in an S-shaped curve until it meets another depressed path running northwest from the main plaza.

A large terrace is thus formed with its principal face running generally north and south. The surface is that of the natural undulating ground, modified here and there by mounds and two slightly

depressed paths which run southwest. To the west it is limited only by the foot of the slope of the hill (P) behind.

In the northern and lower end of this terrace are traces of a stone ring, site Q, on which no further studies were made. On a tongue of the terrace between the east boundary wall and a diagonal depressed path is found a small mound (R), bounded on the east by a slight arc of upright stone slabs, 30 cm high, with a few flat caps. Considerable excavation was done on this mound. Near the surface in the center a number of large rocks were encountered and, beneath these, traces of several burials, including one complete cranium. This was removed by the workmen before the position was noted, but it was said to have been in natural position with the top uppermost. Other bones of a complete interment were found, the long bones of the legs in the same plane and direction, the hip and pedal phalanges at the opposite end from the head, the tibia and fibula uppermost, the femur below, the corpse apparently having been buried on its back with knees doubled up. It is uncertain whether the complete skull belonged to this individual, as fragments of a second skull and other bones were found mixed together with the bones of a small animal. These skeletal remains extended to a depth of 140 cm. The entire interior of this mound and the material surrounding the burials consist of a fine white powdery ash said by the workmen to be lime (*cal*), possibly made by the incineration of bones, shell, or coral. At a considerable depth below this, hard gravel was reached.

North of this western terrace and between it and the main entrance to the site is an irregular mound (S), separated from the terrace by a depressed road.

In other parts of Palmarito more distant from the main features, other sites of interest were investigated. In one place two pillar-like stones projected above the surface with a line of stones in front of them. One was buried in the fragments of a large urn of type A which contained traces of human bones. Near it, a large urn of type C was found near the surface, containing human teeth, the molars large but unworn. In another region a large circular site with a good slab ring was found. An excavation in this revealed that the interior consisted mainly of a mass of homogeneous white powder like cement to a depth of 130 cm, resting on earth and gravel. At the surface it was dark and damp, but below dry, white, and powdery.

Another good circular site 13 meters in diameter, encircled by a complete and well-made ring of upright slabs with the usual indented and lined entrances, one to east and one to southwest, was found at

the base of a small mound. Excavations in it revealed nothing. Another excellent site, almost completely encircled by a stone ring about 15 meters in diameter, is surrounded by a depressed path 3 to 4 meters wide. The usual two entrances are to north and southeast. An excavation showed this to be composed of very soft earth at the surface, large boulders below and gravel and sand at the base. Across the encircling depressed path, the site is surrounded on three sides, west, south and east, by a terrace with retaining wall lined with upright slabs.

Near the largest reservoir a group of three pillar-stones so close together as almost to touch was excavated. Beneath them nothing was found, but some 2 meters to the southwest several flat slabs were encountered. Beneath one was found a broken and rotten red pot with round bottom and large mouth, apparently type C of Gairaca, containing fragile traces of bones. In the course of the excavation two excellent mealing *manos*, a grooved hammer and some other objects were found. A similar broken small vessel in which no traces of bones were found was excavated under another slab.

In the majority of the sites excavated at Palmarito, the upper layer was of dark humus, full of sherds, followed by a thicker and harder stratum of earth and gravel with a few sherds, resting on natural loose sand and pebbles, without sherds.

The eighth and last of the bays, Playa Brava, was not entered by the expedition. As its name indicates, the beach is exposed to high surf and it is seldom entered. Remains of aboriginal occupation would almost certainly be encountered there. Several miles of precipitous cliffs intervene between here and the cape of San Juan de Guía, at which point the hills begin to recede from the coast and sandy beaches replace the rocky cliffs.

Cabo. All along this coast are evidences of aboriginal occupation, a few of which were examined as opportunity offered. At the cape itself, the only place of interest is the terminus of an excellent road which descends from the large hill site of Pueblito (*q. v.*). For most of the distance this descends a large *quebrada* or rocky stream bed of considerable grade, mainly over the natural great boulders, which have frequently been chinked by smaller boulders, at other times following the bank of the stream. Just before the road reaches the flat plain of the shore it passes between two great boulders in contact. Here it is built up with piled stones and in one place lined with thin upright slabs all leaning in one direction. The roof here, formed of the overhanging boulders, is only about 1 meter in height and 50

cm in width. The road then descends over a low wall some 75 cm high, this section of the road being about 6 meters long. Descending farther, it passes in a circular path under a great overhanging rock where it is little more than 1 meter in width. It is slightly depressed so that the rock roof is from 1 to 1.5 meters above. Some interesting and excellent details of engineering are here found.

Just before the road passes under the great rock, to one side is found a long pencil or thin column of rock, set in the ground but probably not to a great depth, since it is leaning against the great rock and is braced by an upright slab. It extends 230 cm above ground, higher than the neighboring rock roof, and measures 25 x 32 cm, the shorter sides being nicely faced, the longer ones crude but relatively flat. Lining the road under the overhanging rock are eight great upright slabs measuring from 125 to 180 cm in height, 25 to 90 cm in width and of various thicknesses. Some of these have their tops close against the roof while others support caps wedged in between their tops and the roof. Some might be considered as slabs and some as pillars. They set relatively close together. The interstices between them and between each and the roof are chinked with smaller stones and the space behind filled with *débris*. Some are natural and uncut, others partly shaped, their purpose apparently being to keep the road free from falling *débris*. After the road has again emerged on the seaward side, several more upright slabs lining the road on the high side are found, and 12 meters farther on a well-made bridge over a gully. The piers and cap are well made, and the span of good width.

Arecife. This is the name of a flat, wooded terrain several kilometers east of the cape. No stream enters the sea but one descends from the hills and disappears into the ground, permitting an aboriginal settlement there. One rock-shelter was found, the surface and upper soil of which was thick with sherds and large fragments of pottery vessels, almost exclusively of fine, thin, polished black ware. The cause of this accumulation of sherds of this ware, whereas in most sites sherds of heavy red ware are in the majority, is uncertain. The possibility of its having been the shelter where a band of early treasure-hunters met to divide their spoil must not be ignored. No house-sites or other evidences of human occupation were encountered at *Arecife*. It may have been utilized only as a cemetery. However, only a few buried stone slabs were found. Only one of these was excavated, without important results.

Two great stone slabs, approximately 130 cm high, 70 cm wide, and 15 cm thick, were buried in parallel vertical position about 75 cm apart and slightly converging at the top. Only about 25 cm showed above the surface. A third irregular stone of equal depth but not appearing above the surface was apparently in the same line as one of the slabs. The space between these upright slabs to a depth of 75 cm was dark humus in which a few sherds, stone beads, and scattered stones were found near the surface, and bracing stones at the foot. The humus continued to a depth of 75 cm, and beneath this was a light-colored gravel, apparently natural and undisturbed, in which the slabs were imbedded. The arrangement indicated a grave, although no traces of bones were found.

Cañaverál. Cañaverál is a tiny settlement of a half-dozen cabins at the mouth of the Rio Piedras where the road from Santa Marta to Rio Hacha descends to the coast. Evidences of aboriginal occupation abound, but of poor quality and slight value. Since, however, the settlement was utilized as expedition headquarters for several weeks, more work was done there than surface appearances and results warranted. Sherds were found to a depth of a meter on the bank, which is being eroded by tidal action. Several mounds and apparent house-sites were excavated, potsherds being relatively thick and fragments of mealing stones common. One of these mounds apparently originally consisted of a stone ring about 7 meters in diameter.

On a high natural mound a hole which may have served as a mortar was found in the bedrock. In other places depressions which may have served as reservoirs were seen. Potsherds in quantities were encountered in many localities. In one site a pot with beads was said to have been found by earlier hunters, and a desultory search here disclosed a stone ax and a few carnelian beads, with sherds and charcoal to a depth of 125 cm.

Several excavations were made which supplied interesting stratigraphical data though of slight importance. In one site dark surface soil containing many large stones and potsherds continued to a depth of 80 cm. Beneath this a stratum of fine loose gravel approximately 50 cm in thickness was found in which occasional potsherds of very coarse pottery, full of gravel, weather-worn and rotten, occurred. One such was found at a depth of about 1 meter below the surface, apparently in a water-borne deposit. Immediately below this a thin stratum, 5 cm in thickness, of a fine sand appeared, and in this also a potsherd was found at a total depth of 110 cm. The next stratum consisted of a gravel similar to the preceding but

of a darker color and with horizontal and dipping dark streaks. This was irregularly from 10 to 30 cm in thickness. Potsherds were said to have been found in it. Below this followed a stratum, some 70 cm in thickness, of a homogeneous, gray, sandy clay of good ceramic quality, streaked with a rusty color in which charcoal appeared. The final stratum was of a sand and gravel of finer quality than those above.

In another place, an excavation was conducted to a depth of 130 cm, the material being sherd-bearing soil, darker on the surface, lighter below. At the base was a mass of small stones including some metate *manos*.

The road from Cañaveral to Cabo for most of the way follows an old Indian road, and in one place crosses a ravine where the latter is partly filled by immense rocks fallen from the cliffs. These were utilized as a viaduct by filling the interstices and gaps with smaller rocks and boulders, flat stones being placed on the top. The path worn by countless feet is very evident. In one place in the center a depression, some 40 cm wide and 10 cm deep, was noted. A few other depressions gave the appearance of artificially carved footholds.

FOOTHILL SITES

Bonda. The little town of Bonda is situated toward the headwaters of the Manzanares River at the base of the Sierra San Lorenzo. It is frequently mentioned in the earliest accounts as the settlement of a warlike tribe. At present practically all vestiges of aboriginal settlement have disappeared, but the village still retains its reputation as a pottery-making center.

Mandigua. This probably represents the site of Bondigua mentioned in the early records. No settlement exists here at present, but several interesting petroglyphs are seen on the boulders in the river. One bears a marked resemblance to Tainan petroglyphs from the Antilles and, like the latter, is situated at the base of a waterfall (Plate V, Fig. 3). The incised lines are broad and shallow. Another such is said to be near-by on a rock visible in the dry season and to represent a woman with the breasts portrayed.

Sabana de Limón. This is the name given to a locality on the Manzanares River above Bonda, Masinga and Mandigua. The surrounding hills are covered with terraced sites and here was found the best paved road seen by the expedition (Plates XVII, Fig. 3, and XVIII). This leads up a steep hillside to a saddle between two small hills; it ends suddenly at the crest of the saddle and cannot be traced

farther. The selected, flat boulders are laid with slanting surfaces, not as steps, as is more frequent, but in five parallel rows with a curb of smaller stones set upright (Plate XIX, Fig. 2). Of an average width of 3 meters, it increases to 450 cm at the upper end, this increase in width being achieved by gradually increasing the size of the large stones in the central row, the final central stone being an unusually fine large one. The stones of the other rows, unshaped, but with one naturally flat face, are set in curving arcs to conform with the increased width of the central row. At the crest of the saddle the road comes to a sudden end with two upright pillars about 60 cm high.

Though the hillsides were covered with potsherds, little of importance was found here. The soil is of slight depth and hard. In the underlying *caliche* are many holes 15 to 30 cm in width and depth. One large urn (Plate LXIV, Fig. 5) was found, of thick, red pottery with a small hole in the exact center of the base. One site yielded a dozen stone celts of different types, a few beads, and two small disks or plates of pottery.

Terán. Terán is a village of recent foundation, but the former name, Masinga Vieja, apparently indicates that it is the Masinga of earlier records, the present village of Masinga, closer to Bonda, being a newer settlement. The archaeological remains in the immediate vicinity of the village indicate that it was a place of considerable importance in aboriginal days as they are the most extensive of any seen in the vicinity of Santa Marta.

In the center of the present village is a large granitic boulder with many irregular, hemispherical or conical, pitted, artificial depressions encircled by a wavy, channeled line. On the west face is seen a human figure incised in very shallow broad lines, much eroded and nearly invisible (Plate V, Fig. 2).

Some of the finest paved stone roads are found in the vicinity of Terán (Plate XVII, Figs. 1-2). The best of these leads up a hill a short distance beyond the village and probably continues, unpaved, into the forest beyond. From foot to summit it measures about 165 paces, there being 295 stones in the central row, averaging 35 to 45 cm in width, the average width of the road being 1.5 meters. For the greater part of the distance, it consists of three parallel rows of water-worn boulders with one relatively flat face uppermost, those of the central line being the largest. On the lesser grades these are set with their surfaces sloping, but in the steeper sections as steps. To either side is generally found a line of small stones set upright on

edge as a curb. Halfway up is a landing with broad stone slabs, and near the top of the hill the path is built up to a height of some 30 cm to carry over a slight depression, the greater part of the road being flush with the surface.

The principal site at Terán is locally known as the Cabildo (Town Hall). This is a hill with several large terraces reached by steps of large stones (Plate XXXI, Fig. 1).

The main terrace is of roughly semicircular form, measuring about 15 x 45 meters. The outer curving edge is lined with a low, retaining wall capped in places with large roughly shaped stone blocks with flat faces. This is reached by a long staircase, now largely disrupted, which enters the terrace in a short hall or vestibule, still in good condition. It is some 240 cm wide and 6 to 7 meters long, paved with large boulders and lined on both sides with rough, large, thick, oblong blocks. The largest of these measures 180 cm in length by 90 cm in width and 22 cm in thickness, with a flat upper surface full of pitted depressions. To one side of this the terrace is bounded by large stone blocks, to the other by two lines of upright stones (Plates XXXI, Fig. 2; XL, Fig. 1). The sole object of interest upon this terrace is a long, pointed, tapering column or pencil of stone, 20 to 30 cm in diameter and extending 90 cm above the ground, slightly slanting (Plate XX, Fig. 1). Excavation proved this to be 240 cm in length. The base was fixed in the solid *caliche* by a shallow hole. The looseness of the surrounding earth and the presence of occasional potsherds and charcoal verified the artificial nature since, over the greater part of the terrace, the upper soil was thin with few sherds on the surface or in excavations.

In another place, at a distance of 180 cm from the front wall, three great stone blocks are found. That closest to the wall, of irregular shape, measures 85 x 180 x 22 cm. The second, roughly rectangular and slightly farther from the wall, measures 85 x 175 x 23 cm. These two lie with their principal faces uppermost. The third innermost block, of irregular width but uniform thickness, 53 x 190 x 32 cm, is set on edge. All are of such massive size that it required the united efforts of five men with poles as levers to turn one over. The earth beneath the first block is partially missing, and consists of fine dark soil, indicating a former opening; but, as the group had evidently recently been disturbed by treasure-hunters, it was impossible to determine the former relations. Since this group of blocks occupies the lowest point of the terrace it is possible they originally covered a drain.

Smaller and more circular terraces are found on the upper heights of this hill, reached by an excellent stone staircase from the main terrace. That on the crest of the hill measures 6 meters in diameter, and is relatively flat. On practically all the terraces the entrance from the staircase is flanked by large, heavy, roughly rectangular stone blocks, in almost every case with shallow pitted depressions, sometimes many small ones and sometimes a few large ones. The soil is generally thin with the *caliche* (decomposed bedrock) close to the surface; and in this, depressions similar to those observed at Sabana de Limón are found, from 8 to 30 cm in diameter and 15 to 45 cm deep. No regular arrangement of these could be determined, but the presumption is that they served for the placing of house posts.

In the site on the crest of the hill a large, thick, stone slab set on edge was excavated. In the loose earth beside it the fragments of a cranium were discovered. Beneath this, resting at a slight angle, was found another with traces of decayed bones beneath it at a depth of 60 cm. Near the edge of this site a large stone slab was found flat on the surface, and below it, on its side, an olla of black pottery, empty. This is of the globular, ring base type, with neck and two small relief knobs. A few stone celts were found in the upper soil.

La Mesita is also a place of great interest, smaller than the Cabildo, but with better architectonic features. This is a tongue of land, high and flat, between two ravines, the long axis extending practically east and west. The staircase leading up to the flat top from the west is especially fine. Beginning at the north side of the base with a single central line of boulders with secondary side lines, it gradually increases in width by the addition of stones on the right of every step until at the top it attains a width of about 450 cm. Here the steps are especially good and even. To either side extends a front wall lined with stones. From the head of this stairway a paved walk leads along the north edge of the terrace for a distance of 18 meters, gradually diminishing in width, size, and quality. Beyond this point the edge of the terrace is lined with stone tables at approximately regular distances, increasing in size and quality toward the rear or east end of the terrace. These are composed of great, thick, oblong stone blocks resting on interred supports. The largest and finest measures 240 x 110 x 25 cm (Plate LI, Fig. 1). It is of granite, the upper and lower faces worked quite flat, the sides slightly convex, but with weathered corners and edges. It rests on four buried oval stones. Two other blocks, similarly placed and supported, but of slightly inferior workmanship, measure 175 x 80 x

17 and 155 x 70 x 22 cm. A fourth specimen, measuring 180 x 75 cm, is found a little farther east, flush with the ground. On the opposite or south side, still farther to the east, is found a fifth table, the top measuring 190 x 105 x 26 cm. Though of somewhat more irregular shape, the upper and lower surfaces are flat, and it is supported on four stones. Near it several smaller blocks which have fallen down the slope suggest that there may have been originally more of these tables, if indeed the terrace was not surrounded by them. Presumably they served as seats or tables in aboriginal ceremonies.

Just south of the fourth table lies what is apparently a stone-lined grave, locally known as a *boveda*, already opened and looted. It measures apparently 160 x 90 cm, but as the capstones have fallen in, the depth could not be determined. The vertical side slabs are thick, flat, rectangular, and well made, the great headstone measuring 125 x 95 cm, with two slabs of slightly less size on either side; the footstone is small.

The surface of La Mesita is very hard and impervious to the sounding bar. The few excavations made revealed nothing.

On a small hillock near a small stream another opened stone-lined grave was found, apparently 160 x 150 cm. It parallels the stream, the main axis being north and south. The head is composed of two vertical stone slabs 130 x 95 and 120 x 60 cm, the sides being made of three slabs each, one large and two small. The capstones and footstones have fallen in and filled the grave.

Over a small stream one of the best small bridges seen by the expedition carries a footpath (Plate LI, Fig. 2). It is composed of one fine, thick, oblong, rectangular stone block supported on vertical piers of piled stones.

The neighborhood of Terán is replete with terraced hills with staircases leading up to them. Some of these have, like the terraces on the Cabildo, large stones on the terrace edge close to the stair entrance. One other site possesses rectangular stone blocks supported on stones like those of La Mesita. However, excavation on several of these revealed a slight depth of soil with the *caliche* close to the surface. In this, large shallow holes some 30 cm in diameter and depth like those found on the Cabildo and the Sabana de Limón were found, the presumable purpose having been for the insertion of house posts. Potsherds, however, were generally found in quantities on the surface. A round-bottomed pottery olla with cover and a pot-rest were the most noteworthy of the few artifacts excavated.

Curinquita. This is a small site in a clearing in the mountains above Terán, probably only one of hundreds of such sites in these foothills of the San Lorenzo Mountains. An excellent site on a hillside is retained by a front wall of a maximum height of 4 meters, made of selected, but unshaped small blocks. Of this, the upper 150 cm is relatively perpendicular, the lower 220 cm sloping at a sixty-degree angle. The site above gave great promise, but no results.

Matagiro. A few kilometers southeast of Bonda is the district known as Matagiro. Here, as commonly in this region, many of the hills are terraced for aboriginal sites. Several promising sites on a large hill were examined. A fine, long, paved path runs up to all these sites, the lowest of which is small, the next very large. This is of semicircular or semioval shape, some 30 meters from front to back and 25 meters wide at the center. The sole feature of interest is at the main entrance where the edge of the terrace is lined with stones arranged in an arc. Several large flat slabs are separated by an upright stone column which extends some 120 cm above the ground. In the center of the site lies a flat slab of trapezoid shape, three of whose sides measure 105 cm, the fourth 45 cm. Beneath it were uncovered several crude, worked stones resembling grinding stones, and a small mortar. Under these, sherds and charcoal were found to a depth of 60 cm, probably representing a part of the fill to level the site.

Los Cóngolos. The upper waters of the Quebrada Concha, the stream which flows into the bay of Concha (which see), flow through a district in which are the places known as Los Cóngolos, Cerro Campana, etc. Old sites of aboriginal occupancy are frequently met along this stream. Work was done on several of these.

One village consists of many terraced sites upheld by retaining walls at the front and with numerous large, upright stones. Some excavation had already been done by treasure-hunters. Two large upright stones 170 cm apart were observed at the top of a hill. One is of very irregular shape, with a maximum width of 70 cm and a uniform thickness of 10 cm. It stands 145 cm above ground. The second is rudely rectangular with three flat faces and two sharp straight corners, 55 x 30 cm and 195 cm above ground, slightly leaning. Between them lies a flat threshold slab. The site being rather formless, about 450 cm in diameter, it is a question whether it represents a house-site with portals or merely the crest of the path which leads up the hill. The discovery of flat stones within the site suggests the

latter. Beneath these the soil was undisturbed. Further excavation on the site revealed nothing.

Another hillside is covered with terraced sites, increasing in size from the top to the bottom, some of the retaining walls being built of piled stones. The lowest site is very large and crescentic. A long, well-built road enters it from the dry stream bed. On either side of the portal are large upright stones. To one side are four in a line, 85 to 110 cm high, 40 to 65 cm wide, and 25 cm in average width, while to the other side are two large standing and several fallen blocks. The former measure 95 x 50 x 40 cm and 130 x 25 x 25 cm. The largest of the fallen blocks measures 200 x 40 cm, the revealed length of this probably affording an index of the actual length of the interred columns. At a greater distance from the portal along the edge of the terrace are a few great, rectangular blocks, flat and well shaped, but irregularly spaced. The largest measures approximately 150 x 90 x 20 cm. The explanation that these were the caps of a stone-lined grave previously excavated is suggested. Excavation on this and neighboring sites revealed nothing but quantities of sherds of large urns, probably indicating a looting of the site in colonial days.

At a distance of several kilometers from the above site another of greater interest was found and investigated. The principal features occupy a high ridge or tongue of land between two nearly parallel ravines. The summit of this ridge is long, narrow and nearly flat, approximately 100 meters long and of an average width of 9 meters. In the center was found the only stone statue seen by the expedition (Plate V, Fig. 4). The shaft is approximately quadrangular, 45 cm in average width and 32 cm in average thickness. The width is a trifle less at the top but the thickness uniform, the wider faces being relatively flat, the lesser faces slightly convex. The maximum height is 292 cm above the ground, the column leaning slightly, about nine degrees from vertical. The faces are weather-worn, and the edges not sharp. The top is modified into a rude human head, facing northwest along the main axis of the site. The neck is well represented by a depressed groove, bending downward in the center to make the chin, but of the facial features only the mouth is sharply cut, the others being more or less vague.

In front of this a great slab lies at an angle which makes it difficult to determine whether it was fallen from vertical or tilted from horizontal position. Apparently, however, it originally lay on four supporting stones at a height of some 60 cm and served as an altar

in front of the idol. The upper face is flat, the lower face very irregular; three of the sides are straight and at right angles, the fourth irregular, the dimensions being roughly 190 x 100 x 20 cm.

To the side of the statue on the edge of the principal ravine are a number of fallen stone pillars, 120 to 150 cm long, and a few similar ones lie to the other sides of the statue, suggesting that it was originally surrounded by these shorter pillars, the general shape of these being columnar. Behind the statue, nothing is found on the terrace, but in front of it, along the edge of the main ravine, are many fallen columns of large size, averaging 180 cm in length. One of unusual size measures 380 cm in length, but is of irregular cross-section and apparently unshaped. On the edge of the minor ravine, no objects of interest appear, but several fine stairways, made of well-shaped blocks, lead up to the site.

Excavations on this site yielded nothing of interest. Many such had been made by earlier investigators, and the place probably thoroughly looted. Untouched gravel was generally found at a slight depth.

A large broken and empty burial urn of Gairaca type A, with ring base and scalloped medial band, but with relief human features, was excavated.

Excavations were also conducted on the flat by the stream at the base of this terrace. This large semicircular site is apparently partly artificial, the grading having been done by excavating the earth at the foot of the ridge and piling it near the stream. Excavations revealed nothing. A near-by smaller site yielded only fragments of pottery urns and bowls.

A journey of a half hour from this place proved the surrounding forests to be full of terraced sites. One such on a tongue of land is especially noteworthy. It was built up by an excellent retaining wall in front reached by a well-built stairway. The entering stone steps are lined on either side with large boulders and at the edge of the front wall, to either side of the steps, evidently originally stood a stone column some 2 meters in height and of roughly circular cross-section. Another similar site is characterized by a wall and a line of upright granite slabs some 90 cm in height. At the front lie several horizontal, rectangular, thick stone blocks, placed like seats. They may have served this purpose or as altars. Circumstances did not permit excavation on these sites.

One specimen which was brought to me by my foreman, who said that one of the workmen had found it on top of a skull in a burial

urn at Los Cóngeolos, would, if authenticated, be of the greatest interest. Unfortunately, these circumstances preclude full reliance being placed in the find. This was a small broken bit, about a square inch, of a thin plate of untarnished shiny white metal, about a sixteenth of an inch in thickness. The report made upon it by Associate Curator Henry W. Nichols of Field Museum, is as follows: "The plate is a white brass composed of a little copper and much zinc. It was cast as a thin plate, and the surfaces later dressed and polished. The only use I can suggest for such an object would be as a metal mirror replacing speculum metal. It is possible that the plate was made by melting down uniform buttons. In Mexico many brass objects are made by the natives by melting and recasting brass from buttons and similar small objects. White brass of a composition similar to that of the plate has been extensively used for buttons."

Since brass is presumed to have been unknown to the American aborigines, it is almost impossible that this plate could be pre-Columbian, but if it was actually found in the place claimed, it would indicate the approximate age of the burial.

Donama. Donama is mentioned in "La Floresta" as an Indian village at that time. Judging by present appearance, it must have been a town of considerable local importance. It lies at several hours' travel from Santa Marta, at an elevation of 1,500 feet, on the upper waters of the Río Piedras which reaches the ocean at Cañaveral. At present the site is included in a coffee plantation of the same name which is alternately worked and abandoned. It is especially noteworthy for its exceptionally fine *bovedas* or stone-lined graves and its petroglyphs, both being the best found in the region by the expedition.

The stone vaults were discovered and excavated in relatively recent years. Glowing stories are told of the fabulous wealth taken from them. While these must necessarily be discounted, the excellent quality of the stone work indicates that they must have been unusually "rich." A group of three was studied on the summit of one of the hills.

Vault No. 1 measures 220 x 180 cm, and is entirely built of accurately shaped rectangular stone blocks with perfectly flat faces and sharp edges. The long axis is approximately north and south. The sides are made of excellent, flat-faced slabs, two great slabs occupying each of the three sides to north, south, and west, but to the east a beautiful horizontal stone block, 230 cm long, 55 cm high, and 20 cm wide, is supported by two fine vertical end blocks, making

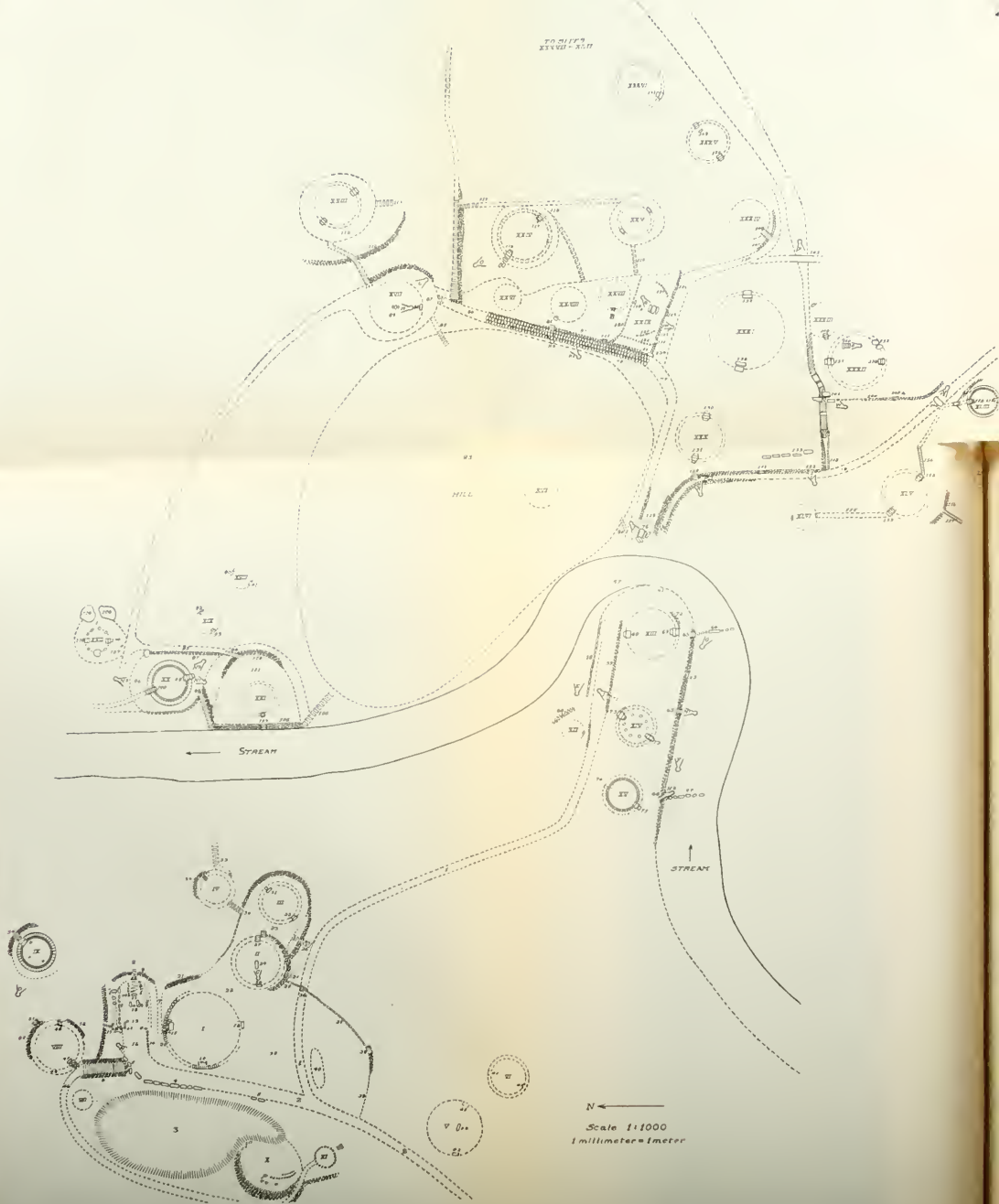
a kind of window and door to the adjoining small grave. The caps are beautiful, long slabs, the finest corner slab measuring more than 250 x 65 x 18 cm (Plate XIX, Fig. 1).

Vault No. 2 is situated at a distance of only a few meters from No. 1, and is practically identical, though somewhat smaller, measuring 190 x 185 cm. One of the beautiful caps measures 240 x 100 cm, and is 20 cm thick, being, as in the former case, laid on lengthwise. The north side is made of two slabs, the south and west sides of one great slab each, the southwest corner being rounder with two small slabs. As in the case of the former vault, the eastern end is made with a central deep niche, in this case even finer than the former. This is done by laying the eastern horizontal block on two supporting stones. Farther within this little niche, two smaller and lower upright stones support several horizontal slabs. This inner space was filled with roots and débris.

The third vault is approximately the same type and size, but with a central partition on the roof formed by a long, thin, high slab approximately 5 cm in width and 10 cm in thickness, supporting one of the central cap slabs. A similar niche apparently occupies the eastern side, but this was filled up. No excavation was made here.

The great petroglyphs are found at a distance of a kilometer or two from the *bovedas* and without obvious signs of primitive occupation in the immediate neighborhood. The main stone (Plate I) is a great conico-hemispherical boulder possibly 3 meters in height and of equal diameter, nearly completely covered with curvilinear grooves averaging 6 cm in width and 3 cm in depth. They are of a type radically different from any known to me from this region or any other, and suggest no interpretation as to meaning or purpose. To the side of this great boulder are two other rocks with relatively flat faces on which are incised figures in an entirely different style of art. These can be readily identified as mainly animal on one rock and human on the other. The former (Plate III) contains two groups of figures, one of three birds, the other of two animals resembling squirrels, nose to nose. On the end of this rock another single animal figure is represented (Plate IV). These figures occupy a space 220 x 160 cm. The second rock (Plate II) contains six figures, four human, two of them apparently with ceremonial head-dresses, and two animal, one evidently a bird, the other possibly a jaguar. Other incised stones were also seen in the vicinity.

Nahuange Arriba. Back of the bay of Nahuange in the foothills along the perennial stream, many evidences of aboriginal occupation



PLAN OF THE VILLAGE OF FIEBLITO

are found—lines of stones and occasional walls. In places an excellent depressed road is seen, made largely by removing stones and piling them to one side. Sites, presumably house-sites, were made in the same manner. Some of these are in the form of small amphitheatres, the quality of which improves toward the headwaters. Three such sites were observed, all protected by fine, well-made retaining walls to the front, 60 to 90 cm high, natural features such as ledges of rock and boulders being also utilized. These walls are made of selected stone blocks, mostly oblong with their flat faces to the front, to which the usual stone staircases, about 120 cm wide, lead. These sites were apparently leveled by excavating behind and piling the earth to the front, the rear boundaries being not well marked. The largest measures 13 meters in length by 10 meters in width. The soil on these sites is very stony with few potsherds, and these few close to the surface. A mealing *mano* and a fragment of a metate were found on the surface, but excavation revealed nothing of interest.

Pueblito. The name Pueblito is given by the natives of this coast to a large aboriginal site in the heavily wooded foothills an hour's hard traveling in from the cape of San Juan de Guía. Here the expedition did the major part of its work and secured the larger part of its material. Though known to many of the fisher folk of Taganga, it is rarely visited even by them, and is quite unknown to the townsmen of Santa Marta. Distant from all traveled trails and native settlements, little excavation has been done there in recent years. Most of the many house-sites are still unexcavated, the architectural features still undisturbed. The city covers a great area, but all in hilly country, covered with forest and intersected by many streams, tributary to the main *quebrada*, which empties into the sea near the cape. Work was done in the neighborhood of what appeared to be the principal part of the village, but it is quite possible that in other parts architectural and engineering features of even greater interest exist which were never seen. Quantities of scraggly orange trees bearing luscious fruit grow all through the woods. The main sites are all overgrown with a species of spiny agave known as *pita*. This latter feature was probably the main factor in saving the sites from despoliation, since considerable labor with a large force of men was necessary to clear them. The existence of these thickets of agave covering the house-sites may possibly be explained as representing spreads from small patches cultivated by the aborigines for fiber, but the presence of orange trees throughout the uncultivated and uninhabited woods is more difficult to explain.

The size and extent of Pueblito, the thickness of the forest, and the confusing nature of the terrain, composed of steep hillsides intersected by many ravines, made it impossible to attempt any comprehensive map. In the absence of proper surveying equipment the most that could be done was to make more or less sketchy plans of the main sites examined and excavated. These were all in one section, divided by the principal permanent stream. This stream will therefore be used as a convenient division, those sites first reached on the road from the cape being considered as on the near side, those across the stream on the far side. The plan, facing page 61, of this section of Pueblito was plotted from the voluminous notes giving dimensions, distances, and directions, aided by visual memory. While inaccurate, it affords a good impression of the general relations, except as regards elevations. The terrain is extremely hilly.

One main road leads up the stream from the cape, but this is practically impassable at present. The details of its lower terminal have already been described (cf. Cabo). Several smaller roads or trails lead over the hills. Approaching the outskirts of the city, small terraced sites with retaining walls and numerous roads and paths are seen, some crossing the small streams on bridges.

On approaching what was apparently the center of the ancient village, the road increases in size and quality, attaining in places a width of 3 meters. It is entirely paved on the grades with large flat stone slabs. Just before reaching the principal sites, it passes a cave containing great quantities of potsherds, very largely from large, plain, and coarse vessels of red pottery. Such a great accumulation could only have been intentional, possibly representing a rubbish heap.

After passing two small stone circles to be later considered (V and VI), the road branches, one branch (1)¹ leading down by a slope to the stream at the principal ford, the other (2) rising slightly to the main court or plaza on a high level bluff on the near edge of the ravine. The branch road (2) makes several turns, and suddenly opens upon a large, level, broad, gently curving area. To the east, at a very slightly higher level, lies a large circular site (I), surrounded by a stone ring beyond which the descent to the stream is abrupt. To the west rises a small steep hill (3).² Along the edge of this road, in a curving line at the base of the hill, lie thirteen great oblong rectangular stone blocks, perfectly cut and dressed (4) (A)³ (Plate LII). They

¹Numbers refer to places designated on the plan of Pueblito facing page 61.

²This hill is very much larger than it is shown on the plan.

³On the plan of Pueblito, the symbol enclosing capital letters, as A, indicates the spot from which the photograph was taken.

measure from 130 to 230 cm in length, the average being exactly 2 meters, from 100 to 110 cm in width and from 13 to 30 cm in thickness. All of them are braced and supported by smaller stones beneath so that they stand considerably above the level of the ground, with their upper surfaces at an approximately uniform height. This level is at a height which suggests that they may have been utilized as benches or seats. One of the central blocks is supported at one end by a perfectly cut, rectangular block of pink stone resembling marble. The first two are isolated, at a distance of some 15 meters from the main group which consists of seven stones (4) practically in a straight line and covering a distance of 15 meters. The last four blocks (5) cover a space of 8 meters and lie in a line which makes a slight angle with the preceding one. The first of these, No. 10, is fallen. Nos. 11, 12, and 13 are in a curved arc. The final three, though similar to the others, form the lower steps of a stairway which ascends from this level plaza to a higher level on which are found circular sites VII and VIII. This stairway (6) is wide and excellently made at the base, the three blocks of the lower step forming a slight convex arc so that the stairs may be entered from several directions. Above each is a second step made of a well-dressed granite block. The upper part of the stairway is not so well made and considerably disrupted, the length being approximately 12 meters, the average width 3 meters. Most of the steps are composed of small, thin slabs in two or three widths, but the uppermost steps again are of better construction. The retaining walls to the two sides, upper and lower, are of poor construction. The direction of this stairway is exactly north and south, skirting the edge of the small, high hill which rises behind the line of stone blocks.

Beyond this stairway the level plaza, which is of the nature of a slightly depressed road, swings to the east to the edge of the steep bank which descends to the main stream. To the north, at a very slightly higher level, the flat space continues to the foot of the hilly slope, the entire plaza forming a sort of natural flat amphitheater, the main axis of which runs east and west (Plate XXXIII). To the south, a slight ravine (7), possibly 1 meter in maximum width and depth, separates it from the great circular site, No. I. To the east, near the edge of the steep slope to the stream far below, are found many architectonic features. The greater part of this slope (8) is steep and unmodified, but near the crest a rude wall (9) protects the slope above, and to this point descends a rude staircase. This stairway (10), though 250 cm wide, is not well made and considerably

destroyed, mainly made of thin slabs of slate or flagstone, frequently cracked and broken. These steps are generally lined on either side with occasional boulders, slabs set on end, and thin slabs piled to make a low wall. The top step (11) at the edge of the crest, however, is a perfectly cut and dressed stone block, measuring 185 x 40 x 30 cm.

The second step is somewhat similar but smaller and flanked by flagstones on either side. Directly in front of the upper step and on the main axis of the path, at a distance of a meter or two, lie two large, flat slabs of oblong shape at right angles to the top step (12). They are separated, and between them at their western end is a smaller slab buried on edge. A few other stone slabs and blocks adjoin to the south. The purpose of these stones is uncertain; possibly they are not in original position. West of these stones is a level space or plaza (13), approximately 6 meters long east and west, and 750 cm wide north and south. On the south it is bounded by an irregular line of stone blocks 880 cm long (14), parallel with the tiny ravine which separates this plaza from the circular site I, and about 3 meters from the center of this ravine.

At the northern edge of this plaza the natural amphitheater ends with a steep slope which leads to site VIII on higher ground. Just at the foot of this slope is a slight ditch only 60 cm wide and 20 cm deep. Some indications suggest that this was a drainage ditch and had been covered over with stone slabs. Many large stones are scattered here, most of them unworked; to the east, near the mouth of the ditch, they are slabs, to the west larger blocks which may have lined the ditch. The northern edge of the ditch is fixed by the high retaining wall of the slope, the southern edge by the low wall of stones lining the plaza before mentioned.

In the northwest corner of this plaza and near the line of stones which divides it from the plaza to the west, two stone pillars are set in the ground, one on either side of a staircase (15) which leads up the slope to the north to the higher site VIII. These stand 90 cm apart and measure 85 and 95 cm in height, 25 cm in width and 20 cm in thickness. The steps themselves are rather poor (B) (Plate XXII, Fig. 1).

The plaza to the west (16), which extends from the western end of the former plaza to the eastern end of the line of great stone blocks, is at a slightly greater height, the surface very irregular and apparently much disturbed and excavated. The stone line which divides it from the plaza to the east is a low wall or line with few worked stones. In the southern part are two large worked blocks, 80 and 90

cm long, 50 cm wide, and 25 to 30 cm high. Farther to the north, both large stones and small upright slabs are utilized. This line sweeps eastward in a curve and meets the foot of the slope from the upper sites. On the north side, no definite boundary between this plaza and the slope is noted.

Across the broad road southeast of the line of large blocks and south of the plazas mentioned above is found the principal circular site of this section (I). The level of this is slightly higher than that of the road, the diameter 19 meters, making it one of the largest circles found by the expedition. The periphery is marked by a ring of small granitic slabs set on edge, averaging 30 cm in length and standing 15 to 20 cm above the surface. This ring is broken in three places for entrances, to north, south, and west. The north and south entrances are the main and typical ones, that to the west being exceptional, probably placed there on account of the proximity of the curving road, and of unusual type.

The main entrance (17) is to the north where the gap in the peripheral ring measures 3 meters in width. The main threshold slab, entirely within the ring, is of good manufacture, though not the best. It is 210 cm long, 135 cm wide, and more than 15 cm high. Roughly rectangular, the top is flat, the sides slightly convex, and the corners somewhat rounded. A smaller similar outer threshold slab is bisected by the peripheral ring. Of approximately similar length, the width is only 70 cm. The flat upper face is slightly tilted, and the sides are markedly convex. There may be a third, deeply buried threshold block still beyond this. To either side of the threshold blocks, placed at right angles to the tangent of the ring and inside it, thus marking the sides of the entrance, is a large granitic elongated and unshaped boulder, which is prone. The opposite entrance to the south (18) is much disrupted and almost indistinguishable. Outside the ring lies one of the large threshold blocks which had apparently been overturned by an earlier treasure-hunter.

The entrance to the west (19) (Plate XXXVI, Fig. 5) is apparently a minor one, composed of a break in the ring with small slabs set upright at right angles to the ring and on the radii of the circle, extending inward. At the inner end of these upright slabs and extending across the entrance are two flat paving slabs, set parallel with the ring.

Outside of this ring to the north and at a lower level, on the edge of the small ravine which separates it from the plazas, is found a low retaining wall (20) capped with flat slabs which resemble slate. It is

possible that this was a paved walk, surrounding, or partially surrounding, the site and at a distance of 100 to 150 cm from it. It continues to the east, but at a lesser distance, about 90 cm, and is covered with earth. Apparently it was a level walk, surrounding the site, but paved only in front of the north and west entrances. Before the west entrance it extends for a distance of 3 meters. To the east of the ring and on the edge of the main large ravine is also a retaining wall (21), in places very well built of large blocks and 120 cm high, running about due south from the edge of the small separating ravine.

Within the ring there were no stones or details of interest, except several slight depressions which were probably the result of ancient excavations. An excavation in the center revealed black humus containing a few potsherds to a depth of 25 cm, beneath which appeared a stratum of lighter gray earth, probably accumulated during the period of occupation or placed there for purposes of leveling, to a depth of 50 to 70 cm, and, beneath this, the natural reddish-yellow, clayish gravel. Immediately beneath the humus stratum was uncovered a large vessel of reddish pottery, rotted and with the rim and upper part gone, containing many excellently made stone objects—three monolithic axes, eight broad, winged stone pendants, a small stone seat, and five beads. In another spot close to the center a more or less circular core of dark earth about 1 meter in diameter descended to a greater depth. This consisted of earth which is hard, compact and gray as if mixed with ash, containing no charcoal and few potsherds. This extended to a depth of approximately 1 meter when hard white *caliche* was reached. It may represent the excavation for the central house post. The upper stratum of dark humus contains many fragments of large, thick, heavy pottery urns, the presumption being that these were from large burial urns which were excavated and broken by the earliest treasure-hunters in the first years of the Spanish occupation.

Many other buried objects were found on this site several weeks later when it was returned to after work elsewhere. These were found in all parts of the circle, but mostly to the north and least to the south, and apparently without any plan of interment. A vase of dark pottery, said to have been covered with a bowl, contained a monolithic ax, two thin stone ornaments and six large pebbles, all imbedded in thick, black, waxy clay. Near-by was a pottery whistle in the form of a bat. A second cache, found under a naturally quadrangular stone slab, consisted of four monolithic axes and one broad, winged, drilled ornament. Beneath another flat stone a small

black olla with a cover made of the base of a larger broken olla and containing a few beads and stones was uncovered. Under another quadrangular stone a large olla of black pottery was excavated, containing five broad, winged, stone, pendent ornaments, and a number of stones. Beneath this were a number of similar pendent ornaments and a monolithic ax, all of too great size to be placed in the vessel.

Another stone slab covered a small olla of black pottery with fluted sides which contained three beads and two stones. Several other small black pottery vessels containing beads and small stones were found, their location being frequently indicated by small, flat slabs placed near the surface. Other ornaments were found loose in the soil, probably mainly buried, but some possibly lost there. Among these may be mentioned monolithic axes, broad, winged pendent ornaments, small cylindrical plinths, ax-heads of several types, large drilled stones like net-sinkers, square convex and concave ornaments, all of stone, small black sharks' teeth (?) drilled for suspension, an object of smoothed greenish stone like two halves of a wide bracelet, a large stone baton or scepter with forked end, several small objects of heavy, black stone like metal ore, some of them worn to a cylindrical shape, many carnelian beads and stones, and pebbles of peculiar shapes and colors.

This site is bounded on the north by the small ravine (7) and on the west by the broad road (2). To the east a slight space (22), increasing toward the south, separates it from the rim of the great ravine. Large stone blocks are scattered throughout this section. Many mealing stones, both entire and broken, are seen, some of the latter being employed in the masonry. The scattered stones are generally long and quasi-cylindrical, and probably represent fallen marking posts. Similar objects are found to the south of the site. Here, outside of the ring, an excavation of a small mound of black earth, deep and full of potsherds, revealed a small buried olla of black pottery.

Southeast of this circular site is a tongue or high promontory of land of approximately similar level. The edge of the great ravine, which is close to the northeastern corner of site I, swings to the southeast, and then describes a curve to the southwest, circumscribing this promontory on which are found the smaller circular sites II and III.

Site II lies due southeast of the center of site I with its ring at a distance of 10 meters from the ring of site I. Approximately 12

meters in diameter and of equal height with site I, the ring is of granitic slabs in upright position, leaning slightly outward from the perpendicular, possibly due to the lesser height of the intervening ground which is rather uneven. The usual low, level, depressed path surrounds the peripheral ring on all sides, 3 meters in average width. This ring is in places braced with stones below it, making, in effect, a low wall. To the east, there is also an outer ring, the surface here being 60 to 70 cm below that in the center of the site. The encircling path is delimited on the north and northeast by a line of boulders, on the east by a ditch (23) separating it from site III, and on the southeast, south, and southwest, by a well-made retaining wall on the edge of the slope to the ravine below. This is broken at the south by a well-built, entering staircase (24). This retaining wall continues to the west, and meets at right angles the final great block of the wall (25) bounding the bare space south of site I. Another staircase (26) pierces the retaining wall between sites II and III. It consists of ten or more steps made of granitic slabs, extending considerably above the top and below the base of the wall which rises perpendicularly to either side of the steps.

The ring of site II is pierced by two entrances to east (27) and west (28), the former being apparently the main entrance. Here a well-made quadrangular threshold block is seen with two other descending steps outside and below it. Immediately opposite this eastern staircase a similar staircase is found in the opposite wall above mentioned, descending toward the east and consisting of four horizontal slab steps. Several excavations were made in this intervening space, and in places dark earth and potsherds were found to a depth of 120 cm. Two small ollas of black pottery without contents were unearthed.

Within the ring a number of large boulders of considerable height were observed. These apparently stood in an inner ring not far from the peripheral ring, and possibly were originally equally spaced but at present displaced. In the exact center is a *boveda* or stone-lined grave which had already been opened, the slab cap turned on edge (29) (C) (Plate LIX, Fig. 1). This grave lies with its axis east and west, and measures approximately 200 x 60 cm, the depth being undetermined. The sides are made of slabs set on edge, three on each side, north and south, two to the east end and one to the west end. The single slab cap measures 190 x 70 x 20 cm. Several excavations on this site revealed a stratum of thin, black humus, 20 cm in depth, beneath which is the undisturbed yellowish clay subsoil.

Site III lies to the east of site II with a distance of 470 cm separating them. Through this space a path (30) runs to site IV and down the slope to the great ravine, breaking the retaining wall along the east sides of sites II and III. This wall also bounds site III on the south. It is made of great boulders chinked by smaller stones. Two circular rings encircle the site, though both are poorly made and missing in places, both of granitic slabs, the inner and principal ring 950 cm in diameter. The height is slight. Outside of the ring to the northwest are several large natural boulders with depressions in their tops.

The surface is very irregular and uneven with many stones, slabs and boulders, and former excavations. The main entrance (31) is to the northeast where the peripheral ring is broken. Two great threshold blocks are found here, one 170 x 90 cm intersecting the ring, and one 140 x 120 cm outside and at right angles to this. An excavation in the center of the site revealed a stratum of dark humus to a depth of 30 cm, beneath which lies one of light loose gravel, evidently the result of the decomposition of the *caliche* bedrock which lies at a depth of 85 cm.

Opposite the main entrance and on the western side of the site considerable excavation was done. Here is apparently a second entrance (32). A well-made threshold block of a material like slate, 125 x 55 x 6 cm, was uncovered at a few inches' depth and 70 cm inside the peripheral ring, its long axis parallel with the periphery of the ring. A second slab, closer to the ring, measures 175 x 95 cm and is also well made. A single long slab set on end in the stone ring parallels its outer edge. Although some 10 cm higher, it may originally have been a support for the threshold slab. Outside of the ring, soundings indicated a staircase, but so covered with roots and dirt that it was not cleared. Beneath these threshold slabs the earth had been disturbed to a great depth and without evident purpose. Only 1 meter nearer the center of the mound, undisturbed soil was reached at a depth of 50 cm, here at 130 cm. Immediately beneath the slabs is a stratum of dark, loose humus with few potsherds and other evidences of occupation to a depth of 30 cm. Under this is about 1 meter of brownish gray, hard, compact gravel containing considerable amounts of potsherds of red and of black pottery, decomposed sherds or burnt clay and charcoal.

At approximately an equal distance from sites II and III, on the edge of the steep descent to the great ravine and at a level 3 meters below that of the above-named sites, is a small circular ring, IV,

approximately 750 cm in diameter. This ring is made of vertical slabs and more or less spherical boulders. A series of steps (30) leads from the higher sites and another (33) to the ravine below. A poorly made retaining wall (34) protects this site to north, northeast, and northwest. The main entrance is apparently to the southeast.

To the southeast of the principal site (I) is a practically level triangular site (35) bounded on the northwest by the main road (2) leading to the plazas above mentioned, and on the southeast by a well-made wall (37) at the edge of the steep slope to a ravine below. The northern end of this wall has been mentioned as meeting the wall south of site II at right angles (25). At this point the wall is very well constructed, with a capping of beautiful, quadrangular stone blocks, broken in two places (36, 38) by entering staircases. This is a retaining wall, the space above being even with the top and approximately level. To the southwest, this wall ceases shortly as the slope becomes less abrupt and the edge of the level terrace becomes a natural crest (39), swinging slightly westward to the edge of the road. Close to this farther edge of the terrace is a low oval mound (40), probably partly natural and partly made by the piling of earth from the leveling of this triangular space.

Somewhat farther southwest of these principal sites, but on the same side of the main road, are found sites V and VI. These are of slight importance. The larger site, V, measures 15 and 13.5 meters in diameter, being slightly oval, the ring made of short, thin, irregular slabs. Entrances are on the east (41) and west (42) sides but not diametrically opposite, that to the west being at the point closest to the road, that to the east at the point closest to the adjacent site VI. The main threshold block is not large, measuring 65 x 140 cm. Near the center, with its longitudinal axis on the line between the two entrances, is an opened *boveda* or stone-lined grave (43), the slab caps thrown aside. It measures approximately 60 cm wide and 170 cm long. The sides are made of three vertical slabs. No buried artifacts were found on this site, but broken stone objects and potsherds were in the upper stratum.

The smaller site VI to the south measures 980 cm in diameter, the inner ring being made of thick rectangular vertical blocks, the outer ring of flat horizontal slabs. The entrances are apparently to north (44) and southwest (45), the threshold slabs of small size and poor technique. In addition to scattered objects, mainly broken, found in the upper stratum, objects which had obviously been buried in the subsoil were encountered. An empty, small, black, pottery

olla and another broken olla containing a gold bracelet, a gold ornament, a copper whistle, and many fine carnelian beads were found, and in the loose soil at a slight distance another gold bracelet, pieces of thick bone, and fine carnelian beads.

Turning now to the north and west sides of the main road, the staircase (6) which ascends the slope from the end of the line of great blocks is flanked at its top with a small site on either side, VII and VIII. These are on approximately equal level and higher than the small road leading from the top of the stairs (46). The small ring of VII is of granitic slabs and is 5 meters in estimated diameter. Site VIII is slightly larger and better, 11.5 meters in diameter, the ring made of granitic slabs and blocks, well made to the west near the stairway path, but poor in other quarters. The twin entrances are to southwest (47) and east (48), the former with a good threshold block, beyond which are other paving slabs leading toward the staircase path (Plate LV, Fig. 1), the latter with five steps of equal width. The site is surrounded by a level terrace (49) about 60 cm less in height, the width being irregular. On the north this is protected by an excellent retaining wall (50), built of fine large stone blocks. Stairs (51) enter here from the northeast. To the east the slope is gentle, to the southeast another retaining wall (52) is found, and on the south the slope is abrupt to the plazas below before mentioned. Up this steep slope runs the staircase (15) already mentioned which commences between the two stone columns at the north side of the plazas below.

To the east of site VIII, at a considerably lower level, equal to that of the main plazas but on a promontory on the slope of the great ravine with steep slopes above and below, is found one of the best-made sites at Pueblito, IX (D) (Plates XLII-XLIII). The circular ring, 850 cm in diameter, is made of perfectly cut and dressed, small, rectangular blocks, made slightly wedge-shaped with sides somewhat concave and convex so that they fit together closely into a circle. Though somewhat disrupted at present by the passage of time, originally their tops were evidently perfectly level, the outer and inner faces describing a perfect circle. The tops of these blocks are about 7 cm in width and 20 to 35 in length, as they are interred on edge. Immediately outside of this ring is a ring or circular step or seat made of cut and dressed flat blocks or slabs, also cut in wedge shape so that they fit tightly into the circle. These are laid horizontally, their inner edges touching the inner blocks at or near their bases, so that they make, in effect, a step, seat or walk surrounding

the inner ring. Under them at their outer edge are numerous smaller stones placed as supports or braces. They average some 45 cm in length. Apparently there is but one entrance to the northeast (53), at the edge of the great ravine. Here the rings are broken by a long rectangular, well-made threshold block. Within the site lie several large unworked boulders at a distance of 1 to 2 meters from the inner ring and approximately equidistant to northeast, northwest, and southwest. Apparently originally there was a ring of these boulders with naturally flat tops just inside the ring of dressed stone blocks. These average 75 cm in diameter, the three large boulders above the surface having evidently been disrupted from this ring. The marks of numerous old excavations were noted within the ring, but excavations here revealed nothing. The dark, loose upper stratum with occasional potsherds extends to a depth of 60 cm when natural rock and gravel are encountered. The line of division is marked, but irregular, in places more than 1 meter in depth, the upper soil appearing slightly lighter in color than the deeper soil.

The level of this site is evidently largely artificial, made by cutting on the inner and filling on the outer side, the slopes being steep. A path, changing to a stairway in the upper section (54), leads up the slope from the stream below to the main entrance. In this section, in front of the entrance, are three retaining walls, the outer one supporting the entering stairs, the middle one the terrace, the inner one the actual site. These walls are very well constructed. The terrace is some 2 meters in width at this point, and continues around to the west side, the inner wall being 70 cm high at this point.

West of the line of great blocks lining the main road rises a small steep hill (3). From the top of the stairs ascending from the end of this line of blocks and passing between sites VII and VIII, a path (46) circles the base of this hill to the west and southwest to two sites on a higher level on the west side of the hill. These are numbered X and XI.

Site X is a level space on the lower slope of this hill on the opposite side from the plazas and road described above. The site is apparently partly artificial, made by cutting back the hill and filling on the lower side. Here the level is preserved by a high semicircular retaining wall, in places 170 cm high and made of small natural stones. It is not perpendicular, but has a backward slope of about sixty degrees. The topmost stones are flat slabs. The site measures some 17 meters in transverse diameter, 12 meters from back to front. No ring of stones is evident, the site being only approximately

circular, the line of division from the hill at the back nearly straight. It is approximately level except near the front where it slopes abruptly to the top of the retaining wall which is some 30 cm below the general level. The main entrance is apparently on the south side. On this side, outside of the retaining wall, a sloping path, 1 meter wide, leads up from the road to the west. It continues on to site XI to the east, but the south entrance of site X also opens to it. It is protected by a second retaining wall to the south, built of larger stones.

Several scattered groups of stones were found on the site, a few in irregular formation in the northeast section near the boundary. An upright slate slab was also found here, possibly marking the opposite entrance, but this section is much disrupted by a large tree. These scattered stones may have been part of a peripheral ring, sections of which are seen better at the west side, at the edge of the level space. Here also, at a distance of 4 meters from the retaining wall, are seen several large stones, apparently without orderly arrangement. To the south side, near the entering path, are two parallel, curving lines of stones some 40 cm apart. Both are made of natural, small, thin stones placed on edge. The upper and higher line is only 150 cm in length, consisting of six stones, the lower line 650 cm long. Several holes indicate that treasure-hunters had made excavations here, but present excavations revealed nothing of interest, untouched gravel being found at a depth of 50 cm.

The smaller site, XI, lies at the same level as X, and southeast of it. Between them is a neutral space at a slightly lower level upon which opens the path which leads up the south side of site X. Like X, it was partly excavated behind and filled to the front where there is a retaining wall, smaller and ruder than that of X. A ring 450 cm in diameter, made of small flat stones, was traced. A stairway of nicely squared stones apparently enters at the back (south-east) of this site. Within the ring a few scattered stones are seen, but excavations revealed nothing of importance.

Sites X and XI are apparently typical of the more common and poorer sites which are found over a large extent throughout the region which apparently comprised the ancient village. They probably represent the house-sites of the average inhabitant.

The main road entering Pueblito bifurcates at a point south of the principal plazas and site I. One branch (2) leads north past the line of great stone blocks and ends at the plazas on high ground on the brink of the ravine. The main branch (1) continues to the east

across the level terrace south of site I and just north of the mound (40) mentioned at that point. Piercing the low wall capped with fine stone blocks (36), it leads down by a gentle grade to the ravine, past sites II and III which are at a higher level and from which it is separated by a retaining wall already mentioned. In places it is also preserved by a retaining wall on its lower side. Farther down it passes between other sites, and finally reaches the ford (57) of the stream. Here it measures 450 cm in width, and is well paved with large, granitic, flat slabs set slantingly on the lesser grades and as low steps on the steeper ones. It varies in width, however, narrowing considerably when between two sites.

Below the ford, the stream takes a sudden turn toward the west, and parallels the road for a short distance so that at the lower end of this turn the road is close to the edge of the stream and considerably higher. It is protected on the outer edge, therefore, by a retaining wall of megalithic proportions (58), 21 meters in length and attaining a maximum height of 170 cm. This is built of great natural boulders, one measuring 180 x 70 x 50 cm, another with its outer face 200 x 70 cm. Smaller stones are used as bracers, but the interstices are unchinked. This wall is perfectly straight and vertical (E) (Plate IX). On the opposite or inner side of the road there is also a low, retaining wall (59) which protects the sites to the south.

When the stream curves again northward, on the triangle formed between it and the road is found a small site, No. XII, with a retaining wall (60) on the stream side. This small site is well situated, but poorly made. The ring, 580 cm in diameter, is made of small and poor slabs with a wall at a distance of 120 cm. The principal entrance is to the south; another to the north is uncertain.

Beyond the ford, proceeding upstream, the stream swings sharply to the south and west, so that for some distance it parallels the main road, enclosing in this space a promontory on which are found three sites of good construction, Nos. XIII, XIV, and XV. For a short distance the border of the stream is a cut-bank (61), but soon another megalithic wall commences, protecting these sites. This continues for approximately 53 meters and attains a height of 230 cm in one place, built of large boulders at the base and smaller ones at the top, the face slightly off perpendicular (62) (F) (Plate X). It is broken in three places by staircases leading from the sites above to the stream. The first (63) is at the end of the wall nearest the main ford and leads from the south entrance of site XIII, the site nearest the ford, to the stream. Crossing the stream at this point is a

path of stones laid in a straight line with one great slab set to span the deepest channel. This slab measures 280 x 75 x 25 cm, the upper concave surface channeled longitudinally (64) (G) (Plate XXIX, Fig. 1). The second staircase (65) leads to the space between sites XIII and XIV. It is narrow (130 cm), and high, consisting of nine steps, the uppermost a well-made block (H¹) (Plate XXVII, Fig. 1). The third staircase (66) is at a distance of 44 cm from the beginning of the wall and near the farther end, and leads to the south entrance of site XV. This stairway breaks the megalithic wall at an acute angle and consists of eight steps (H²) (Plates XXVII, Fig. 2; LVII, Fig. 3). A ford (67) across the stream exists at this point also, made of great slabs thrown transversely across the stream.

The site nearest the main ford and the lower part of the main road, enclosed by the loop in the stream, is No. XIII. This is a large site, 12.8 meters in diameter east and west and 14.1 meters north and south, the ring made of small, rude, roughly shaped, granite or slate slabs, placed vertically. Several large boulders are found on the site within the ring, themselves forming a rude ring. Entrances are found, one to north near the ford and the great road (68), another to the south facing the stream above the ford (69). At this latter point occurs the stairway (63) in the megalithic wall and the small ford (64) before mentioned. The entrances, however, are not at opposite points, and are not well made. Two large threshold blocks compose the north entrance, one measuring 195 x 165 x 10 cm, roughly square and poorly made, its outer edge on the arc of the ring, supported by short, vertical slabs. In front of this, outside of the ring, is a second threshold block measuring 140 x 70 cm. At this point the vertical ring slabs are 50 cm high and support horizontal slab caps 90 cm long with their short, thin faces to the front. At the south entrance are three threshold blocks, two within and one without the peripheral ring. The main central block measures 210 x 85 x 8 cm, roughly rectangular, but poorly made. The inner block is smaller and on the same level, the outer block 170 x 75 cm, rough and crude, and on a slightly lower level. Near the south entrance a second outer ring is visible in places, and to the southeast this becomes a retaining wall 60 cm high (70). This is one of the larger and less well-made sites like several across the stream in which many buried artifacts were found. Nevertheless, excavation revealed nothing here.

Site XIV is a much better-made site, on a slightly higher level farther up the road and about 12 meters west of site XIII. The retaining wall on the south side of the main road near the ford (59)

is broken by the staircase which leads to this site (71). This wall is about 50 cm high at this point, and the staircase is well made. This short staircase measures 175 cm in width and consists of four steps, the upper one a large but rough granitic slab, the second a small slate (?) slab, the third a thick granitic block and the lowest one invisible. The total height is 70 cm, the length about 125 cm. The sides are well made of roughly squared blocks and slabs laid about three deep vertically to meet the steps, the longest ones above, 140 cm in maximum length (I) (Plate XXVI). A terrace of approximately 4 meters in width at this point separates the retaining wall on the edge of the road from the outer ring of the site.

The inner ring of this site measures 880 cm in diameter. It is well made, but somewhat disrupted. Apparently it originally consisted of vertical slabs 19 cm in average height on which rested horizontal caps 6 cm in thickness, a total height of 25 cm. This ring is broken by entrances to northeast and southwest. The latter (72) opens toward the stream, the megalithic wall of which is at a distance of some 450 cm, and leads toward the second stairway (65) in this wall. The northeast entrance (73) faces toward the road and the stairway in it which has already been mentioned.

Both of these entrances are very well made with many large and excellent threshold blocks. The southwestern entrance consists of four stone blocks. One of these lies entirely within the site and measures 160 x 70 cm, of good technique. The principal block measures 153 x 60 x 17 cm, its outer edge on the arc of the inner ring. It is of excellent technique with straight square sides and sharp edges and faces, its front edge slightly convex to fit the arc of the circle. The third block is on a slightly lower level, its level being that of the blocks of the outer ring. It measures 160 x 85 x 10 cm, and is of perfect technique, its outer edge resting on the arc of the outer ring. The fourth block is smaller and of poorer technique, measuring 145 x 50 cm. The northeastern entrance apparently consists of three blocks, the upper and inner one measuring 155 x 60 x 17 cm. It is of excellent technique, both front and rear edges convex, the front edge on the arc of the inner ring. The central block measures 180 x 80 x 10 cm, and is of even superior execution, a little below the level of the blocks of the outer ring and falling a trifle short of their arc. The outer block is smaller and of poorer technique, 50 cm in width (Plate L, Fig. 3).

As already intimated, this site is surrounded by a second and outer ring. This, like the inner ring, is very well made of blocks

excellently cut in trapezoid shape and of good technique. The three blocks to the east of the north entrance, for instance, measure on their four faces 103, 65, 100 and 58 cm; 99, 52, 95 and 45 cm; 99, 52, 95, and 43 cm. These lie in horizontal position, fitting closely into a perfect broad ring which is, however, intact in only a few places and mainly disrupted. The first of these measures 12 cm in thickness, the others 7 cm, all being beveled on their front edges. The blocks to the southwest quarter are especially well preserved, seventeen being in position here. These vary in length from 83 cm at the south entrance to 70 cm at the west side, and from 50 cm in width at the south to 35 cm at the west, the thickness averaging 10 cm. All are braced by stones below. At the back of these is a ring of very thin vertical slabs, generally rectangular, but not well dressed. Apparently all these originally possessed horizontal caps, but practically all of them are displaced and much of the interior of the site is littered with these and other dressed stones. One in position just east of the north entrance is excellently made with the front edge cut convex and on the arc of the circle, measuring 60 x 35 x 6 cm. To the sides of both entrances are smaller stones on the level of the outer threshold blocks, and there are some evidences of an outer third ring.

On the site, within the inner ring, are a number of boulders of roughly cubical shape with slightly concave tops. Apparently there were originally eight of them in a rude ring at intervals of 2 meters. Excavation in the interior revealed nothing of interest, this being the negative result secured on all the sites with the finest masonry.

Site XV is a smaller, but excellently made site to the west of site XIV, bounded on the south by the stream with its megalithic wall, on the north by the main road, on the east by site XIV and on the west by the slope of the hill. The main ring is 790 cm in diameter, made of heavy, well made, and well fitted stone blocks with their long faces to the front. The seven blocks beside the south entrance measure respectively 105 x 19 cm, 95 x 20, 60 x 22, 70 x 18, 42 x 15, 40 x 15 and 38 x 17, all approximately 33 cm in height. Two beside the north entrance measure 95 x 27 and 78 x 28 cm. Outside of these is probably a ring of flat, well-fitted cut blocks like those on sites IX and XIV, only one of which, however, is visible, measuring 80 x 43 cm. Entrances are found to northeast (74) and southwest (75). The main threshold block of the southwest entrance is large, but poorly made, measuring 125 x 55 x 24 cm. The

northern equivalent is smaller but better made and apparently of marble, 120 x 40 x 18 cm. Inner and outer threshold blocks were indicated by soundings, but not uncovered, and an outer ring was similarly indicated. The rude ring of small boulders within the inner ring so frequently met on sites of this type was also found. No excavation was made inside this site.

The larger number of important sites where the major part of the work at Pueblito was done are found on the farther side of the stream crossed by the present road, although, since the ancient main road from the shore ascended this stream, they are not at a greater distance from the coast.

The road (1) which has been followed on the nearer side to the edge of the stream crosses at a shallow ford (57), there being no evidence of a masonry bridge here, though one of wood may have existed. In the stream, however, are great natural boulders which may have served as stepping-stones. These contain many shallow artificial holes, 7 to 10 cm in width and 2 to 5 cm deep, which may have served to hold supports of a bridge such as those made at present by the Arhuacos of the higher mountains.

On the other side of the stream, close to the water and to the continuation of the road, are found the largest and finest examples of native stone-cutting seen (76) (J) (Plate LIII). Four of these stone blocks are large and perfectly quadrangular, the largest three measuring 220 x 120 x 25 cm, 215 x 80 x 20 cm, and 225 x 65 x 30 cm. The upper faces are perfectly flat, the edges straight and relatively sharp, the side faces smooth and perpendicular. The first two blocks are laid close together with their long edges parallel, but the other two are near the short edge of the first and nearer the stream, and are much askew and tilted. Other large stones, both natural and dressed, lie around. The two blocks still in original position are well braced with smaller stones below. It is doubtful if they formed part of a bridge, but I have no suggestion to make regarding their purpose.

These blocks occupy a roughly quadrangular section enclosed between the road (77) ascending from the ford to the north and a small stream which joins the larger and main stream to the south (78), the road and small stream being approximately parallel and at right angles to the main stream at this point. The space between, about 5 meters in width, is at a slightly higher level than the road. A slight ditch separates it from a longer and higher, but narrower quadrangular space farther east.

The road, after crossing the ford, runs approximately east, narrowing slightly to pass to the north of the great blocks, about 2 meters wide and paved with granitic slabs. After passing the great blocks, it again widens to a width of approximately 250 cm and continues, for a distance of some 45 meters, skirting the foot of the small hill (83) which separates it from the main stream. It is uncertain if this section is paved; no paving stones are found near the surface. It then turns to north or northeast and for a distance of 50 meters becomes a well-paved street 3 meters in average width, ascending at a slight grade (79) (K¹) (Plate XXI). The paving slabs are laid in three sections or rows, a central and two side sections. The central section consists of large flat slabs of from 100 to 180 cm in length and of more varying widths. They are not dressed, but apparently roughly shaped, those near the principal staircase (81) being roughly rectangular with closely fitting edges. The side rows are of shorter slabs 80 cm in average length, those to the hill side being ruder, those to the east side better made. To some extent they dovetail with the central slabs and, although there is little obvious evidence of cutting, the edges fit so closely that the interstices are very narrow. When not displaced by tree roots, all are set with their top faces on a very even, slightly sloping grade. It is, on the whole, an excellent example of an aboriginal paved street.

The eastern side of this well-paved stretch is marked by a well-made sloping wall (80) of piled boulders, in places 1 meter in height, which retains a terrace above. Near the northern end this wall is broken by an excellent entering stairway consisting of four steps (81) (K²) (Plate XXII, Fig. 2). The wall is about 10 meters long and runs approximately north and south. At the southern corner is a great, squared stone block measuring 180 x 65 x 30 cm and well braced below (82). A great slab, 225 cm in length, follows, and then smaller piled boulders toward the north.

Though the main road commences at right angles to the main stream, both bend so that in a short distance they run in parallel directions. The space between is occupied by a hill (83) which rises sharply from both stream and road to a moderate height. At the ford a staircase ascends from the road toward the summit, well made at the base, but poor above (84). Another staircase ascends from the site next to be mentioned (85). The summit of this hill is flat, and apparently formed a site of some nature, XVI. It is about 8 meters in diameter, with a poorly marked ring of low stones and

two good slabs like threshold blocks near the center. A few smaller and ruder terraced sites are seen on the slopes.

The main road continues to the north beyond the section ascertained to be well paved, though paving flags might also be found here under the accumulated soil (86). Low slabs and walls bound it on both sides. The grade increases with occasional slanting flagstones and steps. It then enters upon a circular flat path (87) bounding a large site, No. XVII. This path is about 4 meters wide at this point and bounded by a low ring of stones over which the road passes.

This site is one of the largest and best situated, the main road entering directly upon the level circular path which surrounds it, the center of the site being about 50 cm higher. The diameter measures 13.5 meters, the site being bounded by a ring of upright stone slabs on the periphery. These are best on the southeast side where the encircling path, serving as part of the main road, is widest. Here these upright slabs reach a maximum height of 60 cm, natural and uncut (L) (Plate XXXII). The rest of the ring is almost entirely destroyed. As on many sites, several large boulders are seen about 150 cm inside the ring and possibly forming an inner ring. Within these, the site is practically level. The main entrance was apparently to the north, from the main road, but all this section is destroyed by an immense tree. An entrance of indifferent construction is seen to the south where a broad, lozenge-shaped stone block, 150 x 65 cm, is found just within the ring (88). Across the path, opposite this entrance, a stairway ascends the hill already mentioned (85).

In the approximate center of this site a stone-lined grave was found (89). The upper soil is homogeneous and not very dark, with few potsherds. At a depth of 25 to 40 cm the large slab covers were encountered (M) (Plate LVIII), four in number, placed transversely over the grave. They measure 75 to 100 cm in length and 45 to 60 cm in width, the fourth being a small, thin chip. All are natural, uncut flags of granite, slightly concave on the under side, concave on the upper. The grave beneath lies with its longitudinal axis in the line of the entrances, north and south. Two vertical parallel slabs formed either side of the grave and a fifth the north end, the south end being open, the sides converging somewhat toward the north end. All measure 60 cm in height except the headstone, which is 70 cm, its top being 10 cm above the level of the others. The third and fourth caps lie on these upright slabs, the first and second ones

being beyond the southern limit of the sides. Beneath the first slab nothing but charcoal and fragments of burnt clay was found. Under the second, at a depth of 60 cm beneath the soil, a large rotten oval tray of coarse red pottery, 36 cm in width and 6 cm in height, was found, the base nearly flat, the sides low and with a horizontal loop-handle at each end. It contained nothing, but may originally have held food for the deceased. Beneath the third slab, an olla of heavy red pottery was excavated, containing earth, charcoal, and a pendant of polished green stone. Also two small graceful vessels of polished black pottery, full of beads of different sizes, were found, one of which had a cover, consisting of the broken base of a similar olla, tightly cemented to it with clay, which prevented the entry of silt.

Further excavations on this site, outside of the grave, produced a small, black, fluted pottery vase buried beneath a small circular stone. It contained several natural stones of unusual character, four or five stone ax-heads, and a cylindrical pottery stamp or seal. A large mealing stone was excavated at a considerable depth.

To the east of site XVII the road is rather narrow, about 2 meters in width, but to the north it widens considerably, and then continues toward the northwest. From this point the path runs over undulating or steep ground, bending to the west some distance until it arrives near the edge of the steep descent to the main stream below, approximately opposite the road and plaza already described across the stream (8-13) and approximately at an equal height. This section of the road is narrow and poorly made, having degenerated to a path. At the end of the path four sites are found.

Site XVIII, south of the path and farthest from the brink of the stream, is a small one, 570 cm in diameter, surrounded by a ring of irregular granitic slabs. The entrances are to northeast (90) and southwest (91), the former with a small threshold slab with its edge on the periphery of the ring, the latter with a similar slab of better construction. Three good stone ax-heads were found at a slight depth, but the bedrock lies close to the surface.

About 750 cm west of this site lies a much better site, No. XIX. The diameter is 680 cm, the ring being composed of roughly squared, granitic slabs. The main entrance (92) lies to the northeast, the secondary entrance to the southwest (93), near which a staircase (94) leads down to a natural amphitheater (101) beside the stream and but slightly above its level. The north entrance was covered with accumulated earth, the south entrance consisting of two slabs, the main one 120 x 60 cm and of fair workmanship, the inner one much

smaller and poorer. Within the site an irregular ring of small boulders at intervals of some 150 cm was found. Excavation indicated a considerable depth of dark earth with charcoal, potsherds, and occasional beads. This continues to a depth of 80 cm, the lower half being of darker soil than the upper half and full of charcoal and potsherds.

Nine meters west of site XIX, across a narrow depressed path (95) which leads south to the stairway descending to the natural amphitheater, lies the finest site encountered during the entire expedition, No. XX. This lies on the edge of the steep descent to the main stream to the west, 9 meters below. The usual level depressed path (96) surrounds the site, varying in width from 1 meter on the west or stream side (it may originally have been wider, but washed away) to 5 or 6 meters on the southeast where it separates this site from the preceding one. A low retaining wall of small uncut stones (97) protects the site, broken to north and south by the entrances, that to the north leading to a path extending along the edge of the stream, that to the south apparently leading to a disrupted staircase (98) which descends to the natural amphitheater below.

The diameter of this site measures 7.5 meters between the two entrances to north and south and 8 meters from east to west. The bare interior is surrounded by two rings of beautifully dressed granitic stone blocks, the outer edges of the inner ring flush with the inner edges of the outer ring, but on a slightly higher level. The blocks of the outer ring, however, lie with their longer edges on the radii of the circle, while those of the inner ring lie with their longer edges on the arc. In both, the outer edges are convex, cut in an arc to fit the circle, and their radial edges converging to a truncated wedge shape so that they fit into the circles perfectly, the edges touching closely. Naturally, however, many of the blocks are displaced by the action of encroaching vegetation.

The outer ring is supported by small unworked stones piled with a perpendicular face so that it stands at a height of 35 cm. The blocks composing it are of excellent technique throughout, but especially well made and larger near the entrances to north and south, the four blocks to both sides of either entrance being admirable. The first five to the east of the north entrance measure on the outer edge 77, 54, 49, 42, and 42 cm, on the inner edge 52, 52, ?, 40, and 37 cm. In length they decrease regularly from 110 to 85 cm, this feature being obtained by the practice of dressing them so that the long edge closer to the entrance is longer than the farther long edge, thus

making a trapezoidally shaped block. In thickness they vary from 6 to 12 cm, but the lower edges are cut back and beveled so as to leave in every case an apparent width of 4.5 cm, except in the case of the first block whose thickness is 7 cm.

The stone blocks to the west of the north entrance are much similar, the first four measuring 69, 52, 55, and 59 cm on the outer edge and 58, 47, 48, and 49 cm on the inner edge. The lengths are approximately the same as those to the east, the thicknesses of all being 6.5 cm, except in the case of the first which has the great thickness of 17 cm, but with the front edge beveled to an anterior thickness of 8 cm. At the south entrance the technique is quite similar, with faces perfectly flat and corners and edges sharp. The first four blocks to the east measure respectively and in order 108, 102, 94, and 85 cm in length, 64, 43, 53, and 48 cm in width on their front edges and 42, 39, 42, and 37 cm on their back edges. The thicknesses are 9, 7.5, 5.5, and 5.5 cm, on the front edge, but apparently thicker in the center and irregular on the under side. The first five blocks to the west measure 105, 100, 95, 88, and 82 cm in length, 75, 40, 62, 43, and 57 cm in width on the front edge, and 60, 35, 47, 37, and 48 cm on the rear edge, the thicknesses being 9, 7, 5.5, 5.5, and 5.5 cm.

The inner ring of blocks practically touches the outer ring, but stands about 35 cm higher. The outer edges of these blocks are supported at this height by small, thin vertical slabs of granite interred just behind the blocks of the outer ring. This inner ring is composed of uniform, rectangular granitic blocks, perfectly dressed, with their long edges to the periphery. These edges are slightly convex, and the radial edges slightly converging so that, like the outer blocks, they fit tightly into the circular scheme. As in the case of the outer ring, the blocks closer to the entrances are larger, both in length and width, than those at a greater distance. To the east of the north entrance they measure 59, 58, 53, and 50 cm on the outer arc and 54, 58, 47, and 47 cm on the inner arc; to the west 56, 56, and 52 cm outer and 50, 54, and 49 cm inner. The widths of the blocks adjoining the entrance are 31 and 32 cm, the others varying from 30 to 23 cm with an average of 27 cm, the thicknesses uniformly 11 or 12 cm. At the southern entrance this ring is even finer with perfectly flat faces and sharp edges and corners. The lengths of the blocks measure 88, 58, and 53 cm to one side and 65 and 59 cm to the other, the widths 32 to 27 cm, the thicknesses uniformly 11 cm.

The two entrances to this site, practically to north and south, present probably the finest example of masonry construction seen by the expedition, each consisting of five magnificent stone threshold steps. That to the south is possibly a little superior, this apparently being the principal entrance to the site.

The five blocks at the south entrance (N¹, N²) (Plates XLVIII, XLIX, and L, Fig. 2) occupy a total distance of 310 cm (99). The innermost block, entirely within the inner ring, measures 125 x 50 cm, and is of inferior construction. The second block, placed with its outer edge on the outer arc of the inner ring, is of excellent workmanship, measuring 155 x 60 cm and 13 cm thick. Its outer edge is slightly convex to match the arc of the ring, and this edge is supported by small slabs interred vertically. The third block is also of excellent technique with markedly convex front face, measuring 125 x 70 cm, and 10 cm thick. It lies on the same level as the blocks of the outer ring with its front edge at their middle point, entirely below the level of the second block. Its edge is supported by vertical slabs as in the preceding case. The fourth block, with its front edge beyond the outer ring of blocks and 20 cm below it, is also of excellent workmanship with markedly convex front edge, measuring 145 x 70 cm and 12 cm thick. The outermost block, on the natural soil level, is, like the innermost slab, of slightly poorer workmanship, 130 cm long and 10 cm thick with convex front edge. The southwest corner of the second block is cut with a notch so that the adjacent block of the inner ring may fit into it.

The northern entrance (100) (N³) (Plates XLVI–XLVII) is practically equivalent to the southern entrance, being composed of five perfectly quadrangular, oblong blocks of granite. The outermost and lowest lies entirely outside of the outer ring, the next with its outer edge outside of the outer ring, the middle one with its outer edge between the two rings, the next with its outer edge on the arc of the inner ring and the innermost entirely within the inner ring. As at the south entrance, the second from the inside is the finest and principal. The lower three are practically equal in size, 120 to 125 cm long and 60 to 65 cm wide, the thicknesses being 12, 7, and 9 cm respectively. The rise of the second, however, is 18 cm, and that of the third 15 cm, the former being supported by smaller stones, the latter by an interred vertical slab. In each case the rear edge of the lower and outer block is flush with the outer edge of the inner and higher block. The fourth and finest block measures 157 x 60 cm, and is 14 cm thick, but supported by smaller stones so that the rise of this step

is 25 cm. The innermost block is smaller and poorer, measuring 140 x 36 cm, and on the same level as the preceding. The front edges of the outer three blocks are slightly convex, and the side edges very slightly so.

The interior of this site is perfectly clear, the center at a height of approximately 80 cm above the natural level. Although considerable excavation was done hereon, not a specimen was found, natural red clay being encountered at a depth of 35 cm.

Between the last site and the large hill before mentioned (83) is a large low natural amphitheater (101) to which allusion has already been made. This is at a height of only about 3 meters above the stream and exactly opposite the fine sites on the other side of the stream. Along the edge of the stream it is protected by a good megalithic wall (102), in places over 2 meters high and built of great boulders. This is broken in the exact center by a fine stairway (103) from the water's edge. The interior of the amphitheater is practically flat and contains a site, XXI, some 8 meters in width surrounded by a double ring of upright stone slabs, of inferior construction and much displaced and buried. The main entrance with threshold slabs faces the stream to the west. One fine milling stone was discovered on it.

At the rear of the amphitheater is a good stone retaining wall (104), built of small stones, slightly slanting and 120 cm high. At the northeast corner an unusually good staircase (94) ascends to the walk (95) between sites XIX and XX. Another staircase (98) leads up the north side of the amphitheater, beginning at the edge of the stream just north of the megalithic wall and leading to the south entrance of site XX. Near the base a wall protects it on the outer side, and near the top are walls on both sides, the upper one being the retaining wall of the terrace to site XX. There is also some evidence of a stairway around the south side of the megalithic wall leading up the large hill (105).

Some 15 meters northeast of site XX, across the terminus of the main road lies another site, XXII. The road here is narrow, only 150 cm wide, and depressed. This site is high and irregular, about 80 to 100 cm above the path. Great high boulders (106) limit it to the east, and a low path surrounds it on the other three sides (107). The encircling ring is poor, mainly composed of six boulders and a few vertical slabs, broken by a great natural rock. The twin entrances are to north (108) and south (109), each with two threshold blocks, the distance between them being 450 cm. These blocks are of indifferent workmanship, roughly rectangular, but with straight long

sides and rounded short sides. They measure from 130 to 55 cm in length and from 50 to 27 cm in width, the thicknesses being from 25 to 19 cm. Two unusually good mealing stones were found on this site, but excavation revealed nothing of value.

Retracing the main road to the southeast, no sites are found on the northern and eastern sides until approximately opposite the large site, XVII, on which the stone-lined grave was found.

The path to the northeast of site XVII is narrow and low and from it the slope rises abruptly to site XXIII some 450 cm above. This slope is protected by a good, long, retaining wall (110). This is poorest to the south end where it consists merely of boulders placed on the slope. Farther north it is more perpendicular, higher and better made, of megalithic proportions and technique, and at the north end is a fine, slightly sloping wall, 210 cm at its maximum height, made of great boulders. It is broken by a stairway (111) which ascends from opposite the north entrance of site XVII. This turns northward and ascends the slope diagonally along the face of this wall, made of flattish stones and natural quasi-globular boulders. These stairs lead to a large, flat plaza (112) containing a site enclosed by two rings of vertical granitic slabs, both considerably covered and displaced. The slabs of the inner ring are well shaped and interred on their long edges. This ring has a diameter of 10.5 meters on the north-south axis, and 10 meters on the east-west axis. The entrances are to northwest and southeast, though the ascending stairway enters the surrounding walk from the west, the retaining wall here consisting of a few very large boulders. The north and south entrances, however, are not exactly opposite, the line between the entrances passing to one side of the center; the north threshold stone is set at right angles to the line to the south entrance, the south threshold stone at right angles to the radius. Each of these entrances consists of three threshold blocks averaging about 150 x 70 cm, the innermost on the inner ring, the second on the outer ring, the third entirely outside and on a slightly lower level. A little west of the south entrance another and poorer stairway (113) descends the slope.

The center of this site is at a level 50 to 60 cm above that of the surrounding walk. Here, just beneath the surface, was found a thin slab of granite, roughly circular and discoidal, 50 cm in diameter and 2 cm thick, placed horizontally. Beneath this was unearthed a pottery vessel of the type frequently found in connection with buried objects, cylindrical with a practically flat base, nearly vertical sides and wide orifice, and a lip below the rim on which an inverted bowl-

shaped cover rested. Only fragments of the cover remained, but the vessel, unless the workmen secreted other objects, contained only several large water-worn pebbles. In another place, close to the surface, was found a beautiful small stone object, somewhat resembling the monolithic axes. A corroded iron bolt was also found close to the surface, one of the few evidences of post-Columbian visitation found at Pueblito. It was probably on this site, however, that one of the workmen, digging clandestinely, excavated a collection which was afterwards secured. This consisted of a large spatula-wrench-shaped baton or club of green stone, four large *klangplatten* of gray-green stone with longitudinal drillings, two small, long, thin ornaments of black stone with single transverse drillings, a monolithic ax, two ax-heads of red stone, and a small miniature seat or table of steatite.

South of site XXIII a branch road runs at right angles from the main road at the south end of site XVII over the ridge and down into a ravine, heretofore unmentioned, on the other side. Ascending the slope, this is a stairway built of broad flags with side curbs, but not cut or dressed. In places on slopes stairs are found and retaining walls to the sides, and in other places depressions were filled in to make a viaduct. It passes a cave in which were found many hand mealing *manos*.

On the south side of this transverse road and approximately at the same height as the preceding site XXIII a small path (115), reached by twelve steps and approximately parallel with the main road below, runs through a slight depression toward the south. This is protected by a retaining wall. Between these two paths and at a slightly higher elevation than the upper one is found one of the best constructed sites, No. XXIV. This is of a type similar to the fine small high site IX, on the other side of the main stream, consisting of a ring of blocks, placed on their long, thin sides, outside of which is a ring of horizontal thin blocks, cut in wedge shape, so as to fit tightly into the circle. The diameter of the inner ring is 12.4 meters transversely and 12 meters between the two entrances, it being one of the larger sites. The blocks of the inner ring are of rather poor construction and apparently much displaced, being seen to best advantage just east of the north entrance. Here they show as a short line some 25 cm above ground, set at the back edge of the main horizontal blocks.

The main ring of horizontal blocks is also at its best just east of the north entrance, poorer on the west side. The best ones are nicely

squared and dressed, cut in the shape of a truncated wedge and with their outer edges slightly convex so as to fit tightly into a perfect circle. They are supported at an even height by smaller stones beneath. The best blocks, east of the north entrance, are laid with their longest ends to the periphery; those in the southeast quarter are apparently entirely lacking, though they appear again near the south entrance, and those to the west of the north entrance are thin and poorly made. The first block east of the north entrance is very large, measuring 100 cm in width on the outer arc, 75 cm on the rear or inner arc, and 130 cm in length. The second and third blocks are of equal length, but lesser width, the third measuring 60 cm in width at both front and back, the second being narrow and quite trapezoid in shape. The thicknesses vary from 17 cm in the case of the first block, to 10 in the other instances. The blocks west of the north entrance are of similar nature, the first measuring 110 cm in width on the front arc, 85 cm on the rear arc, 120 cm in length and 17 cm in thickness. The second is of equal length, 55 cm in front width and 45 cm in rear width with irregular thickness.

The entrances are to northwest and southeast, the former (116) being of superior construction and apparently the principal entrance (O) (Plates XLV and L, Fig. 1). The innermost two threshold blocks, both approximately level with the tops of the blocks of the inner ring and with the outer edge of the second on the arc of this ring, measure respectively 145 x 92 cm and 148 x 75 cm. The third threshold block, probably the principal one, lies with its upper face a trifle above the level of the blocks of the outer ring and 20 cm below that of the step above. Its rear edge is on the inner arc of the ring, its front edge, cut convex to fit the periphery, a little within the outer periphery of the ring. It measures 170 x 90 cm. The next one, of slightly poorer construction, 20 cm below the preceding and outside of the main ring, is of approximately equal size. This is tilted slightly forward down the slope, probably fallen. In front of this, on the steep slope, and tilted at quite an angle, though probably originally at a similar level, lies a fifth threshold block measuring 120 x 65 cm. These five blocks thus resemble closely the five found on other similar sites. Beyond these, however, are found two others—a feature found on no other site. They lie at right angles to the other blocks, parallel and near the base of the slope, tilted at a steep angle, and possibly not in original position. They measure 136 x 60 and 100 x 55 cm.

The south entrance (117) is probably constructed similarly, though here only the three principal blocks were uncovered. The

uppermost, of rather poor construction, inside the ring of blocks, measures 150 x 80 cm, and has a rise of 10 cm. The second, of equal width and rise, is of better technique, 55 cm inside the ring, and measures 130 cm in length. The third, of the same size, and below the ring, projects 20 cm beyond it.

From the south entrance stairs (118) descend to the main road, and the small path (115) runs south along the middle of the slope toward other sites. This path encircles this site, being protected on the west by a retaining wall. Between this path and the parallel principal path below lies a steep slope with immense natural boulders. In the crevices beneath these rocks were found many sherds and large pieces of pottery, mainly of red ware, the black pottery being in the great minority. The vessels were evidently large, coarse pots and large trays with horizontal, looped handles. Fragments of thin brownish and grayish ware were also found. On a few level terraces were noted small sites with traces of stone rings, retaining walls, and staircases, but none of any merit or size. Above the path no sites were noted.

Four mealing stones or metates were found in this region, almost all quasi-rectangular, but with rounded edges and angles, and deep. The measurements of these four were 45 x 30 x 17 cm, 53 x 35 x 17 cm, 40 x 25 x 14 cm, and 35 x 25 x 10 cm.

At the end of the upper path, on a promontory, is found site XXV, 820 cm in diameter. A double ring of upright stone slabs, now much fallen, encircles the site, with an outer surrounding path and retaining wall on the slopes. Stairs (119) descend this slope to the west. The entrances are to northwest and southeast with threshold blocks of fair technique, measuring 130 x 70 cm, slightly convex on their outer edges.

On the lower level, but little higher than the level of the main road, an irregular long space is found between the road and the base of the hills forming the background. This space is naturally sloping slightly, both from the hills at the back to the road and southward along the road. On this space several sites were noted, probably representing house-sites, but none of them well made or especially noteworthy from an architectural standpoint.

The northernmost site, XXVI, is a natural, irregular, and uneven space bounded to north, south, and east by slopes and boulders. The road to the west is lined with an indifferently made wall of piled natural slabs with a few upright slabs near the center. Only traces of the stone ring are evident, with no certain entrance.

The next space to the south is larger, but likewise irregular and uneven, continuing along the road for a stretch of some 20 meters and bounded to north and east by hill slopes and to south by a wall (120). This southern wall is well made and some 60 cm high, unbroken by any entrance. Especially is it well made to the southwest where it meets the wall lining the main road. Here the latter is broken by a stairway (121). This wall along the main road is also well made, but somewhat disrupted, with the excellent entering stairway (81), already described, near its northern end. Each staircase apparently leads to a small house-site. One of these, XXVII, is in the southeast corner of the site, an irregular surface some 7 meters in diameter with traces of a double ring and an entrance to the west with poorly made threshold slabs. The other site, XXVIII, consists of a ring, only slightly visible, some 9 meters in diameter, the entrance to the northwest consisting of several good threshold slabs. Casual excavations here disclosed some stone ax-heads, discoidal drilled stones, some sherds of a vessel with unusual decoration, apparently a sort of carved or champ-levé ware, and an iron implement in the surface soil.

South of these sites is one, XXIX, which gave little promise from surface indications, but which proved to be of considerable importance. On the west it is bounded by the main road (79), on the north by the southern boundary wall (120) of the site last mentioned, on the east by the irregular foot of the hill, and on the south by a high, retaining wall separating it from the large, low, and relatively flat area on which were found the most important sites later to be mentioned near the stream and the ford. This site, therefore, is on higher ground, though apparently ground of natural level, the lower sites probably having been partially made by excavation to the north side. It is roughly rectangular, measuring 25 x 9 meters (Plate LVII, Fig. 1).

The wall along the main road (79), some 10 meters long and of good construction, has already been mentioned. It is higher and better made at the southern end where, as has already been mentioned, is a great, squared corner block 180 x 65 x 30 cm, followed by a great slab 225 cm long (82). It is paralleled by a line of slabs 3 meters to the east (122). The southern wall (123) runs irregularly east for a distance of 23 meters. Beginning at this junction with the wall of the main road as a low wall of poor construction with entering stairs of poor quality (124), it changes near the center of the site to a line of great stone slabs interred vertically (P) (Plate XVI, Fig. 1). The largest of these measures 130 cm in height above ground, 85

cm in width, and 10 cm in thickness and is roughly squared. Six of these slabs are in line, followed by another low wall with entering staircase of good construction (125), then again a short line of slabs, and finally, at the eastern end, a good wall with a third staircase (126). The whole line is as irregular in direction and height as in construction. The central one (125) of these three stairs is the best, though of no remarkable merit, about 1.5 meters high and consisting originally of six stone steps.

At a distance of 2 meters from the edge of the top step of the central stairway, approximately in the central point of the wall and in front of the steps, were unearthed the large flat stone caps of a large stone-lined grave at a depth of some 20 cm (Q^2 , Q^2) (Plates LIV, Fig. 1, and LVI). The grave measures 85 cm in length and 120 cm in width, the short side being parallel with the wall and the steps of the stairs. Three large stone caps of roughly rectangular shape covered it, placed transversely and considerably overlapping the edges of the grave on all sides. These slabs are of natural form, thin and with slightly convex upper surfaces. The first two are large and roughly squared, measuring respectively 170 x 75 cm and 175 x 85 cm. The third is of the same length, but only 60 cm wide, thinner and of irregular shape. The space between the second and third slabs caused by the irregular shape of the latter was filled with three smaller slabs. The earth within had packed, and the grave had not been entirely filled with silt, leaving a few centimeters of space under the caps.

The sides of the grave are lined with tall, vertical stones which are sunk in the ground, and on which the caps rested. Four of these line the long east side; five and a block, the long west side; three, the short north end; and two large ones, the short south end. Behind these two to the south a larger one rises above the level of the caps as a headstone. The bottom of the grave was found at a depth of 1 meter below the level of the tops of the vertical supporting slabs and about 150 cm from the level of the soil. The bottom is not quite level, but quite marked, the untouched earth beneath apparently being disintegrated rock.

No trace of bones was found in the grave, the dampness of the pronounced rainy seasons having apparently destroyed them entirely. Seven pottery vessels with contents were unearthed, and the soil contained a number of finely made stone ax-heads and numerous carnelian beads. The vessels with their contents are as follows:

1. A large globular olla of thick red pottery with broken cover of black pottery. It has a ring base and constricted orifice with neck.

The cover is an inverted artistic bowl of thin black ware. It contained fourteen stone ornaments of a broad, winged type somewhat resembling Venezuelan *klangplatten* and a similar object of limestone, but no beads.

2. Vase bowl of very fine black pottery with ring base, broken, containing many stone beads and three bracelets of gold and one of copper.

3. Globular olla of red pottery with ring base and constricted orifice with neck and evidences of a figure in relief containing many fine beads, three fine stone ornaments and some pottery whistles.

4. Small fine vase of thin black pottery with constricted orifice and neck and ring base, containing several small bits of thick copper wire which probably served as bracelets.

5. Small vase of black pottery containing beads of shell and fish vertebrae, and two small images of limestone which gave the appearance of forms over which to beat gold.

6. A large globular vessel of red pottery like No. 1 containing quantities of beads.

7. Small vessel of red pottery with smoked black surface containing a few large carnelian beads and some tiny green beads. It is subglobular with ring base and constricted orifice with neck.

These vessels were found at varying depths up to 80 cm below the caps, a few of them lying on their sides. Most of them were broken, cracked, and so rotten that only fragments were removed. Apparently, however, they were interred in perfect condition, not "killed," and contained ornaments buried with the dead. Many scattered beads and a few fine ax-heads were also found loose in the soil of the grave.

This stone-lined grave, which type is known locally as a *boveda*, is the central feature of this terrace site. It is surrounded, apparently, not by a complete ring, but on either side to east and west is a segment or arc of interred vertical slabs (127). The maximum distance between these is 15.5 meters, their tangents east and west meeting the centers of the two flanking staircases in the south wall, which stairs, therefore, lead to the spaces outside of this quasi-ring. The western arc is plain and irregular, that to the east more regular. It was excavated before its true nature was realized. Close to the north wall and approximately at its center was found a roughly made quasi-rectangular stone block, 75 x 100 cm, apparently the threshold of an entrance (128a).

Numerous beads of carnelian were found scattered in the soil around the stones of the eastern arc, as well as above the caps of the grave and elsewhere on the terrace, so many that they could not have been accidentally lost, but undoubtedly strewn there during the placing of the stones. Many potsherds and other artifacts were also found, these probably accidental intrusions, together with charcoal and traces of bones. The excavation indicated that a trench some 60 cm in depth and of equal width was made for the placing of the vertical stones of the arc, these being braced below by other smaller stones.

One other definite find was made on this terrace site, close to the *boveda*, a small vase of black pottery with relief and incised ornament, the site of which was marked by a stone disk above it. It was covered by a small stone slab. The record of its contents is missing, but it presumably contained stone beads.

The space south and west of this terrace extending to the ford at the main stream, where are the great rectangular stone blocks (76) already described, was apparently the central, or rather the principal, part of this section, if not of all Pueblito. At least here were found the three sites which afforded the largest number of important artifacts secured by the expedition. This region will be described proceeding east from the great stone blocks mentioned on page 78.

Crossing the small ditch which forms the eastern boundary of the small space on which lie the great blocks, another roughly rectangular space (128) is found, enclosed between the main road and the small stream (78) which practically parallels it at this point. This space measures about 4 meters in width, and is of greater height than the road, being retained on both road and stream sides by walls. The latter wall is some 2 meters in height and is pierced by a good staircase (129) (R) (Plate XXVIII, Fig. 1) near its farther or eastern limit. This eastern boundary is formed by the ring of the first large site whose western entrance is near the head of the before-mentioned stairs, by which it was evidently served.

This site, No. XXX, is one of the larger and more important ones, but not one of the better-made type. Lying in the space between the main road and the small stream, at a distance of some 22 meters east of the great stone blocks, it measures over 13 meters in diameter. The circumference is formed by a fine double ring of stones, the outer ring made of large, nicely fitted, quadrangular flat blocks, about 20 cm thick, 30 cm wide, and from 60 to 130 cm long, generally of a whitish stone, possibly a marble. Though well made,

this outer ring apparently combines with the inner ring near the west entrance, though here both lines are so disrupted that no definite conclusions could be reached. The inner ring, 12.8 meters in diameter, is at an average distance of 60 cm within the outer ring, and is made of the more usual roughly shaped upright granitic slabs. In a few places horizontal caps are visible, and may have obtained throughout, some of these being well squared like the stones of the outer ring, the latter being at a slightly lower level.

These rings are broken by two well-made entrances to east (130) and west (131), the latter apparently the more important and better made, near the stairway (129) descending to the small stream. Four large, but not especially well-made steps or threshold blocks form this entrance, the innermost entirely within the inner ring, but entirely covered by the roots of a large tree, the second on the inner level of the site and with its outer edge on the arc of the inner ring, the third with its outer edge and upper surface even with the outer ring and 30 cm below the former, and the outermost on the ground level entirely outside the ring and 30 cm below the preceding. In size the last three measure respectively 190 cm in length and 15 cm in thickness, the width being uncertain, 185 cm long, 90 cm wide, and 20 cm thick, and 130 cm long and 80 cm wide, the thickness being hidden. In all three cases the outer edge is supported by a large buried upright slab or block.

The east entrance (130) also consists of four threshold slabs situated like those at the western entrance. The innermost measures 175 x 75 cm, the second 197 x 60 and 10 cm thick, the third, which is of better technique, 185 x 85 cm, while the outermost, which is deeply buried, is apparently smaller and poorer.

The interior of this site was very irregular as if it had been trenched or excavated. Though considerable excavation was done on this site, but little of interest was discovered. In the surface cutting, the base of a great pottery olla, 45 cm in width, was excavated, also a massive tray with loop handles, two rectangular mealing stones measuring 42 x 27 x 14 cm and 38 x 20 x 13 cm, and a large partly drilled stone. An excavation in the center revealed a mixture of soil, potsherds, and charcoal to a depth of 160 cm in which were found a number of tubular beads of uniform size.

The next site to the east, No. XXXI, is of even greater size and of maximum importance, the majority of the unusual objects secured by the expedition having been excavated from this site. Like all the larger sites, it was covered by a dense impenetrable growth of spiny

agave locally known as *pita*, which circumstance had evidently saved it from despoliation. It lies some 30 meters east of the preceding site XXX and 18 meters south of the terrace XXIX with its great stone-lined grave. The space to the west, separating it from the preceding site, is relatively flat, and contains no structures of interest with the exception of a fine staircase (132) entering from the small stream, and an excellent line of large blocks (133). To the north, between this new site and the terrace, a depressed road (134) some 3 meters in width in the narrowest portion follows the terrace wall (123) at its foot.

With a diameter of 20 meters and perfectly flat surface, the site is the largest seen at Pueblito or elsewhere. The peripheral ring, however, is by no means one of the best, consisting of a double ring, not quite circular, indifferently made and somewhat disrupted. Where not disrupted, such as near the east entrance, there are apparently two rings about 1 meter apart, the outer of horizontal, the inner of vertical slabs, mainly rude and uncut.

The entrances to this site are to east (135) and west (136), that to the west, apparently the principal one, facing the preceding lower site XXX. Two especially large threshold stones mark this entrance. The outer stone, which is bisected by the peripheral ring, measures 215 cm on the front edge, 205 cm on the back and 145 cm in width. It is apparently of slight thickness. Although so large, the workmanship is indifferent, and the surface uneven. The front edge is markedly convex to fit the arc of the stone ring, and all sides are slightly convex and corners rounded. The second stone inside of this, separated from it by a gap of 20 cm, is even larger, and also better made, measuring 235 cm in length by 100 cm in width and of even thickness, at least 16 cm. The sides are straight, the surfaces flat, and the corners sharp. The front edge is slightly convex laterally, and all edges are slightly convex vertically. This entrance is at right angles to the diameter of the site while the stones of the east entrance are parallel with these, though the entrance itself is not on the same diameter.

The east entrance (135) is somewhat more disrupted, and consists of two or possibly three large stones, the third and outermost being indicated by soundings, but too deeply buried and covered with roots to be verified. The middle (or outer) stone is bisected by the inner ring, and possibly has its outer edge on the arc of the outer ring; 210 cm in length and 15 cm in thickness, the width could not be determined. The surface is perfectly flat, but the edges are not straight

and the corners are rounded. The inner stone, entirely within the ring, is, as in the case of the western entrance, larger and of superior technique, measuring 230 x 110 cm and 13 cm in thickness. The surface is flat, the front and back edges straight, the side edges somewhat convex. The front edges are straight, the others rounded.

Within this site a number of objects were excavated, singly, in caches and in groups, at various depths. These were apparently buried intentionally in almost all parts of the site and with little regularity.

In the surface cuttings, considerable numbers of fragments of large urns of thick red pottery were found, many of them with grotesque faces in relief. Similar sherds, apparently identical with those found in such large numbers at Gairaca and elsewhere on the coast, were found in practically every site excavated both at Pueblito and elsewhere. Strangely, not an urn of this type was excavated here or elsewhere in the mountains, but one very large and whole specimen was found entirely above ground in the near-by woods together with a smaller urn of unique type. This latter has a large hollow relief human head at the top and two spouts of cylindrical form, one on either shoulder. The reason for these numbers of sherds in the upper stratum is hard to determine; one explanation might be that they were found and broken in the search for gold by the earliest *huaqueros*, four centuries ago, while the smaller vases and caches, containing mainly ceremonial stone objects and beads and more easily evading the sounding-bars of the hunters, escaped or were ignored.

In the exact center of the site, a finely made, low, flat stone seat with four legs was the first object encountered. At this point, firm subsoil was met at a depth of 110 cm. Near-by, close to the surface, was excavated a fine small olla of the type most frequent in this region, of thin black pottery with subspherical body, ring base, and short neck, the body decorated with a band of design of incised lines and two conventionalized flying birds in low relief. It was covered by a small discoidal stone cap some 12 cm in diameter and 3 cm in thickness, and contained about seventy-five beads, mainly of carnelian, a pendant in the form of a bird, and many undrilled and unshaped bits of carnelian.

Near the center, a few centimeters below the level of the original yellow soil, was found a large water-worn boulder of dark stone measuring about 35 x 30 x 10 cm, and 20 cm below this a small olla of polished black pottery with fluted sides covered by a chip of dark

granite and containing a few beads in a clayey mixture. This method of interment was encountered frequently on this site, the placing of a stone, generally discoidal, some distance above a buried vessel and close to the surface, apparently serving as a marker. Few of these "markers" were kept, but many were encountered.

Though buried objects were found through practically the entire site and no definite conclusions regarding place of interment were drawn, yet certain distinctions were noted. In certain sections of the site buried objects were thickly clustered, while other sections were almost bare. Furthermore, interments of certain types were found in largest proportion in certain portions of the site. Thus to the west and east sides of the site, near the entrances, were found mainly caches of ceremonial stone implements, at slight depths and generally beneath quadrangular stone slabs, while to north and south the majority of the finds were of pottery vessels, buried at considerable depths and containing stone beads, small pebbles, and chips of carnelian, and frequently larger pebbles of unique shapes or colors. These were generally marked by a discoidal stone close to the surface.

Nine caches of ceremonial stone objects were found, consisting of the following objects.

1. Four long, narrow, thin stone objects of the *klangplatt* type, three with longitudinal drilling and one with double transverse holes, found without covering.

2. Four long, green stone ornaments of the *klangplatt* type; two small two-legged seats; a small monolithic ax; a fine thick ax-head; a wrench-shaped object; several fragments of carved stone; and quantities of quartz crystals, all found near a large thick discoidal boulder.

3. A long fork-shaped stone; three long spatula-wrench-shaped stones and a similar smaller one with incised decorations; a zoomorphic stone with incised crocodile designs; two monolithic axes, one of green and one of red stone; a long, thin, drilled *klangplatt*; a large two-legged seat; a broken curved bar of reddish stone; and a small hemispherical stone bowl or cup which contained a small quartz crystal. All these were found at a slight depth beneath a very thin quadrilateral or lozenge-shaped slab of slaty stone, measuring some 23 x 55 cm and less than 2 cm thick.

4. Two long spatula-wrench-shaped stones; a smaller baton of similar type with twin carved and incised profile faces on the handle; two monolithic axes; and a long thin ornament of *klangplatt* type with single transverse drilling. These were found beneath a large

quadrangular or lozenge-shaped stone slab of yellowish-gray sedimentary rock measuring approximately 60 x 23 x 3 cm.

5. A beautiful stone club of spatula shape with twin incised and carved profile faces; eight long thin ornaments, seven of them with single transverse and one with longitudinal drilling; and a sub-globular black pebble. These were encountered under a very rough crude slab near the surface.

6. Fourteen ceremonial stone objects were found under a quadrilateral slab measuring 38 x 22 x 3 cm. These consisted of three batons of spatula-wrench shape of various sizes; two monolithic axes, one of greenish and one of black stone; seven long, winged ornaments, three of them with longitudinal drilling, three with single transverse drilling and one with double transverse drilling; a pointed implement, possibly a drill; and a small drilled ornament of greenish steatite.

7. Five specimens comprised this cache, found beneath a roughly quadrilateral slab. These were a fine, long, spatula-shaped baton with a beautiful fretwork handle; a long, thin ornament with double drilling; a thin, drilled stone of unusual type; a long stone ornament with longitudinal drilling; and an end of a similar stone with the broken edge rounded off.

8. Beneath a discoidal stone cap measuring 30 to 35 cm in diameter and 5 cm in thickness were found a beautiful, long chisel-wedge of green stone, a fine cylindrical idol of the same material, and an ordinary ax-head.

9. Near-by, an oblong, lozenge-shaped slab of granite measuring 55 x 18 cm covered three monolithic stone axes, two being of greenish and one of reddish stone; a long spatula-wrench-shaped baton; a large and a small long ornament of greenish stone with single transverse drilling; a rectangular stone; and a green stone ornament of the shape of a human sternum.

Most of these caches of ceremonial stone objects were found in groups about midway between the center and the boundary ring. Caches 3 to 7 were found in close proximity, at approximately the same level and under similar conditions. Practically all the specimens are made of a fine-grained greenish stone, not jadeite, carefully carved and smoothed, but not polished.

Near these caches, in the loose soil, but not in groups, were found a number of other stone objects: a broken baton of spatula-wrench shape; a part of a long, flat bar; five ax-heads; a chisel; the wing of a

long ornament: a small columnar stone; a small mealing stone; a natural stone of peculiar weathering; and five small natural pebbles. In other parts of the site were found a ring of black stone, possibly a bracelet with incised designs; a small ax-head of marble and one of reddish stone; an inverted crude mealing stone; a broken head of a long baton with four profile faces; a pile of natural, fine quartz crystals; a large piece of a fine mealing stone at considerable depth; a large granitic block, roughly rectangular, 35 x 30 x 15 cm, with a shallow mortar depression, 15 cm wide and 4 cm deep; many beads, mostly of a large, thick, heavy discoidal type of green stone; and an inverted crude mealing stone near the surface. Also was found a discoidal stone like a large net-weight with a small hole drilled in the center. It measures 24 to 27 cm in diameter and some 15 cm in thickness. The hole is biconical, drilled from both sides, 5 cm in width at the surface and 1.5 cm in width in the center where the drillings meet.

Some twenty-two pottery vessels were excavated on this site, most of them under discoidal stone "markers" and practically all containing beads and other objects.

1. A small low olla or bowl of fine polished black pottery with slightly convex base, wide orifice, and inclined shoulder. It contained a small grooved stone like a two-legged seat, a fragment of a fine, green stone ornament, and a large lozenge-shaped object of mottled stone which nearly filled the vessel. This stone has a deep oval depression on one face, and is carved, grooved, and incised in the form of a conventionalized animal. This vessel was found beneath a large, heavy, worked discoidal boulder, 40 cm in diameter and 15 cm in thickness.

2. A large vessel of reddish ware of a shape used in the Tairona region especially for the interment of fine objects. It has a practically flat base and vertical sides with a lip on which rests an inverted bowl cover of the same ware. It contained a beautiful stone seat with twin animal heads, a monolithic ax, a long perforated stone ornament, a figurine with incipient drillings, two unshaped stones, and a tiny vessel of black pottery containing a few beads and stone chips for making beads. This was found under two slabs of granite, one upright and one a cap.

3. A small vessel of polished black pottery, containing an object of white stone, probably limestone, with twin perforations like finger-holes. Above it was a small discoidal stone cap.

4. A small olla of polished black pottery with fluted sides, full of stone beads, mainly discoidal, but a few tubular. This was found at a depth of 60 cm, covered with a small discoidal stone, 10 cm in diameter and 3 cm in thickness. Above this, at a depth of 35 cm, was a large discoidal granitic "marker" measuring 30 cm in diameter and 10 cm in thickness.

5. A small vessel of reddish pottery, containing a small quantity of beads and fine stones. This was at a considerable depth under the stone slab "marker" which lay close to the surface, slightly tilted.

6. A small vase-cup of polished black pottery with wide orifice and ring base, containing a few beads and many chips of fine stone. This was covered by a small discoidal stone cap and lay immediately beneath a larger stone disk 29 cm in diameter and 9 cm in thickness, the latter at a depth of 60 cm.

7. A small black vessel of typical vase shape with relief birds and incised design, containing a few beads and fragments of stone. This was covered by the usual small slab while immediately above it, at a depth of 80 cm, lay a stone slab cap. Close to the surface above it was a quasi-quadrangular stone cap.

8. A small olla of polished black pottery with fluted sides, containing a number of beads, mainly small but a few unusually large and fine, a thin ornament of jade, a stone ball, and a rude figurine. A small thin stone cover, 12 cm in width and 1 cm in thickness, covered it, while 15 cm above and at a depth of 50 cm, lay a fine discoidal granitic "marker" 30 cm in diameter and 7 cm in thickness.

9. A small, fluted, black pottery vessel with a small stone cover in the neck, containing a few beads and chips of stone. It lay at a depth of 35 cm beneath a quasi-discoidal cap of granite, 37 cm wide and 8 cm thick, which was found just below the surface.

10. A vessel of fluted, polished black pottery, containing a few beads and a fine stone chip. This lay at a depth of 60 cm, and was covered with the usual small stone disk 10 cm in width and 2 cm in thickness, while immediately above it, at a depth of 55 cm, was a circular stone disk 30 cm in width and 4 cm in thickness.

11. A small polished black vase of the common type with relief birds and ring base, which contained the usual beads and tiny pebbles of fine stones. This had the usual cover of thin slaty stone and lay immediately under a rough triangular thick block at a depth of 50 cm.

12. A vessel of red pottery, containing a large quadrilateral stone like a large ax-head with unfinished edge. This lay under a small circular stone disk.

13. A small, polished black vase of typical form with ring base and flying bird relief, which contained a few beads, many carnelian chips, and a large, mottled green stone. This lay at a depth of 90 cm, while above it at a depth of 60 cm was a great, heavy, thick discoidal-spherical boulder.

14. An olla exactly like the last with the same contents. It had the usual small stone cover, and lay beneath two large stone disks near the surface.

15. A small olla of polished black pottery with fluted sides, which contained a large red pebble and a handful of beads and chips of carnelian. It had the usual thin cover and lay immediately below a large thick stone disk which was at a depth of 40 cm. Above the latter near the surface was a second disk, also large, but thinner.

16. A small black olla of the type with flying bird relief, which contained the usual few beads and pebbles. It possessed the usual thin stone cover, and lay beneath a large thick stone disk at a medium depth.

17. A small plain hemispherical bowl, empty, found near the bottom of the dark stratum.

18. A small black olla with flying bird relief, containing a handful of beads and small stones found beneath a stone disk.

19. A dainty little vase of brown pottery with band of relief, empty, found near the surface.

20. A tiny olla of unusual shape, but with the usual stone cover. It contained a small red stone, beneath the usual stone disk.

21. A typical polished black olla with flying bird relief, containing a few beads. This was found at considerable depth and far above it was a large thick stone disk, and close to the surface a rougher disk.

22. A small black olla with the usual few beads and small stones, and a small green stone ornament.

The beads were generally found imbedded in dark, sticky clay in the bottoms of the vessels.

Quite a number of discoidal "markers" were found, mainly close to the surface, but some as deep as 75 cm, without pottery vessels or other objects beneath them. Some of these were very well shaped and measured up to 37 cm in diameter and 8 cm in thickness. Some of them lay directly on the undisturbed soil at the base of the dark stratum.

A deep excavation just east of the center showed dark soil to a depth of 20 to 30 cm, beneath which lay light yellow, loose soil with occasional potsherds and charcoal to a depth of 60 to 70 cm, where the undisturbed subsoil of harder decomposed granite was encountered.

Near the southern limit of the site, excavation indicated at a considerable depth a large number of boulders of large size and irregular shape, but among them were some worked stones indicating that the boulders had been placed there. It seems most probable that this region was originally low and that the boulders were thrown in to bring the height of the site up to the desired level. But a number of the stones were flat slabs and apparently carefully placed in horizontal position.

Before describing the small stream bed (78), and the intervening ground which lies to the west of the large sites just considered, a large site lying to the south on the farther side of the branch stream will be taken up, inasmuch as it closely resembles the last two sites, and is of equal importance.

Site XXXII lies about 30 meters south of the last-mentioned site, XXXI, the diameter varying between 14 and 14.5 meters. The circumference is composed of a double ring, apparently both of rudely shaped upright slabs with caps, but both poor and much disrupted. The entrances are to north and south, the former apparently the principal one facing the last described site across the small stream bed.

The entrances to this site are not especially noteworthy and are of second grade workmanship. The northern, and apparently the main, entrance was exposed, while the southern was buried deeply and discovered only after long sounding. The former (137) consists of three stone blocks or steps. The innermost lies with its front edge on the arc of the inner ring and measures 170 x 85 cm. The front side is well made, but with rounded edges, the other narrow sides being convex. The upper face is relatively flat. The second block lies on the line of the outer ring and measures 195 x 90 cm and 15 cm in thickness. The upper surface is flat, the corners and edges rounded. The outermost block is smaller and of inferior technique, measuring about 150 x 65 cm. The upper surface is relatively flat, but all sides are convex. The southern entrance (138), which was not entirely uncovered, consists of two blocks entirely inside the ring and possibly others outside. The innermost measures 180 x 85 cm, and is of second-class technique. At one point the rings are broken

by several great boulders (139), and in other parts the rings are non-existent, possibly having been destroyed. Just inside the inner ring, a number of boulders are seen at irregular intervals, and near the center are a low upright stone pillar and a flat stone slab. Like practically all the large sites, it was entirely covered with a thick growth of agave or maguey when first seen.

The principal object of interest found in this site is a small, stone-lined grave or *boveda* in the northeast section near the peripheral ring (140) (S) (Plate LIX, Fig. 2). This grave measures 175 x 75 cm, its main axis lying practically north and south. It is slightly coffin-shaped with the wider end toward the north, this end being occupied by one large, upright, thin stone slab 90 cm wide and 4 cm thick. This projects above the slab caps like a headstone. These slab caps are four in number, diminishing in size from north to south. The first, of roughly quadrangular shape and with flat under, and convex upper surface, measures 100 x 70 x 10 cm. The second, of natural lozenge shape, with convex and concave surfaces, measures 97 x 53 x 6 cm. The third measures 63 x 46 x 5 cm, and the fourth 77 x 33 x 6 cm. All had a number of smaller caps piled above them. The southern end is also composed of a single upright slab 45 cm in width and 6 cm in thickness. Five upright slabs line each side, averaging 35 to 40 cm in width and 6 cm in thickness. The grave is rather deep, the upright slabs resting at its base and measuring from 100 to 130 cm in height, their tops being from 20 to 30 cm below the level of the soil. At the base of the headstone a large stone block was placed transversely, probably to strengthen and uphold it.

Little was found in this grave. In the southern end, at a depth of 80 cm below the caps and 100 cm below the surface soil, a small olla of smoked reddish pottery with convex base and concave sides was found, which contained nothing. Scattered through the soil, however, were numbers of beads, several stone ax-heads, and several fragments of gold ornaments.

Above this grave was found a large stone mortar about the size and shape of a metate, but with depressions on both sides. It measures 35 x 28 x 15 cm, one depression being 18 cm in diameter and 7 cm deep, the other 13 cm in diameter and 3 cm in depth. Above it were also found a broken olla of polished black ware containing a long ornament of green stone and two pottery figurine whistles. An ax-head of red and one of green stone were also found, together with many beads of various types.

Many buried objects were found on other parts of this site. At a distance of 160 cm from the southeast corner of the grave and at a depth of 25 cm, a cylindrical vessel of reddish pottery with a cover, of the type apparently employed solely for mortuary offerings of value, was discovered. The practically flat but slightly convex base measures 35 cm in diameter; the straight sides, slanting slightly inward, are 22 cm in height, the rim being 29 cm in diameter. The lip on which the cover rests is of equal diameter with the base. Above the cover lay a roughly square, thin stone slab of medium size and a number of scattered beads. The cover consists of a large low bowl with vertical sides and a flat-convex base, of reddish pottery. The vessel contained four long ornaments of green stone with transverse drilling, one similar ornament with longitudinal drilling, two large batons of spatula type, four water-worn pebbles of fine stones, and two quartz crystals.

A similar vessel containing two monolithic stone axes was found near the foot of the grave, and in another sector of the site a vessel of similar type was found which contained only stones. In the exact center of the site, beneath the stone slab already mentioned on the surface and other similar slabs beneath it, a large vessel of the same type, but apparently without cover, was excavated at a depth of 30 cm. It contained two monolithic stone axes, a small stone bowl containing beads and bits of carnelian, and six other perfect and beautiful stone ornaments.

A small number of smaller pottery vessels was also uncovered on this site. One small olla contained beads. The remains of a smoked red olla contained a number of long, tubular carnelian beads. A tiny vase of black pottery containing a few beads was found beneath two typical small stone disks, like those found in such large numbers in the preceding site. Another small, black, fluted olla contained seven natural unshaped pebbles of black or greenish stone.

This site, furthermore, supplied an unusual number of objects scattered through the soil. Stone ax-heads were especially plentiful, more than thirty being here excavated. Among other scattered objects may be mentioned fragments of two gold earrings and a small gold ornament, many beads, a steatite figurine of monkey shape, a fragment of green stone ornament, a large mass of quartz crystals, a monolithic ax, and a mealing *mano*. A mealing stone which measures about 22 x 35 cm was set on its edge. This was thin and lozenge-shaped, concave on the upper surface and convex on the lower, with a slight worn depression. Since most of these objects were

perfect and undamaged, it is improbable that they were lost; most probably they were deposited with burials the mortal remains of which have long since disappeared.

In the west central portion of this site, at a depth of approximately 1 meter, was found a line of upright slabs with horizontal caps and other stones, and near the entrance was found a buried pile of large boulders, but in neither case could any conclusion be reached regarding their purpose.

As has already been mentioned, a small stream (78) enters the main stream a few meters south of the great blocks (76) already described. For a short distance of its lower course this stream parallels the main road but farther upstream turns to the south and between them is found the lowest of the large sites, XXX. Throughout this section the high sides of this stream are protected by high slanting walls built of piled natural boulders (T) (Plate XI). These walls reach a height of 2 meters in places and are separated by an average distance of 1.5 meters at the base and 3 meters at the crest. These walls extend for a distance of some 30 meters and the northeast wall is broken in several places by staircases ascending to the large sites above. The first one (129) (R) (Plate XXVIII, Fig. 1), ascending to the lowest of the large sites, has already been described. A second staircase of better construction (141) ascends at the end of the walls to the space between the two lowest sites. From this point upstream, the stream bed widens, and the wall to the west is replaced by a high hill. To the east, a low wall continues which again rises to a height of 2 meters. It is built of great boulders. Near its end, a fine staircase (132) ascends to the east, of six well-made steps generally composed of more than one slab (U) (Plate XXVIII, Fig. 2).

The space reached by these steps is in the shape of a triangle enclosed between the three large principal sites. Some 420 cm from the top of the stairs is seen a great well-made stone block of lozenge shape, measuring 215 x 110 x 30 cm. The upper surface is perfectly flat but all the thin sides are markedly convex. To the north of this and forming a line with it, though 1 meter to the front of it, are four more large similar oblong and roughly rectangular blocks, in a gently curving arc parallel with the stream (133). Two of these measure respectively 235 and 205 cm in length and 48 and 43 cm in width. For some distance to north and south of the staircase, the ground is apparently artificially raised and terraced so as to be level from the line of blocks to the crest of the high wall lining the stream. Beyond this to either side the walls are lower and the slope natural.

Just beyond the staircase the stream bed forks, the main stream with running water (78) coming from the southeast and a dry stream bed coming from the east (142). This latter contains the most interesting engineering feature seen in Pueblito. For a short distance above the fork, continuing upstream, the bed runs eastward, at first only a narrow canal 50 cm wide between almost vertical retaining walls, one low and the other some 2 meters in height. After a distance of 6 meters it widens to 2 meters, and the walls diminish in height. Five meters farther on, the walls rise to the former height, and the stream bed is bridged over with stone caps, converting the stream into a drain or tunnel for a distance of some 25 meters. So well is this done that the existence of this tunnel was not suspected until a careful survey was made, the caps in most places having become covered with soil and dense growth of agave. The bridging of this narrow stream gave facile access from the two large sites XXX and XXXI on the north side to the large site XXXII last described on the south side. The details of this drain follow.

At the lower entrance the tunnel is some 150 to 180 cm in width and 1 meter in height. The lower of the several caps is broken and fallen, but apparently originally the base of the superstructure was at a height of 60 cm from the stream bed, the covering measuring some 60 cm in thickness. This consists of a transverse bottom slab supporting longitudinal blocks, above which again are upper slabs (V) (Plate XXX, Fig. 1). The first section of the tunnel runs for 3 or 3.5 meters to a break probably caused by a fallen slab, though possibly left open intentionally. Here the drain is 150 cm in width with straight sides. The western slab cap is massive, about 2 meters in length, 1 meter wide, and 40 cm thick, the base about 35 cm above the bed of the stream. Across the open gap, which is only 1 meter in length, the next slab is much wider and thinner. The next section of the covered drain continues for some 3 meters. Here, at one point, the drain narrows to a width of only 40 cm, the walls being vertical and built of selected undressed blocks. The base of the covering is here 75 cm from the bed of the stream, the roofing being built, as before, of upper and lower transverse caps between which are longitudinal stones.

At this point, on the surface above the drain and to either side of it, are found three large and well-made stone blocks (143), the purpose of which could not be guessed. They are roughly rectangular, of excellent technique, but not quite first grade (W) (Plates LIV, Fig. 2; LV, Fig. 2). The largest one, to the north of the tunnel and partly

above it, measures 230 x 130 x 20 cm. The upper surface is fine and flat, but the side faces and edges only approximately straight. To the south of this and in a line with it, but entirely off the drain, is a second block of superior workmanship, 200 x 95 x 25 cm. All faces are straight and sharp and edges flat, but the corners beveled. These two blocks are separated by a space of 150 cm. From the southern block, a long wall (144), to be described later, runs off to the south to meet the running stream from which the drain branches. Between these blocks, but behind them, that is to say, to the east, lies a third block, partly over the drain and with one corner touching the northern block. It is slightly smaller, measuring 190 x 100 x 20 cm, but of excellent technique, with flat faces, straight edges, and sharp corners.

A few meters beyond these great blocks the tunnel covering ends, and the drain is open for a distance of 350 cm in an eastward direction, except for one crossing slab. It is probable that former covering slabs here have disappeared, but the evidence is not conclusive. The side walls built of boulders average 1 meter in height, and are the same distance apart. The covering then reappears for a distance of 11.5 meters, this section being between the large main sites. This is the best-made section of the drain, the roofing being high and thick, without holes and completely covered with soil and vegetation. Beneath, the workmanship is admirable, with vertical, straight walls, and firm, transverse slab caps. The average width is 1 meter, the height to the base of the roofing about 60 cm and to the surface 120 cm. It is composed of lozenge-shaped transverse slabs resting with their ends on the great boulders of the walls, and, above these, longitudinal slabs.

Beyond this point for some 12.5 meters some stretches of the drain are well walled, but beyond this it widens and becomes shallower with sloping sides. It is terminated by a viaduct (145) very similar to the tunnel roofing, but much thicker, by means of which a path is carried across. At present the lowest transverse block of this bridge is practically flush with the bed of the stream, leaving little space for the passage of water in floods, but this is probably due to the filling-in of the stream bed (X) (Plate XXX, Fig. 2). Beyond this the stream bed becomes a wide valley with hills on each side and many small sites on the small level places on the lower slopes.

Returning to the three large stone blocks over the tunnel, as was before stated, a long, low wall (144) runs from the end of the southern block due south until it meets the other branch of this stream with

running water. The total length is about 33 meters. The wall is low, never over 60 cm in height, and generally built of selected large boulders, but at the northern end, near the large stone blocks, the caps are of roughly shaped, quadrangular blocks; and the first two are perfectly cut, though small. Fifteen meters from this point the wall is broken by a small staircase (145a) which leads from the running stream to the southern entrance of the last large site (138). This staircase is low and narrow, about 80 cm in width. Ten and a half meters farther on, the wall meets the running stream at a small bridge (146) to be later described, from which point it turns slightly away to the southeast for another 8 meters at which point it ends. The purpose of this wall and the blocks at their beginning was not evident; it did not continue to the north on the other side of the drain.

A small and poor site, XXXIII, was investigated on the southern side of the dry stream bed just at the upper end of the drain and between it and the large site XXXI. The floods in this stream had carried away much of the ring on the northern side. The diameter is apparently 940 cm. The ring, which is largely disrupted or buried, is composed in places of large and prominent roughly quadrangular vertical granite blocks or slabs. The main entrance to the west is well made (146). A main threshold block with its outer edge on the arc of the ring measures 180 x 55 x 22 cm, and is of good technique with flat upper surface. The front face is slightly convex, the short sides markedly so, and the edges sharp. Inside of this, and at a slightly lower level, is another stone block, roughly rectangular but smaller and ruder with a slightly convex upper surface, and outside, on a lower level, are two similar blocks, a total of four.

In this site, 385 cm from the western entrance and at a depth of about 30 cm, a pile of large stones surrounded by many smaller stones was found. Close by it was found a deep depression in the natural soil, full of dark earth, red burnt clay, many potsherds and small stones, apparently a fireplace. Nothing else of importance was excavated on the site.

On the other side of the dry stream bed, beyond the viaduct (145), and southeast of the site with the great stone-lined grave, XXIX, on higher ground at the foot of the hill, one of the smaller sites, XXXIV, was examined. To the south, on the margin of the stream bed, this site is retained by a good wall (147) some 70 cm in height bounding the road (134) which runs from the main road (77) up the dry stream bed. It curves to southeast and to northeast, about half encircling the site. The site itself is on higher ground, about

2 meters above the stream bed, there being a gentle slope from the level of the site to the top of the wall. The stone ring is much buried, and the entire site nearly destroyed by a great tree and its roots. The diameter is between 9.5 and 11.5 meters with the principal entrance at the southwest (148) with a staircase of five steps. Excavation revealed nothing of interest.

Two sites of fair size and appearance were examined on low flat ground a little farther up the stream bed. The first, XXXV, consists of a double ring of rough granite and slate blocks, the diameter of the inner ring being 10.3 meters. Within the ring was observed a ring of a few large boulders like those seen on many of the sites. The entrances to this site, to northeast (149) and southwest (150), are worthy of remark. In both cases, one block lies far within the ring, the distance between them being only 490 cm. The southwestern entrance consists of three blocks in addition to this inner one. The main one is well made, measuring 175 x 75 x 13 cm, and lies with its outer edge on the arc of the inner ring. The next block, of the same size, but inferior construction, lies at a lower level with its outer edge on the arc of the outer ring. The third is poorly made, and lies entirely outside of the stone rings. The blocks of the northeastern entrance are probably similar, but are deeply buried, and were not excavated. One large fine stone ax-head was excavated on this site.

The second site, XXXVI, lies to the east on higher ground, and is protected by a retaining wall with surrounding walk. A double ring of small granite and slate upright slabs, 11.2 meters in inside diameter, surrounds it. On the lower side, the outer ring is furnished with slate caps and inside the ring are found the usual boulders. The main entrance (151) is to the south where roughly rectangular, horizontal slabs of slate, or a material resembling slate, lie on the arcs of the two rings. These blocks measure respectively 120 x 100 x 10 cm and 140 x 130 x 13 cm. They were not uncovered, and in each case the width, the second measurement, may represent two slabs laid side by side.

Farther up the valley or wide gully into which the stream bed changes were found a number of sites, all small and of no merit, typical of many found everywhere in the woods of Pueblito and probably indicating the sites of the small individual houses of the village. Six of these were examined. The first site, XXXVII, has a diameter of 760 cm, the ring being poor and composed of thin, upright slabs with scattered boulders inside of it. The entrances are

to south and north, the former probably the principal one. The block of this measures 125 x 45 cm. The second site, XXXVIII, is on slightly higher ground, the site being bounded by a low line of long, oblong stone blocks. The ring, which is very poor, with occasional slabs and granite blocks, measures 580 cm in diameter. The main entrance is to the northwest with two threshold blocks, the larger one 115 cm in length and 15 cm in thickness. Site XXXIX is on the same level as the last, the ring, apparently made of rude boulders, measuring 640 cm in diameter. The entrances are to west and east, two small and poor threshold blocks being visible in the former, one in the latter. Site XL possesses a ring of thin granite slabs, 780 cm in diameter, with entrances to southeast and northwest. The fifth site, XLI, is of similar size with a disrupted ring of granite slabs and entrances also to southeast and northwest. A fine mealing stone or metate measuring 45 x 29 x 17 cm was found at a considerable depth in this site as well as several stone ax-heads. The last site, XLII, is approximately the same size with a good retaining wall and entering steps. The ring is of small slabs.

The small stream with running water (78), after its parting with the waterless stream bed (142), proceeds upstream for an unascertained distance. For a short distance the east bank is protected by a vertical wall 150 cm high. In this neighborhood two paths cross the stream by means of monolithic bridges. One is spanned at a low level by a large slab (146) (Y) (Plate XXIX, Fig. 2), while the other crosses at a point where the stream is much confined by piers of masonry. This former slab measures 260 x 140 cm, and is of irregular thickness, 15 to 20 cm, lying 55 cm above water level. From these bridges small paths run to three or four sites on the other side of the stream.

The first site, XLIII, is one of the small, but excellent sites with a beautiful stone ring. It lies on low ground some 2.5 meters above the water of the small stream and close to the slab bridge (146) from which a small path leads to its entrance (Z) (Plate XLIV). The inner ring, with a diameter of 690 cm, is made of well-shaped, cut, and dressed, oblong, rectangular stone blocks laid in a circle and interred on their long edges. Their front faces are cut slightly convex so as to fit perfectly into the circle. The short ends are beveled to fit the radii, so that all originally fitted closely into a perfect circle. The faces are perfectly flat, and the edges sharp and altogether admirable. The best-made blocks are near the entrances, the first eight near the north entrance measuring 85, 75, 70, 55, 70, 60, 48, and 42 cm,

respectively, in length and from 15 to 25 cm in thickness (or width), the width (or height) being unascertained. The outer ring, which abuts closely against the inner, consists of trapezoidal slabs lying flat and practically on the surface level, about 25 cm below the level of the top of the inner ring. These blocks are cut in a trapezoid or wedge shape so as to fit tightly into the circle, but are smaller and less well made than those of the other similar sites, those near the entrances being superior to the others. In length they vary from 75 cm near the entrances to 60 cm at the sides, and in front width from 51 to 25 cm, the rear widths being generally narrower. The first two to the west of the north entrance measure respectively 75 x 57 x 73 x 38 and 72 x 64 x 69 x 51 cm. The front edges are upheld and kept at the proper height by thin vertical slabs.

The entrances are to north (152) and south (153), the former probably the principal entrance, the latter destroyed and fallen into a gully. The north entrance consists of three large, well-cut, and dressed stone blocks. The main and central block with its outer face on the arc of the inner ring measures 150 x 50 x 25 cm. The upper face is flat and the edges sharp, but all four side faces are convex, the rear face markedly so. The inner block lies at the same level as this but is smaller, measuring 125 x 48 cm. The outer block makes an integral part of the outer ring but is rectangular and larger, apparently thicker and more deeply buried than the ring blocks; it measures 140 x 75 cm. Within the inner ring and close to it were found the small boulders set at regular intervals which are so frequent on these sites. In the center of this site a number of stones were found at a slight depth; but, as uniformly on the smaller sites with good masonry, excavation revealed nothing else of interest.

Behind this site is a low wall running slightly southeast and enclosing a little amphitheater. In places it reaches 1 meter in height, but is of poor construction. Just west of it is another small site, XLIV, somewhat similar to the last, but of inferior workmanship. It apparently consists of a double ring 660 cm in diameter, but, although of superior construction to the east, near the entrance, no trace of rings or entrance was found to the west, though possibly they were deeply buried. The inner ring consists of very thin, square, upright slabs, 25 x 33 cm in width, 35 cm high above ground, and 2 to 4 cm thick. The outer ring is composed of cut blocks of trapezoidal shape like those of the preceding site. One measures 59 x 29 x 57 x 22 cm, and is 8 cm thick, another 62 x 28 x 33 x 13 cm. The front face is beveled so that the marginal thickness is 4 cm. The entrance at the

east is made of the usual blocks, smaller than ordinary, the principal block, well made, measuring 125 x 46 x 12 cm. Excavation revealed only a mealing stone measuring 45 x 30 x 14 cm.

The last two sites are smaller and typical of those found up the dry stream bed and on the more distant parts of Pueblito, situated, like them, on higher ground. From the small excellent site, XLIII, on low ground near the stream already described, a path with ascending stairs (154) leads up the slope of a low hill to the west. The first site, XLV, lies at the head of these stairs about 30 meters northwest of the lower site, and some 360 cm above it. To this site there is a steep rise on all sides, except to the north where a path (155) runs along the crest of the ridge to the last site on a slightly higher hill. In places there is a good retaining wall (156) at a distance of 3.5 meters from the outer ring.

In addition to the stairs from site XLIII below, another staircase (157) ascends through the retaining wall from lower site XLIV. An inner ring of thin, vertical, rudely shaped small slabs and an outer ring of similar slabs with horizontal slab caps bounds this site, the inner diameter being 10.3 meters. The entrances are to southeast (158) and northwest (159), the former apparently the principal one. The northern entrance consists of five large stone blocks, while of the southern entrance only four could be verified, and of these the innermost is so deeply buried in accumulated soil that it was not uncovered. The upper visible block with its front face on the arc of the inner ring is of good technique, and measures 146 x 58 x 20 cm. The main and best block, with its surface on the level of the outer ring, but with its front edge falling short 25 cm of reaching its arc, measures 150 x 70 x 13 cm, and is very well made. The lowest visible block is well made, but thin, tilted, and broken; it measures 153 cm in length and 8 cm in thickness.

Of the five blocks composing the northern entrance the uppermost and innermost is entirely within the ring, the second probably originally at the edge of the inner ring (both of these had been overturned by a great tree root), the third on the level of the outer ring, but slightly inside of its arc, the fourth on the edge of the outer ring, but below its level, and the last and outermost entirely outside of the circle. Their respective measurements are ? x 55 x 9, 135 x 50 x 12, ? x 60 x 14, 125 x 50 x 12 and 125 x 60 x ? cm. All are of second grade workmanship. Within the ring of this site are the usual small boulders in a ring close to the inner ring and at intervals of about 2 meters. Excavation revealed nothing.

The last site, XLVI, is small and situated on an isolated hill a short distance north of the last and at a slightly higher level, the two being connected by a path (155), the descent to the other sides being steep. The ring is very poor and made of boulders, no dressed stone being found. The diameter is about 6 meters, and entrances are to northwest and southeast. Nothing of interest was found, solid earth being encountered at slight depth in the test excavation. The site was probably merely typical of many others found scattered throughout the forests of Pueblito.

Pueblo Bernardo. Pueblo Bernardo is a small village-site in the deep woods about an hour's travel in from the half dozen huts which form the settlement of Cañaveral on the coast at the mouth of the Rio Piedras (see p. 50). As at Pueblito, the forests are completely uninhabited, the nearest habitation inland being at a considerable distance, but, being a much smaller place, it is generally unknown to and unnamed by the residents of the coast. The site was therefore named "Pueblo Bernardo" in honor of its discoverer, Bernardo Mendoza, a resident of Cañaveral, who found the place while hunting in the mountains, brought it to the attention of Mr. Manuel Chediak of Santa Marta and conducted the expedition to the site. The site is probably but one of many such, some larger and some smaller, which fill the uninhabited and unexplored mountain forests in the neighborhood of Santa Marta.

The neighborhood of Pueblo Bernardo is very precipitous with steep hills and several streams, but is not rocky except in the stream beds. Near the apparent center of the village, nearly every available flat space on the hillsides is utilized as a house-site; paths, paved and unpaved, and steps and staircases are frequent, and bridges over the streams occasional. Few potsherds were seen on the surface, but several portions of large burial urns were found as well as a surprisingly large number of stone implements which were assumed to be *manos* or mullers, though they may have been employed for finishing stone work. In the rock crevices, especially those in the steep rocky stream beds, were found great quantities of broken pottery vessels, a number of them practically complete.

From Cañaveral on the coast to Pueblo Bernardo the present trail in many places encounters traces of the old path, paved in places. When the village is reached, it is seen to occupy both sides of a small mountain stream bed. The finest site observed in the village occupies a level terrace in an angle made by the main stream

and one of its tributary ravines flowing from the south, the main stream coming from the southwest (Plates XXXIX and XL, Fig. 2).

The level space occupied by this site is partly artificial, apparently created both by cutting at the base of a high hill to the rear and by filling at the edge of the stream. The latter was made possible by the construction of a wall (A) at the edge of the stream bed. This wall is built mainly of large natural boulders chinked with smaller stones, but at present much of it is fallen on account of freshets and the growth of large tree roots. Apparently, however, a staircase originally ascended from the stream to the terrace (B) in front of the house wall. This terrace extends the full length of the house wall, averaging 450 cm in width. To the east, however, the ground is not terraced, descending in a natural slope to the contributory stream.

This site is of a type somewhat different from those observed and described at Pueblito, being rather semicircular and not equipped with the circular ring heretofore almost universal. To the rear it is bounded by the foot of a hill (C), while to the front a curving wall (D) of excellent construction forms the anterior boundary. From near the foot of the hill to the west it swings along the northern front of the site to a great boulder (E) to the northeast at the angle of the junction of the two streams. South of this boulder and parallel with the tributary stream, the wall continues to a second large boulder (F). To the west side the wall also ends at a smaller boulder (G) some 1.5 meters from the foot of the slope. The front wall, extending for 730 cm between the two boulders, is of excellent construction, especially near the staircase in the center which faces a little west of north. For the greater part it is built of rectangular dressed stone blocks, especially for the 350 cm to the west of the steps. These blocks, however, are of irregular sizes, the faces slightly convex, the edges not sharp, and the corners rounded. The blocks are, for the greater part, laid in tiers, four layers being the norm, the average height of the wall being about 70 cm.

Farther from the steps to both sides the lowest tier disappears, possibly being covered with earth. On the lower tiers the blocks are laid with their long faces to the front, but the upper layer is laid with the short faces to the front, the blocks sloping with their high edges at the edge of the wall. The construction is especially excellent at the western edge of the steps where four superimposed blocks are laid with their edges perfectly flush. All are of the same length, 75 cm, but the upper and second (from the base) stones have a

width of 40 cm and a thickness of 10 cm, while the third and lowest blocks have a width of 25 cm and a thickness of 15 cm. This construction may indicate some knowledge of the principle of joint-breaking in masonry construction, but this was noted nowhere else in the Tairona region.

The section of the wall to the east of the steps is also well made for a distance of 240 cm, at which point it turns abruptly toward the south for a distance of 1 meter to meet the great boulder (E) at the corner. The construction is similar to that to the west but slightly inferior. Occasionally the joints are broken, but lines of weakness are also evident. To the south of the boulder the wall runs southward for 240 cm to the last boulder which is 180 cm from the foot of the hill.

The entering steps (H) are composed of three great rectangular cut blocks, a fourth and lowest being on the surface level and serving as a threshold. Their measurements from the uppermost to the lower are 115 x 55 x 15 cm, 85 x ? x 18 cm, and 85 x ? x 25 cm, the upper block being on a level with the top of the wall.

The irregular site thus enclosed measures roughly 840 cm in width and 530 cm from back to front wall. Excavations on this site revealed that, as assumed, it had been largely made by filling in near the wall. An excavation in the center of the site revealed dark humus for 40 cm, yellow sand for 35 cm, more compact sand or gravel for 15 cm and decomposed rock at a depth of 130 cm. Occasional potsherds and charcoal were encountered throughout.

The old road which leads to Pueblo Bernardo passes by the sites below to be later described and leads into the main stream in front of this site from which point it proceeds up the side of the stream bed only a fraction of a meter above water level. Although largely disrupted, the large flat slabs of which it was made are still visible, some of them still in place (Plate XXIII, Fig. 1). The slabs are large, thin, roughly quadrangular, and well cut and placed, supported by smaller stones. The road proceeds, well paved, to the west up the stream for a short distance when it becomes completely disrupted and lost.

A short distance farther up this stream bed a paved path crosses the stream at right angles. Apparently it originally crossed on a bridge, but this has now disappeared, leaving a gap (Plate XXIII, Fig. 2). Farther up the stream, however, there is a good bridge, formed by a large flat slab thrown across a chasm. To the left or south this transverse road is well made, leading to the foot of a beau-

tiful long staircase. Six large flat slabs are in line, with flanking curbs on the east, those to the west missing.

The stairway which ascends from here up the hill behind the lower site already described to several sites on a terrace south of the latter is the finest staircase seen in the Tairona region (Plate XXIV). Its forty-eight steps ascend at an angle of thirty degrees for a distance of 16 meters, the lower path to the stream edge adding another 6 meters. The steps range from 10 to 25 cm in height and from 20 to 48 cm in width. The uppermost six steps (Plate XXV) are especially high, from 15 to 25 cm, the average being 20 cm, while the others are lower, ranging from 10 to 15 cm with the average about 12 cm. The upper seven are also wider, ranging from 30 to 48 cm, while the others vary from 20 to 36 cm. In almost every case, however, the step is twice as wide as it is high, making the thirty-degree slope. The uppermost step measures 110 x 45 x 17 cm, and the upper eight steps are all above 90 cm in length, but from that point downward they gradually decrease in length to 50 cm. Normally there are no vertical stones, the entire rise of the step being occupied by the single block which generally rests on the rear edge of the next lower step, the overlap of the stones being only from 3 to 8 cm. But a few of insufficient height are braced by stones below. All are made of roughly rectangular, oblong, cut stones. On either side is a curbing or balustrade, that to the east being nearly intact, that to the west somewhat disrupted. To the sides of the upper four steps are well-cut and dressed slabs, but below these are natural uncut boulders. The lowest step, however, also has wider and better cut stones to its sides, consisting of two slabs side by side. The upper step, which is on the edge of the terrace wall, has two large flanking stones of equal size to the west and one to the east, these being placed at right angles. These are each 110 cm in length, from 60 to 65 cm in width and 15 to 20 cm in thickness.

The staircase ascends the steep edge of a projecting point, gullies being found to either side. At the head of the staircase is a more or less level space likewise bounded by the ravines on either side, the steep slope down with the staircase to the front and the steep rising slope of the higher hill to the back. This space is occupied by two sites to which the staircase leads, the posterior one at a level a little higher than the anterior.

The lower site is surrounded by a terrace to which the great staircase leads, this terrace being for some distance protected by a retaining wall on the edge of the slope, even with the top step of the

staircase. It is especially good on the west side where the terrace was utilized as a path circling the lower site to lead to the upper one. Of narrow width in front of the staircase, the terrace widens considerably to the sides. The site itself is roughly circular, measuring 9 meters from front to rear and 11.8 meters from side to side. The circle is composed for the greater part of irregular natural boulders, but the stones on either side of the entrance are better made and placed, somewhat comparable to those on the lower site just described. It is much disrupted to the south (rear) and west. The entering stairway is at the north, facing the head of the long staircase, and consists of large stone blocks, considerably disrupted. The uppermost and best-made block measures about 120 x 60 x 15 cm. The site, being one of the first examined, was trenched, but showed no evidences of aboriginal excavation, the upper humus being thin with occasional potsherds at the base or on the surface of the light gravel subsoil.

The site to the rear of this is on slightly higher ground and lies close behind it, less than a meter separating the rear of the circle of the lower site from the front of the terrace wall of the upper site. Like the lower site, it is surrounded on three sides by a terrace or path, the rear of the circle touching the base of the ascending hill behind. It was probably partly made by cutting at the base of the hill and filling in toward the front. The terrace is of irregular width, the retaining wall being built of selected, but unworked stones, poor or non-existent in many places. To the north it is broken by a flight of steps, these being not immediately behind the anterior site, but slightly to the west to lead to the terrace path which circles to the west of the lower site. These steps, however, are completely disrupted by the roots of a great tree (Plates XXXVII and XXXVIII, Fig. 1).

The upper site itself measures about 10 meters in diameter, the boundary ring being for the greater distance poor and made of rough natural stones. To the front, however, it is very well made with an excellent entering staircase in a line with the steps in the terrace wall. This stairway (A) is built of three large rectangular blocks with a fourth smaller threshold block outside. The wall to either side of this stairway is made of well-cut, dressed stone blocks, very similar to those in the wall of the site at the base of the hill below.

This site was trenched and partially excavated, but nothing of interest encountered. Beneath the 15 cm of humus, at the base of which a few potsherds were found, the undisturbed subsoil of decom-

posed rock was reached. No further sites were observed in this section of the village.

The paved path which runs down the stream bed below turns away to the north just in front of the lowest site and continues along the more or less level slope of the hillside parallel with the lower course of the stream, but at a little distance from it. On this northern side of the stream the road skirts the base of a high hill with a steep path, in places supplied with stone steps, ascending its slopes. On successive level terraces on the slope of this hill, one above another and connected by the aforesaid path, seven small sites were found, the size and merit decreasing with the height.

The lowest site is irregular and roughly triangular, measuring 10 x 10 meters. A wall, very well built in places, and with an excellent stone stairway leading down, retains it. The six successive higher sites are distinctly poorer, practically all without retaining walls or stone rings, the ascending path supplied with steps only in the steepest places. These sites are probably representative of many which doubtless might be found throughout these woods. A metate and a rude pottery vessel were found on one of them.

The two confluent streams which meet at the lower site before described form a larger stream which flows generally northward through the narrow ravine. In its bed no sites were observed, but on the western slope, at some distance from and above the stream and practically on the level of the lower site first described a relatively level terrace extends for some 150 meters along the slope of the hill parallel with the stream. Three sites occupy this terrace, the marginal sites roughly circular, the central site quasi-rectangular.

The path which runs down the tributary stream from the foot of the great staircase, paved with large slabs, turns northward from the stream in front of the lower site, and passes these three sites above mentioned. For the greater part it is unpaved, but on the steep slopes it is replaced by stone steps. It passes behind the southern circular site, behind or through the rectangular central site and in front of the northern circular site and then apparently out of the village and toward the coast. Just before reaching the first site a staircase proceeds up the slope to the hill sites already mentioned. Another branch diverges just after crossing the stream and turns eastward across the main stream which it crosses on a bridge of poor construction. On the other side, a mediocre staircase ascends the opposite steep bank of the stream on the crest

above which several sites of poor construction and small size may be seen.

The southern site is the largest observed in Pueblo Bernardo and the only one which bears any resemblance to the majority of the sites at Pueblito (Plate XLI). Flat and perfectly circular, it measures 10.3 meters in diameter. The ring is composed for the greater part of quasi-rectangular cut blocks or slabs of stone, on or but slightly above surface level, but to the east or stream side this is replaced by a high retaining wall, this side of the site having been apparently filled in, and at the southeast corner by two great natural boulders, or rather one great boulder split by a fissure through which narrow passage a path enters from the south. The retaining wall which runs from the edge of this boulder relatively straight and parallel with the stream connects with the great retaining wall of the next central rectangular site. This is composed of large natural boulders piled in a slightly slanting wall in places 160 cm in height, but now somewhat fallen and disrupted.

From this wall the circular ring branches off, very well made to the north where it averages 30 cm above the level of the central site to the north, and composed of well-selected stones of uniform thin size, some of them probably trimmed, generally oblong with the short edge outermost and placed in two layers or tiers. Some of them are apparently slightly wedge shaped and with slightly convex outer edges, like those at Pueblito. In most cases they lie with their outer edges high, slanting toward the back and interior of the site so that their rear edges are beneath the level of the surface of the site. As the ring swings to the west, the size and quality of the stones increase, the length increasing from an average of 75 to 100 cm, and the width from 40 to 70 cm. The thickness remains at an average of 10 to 15 cm. At the northwest corner the main entrance is seen, the usual slabs being here replaced by one of triple width, measuring 185 x 92 cm. It is quite rectangular, but with a convex front edge to fit the arc of the circle and a flat upper surface. On this surface, however, to the right of the center, is a depression 5 cm in depth and 25 cm in diameter.

Within this threshold stone is another of smaller size, now broken in three pieces. To the southwest of this entrance the ring continues in a perfect arc until it meets the great boulders to south and southeast. Near the entrance the slabs are especially fine, perfectly flat and well cut, dressed and placed, their short and somewhat convex edges outermost. The largest of them measure 90 to 115 cm in length

and 60 to 70 cm in width. To the west the stones are of inferior construction, but again on approaching the terminal great boulders they increase in quality, the last two stones being of equal size and placed close together so as to form a combination 110 cm square.

Within this site some scattered boulders and several small low mounds were observed. The largest of these mounds was in the exact center and stood some 35 cm above the general level. A second mound to the north was separated by a slight ditch, while a long low mound lay to the west. The purpose of these low mounds was not ascertained, as excavation in them and elsewhere on the site revealed nothing. Dark humus with occasional potsherds was found in the upper levels, then yellowish gray earth and finally hard rock at a level 90 cm from the top of the mound and 60 cm from the surface of the site.

The central quasi-rectangular site to the north of the circular site is probably not a true house-site, but more probably a plaza separating the two circular sites; it possesses no ring, but is bounded to north and south solely by the rings of the other sites. It measures 28 meters in length from north to south and from 16 meters in width at the south end to 13.5 at the north end. The lower or eastern side is protected and upheld by a megalithic retaining wall, in places 220 cm high, built of very large natural boulders piled with a slight slant (Plate XII). This wall is 26 meters long, inasmuch as it retains, at least in part, the flanking circular sites also. Entirely fallen in one place, it is possible that a staircase formerly existed here. On the upper tier some of the stones are dressed. The southern boundary of the site is made by the circular ring of the southern site, and the western limit by the irregular foot of the hill behind. At the northwest corner, however, a low retaining wall is seen, and from this a line of small stones swings to the east to meet the end of a larger and straighter line which forms the northern boundary. This line is composed of six large oblong stone blocks, well dressed and laid in an approximately straight line. All but the fifth block rest on their faces, that one on its edge, but it is possible that all originally lay on their edges and that all the others have fallen. They measure from 75 to 190 cm in length, the average being 141 cm, about 55 cm in width and from 20 to 25 cm in thickness.

The surface of this site is quite irregular, and no definite architectural features were observed on it. A few points of importance, however, were observed.

The northern third of the site is perfectly level and without superficial stones, but the southern two-thirds is very irregular, possibly caused by excavation in early colonial days. This section is also slightly higher in level than the northern portion and contains many stones and large boulders on the surface. Twelve of these boulders appear to be arranged in a rude ring about 10 meters in diameter, but they are not evenly spaced or accurately placed. The center of this ring appears to be 13 meters from the eastern retaining wall and 930 cm from the ring of the site to the south. The surface around this ring is comparatively level, but the center slightly depressed. Eight meters west of this at the foot of the western slope is found a slight niche made of a line of small upright stones in a concave arc, 4 meters long, with a slight depression in front of it. In the northwest portion of the site was a small mound on which rested a mealing stone and several other unworked stones. In the approximate center were two small mounds with small stones on their peripheries. These mounds were all excavated.

Numerous excavations were made in various portions of this site, but with no material results or important deductions. Generally the undisturbed subsoil was encountered at a slight depth under the dark humus which contained occasional potsherds and charcoal. In the center of the boulder ring, however, disturbed soil was traced to a considerable depth. A shaft or core of very dark soil, some 50 cm in diameter, containing much charcoal, many potsherds and a few beads of quartz crystal, was followed to a depth of 50 cm. It was compact and solid without much ash, and may have represented the excavation for the central post of a house. Beneath this, light mixed soil with occasional pockets of charcoal, potsherds, and large and small stones extended to a depth of 125 cm. To the east, however, the dark, carboniferous soil extended in a tunnel to a depth of 60 cm, overlaid with lighter soil. Another test excavation near-by disclosed the same phenomenon, an upper stratum 1 meter in thickness containing few potsherds and no charcoal overlying a stratum of dark soil with a higher percentage of charcoal and potsherds. Evidently, either an excavation had been made in aboriginal days and then filled up, the camp débris being first shoveled in, or else the original surface had been that much lower and the terrace artificially filled in. The great height of the eastern retaining wall suggested that the latter may have been the case.

The northernmost of the three sites (Plate XXXVIII, Fig. 2) lies on approximately the same level as the preceding site, and is of quasi-

circular or semicircular shape, 13 meters from north to south and 11 meters from east to west. On the south side it is bounded by the line of stone blocks (A) which separates it from the preceding site, and on the west by the unmodified and irregular foot of the hill to the back (B). The northern boundary is formed by a curving retaining wall (C), the ground from here falling abruptly to a tributary stream bed. This wall is rather crudely built of undressed stones, in places more than a meter in height, but somewhat disrupted. It is possible that a staircase ascended through one of the fallen sections. It measures some 16 meters from the hill slope at the west to the northeast corner, swinging in a gentle curve.

The eastern edge of this site is the section of maximum interest. The curving northern wall breaks at an angle at the northeast corner, and continues for 3 meters more to meet the stones of the eastern entering staircase, the construction being still of inferior technique. The flanking stones on either side of the staircase (D) are rectangular and dressed, like those of the other staircases noted before, but not so well made as the others. Those of the upper tier measure 80 x 40 x 15 cm and 75 x 45 x 10 cm, the lower stones being more irregular. Each has several small cup-shaped depressions in it. The staircase consists of five steps, but is of poor construction. The blocks are apparently not dressed, but merely selected for size and shape. Only one is level, but there is no evidence of modern disruption. They average 90 to 110 cm in length and half of that in width. The third or middle step is horizontal, the upper and lower tilted forward and the second and fourth tilted back, possibly an intentional arrangement. South of the staircase the wall continues, of equally poor construction, for 430 cm slightly toward the southwest until it ceases at the point where the gradually rising terrace outside gains its level.

East and southeast of this site this narrow terrace (E) parallels the wall, gradually rising from the level of the foot of the steps to the level of the site itself at the southeast corner. This terrace is therefore practically a slanting path or ramp leading past this site to those farther south, and is neatly paved from a point in front of the steps until it meets the line of blocks (A) forming the southern boundary. This paved walk measures from 200 to 250 cm in width and some 5 meters in length, paved with well-selected, but undressed stones. It is protected and retained on the lower side by a wall (F), 525 cm long, paralleling the outer wall of the site above. This wall is well built, but not high, the stones being natural and uncut.

This terrace is entered by a staircase (G) immediately in front of the steps entering the site and at a distance of 450 cm from them. The stairs lead down the southern side of a great boulder on the edge of the terrace, but the steps are laid in a spiral around this boulder so that the lower step faces approximately east, while the upper step faces relatively south. Seven steps comprise the staircase, originally fairly well made, but now somewhat disrupted. The uppermost step measures 135 x 65 x 25 cm, the others being of somewhat shorter length and measuring from 30 to 45 cm in width and from 10 to 20 cm in thickness. Two large boulders flank the upper step and possibly all the steps originally possessed flanking stones.

The interior of the northern site is practically level but slightly higher in the center. Excavation showed the upper dark soil to be very thin with few potsherds.

Near the foot of the terrace steps, on a lower level closer to the stream, was found a small site, with a retaining wall of large boulders on the lower side.

HIGH MOUNTAIN SITES

Vista Nieve. This is the hacienda of M. A. Carriker, well-known ornithologist. It lies in the cool, humid forest zone of the San Lorenzo Mountains behind Santa Marta at an elevation of some 5,000 feet. The terrain is rugged and precipitous with steep forested hillsides and many ravines. Plants and vegetables of the temperate zones such as corn, potatoes, and arracacha grow well here, as well as the hardier tropical plants such as bananas and sugar-cane, but manioc and sweet potatoes do not thrive.

Evidences of aboriginal occupation are visible everywhere, and the pre-Columbian population must have been large. Terraces are visible on the slopes wherever these are cleared, twenty or thirty being seen in the vicinity of Mr. Carriker's house. The average diameter of these is possibly 4 to 6 meters, but larger and smaller sites abound. They occur wherever the contour of the ground is favorable for the making of a terrace, in no regular arrangement (Plate XV, Fig. 1). Apparently these terrace sites were usually made by excavating on the rear side of the hill and filling on the front side, a low wall of piled stones generally protecting and retaining the terrace at the front. Apparently some, at least, of these terrace sites were paved with natural flat stone slabs. A stone metate was found with practically every site, either on it or immediately below it on the slope. These slopes below the sites are covered with potsherds, generally of large, thick, coarse, undecorated ollas with everted rims, probably

broken and discarded water jars. The metates are sometimes of well-shaped quadrangular blocks of granite or other igneous rock, at other times of rough unshaped pieces of stone. Some are deeply hollowed out, having obviously seen much use, while others are shallow and apparently new. All were probably used for the grinding of corn.

These sites, which evidently formed a village, are connected by a series of horizontal paths which run in a more or less parallel direction, along the slopes at different heights. These paths are connected by vertical paths or more often steps, running up the slopes. The horizontal paths are generally paved with unworked, flat stone slabs and frequently are shored up on the outer side by low walls, while the vertical steps are generally of somewhat larger blocks of stone. The latter generally run up the small gullies between which, on the projecting hillsides, lie the terraced sites. From the vertical paths short steps lead up to the actual sites.

On the more level ground near the main stream where Mr. Carriker has his mill, much of the space is paved with large stone slabs. Here was apparently the central portion of the village.

In the uncleared forests around are many other evidences of aboriginal occupation, such as paved roads, house-sites and cairns or piles of stones, placed upright stones and rocks with pictographs.

Río Frío Arriba. Río Frío is one of the several large streams whose sources, known by several different names, are on the western slopes of the Sierra Nevada. They flow to the west, debouching into the Ciénaga Grande between the Sierra Nevada and the Magdalena River after irrigating thousands of acres of banana plantations.

Aboriginal sites are found in many places on the ridges between the streams. At Cerro Mico, a half day's journey above the town of Río Frío, the remains of a small village were found which contains some very well-built sites, terraced on the hillsides. The anterior retaining walls are unusually well built, with selected blocks of natural rectangular shape. One of these walls measures 140 cm in maximum height, the height varying according to the contour of the ground so that the top is approximately level. The largest blocks are at the base but none is of great size (Plate XVI, Fig. 2). Small slabs are frequently used to chink the interstices. Here was found the only instance of the use of a cementing medium like mortar. Probably it was employed in other places, but has disappeared in the centuries of rain. According to Associate Curator Henry W. Nichols of Field

Museum, who analyzed bits of the material, it proved "to be merely much sand cemented by a little clay."

This wall is practically perpendicular, a feature facilitated by the rectangular shape of the blocks used, and is the best wall seen by the expedition. It runs east and west, the site facing approximately south, but the wall turns abruptly at an angle at either end so as to surround the site on three sides. The upper tier consists of large paving slabs which project beyond the face of the wall; a sample slab measures 120 x 90 x 10 cm. Similar slabs appear to pave the entire site. The wall is broken in one place to admit an entering stairway, of good construction, consisting of three or four large, broad, stone steps, 160 cm in width. Above this site, but apparently enclosed by the same large wall, are several more terraced sites with low walls and upright stones.

Other sites were superficially observed at a distance of several miles on a ridge between the Quebrada Guaymero and the Rio Orihueca, an affluent of the Río Frío. These sites are large, apparently all paved and with good entering steps. The guide mentioned one with a large post in the center. My assistant, Mr. Hawkins, reported having seen a very high and practically perpendicular retaining wall, some 9 meters high, with selected natural rectangular blocks bound with mortar. (Having just passed a night without water, the impulse to return and verify these reports was overruled by thirst.)

On the upper Orihueca River near the Arhuaco village of San Andrés, the westernmost Indian village, Mr. Hawkins observed some twenty terraced sites with circles of uncut stones, some 60 cm high and 6 to 7 meters in diameter, with a road about two meters in width traversing them which was paved on the slopes. He also observed a large red pottery urn of the type of Plate LXIII, Fig. 5, which had been excavated or discovered and put to modern use.

Sierra Nevada. The highest parts of the Sierra Nevada, above the regions occupied by the present Arhuaco Indians, are practically bare of archaeological remains; none was observed. The treeless paramos and the cool, misty, boggy regions of the clouds near timber line at least were probably uninhabited. Below this, in the present Arhuaco region, occasional archaeological evidences are seen but very few and far inferior in type and in interest to those near the coast.

On the upper Rio Don Diego occasional terraced sites of poor construction were found, some of them with anterior retaining walls and paved paths, but all much inferior to the sites nearer the coast. On many of them stone metates were seen.

Much of the present Indian trail from upper Don Diego to the present Indian village of Palomino follows a broad road, unpaved, but in places 3 to 5 meters broad, and frequently cut through hillocks in order to reduce the grade. Several stone metates were noticed on this road, and archaeological evidences are more frequent near Palomino.

San Miguel. Near San Miguel, the largest village of the Arhuaco Indians, at an elevation of 5,500 feet, many unused terraces and other archaeological evidences were observed, but of course these could not be certainly designated as pre-Columbian, similar terraces being used by the present Arhuacos for growing coca. Similar terraces were observed in frequent places along the Macotama River above San Miguel as far as the village of Macotama, above which no archaeological remains were seen. Macotama, however, is the highest village along this stream. Some, if not all, of these terraces were claimed by the natives to be of considerable age. The terraces, which were doubtless for agricultural purposes, were found either in the moderately level stream beds, or on the lower slopes of the steep hills. The latter are naturally of slight width and retained by more or less parallel walls of piled stones, those in one place being 30 to 50 cm in height and 2 to 3 meters apart.

The most interesting of these structures, and the only one of importance, differing from the usual run of rudely made flat terraces, and retaining and division walls, is a stairway made of immense, rude, flat-topped boulders by which the road ascends from the bridge crossing the stream below to the high natural river terrace on which stands the present village of San Miguel (Plate XX, Fig. 2). At present it is largely disused on account of the difficulty in ascending the high risers of the boulder steps, and the present natives have worn a path beside it. Why the earlier population should have gone to the immense labor of building this megalithic stairway is incomprehensible.

At the top of the megalithic stairway a relatively flat terrace is met, probably an ancient river terrace, on which artificial terraces and walls are quite frequent. A paved road runs from the top of the great stairway to an enclosure surrounded by several relatively high walls, probably modern, within which are several modern temples. This paved road crosses a number of low parallel stone walls, now hidden in grass, some 30 meters long, 45 cm high, and 350 cm apart.

Through the center of the terrace runs what may be a great depressed road, some 40 meters in width and some 2 meters below the

general level, slightly sloping and cleared of stones. It comes to an end at the steep crest of the descent to a ravine from which point an old paved path of single stones descends to the water. The terraces of this upper flat give the appearance, not of agricultural, but of architectural terraces for house-sites.

Pueblo Viejo. Much of the modern road from Pueblo Viejo, a village of half-blood traders on the edge of the Arhuaco country, at an elevation of 2,000 feet, to Dibulla on the seacoast, includes what is probably one of the large pre-Columbian roads. In places it is 4 to 7 meters in width, straight, wide, and level, and frequently cut through sudden rises in level. Generally unpaved, in places where stones are available, and especially on grades, it is paved with several parallel rows of selected paving boulders. The best stretch of this road was found near the archaeological site of Bongá, described below. At this point the road runs above a cut-bank of the river with a relatively steep descent from the road to the water, and an equally steep ascent on the inner side of the road. The liability to erosion was probably particularly great at this point, the prevention of which may have been the main purpose of the paving. The paved stretch measures some 200 meters in length and 2 to 3 meters in width. Three parallel rows of lozenge-shaped boulders 75 cm in average length and 40 cm in width form the most perfect section of this road.

Bongá. This is the name applied locally to an ancient village on the road from Dibulla to Pueblo Viejo. Here many house-sites were discovered on the sides and crests of the wooded hills, generally of small size and made with retaining walls on the lower side. Walls of other types, occasional paths, upright stones, terraces, and other evidences of occupation were observed here, but no architectural features comparable to those seen in the Santa Marta region. No objects of especial interest were excavated during the several days' work here. In one terraced house-site in the center of which stood two upright stones, a burial urn with cover was excavated. The urn was of the shape shown in Plate LXIV, Fig. 1, 40 cm in width and 35 cm in height, made of a blackish, gravelly pottery, reddish on the exterior, but with a black, unburned central core. A large pottery bowl was inverted over it as a cover, this being of the type of Plate LXIV, Fig. 3, 35 cm in width, 14 cm in height, made of a buff gravelly pottery, poorly baked, 1 to 1.5 cm in thickness. Its inverted base lay at a depth of 20 cm. The urn contained two beads, one tubular and one ovoid, and one molar tooth, probably the sole evidence of an urn burial. Near the front wall of this house, a much rusted iron

blade was found at a depth of 60 cm. It seemed too deep and too imbedded in the rocks to have been left by treasure-hunters, and may have been left there at the time of the building of the house-wall which may quite well have been in colonial days.

Another site furnished two urns laid on their sides, mouth to mouth, at a depth of 100 to 150 cm. Both were of the type shown in Plate LXIV, Fig. 2, made of pink buff pottery of a gravelly texture, 34 cm in height and 43 cm in width. The surface was generally red, but burnt black in places. One contained traces of bones, the other only one small, red bead. Apparently buried in undisturbed soil, they seemed to have been inserted in a pocket excavated at the base of a shaft.

In other excavations potsherds of polished black pottery were exhumed, of a texture and type of decoration identical with those of the Santa Marta-Pueblito region.

A large ovoid boulder with a flattened upper surface, possibly 100 x 75 cm in dimensions, in the center of which is a deep depression about 22 cm wide and equally deep, and possibly employed as a mortar, was the only other object of interest seen at Bongá.

DISTANT COAST SITES

Between the cape of San Juan de Guía and Dibulla the seacoast is low and wooded to the beach and broken by many streams which take their rise in the snowy mountains. From west to east the most important are Rio Piedras, Mendiguaca, Goachaca, Buritaca, Don Diego, Achiote, Palomino, Negro, Ancho, Cañas and Dibulla. All but the last flow through unexplored territory between the highland country of the Arhuaco Indians and the seacoast, and probably each valley contains many villages of the pre-Columbian population, but these have been unvisited since the days of the conquest when they were probably despoiled of their richest "huacas." The larger streams, Mendiguaca, Goachaca, Buritaca, Don Diego, and Palomino are frequently mentioned in the literature of that period. A plantation established by the French at the mouth of the Don Diego has been maintained for some years, and is the only settlement along this coast. This stream is therefore the best known, and its archaeological remains are most renowned, some of their contents having found their way to European museums. But probably each of the streams would afford as rich an archaeological field were it properly explored. The river valleys closer to Dibulla have been much more worked by the *huaqueros* from that village. Mr. Hawkins

descended the Palomino from the village of that name nearly to sea level, following a large old road, and reported finding several ancient village-sites with large numbers of house-sites. The latter are of rings of natural boulders with an average width of 4 meters. None is of unusual size. The road averages 3 to 4 meters in width, with several branch roads 2 to 3 meters in width. One large site contains two mounds in the center. The Arhuacos report the existence of a very large village-site on the Palomino River, "as large as the present city of Ciénaga" (population 10,000), but it was not visited. It is not impossible that this may be the old principal city of the Taironas, Poci güeca.

Dibulla and Environs. The region of Dibulla is probably that which was known by the earliest Spanish conquerors as La Ramada and reported to be very populous. F. C. Nicholas also believes it to contain more and larger archaeological sites than the Santa Marta region, but no sites of especial merit were discovered by the expedition during a stay of a few days.

In the fields in the immediate neighborhood of Dibulla patches of pulverized shells are frequently found mixed with occasional potsherds to a slight depth, one spot on the bank of the river containing sherds to a depth of 60 cm. All of these sherds are of coarse red pottery, apparently fragments of burial urns. Several such urns in nearly complete condition were found which contained fragments of bones, one of them with a complete cranium.

Farther from the shore and at the base of the foothills, a few apparent house-sites consisting of poorly made rings of stone were investigated. One of these measures 17 to 18 meters in diameter, and has a central height of some 50 cm. The rings are composed of rude boulders, not set upright; the twin entrances to north and south, about 150 cm in width, are floored with flat and roughly rectangular threshold blocks. In the center of this site a number of large, but poorly made cylindrical beads were found, both drilled and undrilled. Potsherds and seashells were also encountered. At a depth of some 50 cm was found a small quasi-globular bowl of thin red pottery, which contained only shells. Close to it an interment of an adolescent child was uncovered. Potsherds and shells were found to a depth of 1 meter. Close to the ring and the north entrance, a quasi-globular urn of crude pottery with everted rim, thin red surface, and black unbaked interior was found. Near it and at a slightly greater depth of about 1 meter was a bowl of buff and black pottery, 22 cm wide and 9.5 cm high (Plate LXIV, Fig. 4). Traces

of bones were found associated with these vessels which were apparently placed with an interment.

One of the stones of a house wall in the Vega de Pajuil contains an elaborate incised petroglyph (Plate V, Fig. 5). This stone measures 40 x 120 cm.

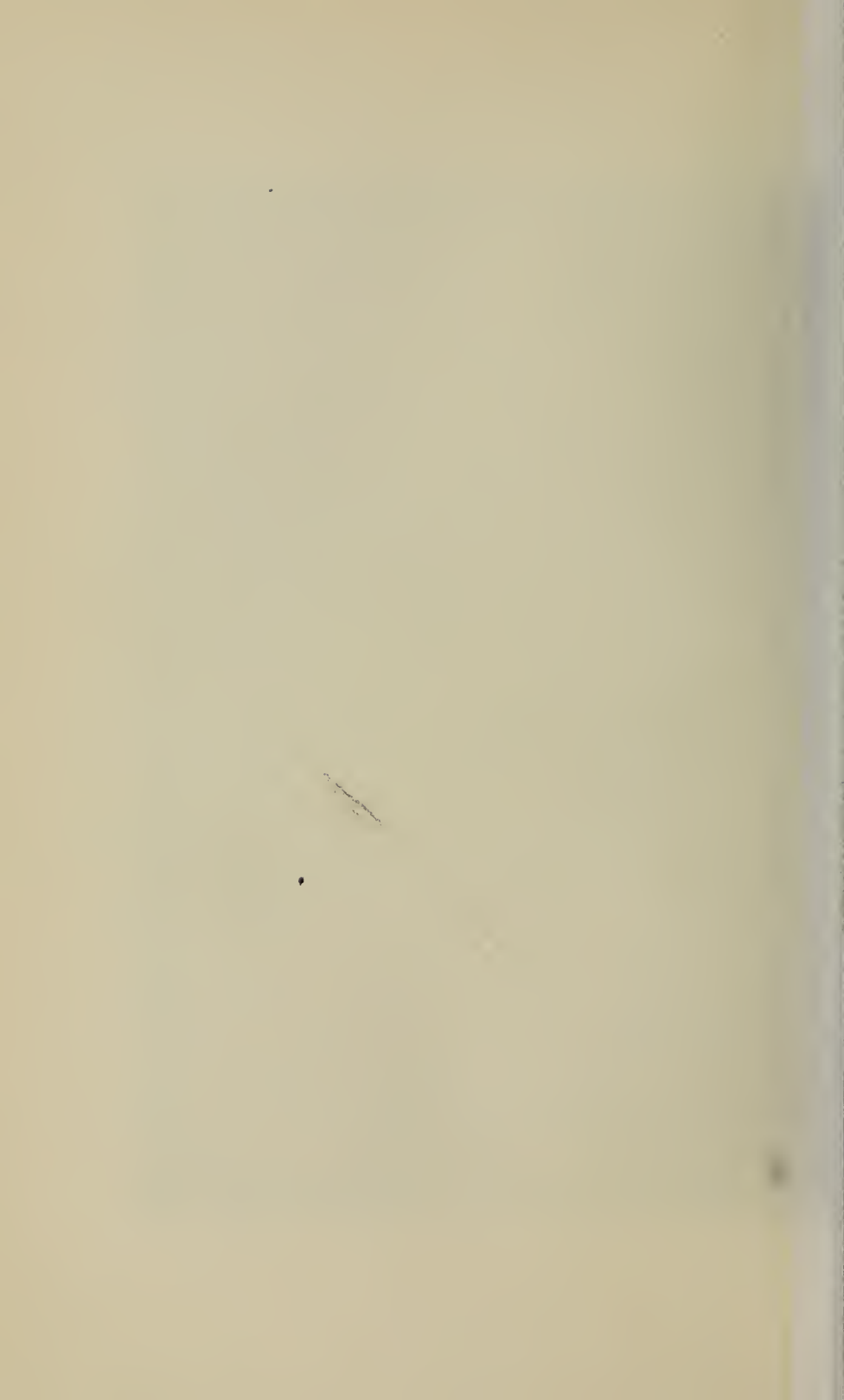
A small mealing stone of good construction and rectangular form, measuring 39 x 26 x 9 cm, was found near-by, the base slightly convex, the sides straight and the corners slightly rounded. All the edges are high and not scoop shaped, though the central depression is deep and broken through in the center (Plate LXIV, Fig. 6).

Rio Hacha. A few kilometers east of Dibulla the Sierra Nevada comes to an end; and from Camarones on, the seacoast and the adjacent lowlands become flat and extremely arid. The ancient peoples of this region were probably more akin to the present Goajiros than to the Taironas and Arhuacos. In several places on the coast between Camarones and Rio Hacha a thin stratum of shell and potsherds was noted at the edge of the cliff. The sherds are of dark coarse pottery of a type different from and ruder than those of the Santa Marta region, and apparently derived from large urns. The shells are those of bivalve mollusks. The strata are generally thin, from 30 to 45 cm on the average, but in one place an urn was buried to a depth of about 1 meter, a shaft of this depth and 50 cm in diameter having been dug.

During a brief visit to the Goajira Peninsula no traces of aboriginal occupation were observed, but the native guide reported that large undrilled beads are found near the eastern end of the peninsula. Graves are also reported in this region by Simons. F. C. Nicholas mentions a large cemetery at San Ramón, about three miles from Rio Hacha.



LARGE CARVED ROCK AT DONAMA





INCISED PETROGLYPHS ON ROCK AT DONAMA



INCISED PETROGLYPHS ON ROCK AT DONAMA



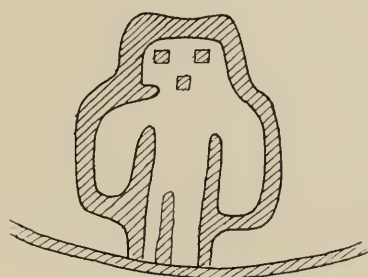
INCISED PETROGLYPHS ON ROCK AT DONAMA



4



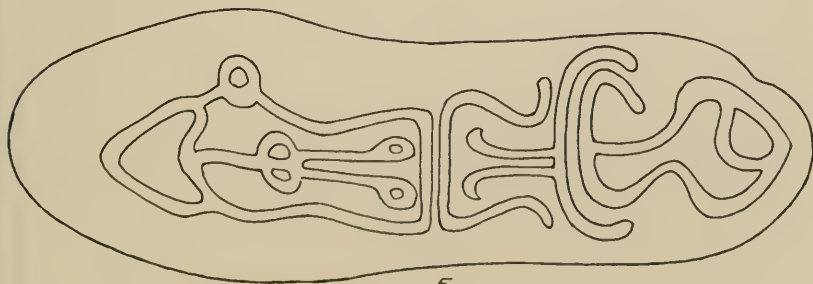
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2



3



5

STONE MONUMENTS AND PETROGLYPHS

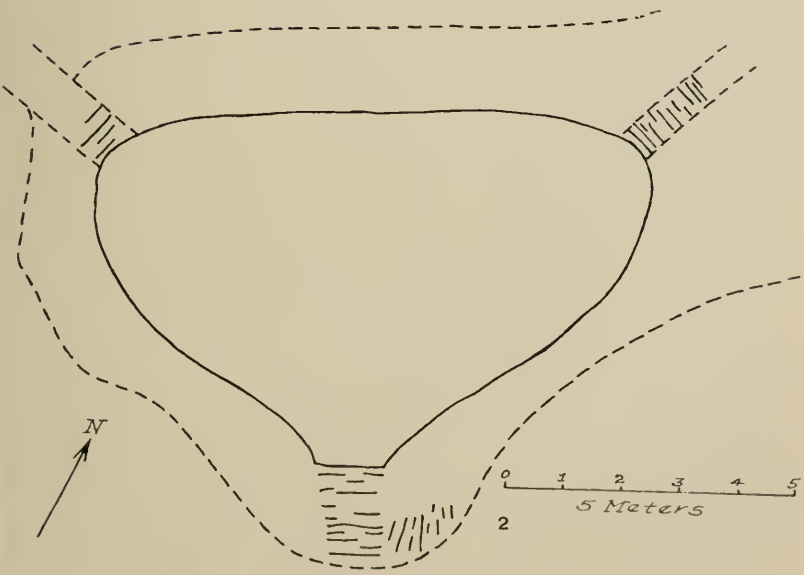
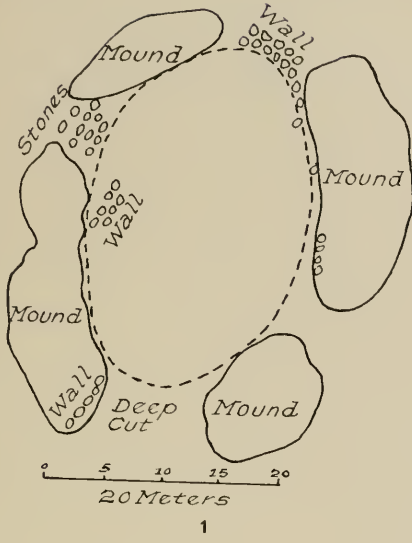
1. Pitted stone at Guachaquita. 2. Incised petroglyph at Terán. 3. Incised petroglyph at Mandigua. 4. Carved stone column at Los Cóngolos.
5. Incised petroglyph at Vega de Pajuil, near Dibulla



RESERVOIR AT PALMARITO



RESERVOIR AT PALMARITO

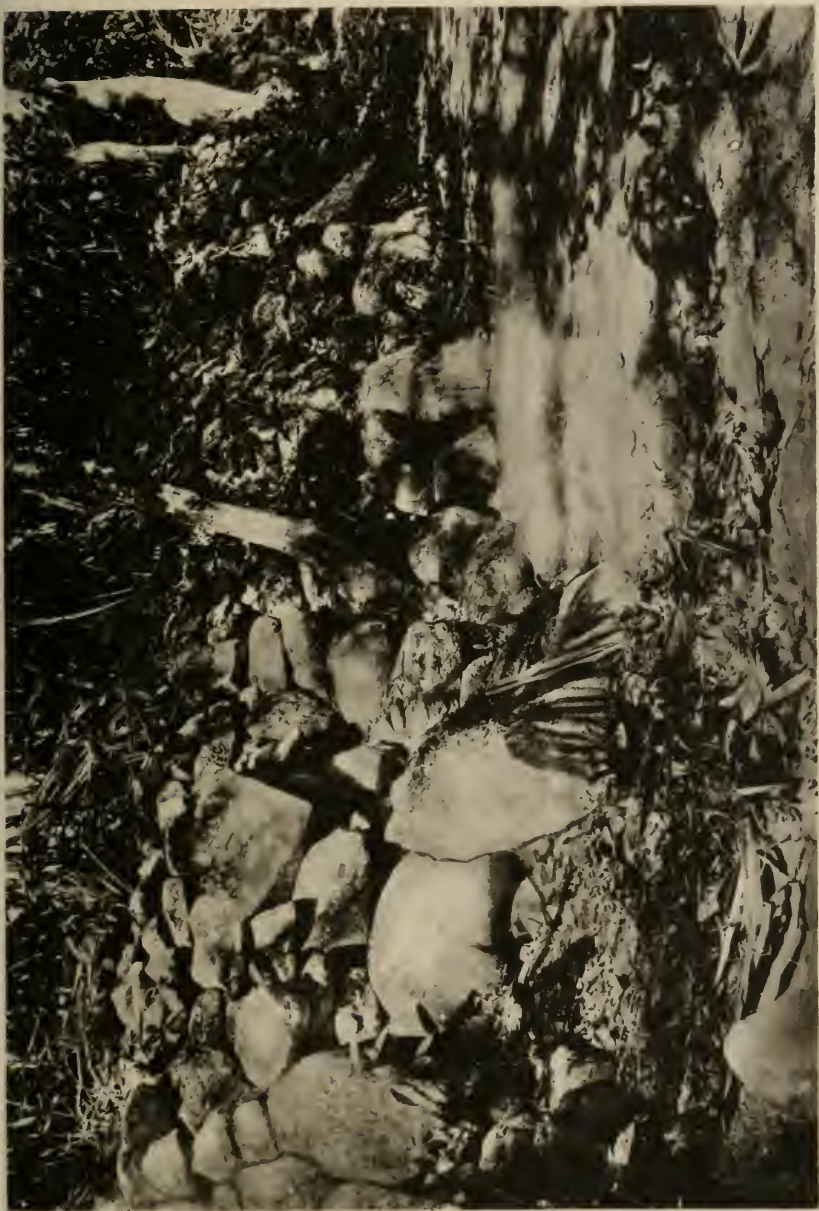


PLANS OF RESERVOIRS

1. At Guachaquita. 2. At Palmarito



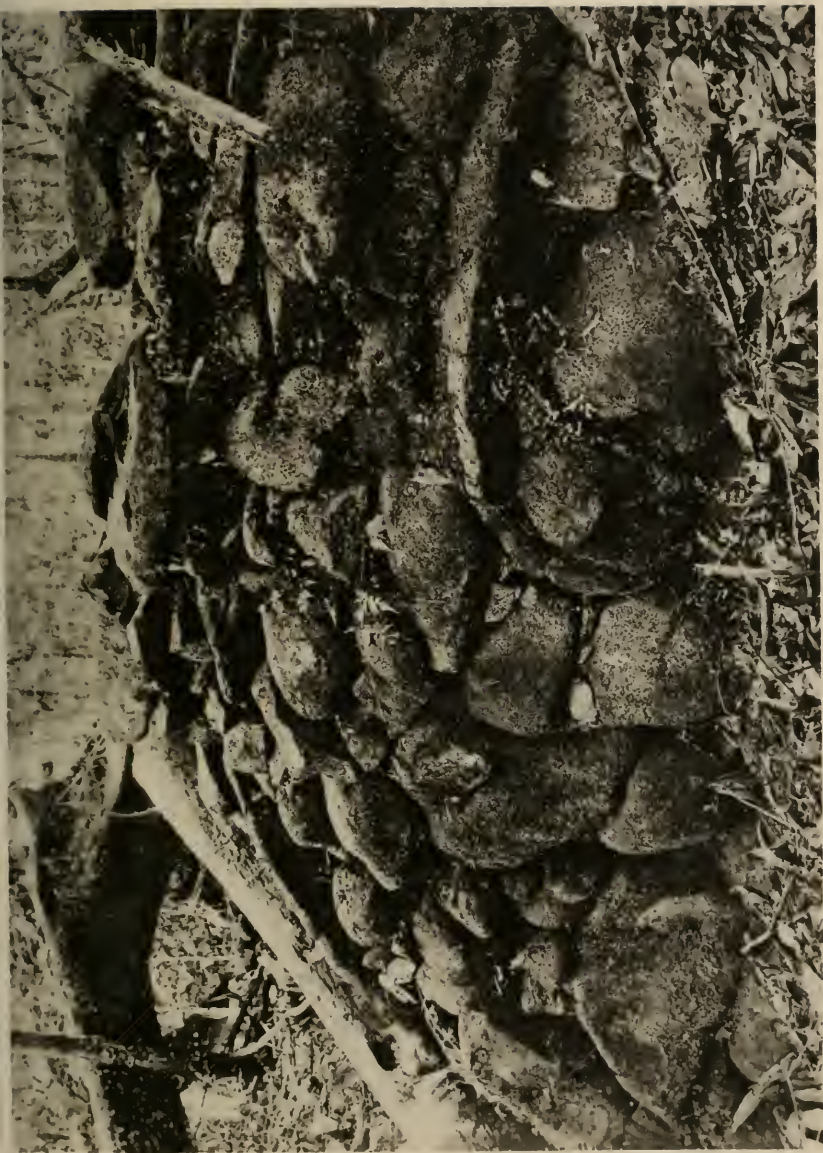
MEGALITHIC WALL RETAINING ROAD AT PUEBLITO



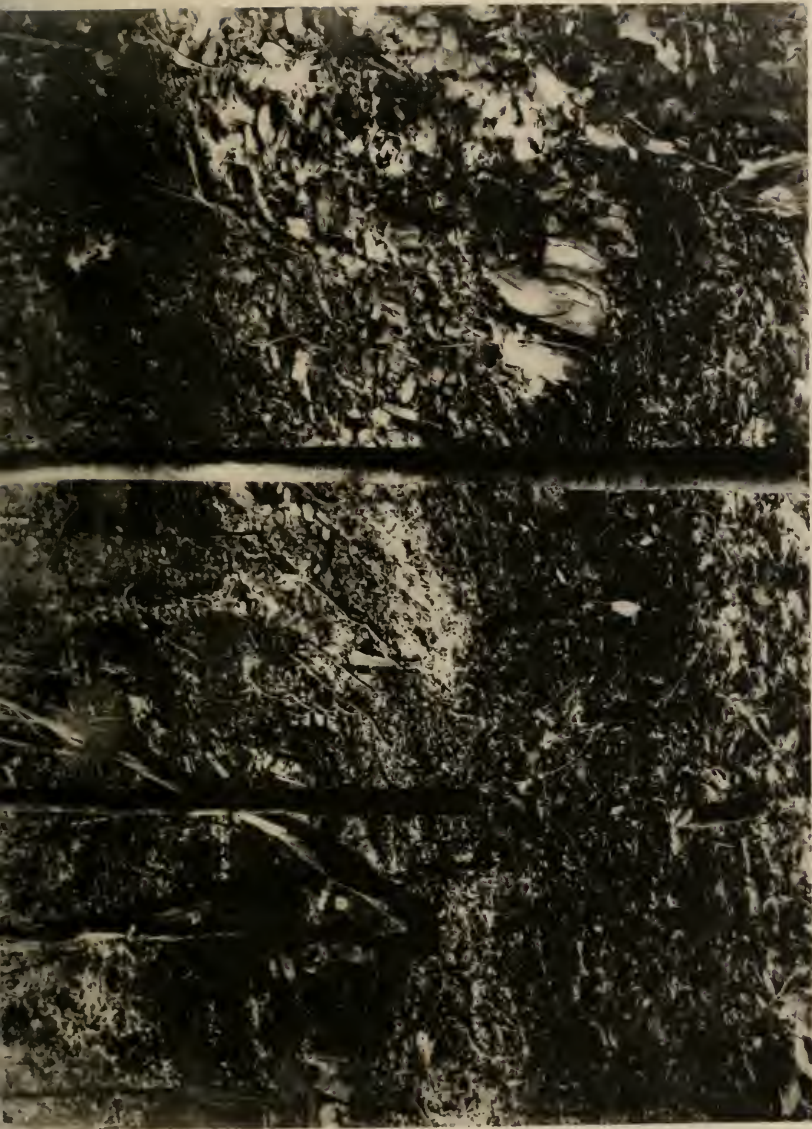
MEGALITHIC WALL, PROTECTING SITES ALONG STREAM, PUEBLITO



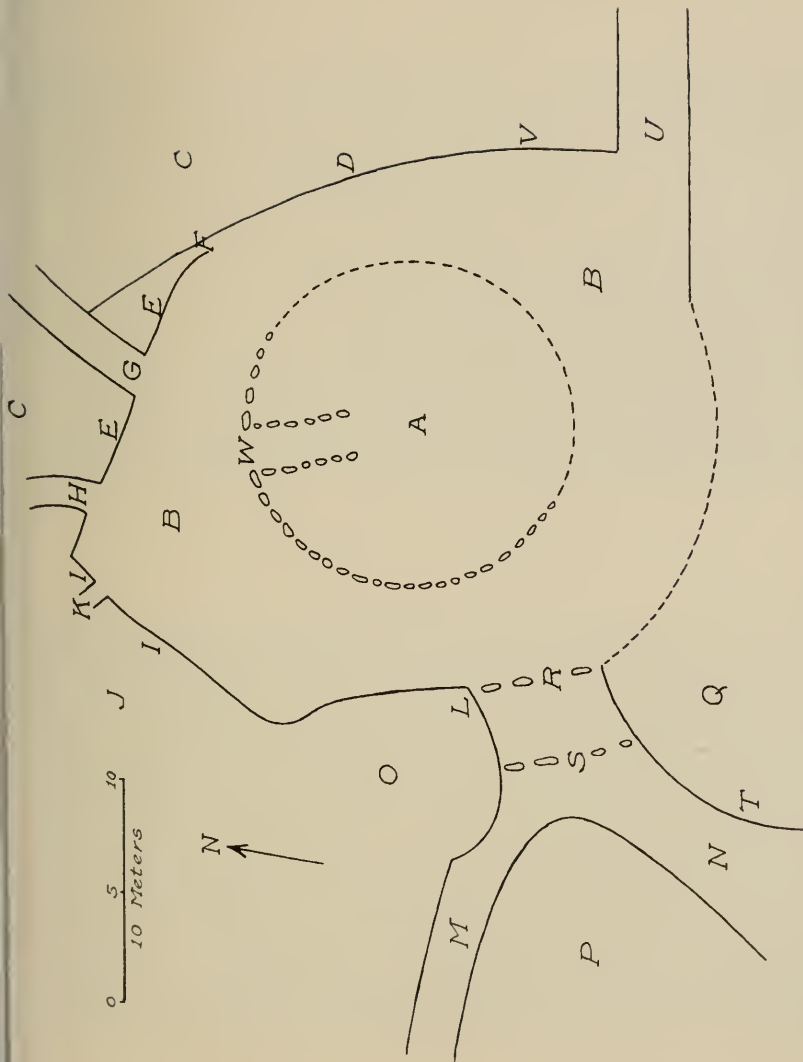
DRY STREAM BED WITH WALLS AT EITHER SIDE, PUEBLITO



MEGALITHIC WALL RETAINING SITE AT PUEBLO BERNARDO



HIGH WALL BOUNDING SITE AT GUACHAQUITA



PLAN OF PRINCIPAL SITE AT GUACHAQUITA



1. TERRACED SMALL SITE AT VISTA NIEVE



2. WALL RETAINING SITE AT VISTA NIEVE



1. LARGE VERTICAL SLABS MARKING WALL AT PUEBLITO



2. WALL OF STONE BLOCKS AT RIO FRIO



1



2



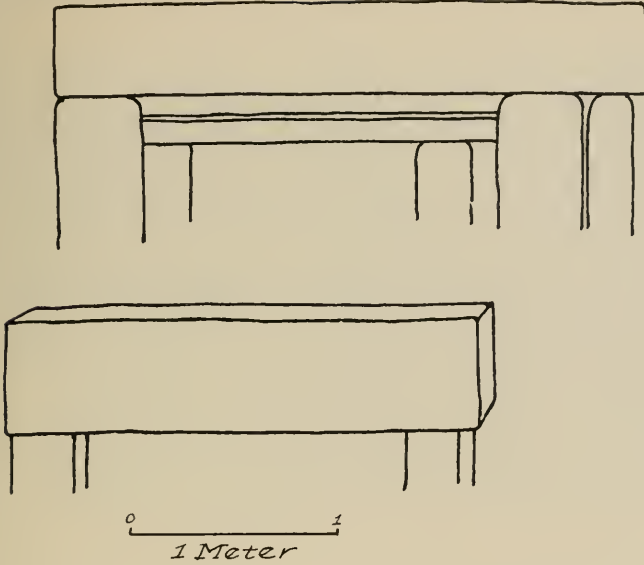
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PAVED PATHS

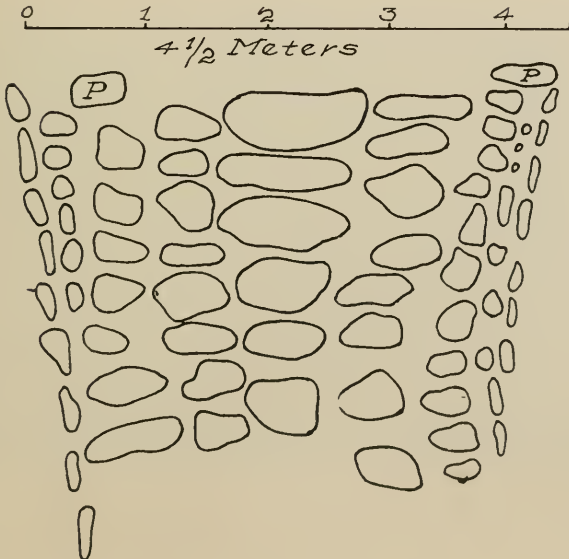
1. At Terán. 2. Near Terán. 3. At Sabana de Limón



PAVED ROAD AT SABANA DE LIMON



1



2

1. GRAVES OF WELL-CUT STONE AT DONAMA 2. END OF WIDE
PAVED ROAD AT SABANA DE LIMON



1

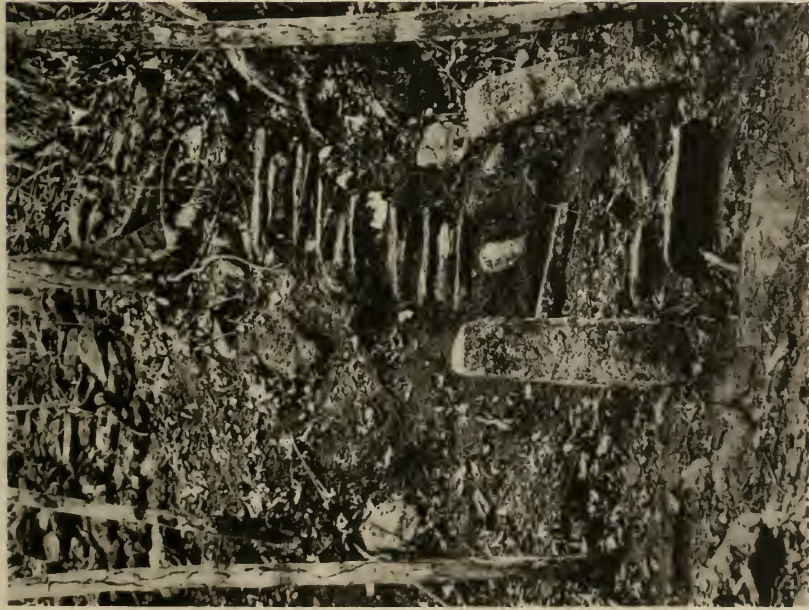
1. LONG BURIED PENCIL OF STONE AT TERAN. 2. PATH OF GREAT STONE BOULDERS AT SAN MIGUEL



2



PAVED STREET AT PUEBLITO



1

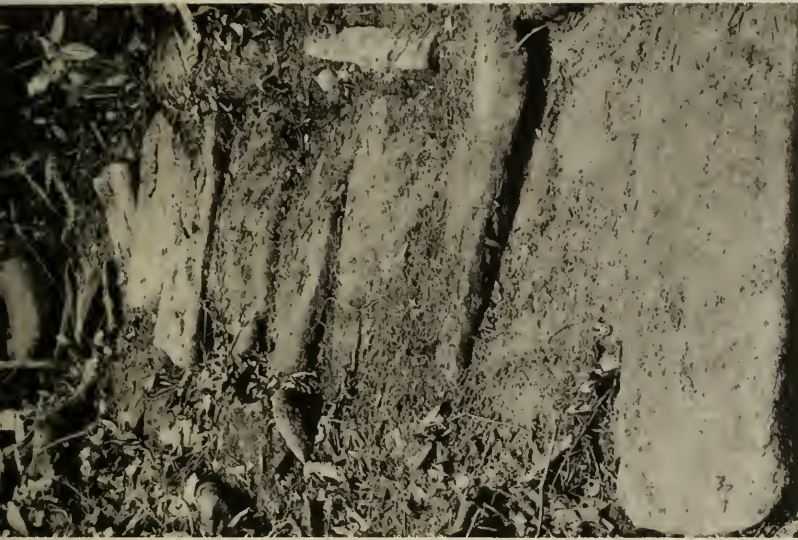
1. STONE STAIRWAY, PUEBLITO. 2. PAVED STREET AND STONE STEPS, PUEBLITO



2



1



2

PAVED PATHS, PUEBLO BERNARDO



LONG STONE STAIRWAY, PUEBLO BERNARDO



STEPS AT TOP OF LONG STONE STAIRWAY, PUEBLO BERNARDO



STEPS AND ENTRANCE TO CIRCULAR SITE XIV, PUEBLITO



1



2

STAIRWAYS FROM STREAMS TO SITES, PUEBLITO



1



2

STAIRWAYS FROM STREAMS TO SITES, PUEBLITO



1



2

STONE SLAB BRIDGES OVER STREAMS, PUEBLITO



1. ENTRANCE TO TUNNEL CONDUCTING SMALL STREAM, PUEBLITO



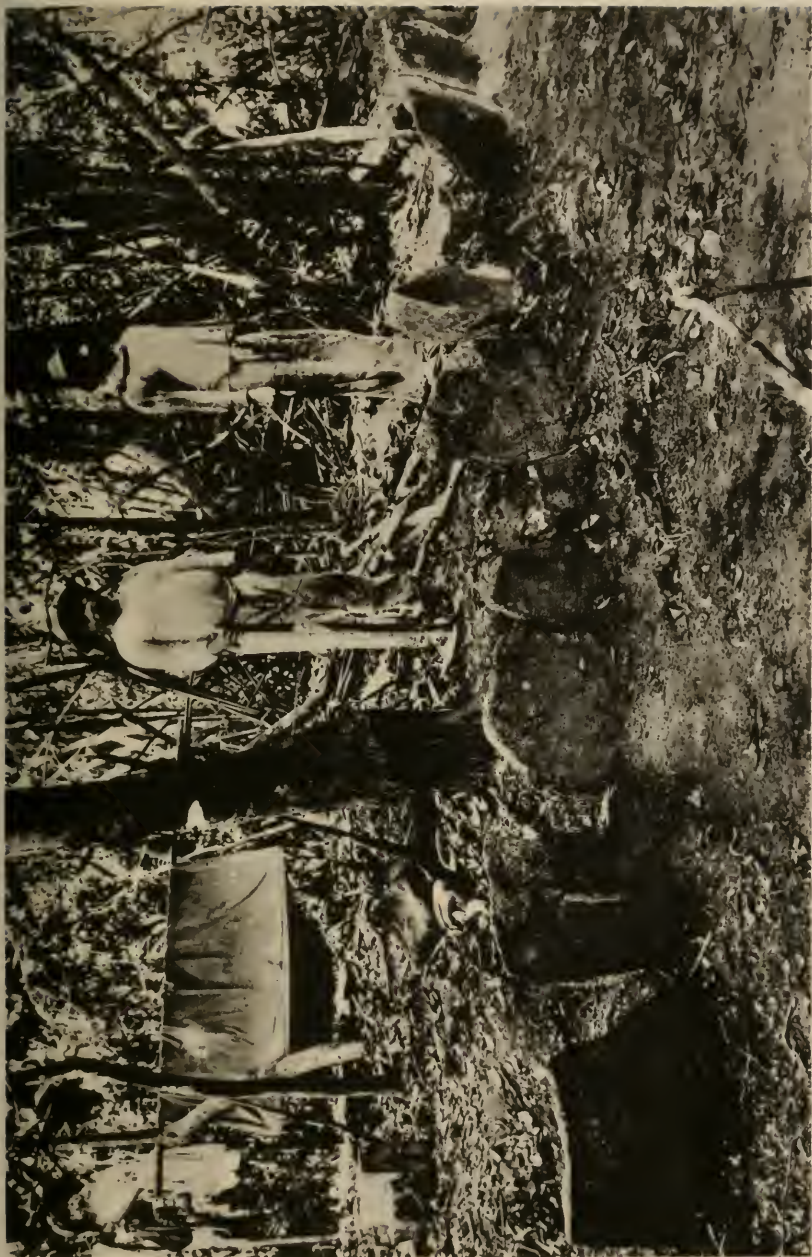
2. VIADUCT OVER SMALL STREAM, PUEBLITO



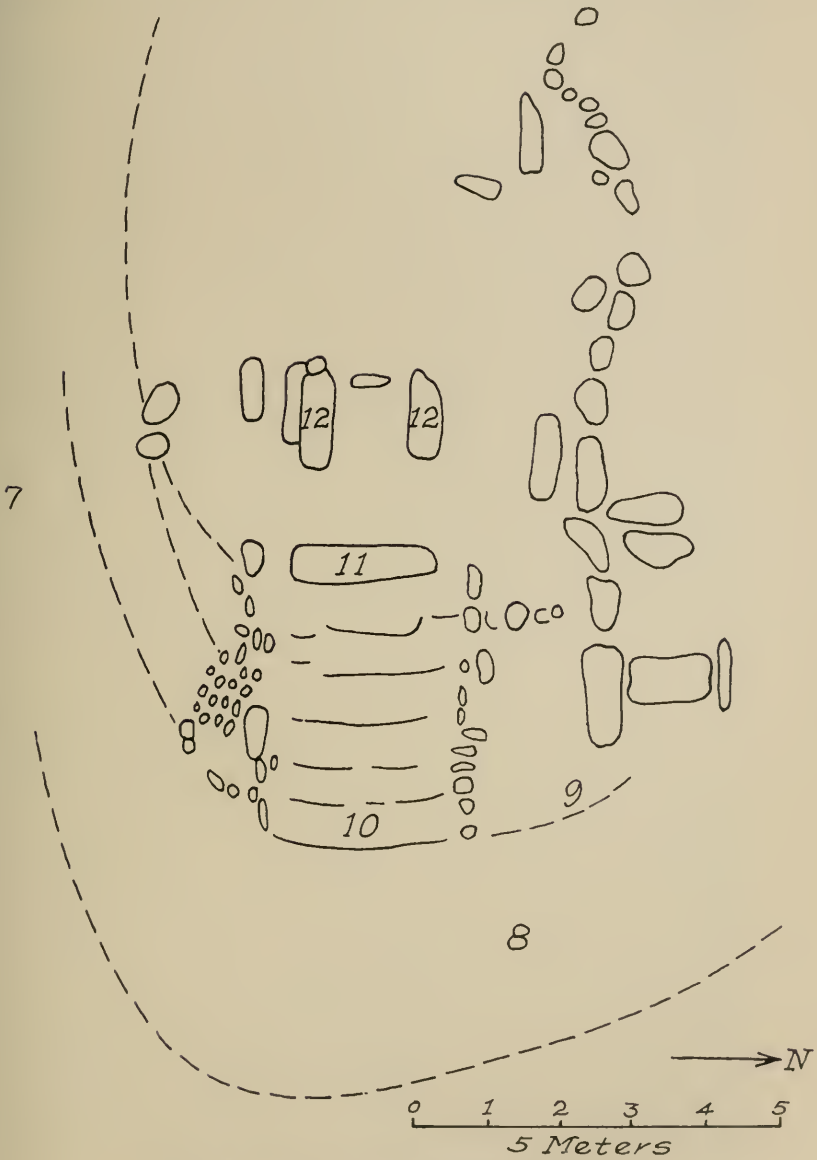
1. PRINCIPAL TERRACE WITH PAVED PATHS, TERAN



2. ENTRANCE TO PRINCIPAL TERRACE, TERAN



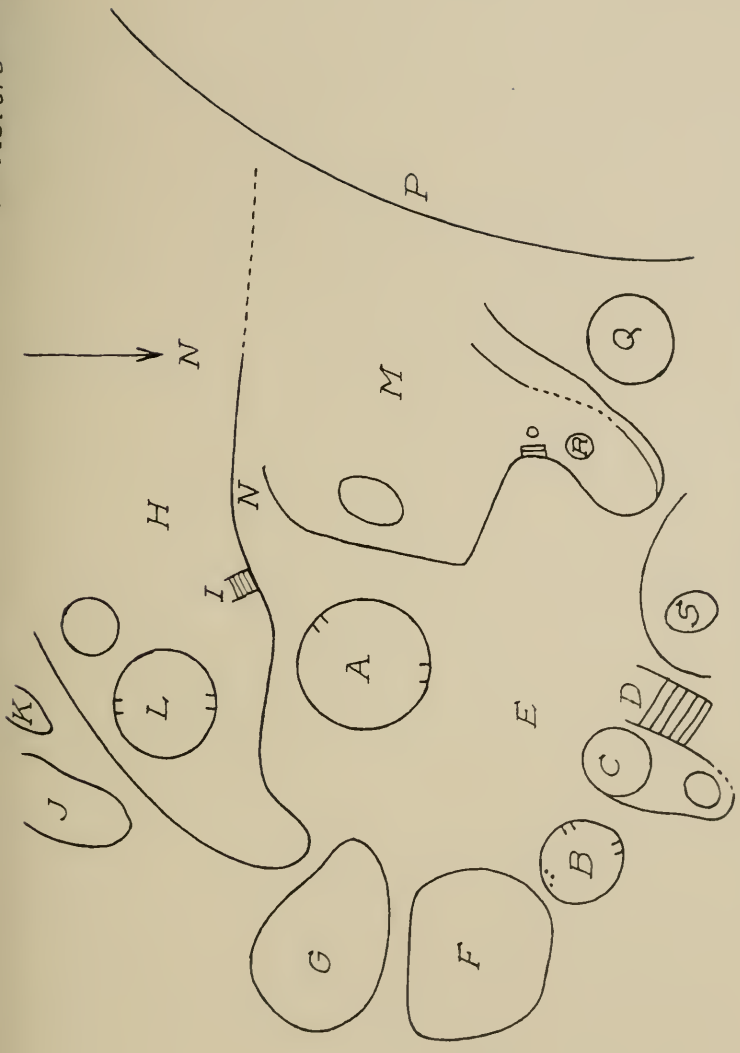
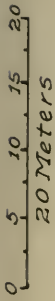
LARGE CIRCULAR SITE XVII WITH UPRIGHT STONE SLAB RING, PUEBLITO



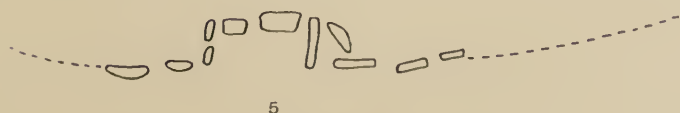
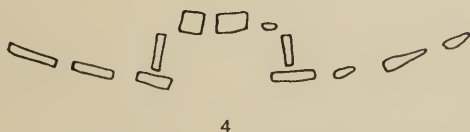
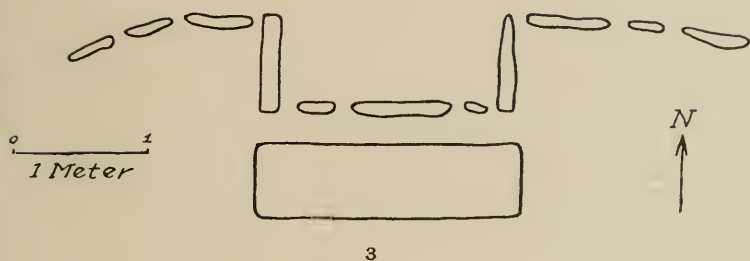
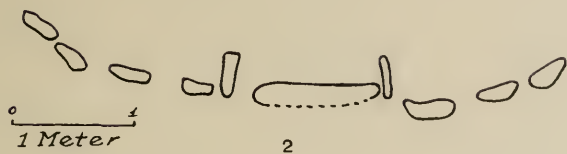
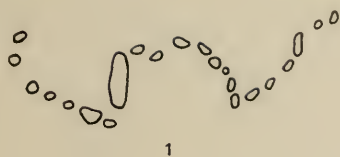
PLAN OF PRINCIPAL HIGH TERRACE, PUEBLITO



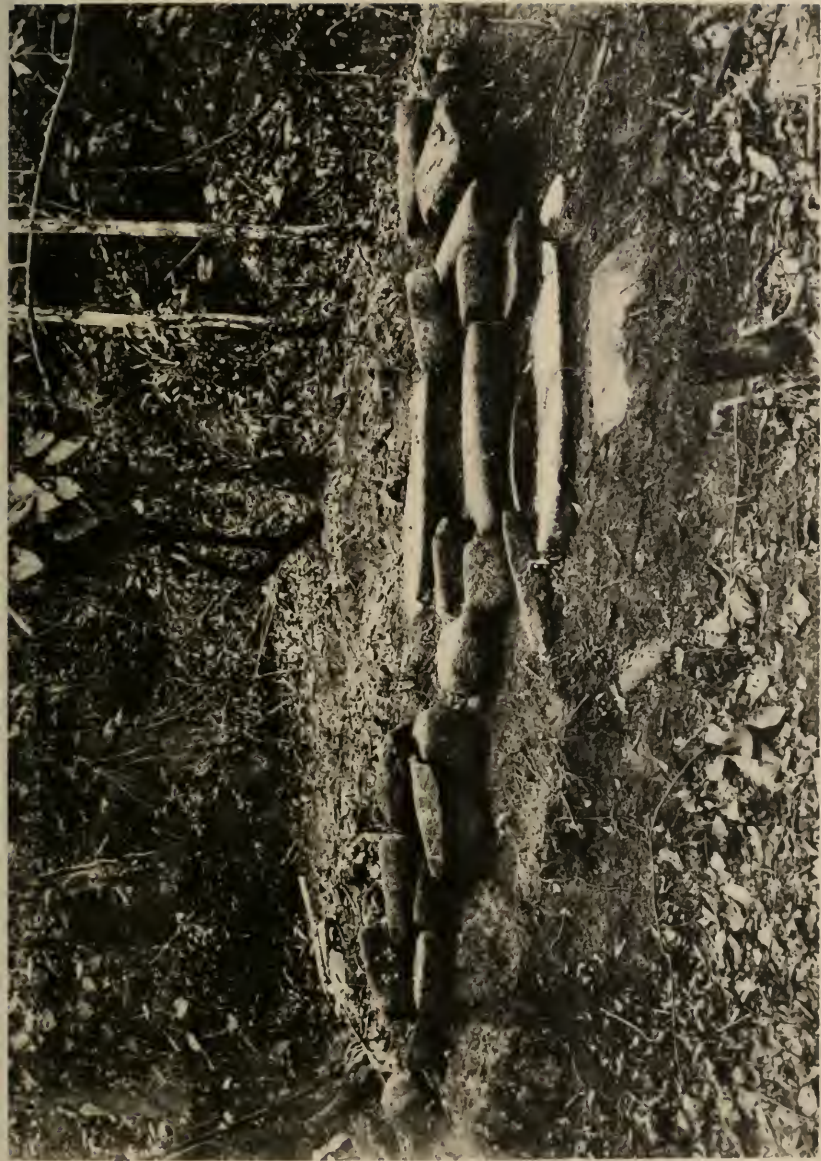
TERRACE WITH SLAB WALL AND STEPS, PALMARITO



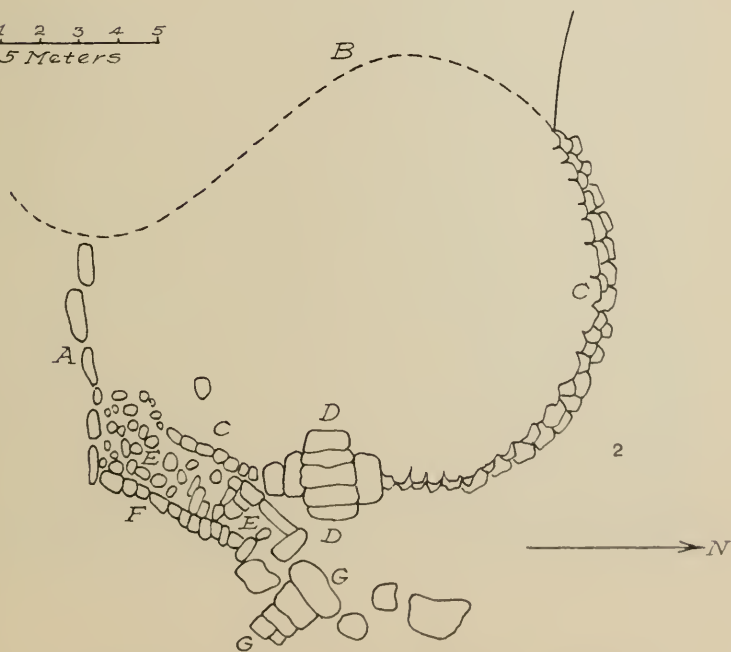
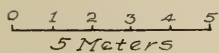
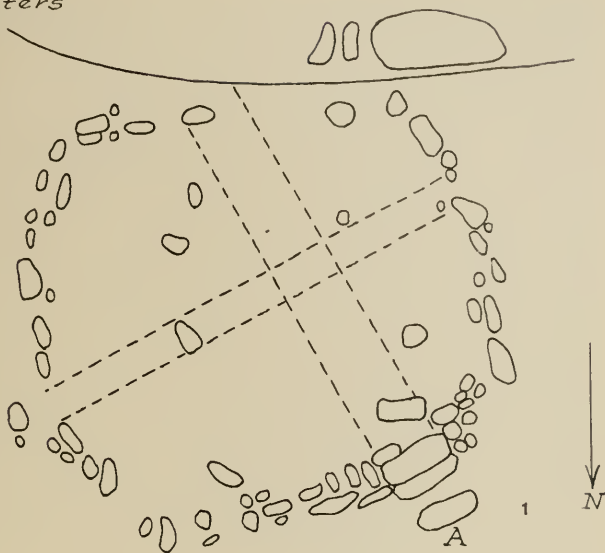
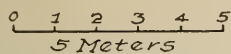
PLAN OF PRINCIPAL SITE AT PALMARITO



PLANS OF ENTRANCES TO SITES
1-2. Guachaquita. 3-4. Palmarito. 5. Pueblito



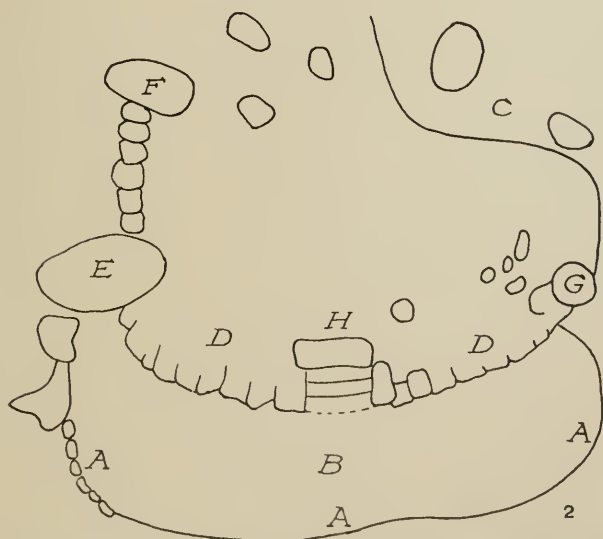
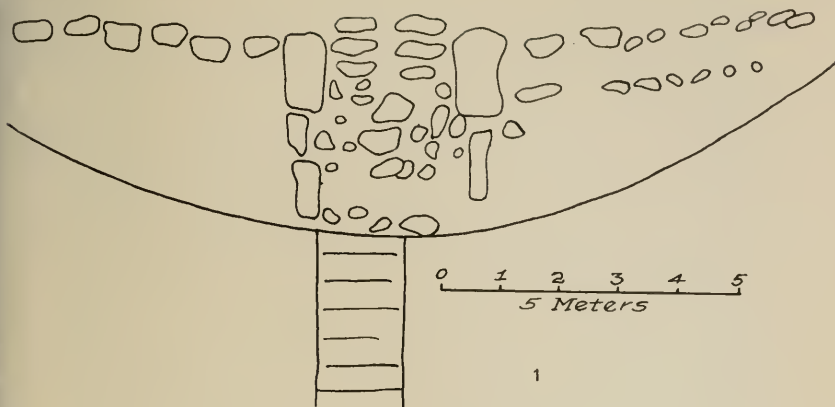
WALL AND STEPS TO UPPER CIRCULAR SITE, PUEBLO BERNARDO



1. PLAN OF UPPER SITE, PUEBLO BERNARDO 2. PLAN OF NORTHERNMOST SITE PUEBLO BERNARDO



WALL AND ENTRANCE TO BEST SITE AT PUEBLO BERNARDO



PLAN OF ENTRANCE TO TERRACE, TERAN. 2. PLAN OF BEST SITE, PUEBLO BERNARDO



CIRCULAR SITE, PUEBLO BERNARDO



CIRCULAR SITE IX WITH WELL-MADE STONE RING, PUEBLITO

Drawing shown on Plate XLIII



CIRCULAR SITE IX WITH WELL-MADE STONE RING, PUEBLITO

Photograph shown on Plate XLII



ENTRANCE TO CIRCULAR SITE XXIV SHOWING WELL-CUT STONE BLOCKS, PUEBLITO



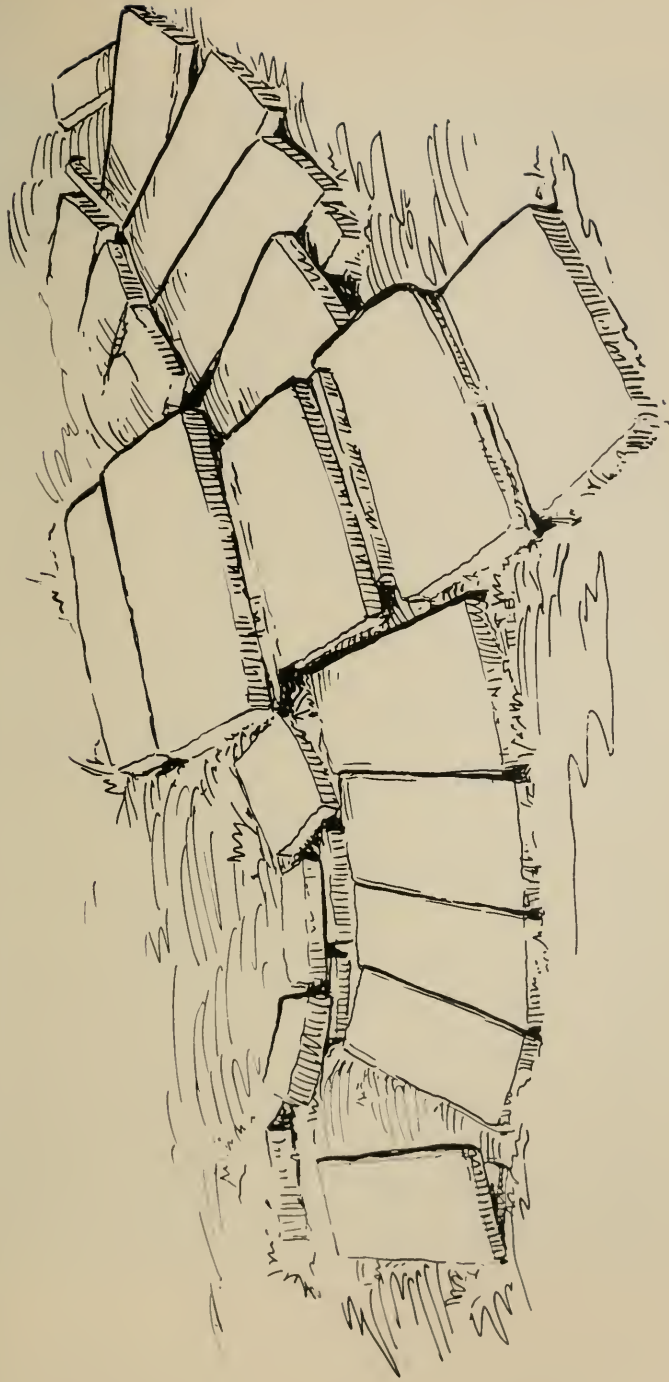
CIRCULAR SITE XLIII SHOWING WELL-MADE STONE RING, PUEBLITO



NORTH ENTRANCE TO SITE XX, SHOWING WELL-CUT STONE BLOCKS OF RING AND STEPS, PUEBLITO

Drawing shown on Plate XLVII





NORTH ENTRANCE TO SITE XX, SHOWING WELL-CUT STONE BLOCKS OF RING AND STEPS, PUEBLITO

Photograph shown on Plate XLVI

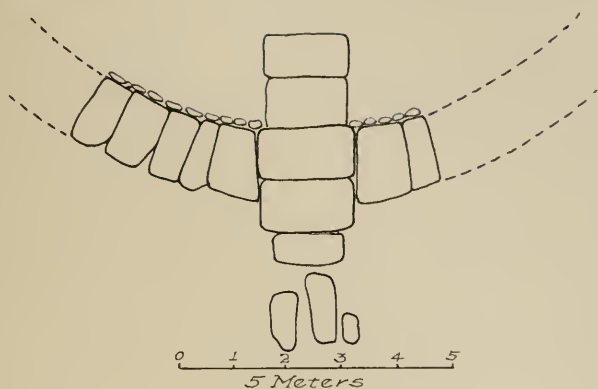


SOUTH ENTRANCE OF SITE XX, PUEBLITO, SHOWING EXCELLENTLY CUT STONE BLOCKS OF RING AND STEPS

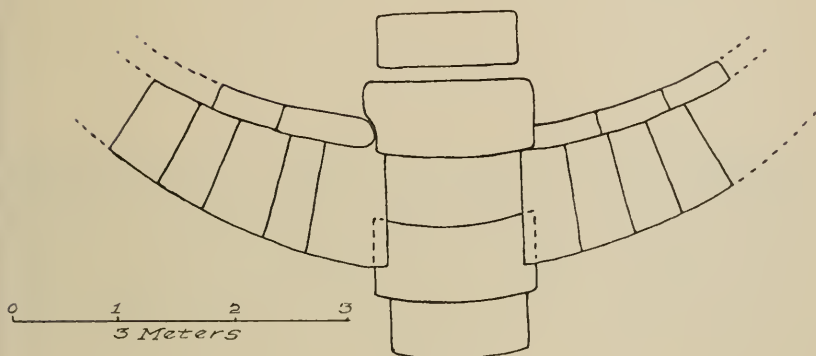




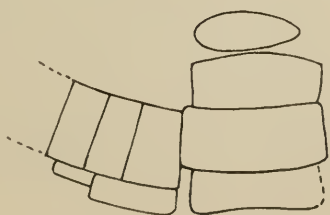
SOUTH ENTRANCE OF SITE XX, PUEBLITO, SHOWING EXCELLENTLY CUT STONE BLOCKS OF RING AND STEPS



1



2



3

PLANS OF ENTRANCES TO BEST-MADE SITES, PUEBLITO



1. TABLES OF LARGE STONE BLOCKS ON TERRACE, TERAN



2. LARGE STONE BLOCK FORMING BRIDGE OVER SMALL STREAM, TERAN



GREAT STONE BLOCKS LINING ENTERING ROAD, PUEBLITO



LARGE AND FINE STONE BLOCKS BESIDE STREAM, PUEBLITO

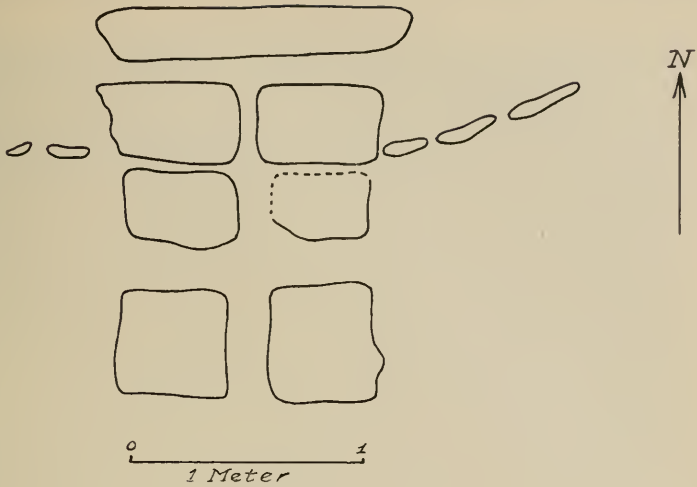




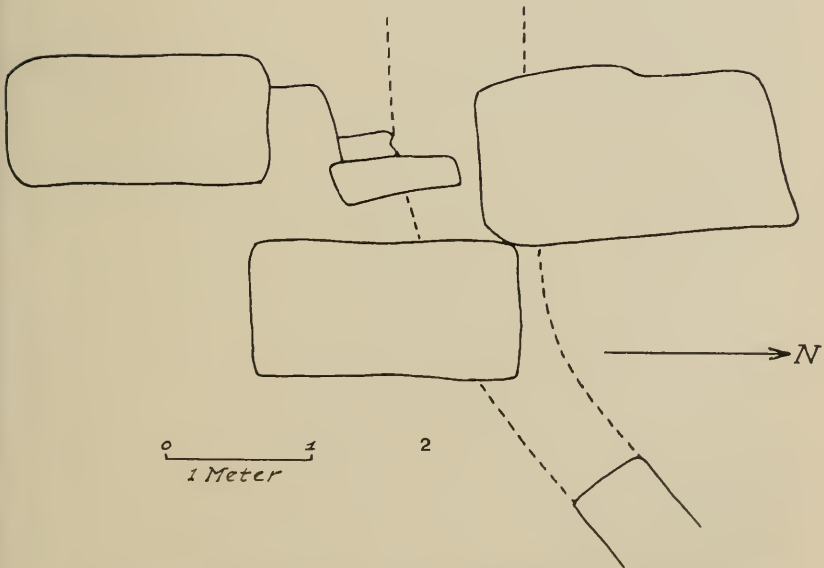
1. COVERS TO LARGE STONE-LINED GRAVE, PUEBLITO



2. LARGE STONE BLOCKS OVER TUNNEL, PUEBLITO



1

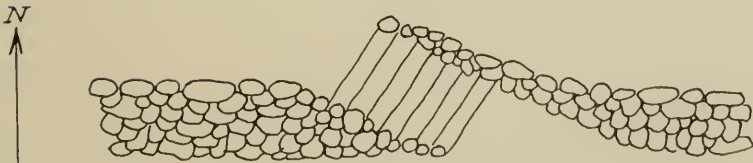
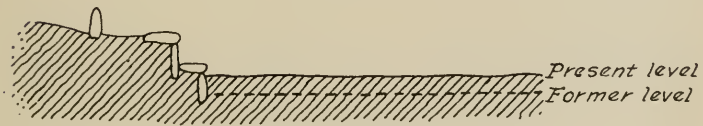
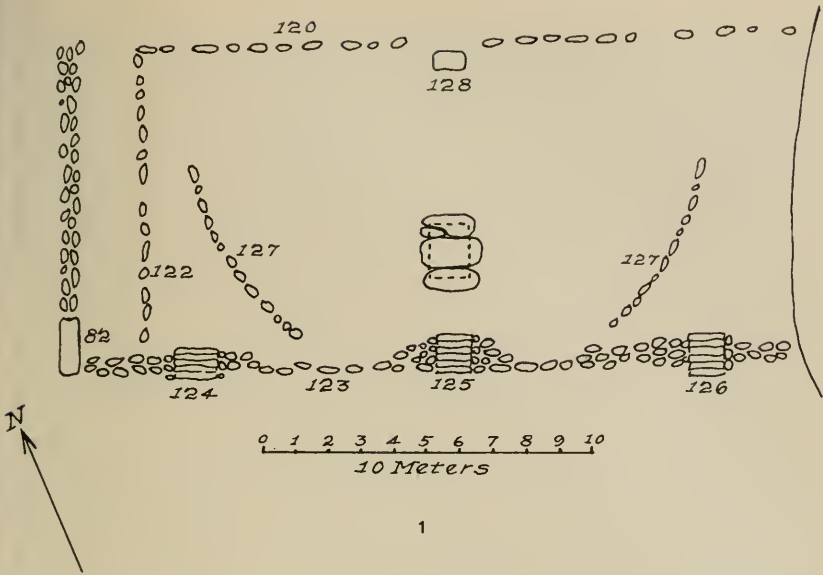


2

1. SOUTHWEST ENTRANCE TO SITE VIII, PUEBLITO. 2. PLAN OF STONE
BLOCKS OVER TUNNEL, PUEBLITO

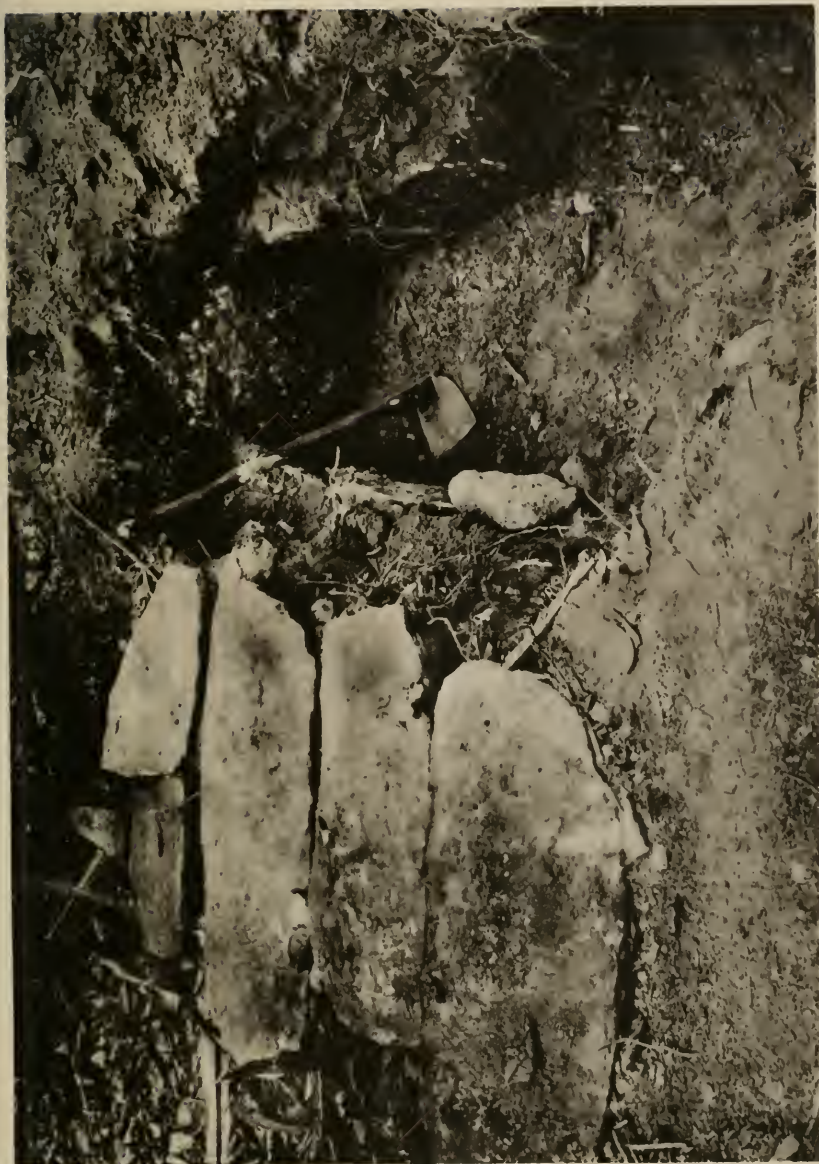


LARGE STONE-LINED GRAVE AFTER OPENING, PUEBLITO



PLANS OF VARIOUS SITES

1. Plan of Site XXIX with central stone-lined grave, Pueblito. 2. Plan of section of site, Guachaquita. 3. Plan of stairway in megalithic wall, Pueblito



STONE-CAPPED GRAVE IN SITE XVII, PUEBLITO





1

1. STONE-CAPPED GRAVE IN SITE II, PUEBLITO.



2

2. STONE-LINED GRAVE IN SITE XXXII, PUEBLITO





STONE-LINED GRAVE AT NAHUANGE



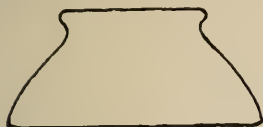
BURIAL URNS AT GAIRACA



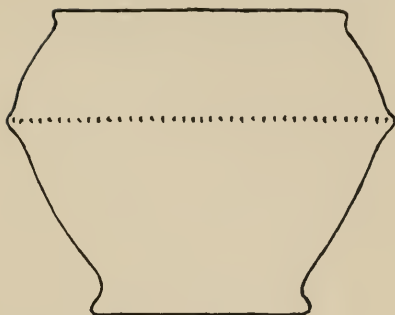
1. EXCAVATING BURIAL URNS AT GAIRACA



2. BURIAL URN AT GAIRACA, SHOWING METHOD OF REPAIRING CRACKS



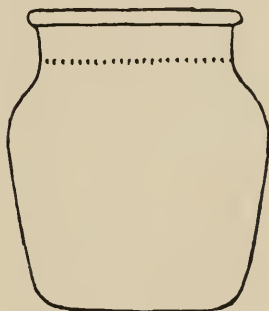
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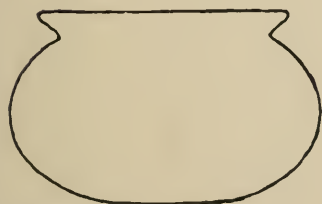
Type A 2



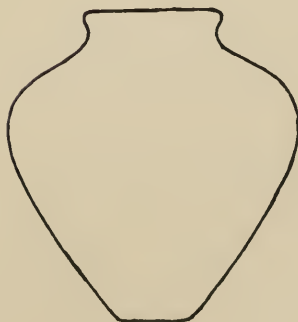
Type B 3



4

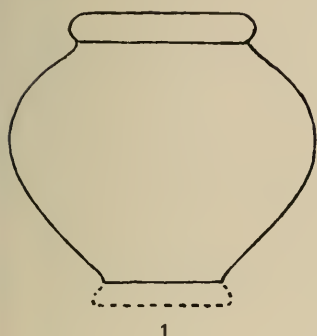


Type C 5

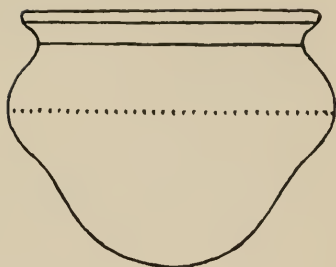


6

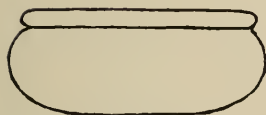
TYPES OF BURIAL URNS FOUND AT GAIRACA



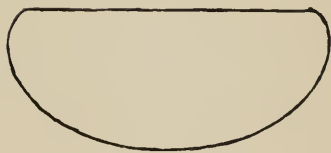
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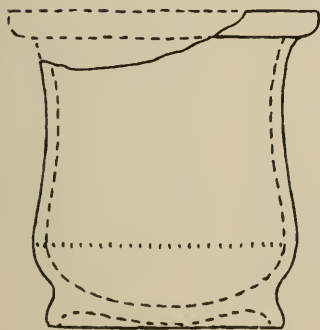
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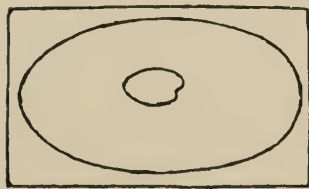
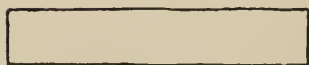
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4



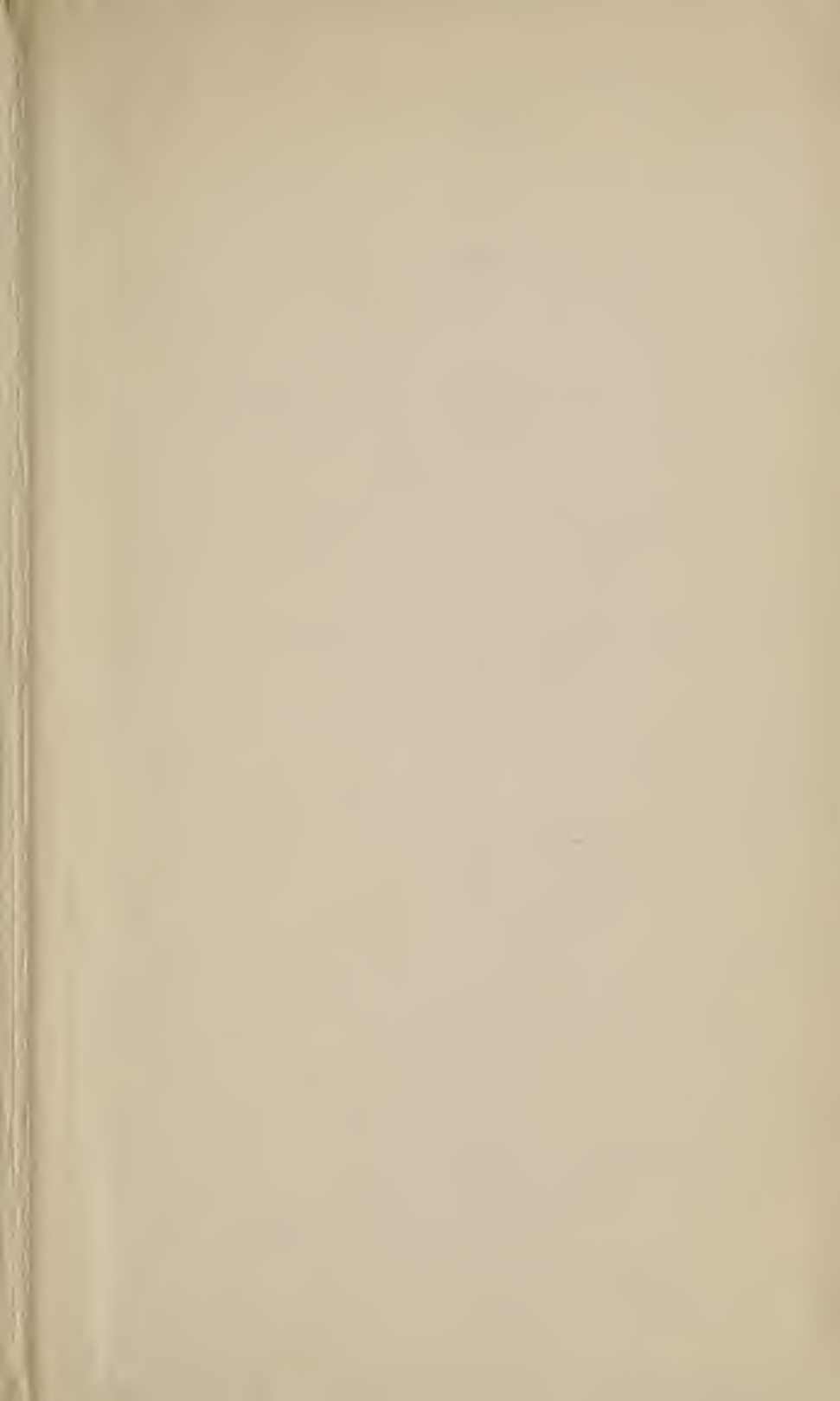
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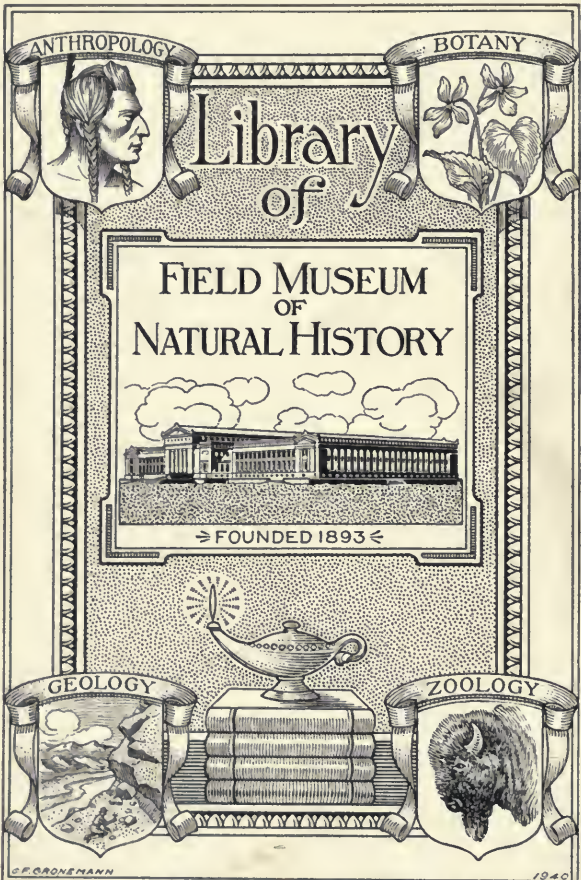


6

POTTERY AND METATE

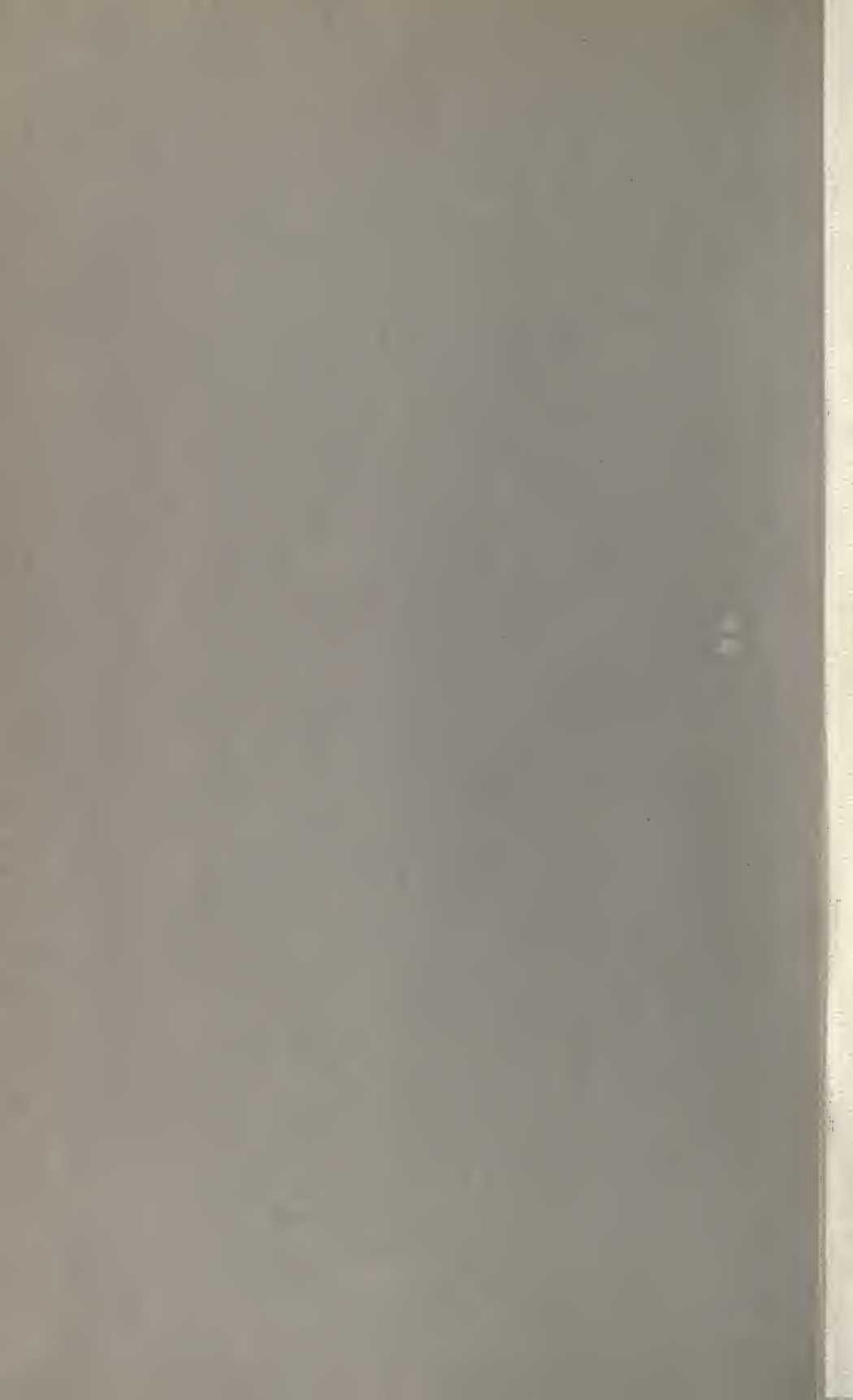
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ARCHAEOLOGY OF SANTA MARTA
COLOMBIA

THE TAIRONA CULTURE

PART II, SECTION 2

OBJECTS OF POTTERY

BY

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ARCHAEOLOGY IN FIELD MUSEUM OF NATURAL HISTORY

WITH AN APPENDIX ON CERAMIC TECHNOLOGY

BY

DONALD HORTON



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PREFACE

This section concludes Part II, the factual description of all archaeological objects known to me from the region of Santa Marta. The major part of the material was collected by me and is in Field Museum, but in order to make the report as comprehensive as possible I have endeavored to ascertain the specimens from this region existing in other collections, and to secure descriptions and photographs or drawings of such of these as are unusual and not represented in Field Museum.

In the fall of 1936 the officers of Field Museum again favored me with the opportunity of spending five weeks there making the studies and notes upon which this report is primarily based. The cordial hospitality and helpful co-operation received at that time are a pleasant memory. Many of the objects had been excavated in fragmentary condition, and others had suffered some breakage in transport to the Museum; it was not possible to mend or restore all the vessels before photographing. This is especially true of the large, heavy vessels, such as the burial urns and their covers. But there is slight variation in these, and all types are represented by complete vessels, either in Field Museum or other institutions.

To all the members of the Department of Anthropology as well as to members of other departments, I am much indebted for many favors, but especially to Dr. Paul S. Martin and the late Director, Mr. Stephen C. Simms. Mr. Henry C. Nichols kindly made some technical studies on the ceramics and Dr. Wilfred H. Osgood identified the animal relief. Mr. John J. Janecek made most of the text-figure drawings and the assistance of the photographic department left nothing to be desired.

Subsequent to the study of the Field Museum collection I examined those in the Museum of the American Indian, Heye Foundation, New York; the American Museum of Natural History, New York; the University Museum, Philadelphia; and the Carnegie Museum, Pittsburgh. For their most cordial co-operation I wish to express my appreciation to many members of the staffs of these institutions. The collections in many European museums I had studied in 1924, and Dr. Walter Kaudern of the Ethnological Museum of Gothenburg, Sweden, and Dr. Walter Krickeberg of the Museum für Völkerkunde of Berlin were most kind in sending me data and photographs. My friends at the Peabody Museum of Harvard University kindly furnished photographs and data on

objects recently secured there. Captain T. A. Joyce had sent me a photograph of an unusual vessel in the British Museum, and Mr. William M. Sutherland, formerly of Santa Marta, supplied a few photographs of objects in his collection and that of Mr. William R. Angell of Detroit. Photographs of the unusual objects in all these collections were gladly furnished for inclusion herein, in most cases without charge. Miss M. Louise Baker kindly supplied the drawings for Text Figure 26, and Miss Jean Francksen drew Text Figure 20. To all of the above, whether mentioned by name or inference, I wish to express my thanks and appreciation.

The important technical studies in the Appendix are the work of the Ceramic Laboratory, WPA Project No. 14753, at the University Museum, Philadelphia, under the direction of Mr. Donald Horton. These detailed studies superseded earlier and less intensive ones kindly made by Mr. Henry W. Nichols, Curator of Geology of Field Museum. The results of the latter are therefore not used, but for his generous aid I am much indebted to Mr. Nichols.

It was impossible to include herein, as originally intended, the studies of the skeletal remains.

Except for a few passing remarks, all observations of an extra-territorial nature are reserved for Part III, Synthesis and Conclusions. For further information of a general nature, most of the remarks made in the Introduction to Section 1 are pertinent to this section also.

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ARCHAEOLOGY OF SANTA MARTA, COLOMBIA THE TAIRONA CULTURE

PART II, SECTION 2

OBJECTS OF POTTERY

CERAMICS

An archaeological study should be presented with the temporal and sequential features as the primary basis, proceeding from the earliest to the latest phases, and describing the characteristics of each horizon. Too little is known about sequences in the Santa Marta region to make this form of presentation possible. Whatever deductions may result in this direction from the work of the Field Museum Expedition will come from a study of the associations of the specimens, for practically no stratigraphical excavations were made (pp. 50-51). For this fact I take some relief in a remark attributed to one of the foremost American archaeologists that one makes stratigraphical excavations only when the tangible results are so unimpressive that he is compelled to do so to make a good showing. The Santa Marta field was so rich and virgin that, having only native assistants, I could not bring myself to cease digging "rich" sites and to search for a refuse heap. Had I stumbled upon one, I should have examined it. Practically all the digging was in graves and in ceremonial and house sites, of slight depth and apparently occupied for a relatively short period. No obvious differentiation into early and late horizons has yet appeared as a result of this study; the material appears to be relatively homogeneous and is presented as though it were absolutely so. Some geographical differentiation appears, but the general aspect is very similar, and it is relatively easy to recognize objects from the true Santa Marta region, and to eliminate others of different appearance from peripheral but not far-distant regions. Only in the rarest cases have objects of exotic aspects been found, or claimed to have been found, in the region of Santa Marta.

The most obvious characteristic of Santa Marta pottery is the absence of painted ware. Painted vessels were found at only one site, Nahuange, and all except one stray sherd were found in the "rich" stone grave there (pp. 31-36); the presumption is that the site was occupied by a people of slightly different culture or on a different horizon. This absence of painted pottery reduces the number of different wares and types to very few. As would be

expected, it also results in an exuberance in form, in relief, and, to a lesser extent, in incised decoration.

An acceptable determination of the various types of ware found in a given region can be done only with the help of technological analysis. A detailed report of such analysis is given in the Appendix. Unfortunately it was not possible for Mr. Horton and his staff to make this examination until after the ceramics in Field Museum and other collections had been studied and grouped on a megascopic basis. Furthermore, the analysis was made on the smaller Santa Marta collection in the University Museum. A sufficient number of sherds of all apparently different wares in this collection were examined, as well as a few sherds representing all apparently unusual wares in the collections of Field Museum, the American Museum, and the Heye Foundation. Probably no local ware of any importance was missed. It was impossible, therefore, to group, classify, and describe the objects according to the technological determination; they had to be grouped on an obvious or megascopic basis.

The relative homogeneity of Santa Marta pottery and the validity of the megascopic classification are, fortunately, corroborated by the technological analysis. Except for a few unusual and presumably exotic sherds, the wares are surprisingly homogeneous in composition. The two obvious divisions into coarse red (type 1) and fine black (type 2) are upheld. The few examples of fine, thin ware with a red or, rather, orange surface fall with the black ware as regards composition as well as form and are evidently vessels to which the final black surface had never been added, or from which it had entirely worn off. A further corroboration of this is found in a very few examples, surprisingly scarce in view of the pleasing esthetic effect produced, in which only parts of a vessel have been colored black, the rest of the surface retaining the original orange color. Vessels of this fine red ware are rather frequent in the University Museum collection, and seem to be especially characteristic of Gaira, a site not visited by the Field Museum Expedition. Some other objects from Gaira, such as figurines, are also unusual, and it is probable that this site, one of the most westerly and in a different environment, very sandy and arid (p. 23), is a peripheral one, of a slightly different cultural phase. On the other hand the analysis of a sherd picked up near Rio Hacha (Sherds Presumably of Alien Provenience "e," p. 406) proved it to be sherd-tempered, a characteristic of the pottery of the adjacent Goajira Peninsula; this places the Rio Hacha region outside the boundary of the Tairona culture.

The data from the excavations prove that the two great groups of red ware and black ware were contemporary. An attempt by Mr. Horton to correlate ware-composition and site-provenience proved fruitless.

A third type of local ware is tentatively differentiated by Mr. Horton on the basis of composition; this is very fine, brown, and micaceous. It is closely related, both as regards composition and form, to the black ware, and probably represents merely vessels made of clay from a pit of slightly different composition. Examples are few, and the ware was not distinguished in the main grouping; the vessels are grouped with the black ware according to shape. The difference was observed in a few specimens but not considered significant. A few objects remembered as consisting of this thin brown ware are illustrated in Plates CCXVII, Fig. 5; CCXXVI, Fig. 6. The color is generally noted in the text.

The rare and locally restricted painted pottery was classed after analysis (Non-Typical Local Sherd "c") as a "local ware," the composition of the paste varying but slightly from that of the black ware. However, an analyzed sherd from the American Museum, from the "Region of the Chimilas," was found to be of identical composition and appearance; so I believe that these painted vessels found in the Nahuange grave were imported from the Chimila region, which cannot be far distant or of very different geology.

On the other hand the light-colored ware, examples of which are even rarer, is apparently exotic; both the shapes and decorations and the composition of the paste (Sherds Presumably of Alien Provenience "g") are quite different from those typical of Santa Marta. My guess is that these are importations from the lower Magdalena.

The primary division here employed is into "Vessels," and "Other Objects." The latter, generally made in only one or the other ware, are not subdivided according to composition. Ladles are considered as vessels, while "Miniature Vessels" and "Small Effigy Vessels of Fine Carved Ware" are considered as objects.

ABBREVIATIONS USED

AM	American Museum of Natural History, New York
BM	British Museum, London
CM	Carnegie Museum, Pittsburgh
FM	Field Museum of Natural History, Chicago
GM	Göteborgs Etnografiska Museum, Gothenburg
MAI	Museum of the American Indian, Heye Foundation, New York
MfV	Staatliches Museum für Völkerkunde, Berlin
PM	Peabody Museum, Harvard University, Cambridge
TM	Musée du Trocadéro, Paris
UM	University Museum, University of Pennsylvania, Philadelphia

VESSELS

Rarely is the same vessel form found in both thick red and thin black ware; treasure jars form the notable exception. Vessels therefore have been classified primarily on the basis of ware, first the thick red, then the thin black, and finally the less important painted and light-colored wares. Treasure jars, in which the same form may occur in either red or black ware, and very similar forms in black or painted ware, are separately described. The few painted and light-colored vessels are not subdivided as to shape, but the red and the black vessels are grouped into many types and sub-types according to shape.

The most obvious distinction in form is in the base. By far the larger number have ring or annular bases; this is especially true of the smaller and more artistic black vessels. Those with round or slightly flattened bases are rare in black ware and in the minority in red ware; they are mainly the larger, thicker, and coarser, red vessels with simple silhouettes, including most of the massive burial urns, though equally large red vessels and urns are found with ring bases, and a few round-base red vessels are small. No vessel of black ware is very large, and the average is relatively small. A few vessels of the finer red-orange pottery have been classified with the black vessels of similar shape. Vessels with bases of other types such as tetrapod are found only in black or fine red pottery. Because of their special characteristics of importance two types are distinguished on grounds other than form of base: vessels with spouts, and effigy vessels; both groups contain vessels with several base-forms.

VESSELS OF RED WARE

These vessels tend to be large, with thick walls. The paste is coarse with large inclusions, the surface often rough, probably as a result of erosion and leaching (see "Ceramics" and "Appendix, Type 1"). Shapes and silhouettes are generally simple. The majority have ring bases, but a good proportion of round bases is found, especially in the burial urns. Loop handles are found in some types. Incised decoration is very rare but relief decoration common, generally in low-relief appliqué and in grotesque or archaistic, human elements.

PLATES AND SAUCERS

Shallow, concave, pottery objects without handles, such as would be termed today plates and saucers, are very rare in this

region. No. 154590 (Fig. 1, *b*), of heavy gray ware, was purchased at Bonda; diameter 15 cm., height 4.5 cm., thickness of ware varying from 1 to 1.5 cm.; markedly concave.

A characteristic though rare object may be a kind of strainer. One nearly complete example and several fragments were found. No. 154940 (Fig. 1, *c*) was secured at Bonda. It is a shallow, round plate of very thick, red-brown pottery, 25 cm. in diameter, of slight concavity. The ware is 1.3 to 1.6 cm. thick. At a distance of 2.5 cm. from the edge there is a ring of about twenty large holes, and there are three other holes in the center. The small pottery disk, No. 154925 (Plate CCXXV, Fig. 5), is probably a toy replica of one of these. This type may be characteristic of Bonda, since Gregory Mason secured there a fragment of a similar specimen about 1.5 cm. thick, increased to 2.5 cm. at the rim. The specimen was probably very large. The paste is coarse and reddish. A complete specimen, 32 cm. wide and 1 cm. thick, of uncertain provenience, is in the Carnegie Museum.

TRAYS AND LOW BOWLS WITH LOOP HANDLES

Broad, shallow trays of thick red pottery are found in this region, though they are not common in collections. Owing to their shape, they are prone to breakage, both during interment and after excavation; few complete ones were found and none preserved intact. The best example, No. 153758 (Fig. 1, *e*), was drawn from the fragments. It was found in the stone-capped grave in site 17 at Pueblito (p. 81). It is round, not oval as first stated, about 40 cm. in maximum width. The base is slightly convex, the low sides sloping a little, and 6 cm. high, with a filleted angle at the junction of the base and the sides; the ware is from 7 to 10 mm. thick, the rim slightly thickened, with two loop handles projecting above the rim. Shown in Fig. 1, *f* is a fragment of another tray from Pueblito, with rim handles of the same type, the lip slightly everted, with a broad rim. It is from a larger and thicker vessel, the total height being 10 cm., the ware from 1.8 to 2 cm. thick.

During the excavations a number of sherds were found with vertical loop handles on the rims; these are presumed to be from trays of this form. Most of these were found at Pueblito and Cañaverl. Drawings of four are shown in Fig. 2, *a-c, f*. All are of thick red ware, up to 3 cm. thick. The orifices are quasi-semicircular and generally small. Some were placed vertically on the rim, but most of them slope outwards at an angle of from 45 to 60 degrees. The largest one

measures 17 cm. from end to end, and 8 cm. from the rim to the top of the handle; the largest orifice is 6 x 2.5 cm. In section, the handles are round, oval, or quasi-rectangular. One is divided into two parts by a lateral groove so that it looks like a twin coil; another has a concave upper surface.

Several heavy red bowls also have these loop handles on the rim and may be considered as related to these trays; they are low, although the sides are converging and the orifice less than maximum width. No. 153756 (Fig. 1, *h*) from Pueblo Bernardo, is 26 cm. wide and 11 cm. high to the rim; loop handles extend 4.5 cm. higher; 1 to 1.5 cm. thick. No. 153669 (Fig. 1, *a*), from Pueblito, 13 cm. wide and 9 cm. high to the rim, is proportionately deeper.

A bowl of unusual type, No. 153761 (Fig. 1, *d*) from Pueblo Bernardo, is very low, with an almost flat base and a sharp curve between the base and the converging side. It is 31 cm. wide and 13 cm. high. The handles of this bowl are vertical loops, with one end on the rim and the other on the body of the vessel.

Vertical, loop, "pitcher" handles of the above-mentioned type are certainly not typical of this region; except for the examples I have discussed, the only noted instances are on the shoe-shaped vessels to which they are especially adapted on account of the asymmetrical form. Six sherds containing similar handles were found, and five of them are shown in Fig. 2, *e, g-j*. Some of these specimens might have been employed horizontally, but probably were not. The large specimen (Fig. 2, *e*), No. 154804, is from Dibulla. It is relatively broad and thin, 7 cm. long, 3.5 cm. wide, and 1.5 cm. thick, and is divided by two parallel grooves into three longitudinal segments. Similar grooves are on the inner side. The handle extends above the rim of the vessel and, at least on one side of the handle, there is a small knob on the rim. No. 154763 (Fig. 2, *j*) is also from an unusual site, Pueblo Viejo. It has a large knob that extends above the rim. The other four are from Nahuange, Gairaca, Cañaverál, and Arcife. Three of them (*g-i*) are divided by a longitudinal groove into two segments. The specimen from Nahuange is of rather thin black ware, the others of red. The specimen from Arcife, not shown, is rather broad and thin, 5 x 1 cm., and is divided by parallel longitudinal grooves on the exterior into six segments.

Horizontal, loop, rim handles, probably from large trays, were found by Gregory Mason at Gaira and Pueblito, and vertical handles, probably from shoe-shaped vessels, at Cinto. A loop, rim handle,

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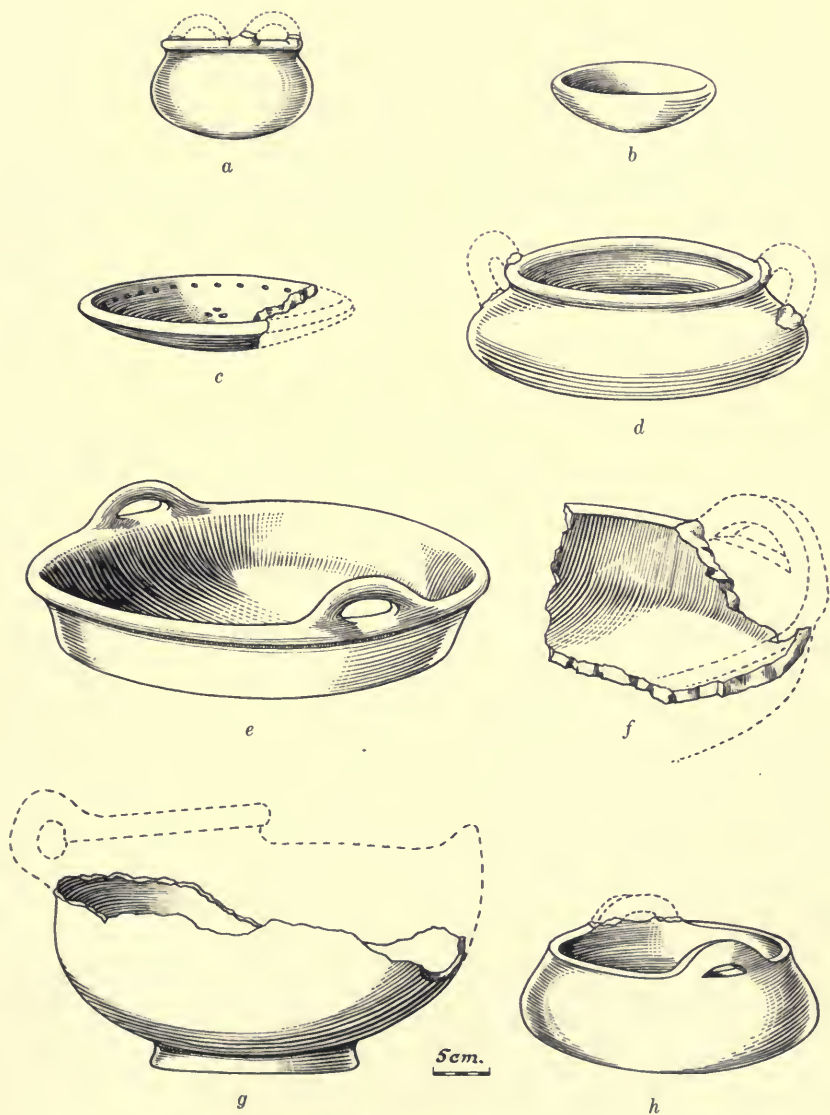


FIG. 1. Vessels of heavy red ware. a, d-f, h, Trays and bowls with loop handles; b, c, Plate and saucer; g, Shoe-shaped vessel.

which apparently belonged to a deep bowl similar to those shown in Fig. 1, *a, h*, was found at San Pedro Alejandrino.

In the Carnegie Museum is a bowl of unusual type from near Bonda (Fig. 22, *p*). It is red ware with a round base, slightly rolled rim and a rude finish; 28 cm. wide, 18 cm. high. The horizontal loop handles are on opposite sides of the body, below the rim.

Of the four low bowls with handles on the rim, in New York, two are of the common type shown in Fig. 1, *e, f*; 38 and 34 cm. wide, 8.5 and 10 cm. high. On another broken specimen, 43 cm. wide and 10 cm. high, no trace of a handle was noted but it may have had one. One from Bonda (MAI; Fig. 22, *d*) certainly had only one handle on the rim. It is smaller and deeper than most bowls, 15 cm. wide, 6.5 cm. high to the rim, and 9 cm. to the top of the handle. The ware is very thick.

SHOE-SHAPED VESSELS

Pottery vessels in the shape of a shoe are found in the Santa Marta region, though they are not common. The type, however, is important, as it is of widespread distribution and apparently one of the diagnostic criteria of an old culture-complex.

Four vessels of this type, of which only one was complete, were found by the Expedition. Another specimen was evidently so badly broken in shipment that it was not catalogued. All were excavated at Pueblito, and apparently all on site 31. They are of thick, coarse, red ware and were almost certainly utilitarian, probably culinary, in purpose. No. 153639 (Plate CLXIX, Fig. 2) has a round base, pointed and upcurved toe, and a medium small orifice; 26 cm. long, 16 cm. high, and 16 cm. wide. Probably it should rest with the orifice level and the toe lower than shown in the Plate. A vertical loop handle connects the orifice rim with the body. Many similar handles, probably belonging to vessels of this type, were found (Fig. 2, *e, g-j*).

No. 153604 (Fig. 1, *g*), also fragmentary, is of slightly variant and very unusual type, as it rests on an oval ring base (instead of the usual rounded bottom), 20.5 x 17 cm. in exterior dimensions. The vessel itself is much larger than the others, apparently about 36 cm. long, 20 cm. wide, and at least 18 cm. high. The vertical handle is uncertain but probable.

A vessel almost identical with No. 153639 in shape and size, from Don Diego, is in the Trocadero Museum. The largest vessel of this type, 38 cm. long, 17 cm. wide and 15 cm. high, with a large, vertical,

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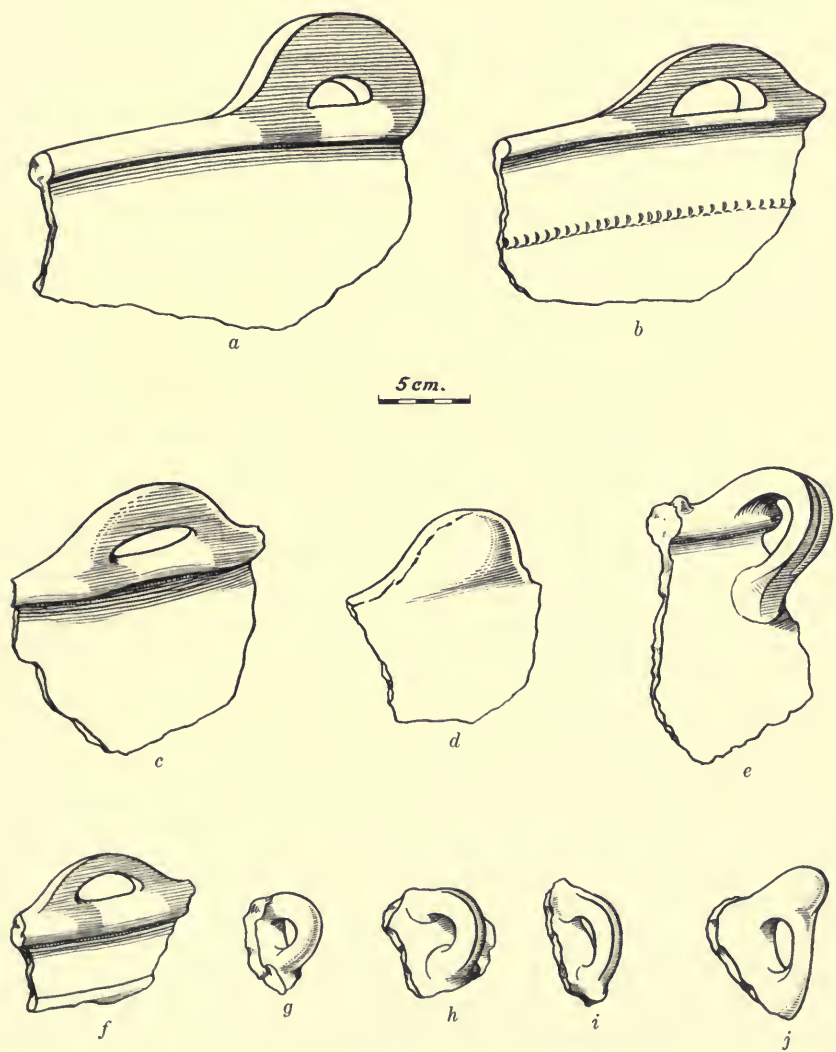


FIG. 2. Handles of heavy red vessels.

loop handle and a straight, pointed toe, was found at Pueblito and exchanged to the Museum of the American Indian (Fig. 22, *l*).

In the American Museum are two small and unusual examples (Plate CCXXII, Figs. 2, 3). One, from Taganga, 18 cm. long, 11 cm. wide, and 12 cm. high, has a slightly concave slanting semi-circular lip at the upper rear in place of the usual vertical loop handle. This unusual handle explains the nature of a similar handle fragment found by the Field Museum Expedition at Dibulla, No. 154797 (Fig. 2, *d*). This is concave or shell-shaped, luted to the rim, and set at an angle to it; of dark, thick, coarse ware, 8 x 2 cm.

The other vessel in the American Museum, from Don Diego, is even smaller, 12.5 x 7.5 x 9 cm. It has the usual vertical loop handle at the rear, and the unusual feature, for this region, of a human face in appliqué low-relief on the front.

PLAIN, ROUND-BOTTOM POTS

Burial Urns of Type C.—Vessels of this type represent probably the commonest and the simplest type of Santa Marta ceramics. The possible differentiation is slight except in size, and numbers of examples are found in every large collection from this region. It was obviously a utilitarian ware, its main purpose doubtless culinary, but the largest examples were employed as burial urns. Urns of this shape have already been designated as type C (p. 27; Plate LXIII, Fig. 5). A type specimen is shown in Plate CLXIX, Fig. 5, and sketches showing the variation in size and shape are in Fig. 3, page 295. There are larger burial urns, however; these differ from the smallest vessels only in size, not in shape.

More than sixty vessels of this type were secured, mainly whole or nearly so. Six of these are of the large burial-urn type from Gairaca; thirty-three of the others are from Pueblito, fifteen from Pueblo Bernardo, three from Gairaca, three from Teran, and one from Taganga. All of those from Pueblo Bernardo were found on the surface, as were many of those from the other sites. No. 153614 (Plate CLXIX, Fig. 5) was taken from the stone-lined grave of site 29 at Pueblito (p. 92); it contained beads and probably held human remains.

The smallest sizes were presumably toys or mortuary miniatures, probably buried with girls. Dimensions vary from 9.5 x 6 cm. (UM) to 65 x 36 cm. (MAI). All the large urns were apparently secured at Gairaca, and one broken example in Field Museum, apparently 65 x 40 cm., slightly exceeds the above maximum. Proportions vary

Fig # 86103 (5x6½)
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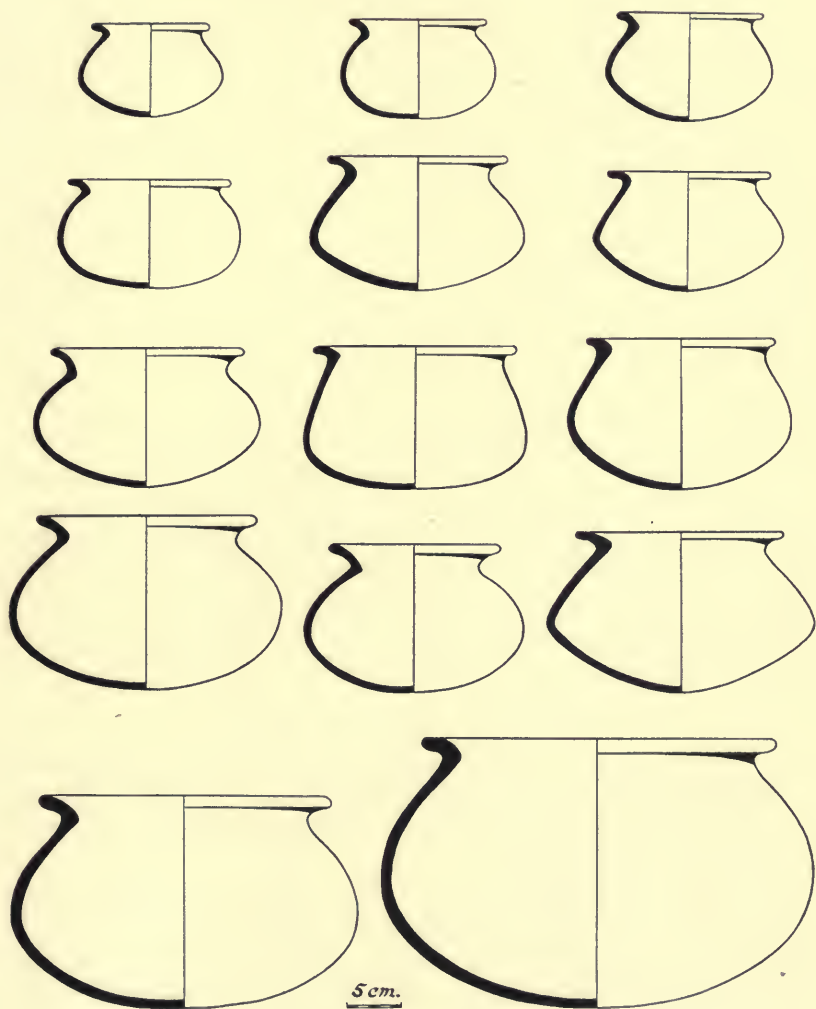


FIG. 3. Plain, round-bottom red pots.

considerably, the highest, relatively, in Field Museum being 18 x 16 cm., the lowest, 18 x 7 cm. None is even approximately globular, the base being of a much slighter arc than the side. In certain ones, apparently more characteristic of Pueblo Bernardo, the shoulder is also of slight arc, and meets the base in a carination. A number of the Pueblo Bernardo specimens show in places the bright-red surface color that is seen also on some of the stone-work (p. 147). The everted rim, generally rather wide, with a flat upper and slanting, straight, lower surface, seems to be an invariable characteristic. The lips of the large burial urns are up to 7 cm. in width.

The thickness of the ware is not great, that of the smaller vessels being from 4 to 6 mm., of the larger urns 1 to 1.5 cm. The paste is apparently always coarse, the surface red, never blackened. If a red surface slip was ever used, it has disappeared in every observed case. Apparently no form of decoration was applied to vessels of this form.

In the Carnegie Museum are two vessels of this type from a village site three miles east of Masinga. In the University Museum are vessels from Las Tinajas, Concha Bay, and San Pedro Alejandrino. Among the twenty-one pots of this type in the Museum of the American Indian, thirteen of them, received by exchange from Field Museum, are vessels from Gairaca, Cinto, Pueblito, and Pozos Colorados. Eight from Taganga and San Pedro Alejandrino are in the American Museum. One is said to have been filled with broken human bones, another with animal bones.

ROUND-BOTTOM JARS OR OLLAS

Jars without ring bases are not typical of this region, but a number of examples, typical in other respects, were found. Twelve, showing their outlines and sections, are drawn in Fig. 4, and four of these are also shown in Plate CLXIV.

Round-bottom jars are almost always wider than they are high; the height of a few is greater than their width. There is no sharp angle or carination dividing the body into upper and lower zones. The orifices are normally rather small and the neck is generally low; this often bears grotesque, human, facial features in relief, and the arms and hands are often placed on the adjacent parts of the body of the vessel. The type is most characteristic of the foothill sites, ten of those in Field Museum coming from Pueblito, three from Teran, and one from Pueblo Bernardo; one was purchased at Taganga, and one found at Gairaca. The largest is No. 153665 (Fig. 4, *k*),

Fig # 86096 (5x6 $\frac{3}{4}$)
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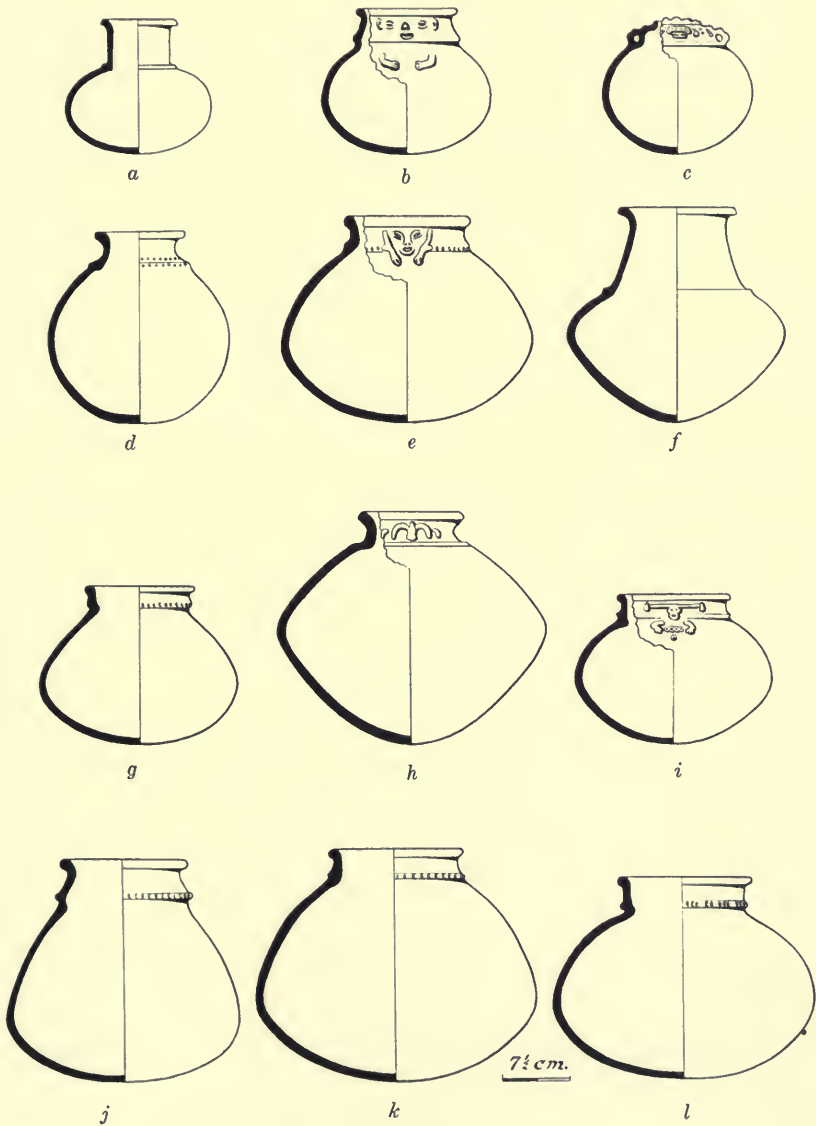


FIG. 4. Round-bottom red jars or ollas.

32 cm. wide and 27 cm. high; the smallest are 15 x 15 cm. and 17 x 13 cm. (Fig. 4, *a, b*).

At the base of the neck there is generally a slight flange that is normally filleted. In No. 154592, from Teran (Plate CLXIV, lower right), the flange is bordered by a line of incised dots. No. 154586, from Teran (Plate CLXIV, lower left; Fig. 4, *c*), has a highly ornate, relief shoulder and a very small orifice; originally, it probably had a small neck above this. Two tiny vertical loop handles connect the ruff with the body. Two have rather high necks and esthetic shapes, No. 153671, from Pueblito (Fig. 4, *a*), and No. 153760, also from Pueblito (Fig. 4, *f*); the latter has a pointed base.

Selected examples from among many in other museums are illustrated in Fig. 20, *a* (UM); Plate CCXXI, Fig. 4 (MfV), 15 cm. high; Fig. 21, *j* (Collection of William M. Sutherland), ca. 30 cm. high and wide. The latter was found near the power plant above the town of Gaira; it contained no objects. The neck is of an unusual constricting shape and the relief on the body is peculiar; the high-relief arms seem to bifurcate so that two lower arms and hands are shown on either side. In the medial line are two small rings, one above the other. Another unusual type (MAI; Plate CCXVI, Fig. 5) from Gairaca is small, 13 x 12 cm., with constricted neck and enlarged head, the face decorated with fine, incised lines. On the body are two short arms in the round, like small loop handles.

Small, rather rude and thick red ollas of this form seem to be especially characteristic of Pozos Colorados, where Gregory Mason found twenty-four, fourteen of which are in the University Museum, and ten in the Museum of the American Indian. Several similar ollas with ring bases were also found. All have small necks and differ only in details. Several in Philadelphia are noted as having been found inside larger vessels, and one as having contained carnelian beads. Three have rude, relief, human faces on the neck (Plate CCXIX, Fig. 6). Most of the others have one or a pair of low-relief nodes or lugs, circular or elongated, on each side, grouped either horizontally or vertically. Some are perfectly plain, and some have a filleted ring at the base of the neck. The smallest is 9 cm. high and wide, the largest 16 cm. One of those in New York has a rude but otherwise typical flying-bird relief on the shoulder.

Two large red vessels of unusual shape (MAI) should possibly be placed in a category by themselves, as they are more or less intermediate between this type and the plain neckless pots and type C urns already considered. One (Fig. 22, *s*), 23 x 28 cm., from

the new site of Mamaron, near Gairaca, has a squat globular body, a round base, a very wide orifice, and an everted, rolled rim without neck. The other (Fig. 22, *r*), 24 x 27 cm., has a slightly pointed base, a wide orifice and a short, flaring neck or slanting rim decorated on the exterior with a ring of nodes.

In a slightly different class are globular vessels with small, low necks, Nos. 153681 and 153682, from Pueblito (Plate CLXXIX, Figs. 4, 6). The ware is thinner and the paste finer and possibly of a different type. On the shoulder below the neck with its relief decoration are two concentric rings of large, shallow, impressed dots or ovals. The relief arms sometimes extend upwards with the hands near the eyes.

The large burial urns of type B (q.v.) might be considered as large forms of round-bottom ollas, though they show some minor peculiarities in addition to size.

Burial Urns of Type B.—One of the most striking and characteristic objects of Santa Marta ceramics is the massive burial urns of type B (Plate LXIII, Fig. 3). These are large, of thick, coarse, red ware and artistic shape, and have large necks which often bear a human face in appliqué or molded relief; arms and other features are often placed on the body. In addition to greater size, they differ from the ollas just considered in having higher necks and generally more ornate relief ornamentation. They more closely resemble the jars with ring base without carination, but are larger and have a slightly convex base. Height and width are about equal; the bodies lack any carination. There is always a filleted flange at the base of the neck and at this point the interior is often constricted. This suggests that a cover of some nature was placed at the base of the neck, though in no instance was one found. Only two of the nine urns of this type found at Gairaca had covers. The rims are generally rolled, seldom flat like those of the plain, red, round-bottom pots. The average thickness of the ware is about 2 cm.

Most of the urns of this type were excavated at Gairaca (pp. 26-31; Plates LXI, LXII, Fig. 2), but massive sherds with relief, probably fragments of similar urns, were found in the excavations at most of the other sites, suggesting that these urns were interred at many places. On the surface at Pueblito, one, that may be taken as typical of the group, was found undamaged, No. 153601 (Plate CLXV), 80 x 75 cm., the largest known to me; rim diameter 50 cm., interior width of neck at base 33 cm.

Another urn from Gairaca (CM; Plate CLXVI, right) about 66 x 62 cm., lacks the constriction in the neck. The largest four of the five urns illustrated in Plates CLXVII and CLXVIII were secured at Gairaca by the Field Museum Expedition. They are now in the Museum of the American Indian. The largest, of nearly maximum size, 77 x 77 cm. (Plate CLXVII, left), is shown partly excavated in Plate LXII, Fig. 2. This urn illustrates the common aboriginal technique of repairing a crack by drilling holes on either side of it; doubtless thongs or withes were laced through these holes to hold the pieces together.

The seven urns shown in Plates CLXVI-CLXVIII illustrate well the variations in the characteristic relief decoration, a face on the neck, and arms and sometimes other features on the body. Some are of appliqué relief, with the "coffee-bean" eye that sometimes has been considered a diagnostic criterion of Archaic art; others are mainly modeled and more naturalistic. Nose- and ear-ornaments are almost universal, tattooing is shown in several instances, and there is a lump, probably representing a quid of coca, in the right cheek of one (Plate CLXVI, right). The face of one (Plate CLXVIII, right) is of a rare type, with very high-relief features, eyebrows, and nose; the eyes are round rings; and the mouth is oval and open, showing the teeth in the round. The arms hold a pitted object and there is an object like a beard below the mouth. Many of these same peculiarities may be noted on the unusual double-orifice urn, No. 153602 (Plate CLXXI). This also has a crack-mending drilled hole. The ornamentation on one of the other urns (Plate CLXVIII, center) is unusually ornate, showing crescentic nose-ornament, labret, ear-rings, necklace, flying-bird pendant, T-shaped ornament, teats, and probably vestigial legs, as well as arms and hands.

Other relief from these urns is noted under the heading of "Relief Decoration of Red Vessels."

Comparatively small urns of type B seem to be characteristic of Pozos Colorados (UM, Fig. 20, *e, f*; MAI, Plate CLXVIII, left, and Fig. 21, *i*). The dimensions range from 35 x 37 cm. to 45 x 45 cm. All have the usual, grotesque, human, relief ornamentation and, at least in the two Philadelphia specimens, the relief arms on the shoulder are asymmetrical, the hands often turned up to the mouth or cheeks. A lump, probably representing a quid of coca, is shown in the cheek of one. Bones were found within one.

Burial Urns of Type D.—A fourth type of burial urn is found in small numbers at Gairaca; its form was shown with the other three types in Plate LXIII, Fig. 4, but no classification was assigned it. It will be termed type D. Urns of this kind are the largest and most massive of all. The shape is simple, the sides relatively vertical to convex, the base slightly convex without basal ring. The neck is short and but slightly constricted, with an unusually wide orifice and a rounded rim. No instance of relief decoration has been observed. There is generally a slight flange at the base of the neck, and this and the angle where the side meets the base are generally filleted with finger indentations. The surface is always red, and the texture invariably coarse.

No urn of this type reached Field Museum intact, but the shapes of the broken specimens may be judged by those of complete examples in other museums. The average thickness of the ware is 2 cm., and the rim fragments indicate orifice diameters varying from 45 to 70 cm.

Variation in shape is considerable; the extremes are shown in the largest two specimens. One (UM; Fig. 20, *n*), 88 x 64 cm., has a nearly straight, vertical side. The interior of the neck is slightly constricted at its base, as in the case of urns of type B. The other (CM; Fig. 21, *l*), 80 x 75 cm., has a very convex side which is practically continuous with the convex base. The orifice is a little constricted to 57 cm.; in the former example it is of almost maximum width.

Intermediate types measure 65 x 65 cm. (UM; Fig. 20, *o*), 82 x 75 cm. (MAI; Fig. 21, *n*), 70 x 63 cm., and 61 x 65 cm. The latter is unusual in that the width is slightly greater than the height.

A vessel from Gairaca of unusual, simple shape might be considered a variant of type D (CM; Fig. 21, *m*). Though small for an urn it is large and heavy, with rounded base and almost vertical side, large orifice with rolled rim, and no neck; height, rim, and maximum diameters about 50 cm.

RING-BASE, NECKLESS JARS

Jars without Carination.—The jars of this type are not very common; all fifteen examples in Field Museum are depicted (Figs. 5; 7, *b*, *c*, *g*; Plate CLXIX, Figs. 1, 3). Variation is considerable. Bodies tend towards spherical without any carination. They are moderately high with moderately large orifices, and generally slightly everted rims with no necks. Almost all are wider than they are high, those in Field Museum measuring 12.5 x 15 cm. to 26 x 37 cm. Two in

the University Museum are 28 x 36 cm. and 45 x 56 cm. Four of the fifteen have low-relief, human faces and arms on the upper part of the body. Paste and surface are always reddish. Six are from Gairaca, five from Pueblito, two from Pueblo Bernardo, one from Teran, and one from Dibulla.

No. 153725 from Pueblo Bernardo (Plate CLXIX, Fig. 1) is unusual; the orifice is very wide and on the broad, flat rim are two pairs of raised, elongated lugs. Another variant (MAI; Fig. 21, *g*), 27 x 27 cm., has a wide orifice almost equal to its maximum width.

Vessels of this type, taller than they are wide, are unusual. Two such are from Pueblito (Fig. 7, *b, g*), one of these unusually slender, with relief decoration.

A variant form is found at, and may be characteristic of, Pozos Colorados (UM; Fig. 20, *i, j*). The rim is projected upwards and outwards to form a quasi-neck, and the lip of the larger specimen is slightly inverted. The larger, 44 cm. high and 41 cm. wide, has a rude stylized relief, human face on opposite sides of the shoulder, and the smaller, 34 cm. high and 38 cm. wide, has a pair of oval nodes or lugs in the same places. The latter contained three of the small, rude, red, round-bottom, small-neck ollas mentioned elsewhere, and close beside it were several other small pottery figures.

A jar from Dibulla (Fig. 7, *c*) is unusual, as might be expected from this rather distant site to the east. This jar is of hard, dark-red ware, rudely shaped, and lacks both neck and everted rim. The two small horizontal loop handles are close to the body without interstices. It probably belongs to one of the peripheral sub-cultures.

Very large vessels of this type are considered as variant forms of type A urns, A2 (q.v.).

Jars with Carination.—These jars are among the commonest and most characteristic vessels from Santa Marta. Examples are found ranging from relatively small to the most massive burial urns of type A (q.v.) (p. 26, Plate LXIII). The vessel is wider than it is high and of maximum width near the middle. The lower zone is slightly convex, the upper concave or convex; they meet in a raised filleted carination around the middle. Basal ring and orifice are both moderately large and the latter has an everted flat rim of relatively small width.

In Fig. 6 seventeen of the smaller sizes of these jars are drawn in outline and section, showing the range in shape and size, though the large urns greatly exceed the largest of these; four of them are

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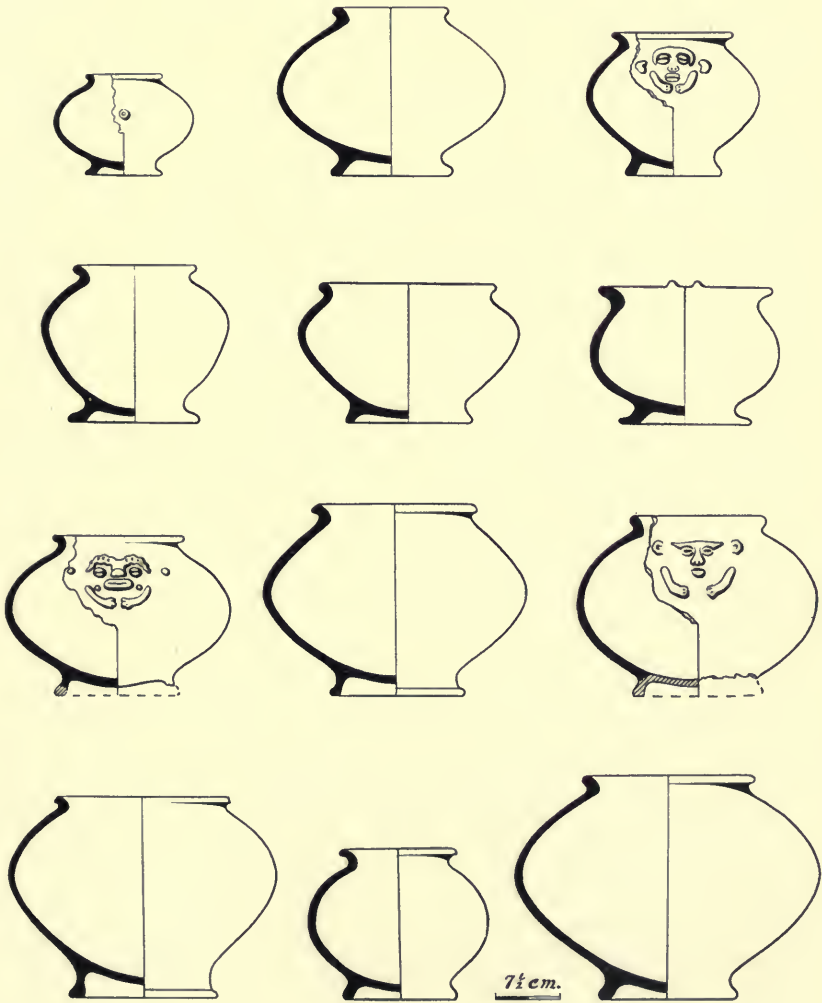


FIG. 5. Ring-base, neckless red jars without carination.

also shown in Plate CLXX. These smaller sizes are mainly from Pueblito, the large urns all from Gairaca. The smallest is No. 154597 from Mandigua (Fig. 6, upper left), 9.5 x 18 cm.; the largest is No. 153697 from Pueblito, 25 x 38 cm. (lower center). Of these smaller sizes, twenty-three are from Pueblito, two from Pueblo Bernardo, and one each from Mandigua, Teran, Nahuange, and Gairaca.

A minor variant sub-type has longer and more slanting shoulders, and wider, more everted rims (Fig. 6, bottom row; Plate CLXX, lower row). Normally vessels of this type are plain, but six have grotesque, appliqué, human relief on the upper zone. Fragments of the relief from others may be seen in Plate CLXXX.

Burial Urns of Type A.—Burial urns of type A (p. 26, Plate LXIII) composed the most common type found at Gairaca, and all examples known to me, from whatever collection, are from this site. Thirty-one examples were found there by the Field Museum Expedition (pp. 26-31; Plates LXI, LXII).

The majority differ from the red, ring-base vessels with filleted carination (Fig. 6) mainly in size, and as there is an unbroken gradation in size the distinction between urns and vessels is an academic one; possibly all were used for mortuary purposes. Several large urns of similar size and shape lack the filleted carination and differ only in size from the smaller vessels of this shape (Fig. 5). These two types might be distinguished respectively as types A1 and A2.

These are among the largest and heaviest vessels, the largest known to me (MAI) being 75 x 88 cm. The width is always greater than the height. Ware is always red, coarse, and rather thick, about 1.5 or 2 cm., increasing at the medial filleted carination to a maximum of 3.5 cm. Rim widths average about 5 or 6 cm. One (UM; Fig. 20, *m*), 72 x 72 cm., shows the drilled holes for mending the cracked rim.

These urns are almost always plain but three with relief decoration were observed. In two, this is a human face, one (FM; Plate LXI) grotesque and unusual, the other (MAI) excellent and naturalistic. The third (CM; Plate CLXVI, left), 71 x 84 cm. (without the missing base), has a relief figure of a toad or frog on opposite sides; the head is in high-relief and probably shows the origin for some of the broken relief frog heads found.

Two others, among the largest, 65 x 74 cm. and 60 x 72 cm., belong to type A2, the sides being curved without the filleted carination that is more typical. Except in size they resemble the smaller

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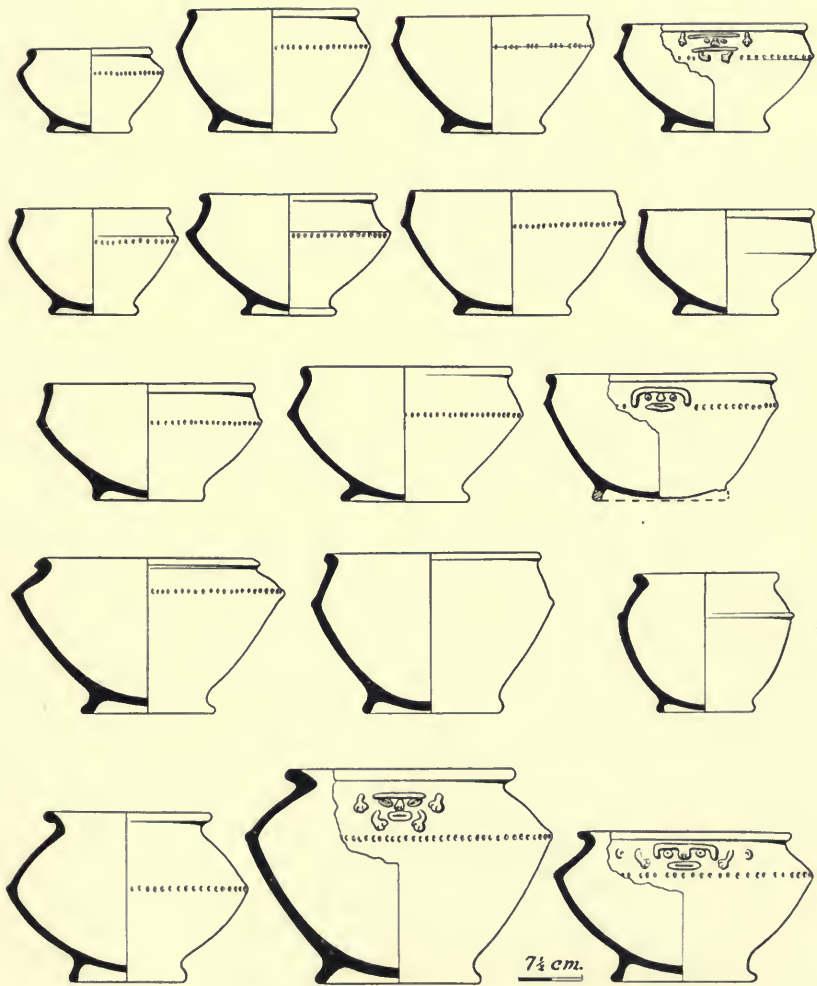


FIG. 6. Ring-base, neckless, carinated red jars and bowls.

vessels (Fig. 5). The diameter of the ring base is about one-half the maximum width, that of the orifice about two-thirds of the width.

Urns of type A ordinarily had covers of an inverted bowl of a special type (truncated cone shape, Fig. 9), red, with ring base and straight, flaring sides with very slightly incurved rim.

As in the cases of several other shapes, jars of a variant form are found at Pozos Colorados (UM, MAI); these were probably also burial urns. They approach in shape the urns of type A, but differ from them in having wider orifices, higher ring bases and shorter concave upper zones. The medial carination is filleted and the rims rolled outwards. Dimensions are 34 x 36 cm. (UM; Fig. 20, *k*), 36 x 40 cm. (UM; Fig. 20, *l*), and 38 x 42 cm. (MAI). One contained human bones.

DOUBLE-ORIFICE URNS

One of the finest and most unusual specimens found by the Expedition is the urn with twin orifices, No. 153602 (Plate CLXXI), which was picked up on the surface at Pueblito by the workmen, together with a large, complete urn (Plate CLXV), during the first few days before the site had been plotted. Both were empty.

No. 153602 is of medium size, 56 x 50 cm., of comparatively thin, red pottery. It rests on a ring base and is heart-shaped, the maximum width near the top. At the center of the top is a grotesque human head in full round, and on the shoulder on either side a cylindrical spout on which are smaller, grotesque human figures in appliqué relief. The interior of the central head is hollow, and a little more than hemispherical. The details are in high-relief and show, in addition to the facial features, head-dress, ear-rings, and tattoo marks. On the top of the head is a small high-relief human figure lying prone, the head broken off. There is a suggestion of a bag hanging from the right shoulder at the rear, and below the neck is a triple necklace. The arms are shown in low-relief on the body of the urn. Arm-bands are shown, and each hand grasps a different object of uncertain nature, probably a weapon or ceremonial object. That in the right hand has a pitted, round head; the other is longer.

The orifices are, or were, for one of them is broken away, about 14 cm. in width and maximum height. On the front is shown a small, grotesque human figure in relief. The arms hold the upper arms of the main figure, and one leg projects forward, the other to the rear.

This type of urn is rare, but that the vessel is not unique is indicated by a fragment of a similar urn found in or near site 31 at Pueblito, No. 153603 (Plate CLXXIX, Fig. 5). On this specimen little remains of the orifices, but they seem to have been plain, and the relief details in general less. The central head shows the use of labret and nose-ornaments; a large pendant in the form of a flying bird, certainly depicting a gold pectoral, hangs on the breast.

JARS WITH RING BASE AND NECK

Vessels with considerable variation in shape are grouped in this type. The bodies approach globular form without carination; the orifices are generally rather small, with more or less vertical necks which are frequently embellished with human facial features in relief, with the arms shown on the adjacent parts of the body. Most, if not all, of them were probably made for mortuary purposes, for interment in graves or ceremonial sites; the larger ones probably served as burial urns. There are black jars of the same type, and some of these may have been black, the surface now eroded.

Ten vessels in Field Museum are placed in this type, seven from Pueblito and one each from Nahuange, Palmarito, and Vista Nieve. Three (Fig. 7, *a, h*; Plate CLXXII, Figs. 2, 5) were found in the stone-capped grave in site 29 at Pueblito (pp. 91, 92); they contained ceremonial objects. Two of these, one of which had a black bowl as a cover, are plain; the third has relief ornamentation. Most jars of this type are taller than they are wide, but the difference is not great except in one sub-type.

In the most characteristic sub-type the body is subglobular, the neck low (Fig. 7, *a, d, e, h*; Plates CLXXII, Figs. 2, 5; CCXVII, Fig. 3 [MAI]). One of these from Pueblito (Plate CLXXII, Fig. 1; Fig. 7, *e*) has interesting asymmetrical relief and a ribbon tongue in the round extending from mouth to body. Of two other vessels with asymmetrical relief (MAI), one arm is much longer and apparently holds the male genitals; in the other, an arm in the round extends from the body of the vessel to the mouth of the relief face. Human relief varies from rude to ornate.

A vessel from Pueblito (Plate CLXXII, Fig. 3; Fig. 7, *f*) has unusually low base and high neck, with three filleted rings and human, facial, relief features.

The larger vessels much resemble urns of type B except for their ring bases, but never are of great size. One purchased at the high-

mountain site of Vista Nieve (Fig. 7, *j*; Plate CLXXII, Fig. 4), 34 x 30 cm., is of interest, if actually excavated here, as the aboriginal culture at this cool altitude (p. 123) would be expected to be somewhat different, and probably lower. Two small legs or arms, in the round, connect the neck and body of the vessel. A vessel very similar in all particulars (Fig. 21, *k*), apparently about 45 x 40 cm., was found by Mr. William M. Sutherland near the power plant above the town of Gaira. This is also a site at a high altitude, not far from Vista Nieve. The two short arms, in the round, are said to hold a cup under the mouth. In each cheek is a relief node that may represent a quid of coca.

The most artistic vessels of this type are the large, tall ones with the body heart-shaped, the maximum width close to the base of the neck. This form is very characteristic of certain smaller vessels from the Quimbaya region of the southern Colombian highlands. The finest of these (MAI; Plate CLXXIII, Fig. 1), apparently bought by Gregory Mason at Taganga and therefore of uncertain exact provenience, much resembles in body shape and relief decoration the double-orifice urn (Plate CLXXI), and the two must be of similar cultural origin. The relief is very high, with round eyes and a projecting animal snout that is hollow, at least in part, the teeth being in full round. The photograph also shows the ring-base bowl, with filleted carination, that covered it; it came far down over the neck of the vessel. Other jars of similar shape, both with the basal rings missing, are from Pueblito (FM; Plate CLXXIII, Fig. 2; Fig. 7, *k*), 40 x 28 cm., and Gaira (UM; Plate CLXXIII, Fig. 3), 49 x 36 cm. Each jar has a human face with a large nose-ornament, and arms. The face on the latter specimen is peculiar, with the eyes very close together, the nose, especially the nasal septum, very projecting.

It should be noted that although small jars with ring bases, spheroid bodies and small, high necks are very common in black pottery, they are unusual in the thicker red ware. In addition to the few mentioned above, one of the many thick, rude, red, irregular, small vessels from Pozos Colorados (UM) has a ring base; the bases of all the others are round. These were probably all found within burial urns.

An unusual shape that approaches bowl-shape, with a very wide orifice (Fig. 7, *i*), from Nahuange, is an intermediate type.

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alt # 72 (5x6 1/2)

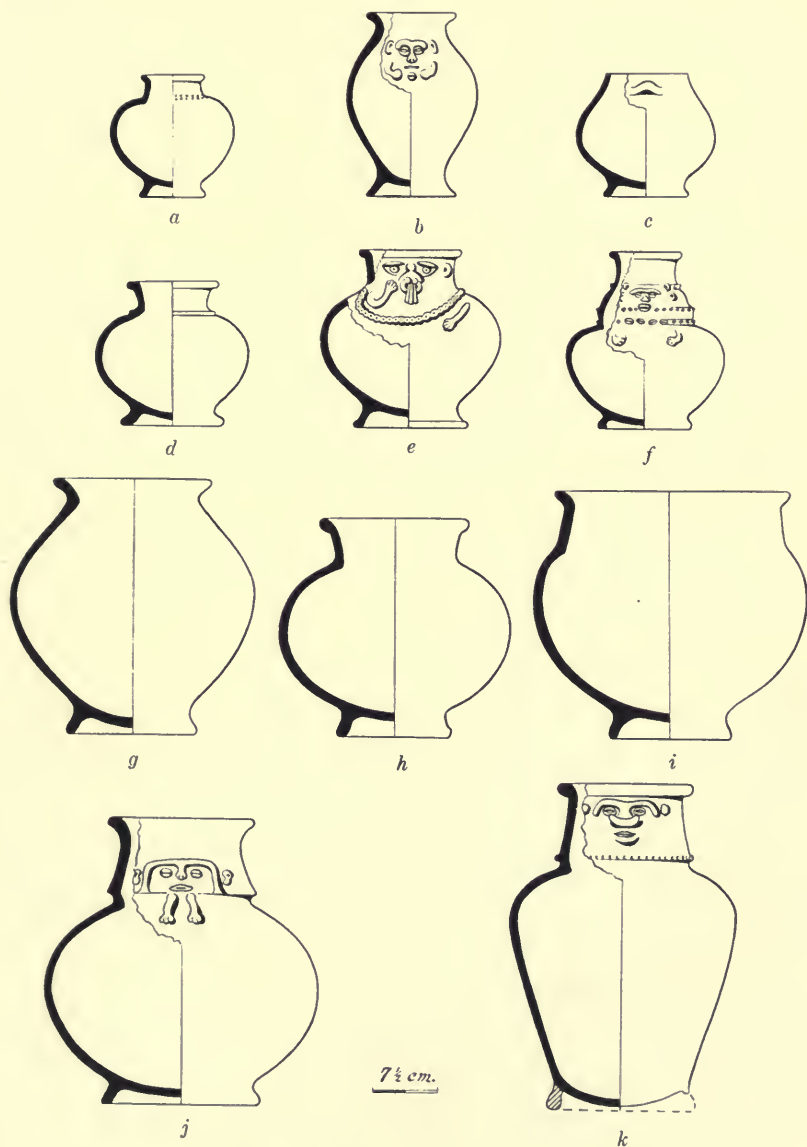


FIG. 7. Red ring-base vessels. *a, d-f, h-k*, Jars with necks; *b, c, g*, Neckless jars without carination.

QUASI-CYLINDRICAL RING-BASE JARS

The vessels in this group vary considerably in details, proportions, and size. All have ring bases, rather short, very slanting, convex, lower zones, a pronounced carination that is always filleted, a high, relatively vertical, concave or straight, upper zone, wide orifice, and everted rim. They range from rather small jars to large vessels which were probably burial urns. Ten vessels of this type were found (Fig. 8). Few were complete, and restorations have been made in most (see also Plate LXIV, Fig. 5).

Of the ten, five are from Pueblito, two from Pueblo Bernardo, two from Teran, and one from Gairaca. In size they range from No. 154933 (Fig. 8, upper left), 16 cm. wide and 16.5 cm. high, to No. 154945 from Gairaca (Fig. 8, lower left), 44 cm. wide and 35 cm. high without the missing ring base. One, No. 153737 (Fig. 8, top row, center), has a human figure in relief on the side, but this is obviously not typical. At least one was apparently mortuary furniture and contained stone ornaments; it was excavated in the ceremonial center at Pueblito.

Another example (MAI) from Pueblito is unusually tall, 20 x 13 cm. without the missing rim. Another of a more common shape has low-relief, human decoration.

BOWLS OF TRUNCATED CONE SHAPE

This is a very common type and varies little except in size, in which the variation is great. The large ones, used in inverted position, were employed primarily as covers of burial urns (Plates LXI, LXIII), and many of the smaller sizes probably served as covers for smaller vessels. The orifice is wide with the maximum diameter close to the rim, which is generally slightly incurved. The sides are straight or slightly convex, viewed from the exterior, and the bottoms are relatively small, with ring bases.

The exterior is always plain and the interior usually so. In the case of the largest known example, and a number of the smallest ones, the interior is partly covered with incised or punched lines or impressions; as these were probably utilitarian as well as esthetic these bowls are considered as graters (q.v.). The silhouettes of both types are identical (Fig. 9). All the very large specimens, and some of the small ones, are from the Gairaca cemetery; a few rather large examples are from other sites: Gairaca, twenty-seven; Pueblito, three; Pueblo Bernardo, two; Nahuange, one. Sizes vary from 5 x 7

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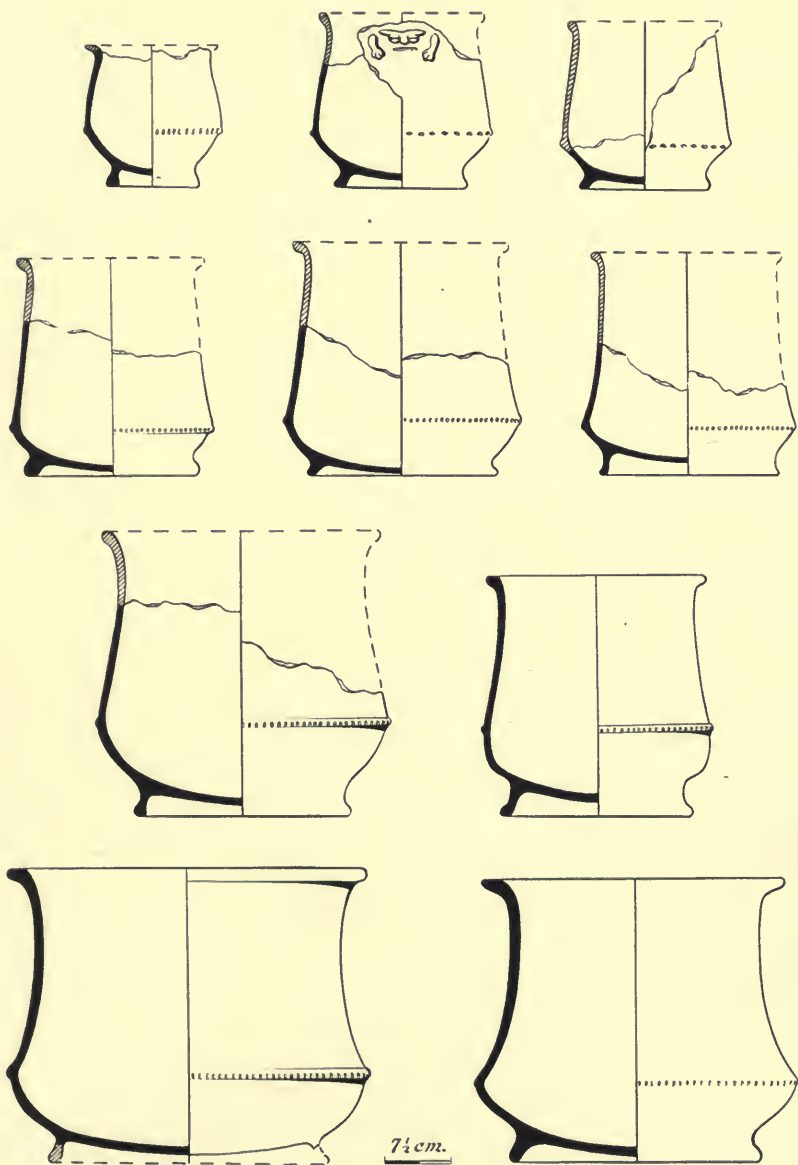


FIG. 8. Red, quasi-cylindrical, ring-base jars.

cm. and 5 x 9 cm. (Fig. 9) to 17 x 38 cm. (Plate CLXIX, Fig. 4), 27 x 56 cm. (CM) and 27 x 60 cm. (FM; grater).

One from the distant and possibly extra-Tairona site of Baranquilla (AM) is of typical shape but of red and gray ware with a grayish slip. Another (MAI) is from Pozos Colorados. Three from Gairaca (MAI) are unusual. One (Fig. 21, *c*) of thick ware with a very low ring base is small and very low, 5 x 13 cm., and might be called a plate. Another (Fig. 22, *j*) is exceptionally deep, 18 x 26.5 cm. A third (Fig. 22, *q*), also deep, 37 cm. wide and 20 cm. high without the missing basal ring, has its rim much more incurved than any of the other large examples.

Graters, or Bowls with Incised Interiors.—Bowls of truncated cone-shape with impressed markings in the interior are considered as graters. Although the markings are generally even, regular, and sometimes in designs, they often show signs of wear. With one exception they are small and of the same shape as the plain bowls (Fig. 9), and were also often employed as covers for ollas or urns. There are grater bowls of black ware also, generally with well-made designs. The sizes range from 7 x 14.5 cm. to 13 x 32 cm.: Gairaca, nine; Pueblito, three; Pueblo Bernardo, one. Others are from Pozos Colorados (UM); another from Gairaca (UM) is unusually low, 7.5 x 20 cm.

The impressions cover a round space in the center of the interior; they are generally cuneiform, but may be round, oval, or elongated, generally rather deep and apparently made with the point of a stick or some similar object. The area covered may be large or small, an even circle or an irregular circular space. Often they are carefully made, with the incisions in concentric circles and radiating; others are more irregular but never entirely at random (Fig. 25, *g-i*).

The exception in size is the largest of all the bowls, No. 155005, from Gairaca, 27 x 60 cm. The entire interior is filled with large, deep, oval impressions, round on the bottom, horizontal and in parallel rows on the side; they were apparently made by dragging or pushing a large, blunt-pointed implement.

GRIDDLES, OR LADLES WITH STRAIGHT ELONGATED HANDLES

Though many fragmentary handles which certainly or presumably belonged to pottery objects of a ladle form are found in all large collections from Santa Marta, not so much as half a complete specimen is known, and the Field Museum Expedition secured only handles. The most complete example (UM; Plate CLXXIV, Fig. 4)

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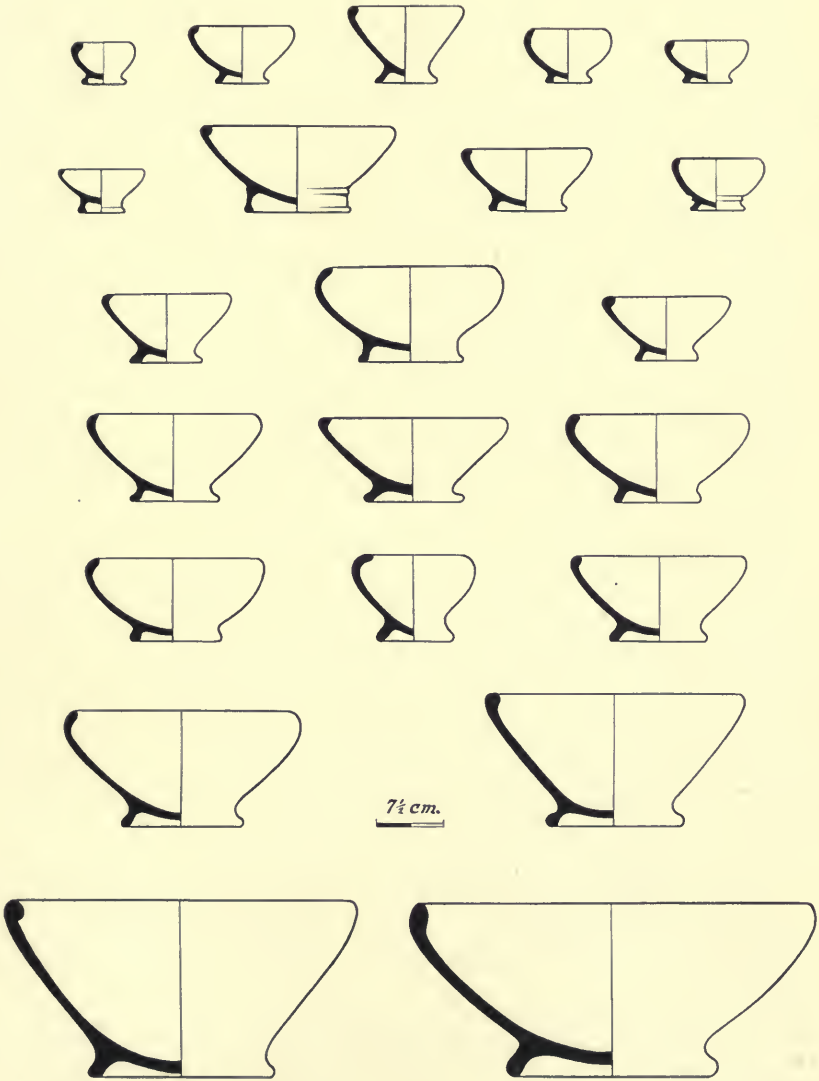


FIG. 9. Red bowls of truncated cone shape.

indicates a circular, slightly concave, shallow tray about 20 cm. in diameter with a single, straight, solid, cylindrical handle projecting horizontally from the edge. It is of very coarse, heavy, reddish pottery apparently without slip, about 1 cm. thick except at the base of the handle, which is, of course, much thicker. All the other handles and handle fragments afford no ground for supposing that any examples vary much from this norm, though some are of finer texture with a reddish slip.

The handles vary greatly in detail; Plate CLXXV shows examples in Field Museum, Plate CLXXIV those in the University Museum, and Plate CLXXVI those in the Museum of the American Indian. A few examples in other museums are shown in Plates CLXXXVI, Fig. 6; CCX, Fig. 4; CCXXVI, Fig. 7; and CCXXVIII, Fig. 7.

The simplest handle, type 1a (Plates CLXXIV, Fig. 4; CLXXV, Fig. 2), is plain and cylindrical, with a flare or knob at the end, and circular in cross section, the minimum diameters 2.5 to 4 cm., the lengths 7 to 9.5 cm. The curve from the handle to the tray may be either gradual or abrupt. The end is circular, 4.5 to 5.5 cm. in diameter, and may be flat, convex, or concave. In one concave specimen the end is filled with large, punched dots. In a specimen from Gaira (UM; Plate CLXXIV, Fig. 2) the enlarged end, 5 cm. across, is serrated like the cogs of a wheel; there were probably eight of these notches or cogs, in four pairs. In the end is a deep, broad, central depression. The shaft is slightly oval in cross section, 3 x 4.5 cm.

In type 1b the handle is decorated with the low-relief that is characteristic of red vessels (Plate CLXXV, Fig. 1). In type 1c the terminal flange is retained but the shaft is modeled as the neck and head of an animal or human (Plates CLXXV, Fig. 6; CLXXVI, Figs. 5, 9; CLXXXVI, Fig. 6).

For the twelve specimens of type 1 in Field Museum the proveniences are: Pueblito, six; Teran, two; Taganga, two; Palmarito, one; and Bonda, one. The type seems to be more characteristic of Pueblito; the absence of ladles from the Gairaca cemetery is noteworthy.

The majority of the specimens seem to belong to type 2, which lacks the terminal flange, this being replaced by an animal head. Two animals predominate, a monkey with rounded head, type 2a, and an animal with long ears and nose, probably a deer, type 2b. This type seems to be more characteristic of Bonda, the source of four out of seven examples in Field Museum, with one each from Taganga, Pueblito, and Gairaca.

The same variations in technique that are noted in relief on red vessels are found also in these griddles. Some have the "coffee-bean" eye, some eyes are ringed with a central depression, and in some the eye is merely a small, deep depression.

In type 3 the handle takes the form of a complete, human figure, generally lacking entirely the typical cylindrical form. This type may be characteristic of Bonda, since almost all the examples of which the provenience is recorded came from this region. One complete example (UM; Plate CLXXIV, Fig. 1), showing a portion of a tray more concave than most, is a rude, seated, human figure. The male genitals are large and the penis shows a large slit that may either portray the natural orifice in exaggerated form, or possibly even the result of some operation. A similar complete female figure (AM; Plate CCXXVIII, Fig. 7) shows pitted circular nose-ring and a labret-hole. The portrayal of sex is rare in Santa Marta ceramics. Another figure handle (UM; Plate CLXXIV, Fig. 9) apparently portrays a woman with pendent breasts. An aboriginal style of coiffure may be shown, as a circular ridge encircles the head. The arms were free, with an orifice under the elbows.

The most ornate of these handles, if they are such, show detailed costume which may throw some light on aboriginal dress. In an unusual example (UM; Plate CLXXIV, Fig. 7) the back is well shaped also, the upper part covered with punctate dots possibly representing a jaguar cape. Punctate-decorated neck-band, kerchief, arm-bands and waist-band are shown; the latter curves around and over the buttocks and the ends of it descend between them. The hands hold objects with punctate dots that resemble one held by the figure on the large double-orifice urn (Plate CLXXI). The largest of three others (MAI; Plate CLXXVI, Figs. 10-12), from Tayro, is quite ornate and the legs are separated. This suggests that a similar, human torso (UM; Plate CCXXVI, Fig. 7) may also be a griddle-handle. This is of solid, gray-brown pottery, 8 cm. long, excavated at Pozos Colorados.

Another object (UM; Plate CLXXIV, Fig. 5) may or may not be a griddle-handle. It is unusually large and rude, 10 x 7 x 4.5 cm. The neck is an encircling groove and the face is in rude relief; it was found in a stream bed on the road to Donama, and is somewhat eroded.

In addition to the sites already mentioned, griddle fragments were found at Gaira, Mamatoco, and San Pedro Alejandrino.

The heads of handles are naturally difficult or impossible to distinguish from solid high-relief from vessels, and certain specimens of either may be wrongly classified in this report.

RELIEF DECORATION OF RED VESSELS

Large red vessels, especially urns, are very commonly decorated with relief, usually appliqué, of the same paste. This often breaks off, proving that it was luted on. Frequently, however, the relief is modeled (Plate CLXXVII, Fig. 7). The largest and most constant relief is on the necks of burial urns of type B (Plates CLXV-CLXVIII; CLXXVII-CLXXIX; CXCI, Figs. 5, 6), rarely on those of type A. Many smaller vessels are also decorated with relief (Plates CLXIV; CLXX; CLXXIII; CLXXX-CLXXXIV; CLXXXV, Figs. 2, 6, 8, 10, 11; CLXXXVI, Figs. 5, 7-9).

The commonest decoration is the human face, and that on the necks of type B urns is apparently restricted to this. It may be presumed to represent the face of some deity or deities, but our knowledge of Tairona theology is nil. From the details of these human or divine faces we may possibly derive some information regarding ancient costumes and customs. Also the technical and art styles may eventually serve as criteria for sequential horizons.

The eyes are generally oval with a horizontal slit, the "coffee-bean" eye; it is generally of appliqué, but may be molded. In a few instances it is an oval or circular ring. The nose is normally of high-relief, sometimes very naturalistic, with spreading nostrils (UM; Plate CLXXXV, Fig. 8). A nose-ring or other nose-ornament is often portrayed. This is sometimes a circular ring which is in some cases covered with impressed dots; this almost certainly represents a gold nose-ring like those shown in Plates CXLII and CXLIII. More frequently the nose-ornament is an elongated object of varied form, which undoubtedly portrays a gold ornament something like those depicted in Plate CXLVI; this may also be covered with dots. A nose-ornament of another type is seen on the head of a double-spout urn (Plate CLXXIX, Fig. 5). The mouth is generally small and often also of the "coffee-bean" type, of appliqué showing a horizontal slit. Some are merely incised and several are open and show large teeth. A short, cylindrical labret, always placed in the center of the lower lip, is portrayed in several examples. In some of the larger relief faces a lump is shown in one cheek, generally the left; this almost certainly portrays a quid of coca (CM; Plate CLXXXVI, Fig. 5).

The ears are normally small and crescentic and almost invariably bear a large circular ring, larger than the ear; this almost certainly represents a gold ring. It is often filled with dots, or, less often, with radiating striated lines. The ear-ornament of an urn-neck (Plate CXCI, Fig. 5) is a six-pointed star. This face also shows some other peculiarities, such as the open mouth with teeth, the ringed eyes, and the incised dots on the cheek. The latter may represent tattooing; similar marks are found on a few other urns (CM, Plate CLXVI, right; MAI, Plate CLXXXIII, left). Another face (Plate CLXXVIII, lower left) has a small pitted rosette on each cheek. Eyebrows are shown, sometimes rather naturalistically but more often as straight rectangular lines; these are often continued down at right angles vertically to frame the face, and are often filleted or pitted. Sometimes there are double, angular lines.

On the body of the vessel, below the neck, the arms are often shown in low-relief, and a necklace is indicated by a filleted semi-circular line. In the large urn, No. 153601 (Plate CLXV), this necklace is replaced by a horizontal line. In the large treasure jar (Plate CLXXVII, Fig. 5) the arms and necklace naturally had to be placed close to the face; this relief is unusual in many particulars. In some of the better examples, such as the double-spout urn (Plate CLXXIX, Fig. 5), a pendant, generally in the shape of a flying bird, hangs from the necklace. This undoubtedly represents a gold ornament of the type that was worn by certain of the aborigines of Panama and Costa Rica, and more or less like those shown in Plate CL. Examples of these, and of some other relief ornaments, such as nose-rings and ear-rings, are shown in Plate CLXXXII.

In rare cases, already noted, the arms are in higher relief or in the round, and sometimes connect the body and neck of the vessel; in this case the hands are generally uppermost. The low-relief hands on the body in the finer examples (Plates CLXVIII, right, and CLXXI) sometimes hold objects, among them a pitted ball. The body relief of the central specimen in Plate CLXVIII is unusually ornate and contains unusual features. Infrequently the entire body is shown on the neck of the urn, as in Plate CLXXXIII, lower center, which shows a female figure with sex characteristics indicated, but without legs. Two relief fragments from Gaira (UM; Plate CLXXXV, Figs. 10, 11) show a feature that may be characteristic of this site. Small legs in appliqué relief are placed immediately below the face, there being no attempt to show the torso.

Human face relief is also found on red pottery vessels of other types. A selection of faces on sherds is shown in Plate CLXXX. These are naturally smaller, but show the same general characteristics as those on the urns. The eyes are more often round rings. One of these fragments, near the upper left, apparently shows a nose-ornament perforating the nose above the nostrils. On vessels with low necks the arms are sometimes placed beside the face.

Fragments of red relief in the form of animals or, more frequently, animal heads, are not unusual. A selection of these is shown in Plate CLXXXI. That relief in the form of animals was occasionally employed on burial urns is indicated by one of the urns in the Carnegie Museum (Plate CLXVI, left), and some of those herein shown may be from urns; others are from vessels of unknown shapes. Some of these may be from handles of ladles (q.v.); a few may be relief from black effigy vases from which the black surface has been worn off. A few seem to be of the nature of handles. Some of the animals in Plate CLXXXI can be identified with a reasonable degree of certainty, but many are too stylized. Fig. 1 is very much like a coati; Figs. 9, 11, and 12 probably represent monkeys; Fig. 7 is probably a jaguar. The animals in relief on the rims of the vessels, Figs. 10 and 13, are almost certainly toads. Fig. 14 is unusual, and from an unusual distant site, Pueblo Viejo. It is apparently a very low bowl with a flat base, the ware thick, with rim and lower angle thickened. On the rim are the relief heads of two birds, almost certainly parrots, and, from their mouths, tongues in the round curve slanting downwards and unite in an extension on the basal angle.

These fragments of red relief were found at every locality in the coast or foothills where any considerable excavation was done except at Guachaquita, and probably are universal throughout this region; vessels with relief were also found in the high mountains at Vista Nieve.

Most of the relief from the site of Pozos Colorados, the human faces at least, is not of appliqué but made by modeling the walls of the vessel (UM; Plate CLXXXV, Fig. 8). The very well modeled, high nose was produced by pushing out the paste from the inner side of the vessel.

Three high-relief heads (CM; Plate CCXLII, Figs. 1, 5, 9) probably represent animals, possibly jaguars. All have incised dots on them, possibly jaguar spots.

One characteristic, small group of relief is in the form of a thin semi-circular extension that may have served as a handle (Plates CLXXXI, Fig. 3, and CCXXVII, Figs. 9, 10, 11); these are ornamented with grotesque relief, human or animal faces. The three in the Heye Foundation came from Bonda, Gairaca, and Pozos Colorados.

VESSELS OF BLACK WARE

These tend to be small with thin walls and paste of fine texture (see "Ceramics" and "Appendix, Type 2"). The surface is, or originally was, smooth, black, and polished. A few vessels of red-orange ware of fine texture and smooth surface are also included; some of these were never colored and others may have been black with the surface now eroded. Shapes tend to be complex, with much greater variation than is found in red ware. Round bases are in the great minority, and other types of base, such as tetrapod, are found. Effigy forms and vessels with spouts occur. Basket handles are found but side handles are missing. Incised decoration is frequent and high naturalistic or stylized conventionalized relief common, but appliqué relief like that of red vessels is very rare, and vessels containing it probably belong to the red group, irrespective of the surface color.

Vessels of brown ware ("Appendix, Type 3") are also included in this group. These are apparently few and the validity of their classification as a third primary type is questionable. They are probably an aberrant type of black ware (see "Ceramics").

RING-BASE OLLAS

The great majority of black vessels have ring bases and may be classed as ollas, cups, and bowls. Many different shapes are found with intermediate forms that might be placed in one or another category. Small bowls often served as covers for ollas.

There are two main types of black, ring-base ollas, those with animal relief and those with human relief. Also there are a number of plainer vases of various shapes.

Black Ollas with Animal Relief.—Vessels of this type are probably the most common and characteristic of all ceramic objects from Santa Marta, as well as one of the most artistic forms. Some sixty more or less complete examples were found by the Expedition, as well as many fragments, and examples are frequent in the other large collections from this region. The great majority of the specimens

conform to the following type. The ollas are of polished black pottery and relatively small, with ring base and orifice of approximately equal size. The ring base is relatively short and slightly flaring, the neck short and concave. The sides of the base are perforated with two small holes, one on either side and generally directly under the two relief decorations; these probably were used in tying on the bowl-cover. The body generally consists of a wider lower zone and a narrower shoulder. These usually meet in a carination that may be slight or marked, the shoulder in some examples being relatively horizontal. In a minority the carination is missing, the two zones blending in a continuous arc. The lower zone is always plain, the shoulder generally decorated with two low-relief figures of a flying bird at opposite sides. The wings are curving, the tail is outstretched, and the head is in higher relief. Between the bird figures is a band of decoration in fine incised lines. This consists of a row of large triangles filled with parallel lines that follow one of the slanting triangle lines, and of horizontal lines of dots. Four ollas of this most typical form, showing some of the variations in size and shape, may be seen in Plate CLXXXVII, and more variations are given in Fig. 10. Variations in the band of incised decoration are shown in the upper four and lower three rows in Fig. 15.

These vessels were almost certainly made especially for mortuary purposes. The great majority (26) were found at Pueblito, mainly in or near site 31; eight were secured at Gairaca. Their absence at the other places, especially Nahuange, is significant. Most of those found intentionally interred contained beads and had covers.

The largest of these vessels is No. 153980 (Plate CLXXXVII, Fig. 3), 22 cm. wide and 18 high. The smallest is 5.5 x 7.5 cm., much smaller than No. 154000 (Fig. 1), 9 x 10 cm. Ordinarily the width is a little greater than the height, but a few specimens are relatively taller, such as No. 153996 (Plate CLXXXVIII, Fig. 2).

Typical examples are found in all other large collections (MfV; Plate CCXXI, Fig. 1). The dozen or more fine examples in the Carnegie Museum, Pittsburgh, are from Gairaca. Many of these are provided with their original covers, inverted bowls. These bowls are polished, black, and wide-mouthed, with ring bases, generally also with flying-bird low-relief and a band of incised decoration. The new sites represented in the Heye Foundation, University Museum, and American Museum are Gaira, Pozos Colorados, Tairo, and San Pedro Alejandrino. One with typical relief and incised

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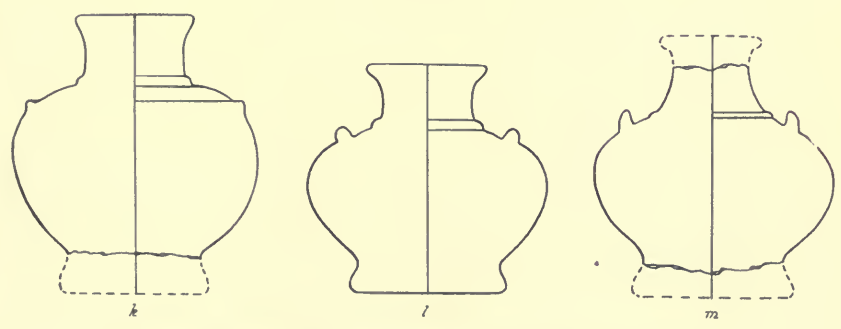
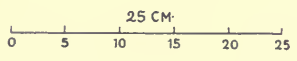
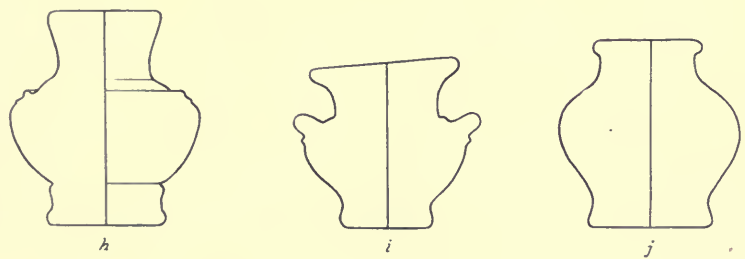
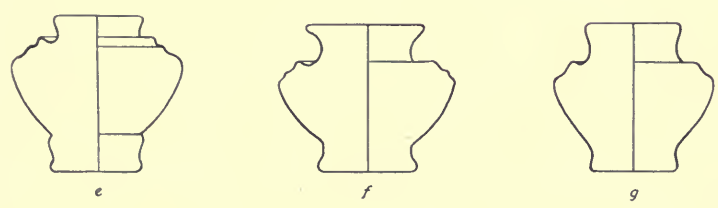
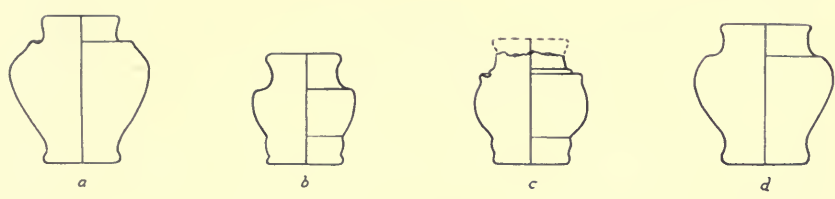


FIG. 10. Black ring-base ollas with animal low-relief.

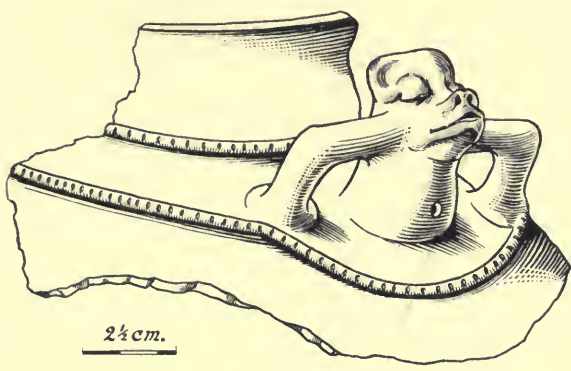
ornament (AM; Fig. 22, o) is of unusual shape, with wide base and small, low neck.

Almost all the above-noted typical characteristics are absent or altered in certain specimens. In some examples the flying-bird relief is replaced by that of another animal, generally a reptile or a bat. Two such from Pueblito have high necks: No. 154010 (Plate CLXXXVIII, Fig. 3), of polished black ware, has large high-relief heads of toads or frogs, with arms in low relief; No. 154008 (Plate CLXXXVIII, Fig. 4) shows the prone low-relief figure of what is apparently a reptilian quadruped. An unusually fine large example (MAI; Plate CCXVII, Fig. 4), 19 x 24 x 20 cm., has two large high-relief and well-modeled bat heads, apparently solid, in place of the usual low-relief bird figures and placed lower; it lacks the zone of incised decoration. The base is unusually broad. In another olla (MAI) a well-shaped, pitted head of a bat is substituted for the flying bird. In some instances the relief has been simplified to one or two low lugs or nodes.

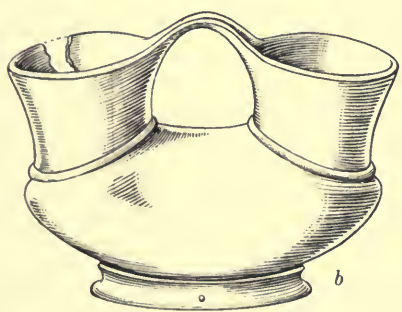
Sometimes the band of incised decoration is missing, and some specimens have incised designs other than the typical triangles. The most frequent variation is a band of large x's composed of parallel lines enclosing a line of dots (Fig. 15, lower left); this generally is found on ollas of large size, sub-spheroid shape without carination, and wide bases, a complex of characteristics that may be termed a special sub-type (MfV; Plate CCXXI, Fig. 2). No. 154594, from Teran, of this type, measures 22 x 21 cm. The provenience of the Berlin example, 20 cm. high, is unrecorded. Ollas of unusually large size tend to be variant. Nos. 154600 from Teran and 154013 from Pueblito are 21 and 24 cm. high (Fig. 10, *l, m*), lack any decorative band, and the relief has degenerated to lugs. The base of one is unusually wide, 15 cm.

The ollas from Rio Frio (GM) are characterized by high necks and highly polished, very black surfaces. Most of them have round bases, but two have the ring type (Plate CCXVIII, Figs. 1, 3). The body shapes are different, one being sub-spheroid, 21 cm. high, the other, 19 cm. high, having slightly convex lower and upper zones meeting in sharp carination, the upper zone approaching horizontal. Both have high-relief ornamentation, probably flying bird, near the base of the neck, and also bands of incised decoration. That of the former has the typical triangle motif; that of the latter seems to be limited to a straight incised line and lines of dots.

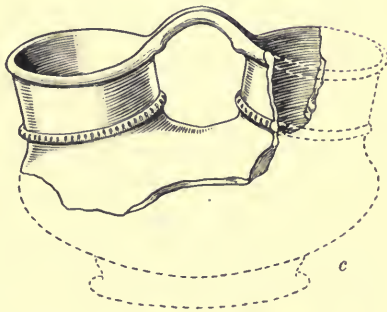
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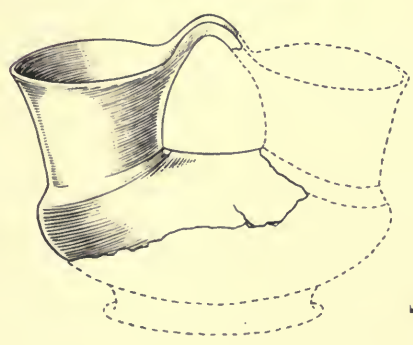
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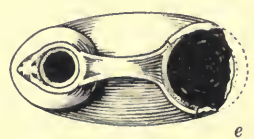
b



c



d



e

5 cm.

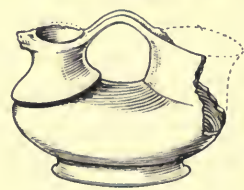


FIG. 11. Black vessels. a, Fragment of olla with bat relief; b-e, Double-orifice, oval-base vessels.

Two ollas from Nahuange, while considerably dissimilar, conform to the characteristics of this class more readily than to any other. They are peculiar in that the necks are very large and their orifices much larger than the bases. No. 154541 (Fig. 10, *i*), from the mound of the stone-lined grave, has animal—probably reptilian—high relief, head and arms. No. 154560 (Plate CC, Fig. 4) was one of the finest vessels found in the stone-lined grave, of polished black ware and the largest of the type, 29 cm. high and 33 cm. wide. The ring base is small, less than one-half of the diameter of the wide orifice, and is constricted towards the bottom. In the upper part of this base, just below the junction with the body, are two rather large triangular perforations. In all these respects it closely resembles the bowls with broad orifices and constricting ring bases, with which type it is probably closely associated and possibly should have been classed. The shoulder is very narrow compared with the height of the lower body and the neck. It has no incised decoration, but two pairs of high-relief knobs like conventionalized animal heads. A smaller vessel of the same shape, 16 x 16 cm., now in the Museum of the American Indian, was found in the same grave. The surface of the latter specimen is brownish, the interior reddish. On either side is a bat head in high relief with arms in low relief.

A few ollas were found with the typical relief and incised decoration but with round bases (Plate CLXXXVIII, Fig. 1). As the basal form has been here, possibly arbitrarily, taken as one of the criteria of shape, these are classified under the heading of "Round-bottom Vessels," but they probably have more analogies with the present group. All lack the carinated side; some approach the typical form, but others are sub-globular with short, narrow necks. In a few specimens the surface is reddish, probably due to erosion of the black polish.

Black Ollas with Human Relief.—Polished black ring-base ollas with human relief are neither common nor rare; the best of them are among the finest examples of Tairona ceramics. Like the relief of red urns, the head is generally shown on the neck, the arms, and sometimes other features on the shoulder or body of the vessel. The relief is generally better made and more developed, and the umbilicus is more often portrayed than on the red vessels. The relief is generally molded rather than appliquéd. Occasionally these black vessels are difficult to distinguish from fine, red vessels of the same type, since in some instances the polished black surface has entirely eroded.

The group is far from homogeneous, and the classification is probably not inherent. Shapes are variant, the relief ranging from simple and rude to ornate and excellent; some of it is archaistic, like that on red vessels.

Only four examples of this type were secured by the Field Museum Expedition; the best examples are in other collections.

A typical example of the ruder relief class is from Gairaca, 15 cm. wide and 11.5 cm. high (CM; Plate CCXXIV, Fig. 4). Another (PM; Plate CCXLVI, Fig. 2), 12.5 cm. wide and 10 cm. high, is more developed. The arms are asymmetrical and legs(?) are also shown, as well as a small central ring that probably represents the umbilicus. Low breasts are portrayed and apparently also male genitals.

A vase of different shape and art (MAI; Plate CCXVII, Fig. 2) is unique. The general provenience is uncertain, but as the other objects with which it was purchased abroad are undoubtedly of Tairona culture it probably comes from this general region. It is unusually tall with very large neck, both body and neck being quasi-spheroid. Though now weathered, apparently it was originally black. The rude face shows nose-ring and labret. The nose serves as a loop handle; the eyes are indented.

Very small ollas are sometimes made in human effigy form. No. 154602, bought at Taganga (Plate CXCI, Fig. 3), measures only 4.5 x 6 cm. The neck is rudely modeled into a grotesque, human head, with arms and umbilicus on the body.

The most definite sub-type has the approximate shape of the ollas with flying-bird relief, with sub-spherical body, and neck and basal ring of approximately equal size. A vessel from Tairo, a site thirty miles east of Santa Marta (MAI; Plate CCXVI, Fig. 2), 14 x 15 cm., is typical. The features are unusually naturalistic, with modeling on the orifice rim above the relief face. The face is often adorned with disproportionately large nose-ornament and labret; an excellent example (PM; Plate CXC, right), 20 cm. high, also shows a pendent gold ornament on the breast. No. 154906, from Gairaca (Plate CLXXXIX, Fig. 3), fragmentary, 12.5 x 11.5 cm., is similar. No. 154024, from Pueblito, with neck missing (Plate CLXXXIX, Fig. 5) was probably also of like type. Three loops extended from the neck to the body; these probably represented the arms and tongue. A ring of incised circles surrounds the base of the neck, and there is an incised cross on the front of the body below the tongue.

Neck shapes are sometimes unusual. A vessel secured by De Brettes on the Santa Marta coast (MfV; Plate CCXXI, Fig. 3), 20 cm. high by 16 cm. wide, has a neck of sigmoid shape with human facial features of unusual quality. The tongue is projecting and striated, and high-relief hands without arms project from the body. The usual small perforations are in the basal ring. A neck of a vessel purchased at Gaira (UM; Plate CCXIX, Fig. 2) is somewhat similar; nose-ornament and labret are shown.

A remarkable, large vessel (MAI; Plate CXC, left), 34 cm. high by 24 cm. wide without the relief, was secured by Gregory Mason at Gairaca. Of polished black ware, the body is cylindrical with very sloping shoulder and rather wide neck. The large ring base is perforated with several small holes. The face on the neck is in low relief except for the high nose with nose-ornament; the cheeks are decorated with incised lines and dots. The two arms, in the round, form loop handles from the neck of the vessel to the body. There is a disk at the umbilicus and a low-relief necklace on the shoulder and body. This jar might well have been classed with the effigy vessels, and probably shows the original form of some fragments there described (UM; Plate CLXXXV, Fig. 12).

From Dibulla, at the periphery of the Tairona region, comes an unusual vessel, No. 154859 (Plate CLXXXIX, Fig. 1). The basal ring has been broken off and the shape is peculiar. The face, in low relief on the short neck, is rude, and from the nose two low-relief lines sweep downwards to the body. Their farther ends form a free loop, and they probably represent arms holding something to the mouth. The umbilicus is shown. At the rear, opposite the face, and on the upper part of the body, is a short, vertical low-relief tail with the lower end upcurved. On either side of this, over the rear half, is a band of decoration in finely incised lines in herringbone pattern. The vessel is not typical of the Santa Marta region and probably was produced by a variant culture.

Black Ring-Base Ollas of Other Types.—Plain, simple-silhouette vessels of this type are practically unknown (MfV; Plate CCXX, Fig. 5; 9 cm. high). The simplest form of decoration is a filleted coil at the base of the neck (Plate CXCI, Fig. 2). No. 154032, 12 x 13 cm. (Plate CXCII, Fig. 3), was found in the stone-lined grave in site 17 at Pueblito (p. 81). It had a cover tightly cemented to it and contained many carnelian beads. The base had apparently been broken and later smoothed off. Seven more vessels conform to this type, almost all excavated at Pueblito, mainly in the graves where

they contained beads. Dimensions range from 7 x 7 cm. to 8.5 x 10.5 cm. and 9.5 x 9.5 cm. One has the twin perforations in the basal ring. No. 154033 (Fig. 19, *j*) is of unusual shape, tall with high base and narrow neck.

Other ollas are decorated with encircling coils. No. 154031 (Plate CXCII, Fig. 1) is of thin gray ware, 15 x 14 cm. This is vessel No. 4 from the stone-lined grave in site 29 at Pueblito, where it contained some objects of copper (p. 92). Another, No. 154041 (Plate CXCI, Fig. 1), found within a larger vessel in site 31 at Pueblito, is ornamented with four pairs of raised vertical lines. Another vessel has rude vertical incised lines on the body.

The commonest sub-type has the spheroid body covered with vertical ridges, a fluted or melon type (Plate CXCI, Figs. 4, 5; Fig. 19, *g*). All are of highly polished black ware, with the typical perforations in the basal ring; from Pueblito and Gairaca. Related to these are ollas or bowls of more unusual shapes with a band of fluting across the middle. Such are Nos. 154817 and 154814 (Fig. 19, *h*, *i*); both specimens are from Nahuange, the former, of vase shape, from the stone-lined grave.

No. 154576 (Plate CXCII, Fig. 2), from the stone-lined grave at Nahuange, 14 x 13 cm., is unique and shows several features characteristic of this site. The converging ring base is furnished with three large, oval orifices. The shoulder is covered with a decoration of incised lines in a peculiar curvilinear pattern (Fig. 16, *i*).

A small, gray, fragmentary, spheroid vessel from Pueblo Bernardo, No. 153975 (Fig. 24, *b*), 6.5 cm. maximum width, with small neckless orifice, may be placed in this class. Around the middle is a raised band of semi-circular section, which is decorated with short parallel slanting incised lines in a design resembling that in Fig. 16, *e*.

An artistic polished black olla of unusual shape, 16 x 18 cm., was found at Gairaca at a depth of six feet (CM; Fig. 22, *e*). The basal ring and the neck are comparatively small. Another artistic olla of unusual shape, 16 x 18 cm., of brown ware, spheroid with a narrow, high, flaring neck, is from Pozos Colorados (MAI; Fig. 22, *i*). It bears two relief nodes, one on either side, in which holes are punched to represent rude eyes and mouth.

A few ollas lack necks entirely and are undecorated. No. 154605 from Gairaca (Plate CXCII, Fig. 5), 18 x 15 cm., has a spheroid body and holes in the basal ring. It approaches the bowl shape, and the somewhat similar vessel at its left is considered as a bowl.

Another vessel with missing rim (Fig. 19, *k*) is somewhat similar but taller.

RING-BASE BOWLS AND CUPS

Bowls and cups with ring bases compose one of the largest and most variant classes of fine black pottery. A few sub-types are relatively clear-cut, but there are many varied shapes with intergradations. The distinction between the bowls and cups, and between cups and ollas, is not sharp. Many of the small, wide-mouth bowls were used as, if not made specifically for, covers for the black ollas that were buried in ceremonial sites and graves with their contents of beads and other ornaments. The main sub-types are cups; bowls with carination or flange; bowls without carination; graters, or bowls with incised interiors; kylices, or bowls with high flaring bases; bowls with broad orifices and high, constricting bases.

Cups.—Some vessels classified as cups approach olla form with wider orifices; others differ from bowls only by greater height.

CUPS WITH FLANGES

Cups of this kind form a rather definite sub-type of artistic vase shape characterized by a thick, triangular flange just above the basal ring. The upper surface of this flange generally carries a design of incised lines and often animal figures in low relief, both intimately related to the decoration on black ollas. The upper zone or neck may vary considerably in shape. The tallest and most vase-like, No. 153881, Pueblito, 12 x 14.8 cm. (Fig. 19, *d*), of thick brown ware, lacks relief decoration. One of different shape with missing rim, 18 cm. wide and 18+ cm. high (MAI; Fig. 22, *m*), has pairs of relief nodes on the flange. Two shorter ones have wider orifices and low flying-bird relief on the flanges, one from Pueblito, No. 153840 (Plate CXCIV, Fig. 4), 16 x 15.5 cm., and one from Tairo (MAI; Plate CCXVII, Fig. 6), 19 x 20 cm. The latter, of polished brown ware, has small holes in the basal ring. All four have typical incised designs on the flange.

BOWL-CUPS

Other cups differ from bowls mainly by greater height. One specimen, of unusual, flaring hour-glass shape with wide orifice (AM; Fig. 22, *n*), has two pairs of low-relief nodes at the constricted waist; measurements about 20 x 23 cm. Flying-bird relief and a wide band of incised decoration, composed of crossing parallel lines enclosing a line of dots, decorates a fine specimen from Taganga (MAI; Plate CCXVI, Fig. 1), 11 x 17 cm. Smaller and plainer examples (Plate CXCVI, Figs. 5-8; CCXX, Fig. 2, MfV), from

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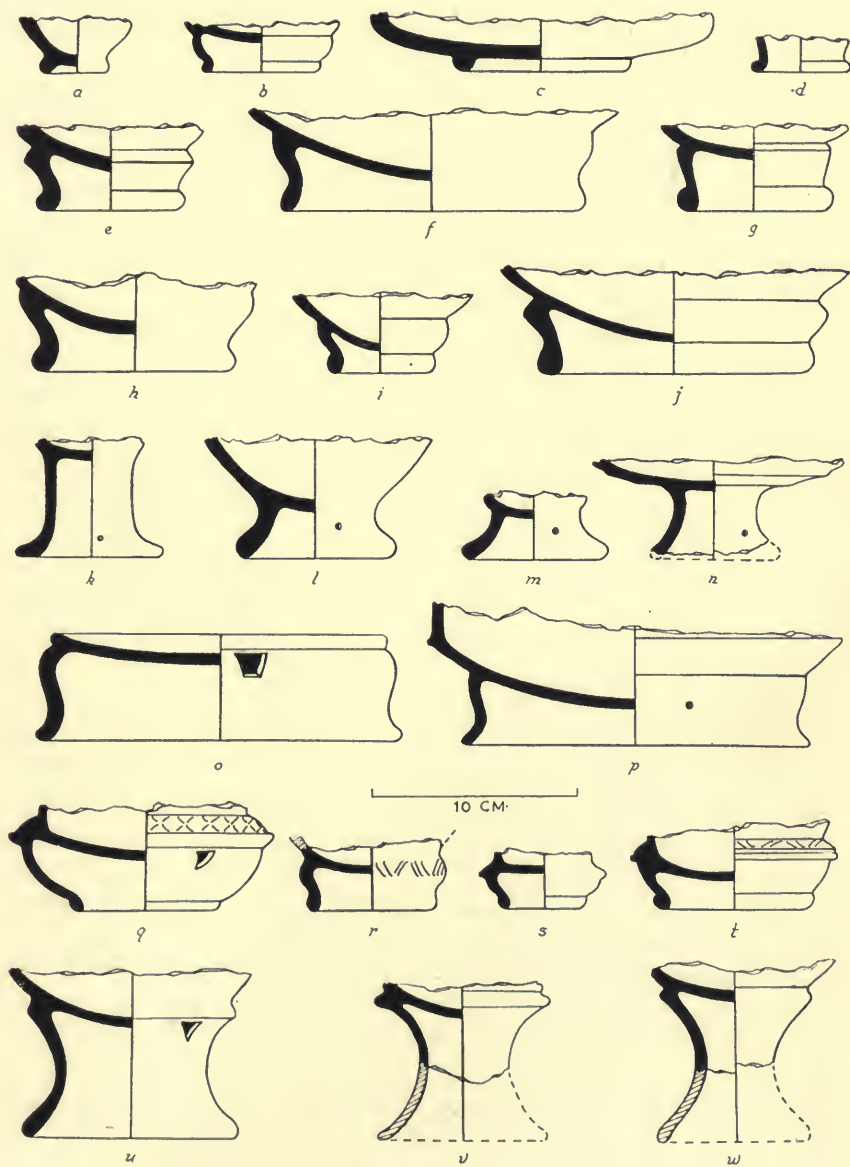


FIG. 12. Ring bases of black vessels.

Pueblito, Arecife, and Nahuange, 8.5 to 11 cm. high, always have a filleted carination. One has two pairs of small nodes near the base, another a narrow band of incised lines and dots; one has small holes in the basal ring, the wall of another is only 4 mm. thick.

Bowls with Carination or Flange.—Most ring-base bowls consist of three external parts. Above the vertical or flaring basal ring the lower part of the body slants upwards and outwards. The upper part or shoulder, generally longer than the lower zone, straight, concave, or rarely convex, may be vertical, converging, or flaring. The two parts meet at a carination or flange, generally filleted. The combinations of these features produce a large number of different forms.

A type that seems to be characteristic of Gairaca is relatively high with a plain vertical shoulder without everted lip, and pronounced flange, in which respects it shows analogies with the flanged cups (q.v.). Nos. 154862 and 154870, 7 x 9 cm. and 8 x 12 cm. (Plate CXCIV, Figs. 4, 6), show unfilleted carinations. Wider flanges are filleted and decorated, with pairs of round nodes—No. 154044 (Plate CXCIV, Fig. 2), 9 x 13.5 cm.—or with groups of four parallel vertical oval nodes and incised design of slanting lines and lines of dots, No. 154043 (Plate CXCIV, Fig. 3), 16 x 21 cm. The basal ring of the latter had evidently been chipped and was smoothed off so that it does not rest level.

A sub-type, relatively high, with wide flange and flaring rim, is probably related to the flanged cups and the bowls with broad orifices and constricted bases (q.v.). The flange is often decorated with the typical incised designs. The shoulder carries the high-relief head and arms of a bat on opposite sides, the arms, sometimes in the round, holding a stick or bar behind the head. This element is often found on vessels of other types (Fig. 11, *a*; see "Relief from Black Vessels"): Nos. 154046, 154540, 155021, from sites 2 and 3, Nahuange (Plate CXCI, Figs. 1, 2, 4). The dimensions of the largest, No. 154540, are 9.5 x 14 cm., exclusive of relief. The design of No. 155021 (Plate CXCI, Fig. 4) is shown in Fig. 16, *m*; this has holes in the ring base, the others do not. No. 154045 (Plate CXCI, Fig. 3), found in a large urn at Gairaca, has slightly different relief; above each eye is a small relief ring somewhat reminiscent of some representations of the Mexican rain-god, Tlaloc.

Small, polished black bowls with low vertical shoulders and wide orifices were commonly used as covers for black ollas and are generally

decorated with flying-bird low relief and designs of incised lines and dots similar to those on the ollas. Most of them have holes in the basal ring. By means of these, and the similar holes in the ollas, they were probably tied to the latter. These are characteristic of, if not restricted to, Gairaca, though a typical fragment was found at the very distant site of Bonga. One (MAI) is peculiar in that the lower convex zone is reddish, the rest of highly polished black. Frequently the flying-bird relief is replaced by a pair of low nodes, or one node. Dimensions range from 5 x 8 cm. to 8 x 15 cm., the former probably closer to the norm (Plates CXCIV, Figs. 1, 2; CXCVIII, Fig. 2; Fig. 19, *u*). Drawings of some of the incised designs are shown in Fig. 15, rows 5 to 8, and Fig. 16, *a-d, f, h, j-l*.

Other small cover-bowls with polished black surface, incised designs on the shoulder, and holes in the basal ring have constricting upper zones that result in small orifices. The relief is either flying-bird or pairs of nodes. The carination where the zones meet is sharp, extended, and generally filleted; the rim is slightly rolled. Some of the incised designs are shown in Figs. 15 and 16. Proveniences: Gairaca, three; Nahuange, two; Pueblito, one; Taganga, one. Dimensions: 4.2 x 6.5 cm. to 13 x 17 cm. (Plate CXCVIII, Figs. 1, 3, 4, 5, 7; Fig. 19, *p, v*). One of the smallest, 5.5 x 6 cm. (AM; Fig. 21, *b*) is from Don Diego.

Undecorated bowls of these shapes are generally larger; decorated, large bowls are unusual except for the filleted carination. The largest ones differ only in surface from red vessels. Many, however, have the holes in the basal ring that suggest that they were used as covers for large vessels. Those with vertical shoulders range from 6.5 x 11 cm. (MfV; Plate CCXX, Fig. 7) to 15 x 28 cm., from Gaira (UM); the eleven in Field Museum range from 7 x 9 cm. to 15 x 27 cm. (Plate CXCVII; Figs. 19, *e, t, w*; 21, *f*, MAI). Six have holes in the basal ring. The six Pueblito examples are generally large, the two from Gairaca small; the Nahuange specimen is the largest. The two from Pueblo Bernardo and Arcife show traces of red slip or paint. The latter, No. 153861 (Plate CXCVII, Fig. 3), is the only decorated vessel of this type, with flying-bird relief and two low-relief nodes above it.

The larger bowls with markedly sloping shoulders are mainly from Pueblo Bernardo, six; Pueblito, three; and Teran, one. About one-half of the bowls have the holes in the basal ring; some of these seem to have been drilled after firing, as if the use as a cover were secondary. One served as a cover to the largest olla of red ware in

the stone-capped grave in site 29, Pueblito (pp. 91, 92). Sizes are up to 13 x 23 cm., the larger ones closely resembling red bowls (Plate CXCIV, Fig. 5; Fig. 19, *f, q*). Slightly variant in form, with high, concave, plain shoulder and thin rim is No. 153852, Pueblito, 14 x 20 cm. (Plate CXCVIII, Fig. 6).

No. 153815 (Plate CC, Fig. 5), found on the surface at Pueblito, is unique, large, 21 x 35 cm., and of very hard, gray ware. The carination is daintily filleted, and on opposite sides are stylized, human faces in low relief, of the same technique as the relief on red vessels.

A large bowl from Pozos Colorados (UM; Fig. 20, *c*), 18 x 40 cm., is unique. Of fine thin black ware, well shaped, smooth, and polished, of the general shape of the red cover-bowls of burial urns, it was considered by the finder, Gregory Mason, as a "cover for a burial jar." The side is straight, the rim slightly inverted but artistically modeled. Just below the rim on the exterior are six circular, low knobs like truncated cones, spaced at equal distances; it is possible that these are only bases formerly holding high-relief heads.

No. 153862 (Fig. 19, *l*) is intermediate between this and the bowls without carination (*q.v.*). Above the convex side the shoulder near the inverted rim is flattened.

A special sub-type, from Pueblito, seems to be an extremely low bowl with very wide orifice, very low base, and vertical sides (Plate CXCIV, Fig. 3; Fig. 19, *r*). Two broken places on the rim suggest that this originally possessed a basket handle; otherwise it is perfectly plain. It is of heavy brown pottery, 7 x 17.5 cm. A fragment of an even lower bowl from the rock-shelter at Arecife has a basal ring that is almost non-existent (Fig. 24, *h*); dimensions, 4.5 x 18 cm. (see also Fig. 12, *c*).

A small bowl (AM; Plate CCXXII, Fig. 4) is unique and of considerable importance, if the provenience is correct. It is in the collection of F. C. Nicholas and marked "Santa Marta; Gift of Miss Mable W. Nicholas." Of thin brown ware, 10 x 6.5 cm., it is not polished except on the interior. There are two loop, vertical handles and the exterior is covered with knobs or spikes in two rows. The base is flattened with a slight ridge for a basal ring. The type being unique, in view of the uncertain provenience it would probably have been better not to include this specimen in the illustrations.

Bowls without Carination.—There is a gradation between broad bowls with straight sides and slightly inverted rims (Fig. 20, *c*), and

sub-spherical ollas (Plate CXCII, Fig. 5). Many of these bowls have holes in the basal ring and presumably were used as olla covers.

Small examples are simple, plain, and characteristic of Gairaca, where seven were found, the dimensions ranging from 4.8 x 7.2 to 6 x 10.5 cm. The two smallest, at least, were found within burial urns (Plate CXCVI, Figs. 1, 4).

Four specimens from Pueblito and one from Pueblo Bernardo are larger, 8 x 15 cm. to 9.5 x 17 cm., and better made, of thin red ware with a black surface (Plate CXCIX, Figs. 1, 2). The ring bases are wide and flaring, and almost all have the small holes. All are plain except No. 154021 (Plate CXCIX, Fig. 2), which has a typical, low-relief flying-bird on the shoulder.

Bowls from Nahuange (Plate CXCIX, Figs. 3-5) are often more ornate and peculiar. At least two of the three were found in the mound that covered the stone-capped grave. The ring bases are never flaring and sometimes have the three large, high holes typical of the site (Plate CXCIX, Fig. 5). The rims are rolled and sometimes have four relief animals, probably bats, on and extending above them (Plate CXCIX, Fig. 3). This bowl, No. 154914, was the cover to olla No. 154541 (Fig. 10, *i*). Another has two pairs of stylized, relief figures of animals on opposite sides of the shoulder (Plate CXCIX, Fig. 4), probably flying birds or bats, but of an art style different from the norm. Rims are filleted on both outer and inner edges. All are of brownish ware, probably reddish paste originally with a polished black surface, 8.5 x 13.5 cm. to 8 x 18 cm. Similar features, constricting base with three rather narrow slits, complex silhouette, and rim filleted on both edges, characterize a bowl from Pueblito (MAI; Fig. 21, *d*), 7.5 x 16 cm.

Another Nahuange example, with the triple large holes in the basal ring (Plate CXCII, Fig. 4), 11 x 16 cm., approaches spherical form and lacks the rolled rim. Even more globular is one from Gairaca (MAI; Fig. 22, *k*), 17.5 x 23 cm.

Graters, or Bowls with Incised Interiors.—Certain wide black bowls with ring bases have incised designs in their broad, concave, interior bottoms. Other examples are found in red ware (q.v.); these were almost certainly utilitarian, probably for the grating of vegetal products, as similar bowls were used for chili in Mexico. The black-ware graters are almost always better shaped, the interior features generally of fine, shallow, incised lines, often forming designs and seldom if ever showing wear; therefore, they were presumably esthetic rather than utilitarian. Whatever their original purpose,

many of the bowls were used, as were the majority of the red bowls, as covers for interred ollas. One (CM) was catalogued as the cover of a burial pot from a grave. Some have the typical holes in the ring base.

Bowls from Gairaca typically show star or rosette patterns (Fig. 25, *j-l*), their outlines made of incised lines, the interiors filled with incised dots or short lines. Dimensions: 5.2 x 10 cm. to 9.2 x 20 cm. Silhouettes are simple.

Bowls from other sites (Arecife, five [Plate CC, Fig. 1]; Nahuange, two; Pueblo Bernardo, one; Guachaquita, one; Taganga, one) have simpler patterns, generally a small circular area with round dots or wedge-shaped depressions. Three, from Arecife and Gairaca, have a small, artistic, circular pattern of rings of short, parallel lines in chevron pattern, with a field of dots. One of the Nahuange specimens, from site 2 (Plate CC, Fig. 3) is unusually black with a short, vertical shoulder, filleted rim, and holes in the basal ring. Sizes are larger than the Gairaca examples, 8 x 20 cm. to 11 x 21 cm.

Wide, flaring, pedestal bases often accompany grater bowls, the base approaching those of kylix type (*q.v.*), which also sometimes have incised designs in their bottoms. A grater from San Pedro Alejandrino (AM) has two large triangular holes in its flaring base, a feature more common at Nahuange. The flaring base is more common with bowls of fine, thin, reddish ware. A fragmentary grater from site 3, Nahuange (Fig. 24, *f*), 8 x 18 cm., is of thin, dark paste with a red slip, the flaring base with the large hole (probably originally three) characteristic of the site. Another from Rio Frio (GM; Plate CCXVIII, Fig. 7), 18 cm. wide, of unusual, simple, artistic shape, the rim slightly inverted, is reported to be of a grayish-yellow ware. Of similar shape and thin, fine, reddish ware, though apparently not a grater, is a bowl from Gairaca (MAI; Fig. 22, *a*), 11 x 18 cm.

Kylices, or Bowls with High Flaring Ring Bases.—Bowls supported on a high, flaring, ring foot are among the most artistic types of Santa Marta ceramics. The pedestal base is found only with wide-orifice vessels that would otherwise be considered as bowls; the ware is always thin, fine, and black, and generally is highly polished. Shapes are esthetic, and silhouettes often complex. The rim is often modified with relief, nodes, or scallops, and fine incised decoration is sometimes employed. These bowls are here termed kylix, or kylix-base. The relationship to bowls with flaring ring bases is close, and the line of distinction hazy. No complete example was found by

the Field Museum Expedition, but the inferred shape was later verified by intact vessels in other collections. Examples are noted from eleven different sites, among which the absence of Nahuange may be significant.

The most artistic bases are high and spool-shaped, with symmetrical concave side (GM, Plate CCXVIII, Fig. 8; Fig. 12, *u, v, w*; Fig. 19, *n*; AM, Fig. 22, *b*). Some are lower (Fig. 12, *n*; Fig. 19, *s*), some less concave (Fig. 12, *k*). Others have very wide bases (UM; Plate CCXIX, Figs. 1, 3). One from Rio Frio (GM; Plate CCXVIII, Fig. 6) is unique, with flat base and straight, converging stem. Generally there is an inset at the junction of base and body, and in some cases this is enlarged to a wide flange as in a bowl from Pueblito with broken base (Plate CXCVI, Fig. 2; AM, Fig. 22, *b*); in some examples this is deeply scalloped and in one (AM) is altered to a band of large, pyramidal cogs. Small, circular holes, or larger, triangular holes are found in some of the bases. The stem is frequently very narrow at its most constricted point, in one case (AM) only 3.5 cm. in diameter, though the width of the bowl is 18 cm. The ware is generally thin, sometimes no more than 7 mm. thick, often highly polished and very black, though a few have a fine-grained, red surface.

The upper bowl section varies, ranging from those with straight, slanting, lower zone and vertical shoulder to convex bowls without carination (Plate CXCVI, Figs. 2, 3); the latter are rare. The sloping, lower zone is often divided into several bands by ridges (Fig. 12, *n*; Fig. 19, *n, s*). The vertical shoulder is sometimes decorated with incised lines, as in the case of the fine bowl from Gaira (UM; Plate CCXIX, Fig. 1), 14 x 22 cm., with a base 16.5 cm. in diameter, decorated with a double line filled with dots in triangular pattern. The narrow shoulder of a bowl from Rio Frio (GM; Plate CCXVIII, Fig. 8), has a similar, smaller design, of triple, incised lines.

The rims of most kylix bowls are ornamented by modeling. The simplest decorations are a few scallops, notches, or raised nodes on opposite sides. A kylix with a broken base from Pueblito (Plate CXCVI, Fig. 3), another from the Arcife cave, and two from Rio Frio (GM; Plate CCXVIII, Figs. 6, 8) are illustrations of this type. More characteristic are four low knobs on the rim, the lip of which is filleted by transverse, shallow lines on opposite quarters (Fig. 19, *n, s*). In a bowl from Pozos Colorados (UM) the four small nodes are not spaced at the quarters but at intervals of about one-sixth, the rim filleted on the two shorter sections.

In the fine bowl from Gaira (UM; Plate CCXIX, Fig. 1), the rim modeling takes the form of small, conventionalized animals in relief, with head and tail. As much of the rim was missing and is restored it is impossible to say how many figures there were, or if the rim was also filleted.

In possibly the most esthetically shaped kylix, from San Pedro Alejandrino (AM; Fig. 22, *b*), the bottom has a depressed, circular area with fine, incised designs like those on black grater bowls (q.v.).

Bowls with Broad Orifices and Constricting Ring Bases.—This is a very characteristic but not common type, related to the flanged cups (q.v.). Only four relatively complete examples were found, in addition to six bases that presumably came from similar bowls. The orifices are very out-curved and flaring, the bottoms rather shallow and concave. On the exterior, at the base of the flaring lip, is a slanting, flange-like extension that carries a band of incised decoration, generally of parallel, slanting lines forming designs of triangles and chevrons. Below this the high base, with convex surface, curves inwards to a small ring base. Generally, at the top of the ring base and just below its junction with the bottom of the vessel proper, are four rather large, triangular holes. Heights range from 9.8 to 11.5 cm., orifice diameters from 18.5 to 21 cm., the width being almost double the height. The diameters of the basal rings are also less than one-half of those of the orifices, 7.5 to 9 cm.

Proveniences: Arecife Cave, four; Nahuange, three; Pueblito, two; Pueblo Bernardo, one. The most typical example, No. 154022 (Plate CXCIV, Fig. 1), is from Pueblito. One from Nahuange (Fig. 12, *q*) has only three triangular, basal holes, and another (Fig. 19, *b*) only two. Many of the others, especially those from Arecife, have none (Fig. 19, *a*; Fig. 12, *r, s, t*). One from Nahuange lacks the incised flange decoration.

Large triangular holes in basal rings, and very converging bases seem to be especially characteristic of Nahuange and occur on other types of vessels (Plates CC, Fig. 4; CXCII, Figs. 2, 4; Fig. 12, *o, u*).

DOUBLE-ORIFICE, OVAL-BASE VESSELS

This is a very characteristic but uncommon form, consisting of an elongated body resting on an oval ring base. At either end is a broad, vertical neck with wide orifice, and the adjacent parts of the rims of the two necks are connected by a semi-circular, ribbon handle. The ware is relatively thin and hard, dark brown or black. In one of the Pueblo Bernardo examples the surface changes abruptly

from polished black to the bright red that is characteristic of many objects from this site. Two complete and eight fragmentary examples were found by the Expedition (Plate CC, Fig. 2; Fig. 11, *b-e*). The distribution seems to be rather limited: Arecife, five (p. 49); Pueblo Bernardo, two; Pueblito, two; and Cañaveral, one.

The oval bases (four of the specimens consist only of the base) measure from 9 x 11.5 cm. to 10 x 17 cm. The sides of the base vary as much in contour as those of other types of black vessels. In two of them the foot is perforated on the opposite, flatter sides with a small hole like those on certain other ollas and bowls; these holes were apparently drilled after the vessel was baked.

There is considerable variation in proportions and other details, especially the heights of the spouts and their distances apart. In several specimens there is a band of raised filleted decoration at the base of the spouts. Average dimensions are about 18 x 28 cm. One from Don Diego (TM) measures 15 x 30 cm. and 25 cm. high.

One of these vessels deserves especial mention, No. 153610 from Pueblito (Fig. 11, *e*). This is smaller, 8.5 x 16 x 12.5 cm. high, the oval base 8 x 10 cm. with a drilled hole. The spouts are relatively smaller, of an hour-glass shape, and are asymmetrical, one plain while the other is smaller and is modified into the head of an animal.

The loop handles vary considerably in arc, but are always thin and of concave cross section when seen from above; in a few the upper surface is V-shaped. Several fragments were found at Arecife and Cañaveral. One from Arecife, apparently from a vessel of this type, is peculiar, polished, black and thick, with grooved upper and hemispherical lower surface. The lower part of the handle flares instead of joining the spout-rim abruptly, and on this broad flare is a simple incised decoration of lines and dots.

In points such as complex silhouette, thinness of wall, ribbon handle and holes in the basal ring this type belongs with the black ware, and all notes regarding surface refer to black or dark slip. But the only sherd examined or analyzed was found to be of coarse red ware. Possibly the type should have been classed with "Treasure Jars" as a form that may occur with either ware.

RING BASES OF BLACK VESSELS

A study of the plates and figures will show that the ring bases of black vessels differ greatly in form and proportions. A large number of vessels were found of which only the ring base and the

bottom, or even less, remained; the form of the vessel is naturally indeterminable in these cases (Fig. 12). The range in size is greater than here shown. A few bases are very flaring, such as those illustrated in Fig. 12, *l* and *m*, but this is atypical of the region. The majority are relatively vertical or slightly converging, and the sides are never straight but generally in a sigmoid curve which is varied in many forms. In a few cases, such as those illustrated in Fig. 12, *q*, *s*, and *t*, the sides are extremely converging; these bases apparently belonged with the peculiar type of bowl shown in Fig. 19, *a-c*. Very low bases (Fig. 12, *a* and *c*), and very high cylindrical bases (Fig. 12, *k*) are very rare. A few high and very concave bases, such as Fig. 12, *n*, *u-w*, certainly belonged to the kylix type of bowl. Fractures indicate that normally the bottom of the vessel was finished, the point of junction deeply scored, and the basal ring, independently formed, then luted on.

ROUND-BASE BLACK VESSELS

Round-base vessels are rare in dark ware; less than ten were found by the Field Museum Expedition. All known are ollas with relatively or very small mouths except for one bowl (MAI) from Gairaca. This is of sub-hemispherical shape, the orifice diameter almost the maximum width, of thin, polished black ware, 7 x 13 cm.

Most of the ollas are of simple silhouettes and undecorated (Plate CCI), from Nahuange, Masinga, Gairaca, and site 31 at Pueblito (lower pair). The ware tends to be thick. Two other smaller heavy ollas, 6 and 7 cm. wide, were bought at Nahuange and Taganga; one has two rings of large, irregular dots around the base of the neck.

Of the undecorated vessels of this type in other collections only two are of interest. In both, the silhouette is a little complex with horizontal bands. One from Gaira (UM) is sub-globular with a small orifice and short neck (Fig. 20, *b*), of blackened red ware, 21 x 25 cm. One from Gairaca (MAI), 15 cm. wide and 12 cm. high (Fig. 22, *h*), is broad with a wide, sloping neck.

A definite sub-type consists of vessels with the same combination of a flying bird in low relief and a zone of incised decoration of straight lines such as is characteristic of a large group of ring-base ollas. These vessels are quasi-spherical with small, low necks, the decorative zone on the shoulder below the neck (Plate CLXXXVIII, Fig. 1). Three were excavated at Pueblito, and one was bought at Taganga. They range from 13 to 24 cm. in width and a little less

in height. All have a narrow, raised, encircling band below the incised zone, but one lacks the relief, and another both relief and incised decoration. The bottom of one is concave, of the others round or very slightly flattened. A vessel of this type (MAI) has a very unusual and interesting characteristic; the body has a fine red surface while the shoulder with its relief and incised decoration is polished black.

Round-bottom, black vessels are also decorated with low relief in human form in the usual style, the face on the neck of the vessel and the arms on its body. They are thus identical, except for the base, with certain ring-base vessels. The relief is generally rude and archaistic and never so good as in the best of the ring-base vessels. No example of this type was found by the Field Museum Expedition, but specimens exist in other collections: from Gairaca, 9 x 10 cm. (CM; Plate CCXXIV, Fig. 3); and from Pozos Colorados (UM; Plate CCXIX, Fig. 6).

Three ollas with round bases and tall, narrow necks come from the Rio Frio region (GM; Plate CCXVIII, Figs. 2, 4, 5); these tall necks seem to be characteristic of this site, and very similar ollas are found with ring bases. One is plain; one has a relief, human face on the body, the prominent feature of which is a high nose, apparently like a small, looped and grooved handle; the third combines the human relief ornamentation on the body with typical incised and dotted lines. Heights from 18 to 20.5 cm.; widths a little less.

TETRAPOD VESSELS

All the Santa Marta vessels that rest on small legs are tetrapods; no tripod is known. This fact doubtless has considerable cultural and historical import. All are of fine texture and generally of dark ware, polished black, gray, or brown, very rarely of fine red.

Owing to the obvious resemblance between a tetrapod vessel and a quadruped animal, most of them are to some extent effigy in character. There are three main types: bowls, frequently with ribbon basket-handles, ollas, and effigy vessels.

Bowls.—Bowls are generally shallow, except for the legs, and with maximum diameter at the rim, except for the relief. Type 1 is very shallow, with a thin, semi-circular, ribbon basket-handle extending from rim to rim, and high-relief bat heads at the base of each end. The heads are generally small, stylized, and on the flaring bases of the handles (Plates CCII, Fig. 1; CCIII, Figs. 1, 3, 4). The cross section of the handle is always flat or slightly convex on the

lower side, concave or flat with marginal ridges on the upper side, the width at the minimum point between 2 and 2.5 cm. Handle fragments were found at Pueblito, Cañaveral, Taganga, Arcife, and Gairaca. In a variant fragment from Gairaca (Plate CCIII, Fig. 2) the entire relief figure of a bat, upside down, is on the side of the bowl below the handle, which shows two drilled holes for mending a crack. Basket-handles are also found on vessels with tubular spouts (q.v.; Plate CCXXI, Fig. 6), and on some very shallow, ring-base bowls (Fig. 19, *r*), suggesting close temporal relationships between these types. Other species of bats are portrayed, sometimes a leaf-nosed bat with a crest, and arms that are clasped or hold a stick behind the head (CM; Plate CCXXIII, Fig. 3; Gairaca), a feature often found on vessels of other types. Heads of this type are sometimes placed on the side of the bowl below the handle (MAI; Plate CCXVI, Fig. 3; Cinto Arriba). This bowl is slightly oval; as the rim is restored the handle is presumptive. The ware is gray. In one fragment (MAI) the bat head is in relief, not in the round; in another from Don Diego (AM), the bat heads are hollow, with traces of incised designs below them. Another, with fragmentary bat heads on the sides and traces of the handle (one leg missing), from the ceremonial center of Pueblito (Plate CCII, Fig. 2), is larger, coarser, and heavier than the others. A bowl of red ware, without a trace of the black surface that may have been entirely eroded, from Pozos Colorados (UM), has a handle very wide at the base, 4-5 cm.; the span is greater than that of the rim so that the base of the handle bends inwards above the animal relief.

The legs of all are bulbous and asymmetrical, relatively straight on the inner side, sinuous on the outer. The bases are enlarged in all, and several have incised lines, evidently to represent toes. All are hollow, with an air-vent on the inner side. Those of the fine example purchased at Dibulla (Plate CCII, Fig. 1) contain rattling pellets, and another (MAI; Plate CCXVI, Fig. 3) also rattles, probably containing gravel; this feature was not noted on the others.

Bowls of type 2 lack the basket-handle and the rims are very flaring; the four known examples are all from Gairaca. Two (CM) have bulbous feet and lack any relief ornamentation (Fig. 21, *a*); they are relatively deep. A shallower one with bulbous feet, one of them missing (FM; Plate CCII, Fig. 3), has at the base of the side, at opposite points, between each pair of legs, a small knob that may be a vestigial representation of the bat heads. Unusual in many ways is one (CM; Plate CCXXIII, Fig. 4) with quasi-cylindrical

hollow elephantine legs, slightly bent in the middle and enlarged at the ends, probably to represent knees and toes; the air-vents are at the front. The rim is very flaring and there is a filleted lower flange with relief above it, a conventionalized flying bird at one end and an animal head at the other.

A small, black, fragmentary, tetrapod cup from Bonda (UM) is unique. It resembles the neck of a vase, constricting towards the rolled rim. The feet are short, solid, and very spreading, quasi-conical and quite different from most of the feet. Dimensions: 8 cm. high and 11 cm. wide.

Ollas.—This group is based on one example, No. 154539 (Plate CCII, Fig. 4), found, with many other unusual specimens, in the stone-capped grave at Nahuange. It is made of polished black ware, oval shape, 21 x 15 cm. and 16 cm. high. The birds' (?) heads on either side are hollow and connect with the interior of the vessel, without septum. The short, hollow legs show the same unusual feature. They were filled with beads when found. Two of them have small, pierced holes in their bases, indicating that the vessel was not intended as a liquid-container.

Effigies.—No true animal-effigy, tetrapod vessel was found by the Expedition, but several examples are known in other collections, and some of these are among the most striking examples of ceramics of the region.

One of the finest is described under the classification of "Spouted Vessels" (BM; Plate CCXXI, Fig. 5). It has the additional peculiarity that the bases of the four feet are enlarged into hollow, depressed balls, all of which seem to be connected.

Another excellent effigy tetrapod is in the Paris Trocadéro Museum. This Museum is at present (1937) being rebuilt, and it was impossible to secure a photograph or a good sketch, but a drawing based on a rude sketch made by me in 1924 may be seen in Fig. 21, *h*. The body is spheroid, the neck of the vessel altered to represent the head of an animal with a long snout, possibly a peccary. The four feet are rather naturalistic and each is provided with a groove dividing it into halves, like a hoof. The specimen is polished black pottery, 25 cm. high and long, 20 cm. wide.

Three tetrapod, animal-effigy vessels of polished black pottery (GM; Plate CCXVIII, Figs. 9-11) were secured by Gustav Bolinder at Rio Frio, a little southeast of Santa Marta. Very similar to each other, and a little different from anything secured by the Field Museum Expedition, they probably pertain to a slightly variant

phase of Tairona culture. All seem to be to some extent asymmetrical. The bodies are ovoid from side to side, the width being greater than the length. The four legs are short and either tapering or cylindrical. The heads of the animals form the necks of the vessels, with convex surface, a slightly rolled rim, and low-relief facial features and ears that are as much human in shape as animal-like. In the vessel illustrated in Plate CCXVIII, Fig. 10, height 21 cm., the head is turned and faces sideways; the legs are hollow and rattling. The vessel shown in Plate CCXVIII, Fig. 9, height 15 cm., probably had the same shape, but the head is turned to the other side; the tail-end is broken away. The height of the vessel shown in Plate CCXVIII, Fig. 11, is 16.5 cm.

Other vessels that rest on tetrapod supports are most of the ornately incised and carved, small effigy vessels that are described separately; they compose a special type of ware related to the ocarinas, and forms other than tetrapods are included. The legs are short and solid, never hollow and bulbous as with the bowls considered above (cf. Plate CCII, Fig. 5).

Legs of Tetrapod Vessels.—A large number of separate feet were found in the excavations; presumably all of these came from tetrapod vessels like those already described. Drawings of a selection of thirteen of these, showing the variations of shape and size, are shown in Figure 13.

With a few exceptions, all are thin black ware and are hollow, bulbous, and asymmetrical. Only two specimens of solid pottery were found that look like vessel legs, although they may have been used for other purposes; both may be relief. One of these from Arecife (Fig. 13, *d*) is of gray ware.

The smallest leg, from Pueblito (Fig. 13, *a*), is 2.5 cm. thick and high; the largest (Fig. 13, *l*) from Pueblito, is about 8 x 8 cm. Some of the smaller ones may be solid; at least they show no perforation, but almost all, especially the larger ones, have one or two holes leading to the hollow interior. These holes are either round, or long slits, generally on the straighter, interior side, sometimes at the side, and even on the convex front. There are two holes in some, sometimes a pair at the rear, sometimes one on either side. The presumption is that these large, hollow feet contained rattling pellets, but it was not possible to be certain, in the few cases where rattling was noticed, that this was not caused by dirt within.

In almost every case the front side of the leg is enlarged and bulbous near the top. In a minority the base converges towards a

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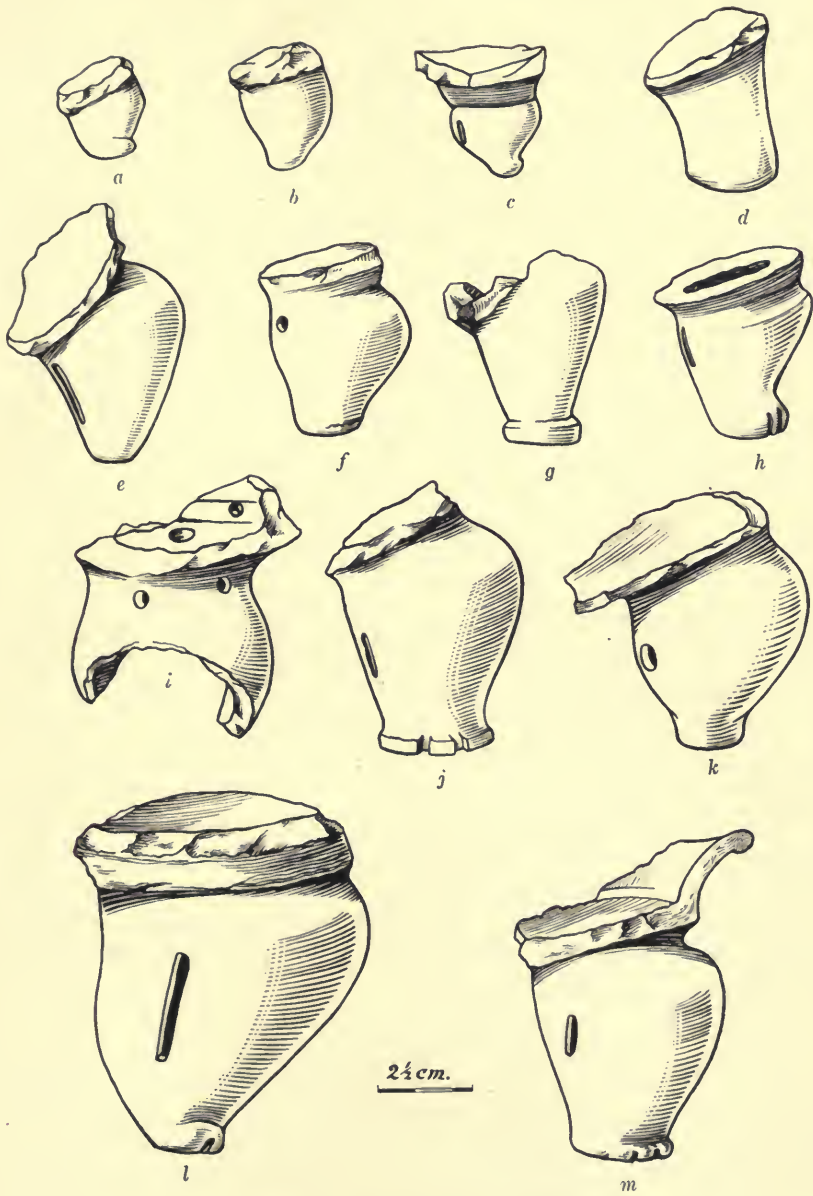


FIG. 13. Legs of tetrapod vessels.

small but flat round base (Fig. 13, *e, f*; Plate CCXLIV, Fig. 11), or the base may be elongated (Fig. 13, *k*), or it may be provided with a ferrule (Fig. 13, *g*). Generally, however, the base is enlarged on the outer side; this is apparently the conventionalized representation of an animal's foot, and this identification is further often verified by vertical incisions, obviously to represent toes (Fig. 13, *h, j, l, m*). Fig. 13, *i*, from Pueblito, illustrates a peculiarity noted in several other entire vessels. In addition to two holes in the hollow leg, near its junction with the vessel, there is a perforation leading from the bottom of the vessel to the interior of the leg, and another through the adjacent side of the vessel from the interior to the exterior; these bowls obviously could not have been used for holding liquids.

Several examples indicate that the legs were molded separately and then luted to the body of the vessel, the point of contact on the vessel having first been deeply scored to facilitate firmer adhesion. Legs were found at most of the sites, specifically Arcife, Palmarito, Guachaquita, Gairaca, Nahuange, Taganga, and Pueblito, but no site seems to display any peculiarities in this line.

The legs from Gaira (UM), however, are mainly of an orange-buff surface without any trace of blackening; vessels with a fine, smooth surface of this color seem to be characteristic of this site. The legs from here and from Pozos Colorados present no marked peculiarities of form, but possibly show the same characteristics to a more exaggerated degree, with larger ferrules or longer cylindrical projections at the base. One black leg from Gaira is practically hemispherical with a very short, cylindrical projection at the bottom.

The feet in the New York collections, from San Pedro Alejandrino and other sites, include fine pottery, both red and black. One of them, with a small flat triangular base, shows a large circular clay pellet within, indicating that it was certainly intended to rattle; another ends in a rather sharp point, and others are conical, with a rather large, thick disk at the base.

VESSELS WITH TUBULAR SPOUTS

This type is not common. It subdivides into two quite different groups: vessels with a single straight short spout, and those of "stirrup" type, with two longer, curved spouts that coalesce in a single orifice. The resemblance of the latter to certain Peruvian forms, especially the Chimú, is obvious.

Single Spouts.—Only two practically complete vessels of the type are known, in addition to a number of spouts which naturally were

especially liable to fracture. They are related to the black ring-base ollas. The most complete one, from Mamatoco (GM; Plate CCXXI, Fig. 6), of thin black ware, 14.5 x 18 cm., has the typical small tie-holes(?) in the ring base, a filleted medial carination and two raised, broken places at opposite points on the rim. These latter presumably represent the bases of a ribbon basket-handle, and connect the type with certain tetrapod and plain bowls (Plates CCII, Fig. 1; CCXXIII, Fig. 3; Fig. 19, *r*). On the side opposite the spout is a low-relief flying-bird figure. The other example lacks the medial carination and any evidence of a basket-handle (MAI; Fig. 22, *f*), 12.5 x 17 cm. A circular hole from which the spout was evidently broken is flanked by low-relief crescents, probably representing wings, and on the opposite side is the typical low-relief flying-bird. The winged spout and flying-bird relief are found on the fragments of a carinated vessel (CM; Plate CLXXXVI, Figs. 2, 3). The high-relief head with a crest probably represents a curassow; similar heads, presumably from similar vessels, are frequently found (Plate CCV, Figs. 1-3). The rest of the shoulder of the vessel is decorated with a band of incised design of parallel lines and triangles, similar to those on black ollas with flying-bird relief. It apparently also had a ribbon-loop basket-handle with perforated holes for crack-mending. Near the bird head are four small, round perforations through the wall, two near the base and two near the rim; the same feature is found on another spouted, and on a tetrapod vessel (Figs. 13, *i*; 24, *g*).

Plain cylindrical spouts were found at Bonda and Teran (Fig. 14, *a*, *c*, *d*); the type may be characteristic of the upper Manzanares River. Lengths from 4 to 6 cm., shaft diameter about 2.5 or 3, orifice width from 3 to 4 cm. There is always an angle at the lower base. A sherd with spout from Pozos Colorados (UM) is shorter, and lacks the basal angle and the low relief crescents.

Bulbous or mammiform spouts are also found (MfV; Plate CCXLIV, Fig. 14). One from Pueblito (Fig. 14, *b*) is larger, 3 x 5 x 9 cm., with a projection like a spine at the base. A bulbous spout from Don Diego (AM; Plate CCX, Fig. 6), 4 x 2 cm., is decorated with a grotesque human face in relief.

A definite sub-type is large, bulbous, of thin ware, often a sandy brown or gray color, in the form of an animal head that somewhat resembles a crocodile. The snout is large, flat, and square at the end, from which projects a short cylindrical tube; the eyes are prominent and protruding (UM; Plate CCXXVI, Fig. 6). One is 10.5 cm. long (MfV; Plates CCXXII, Fig. 6; CCXLIV, Fig. 12). Another

from the Arecife cave (Plate CCVII, Fig. 2) resembles very much the skull of an armadillo.

Less obviously, but probably spouts of another type, are solid projections or fragments with narrow-bore perforations. A small, black, fragmentary, ring-base bowl from Pueblito (Fig. 24, *g*) has such a horizontal perforated cylindrical extension that may also have served as a handle. The vessel may have been a handled censer. Its relationship with one of the spouted vessels above mentioned is shown by the four small drainage(?) holes, two in the side wall and two in the bottom. Possibly of the same nature is a fragment of reddish ware from Taganga, the end decorated with carved monkey(?) heads (AM; Plate CCXXVIII, Fig. 3; shown from the end).

Double "Stirrup" Spouts.—Except for this one common feature these vessels are variant; all are animal effigies and might have been thus classified. Most of them are of thin black ware, their relationships being with tetrapods, effigies, and fine, carved, effigy vessels, but a genetic relationship with the large, double-orifice urns (Plate CLXXI) and the double-orifice, oval-base vessels (Plate CC, Fig. 2) is presumptive.

Two with very similar spouts are otherwise radically different. The semi-circular spouts, with a ring at upper and lower ends and relief knobs at mid-height, unite in a short, vertical orifice. One (BM; Plate CCXXI, Fig. 5), from "the hills behind Santa Marta," about 23 cm. high, is the figure of an animal with unidentifiable head and thick tail; the four legs end in flattened hollow balls that are apparently all connected. The other (CM; Plate CCXXIII, Fig. 2), 15 x 19 cm. and 11 cm. high, from a grave at Gairaca, is a tubular ring in the form of a coiled eel or snake, the large head projecting over the tail.

An effigy from San Pedro Alejandrino is similar, obviously a snake, but smaller, 7.5 x 11 cm. and 9 cm. high, and is of fine carved brown ware, in which class it belongs (AM; Plate CCXXII, Fig. 1). A small stirrup spout from Chorrera Cordoncito, made of rude, red ware, is well modeled in the form of a bird (MfV; Plate CCXLIV, Fig. 16). This site is about fourteen leagues south of Rio Hacha; the other specimens from here show some divergence from typical Santa Marta objects, and the region is probably outside the true Tairona area.

The Nahuange stirrup-spouted vessels of thin black ware are, as usual, peculiar and more effigy in character. The spouts represent

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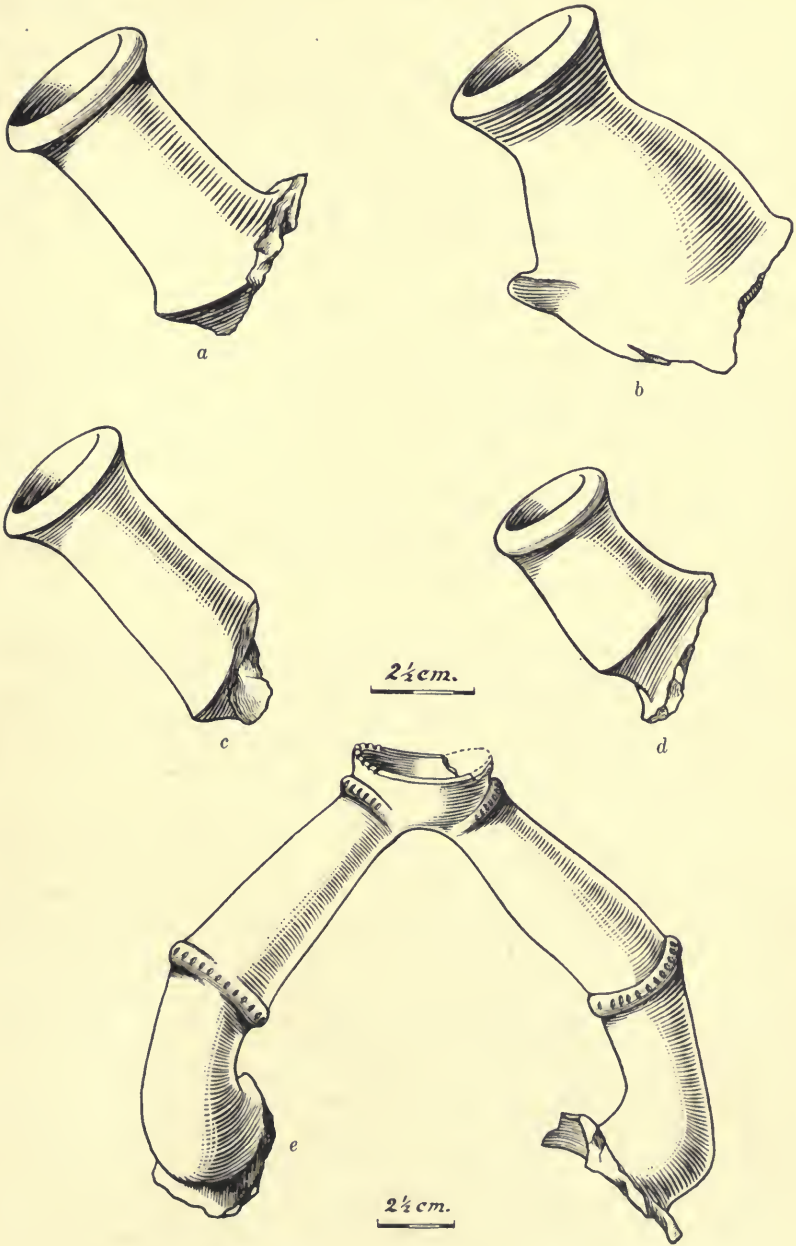


FIG. 14. Tubular spouts from black vessels.

the upraised anthropomorphic arms of an animal, the hands coalescing in an oval bowl (Plate CLXXXIX, Fig. 4; Fig. 14, *e*). The vessel is large, 20 cm. wide and 24 cm. to the spout orifice. The general concept is similar to that of the double-orifice urn (Plate CLXXI), an apical head without orifice, flanked by two spouts. The squat, globular body, with low-relief teats near the arms, is surmounted by the low-relief head of an animal. Two short bands of incised decoration lead from near the ears to the eyes. The spout orifice where body and arms join is very constricted.

EFFIGY VESSELS

True effigies in which the entire vessel is modeled in the shape of an animal or person, such as are especially characteristic of the Chimú region of Perú, are very rare in the Santa Marta area. No vessel in any degree approaching an effigy is of coarse red ware, the nearest approximations being of polished black ware or fine red ware that may originally have had a black surface. It is an indication of influence from Perú that the purest effigies are those with stirrup spouts (*q.v.*); these spouts are one of the characteristics of Chimú effigy pottery.

From these practically pure effigies there is an unbroken gradation through vessels showing less and less naturalistic shape, and less and less naturalistic elements, in the round or in high-relief, to vessels showing only a little low-relief ornamentation, generally human, and then to simple-silhouette, undecorated vessels.

Next to the stirrup-spouted vessels in degree of effigy nature come the tetrapod effigies (*q.v.*), especially the excellent examples in the Paris Trocadero and the Gothenburg museums. Tetrapods naturally lend themselves to the representation of quadruped animals, and all tetrapod vessels, which seem to be antecedent to tripods in Middle America, may have had quadruped animals as their prototype. In a slightly different class are the small effigies of heavy, brown, finely carved and incised ware (*q.v.*); most of these are tetrapods.

Less purely effigy in nature are vessels with ring, flat, or round bases. These are considered in the present section, which comprises effigy vessels and fragments that lack the specific characteristics entitling them to classification elsewhere.

Only one practically complete vessel is placed in this category, a large, black, ring-base vessel from Gaira in the form of a bird (UM; Plate CCXIX, Fig. 4; Fig. 20, *d*). The spheroid body is topped

by a typical olla neck, broken and evened off. A bird's head in the round, hollow and connected with the interior of the vessel, projects from one end. The wings, now partly broken, are represented by solid, sloping flanges on either side; they probably originally connected at the back.

Here might be mentioned a fragment of relief, also from Gaira, that probably came from a somewhat similar vessel. Of solid, thick, flat, brownish pottery, it resembles a fragment of a plate (UM; Plate CCXXVI, Fig. 10), but it had one small place of attachment measuring 3 x 2 cm. instead of the average thickness of 1 to 1.5 cm. The edge is also thickened at certain places, and notched, and on the surface are two parallel, curving, incised lines. The length, probably maximum, is 15 cm., the present partial width 9 cm. The object can best be interpreted as a bird's or bat's wing, a fragment from a large effigy vessel.

Several fragmentary vessels, or vessel fragments, apparently of unusual shapes and with naturalistic, human elements in the round or in very high relief, probably should be considered in this category.

A tall olla of oval cross section, flattened at the front, 20 x 23 cm., is of uncertain height owing to the missing lower half, probably about 26 cm. (UM; Plate CCXIX, Fig. 5); purchased at Taganga, of coarse, buff paste, the surface much blackened. The high-relief human(?) head is hollow, with an air-vent, but not connected with the interior of the vessel. The ends of the low-relief looping necklace curve around the olla neck and hang down the back. Low-relief elements probably represent teats and umbilicus. On either side are three places where relief in full round has been broken away; these probably were shoulders, hands, and thighs, the attachment places for the feet being missing.

A large fragment of yellowish-red ware, 15 cm. long, with a hollow leg and arm (GM; Plate CCXLVII, Figs. 2, 4; two views) may have come from such a vessel as the above. Other fragments, apparently of effigy vessels, with hollow human arms in the round (MAI, Plate CCXXVII, Figs. 13, 14; UM, Plate CLXXXV, Figs. 5, 7) are apparently from vessels of other forms. All are of dark ware, black or gray, from Nahuange and other sites. One, of polished black ware from Gaira (UM; Plate CLXXXV, Fig. 12), apparently came from a large cylindrical jar with a horizontal convex top, on which was the human head.

RELIEF FROM BLACK VESSELS

Both in Field Museum and in other collections, quantities of fragments of relief from finer vessels were secured, the shapes of which vessels are difficult of determination. Since relief elements may be of either solid or hollow pottery, and as the interiors of hollow relief elements may be either continuous with the interiors of the vessels or separated from them by a septum, it is difficult or impossible to distinguish between relief from vessels and from parts of whistles, figurines, ladles, and similar objects, unless adjacent parts are included. As whistles are generally blown from the effigy head, the air-shaft usually distinguishes these heads; such identifiable fragments are considered under the description of whistles. Certain other relief elements may be actually handles, spouts, or even tetrapod feet of vessels.

Relief may be low, and modeled or molded in shaping the vessel, or it may be high or in the round, in which case it was often modeled independently and subsequently luted to the vessel. Often the two are combined. The most usual technique is a combination of animal head in high relief or the round, with arms and, less often, feet and body in low relief. The head is sometimes also in low relief, and occasionally arms may also be in the round. Heads in relief with arms in the round are seldom found.

The commonest relief element is the flying bird, probably an eagle, typically found on polished black ollas. In addition to those shown on the vessels, a few examples may be seen in Plate CCXI, Figs. 6-8. In a few cases a bat is substituted for the bird. Other examples of animal low-relief are shown in Plate CCV, Figs. 4, 5, 6, 9, and Plate CCIV, Figs. 3, 6. Most of the animals that are identifiable seem to be bats.

The bat head is probably the commonest round, or high-relief element. It appears in many different forms, and several species are probably depicted. One of the most frequent forms is a large bat head in the round with a high, flat, often serrated crest on the forehead. It frequently has anthropomorphic arms in the round, the hands uppermost and often apparently clasped behind the head or grasping a stick or bar that passes behind the head (Plates CCIV, Figs. 2, 4, 7; CM, Plate CLXXXVI, Fig. 1; UM, Plate CCIX, Figs. 1-4, 7; MAI, Plate CCVIII, lower two rows; Fig. 11, *a*). Often this element becomes very conventionalized and would be unrecognizable were it not for many naturalistic prototypes; eyes are often omitted, as in an example (AM; Plate CCX, Fig. 2), shown from

below, of hollow, reddish pottery with several filleted rows on the lower jaw. The fine bat head from Dibulla (AM; Plate CCX, Fig. 7) is very large, about 7 x 7 cm. The large, full, round figure (MAI; Plate CCVIII, lower right), from Cinto Arriba, is very unusual in that it shows a complete anthropomorphic figure, 13 x 12 x 5 cm.

Bat heads are also found in more naturalistic forms, generally smaller and showing the two ears. Other animal relief includes birds such as curassows and pelicans, snakes and other reptiles, jaguars, monkeys, crocodiles, and several other kinds of animals. Most of them are identifiable from the photographs, but only those in Field Museum were examined by a zoologist. Dr. Wilfred H. Osgood, Chief Curator of Zoology in Field Museum, examined these and identified some with certainty, others with probability, while some he found too generalized or conventionalized to be identifiable.

Of the relief animals in Plate CCIV not already noted as crested bats, Figs. 3, 5, and 6 are also bats, Fig. 6 being very naturalistic. Fig. 1 is a fine snake's head, although arms are shown; it contains a rattling pellet. Fig. 9 is a bird, seated on the rim of a vessel and facing inwards.

The animal heads shown in Plate CCV are all of solid pottery; those in Figs. 5, 6, and 9 are bats. Fig. 8 is unidentified and Fig. 7 is a reptile, facing upwards with the nose to the vessel rim. The three heads at the top, in the round, are common and typical forms. Figs. 1 and 3 represent birds, probably the curassow; the other was identified by the natives as a *pasarroyo* and by Dr. Osgood as a reptile. Two fine large examples, probably curassows (GM; Plate CCXLV, Figs. 1, 2), are 3 cm. and 4 cm. in length (see also CM, Plate CCXLII, Fig. 3; and UM, Plate CCIX, Fig. 10). The fine incised and carved reptile head (CM; Plate CCXLI, Fig. 1) should be noted.

The animal heads in Plate CCVI are a miscellaneous group. They were tentatively identified by Dr. Osgood as follows: Figs. 1, bat; 2, 5, and 9, uncertain; 3, reptile; 4, 6, iguana; 7, monkey; 8, porpoise(?); 10, bird; 11, king vulture; 12, parrot; 13, eagle or hawk. The birds in the lower row, at least Figs. 10-12, probably are from ocarinas, the mouth-orifices of which were in the birds' tails.

The animal heads and other objects in Plate CCVII are larger and coarser, though of black or gray pottery and different from the relief on red vessels. The animals were tentatively identified

by Dr. Osgood as follows: Figs. 1, 5, 6, and 8, bats; 2, armadillo skull(?); 3, lizard or iguana; 4, manati; 7, monkey(?).

Fig. 2 apparently illustrates a spout and is described under that heading. Fig. 1 shows a large, hollow, thin, black head, probably a relief ornament; the mouth is a narrow, open slit at front and sides, closed only by the large canine teeth. Figs. 9-11 display elements that, if biomorphic, are simplified beyond recognition; they are from the coast sites of Arecife, Nahuange, and Gairaca. All are hollow; Figs. 4, 8, and 10 rattle, and Fig. 11 has a hole in the point. Most of the other heads are hollow, a few solid.

Two solid animal heads from Taganga (GM; Plate CCXLV, Figs. 5, 6) are probably relief from vessels and may represent jaguars. In the Berlin Museum are a number of such relief fragments (Plate CCXLIV, Figs. 3-10). Most of these, Figs. 3, 6, 8, 9, 10, and 16, are from Chorrera Cordoncito, about 14 leagues south of Rio Hacha, and probably belong to a slightly different culture. Though well molded, they look slightly different from true Tairona ceramics. The heads, of reddish pottery without slip, are mainly dome-shaped and the eyes are round with depressed centers. Two other very fine, and very large, relief figures, apparently both jaguar heads (MfV; Plate CCXX, Figs. 3, 6) have their ears perforated, probably for suspension. The fine, polished, dark-brown, animal head (MfV; Plate CCXXII, Fig. 5) is probably also a relief element; it is hollow and rattles, 10 cm. long, collected by De Brettes on the coast of Santa Marta. Its relationship to certain spouts is evident.

A large, hollow figure of a bird, of gray pottery, 7 cm. high, stood on the rim of a vessel, probably a bowl (AM; Plate CCX, Fig. 1). Most of the relief in the Museum of the American Indian (Plate CCVIII) consists of bat heads, but a few examples of other animals are shown in the upper row; among these is a small animal with a thick, curving tail, and a small face, possibly a monkey, with nose and mouth asymmetrical. (See also Plates CCX, Fig. 5, AM; CCIX, Figs. 5, 6, 9, UM.)

Human relief is not so common on black or fine red ware as on the coarse and massive red pottery. The most easily identifiable fragments are those of faces and limbs. The faces generally show a large nose-ornament, usually of the crescentic or winged type, and a cylindrical labret in the center of the lower lip. Often a quid of coca is shown in the cheek, generally the left. Incised lines and dots that may represent tattooing are frequently shown on the cheeks (Plate CCXI, Figs. 1-5; UM, Plate CLXXXV, Figs. 1, 3, 4; MAI,

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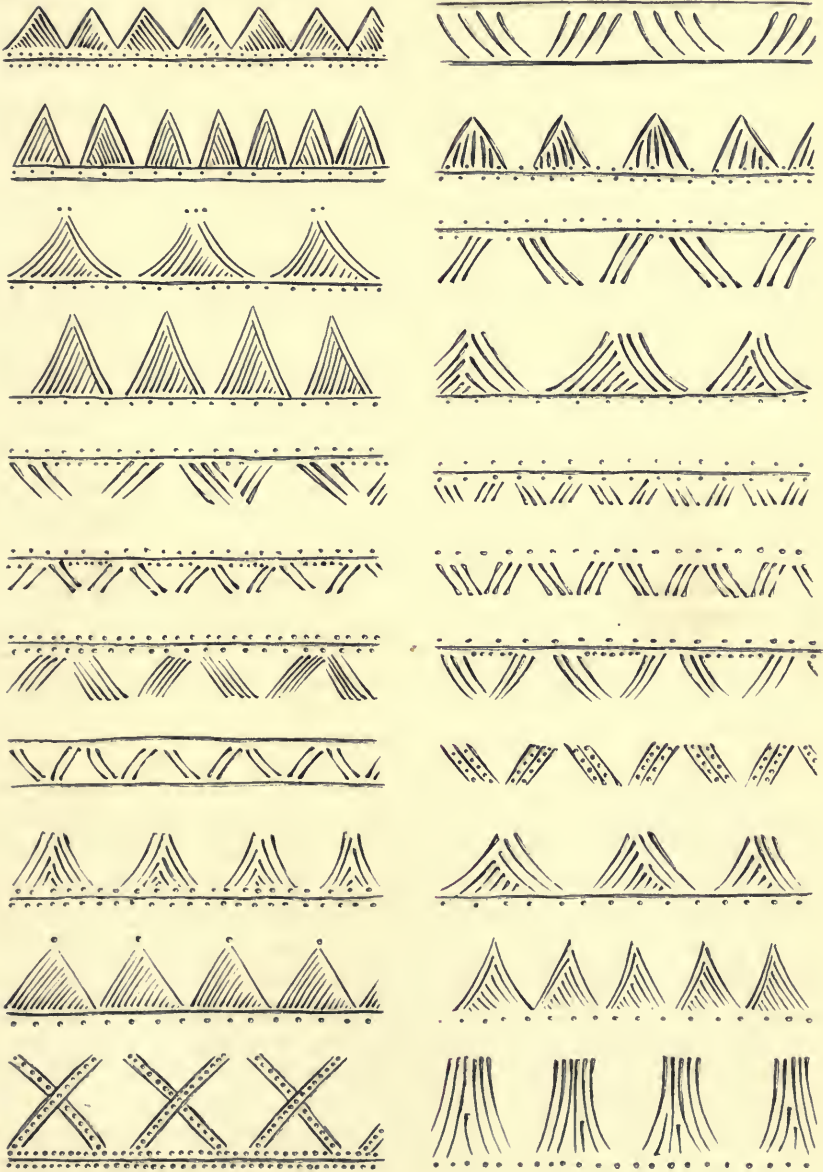


FIG. 15. Incised decorations from small black ollas and bowls.

Plate CCXXVII, Fig. 12; CM, Plate CCXLII, Fig. 8). One head (Plate CCXI, Fig. 3) has a high, pierced, nasal septum as if for the insertion of a metal nose-ring, a feature that often appears in human figurines from the central Colombian highlands.

Human or anthropomorphic arms and legs in full round are common relief elements (Plate CCXII; UM, Plate CCXXVI, Figs. 4, 8, 9; MAI, Plate CCXXVII, Fig. 15); in view of their fragile nature they are seldom found on actual vessels and it is difficult to assign the fragments to their proper types of ceramics. Many of them probably come from effigy vessels, figurines, or whistles. Most of them are of solid, polished, black or brown pottery, and may be large or small, simple or ornate. The arms with well-formed hands often grasping a bar or stick are probably from the common relief of a bat head with a flange above the forehead. On the larger and better made of these fragments, especially on the legs, adornments such as anklets and leg-bands, and sometimes parts of costume are shown. In an unusual sherd of red-black ware from Nahuange (Fig. 25, *f*) semi-hollow objects in the round like grotesque human arms connect the body and neck of the vessel.

Non-biomorphic elements such as knobs and lugs are often found on vessels. Sometimes these may serve as handles; some may be reduced from biomorphic relief. Knobs are sometimes found on the widened, flat rims of vessels, as on a sherd from Mandigua (Fig. 25, *c, e*).

INCISED DECORATIONS

Geometric, incised decorations are found only on vessels of fine texture, generally black, and mainly in bands or zones in association with biomorphic low relief. These generally consist of short, parallel, straight or slightly curving, slanting lines, and lines of dots (Figs. 15, 16). More extensive, and curvilinear designs are so rare as to suggest importation. Such is the design (Fig. 16, *i*) on an olla from the stone-lined grave at Nahuange, from which came many unusual objects. At the bottom of this Figure are shown drawings of a few more unusual, incised decorations on sherds. The decorations on two of them (Fig. 16, *p, q*) resemble the above-mentioned but the sherds seem to be from other sites. A very unusual, curvilinear design (Fig. 16, *r*) from Pueblo Bernardo is deeply incised in brown ware. A unique sherd (Fig. 16, *o*) of a small globular vessel, from Pueblito, has small repeated designs in low relief, probably carved but possibly stamped or molded. The analysis of a sherd of this vessel proved it to be of the usual black-ware composi-

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alt # 72



FIG. 16. Incised decorations from black vessels.

tion. Another fragment (Fig. 16, *n*), possibly of a whistle, of heavy, thick, hollow, gray, irregular pottery has small, deep, triangular impressions. Naturalistic incised designs are unknown.

TREASURE JARS

These vessels are so named because they were probably made exclusively for mortuary use, to hold offerings of ceremonial objects such as monolithic axes, batons, and broad-winged stone objects, and also ornaments such as jade pendants and beads. Those excavated by the Field Museum Expedition were mainly found in graves and ceremonial sites and contained many of the finest specimens secured.

Though of an unmistakable type and purpose, no other class of vessel varies so widely in detail. They occur in all sizes from very small to large, in coarse red, fine red, polished black, and painted wares, with and without ring bases, with and without relief ornament or incised decoration, and in several very different types, shapes, and proportions.

The one uniform feature is that all consist of two parts, the lower body, and a bowl-cover of the same ware, made to fit, which rests upon a lip or collar. They are classified into two main types with two sub-types of each:

- A. With flanged lip:
 - 1. Broad
 - 2. High
- B. With inset lip (Nahuange type):
 - 1. Black
 - 2. Painted

A. JARS WITH FLANGED LIP

The most common type. The bowl-cover rests on a projecting horizontal flange a little below the rim.

A1. BROAD FLANGED-LIP JARS

The majority belong in this class. Bases are convex or flattish. Ware varies from thick coarse red to fine thin black; sizes large to small; several with relief ornamentation.

Jars of coarse red ware (Plate CCXIII, Fig. 5; Fig. 17) run the gamut of size and naturally include all the largest. Of the twenty-three secured by the Field Museum Expedition all the large ones, and almost all the others, came from Pueblito. One fragment was secured at Pueblo Bernardó and two jars of the smaller sizes at

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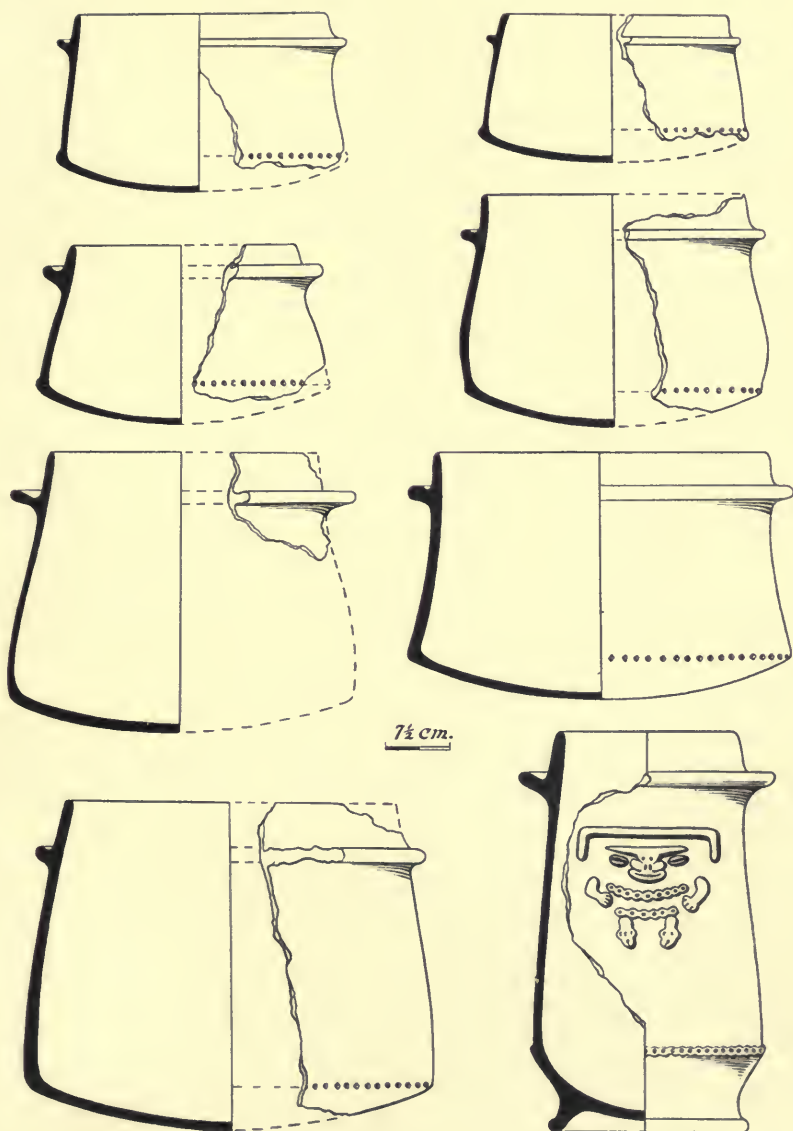


FIG. 17. Red treasure jars.

Nahuange. Most of them, with their contents of ceremonial and ornamental objects, were excavated in sites 1, 31, and 32 at Pueblito. The other proveniences represented by the many jars in other collections are San Pedro Alejandrino (MAI, UM), Tairo (MAI), Gairaca (UM), and Las Tres Cruces (CM).

The largest jar, by far, as calculated from its fragments (Plate CLXXVII, Fig. 5), measured 58 cm. wide, more than 25 cm. high, width of lip 4 cm., lip to rim distance 6 cm. The relatively deepest jar (Fig. 17, lower left) is 33 cm. wide by 23 cm. high, with a narrow lip 1.5 cm. wide. The relatively shallowest is 30 cm. wide and 11.5 cm. high. The smallest measured 8.5 cm. wide and 4.5 cm. high (MfV; Plate CCXX, Fig. 4); the rim above the cover-lip is very short and slanting. The largest complete jars measure 45 x 36 cm. (MAI) and 41 x 32 cm. (UM).

The bases are generally convex, sometimes markedly so, the sides from vertical to very slanting, generally almost straight but often slightly convex or concave. One small jar, 7 x 10 cm. (MAI), has base and sides so convex that it is practically hemispherical. Maximum width is generally at the base, where this meets the sides in a filleted carination, but the cover-lip is usually of equal diameter, the rim being less. The cover-lip was molded separately and luted to the body. It is of varying widths and at various distances from the rim; frequently it is concave on the upper surface so that the rim of the cover-bowl may rest on it more firmly.

Relief decoration was found on only two of these jars. It is of appliqué, of the same art as most relief on coarse red vessels. Owing to the necessities of the vessel shape, the relief arms are unnaturally placed. One (MAI; Plate CCXVI, Fig. 4) from Pueblito, 20 x 14 cm., has a very convex base, very sloping side, and traces of red slip. The other is the largest jar (Plate CLXXVII, Fig. 5); the relief is of unusual type, with oval eyes and open, toothed mouth.

Both of the above-mentioned vessels, as well as several others, have perforated holes near the rim, generally two, sometimes two pairs; these were probably used for tying on the cover.

Treasure jars of black ware with cover-lips are normally small and highly polished. They are characteristic of Nahuange. One of intermediate type, from Pueblito (Plate CCXIII, Fig. 2), has a partly blackened but unpolished surface and is of thicker ware. A few are of relatively large size, the surface not highly polished; possibly some of the red vessels originally had a black surface. These are from San Pedro Alejandrino (UM), 32 x 22 cm., and (MAI) 17 x 13 cm.; and Gaira

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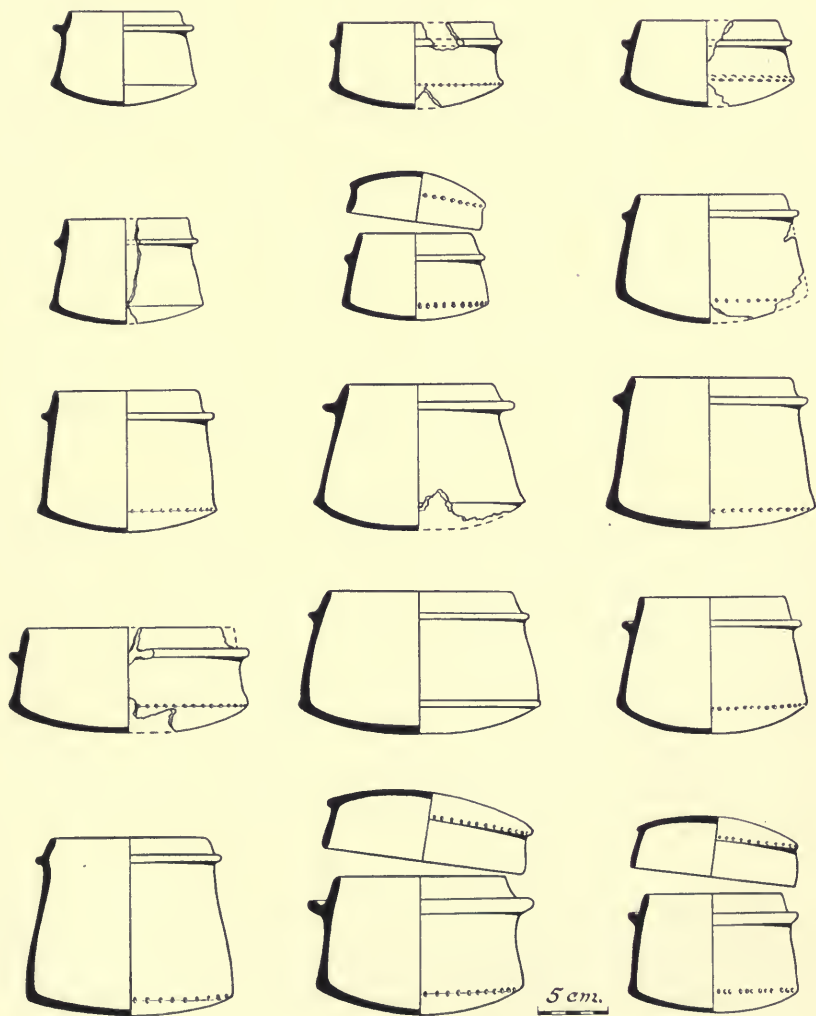


FIG. 18. Small red or black treasure jars.

(UM; Fig. 20, *h*), 22 x 13 cm., the latter heavy with a very slanting side. Another (MAI) is blackened only to the cover-lip, being of a gray color above; it has perforated holes near the rim.

Small black treasure jars are typical of Nahuange, where some fourteen of type A1 with cover-lips were found; most of these have a highly polished, black surface (Plate CCXIII, Figs. 1, 3; Fig. 18). All were excavated from sites 2 and 3 (pp. 36, 37). The sizes vary from 6.5 cm. high and 11 cm. wide to more than 10 cm. high and 20 cm. wide. The smallest are of very thin ware, only 3 to 5 mm. in thickness, and with a high black polish. The bases are typically convex, the angle with the side slightly projecting and filleted; the sides are generally slightly concave and sloping inward towards the top.

A small polished black treasure jar, now in the Heye Foundation but secured by the Field Museum Expedition, presumably at Nahuange, has the very unusual feature of a simple, incised decoration on the side (MAI; Fig. 22, *c*). It is of unusual shape and has a very slight cover-lip and an almost flat base, 9 x 17 cm.

A2. HIGH FLANGED-LIP JARS

Only four treasure jars of the high type are known; three have ring bases, a feature unknown to the broad jars, and two of these have the unusual feature of relief decoration. One from Pueblito (Plate CCXIII, Fig. 4; Fig. 17, lower right), 31 cm. high and 20 cm. wide, has typical appliqué relief decoration; that of the other (MAI; Plate CCXVII, Fig. 1), 23 x 20 cm., shows an unusual standing, human or monkey figure. The third ring-base jar (AM; Fig. 21, *e*), 33 cm. high and 15 cm. wide, is of thick polished black ware. One of unusual shape, with very convex base and concave side, 27 cm. high and 15 cm. wide (UM; Fig. 20, *g*), from Pueblito, is of plain, rude, rather heavy red pottery.

B. JARS WITH INSET LIP

This type is characteristic of Nahuange; except for one small unique bowl from the neighboring bay of Gairaca all were secured at Nahuange, and all except one, purchased there and therefore of uncertain exact provenience, were excavated in the large tomb (pp. 32-36). The bowl-cover fits over a constricted neck. The type occurs in thicker black ware, plain or incised, and in painted ware.

B1. BLACK JARS

Seven examples are known, three plain and four incised. The plain ones have flat bases, and two of relatively small size have

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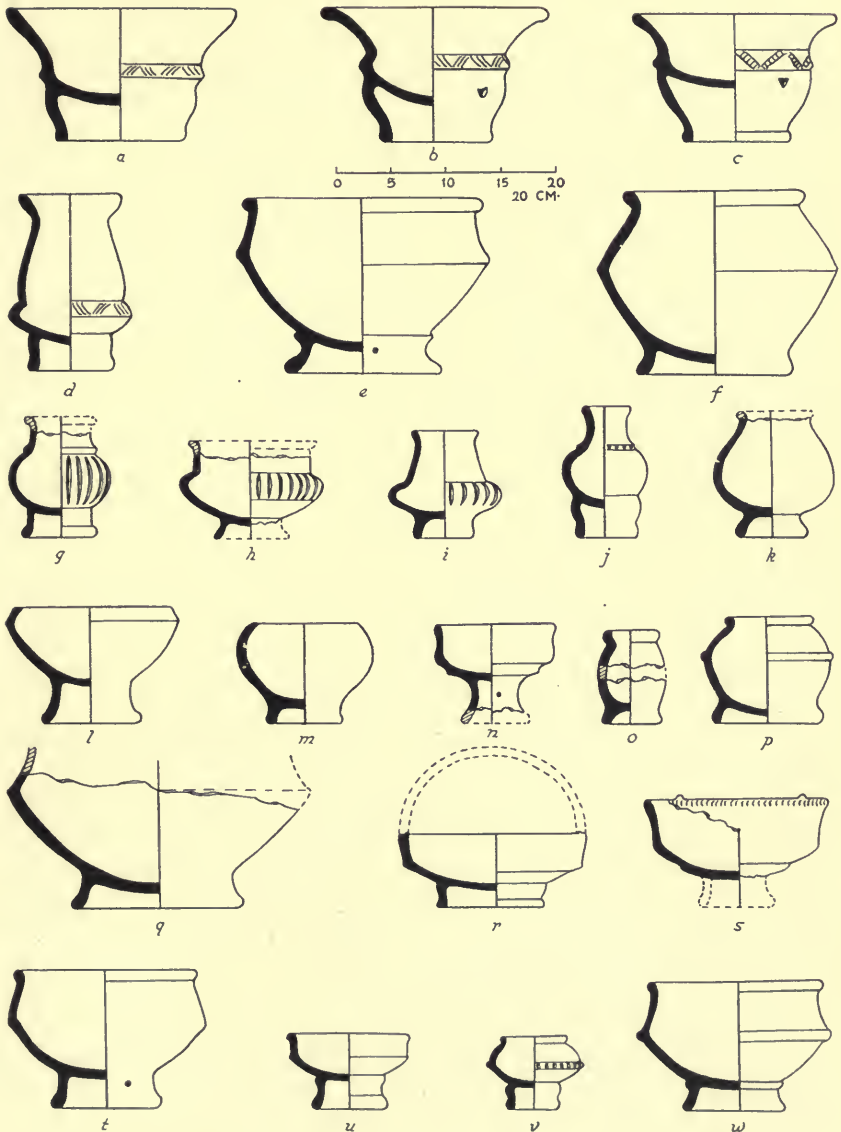


FIG. 19. Various black vessels. *a-c*, Bowls with broad orifices and constricting ring bases; *d-f, l, p-r, t-w*, Ring-base bowls and cups; *g-k*, Ring-base ollas; *m, o*, Miniature vessels; *n, s*, Kylix bowls.

straight, vertical sides (Plate CCXIV, Figs. 1, 2), 7 x 15.5 cm. and 7.5 x 7.5 cm., both of rather heavy ware. The third (Plate CCXIV, Fig. 4) is larger, 13.5 x 20.5 cm., and rather rude and asymmetrical, the side slanting, the neck even more so, with a narrow cover-ledge. Just below the ledge, on opposite sides, is a small, horizontal, loop handle with a small orifice, probably used for tying on the cover. The paste is more like that of the convex-base vessels.

The three incised jars, or rather bowls, have very convex bases and very sloping sides and necks. The paste is unusual, gray, sandy in texture, medium thick but of light weight, and, in the largest example, soft, rotten, and fragile. The two smaller ones are closely related in shape and design. The sides are decorated with a band of vertical incised lines, relatively widely spaced, broad and shallow, enclosed between horizontal lines at top and bottom. The smaller also has a horizontal line of dots above and below. On opposite sides is an undecorated space provided with a pair of low, circular knobs. In the larger specimen (Plate CCXIV, Fig. 5), 22.5 x 12.5 cm., these are placed horizontally; in the smaller (Plate CCXIV, Fig. 3), 12.5 x 9.3 cm., they are placed vertically, the area bordered with vertical incised lines and lines of dots. The largest bowl, in which many of the finest specimens were found (No. 16, p. 34) (MAI; Plate CCXVII, Fig. 5), 32 x 25 cm., is decorated on the side with broad, shallow, incised lines, crosses, and dots, exactly like those on the cover of the painted jar (Plate CCXV, Fig. 4; Fig. 16, *g*). This cover doubtless belonged to this bowl, although according to the field notes it was found on the painted jar. The latter is quite likely, as the two large jars are of identical diameter and height, and no painted cover was found to match the large, painted jar. The black, incised cover, moreover, does not exactly fit the painted jar. On the large, black, incised bowl there is also a very conventionalized, very low-relief, human face on one side and a small, low ring on the other, as well as low-relief, conventionalized feet at the base of the side.

The small, low bowl from Gairaca (Fig. 24, *i*), 8 x 3.8 cm., with flat base and vertical side, has a typical, carved and incised design on the side, consisting of short, straight lines in chevron pattern and circles in triangles.

B2. PAINTED JARS

Four of the five known vessels of painted ware (q.v.) are treasure jars, all of type B. They vary greatly in size but are homogeneous in shape. Bases are flat, sides vertical, and slightly convex, necks relatively high and, as in all cases, plain. All except the largest had

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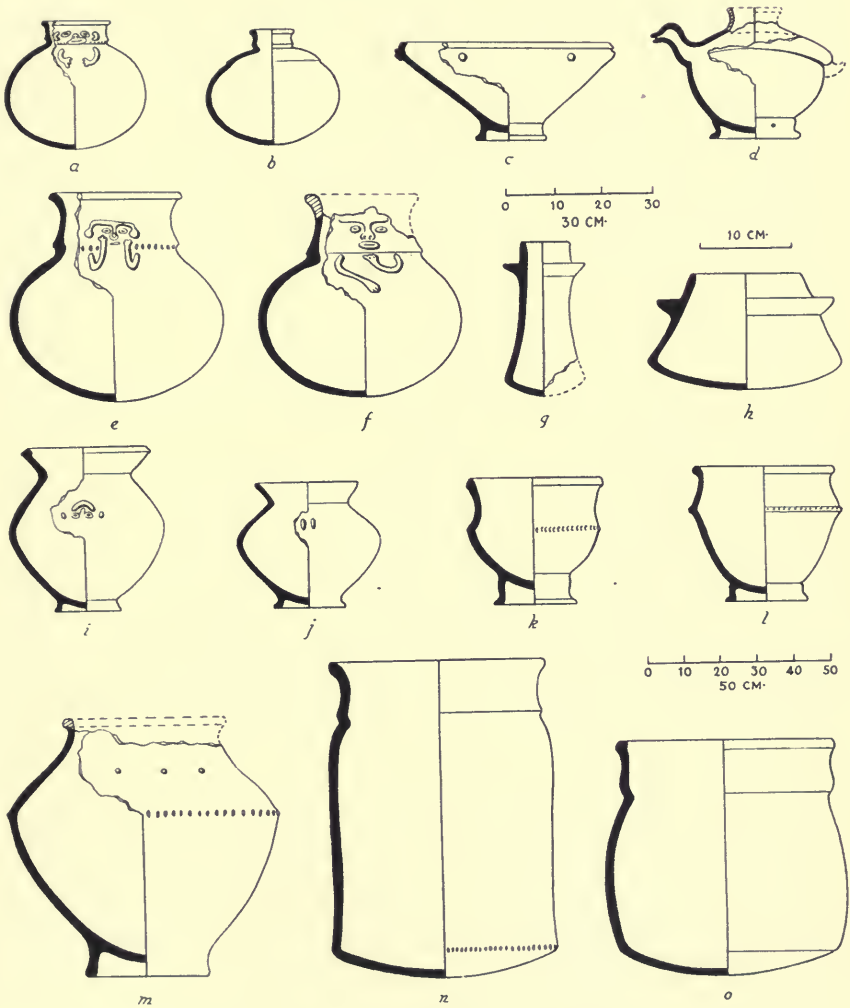


FIG. 20. Vessels in the University Museum, Philadelphia. *a*, Round-bottom red olla; *b*, Round-bottom black olla; *c*, Black ring-base bowl; *d*, Black effigy vessel; *e*, *f*, Burial urns of type B; *g*, *h*, Treasure jars; *i*, *j*, Red ring-base neckless jars without carination; *k*-*m*, Burial urns of type A; *n*, *o*, Burial urns of type D.

covers painted in designs similar to those on the sides of the vessels, all of which are described under "Painted Pottery" and shown in Fig. 23. The largest (Plate CCXV, Fig. 4), 32 x 25 cm., contained many of the fine ornaments that were found in the stone grave of Nahuange. The smallest (Plate CCXV, Fig. 3) is only 10 x 8 cm. This and a larger one (Plate CCXV, Fig. 5) are similar in shape and design and both have, at one point just below the cover-ledge, a small, round depression; a similar depression is on each of the covers near the rim. When these depressions are placed together, the painted designs on jar and cover match. They would seem to have no other function than to indicate the proper placement of the cover. The fourth jar (MAI; Fig. 22, *g*) is a trifle different in shape.

COVERS OF TREASURE JARS

Obviously, the covers of treasure jars were ordinarily made especially to fit the jar, of the proper size and the same type of ware and decoration.

Covers of red treasure jars ordinarily have practically vertical, low sides, but little higher than the distance from the lip to the rim of the jar, the tops (or inverted bottoms) convex. In most cases the edge where the side meets the top is filleted (MfV; Plate CCXX, Fig. 8). The cover of the largest known jar must have been about 50 cm. in diameter, but no covers were found over 24 cm. The maximum height is always less than one-half the diameter, the height of the side about one-third. One bowl from Pueblito, presumably of this type, is deeper: diameter 15 cm., maximum height 10 cm., height of side 7.5 cm.

The covers of the smaller, thinner, black jars are usually of the same shape (Plate CCXIII, Figs. 1-3). Diameters vary from 11 to 15.5 cm., maximum heights from 4 to 5.5 cm., heights of sides from 2 to 3 cm. Sides are straight, slightly convex, or slightly concave. A few lack the projecting filleted basal edge. The ware is generally thin, and the surface very highly polished black.

In two examples the convex top, or inverted bottom, is decorated with incised designs. That of one from Nahuange, very low with very convex top, 5 x 14 cm., with a side height of 3 cm., is in rather broad parallel lines with irregular, encompassing rings of dots. That of a rather large low bowl (UM) from Bonda Sabana, 6.5 x 21 cm., is a large six-pointed star made of dotted lines, the interior plain, the periphery finished in fine, incised lines in chevron pattern parallel to the lines of the points of the star.

Fig # 87666 (5 1/2 x 7)
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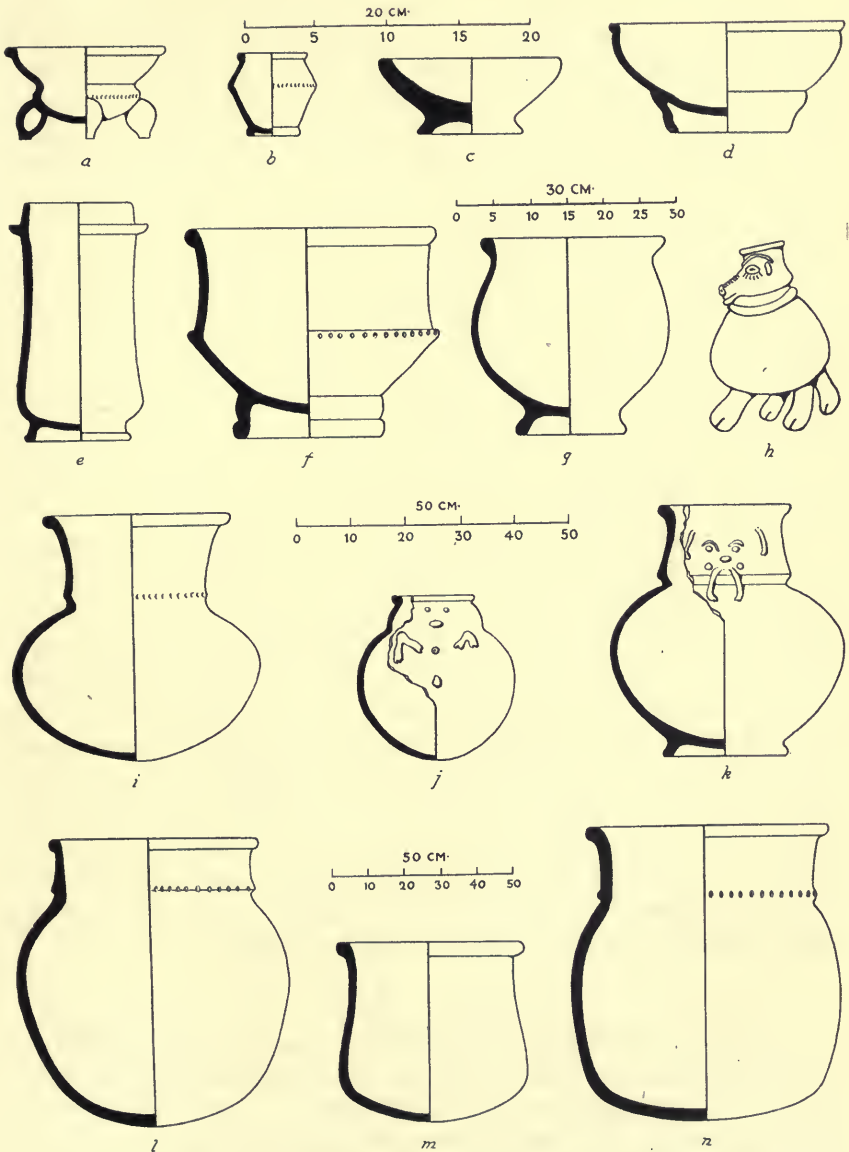


FIG. 21. Vessels in other collections. *a, l, m*, Carnegie Museum, Pittsburgh; *b, e*, American Museum of Natural History, New York; *c, d, f, g, i, n*, Museum of the American Indian, Heye Foundation, New York; *h*, Musée du Trocadero, Paris; *j, k*, Collection of Mr. William M. Sutherland. *a, h*, Black tetrapods; *b, d, f*, Black ring-base bowls and cups; *c*, Bowl of truncated cone shape; *e*, Treasure jar; *g*, Red ring-base neckless jar without carination; *i*, Burial urn of type B; *j*, Round-bottom red olla; *k*, Red jar with ring base and neck; *l-n*, Burial urns of type D.

Covers of treasure jars of Nahuange type B1, with inset lips, were probably always made to fit the jar, in size, shape, and ware. That of the black, incised jar (Plate CCXIV, Fig. 5) is of the same ware and resembles its jar very much, with very convex top and low, slanting, concave side. The decoration, a band of vertical, incised lines, is the same as that on the jar, and on opposite sides, near the edge, is a pair of low, rounded knobs to match those on the jar. Maximum diameter 22 cm., height 9 cm.

The bowl (Plate CCXV, Fig. 4) that was found covering the largest painted jar in the Nahuange grave was certainly made for another (MAI; Plate CCXVII, Fig. 5) which it matches in size, ware, and decoration. Ware is black, light, and porous, 7 mm. thick; maximum dimensions 28.5 x 10.5 cm. The simple design on the side, of large x's in shallow, wide, incised lines and dots (Fig. 16, *g*) is repeated four times. On the opposite sides there is a vertical plain band and a pair of low round knobs near the basal edge.

The three covers to the painted treasure jars (Plate CCXV, Figs. 2, 3, 5) are of simple shapes, the tops practically flat, the sides straight, slightly slanting, and relatively high. The ware, rather thick and light in color, and the painted designs on top and sides (Fig. 23, *a, b, e, f, h, i*), matching those on the corresponding jars, are described under "Painted Ware." Two have, near the rim at one point, a circular depression; when this is placed above a similar depression on the jar the designs match. The cover (Plate CCXV, Fig. 2) to another jar (MAI; Fig. 22, *g*) lacks this depression. While this cover fits and matches this jar, it was not found covering it, but lay in the Nahuange grave inside the very large, black, incised jar (MAI; Plate CCXVII, Fig. 5), in which position it contained beads and other ornaments and ceremonial objects.

PAINTED WARE

By the term "Painted Ware" is meant dichrome pottery, vessels painted in designs of one color on a surface of a lighter color. Trichrome or polychrome pottery is unknown. Since it was found only at the site of Nahuange (pp. 31-39) and mainly in one grave it must be considered not typical of Santa Marta ceramics. The analysis of the only available painted sherd indicates, however (Appendix: Non-Typical Local Sherd "b"), that its composition is closely related to that of the black ware, and it is considered a local type. The pigment used in the painting is iron oxide.

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 al # 72

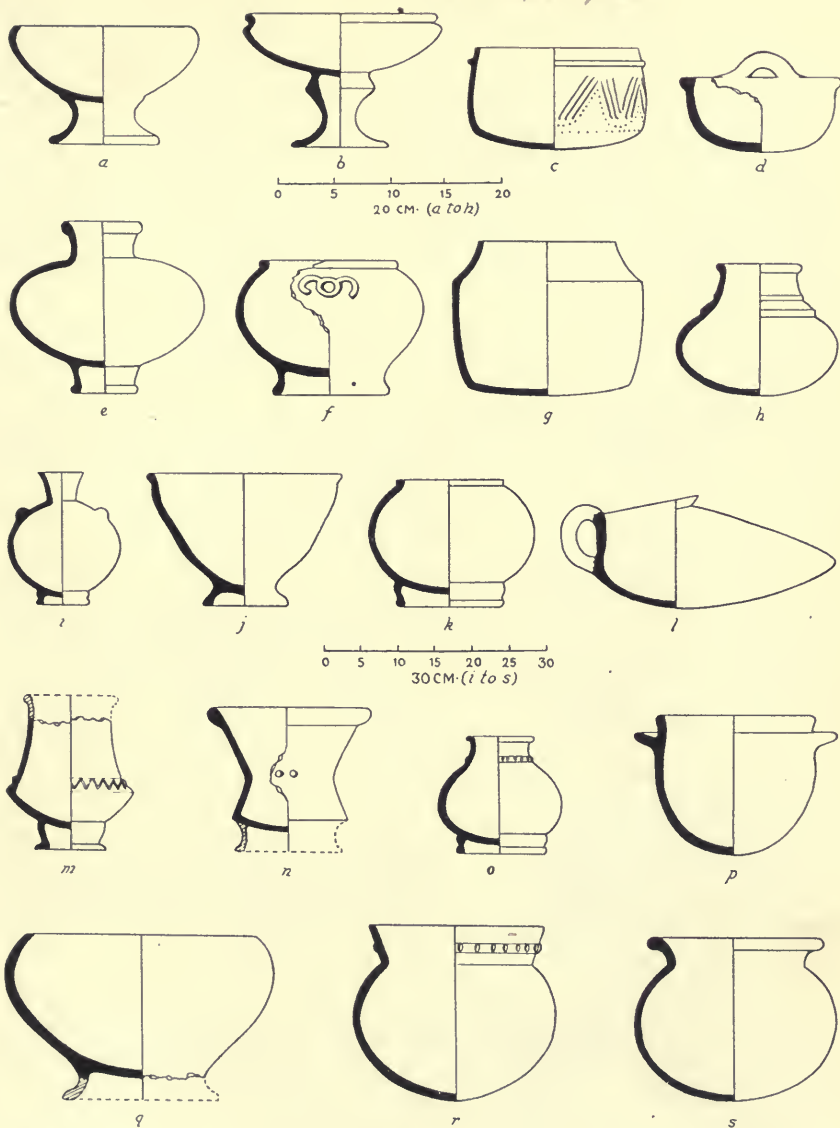


FIG. 22. Vessels in other collections. *a, c, d, f-m, q-s*, Museum of the American Indian, Heye Foundation, New York; *b, n, o*, American Museum of Natural History, New York; *e, p*, Carnegie Museum, Pittsburgh. *a*, Fine red bowl with flaring base; *b*, Kylix bowl; *c, g*, Treasure jars; *d, p*, Bowls with loop handles; *e, i, o*, Black ring-base ollas; *f*, Vessel with tubular spout; *h*, Black round-base vessel; *j, q*, Red bowls of truncated cone shape; *k, m, n*, Black ring-base bowls and cups; *l*, Shoe-shaped vessel; *r, s*, Round-bottom red jars.

In the American Museum are a few sherds and fragmentary vessels of very similar appearance. An analysis of one from the "Region of the Chimilas" indicated a composition identical with that of the Nahuange sherd. The Nahuange vessels are therefore presumably importations from this region, probably on the southwest side of the Sierra Nevada, not far from the town of Fundacion. The mineralogy of this region is probably not very different from that of the Santa Marta district; the clays are probably of a similar composition. Another provenience of painted pottery on the south side of the Sierra is Molina, near Villanueva, fifty miles south of Rio Hacha. Other painted vessels, however, point in the direction of Venezuela, as do the jade objects found in the Nahuange grave. Sherds with somewhat similar, simple designs, painted in brown or red on a pink-buff or cream slip, are recorded from San Ramon and Barrancas, near Rio Hacha. The composition of analyzed sherds from Rio Hacha, however, indicates a technical difference, as these are sherd-tempered.

Nine examples of painted pottery were found, eight vessels in the grave at Nahuange (Plate CCXV) and one, a sherd, in the soil in near-by site 2. The analysis of the sherd is given in the Appendix. One jar was exchanged to the Museum of the American Indian (Fig. 22, *g*).

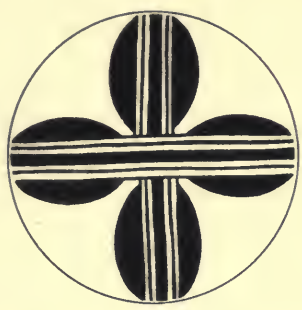
The eight vessels consist of four jars of the treasure-jar type, B2 (q.v.), three of which have covers of the same ware; one is a vase with ring base. The latter was found within a bowl of black, incised ware. These four treasure jars are of a type that is especially characteristic of Nahuange. The form is more fully described under the heading of "Treasure Jars"; the present interest is in the decoration. Extended drawings of the painted designs on the seven specimens in Field Museum are illustrated (Fig. 23).

The designs, now generally faint and eroded, are painted in shades of red or brown on buff or cream. On those that were encrusted with dirt it was difficult to remove the encrustation without erasing the design also.

The largest vessel, No. 154572 (Plate CCXV, Fig. 4), has a very faint design (Fig. 23, *j*). The designs are large, geometric, and mainly curvilinear. The ware is rather thick, probably 8 mm. average thickness, and 1.2 cm. thick at the rim.

The decoration of jar No. 154584 (Plate CCXV, Fig. 5) is in better preservation. The designs on the side of the vessel and the side of the cover match and are identical, and that on the top of

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al # 72



a



d



b



e



c



f



g



h



i

5 cm.



7 1/2 cm.

j

FIG. 23. Designs from painted vessels.

the cover is similar (Fig. 23, *a-c*). The slip is a pinkish-buff; the designs are in red. The design on the smaller jar and cover, No. 154552 (Plate CCXV, Fig. 3), shows the same general concept (Fig. 23, *e-g*). The paste is thick and of light color.

The vase, No. 154805 (Plate CCXV, Fig. 1), is of a simple shape with ring base and wide orifice, somewhat similar to some shapes found in black vessels; the basal ring is quite flaring. It is 14 cm. wide and 12 cm. high; thickness of paste about 1 cm. The design, of the same nature as the designs on other painted vessels, is in red-brown on whitish-buff (Fig. 23, *d*), and is repeated on either side.

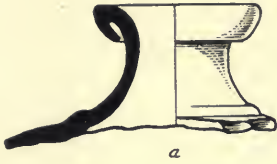
The designs on the other treasure jar are different and the red color is darker and brighter than in the other specimens. The top of the cover (Plate CCXV, Fig. 2) is painted with broad lines radiating from the center and connected by shorter, parallel lines, the side with short, thin, parallel, vertical and horizontal lines filled with dots (Fig. 23, *h, i*). The surface and designs of the jar (MAI; Fig. 22, *g*) are very similar to those on its cover, parallel lines and dots, rather simple and rudely made, on buff ware with a cream slip.

LIGHT-COLORED WARE (EXOTIC)

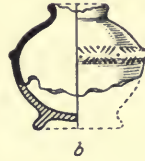
A very few fragmentary objects were found made of a paste of very fine texture, a smooth-surfaced, creamy or buff ware very different in superficial appearance from any other paste found in this region. The shapes are also unique, as well as the decoration of fine, thin, deep, short, incised lines. The exotic nature was borne out by an analysis of a sherd from Vista Nieve, a high-mountain site; the composition of the paste was found to be very different from that of typical Santa Marta sherds (Appendix: Sherd Apparently of Alien Provenience "*g*"). The vessels were almost certainly imported. The Collection of Dr. F. C. Nicholas in the American Museum contains some very similar vessels and fragments, of cream-colored ware daintily decorated with small designs in fine, thin, deep, short, incised lines; these come from El Cerro, six miles below Calmar(?) on the Magdalena River. This region is therefore presumably the source of the ware. In the same collection is a similar sherd from Don Diego.

The only three fragments that suggest any vessel shape seem to be olla necks, or, less probably, kylix bases. No. 153824 from Pueblito (Fig. 24, *a*) is apparently the mouth, neck, and rim of a small-mouth jar of hard, light-colored ware. No trace of a glaze or of the marks of a potter's wheel are noticeable. The rim is bent

neg # 87668 (6 x 8)
 alt # 72



5 cm.
 a, b, c, d, f, g, h



2 1/2 cm.
 e, i, j

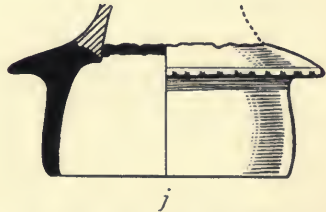
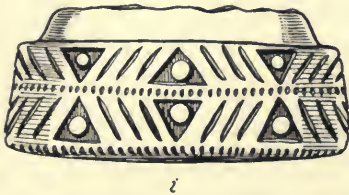
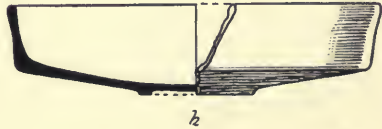
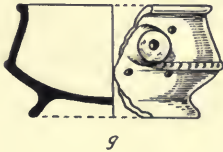
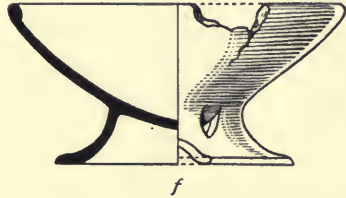
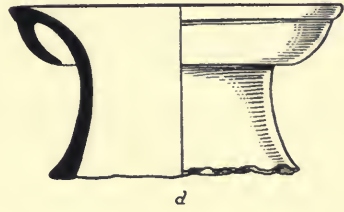
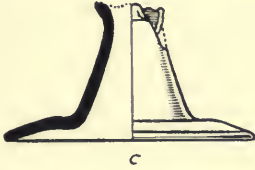


FIG. 24. Unusual small vessels and fragments. a, c, d, Parts of vessels of exotic light-colored ware; b, Black ring-base olla; e, Small effigy vessel of fine carved ware; f, Black grater bowl; g, Vessel with tubular spout; h, Ring-base bowl; i, Treasure jar; j, Miniature vessel.

over like a collar, the minimum width of the orifice being 2.5 cm., that of the rim 7.5 cm. There are two rings of dots around the outside of the rim, and on the shoulder just below the neck is a band of decoration in fine, incised lines consisting of rows of dots, concentric lines, and a band of cross-hatching. Gregory Mason secured an almost identical neck at Gairaca (MAI). It has three rows of small dots near the rim and a collar at the base of the neck with a band of finely and delicately incised decoration consisting of a line of dots and a band of parallel, slanting, short lines.

No. 154608 (Fig. 24, *d*), excavated at Teran, is similar but larger, of white ware, undecorated, 15 cm. in width at the rim and 8.5 cm. in height. The base is perfectly flat but the base rim is irregular. It may be that the latter is merely chipped, and this specimen looks more like a slightly damaged pot-rest than the broken neck of a vessel.

The third specimen, No. 154896, from Gairaca (Fig. 24, *c*), is a high, conical object of fine, smooth, buff pottery. The larger end is very flaring, like the neck of a vessel or the base of a kylix bowl. The pointed end is broken and the orifice there very narrow. It may be either the high base or the narrow neck of a vessel, probably the former.

A sherd of this ware, with fine, incised cross-hatching, found at the mountain site of Vista Nieve, was analyzed. Two analyzed sherds from the American Museum and the Heye Foundation, unfortunately of unknown proveniences, are of similar composition. A ring base of whitish ware, bought at Taganga, very much resembles the painted olla (Plate CCXV, Fig. 1) and might be such a vessel with the paint eroded, but is at present undecorated, rather rudely finished, and apparently had a rim now missing.

OTHER OBJECTS

Except for ocarinas, pottery objects other than vessels are uncommon. In addition to those here noted, a few pottery beads were found (p. 228; Plate CXXIII). Small, effigy vessels of fine, carved ware are classified here, as the vessel form is evidently secondary to the effigy shape and they are intimately related to certain classes of ocarinas; both are of brown or black pottery. Most of the other objects are of red ware, generally thick, sometimes solid. Miniature vessels and cut sherds may be of any ware; the former might well have been considered as vessels. On the other hand, ladles, considered as vessels, might well have been classified here; they resemble pestles in many particulars.

PESTLES

Short, thick, conical pestles of heavy red pottery are apparently characteristic of the culture, though not common; they may have been used for grinding salt crystals, chili, or similar substances. The bases are hemispherical and often worn, sometimes striated, the body tapering. Though heavy and with thick walls, there is probably always a small hollow interior which often, or normally, contains a rattling pellet, though in no case was any air-vent noted. The handle end is probably always modified into an animal head. Some of the objects considered to be fragmentary ladle-handles may be actually pestles.

Pestles such as are described above are found in the following museums:

AM (Plate CCXXVIII, Fig. 5): 5.5 x 10 cm.; pitted base; animal head.

AM (Plate CCXXVIII, Fig. 1): worn base; animal head; rattles.

CM (Plate CLXXXVI, Fig. 4): 5.5 x 8 cm.; animal head with large cup-shaped eyes; rattles.

FM (Fig. 25, *d*): 4 x 8.5 cm., the only one found by Field Museum Expedition; Bonda; base with radiating striated lines; broken and probably bore an animal head.

UM: 4.5 x 10.5 cm.; Bonda; human head.

MAI: Three from Tairo, Pueblito, and Gairaca; base of one pitted, of another striated; end of one in an animal head with a long snout.

An object (GM) that is probably a double-ended pestle, 5 x 10 cm., is of apparently solid, reddish pottery, quasi-cylindrical with slightly concave sides and very convex ends, both punched with many small, round depressions.

A unique object from Dibulla (AM; Plate CCXXXVIII, Fig. 6) probably partakes of the nature of a pestle. The base of the quasi-globular body is worn as if it had been used for grinding. It may have been used as a rattle also, although there is a broken hole which prevents determination; the walls are thick red pottery, but the interior is hollow. The upper end is enlarged into a human head and at the top are two rows of large holes, six in one line, five in the other. The purpose of these holes is unknown; while the interpretation may be unduly based on modern analogy, it would serve perfectly as a combined salt-grinder and salt-shaker.

RATTLES

Only one object that was apparently primarily a rattle is known from this region, a unique specimen (MAI; Plate CCXXVII, Fig. 8) from Gairaca. It is a figurine of a quadruped animal, possibly a reptile, 19 cm. long by 7.5 cm. wide, and 14 cm. high to the top of the tail. Of heavy red pottery, it would be presumed to be solid if it did not produce a rattling sound.

Certain other objects seem to be secondarily rattles. Pottery pestles (q.v.) often or generally produce a rattling sound; here also the walls are very thick and the objects would be presumed to be solid but for this sound and the evidence of one or two broken examples. Hollow tetrapod legs and hollow relief elements, generally animal heads, on vessels are also sometimes provided with rattling pellets, but the usage is apparently unusual.

STAMPS OR "SEALS"

Small, symmetrical, pottery objects with deeply incised or carved designs are generally termed, and considered to be, stamps or seals, though this identification is probably purely deductive. Stamps with a flat surface and projecting handle, characteristic of Mexico, were probably used for this purpose, but cylindrical "seals," characteristic of the Colombian highlands, may have served some other purpose.

Cylindrical objects of this character are certainly native to the Santa Marta region, though not common; seven examples are known, three excavated by the Expedition. One example of the stamp

type was purchased at Taganga, but since the provenience of the specimen is uncertain, this type cannot be certified for this culture. All these objects are of heavy red pottery, generally coarse in texture.

A cylinder (Plate CCXXV, Fig. 1) excavated at Pueblito is small and rude, 3 x 4.5 cm., the ends rough. It is pierced by a longitudinal shaft. Four encircling and ten longitudinal, deep grooves produce thirty cog-like rectangular knobs. A fragmentary cylinder secured by Gregory Mason at San Pedro Alejandrino (UM) is similar in all respects but with more projections, four horizontal rows, and apparently at least fourteen vertical ones. Another small, rude cylinder (UM; Plate CCXXVI, Fig. 11) from Mamatoco, about 3.5 cm. long and wide, has a small central shaft, and two decorative bands of triangles with parallel, slanting lines.

The best complete cylinder (Plate CCXXV, Fig. 2), from Bonda, has a deeply carved design, repeated on opposite sides, of guilloches and triangles with central dots, elements typical of the art of the region. It has the longitudinal shaft and high, terminal ridges; dimensions 3 x 4.3 cm. A fragmentary cylinder from Gairaca (MAI; Plate CCXXVII, Fig. 6) has a deeply carved design of triangles, slanting lines, and circles. A specimen secured by Dr. F. C. Nicholas at Dibulla (AM; Plate CCXXVIII, Fig. 3), 7 x 3.5 cm., is solid without any shaft; the eroded design is of concentric circles. The largest cylinder, fragmentary (Plate CCXXV, Fig. 3), had a large shaft, about 2 cm. in diameter; the maximum diameter was apparently about 5 cm., length 8 cm. The design is deeply carved in two bands with central and terminal encircling lines. Like many of the unusual objects, it was excavated at Nahuange, in site 3.

The flat stamp with a handle (Plate CCXXV, Fig. 6), purchased at Taganga and therefore of uncertain comparative value, is of solid pottery, 3.7 x 5.7 x 3.8 cm. The quasi-rectangular base contains a very deeply molded, simple design. In the center is a long rectangular depression with five raised knobs; on either side of this is a row of depressed triangles, and a deep depression at each corner. Probably also a handled stamp is an object of solid pottery from Don Diego in the form of a pestle (AM; Plate CCXXVIII, Fig. 4; shown from the end). The end is round and flat, with a geometric rosette design that is deeply incised and sharply cut.

TOBACCO PIPES

The existence of tobacco pipes in the pre-Columbian cultures of Santa Marta is open to question. No example was excavated and

none is known in other collections, but one was purchased in Bonda, together with other archaeological objects (Plate CCXXV, Fig. 8). Since in size and shape it resembles pipes recently found in Venezuela the presumption is in its favor. It has a small bowl with very short stem, 2.7 x 3.7 x 3.2 cm., and was probably provided with a longer stem of a reed or similar vegetal material. The orifice in the stem is relatively large. The surface varies from reddish to blackish in color.

SUPPORT FOR FIGURE

An unusual object, one of the only known pair, a pottery stand for the support of a figurine (UM; Plate CCXXXII, Fig. 6), was lent to the University Museum by Mr. William A. Sutherland, formerly of Santa Marta. Its purpose is beyond question. It is of low, truncated cone shape, the sloping side deeply carved with a typical Tairona design consisting of parallel, triangular lines enclosing circles. Two large holes penetrate the stand from top to bottom, and in front of each, in natural position, is a human foot in relief. Unquestionably the legs of a human figure were inserted in these holes; probably the figure was of gold. Dimensions 7 x 3 cm.; ware orange-buff.

ABSENCE OF SPINDLE-WHORLS

The absence of identifiable pottery spindle-whorls—or whorls of any material—is a noteworthy characteristic. If present, a goodly number of them should have been found. In the Berlin Museum is one from the collection of De Brettes and presumably from the coast of Santa Marta; but as it is unique in this region, and identical with whorls from the central highlands, it has been considered a trade object.

SMALL DISKS

Small pottery disks may have served any one of several purposes, such as covers or stoppers for vases, as parts of games, or as toy replicas of larger plates. Only two were secured by the Expedition, both of coarse red pottery, apparently without slip, and both excavated at Mandigua. One (Plate CCXXV, Fig. 4) is circular, 6.5 cm. in diameter, thin, 8 mm. in thickness, and slightly concave with a slightly thickened rim. A similar specimen, of uncertain provenience (AM), is 5.5 cm. in diameter. The other, fragmentary (Plate CCXXV, Fig. 5), 7.8 cm. wide and 7 mm. thick, is rather rudely made but thin, the rim slightly upcurved. Just inside the rim is an irregular ring of small perforations. Much larger and thicker disks or plates with a similar ring of perforations are known

(Fig. 1, *c*), which indicates that the smaller specimen, at least, may be a miniature, model toy.

CUT SHERDS

Potsherds with the broken edges ground to regular shapes are common in many parts of America and are found in the Santa Marta region. Some are roughly circular, others roughly rectangular. Some of the former may have been used as olla-covers, but the most usual assumption is that all were used in games or for some esoteric purpose. Most of them are of thin ware, generally black or dark, but sherds of both thick and thin red wares were also employed.

Round, cut sherds were excavated at Pueblito and Cinto (UM; Plate CCXXVI, Fig. 1); average diameter 2.5 to 5 cm. One of unusual width, 9.5 cm., of thick red ware, found at Gairaca, may belong in a different class. Many quasi-rectangular sherds were excavated at Nahuange (UM; Plate CCXXVI, Figs. 2, 3) and one at Palmarito; sizes range from 2.5 x 3 cm. to 4.5 x 4.5 cm.

MISCELLANEOUS SMALL OBJECTS

A small sherd of black pottery, 2.8 x 3 cm., excavated at Pueblito, the edges ground to oval shape, has a biconical, drilled perforation near one end that permitted its use as a bead or pendant (Plate CCXXV, Fig. 9).

A small, thick, ovoid ball, 1.8 x 3 cm., excavated at Gairaca, has a punched perforation (Plate CCXXV, Fig. 7), and presumably was a large bead.

At Taganga was purchased a much eroded but well-molded human phallus of solid red pottery, 3 x 7 cm. It might have been the handle to a ladle. Since its original provenience is doubtful, it is not shown in the plates.

A small object of solid dark pottery, of unknown purpose, 4.2 x 2 cm., purchased at Teran, is tapering and conical with a deep, broad, conical depression at the broader, flat end (Fig. 25, *b*).

A fragmentary object of solid, very red ware and uncertain purpose (Fig. 25, *a*) was presented as having come from Durcino near Gaira. It is covered with deeply incised designs and may be a stamp or seal.

In an urn with a child's burial at Gairaca was found a fragment of polished black ware of very unusual form and uncertain nature (Fig. 24, *j*). Not enough remains to make the shape certain; it may be a ring-base bowl with a flange, the base now missing, and shown

upside down in the Figure, but the appearance is more that of a stopper-cover for an olla, the cover fitting inside the vessel neck and resting on the flange, instead of outside, as in the case of treasure jars.

MINIATURE VESSELS

Very small, pottery vessels fall naturally into two classes: those that are carefully made, either of black or red ware, generally miniature examples of larger vessels (Plate CCXXX), and those that are heavy and rudely shaped (Plate CCXXIX).

The small, rude vessels are often difficult to distinguish from fragments of red relief from urns, but seven examples were found that show no evidence of having been broken away from larger vessels; their purpose is problematical. Three of these, from Mandigua (Plate CCXXIX, Figs. 1, 2) and Taganga (Plate CCXXIX, Fig. 3), are of a rude crucible shape, very poorly formed, with slightly constricted bottoms and vestigial ring bases. Two others, from Pueblito and Pueblo Bernardo, are of vase or lamp-chimney shape, with good ring bases and constricted orifices (Plate CCXXIX, Figs. 4, 5). Each has a pair of punched holes, probably for suspension. Those in the complete specimen are on opposite sides near the rim, those in the broken specimen close together on one side. One from Bonda (Plate CCXXIX, Fig. 7) is shorter and broader. The last, from Pueblito (Plate CCXXIX, Fig. 6), is of a peculiar heart-shape with a rather pointed base. The orifice is small, and the rim—and neck, if any—are broken off.

Some of the carefully made miniatures are small replicas of much larger vessels and may have served as toys or as mortuary representations. Others are merely the smallest sizes of vessels which are normally small; these probably should not logically have been included in this group. There is a continuous gradation in size, and some specimens here considered as miniatures may be larger than some considered in their proper grouping according to shape.

A selection of the better-made miniature vessels is shown in Plate CCXXX. With the exception of Fig. 5, those in the upper row are of finer ware, mainly polished black, and are very small sizes of normally small vessels; the rest are small replicas of normally large vessels and are of the coarser red ware, except Fig. 9.

Four (Plate CCXXX, Figs. 1-4) are carefully made ring-base vessels of various forms. Two were excavated in site 31 at Pueblito, two bought at Taganga. Two are decorated with incised designs and one with relief. The latter (Plate CCXXX, Fig. 2), 5 x 5 cm.,

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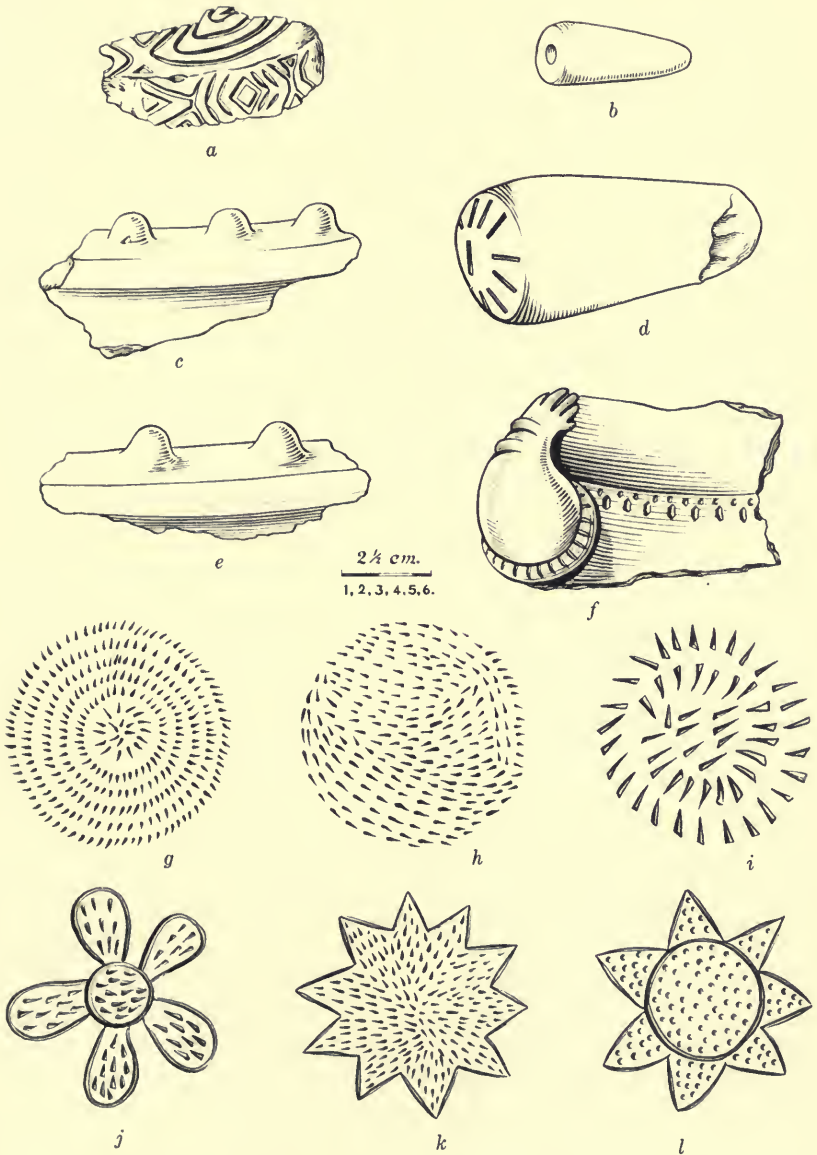


FIG. 25. Unusual small objects and fragments. *a, b*, Miscellaneous small objects; *c, e, f*, Relief from black vessels; *d*, Pestle; *g-i*, Interiors of red grater bowls; *j-l*, Interiors of black grater bowls.

excavated at Pueblito, is unusual. On one side there is a band of relief decoration that extends, slanting, from the rim to a filleted ring near the base; this relief is hemispherical in section and is decorated with incised straight lines and dots. The same decoration (Fig. 16, *e*) is found on two other larger vessels. The small hemispherical bowl (Plate CCXXX, Fig. 9), of very thin gray ware, was also excavated in site 31 at Pueblito.

Five other miniature vessels were found in the ceremonial center of Pueblito. One is a tall olla (Plate CCXXX, Fig. 8), of heavy yellowish ware, 8.5 cm. high. Another of similar shape, of thin red ware, containing beads, was excavated in site 31 (Fig. 19, *o*). The interior is constricted at the base of the neck, a feature found in some large burial urns of type B. One of black ware that contained beads and gold ornaments was found in the stone grave in site 29 (p. 92), and another of thin brown ware, also containing beads, in site 32. The last is a dainty bowl of kylix-base type, well shaped, of thin red ware, 8.5 x 11 cm. (Fig. 19, *n*), already described as a kylix bowl.

Five miniature vessels were found at Gairaca. A double-handled bowl of red ware (Plate CCXXX, Fig. 7), 11 cm. wide, is of the same shape as much larger vessels, and was probably a girl's toy cooking-vessel, as it was found in a child's burial. Another single-handled vessel of heavy red pottery, 9.5 x 7 x 5.5 cm. (Plate CCXXX, Fig. 6), was probably also a toy. The other three are ring-base bowls, one the shape of a cover-bowl to a burial urn, of heavy red ware, rudely made, another of black ware, quasi-globular, with inverted rim (Fig. 19, *m*).

Two miniature vessels were excavated at Mandigua, a fragment of the base of a tiny red olla with a low ring base, the lower edge scalloped with large knobs, and a small, rude, heavy, low, round-base bowl with one lug on the rim, 6.5 x 2.8 cm. Two other small round-base bowls were found. One from Los Congolos (Plate CCXXX, Fig. 5) is tiny and red, 4.3 x 2 cm., with a pair of perforations near the rim. The other, from the Arcife cave, is a deep bowl with everted rim, of thin, very red ware, 12 x 7 cm.

FIGURINES

In contradistinction to Mexico and Central America, simple pottery figurines, either animal or human, are practically unknown in this region. Fragments of animal or human figures are very common, but the majority of these are obviously either parts of

whistles or ocarinas or fragments of relief from vessels, and almost all the remainder could be such and presumably are. Only a very few objects were found by the Expedition that are presumably simple figurines (Plate CCXXXI, Figs. 3-5).

Two very similar and very peculiar figurines come from the same place. They are so different in appearance from most Tairona ceramics as to suggest that they belong to a different culture, though other objects from these places near Gaira show no such pronounced peculiarities. A cultural difference might be expected here, as the region is very arid and sandy. It is not impossible that they are post-Columbian, though they display no non-aboriginal characteristics. Both are apparently of solid pottery, light in color and rudely made, though naturalistic. One of these (Plate CCXXXI, Fig. 4) was presented to the Expedition as having come from Dur-sino, near Gaira. It represents a man with a child on his back. The child is facing backwards, and bound; only the head is visible. There is a compressed band around the man's body and a large hole in the breast, below which the arms are folded. The feet are large, as are the facial features. On the head is a flat turban, and a sort of kerchief covers the back of the head and the sides of the face. The general effect is good but the details are rude; 4 x 4.5 x 8.5 cm.

The similar specimen (UM; Plate CCXXVI, Fig. 5) was secured at Gaira by Gregory Mason. It consists of only a head, which is of light-colored paste, 3 x 3.5 x 4 cm., solid, but pierced from top to neck with a small shaft. The slightly concave, flat top, and the kerchief on the sides of the face are the same as in the preceding specimen. The nose is elevated, the eyes, nostrils, and mouth incised.

The same cowl and flat crown are seen on an ocarina of uncertain provenience (MfV; Fig. 26, *d*; Plate CCXLIV, Fig. 17), also of reddish-yellow pottery, and on the bone figurine from Gairaca (Plate CXXV).

The other objects in Plate CCXXXI may be fragments of figurines, but in view of the almost total absence of these they probably are of another nature. The specimen in Plate CCXXXI, Fig. 5, is a massive, short, thick, hollow leg and foot, probably human, with buttocks and traces of male sex organs; it might be the base of a human effigy vessel. Bought at Taganga, the original provenience is uncertain. Another short leg or foot, also secured at Taganga, 4 x 6 x 6.5 cm., is solid and massive, like an elephant's foot, oval at the base, with five or six extensions as if for toes. This may also be a supporting leg of an effigy vessel.

Plate CCXXXI, Fig. 3, shows a large, hollow, seated female human figure, of thick pottery, the head missing; 8 cm. wide, present incomplete thickness and height 5.5 cm. and 8 cm.; also purchased at Taganga. Though there are no whistle orifices in the part preserved, and no whistles of this type are known, it is most likely a part of a whistle. The legs are short and elephantine, probably hollow and possibly originally rattling, with small holes in the soles.

The two small fragments in human form (Plate CCXXXI, Figs. 1, 2), of fine, hollow, incised pottery, may also be parts of whistles, possibly of the nature of the fine one shown in Plate CCXXXVII, Figs. 1 and 2.

Two similar objects of solid red pottery in the rude form of birds with head and tail broken off were bought at Taganga. As they have slightly flattened bases on which they rest, obviously they are not relief fragments; if they were whistles, as is probable, the orifices were in the heads and necks.

It should be noted that most of the above possible figurines were bought at Taganga, the exact proveniences being unknown. The fishermen of this village range the coast to Rio Hacha or beyond and may have secured these specimens beyond the limits of the Santa Marta culture; possibly it would have been better not to include them herein.

From Dibulla, near the eastern limit of the Tairona culture, comes a very interesting figure (AM; Plate CCXXXVIII, Fig. 2). In general appearance it resembles Santa Marta objects, a large human or anthropomorphic hollow figure of thin, polished gray pottery, 11 x 7 x 4.5 cm. The legs are short and end in enlarged disks with slightly concave bases. The head is probably that of a bat, with pointed, pig-like nose and a square contour with horns at the corners. There is a hole in the top of the head with smaller holes flanking it, a larger asymmetrical hole at the rear side of the head, and a tiny orifice at the crotch. There seems to be no air-shaft or vent and the figure is more likely a figurine than an ocarina.

Another figurine (MfV; Plate CCXLIII, Fig. 3) is of very unusual type and resembles certain Venezuelan or Amazonian figures; it is included here because it was found by Karsten in a river near Santa Marta. It is a large female figure, 26 cm. high, of reddish clay without slip, and is not a whistle. It is decidedly non-Tairona in appearance, but the other objects said to have been found with it are typical of the region. A figure from Barrancas near Rio Hacha (AM), of much the same type of art, suggests the original provenience

of the Berlin specimen. The latter, however, is an ocarina, with four finger-holes, and is of cream-colored ware.

OCARINAS AND WHISTLES

One of the most outstanding characteristics of Santa Marta ceramics is the number, variety, and quality of the pottery ocarinas and whistles. Numbers of complete or fragmentary specimens are found in almost every collection and often are the finest objects. The ocarinas—whistles with finger-holes by which the sound is modulated and several tones produced—far outnumber the whistles of a single note, and surpass the latter in size and beauty. Practically all the ocarinas, but not the whistles, belong, as regards ware, with the small effigy vessels of fine carved ware (q.v.), of rather thick black or brown pottery, with finely modeled or carved features, and incised lines which are generally filled with white coloring.

The large number and variety of ocarinas have, for the sake of convenience, been classified in a number of types and sub-types. Some of these are rather homogeneous and clear-cut, represented by a number of examples; others are less obvious, with few examples, or even with only one:

- (1) Fine, large, ornate, crescentic, anthropomorphic
 - a. Semi-circular head-dress
 - b. Smaller head-dress
- (2) Flying animals
 - a. Crescentic eagles
 - b. Other birds
 - c. Bats
- (3) Cylindrical
 - a. Standing, anthropomorphic
 - b. With head-dress
- (4) Small, standing, anthropomorphic
- (5) Large, anthropomorphic
 - a. Standing
 - b. Seated
- (6) Small naturalistic animals
 - a. Birds
 - b. Snakes
- (7) Large naturalistic animals
 - a. Toads or frogs
 - b. Quadrupeds
 - c. Owls
- (8) Large naturalistic human; Esmeraldas type
- (9) Tubular
- (10) Pear-shaped
- (11) Multiple
 - a. Double pear-shape
 - b. Double naturalistic
 - c. Triple
- (12) Rude zoomorphic whistles

1. FINE, LARGE, ORNATE, CRESCENTIC, ANTHROPOMORPHIC OCARINAS

Pre-eminent among all Santa Marta, and indeed among all pre-Columbian American ceramic products are the large, crescentic ocarinas of brown or black pottery with ornate details very finely carved or incised. They are also the largest of the ocarinas. Their relationship with the small effigy vessels of fine, carved ware is close. Regarding one of these (MAI; Plate CCXXXVI, left) the late Marshall H. Saville wrote: "The incised technique . . . is of such beauty of design and execution . . . that in this class of ornamentation the Tayrona were unsurpassed among the native artists of the New World." (Indian Notes, vol. 4, p. 363, fig. 87. Museum of the American Indian, Heye Foundation; New York, October, 1928.) The five known complete examples show a relative homogeneity; the lower part is crescentic and of oval cross section, hollow, with four round finger-holes at the front which are connected by ornamental, carved guilloches and decorated with raised circles in triangles. Seated on this, as in a hammock, is a human or anthropomorphic figure, ornately adorned, hollow, with the mouth-orifice at the top of the head and a rectangular vent at the back of the neck. The air-channel is a narrow slit and the head is solid except for this shaft. There are generally two transverse suspension holes in the figure. The two sub-types differ mainly in degree of ornamentation.

a. WITH SEMI-CIRCULAR HEAD-DRESS

These are the most delicate and ornate type of carved and incised pottery. The only complete example is aberrant; the other four consist of only the head. The figure probably represents either the principal Tairona god, or a priest wearing the god's mask. The mouth or muzzle is very projecting, with great canine teeth. Wooden masks¹ of almost identical nature are worn by the Kagaba-Arhuaco "mamas" or shamans today (K. Th. Preuss, *Forschungsreise zu den Kagaba*. *Anthropos*, vols. 14-15, 1919-20, Figs. 30, 31). These masks were probably inherited from the Tairona. The face is generally decorated with fine, incised designs of slanting lines and dots. The head is surrounded by a great semi-circular head-dress, doubtless representing a vertical feather crown; such great feather head-dresses are worn by the Kagaba priests in association with these masks. Circular, pitted ear-ornaments are always shown.

Two practically identical specimens, both with the muzzle somewhat battered, show the finest examples of this type. The ware is

¹ Preuss terms these *Muluku* and *Hisei* masks.

grayish rather than black, the depressions filled with white; 7.5 cm. wide. The broken example in Field Museum (Plate CCXXXIII, Fig. 1) was the gift of Carlos A. Ponce de Leon and said to have been found at Perihuetano. The details of the better-preserved specimen (MAI; Plate CCXXXVI, Fig. 1) are seen to better advantage in the published natural-size drawing of it (Saville, loc. cit.). The other two heads (AM, Plate CCXXXIX, Fig. 2; CM, Plate CCXLI, Fig. 4) are similar and but slightly inferior in technique.

The only known complete example (UM; Plate CCXXXII, Fig. 3) is slightly aberrant and possibly should have been considered another sub-type. It was secured by Gregory Mason at Gaira; 8.5 x 6 x 3.5 cm. The lower crescentic part is fused with the head-dress so that in effect it has merely a rounded base. The figure is not so obviously seated on the crescent. The ware is dark brown, the depressions are filled with white. Although exquisite and in perfect condition, the carving and incising are not quite so dainty as in some of the other fragments. Details of body apparel are shown, such as skirt, bracelets and tassels, neckerchief, nose-ornament, and cowl at the sides of the face, but the details of the head-dress are somewhat different from the others of its type.

b. WITH SMALLER HEAD-DRESS

The ware and the crescent form are similar; details of the figure are more variant, without the semi-circular head-dress, and the incised workmanship is not quite so fine. Four complete examples are known, and seven heads that presumably came from ocarinas of this type.

The figure varies from the naturalistic human, and the human with mask or facial adornment, to an anthropomorphic eagle. The plainest human figure (CM; Plate CCXLI, Fig. 5), 7 cm. wide, has a short trifurcated head-dress, probably representing feathers, and the unusual feature of the mouth-orifice at the front. In a more common form, generally large and of brown ware, the head-dress forks and falls on either side, and the face is disfigured by an immense nose-ornament and a labret (CM, Plate CCXLI, Fig. 3; FM, Plate CCXXXIII, Fig. 2). One of the finest complete ocarinas (MAI; Plate CCXXXVI, right), 10 x 8.5 x 4 cm., secured, like one of the above mentioned, at Bonda, has the facial ornaments somewhat worn, but it was doubtless of similar type, and the same is probably true of two other slightly battered fragments (AM, Plate CCXXXIX, Fig. 4; MAI, Plate CCXXXVII, Fig. 6). A small complete ocarina from Gaira (UM; Plate CCXL, Fig. 2) is very

plain and apparently simplified. The face is projecting and rectangular without facial features. Although somewhat eroded, it apparently always lacked any carved decoration on the lower crescentic part. Another rather rude fragment (CM; Plate CCXLI, Fig. 6) is somewhat of the same type. Two other fragmentary figures or heads from Taganga (GM; Plate CCXLV, Figs. 3, 4) may belong to this type, but exhibit some peculiarities. One shows a complete figure, though lacking the crescentic base; the other is the face with very projecting jaw typical of type 1a, but apparently lacking the semi-circular head-dress.

An exquisite unbroken ocarina of highly polished black ware, No. 153539, bought at Taganga and therefore of uncertain exact provenience (Plate CCXXXII, Fig. 1), 8.5 x 9 x 5 cm., has interesting peculiarities. The points of the crescent terminate in reptile heads, and the head-dress is flat with rolled ends. The anthropomorphic figure has a long curving beak which connects with a spheroid object with carved human face at the front. This object is held in the hands. Whether this represents a cup from which the figure drinks, a concept common to much of South America, or a human head being eaten, is difficult to decide. Dr. Walter Lehmann (*Ein goldner Adlerschmuck aus Costa Rica*, IPEK, 1925, pp. 165-197) believes that it represents the latter, a giant eagle-god feeding upon a human head, a mythological concept common to much of Central America.

A small ocarina (MfV), slightly broken, is of variant type. The crescent seems to have only two finger-holes, the open tips providing the other two. The figure is apparently an anthropomorphic bat with his hands to his head, standing on the crescent. The body is pitted with dots filled with red coloring.

2. FLYING ANIMAL OCARINAS

Almost all these animals are birds. The tail is extended and contains the mouth-orifice at the end, the head being solid. The air-vent is on the under side.

a. CRESCENTIC EAGLES

Polished thin black ware; wings outspread and crescentic, somewhat resembling type 1. Four finger-holes in the upper surface, generally surrounded by a raised circle which is often decorated with radiating lines. Tail with mouth-orifice elongated and plain. Head of a hawk or eagle, with incised collar. The lines are generally filled with white. The type is rather uniform and common; fragments are found in all collections but there is only one complete

specimen (Plate CCXXXIII, Fig. 4), 7.5 x 6 x 4.5 cm., from Pueblito. Other specimens are from Gairaca and Dibulla. One from Pueblo Bernardo is larger, of reddish ware, the two ends of the crescent open; probably in this fragmentary example there were only two other finger-holes. In a fragmentary specimen from Gairaca the ends of the crescent seem to have been connected by a bar.

The elongated tail mouth-piece is often enlarged in a T-shape. A number of fragments were secured at Taganga, Gairaca, and Teran. Most are plain; a few show relief heads. One (UM; Plate CCXL, Fig. 9) has a bat(?) head on one side. In another (CM; Plate CCXLI, Fig. 2) the flanks of the T are modeled in the form of reptile(?) heads.

b. OTHER BIRDS

Several different forms that might possibly be considered subtypes are included. First are several with crescentic wings but more compact than those of type 2a, and depicting doves or other non-raptorial birds. The finest and largest (UM; Plate CCXL, Fig. 3) is a gift of Sr. Rafael Robles and is said to come from Remolino, eight leagues up the Magdalena River from Barranquilla. If this provenience is correct, it indicates the extension to this point of a culture very similar to the Tairona, for the specimen shows several very typical Santa Marta characteristics. Large, 6.5 x 5.5 x 5 cm., of heavy dark brownish ware, it shows the typical four finger-holes with guilloches, mouth-orifice in tail, and vent in breast. Well modeled and decorated, with much cross-hatching, though in lines coarser than the best Tairona work, the bird seems to be a dove. The suspension holes are unique in being close together in the tail on either side of the vent. On the top they nearly meet within a raised circle resembling the carnelian buttons in Plate CXVI. Other smaller examples from Pueblito (UM) represent doves and curassows (Plate CCXL, Figs. 5, 7). Brown, gray, and orange-buff pottery; the suspension hole is generally horizontally transverse through the tail.

Three others are non-crescentic and variant. A large naturalistic bird of heavy black ware, from Don Diego (AM; Plate CCXXXVIII, Fig. 3) has folded wings shown only by incised lines. There are two finger-holes, one at the center of the back, the other at the side; a transverse, horizontal, suspension hole perforates the neck. A small, ruder specimen has outspread wings, but not in crescentic form (CM; Plate CCXLII, Fig. 11).

A small flying-bird ocarina from Pueblito (Plate CCXXXIV, Fig. 12), 3.8 x 2 x 3.8 cm., is unique in having the mouth-orifice in the head. Dainty and naturalistic, covered with small dots, it has two finger-holes in the body, and a suspension hole in each wing.

c. BATS

The sub-type consists of a unique specimen, No. 153551 (Plate CCXXXIV, Fig. 1), from Pueblito, 6.2 cm. long, of ware ranging from red to black. It has the T-shaped tail mouth-piece and small semi-circular wings with suspension holes in them. The head is that of a bat, well carved, with a single finger-hole at the top.

3. CYLINDRICAL OCARINAS

The body is cylindrical, with two finger-holes in a vertical line on the front and another on the flat base, the mouth-orifice being in the top of the head.

a. STANDING, ANTHROPOMORPHIC

A definite and common type of polished black pottery. The pose and arms are anthropomorphic, the head that of a bat. Legs are missing, the lower part being a non-biomorphic cylinder, generally tapering, the base often with a ferrule. This ring and the shoulders and arms are generally decorated with incised lines filled with white; a circle of dots sometimes surrounds the finger-holes. Heights are from 6 to 10 cm., the known proveniences Pueblito and Taganga. The suspension holes are generally in the shoulders or elbows (FM, Plate CCXXXIII, Figs. 3, 5; UM, Plate CCXL, Fig. 1; CM, Plate CCXLII, Fig. 6; PM, Plate CCXLIII, Figs. 1, 2).

b. WITH HEAD-DRESS

Represented by a unique small specimen, from Pueblito (MAI, Plate CCXXXVII, Fig. 4), 5 cm. high. The arms are missing. The finger-holes are not in the central line, and each is surrounded by a ring of dots. The head is probably that of a bat, but is not naturalistic and is surrounded by a large head-dress somewhat resembling the head-dresses of type 1b.

4. SMALL, STANDING, ANTHROPOMORPHIC OCARINAS

The figures are small, standing, human or anthropomorphic, simple and symmetrical, with disproportionately small legs. The mouth-orifice is in the head and the single modulating finger-hole at the umbilicus. Heights are from 3.5 to 7.5 cm., with an average of 4.8 cm. for the eight examples.

The definitely human specimens are among the smallest, daintiest, and most naturalistic, with fine incised decorations. One from Gaira (UM; Plate CCXXXII, Fig. 2), of reddish pottery like many of the Gaira objects, has head and ears covered by a cowl or kerchief that extends to the neck; the smallest of all, from Pozos Colorados (MAI; Plate CCXXXVII, Fig. 5), has the fine incised details in the black pottery strongly brought out by white coloring. In three others the face is upturned and eroded and may represent an animal. One from Los Congoles (MAI; Plate CCXXXVII, Fig. 3) and one from Gairaca (FM; Plate CCXXXIV, Fig. 6), found in an urn with a child's burial, are very similar. Another with similar head from Gairaca (FM; Plate CCXXXIV, Fig. 4) has the vestigial legs separated but meeting at the feet. Two finely incised examples have the legs tapering to the feet. A small specimen from Bonda (FM; Plate CCXXXIV, Fig. 7), of hard, polished dark pottery, has a broad, non-human face. The largest specimen, from Taganga (AM; Plate CCXXXVIII, Fig. 7), of gray pottery, is even finer; the head is that of a bat with very projecting snout. An eroded figure, probably human, of this size and type (MfV; Plate CCXLIV, Fig. 2; Fig. 26, *b*) was secured by Preuss from a hill above Pueblo Viejo, in the mountains on the edge of the Arhuaco country.

5. LARGE, ANTHROPOMORPHIC OCARINAS

A heterogeneous group with almost no uniform characteristics.

a. STANDING

The figures are relatively large, well made, naturalistic, and often asymmetrical. Especially noteworthy are two in Berlin, secured by Preuss on the Santa Marta coast, and probably from the same site. Of polished black pottery, one 8, the other 9 cm. high, with the mouth-orifice in the top of the head and a single finger-hole at the umbilicus. One (MfV; Plate CCXLIV, Fig. 13; Fig. 26, *a*) is human, with details of importance: an immense discoidal labret, quid of coca, prominent bound-up genitals, and an object like a small quiver for blow-gun darts bound at his side by a band around the waist. This band is folded so that the rear end hangs down behind like a tail. The figure is said to have traces of green coloring on it. The other (MfV; Plate CCXLIV, Fig. 15; Fig. 26, *e*) has an animal head and a girdle of the same type as the one mentioned above. In each hand he holds an unidentified object and on the back he carries a quiver or a carrying-basket. The body is covered with impressed dots filled with white, doubtless to represent a jaguar.

A very naturalistic standing jaguar figure from Don Diego, also of black pottery with pitted white dots (AM; Plate CCXXXVIII, Fig. 4), holds in his paws a baby jaguar. The relief tail is curved up the back and there are two finger-holes at the hips and suspension holes at the arm-pits; 8.5 cm. high. A fragmentary plainer figure from Los Congolos (MAI; Plate CCXXVII, Fig. 7) has an animal-like face, monkey or jaguar, but the human attributes of a labret and a coca quid in the left cheek. Of thick, heavy, dark pottery with a finger-hole on either side of the body.

b. SEATED

The two largest and best, in Berlin, are human, the others animal, anthropomorphic, or naturalistic. The largest human figure (MfV; Plate CCXLIV, Fig. 17; Fig. 26, *d*), 11 cm. high, is of reddish-yellow pottery and has a flat turban and a cowl at the sides of the face, both of these characteristics of Gaira. Labret and coca quid; two finger-holes, one on the left side and one on the bottom, and a large orifice in the back of the neck. The other (MfV; Plate CCXLIII, Fig. 4), 6.5 cm. high, of polished brown pottery, the incised details filled with white, also shows the labret and cowl. There are three large finger-holes in a vertical line.

Bats and jaguars are the animals most frequently found. The best anthropomorphic bat, from Don Diego (AM; Plate CCXXXVIII, Fig. 6), of polished black pottery, 8 cm. high, has three finger-holes in a line down the abdomen, including one at the anus, and a suspension hole through the jaws. The elongated head has two leaf-shaped objects that curve backward to meet in a point behind (UM, Plate CCXL, Fig. 8). Other bats are ruder (CM; Plate CCXLII, Figs. 2, 10). One, with the body covered with dots, has the three vertical finger-holes, and suspension holes in the arm-pits; the other, plain and naturalistic, 7 cm. high, has two small finger-holes in a horizontal line on the abdomen. A naturalistic but stylized bat with the wings folded (FM; Plate CCXXXIV, Fig. 3), of brown pottery from Pueblito, 5 cm. high, has a single finger-hole with a raised disk around it at the umbilicus.

Two seated anthropomorphic figures are almost identical. One from Pueblito (FM; Plate CCXXXIV, Fig. 2), of brown pottery, 5 cm. high, with a finger-hole on either side of the body and a third at the anus, has a jaguar tail in relief curving asymmetrically up the back; the other (PM; Plate CCXLVI, Fig. 1) has a bat-like nose. A small, rather rude figure from Mamatoco, probably a jaguar, of brown pottery, 4.3 cm. high (UM; Plate CCXL, Fig. 4), is

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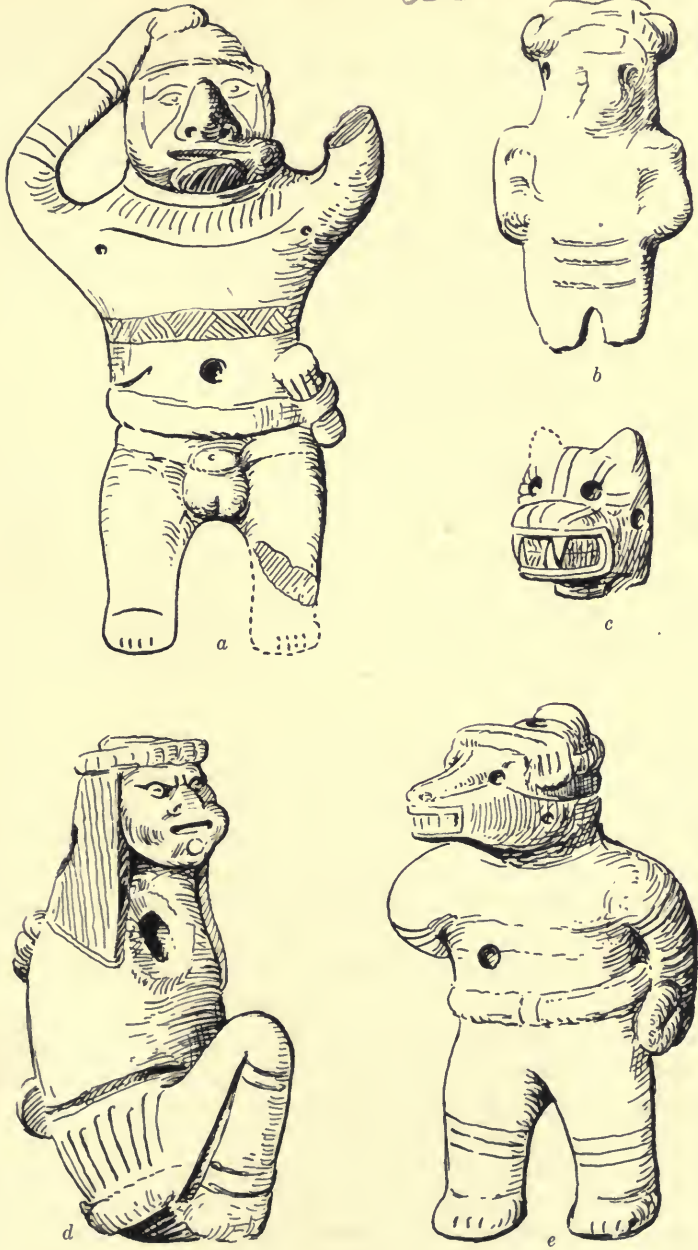


FIG. 26. Whistles and ocarinas, Museum für Völkerkunde, Berlin. *a, b, d, e*, Ocarinas; *c*, Head of ocarina. *a*, Height, 9 cm.; others in same proportion except *d*, 11 cm. high.

pitted and showing male genitals, with a single finger-hole at the umbilicus. Another with body covered with pitted dots and showing male genitals (FM; Plate CCXXXIV, Fig. 5), of brownish pottery from Pueblito, 7 cm. high, seemed much more like a bear than a jaguar to the Field Museum zoologists. There were three finger-holes in the medial line, including one at the anus.

A small, rude figure from Don Diego, of heavy pottery (AM; Plate CCXXXVIII, Fig. 5), of uncertain biomorphic identity, has perforations connecting the top of the head, back of neck, umbilicus, and anus; it may not be a functional ocarina.

6. SMALL NATURALISTIC ANIMAL OCARINAS

a. BIRDS

Small, standing birds differ from flying birds in having the mouth-orifice in the head. Wingless owls are probably represented, with two finger-holes, one on either side of the body; suspension holes are through the neck. One from Pueblito (Plate CCXXXIV, Fig. 8) is of dark pottery, 5 cm. high; the other, from Gairaca (Plate CCXXXIV, Fig. 10), reddish, 4.5 cm. high, has three pairs of deep depressions: in the eyes, the top of the head, and the back of the neck.

b. SNAKES

Represented by a unique specimen from Taganga (UM; Plate CCXXXII, Fig. 4), a tiny whistle without modulating finger-hole, 3 cm. high, of fine workmanship and decoration, different from the other rude whistles. A little, coiled snake with daintily incised decorations and a tiny transverse suspension hole. The mouth-orifice is in the top of the head, the vent at the back of the neck.

7. LARGE NATURALISTIC ANIMAL OCARINAS

a. TOADS OR FROGS

These are naturalistic and rather large, of heavy pottery. Two postures, recumbent and seated. One of gray-brown pottery, 14 x 9 x 6.5 cm. (CM; Plate CCXXIV, Fig. 2), has three finger-holes on the back, two on the left side and one on the right. There is a mouth-orifice in the nose, a vent in the throat, and a large, round hole in the abdomen, made after baking but apparently not broken. A decoration of broad, shallow, incised lines is on the back. A fragmentary similar specimen (Plate CCXXXV, Fig. 2) with two symmetrical finger-holes on the back, from Perihuetano, was presented to the Field Museum Expedition by Sr. Carlos Ponce de

Leon. A fragment of a seated toad of black pottery from Gairaca (Plate CCXXXV, Fig. 5) has an incised decoration up the spine and a finger-hole on the left side of the back; there may have been another on the missing right side, but the finger-holes could not have been quite symmetrical.

b. QUADRUPEDS

Naturalistic animals with short legs and thick tails in which is the mouth-orifice. One from Don Diego (AM; Plate CCXXXVIII, Fig. 1) is comparatively small and well modeled, 8 x 4 x 6.5 cm., with a finger-hole symmetrically placed on either side of the back, and a suspension perforation through the neck. A headless specimen, 8.5 x 5.5 x 4 cm., from Pueblito, decorated with a few incised lines (Plate CCXXXV, Fig. 1) has a finger-hole on either side of the body. Several other fragments were secured at Cañaverl and Pueblito.

c. OWLS

The type is represented by only one large very naturalistic head from Pueblito (Plate CCXXXV, Fig. 4). The narrow mouth-orifice is in the top of the head. Around the neck is a collar of carefully carved, deep designs, guilloches, and triangles with central disks.

8. LARGE NATURALISTIC HUMAN OCARINAS

Only one of this type is known (MAI; Plate CCXXXVII, Figs. 1, 2), of uncertain exact provenience but secured by Gregory Mason near Santa Marta. Though fragmentary, it is considered an ocarina on account of the two pierced holes in the chest, one on either side but slightly asymmetrically placed. It is rather large, the torso being 8 cm. long, hollow, and of thin brown pottery; the hollow portion ended at the hips. It bears a close superficial resemblance to the figurines from Esmeraldas, Ecuador. Both front and rear views are reproduced in order to show the costume, which may give some idea of one type of native dress. Collar, belt or sash, arm-bands, wrist-bands, and carrying-bag are portrayed. A double scarf of some type extends from the breast, where the two ends are gathered together, over the shoulders and under the collar, and is held together at the back by some square object. The two ends fall separately below the hips. Possibly two fragments of small human figures in Field Museum (Plate CCXXXI, Figs. 1, 2) are from ocarinas of similar type.

9. TUBULAR OCARINAS

Type 9 is represented by only a single specimen (MAI; Plate CCXXXVI, center) from Mamaron, near Gairaca. Of chocolate-brown, polished pottery, 11.5 x 3 x 2 cm., the body is long and tubular, of oval cross section. This is divided on the front by double or triple horizontal incised lines into alternate plain and decorated zones, the decorated ones of deeply cut triangles and parallel, slanting lines. No arms or legs are shown. At the upper end is a human head with very fine incised and pitted decoration, with crescentic nose-ornament, and a large semi-circular head-dress, in the top of which is the mouth-orifice, the vent being at the back of the shoulders. There are three finger-holes in a vertical line at the front, one on each undecorated band, and at the bottom a larger, oval hole.

10. PEAR-SHAPED OCARINAS

A rather definite type, small, with sub-globular bodies in which are the finger-holes, and animal heads with the mouth-orifices. Heights from 2.3 to 4.3 cm.; proveniences Cañaveral, Taganga, Guachaquita, Gairaca, and Pueblito, mainly coastal sites. One of the Gairaca specimens was found in an urn with a child's burial. About one-half of the specimens have a single finger-hole at the front, the others a hole on either side; there are suspension holes in the neck. The heads are sometimes conventionalized and unidentifiable, especially the smallest ones (Plate CCXXXIII, Figs. 8, 10); some are wide with little depicted except the eyes (Plate CCXXXIII, Figs. 7, 9). The larger ones sometimes have naturalistic heads (Plate CCXXXIII, Fig. 6; UM, Plate CCXL, Fig. 10). A small example of polished black pottery (CM; Plate CCXLII, Fig. 4) has a human face decorated with slanting, incised lines on either side which extend both above and below the eyes.

11. MULTIPLE OCARINAS

Multiple whistles have a single mouth-orifice but have two or three shafts which lead to separate vents; they generally have modulating finger-holes.

a. DOUBLE PEAR-SHAPE

The simplest form of double whistle is twin-fused and pear-shaped (Plate CCXXXV, Fig. 8; UM, Plate CCXL, Fig. 11) with two lower lobes and a single animal head, generally naturalistic. Ordinarily there is a small finger-hole in each lobe, but one (Plate CCXXXV, Fig. 7), the largest, has none. All known proveniences are Pueblito; heights 3.3 to 6 cm.

b. DOUBLE NATURALISTIC

Represented by two specimens. In the complete example (FM; Plate CCXXXV, Fig. 9) the twin lobes are altered into birds with high-relief heads, and the mouth-orifice is in the broken tail. It is shown in the plate from above with the twin heads at the bottom. Daintily made. The suspension hole is vertical; in the pear-shaped type it is horizontal through the head. Twin air-shafts in the fine bat head (MAI; Plate CCXXVII, Fig. 2), from Tairo, prove that this fragment must have belonged to a much larger and different example of the type.

c. TRIPLE

Three shafts lead from the mouth-orifice into lobes, each with an air-vent. Only one complete example is known (MAI; Plate CCXXXVII, Fig. 8), a standing, human figure, 9 x 6 x 2.5 cm., of brownish pottery, naturalistic, of excellent workmanship. A wide mouth-orifice is in the top of the head with vents at the back of the neck and the back of either shoulder, one resonance cavity being the body, the others the bulbous upper arms; the transverse suspension holes are in the arm-pits. A large hole has been broken in the abdomen, but there were apparently no finger-holes. The nature of the body of the only other known fragmentary specimen, from San Pedro Alejandrino, is uncertain. The head (AM; Plate CCXXXIX, Fig. 6), showing the beginnings of the triple shafts, is that of a conventionalized bat.

12. RUDE ZOOMORPHIC WHISTLES

A very few whistles without modulating finger-holes, of heavy, reddish pottery, undecorated and rudely made in animal forms, are known. All four are from Bonda, probably purchased, and differ so much from typical Tairona ocarinas that they may be of more recent manufacture. Two resemble a tadpole or fish with bent tail (Plate CCXXXV, Fig. 6), 5.5 cm. long. Another (Plate CCXXXV, Fig. 3), 5 cm. long, resembles a turtle, with two short hind feet but no front feet. Both of these have the mouth-orifice in the nose. The last (UM; Plate CCXL, Fig. 6) is a legless animal with long neck and the mouth-orifice in the elongated tail.

HEADS OF OCARINAS AND WHISTLES

As most ocarinas have animal heads from which they are blown, fragmentary whistle-heads can generally be identified, but in most cases they cannot be assigned to their respective types; a few have been classified. Bat heads of several types or species are the most

common; jaguars and birds are also found. Some of the bat heads are as large as 5.5 cm. One jaguar head is very large and naturalistic (GM; Plate CCXLV, Fig. 7). An unusual head, unfortunately photographed from above (AM; Plate CCXXXIX, Fig. 1), from San Pedro Alejandrino, portrays an animal with a long, conical snout and knobs on the head, possibly representing hair. (See also MAI, Plate CCXXVII, Figs. 1-5; FM, Plate CCXXXIV, Figs. 9, 11, 13, 14; AM, Plate CCXXXIX, Figs. 3, 5, 7, 8; UM, Plate CCXL, Fig. 8; CM, Plate CCXLII, Fig. 7; MfV, Plate CCXLIV, Fig. 1; GM, Plate CCXLV, Figs. 3, 4; MfV, Fig. 26, c.)

SMALL EFFIGY VESSELS OF FINE CARVED WARE

Almost as characteristic of Santa Marta ceramics as the fine, carved ocarinas, with which they are intimately associated in technique and art, is a group of small, effigy vessels lavishly decorated with dainty incised and carved designs in high and low relief. These are, like most of the ocarinas, of rather thick, heavy, brown pottery, the lines and recesses often filled in or painted with a thick white substance. They were presumably made specifically for mortuary or ceremonial purposes.

All these show animal or human heads in high relief, and most of them rest on four short, solid feet which are generally of truncated conical or cylindrical shape. In many cases the feet are seen really to be the feet of a seat or bench, generally with concave upper surface and resembling the stone seat shown in Plate XCIII, Fig. 2, on which the upper, effigy part of the vessel rests.

Strangely, no good example of this characteristic type was secured by the Field Museum Expedition, but the small though select collection in the Peabody Museum of Harvard University has six excellent examples. As the art is typically Tairona and as they were secured at Taganga and Bonda they are certainly not exotic.

Apparently most typical are small vessels with a reptilian head in the round, stylized and beautifully carved, at either end. Most of them rest on four solid legs. Sometimes the heads project from a spheroid olla, deeply carved with typical guilloches and disks, that rests on the four-legged seat (PM; Plate CCXLVI, Figs. 6, 7); average height 6.5 cm. The nature of the base is less obvious, the decoration different and poorer, in an example from Los Congolos (UM; Plate CCXXXII, Fig. 5). Sometimes the head is larger and less projecting, and probably represents a toad or frog rather than the snake or iguana that is more usual (PM; Plate CCXLVI, Fig. 4).

An example from Pueblito (FM; CCII, Fig. 5) is larger, 12.5 cm. long including the relief heads, more bowl-like and deeper; it lacks the seat-like base.

Frequently a man is seated on the bench. The latter lacks the twin reptile heads in one fine example (PM; Plate CCXLVI, Fig. 5); the man's legs replace the front legs of the seat. The orifice of the vessel is behind his head. The modeling is very fine; the pitting probably represents a textile cape and the face is decorated with fine lines that may denote tattooing. More typically the seat has the twin relief reptile heads. The largest and most ornate effigy vessel (PM; Plate CCXLVII, Figs. 5, 6; shown from front and side), 17.5 cm. high, from a grave near Santa Marta, shows a human figure, possibly masked, that closely resembles those of some ocarinas.

The same concept of a man sitting on a four-legged seat with twin animal heads is employed in two rather rude and grotesque figures which, although presumably from this region, differ very greatly from typical Tairona ceramics and may belong to a different culture. One (MfV; Plate CCXX, Fig. 1) is of polished, brownish-black pottery, 9.7 cm. high, 13.5 cm. maximum width, secured by Preuss on the coast of Santa Marta. The interior is hollow, with an orifice in the top of the head. The other from Rio Frio (GM; Plate CCXLVII, Figs. 1, 3; front and rear views), 14.5 cm. high, is of buff pottery. The animal heads are very small. This seems to be a figurine, presumably hollow but without any large orifice. The figure has no legs, but a large, broken penis seems to be present. The nasal septum is perforated and probably originally held a metal ring. This is a common feature in the central Colombian highlands, but otherwise unknown in the Tairona region.

A minority of examples lack the tetrapod base; four have flat bases and one a ring base. A fine ornate small effigy olla is in the form of a seated man with hands covering the eyes (PM; Plate CCXLVI, Fig. 3), the orifice in the top of the head; height 8 cm. A small olla with large orifice and large reptile head (FM; Fig. 24, *e*), 6 cm. high, from Pueblito, probably belongs in this category. As it is much eroded and broken, it may originally have had a second symmetrical head, and more ornamentation than is shown.

Coiled snakes are common concepts in this ware. One is the ring snake (AM; Plate CCXXII, Fig. 1), described under the head of "Spouted Vessels"; the fine carving places it in the present category also. A coiled-snake effigy olla of another type (FM; Plate CLXXXIX, Fig. 2), 10 x 11 x 8 cm., was excavated in site 3 at

Nahuange (p. 37). Of polished, black, heavy pottery, the stylized head, in the round, is fine and typical; the scales are shown in relief by alternate sections of hatching and cross-hatching. A coiled-snake effigy olla of different shape (Collection of Mr. William R. Angell; Plate CCXXIII, Fig. 1), ca. 10 x 10 cm., was found at El Recuerdo on the road from Santa Marta to the finca of Cincinnati.

One small ring-base vessel of this ware is known (MAI; Plate CCXXXVII, Fig. 7), from Gairaca, 10.5 x 5.5 x 5 cm. Of heavy brown ware, the two animal heads are large, ornately carved, and of unusual type. The decoration on the body is typical but uncommon.

APPENDIX: THE TECHNOLOGY OF SANTA MARTA POTTERY

BY
DONALD HORTON

INTRODUCTION

Technological studies of pottery are a relatively recent development in the archaeological field. The advantages of technological analysis—its possible scientific objectivity and unlimited technical resources—have been stated by Anna O. Shepard, and recognized by an increasing number of archaeologists. The method is undoubtedly to be regarded as a permanent addition to archaeological technique. In order to facilitate its development, reports of analyses should, at this stage, include more than the analytical data and interpretations. Discussion of purpose and methodology should be given place. In the following report of a technological study of sherds from Santa Marta such matters are treated.

Although the inclusion of technical discussions of a theoretical nature is desirable and necessary at the present time in order to build up a literature of methodology available for future workers in this field, it is expedient not to burden the general archaeologist with the reading of such material, except as he may voluntarily inquire into the methods by which our conclusions have been obtained. We therefore present our report in two sections: the first, a general description of the sherds based on our technical studies; the second, technical in character, a detailed presentation of our data along with discussion of pertinent technical questions. Miss Shepard has followed a somewhat similar course in separating her summaries of analytical data from her discussion of the data (*The Pottery of Pecos*, vol. 2, part 2, 1936). Our purpose is slightly different in that we wish to present a non-technical description for the archaeologist and a technical description for the specialist. It is hoped that such an arrangement will prove sufficiently elastic to permit the development of a sound technical literature on ceramic analysis without rendering the essential pottery description too difficult of access to the non-specialist.

The general aims of technological study of pottery have been formulated by Miss Shepard as, first, "To follow the history of the potter's craft," and secondly, "To study the evidences of trade relations and foreign influences." In our study of the Santa Marta

material the first of these general purposes was not considered. A chronological ceramic sequence has not yet been established. The present work was undertaken chiefly to establish the general ceramic characteristics of the area and to determine whether certain sherds, peculiar in shape, decoration, color, and texture, were of local manufacture. The evidence on the latter question is presented in a negative way. The character of undoubtedly local wares is shown, and the presumably imported sherds are compared with the local types. A difference of clay or temper is tentatively regarded as strengthening the stylistic evidence that certain sherds are imported. To present the same conclusion in a positive way it would be necessary to make a field investigation of the natural resources of Santa Marta and adjacent regions, as well as a technical study of neighboring ceramic types. Such an extensive research was not possible in connection with the present work, and in fact could hardly be justified by the nature and quantity of pottery available from the area.

More important for our analysis than either of the foregoing general aims of technology were certain limited problems of a specific nature, for the solution of which the limited material available seemed adequate. (1) As an aid to the stylistic classification can it be shown that all the local pottery is from the same source? Does each of the recognized types have its peculiar texture and composition? Is there technical evidence that the manufacture of certain shapes and styles was limited to specific sites? (2) A black-slipped ware and a red-slipped ware are recognized. Are they properly so described? Are the red and black surfaces truly slipped? What is the technical character of these surfaces? (3) A ware of fine, soft fabric seems to fall into a class of its own so far as texture and other physical features are concerned, but stylistically it would be more appropriate to class it with the black-slipped ware. Traces of a dark slip are actually found on some of these soft fabrics and there is reason to believe that these may, in fact, have been black ware from which the slip has been eroded by exposure to weather. It is one of the special difficulties involved in study of the sherds from Santa Marta that some of them have been lying on or near the surface of the ground long enough to have been seriously affected both by chemical and mechanical weathering. Is there any technical evidence to support this classification? Answers to these and similar questions are presented in this report.

The work was done in the Ceramic Laboratory of the University Museum, Project 14753 of the Works Progress Administration. All

of the members of the Project Staff took some part in the work and their valuable assistance is gratefully acknowledged. Mr. Joseph Berman is especially to be thanked for checking our identifications of minerals.

To Dr. Edward Watson, Chairman of the Department of Geology of Bryn Mawr College, thanks are given for the use of a petrographic microscope, without which our work could not have been finished. Dr. Dorothy Wyckoff of the same Department gave friendly and valuable advice on several aspects of the petrographic analysis. Our preliminary work was done in the laboratory of the Geology Department of the University of Pennsylvania with the permission of the Departmental Chairman, Dr. F. E. Ehrenfeld. Mr. A. W. Postel of the same Department materially assisted our work by lending us a Wentworth recording stage, as well as other needed items of laboratory equipment, and we asked his advice frequently. Heavy mineral separations were obtained with a centrifuge in the Department of Physiology of the University of Pennsylvania Medical School. The use of this centrifuge was kindly granted us by Dr. D. W. Wilson. Our photomicrographs (Plate CCXLVIII) were made by Mr. Reuben Goldberg, Photographer for the University Museum.

GENERAL DESCRIPTION OF THE WARES

In the mineral composition of the Santa Marta sherds so few qualitative differences are to be found that a single statement of the variety of minerals present will suffice for all the local wares. Quartz, feldspar, hornblende, as separate grains or combined in rock fractures, micas, and iron-oxide nodules, are the chief non-plastic constituents. The quartz appears in the hand specimen usually as glassy particles, the feldspars as white, opaque, angular grains with lustrous, flat cleavage surfaces, the hornblende as black, opaque, highly lustrous grains. The micas are most prominent in the sherds of fine texture, in which they are present in relatively greater proportion than the other minerals, although mica is a significant constituent of all the fabrics. Similarly the red oxidized-iron nodules are more noticeable in the finer-textured sherds, and in those in which there is a strong color contrast between the fabric and the nodules.

Significant differences on the basis of which the sherds may be classified in groups are found rather in the size and relative proportions of mineral grains (texture) than in qualitative differences.

Three such types are recognized. The textural terms used in describing them refer to their appearance to the unaided eye, and these terms, such as "coarse-textured" and "moderately tempered," are obtained by approximation from the analytical data given in the second part of our report. Miss Shepard's table of equivalents is employed (*loc. cit.*, p. 444).

TYPICAL LOCAL SHERDS

Type 1.—Red-orange slipped sherds; typical Ridgway value 7'' (Terra Cotta) to 13'' (Fawn). Generally thick-walled (8-14 mm.), coarse-textured, moderately tempered; quartz and feldspar prominent, hornblende present but not prominent. The sherds of this first type are tempered in the proper sense of the word; that is, a quantity of non-plastic material was added to the potter's clay in preparation of the paste. The quantity of material added was relatively constant in the sherds under examination. The tempering material itself is judged to be a residual sand derived from a dioritic rock. The clay to which it was added is described as red-burning, non-refractory (begins to vitrify at 1000° C.), slightly micaceous. It is of sedimentary origin.

No evidence was obtained in this study as to the method of construction of the vessels. The finishing was evidently done with a burnishing tool. The elongated facets or shallow grooves left by the tool were not smoothed off. To some, but not all, of the surfaces a thin wash of clay was added. The suspension was largely absorbed by the fabric and is therefore present only as a very thin layer on the surface of the sherd. The clay used in the surface wash was evidently the finer fraction of the pot-clay itself, since it fires to a color similar to that of the fabric, and, on refiring to high temperature in the laboratory, loses its identity. The wash was applied carelessly in some instances; the areas under projections were not always covered. Although the firing must have been done in an oxidizing atmosphere to produce the red or orange color characteristic of sherds of this group, many have dark cores. These are attributable to carbonaceous matter in the clay, which was not oxidized because of the thickness of the vessel walls. The porosity of the fabrics, which may be important in this connection, was not determined. Several sherds have patches of carbon black on their surfaces, attributable to smoke during or subsequent to firing.

A few sherds, with surfaces rough and unpolished, and tempering grains completely exposed, are thought to be very much weathered examples of type 1.

The twenty sherds analyzed represent vessels of many different stylistic types, from a number of sites.

Type 2.—Black slipped and brown non-slipped sherds. Typical Ridgway values, 17''' (Wood Brown), 13''' (Cinnamon-Drab) and Carbon Gray; wall thickness from 4 to 12 mm.; texture medium to fine, inclusions moderate to sparse in quantity; hornblende relatively prominent, and mica more evident in the finer-textured fabrics.

The sherds of the second group show a textural gradation from medium to fine with a correlative increase in the volume of mica (chiefly muscovite). If the sherds are arranged in a series in descending order of fineness of texture, there is an overlapping at the lower end with the fine-textured sherds of type 3. From this point of view, therefore, the two groups may be regarded as members of the same series. Similarity in color after refiring further strengthens this conclusion. For convenience, and to indicate that the evidence on this point is not definitive, the two types are described separately. In view of the lack of constancy in the proportion of inclusions, the fineness of texture (in many of the sherds the inclusions are not clearly visible to the unaided eye), and the micaceous character of the finer fabrics, it is concluded that these sherds contain only the inclusions naturally present in the pot-clay itself. No additional tempering was used.

The sherds of type 2 may be subdivided on the basis of surface character. Practically all the sherds have a black outer surface. In several cases the slip has been worn thin or removed by erosion. The surface beneath the slip was evidently burnished as in type 1. Several sherds show shallow facets, although one or two have been smoothed to a perfectly plane surface. The unslipped vessels were possibly first fired in an oxidizing atmosphere, with consequent oxidation of the iron in the outer portions of the fabric, then, while still very hot, coated with an organic slip which was immediately carbonized. Internal evidence, best shown in the molecular changes effected in the hornblende grains, indicates that the temperature of first firing was about 800° C. The thirty sherds of this type analyzed comprise nearly all the vessel types and proveniences represented in the University Museum.

A few sherds especially characteristic of the site of San Pedro Alejandrino are grouped here because they are practically identical in mineral composition and texture with type 2, but are brown (13''', 17'''), or brown with black smoke-mottling, and lack slip.

A second sub-type is represented by a few vessels of the site of Gaira (Dr. Mason's "fine red ware"). A tetrapod bowl of this sub-type was examined and proved to have a fine texture and a complement of mineral inclusions which would place it well down in the gradational series of type 2. Its peculiarity consists in its thoroughly oxidized fabric (11'', 11'' *i*) and polished but non-slipped surface.

Type 3.—Brown, Ridgway values 13'''' and 17''', thin-walled (3-5 mm.); soft, gritty (evidently abraded) surfaces; texture very fine, markedly micaceous.

Our reasons for believing that these fine-textured sherds belong to the gradational series of type 2 have been given above. The fine, micaceous character of the clay is perhaps in itself the factor which made the thinness of the vessels possible. One small vessel of this group has a black slip well preserved. The softness of the fabrics, due to the abundant mica, may have been the reason for the erosion of an original black slip in all but this one instance. Occasional traces of a slip of obscure character are found on several sherds.

Although this explanation is plausible, the sherds are classed as a separate group to emphasize the fact that more direct evidence is needed. From the geological point of view, it is quite logical to expect that such a variation in the texture of a clay might occur vertically in the deposit in a single clay pit, or horizontally in a relatively restricted area. In such a case, the textural gradation of groups 2 and 3 might have been produced at one place. If the variation in the natural clay were regional, and the distance between the coarser phase and the finer phase of the clay were several miles, it might be argued that the two correlated types of pottery were made by different potters, perhaps even in different settlements; and one should expect to find in each case a constancy of texture which would entitle the sherds from that locality to be classed separately as a type of the ware. In the case of the sherds under discussion, it is not a question of classing them as two separate wares, since in style the two groups are homogeneous.

[The sherds of type 3 represent vessels that seem to be identical in form with those of type 2. The vessel with the black slip previously noted is a very typical black olla with flying-bird relief and incised designs, from Gairaca. Vessels of type 3 ware are relatively uncommon, probably not 10 per cent of those of type 2. J.A.M.]

In any case, the fine, micaceous sherds of type 3 are to be classed as local on the basis of their mineralogical composition, and there

are no strong reasons why they should not be included with the black and brown sherds.

The precise provenience of the groups described above is not immediately to be inferred from the mineralogical analyses. Because of differences in the colors to which they fire at 1000° C. it is probable that groups 1 and 2 were made in different places, or at least from different clays. Even this distinction between the two groups may be more apparent than real. Beyond this, all other indications are that the geological features of the region are marked by uniformity. We have not been able to obtain any satisfactory geological data for the area by which to check this surmise.

NON-TYPICAL LOCAL SHERDS

Practically all the sherds analyzed fell into the above three classes. Of the other few, selected because of unusual megascopic appearance, seven types have been identified, each represented by from one to three sherds, far too small a number for certain characterization. The first, "a," "b," "c," and "d," differ little if at all in mineralogical composition from type 2, the difference being mainly in surface treatment, and they are therefore considered to be local wares; type "b" is the "Painted Ware." The other three, "e," "f," and "g," differ more radically and are therefore presumed to represent vessels of alien provenience; type "g" is the "Light-colored Ware."

(a) Two sherds decorated with punctate bands have a mottled surface coloration, in shades of gray and orange. The fabric is gray. The mineralogy is similar to that of the other local wares, but includes "microlitic" glass and microcline. The texture is characterized by an abundance of inclusions and their unusual uniformity in size (fine texture). This uniformity can be seen with difficulty under a hand-lens but is very clear in thin-section.

[The unusual nature and rarity of this type is shown by the fact that the two sherds, selected for analysis from the Collections of the University Museum and the Heye Foundation, belong to the same vessel, the original large collection having been divided. The sherds are not large enough to show the shape of the large vessel. Not only is the surface appearance unusual, but also the decoration, a band of two parallel horizontal lines of rather large deep dots enclosed between horizontal lines. The sherds are from Gaira, a site characterized by a number of unusual objects. J.A.M.]

(b) Two sherds of orange fabric have a buff-colored slip, which is white in cross section, and may have been white originally on the

surface. Thin, somewhat eroded bands of red iron-oxide paint are evident on the slipped surface. The mineralogy and texture of the sherds should place them about midway in the series of type 2. Possible difference in the clay was not investigated by refiring because only two small sherds of this ware were available.

[These sherds represent the "Painted Ware." One is from Nahuange, the only site where this ware was found by the Field Museum Expedition; the other, from the American Museum, is from the "Region of the Chimilas," probably southwest of the Sierra Nevada, and may point to the region from which the Nahuange vessels came. J.A.M.]

(c) One sherd has a dark polished inner surface, a buff, uniformly oxidized fabric, and an outer surface of Prussian-red color. This outer surface has been colored by a thin slip, apparently iron-oxide (ochre). The mineralogy and texture of the fabric would place this sherd also in the category of group 2.

[Objects with the surface colored bright red, mano stones (p. 147) even more than pottery vessels, are characteristic of Pueblo Bernardo, the provenience of this sherd. J.A.M.]

(d) A sherd with dark inner surface and a red-slipped outer surface has an unusually equigranular uniform texture. The hand specimen shows an abundance of fine grains of plagioclase and quartz. The fabric is black. In thin section the inclusions (mineralogically of group 2, but with fewer grains of hornblende and other accessories) stand out in strong contrast to a clay matrix of very fine, homogeneous texture. This clay is diatomaceous. It contains siliceous tests and fragments, some of rectangular shape.

[This vessel was unusual in several characteristics: red surface, very black fabric, and dark interior, the exterior surface with the very unusual feature, for red ware, of incised decoration. It comes from the mound of the grave at Nahuange, the source of a number of unusual objects. J.A.M.]

SHERDS PRESUMABLY OF ALIEN PROVENIENCE

(e) Two sherds are sherd-tempered. These are the only sherds in the entire sample with this type of inclusions. The sherd fragments are easily recognizable. In texture and mineralogy both the sherd fragments and the matrix in which they are contained differ from the local ware. The texture is fine. The chief mineralogical difference is the lack of plagioclase feldspar, lack of characteristic accessories, and abundant presence of orthoclase feldspar. One of the

sherds has a red-slipped outer surface. The microscopic appearance of one of these sherds is shown in the photomicrograph (Plate CCXLVIII, Fig. 4). Several light and dark sherd inclusions are evident.

[The two sherds were picked up near Rio Hacha, on the edge of the Goajiro country. Sherd-tempered pottery is a characteristic sharply distinguishing Goajira ceramics from those of Santa Marta. J.A.M.]¹

(f) Two glazed sherds, thought to be Spanish, have mineralogical and textural peculiarities which confirm the stylistic attribution. Although they might have been made in South America by Spanish technique, there is no evidence that they were made of the materials used in the local wares.

(g) Three sherds of buff clay contain an abundance of silt. The texture is fine. A characteristic of the mineralogy is the presence of aggregates of biotite and opaque grains, yellow in reflected light, probably nodules of earthy limonite.

[These sherds represent the "Light-colored Ware" (q.v.). One is from the high-mountain site of Vista Nieve; the others, from the collections of the American Museum and the Heye Foundation, are of uncertain proveniences. The unusual mineralogical composition corroborates the evidence of unusual shapes to the effect that the vessels are not of local manufacture. J.A.M.]

TECHNICAL DATA

TECHNIQUE

The emphasis of this study was put on the preparation and examination of thin-sections, although in a few cases heavy minerals were separated and identified in immersion liquids. Rosiwal analyses of inclusions were made with a Wentworth recording stage. For grade-size analyses an ocular micrometer was used.

No new technical methods were employed in preparation of the thin-sections. The more friable sherds were impregnated with balsam. An optical abrasive (No. 303½) made by the American Optical Company was found to be more satisfactory for the final grinding than the finer grades of carborundum.

¹Both sand and potsherd temper are attributed to Goajiro ceramics by S. Linné on the basis of a statement by Bolinder (S. Linné, *Technique of South American Ceramics*, Map 3a and Table, pp. 32-33). In order to verify this statement, we examined thin sections of twenty-seven typical sherds from various Goajiro sites, as represented in the collections of the University Museum. With a few exceptions the sherds were found to be tempered with sherd fragments or with both sherd and rock fragments (D.H.).

For separating heavy minerals from the clay matrix for identification an electromagnet was not available. A satisfactory separation was made in bromoform, using a centrifuge and a specially designed separatory tube. A standard glass centrifuge tube, 11.5 cm. long, diameter 2.7 cm., was fitted with a narrower inner tube drawn to a pipette end. The inner tube was 11 cm. long and 1.5 cm. in diameter at the upper end. The lower end was drawn to a point with an aperture 2 mm. in diameter (large enough to pass the largest grains of heavy minerals observed in the thin-sections). The smaller tube was suspended in the larger tube through a rubber stopper, which was cut with a flange to overlap the outer tube and prevent the stopper from being drawn into the outer tube by centrifugal force. The overlapping flange was 1 cm. thick and projected 0.5 cm. beyond the rim of the tube. Enough bromoform was used to fill the inner tube to about two-thirds of its length. The powdered and oven-dried sample was then poured into the inner tube. When centrifuged at about 5,000 r.p.m., a clean concentration of heavy minerals passed through the pipette end of the lower tube into the bottom of the larger tube. The light fraction was removed in the inner tube and thus the mixing of heavy minerals and clay particles by convection currents was avoided. We found that we were able to make cleaner separations in this way than by any other heavy-liquid method.

Sherds were refired in a gas muffle-furnace. The maximum temperature obtainable in a half hour was 1000° C. Although no direct temperature readings were made during the firing, the furnace had previously been calibrated with a Fery radiation pyrometer and the variation of temperature after one-half hour of firing was found to be not more than plus or minus 25°. An oxidizing atmosphere was maintained.

Mineral identification in liquid immersion media was carried out by the usual methods. The recording of refractive indices of clay particles was abandoned in the course of the work. The variation was found to be so great, even within a single sherd, as to make the determination valueless. It is believed that this variation may be attributed to surface films of iron or carbon.

DESCRIPTION OF TEXTURE

The most important figures which refer to texture are considered to be those of volume and grading. The volume percentages are given to the nearest whole number. Figures in the first decimal place are considered to be insignificant in relation to the accuracy

of the method as well as unnecessarily confusing to the reader. Grading is represented in two ways: (1) According to the scale suggested for field description by Miss Shepard (loc. cit., p. 444): fine, medium, coarse, very coarse. (2) According to the geological classification of Wentworth: silt, very fine sand, fine sand, medium sand, coarse sand, very coarse sand, granule (see W. H. Twenhofel, Treatise on Sedimentation, p. 25, 1926).

The first classification is primarily of interest to the archaeologist as a basis for a simple, accurate, field description. The second is an aid to technological interpretations of the texture for understanding both the potter's technique and the geological nature of the materials employed. Thus the question whether the clay was "self-tempered" or artificially tempered may be illuminated by this geological classification, and from it one may also obtain a notion as to what type of clay, residual or sedimentary, should be looked for in the field if the source of the potter's material is to be found.

Our textural calculations are slightly different from those of Miss Shepard. In "The Pottery of Pecos" she gives the percentage of the total inclusions in each size-grade. We give volume of inclusions in each size-grade as a percentage of the total cross-section area of the sherd; thus, where Miss Shepard may say of a sherd whose volume of temper is 30 per cent, that 50 per cent of the inclusions are very fine, 30 per cent fine, 15 per cent medium, 5 per cent coarse, our figures would be 15 per cent of the total area of the cross section very fine, 10 per cent fine, etc.

Our purpose is to preserve the direct relationship between the microscopic measurements and the appearance of the texture to the unaided eye. With practice the interpretation of our data in terms of the megascopic appearance of the texture should be relatively easy. The proper descriptive field term may be developed directly from these figures. Miss Shepard's proposed scale, which we accept, depends on an estimation of the percentage of *visible inclusions* in the total volume of the fabric. Miss Shepard found as the result of experiment that, other conditions being equal, inclusions of medium grade or larger are visible to the unaided eye. In our type 1, which by Shepard's classification has an average texture of 30-6-6-1, and which would be described as "sparsely tempered" (less than 15 per cent of inclusions visible), the actual visibility of the particles is greater than this theoretical limit. The contrast of white particles against a red or orange matrix gives visibility to grains of fine-sand grade. When the fine-sand fraction (part of the

"fine grade") is taken with the medium, coarse, and very coarse sand fractions the average of total visible inclusions is 17 per cent, to be described as "moderately tempered." Similarly, the small black hornblende grains which in type 2 stand in strong contrast to the buff matrix, both because of their color and their brilliant luster, are visible below the limit of the medium grade, although in this case their effect is not great enough to warrant use of the term "moderately tempered." Yet in the foregoing cases since the term "fine" as used by Miss Shepard includes both fine sand (in this case visible) and very fine sand (not visible) the figures of the field classification do not suggest what proportion of the grains should be considered visible to the unaided eye and therefore serve as a basis for classification. The geological classification is more sensitive in that more categories are given.

In considering grading we have to deal with what is in many cases a continuous distribution. Yet it is desirable for convenience to be able to refer to the characteristic size of temper by a single descriptive term which would indicate this characteristic just as the terms "sparsely" or "moderately" tempered describe apparent volume of inclusions. In our report, type 1 is spoken of as of "coarse texture." The average grading is 30-6-6-1 (Shepard's scale). But though the volume of coarse and very coarse grains represents only 7 per cent of the cross-section area, these grains, because of their striking visibility, give an impression of coarseness. Although the fine and medium grains are more abundant than the coarse, it is this 7 per cent of coarse grains which gives the fabric its characteristic appearance. In order to give a single term which will emphasize this quality we have described type 1 as coarse in texture. In type 2 the average for the medium grade is only 3 per cent, with a range of 1 to 8, and the coarse grade is lacking. A majority of the sherds of this type are described as of medium texture and some as fine. This practice is partially subjective and therefore not completely satisfactory.

The development of a flexible system for describing texture involves many difficulties which technologists will have to consider as they accumulate experience in attempting to describe and classify their material.

A second set of problems, as yet uninvestigated, is involved in an attempt to determine whether or not a paste was tempered by the potter. Texture is an important criterion, though many other factors must be taken into consideration. We have concluded

that our types 2 and 3 were not tempered; the grading curves have a natural slope best shown by the geological classification. The bulk of the inclusions are in the silt grade and the grading curve falls off gradually to the medium sand grade. This is the type of curve to be expected of a natural sediment. In contrast with this, the grading curve of type 1 has two maxima, best shown by the geological classification (see p. 416). Although it will be necessary to examine grade-size distributions of many sediments to substantiate this point, the writer has found such a double-maximum curve to be very rare in the geological literature. A curve of this type given by De Magnée and Macar is interpreted by them as evidence of mixing of sediments (*Données nouvelles sur les sables des Hautes Fagnes*, Ann. Soc. Géol. de Belg., T. 59, pp. 263-288, 1936). We have similarly interpreted our curve as indicating the mixing of tempering material with the clay and its natural inclusions. On the basis of texture alone, this might be a questionable inference, but in the case of our type 1, the constancy of inclusions, their shape and mineralogical character, and the finding of similar inclusions, not mixed with clay, as a filling in the two hollow legs from Gaira (cf. "d" above), all support our conclusion. Nevertheless, it must be admitted that criteria for "tempering" have still to be worked out as new experience in ceramic technology is accumulated.

SAMPLING

Approximately 150 sherds were examined with a wide-field, binocular microscope and classified tentatively on the basis of this examination. Thin-sections of eighty sherds were prepared. Rosiwal analyses of volume of inclusions were made on fifty sections, and twenty analyses of size-grade of inclusions were made; thirty-five samples were refired, and three of the refired sherds were sectioned; fifteen heavy mineral concentrations were obtained, and the minerals identified in immersion liquids.

Insofar as it was desired to give a technical description of the chief classes of local sherds, the sample may be considered adequate. Type 1 is represented by eighteen sections, type 2 by forty sections, and type 3 by ten sections. In the case of the non-typical sherds we met many difficulties because of the small number of sherds available for analysis. For instance, the sherd described under "d" in the foregoing section was the only one of its kind. In mineralogy it seemed to belong with the local groups, but there were minor differences, both in kind and quantity. Since there were no sherds

with the same peculiar texture and matrix with which to compare it, we must remain in doubt as to whether the observed differences really distinguish it as a representative of a new class, all of whose members would be found to have these differences in common, or whether the differences are attributable to natural variation in the local geology. If the differences are of a major order, as in the case of the putative Spanish sherds "f," the evidence is more convincing, but where the geological variations themselves are slight over a wide area, and the technical features of the pottery over this area are uniform, a single example of a variant type gives rise to insoluble problems. The analytical data can be given, but their interpretation remains in doubt, and the technologist may waste hours in the attempt to find a really diagnostic difference. Thus in the case of the local wares we spent much time in an attempt to show whether there were differences in composition correlative with site differences. Since the mineralogy of the whole group is more or less homogeneous, we looked for differences in the composition of the feldspars and the hornblendes. Minor differences were found, but these showed no correlation with sites. If the material had been sufficiently abundant to allow us to have, say, ten sherds from each site, we should have been able to tell from the thin-sections themselves that the variation in each site was of the same order as the variation in the group as a whole. The additional task of identifying a series of plagioclase feldspars and hornblendes would have been unnecessary.

In another phase of the study a similar difficulty in interpretation was met. On refiring, the local sherds showed a range of oxidation colors from 9" to 13". One or two sherds which have a gritty, possibly eroded surface, and a medium texture of the second mineralogical type, fired to an unusual orange color (10' *i*). Are these to be considered examples of a distinct class on this basis? It could very well be so, if it were found that ten such sherds refired to colors outside the range of the other local types. But a variation represented by but two or three sherds remains doubtful. One hesitates to dismiss it as insignificant; to describe it without interpretation is presumably all that can be done. Individual descriptions may make a report too cumbersome to be practical, yet a synthesis and interpretation are not justified.

Such difficulties, doubtless, were the factors that led Miss Shepard to insist that technological work could be of optimum value only where the ceramic material is both abundant and well understood stylistically. Only when these conditions can be met is it possible

to work on a statistical basis. An entire class of imported sherds may be recognized under such conditions more easily than a single sherd may be recognized as an import, and the relative efficiency of the technological work will increase immeasurably with a relatively slight increase in the actual magnitude of the task. The writer feels that the difficulty encountered in the present work may serve as a demonstration of the validity of Miss Shepard's contention.

MINERALOGY OF THE LOCAL WARES

INCLUSIONS

Essentially the same mineral association is found in all the sherds, with a few noted exceptions. The group differences are variations in grading and quantity of these minerals. The chief constituents are orthoclase, plagioclase, quartz, and hornblende. The minor constituents include epidote, clinozoisite, muscovite, biotite, pyroxene, zircon, titanite, actinolite, organic silica, magnetite, and iron-oxide concretions.

Orthoclase: Commonly clouded by minutely microscopic inclusions, judged to be weathering products, and larger flakes of sericite.

Plagioclase: Many of the larger grains carry sericite and grains or patches of epidote and clinozoisite. Weathered grains are common, but in some sherds the plagioclase is fresh. The typical species is in the oligoclase-andesine range. Extinction angles on lamellar twins run from 20° to 30°. Bent lamellae were observed and crystals showing strain polarization are common.

Quartz: Many grains show polarization. Two general classes of quartz are recognized: large angular rock fragments, including many with mosaic texture, and small sub-rounded grains, probably the silt or fine sand fraction of the clay.

Hornblende: Generally less abundant than the foregoing minerals, but in some sherds hornblende grains are a considerable part of the total inclusions. The species range from pargasite (γ 1.670) to basaltic hornblende (γ as high as 1.735). The most common species has a γ index of 1.687 (hastingsite). Ordinarily only one species is present in a single sherd, but occasionally two distinct species with different pleochroism are recognizable.

When the sherds have been oxidized, particularly near the surface of the fabric, the hornblende has gone over wholly or partly to oxyhornblende, pleochroic in yellow and dark brown, with parallel extinction, and with higher refractive indices. Many large grains were observed in which the outer edges had been oxidized and the

inner portion unaltered, or grains in which oxidation has occurred along prominent cleavage-cracks. Such a grain is shown in Plate CCXLVIII, Fig. 2, a photomicrograph of a sherd of group 2. Several grains of hornblende are evident. The wedge-shaped grain in the center of the photograph shows color-mottling due to oxidation. The lighter areas are the green, unaltered portions of the mineral, and the darker areas are orange-brown, oxidized. That this change took place when the sherds were fired is indicated by the fact that there is a progressive alteration of hornblende to oxyhornblende from the core to the margins of many sherds.

For a description of this alteration see Winchell (*Elements of Optical Mineralogy*. Part 2: Descriptions of Minerals, 3rd ed., p. 252, 1933): "Basaltic hornblende may be produced by the oxidation of the iron of common hornblende (with loss of H) without destruction of the crystals; this change occurs in nature when common hornblende is heated to about 800° under oxidizing conditions, as in certain lava flows; it is easily produced artificially . . . oxyhornblende has higher gravity, refringence and birefringence than common hornblende, but its extinction angle is 0°, or very small, in all cases in which oxidation is complete or nearly so."

Rock fractures: Fairly numerous. They include various combinations of orthoclase, plagioclase, quartz, and hornblende. The texture is usually granular, with suggestions of crushing. The textures suggest an igneous rock as the source of material (an inference strengthened by the occasional occurrence of zoned plagioclase and hornblende). The mineralogy indicates a quartz-diorite or a hornblendic granodiorite. We have not been able to obtain any literature dealing with the geology of this section of Colombia in order to check this conclusion.

Except for that small proportion of the inclusions which can be attributed to the potter's clay, the grains of feldspar, quartz, and hornblende are all angular in shape. They are poorly sorted. The characteristic size-distribution for the coarse-grained sherds is from silt to very coarse sand, and correspondingly for sherds with finer texture from silt to medium sand or coarse sand. Three characteristics of the material in type 1, that is, grain shape, grain-size distribution, and alteration products in the feldspars, lead us to conclude that the potters obtained their tempering material from a deposit of coarse residual sand, which had suffered little transportation. A handful of such a sand corresponding mineralogically with the

tempering material was found as a filling in two hollow legs from Gaira.

Clinozoisite and epidote are present both in feldspar as already mentioned and abundantly as separate grains. A colorless amphibole, identified as actinolite, is present in some but not all sections. Pyroxene (probably augite), zircon, and titanite are strictly accessories. Biotite and biotite-like mica are abundant. There occur large flakes evidently introduced with the temper, but most of the biotite is minute and appears to be a clay constituent. Muscovite, not present in all sherds, is quite distinctive of the fine-textured sherds of types 2 and 3. Small grains of organic silica, which are present in most of the sections, are undoubtedly a constituent of the clay. Many of them are fragments of diatoms, and may be taken as evidence that the clay used is of sedimentary origin.

Red, opaque grains of all sizes from silt to coarse sand are present in most sections. In the well-oxidized fabrics these red inclusions are prominent. Since most of them contain mineral inclusions they might be taken to be sherd fragments, but this interpretation is rejected because many of the red grains are rounded like natural concretions.

CLAYS

The clay matrix in all of these local sherds is essentially coarse-grained (as clays go), micaceous, with brown micas conspicuous, and with the clay particles themselves of micaceous habit, strongly birefringent where the iron content has been oxidized and thus rendered translucent. As already remarked, in discussion of the minerals, the clay is slightly silty, and contains siliceous remnants of what are probably diatom frustules. It can accordingly be regarded as of sedimentary origin.

Several sherds (thirty in all) were refired half an hour in an oxidizing atmosphere at a temperature of approximately 1000° C. One example of the red-orange ware proved to be non-refractory; bloating occurred on this one sherd, and other sherds of type 1 showed incipient vitrification. All of the sherds fired to some shade from 9" to 13", and distinctions between types are not easy to make on the basis of different shades of the same fundamental colors. It would be hard to differentiate the black-slipped ware (from which the black surface is oxidized rapidly at 1000°) and the brown micaceous sherds on the basis of their oxidation colors. A group of three red-orange sherds which resemble the black ware in mineralogy and texture have a distinctive oxidation color (10') which seems to be

characteristic and may indicate that they represent a distinct sub-type of different clay composition.

DESCRIPTIONS OF THE LOCAL TYPES

The mineralogical summary just presented is applicable to the whole local group. Certain general quantitative and qualitative differences in mineralogy are characteristic for specific types. On the basis of mineral content and texture three types of sherds are recognized. Each of these can be characterized in general by its texture and its prominent mineral: (1) Coarse, feldspathic; (2) medium to fine, hornblendic; (3) fine, micaceous. These three classes tend to be in correspondence with the ceramic classification.

- (1) Red-orange type. The sherds of this group are coarse-textured, heavy, thick-walled. A majority of them have dark cores, indicating incomplete oxidation, while the surfaces are oxidized.

Thickness: Av. 9 mm. Range: 8-14 mm. (measurement of wall thickness only. Flanges, bases, and applied figures are much thicker).

Color: Outer surface, 7'' to 17''*i*. Typical: 9'' (Testaceous).

Inner surface, 9''*h* to 17''*c*. Typical: 13'' (Fawn).

Hardness: Av. 4.5. Range: 3-6.

Refired: Fabric color, 9''*i* (Cacao Brown) to 11'' (Pecan Brown).

Slip color, 9'' to 11''.

Mineralogy: Orthoclase and plagioclase are more abundant than quartz. Orthoclase slightly less than plagioclase in quantity. The large, opaque, white feldspar grains present a striking appearance in the hand specimen, especially in those sherds in which the core is black, and the feldspar inclusions stand in strong contrast to the dark matrix. Among them occur grains with a maximum diameter of 2 mm.

Texture: Volume of inclusions. Average total inclusions (eleven typical sherds): 41 per cent, range 29 per cent to 47 per cent. The total content of feldspars and quartz taken together averages 38 per cent. The range is from 23 per cent to 46 per cent. Hornblende and accessories are on an average 3 per cent of the volume of the sherds. Range of hornblende and accessories: 1-9 per cent. At least 17 per cent of the inclusions are visible (fine sand to very coarse sand, incl.). The sherds can be said, therefore, to be "moderately tempered" (Shepard's scale). Grading: The characteristic texture of this group is shown by the following particle-size distributions (averages for six sherds).¹ A finer-textured example of this type is shown in the photomicrograph (Plate CXLVIII, Fig. 1).

SHEPARD SCALE

	Fine	Medium	Coarse	Very coarse
Average	30	6	6	1
Range	17-41	1-9	2-15	0-2

WENTWORTH SCALE

	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand	Very coarse sand
Average..	14	12	4	6	6	1
Range...	9-17	8-18	0-6	1-9	2-15	0-2

Surface: The surfaces have been rather irregularly smoothed (parallel facets from the smoothing tool are quite conspicuous on some). The smoothing

¹ The average volume of inclusions is given as 41 per cent but it will be noted that the total of the grading percentages is 43 per cent. This apparent discrepancy is due to the different number of thin-sections analyzed in each case.

has produced a slight parallelism in the clay particles of the matrix at the surface. To some of these smoothed surfaces a thin wash has been applied, a wash which apparently contained very little clay, since it is evident in thin-section that the color has been absorbed by the clay to a fairly uniform depth (about 0.06 mm.). There is no evidence of a separate surface layer. When the sherds were refired to 1000° the fabrics and surfaces were oxidized to the same colors. The coloring agent can therefore be assumed to have been derived from the potter's clay itself.

- (2) Black type. The sherds of this type have a medium to fine texture and contain considerable hornblende. The accessory minerals, especially epidote and biotite, are prominent.

Thickness: Av. 7 mm. Range: 4-12 mm.

Color: Generally the sherds are black only on one surface. The characteristic colors of the slipped surfaces are shades of neutral gray, carbon gray, and sooty black (1^{''''m}), etc. The characteristic colors of the non-slipped surfaces are 13^{'''} and 13^{''''}. The fabrics are generally oxidized along their margins, showing color bands in cross section. Typical colors are 13 and 17 (^{''} and ^{'''}). Range 9^b to neutral gray.

Hardness: Fabric Av. 4. Range: 2-6. Slip: Av. 5. Range: 2.5-7.

Refired: Fabric color, 10^{''} (Cacao Brown/Pecan Brown) to 12^{''} (Vinous-Tawny/Orange-Cinnamon). Slip: 9^k (Walnut Brown) to 12ⁱ (Pecan Brown/Mikado Brown).

Mineralogy: The sherds show a concentration of hornblende, and accessory minerals, especially epidote and biotite. Altered hornblende is prominent in many of our sections. Mica increases in relative abundance toward the finer end of the series. Red iron oxide nodules occur sparingly.

Texture: Volume of inclusions: Av. 22 per cent. Range: 14 per cent to 41 per cent. The sherds are "moderately tempered." The total volume of quartz and feldspar is 15 per cent. Range: 9 per cent to 25 per cent. The volume of hornblende averages 6 per cent. Range: 2 per cent to 18 per cent. The accessories such as epidote and clinzoisite were calculated with the hornblende and are estimated to be about 2 per cent. The mica, which is prominent in the finer-textured sherds, was not measured. Grading: Particle size distributions are given for six sherds.

	SHEPARD SCALE				
	Fine	Medium	Coarse	Very coarse	
Average.....	20	3	...	...
Range.....	12-31	1-8	...	...

	WENTWORTH SCALE				
	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand
Average.....	9	7	4	3	....
Range.....	3-13	6-9	3-9	1-8	....

The photomicrograph (Plate CCXLVIII, Fig. 2), which has already been mentioned with reference to the oxidation of hornblende, illustrates one of the coarser fabrics of this type.

Surface: The outer surfaces are generally smooth, but some show the parallel flutings of the smoothing tool. These outer surfaces have a dark gray or brownish slip of variable thickness. Brush strokes are evident on several pieces crossing the burnishing facets and in one instance leaving the unslipped surface exposed as a decorative feature. The pigment is evidently carbon; it is completely oxidized by refiring at high temperature, leaving no visible ash. The slipped outer surfaces are generally harder than the non-slipped inner surfaces. The slip appears in thin-section as a microscopic opaque line (0.01 mm.) or an opaque black layer (0.05 mm.).

- (3) Brown micaceous type. Megascopically this ware is quite striking because of its thin walls, peculiar brown color, soft fabric, and generally gritty surface. The texture is fine and prominently micaceous. The only

- inclusions clearly visible to the unaided eye are glittering white mica flakes, and iron oxide concretions, which are frequently soft and powdery. Thickness: Av. 4 mm. Range: 3-5 mm.
- Color: Characteristic surface and fabric colors: 13 and 17 (" and ").
- Hardness: Av. 3.5. Range: 2.5-5.5.
- Refired: Characteristic surface and fabric color: 13" (Orange Cinnamon).
- Mineralogy: In these sherds, orthoclase is scarce. Small grains of plagioclase and quartz are prominent. Hornblende is present, but is a minor constituent. Biotite and muscovite are sufficiently abundant to give the sherds a micaceous texture. Muscovite, both as minute flakes and as lamellar "books," is characteristic. Actinolite was observed in all the sections of this type.
- Texture: Volume of inclusions: Av. 12 per cent. Range: 8 per cent to 23 per cent. The average volume of feldspar and quartz is 10 per cent. Range: 8 per cent to 15 per cent. Hornblende and accessories 2 per cent. Range: 1 per cent to 8 per cent. The micas were not measured but are estimated at 10 per cent to 15 per cent. The type is described as "sparsely tempered."
- Grading: The size distributions of five sherds were recorded.

SHEPARD SCALE

	Fine	Medium	Coarse	Very coarse
Average.....	11	...	...	...
Range.....	8-15	...	...	...

WENTWORTH SCALE

	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand
Average.....	9	2	0	...	...
Range.....	8-10	0-4	0-1	...	...

A photomicrograph of a sherd of this type is given in Plate CCXLVIII, Fig. 3. The micaceous character of the fabric is shown clearly.

Surface: The surfaces have been smoothed, but parts of the original surface have been eroded, leaving a residual surface gritty and uneven. No trace of slip was found in any of the sections, but one or two sherds bear what seem to be tiny remnants of a dark surface either slipped or polished. One of the black-slipped vessels belongs texturally to type 3 and may indicate that all were once black.

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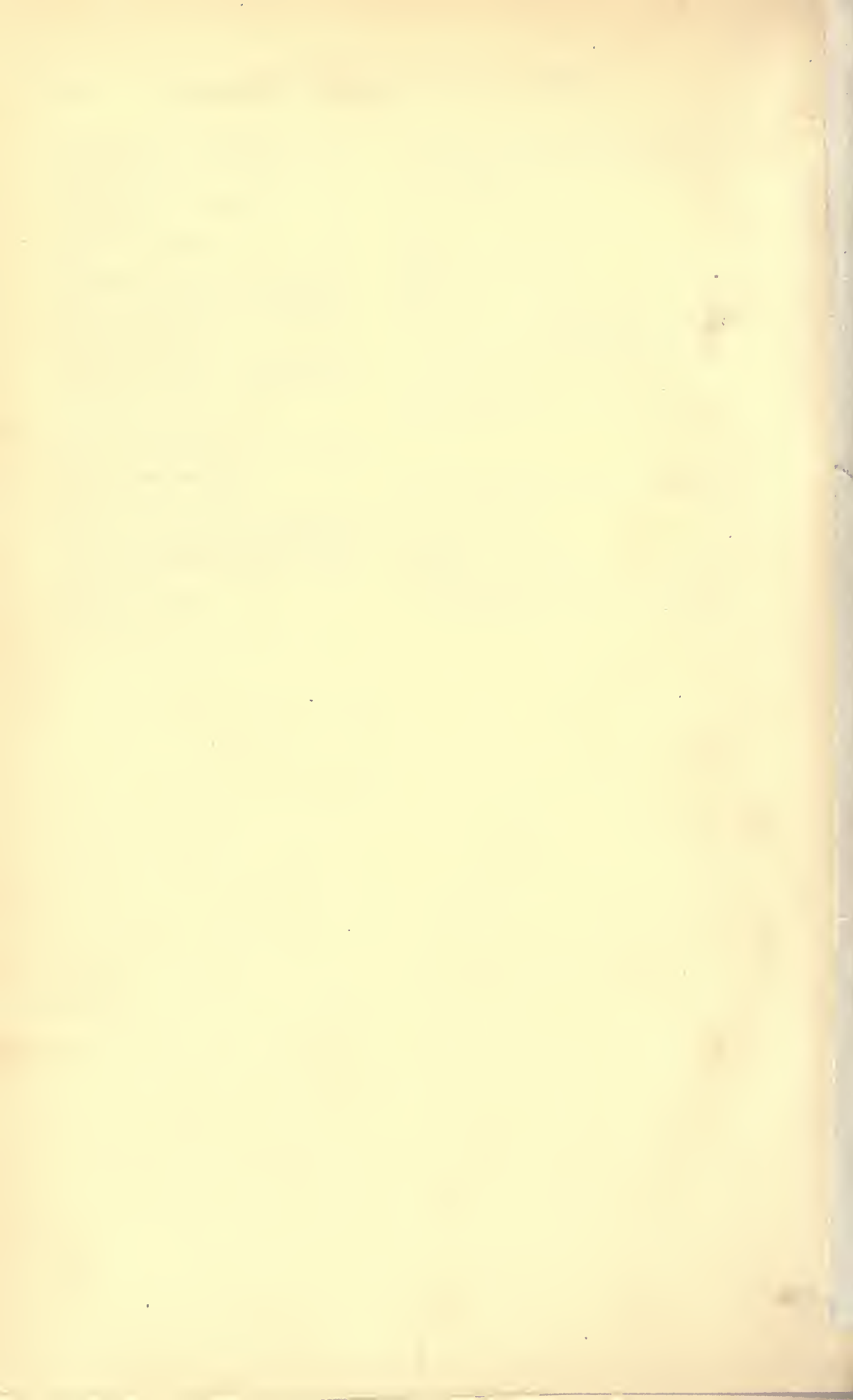
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ny. 85974
(5 1/2 x 6)
al #72



153668



154592

RED ROUND-BOTTOM JARS OR OLLAS

Upper right, 17 x 13 cm.

neg # 85962 (5½ x 6)
alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXV



LARGE BURIAL URN OF TYPE B

Height, 80 cm.

153601

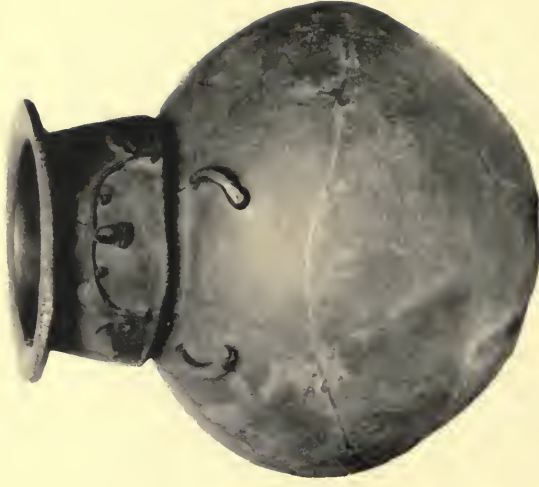
749 # 87220 (5x8) Q# 72



BURIAL URNS OF TYPES A AND B

Carnegie Museum, Pittsburgh

Left, type A; height, without the missing ring base, 71 cm. Right, type B; height (rim estimated), 66 cm.



BURIAL URNS OF TYPE B
Museum of the American Indian, Heye Foundation
Height of larger, 77 cm. Both are restored in part

al#72

neg # 87281
(5x8)
al#72



BURIAL URNS OF TYPE B
Museum of the American Indian, Heye Foundation
Height of largest, 72 cm.

neg # 00100 (5-10 alt # 12)



1



153639
2



3



4

154942



5

VESSELS OF RED WARE OF SIMPLE SHAPES

Figs. 1, 3. Red, ring-base neckless jars without carination. Fig. 2. Shoe-shaped vessel. Fig. 4. Bowl of truncated cone shape. Fig. 5. Plain round-bottom pot. Width of Fig. 4, 38 cm.

Key # 85973
(5x6 1/2)
al # 72



153697



153698



RED, RING-BASE, NECKLESS, CARINATED JARS AND BOWLS
Height of largest, 25 cm.

neg # 87214

al # 72

neg #
153602

Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXXI



neg # 85960
(5" x 6")



neg # 85961
(5 1/2" x 7")

DOUBLE-ORIFICE URN; FRONT AND TOP VIEWS
Height, 56 cm.

7149 # 85972
(5x6 1/2)
al # 72

153685



163692



153686



153694



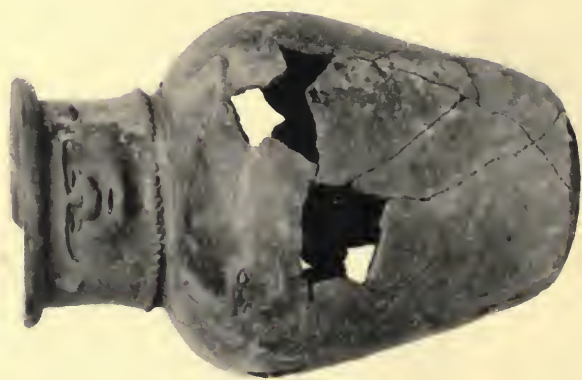
RED JARS WITH RING BASE AND NECK

Height of Fig. 4, 34 cm.

neg # 87275 al # 72



1



153696

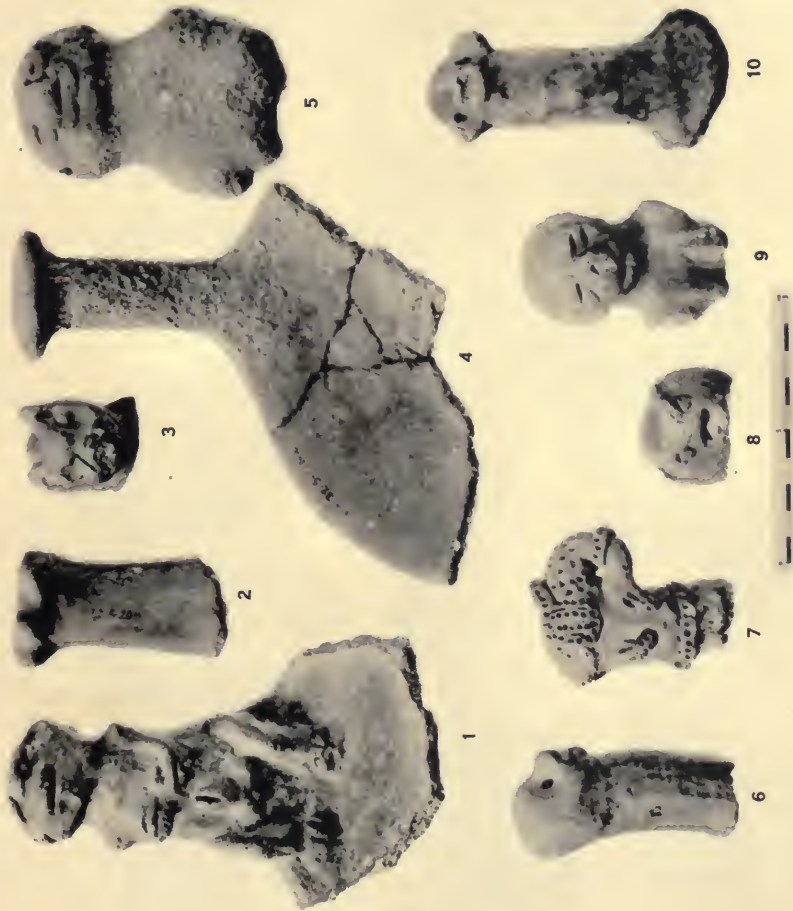
RED JARS WITH RING BASE AND NECK



3

Fig. 1. With proper cover-bowl; Museum of the American Indian, Heye Foundation; height of jar, 32 cm. Fig. 2. Field Museum; base missing; height, 40 cm. Fig. 3. University Museum; base missing; height, 49 cm.

neg # 87213
(5x6)
al # 72



HANDES OF LADLES
University Museum
Length of Fig. 5, 10.5 cm.

Key # 85929 (5x7) al # 72



1



2



3



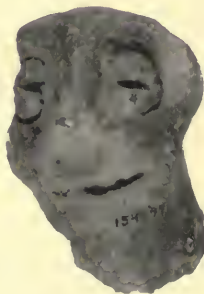
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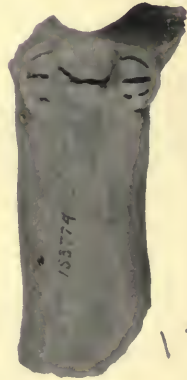


6



154697

7



8

153774

HANDLES OF LADLES
Length of Fig. 1, 14 cm.

neg # 87278

(5 x 7 1/2) Oct # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXXVI



HANDLES OF LADLES

Museum of the American Indian, Heye Foundation

neg # 85967 (5 7/8 x 7 1/2)

alt # 12

153787



1



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153798



3



153792



153799, 13



7

153796

153795

FRAGMENTS OF LARGE RED VESSELS WITH HUMAN LOW RELIEF
Probably mainly from necks of burial urns of type B; Fig. 5 is from large treasure jar

neg # 85964 (4 1/2 x 7 1/2) al # 72



154670



153800



154854



158796



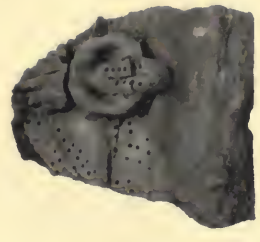
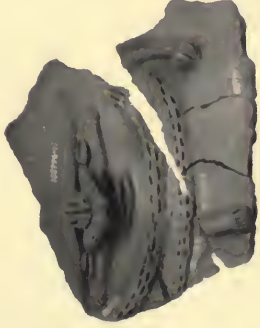
153793



154875



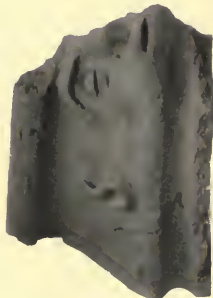
153796



FRAGMENTS OF LARGE RED VESSELS WITH HUMAN LOW RELIEF
Probably mainly from necks of burial urns of type B



153778



153792



153384



153681



153603



153682

FRAGMENTS OF RED VESSELS WITH HUMAN RELIEF

Figs. 1-3. Probably from necks of burial urns of type B. Figs. 4, 6. Necks of round-bottom red jars. Fig. 5. Top of double-orifice urn

neg # 85975 (5x7 1/2) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXXX



153802



153790



153781



154903



153763



153764



153779



154876

FRAGMENTS OF RED VESSELS WITH HUMAN LOW RELIEF

neg # 85976 (5x7) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXXXI

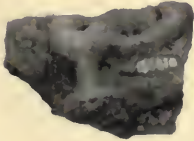


FRAGMENTS OF RED VESSELS WITH ANIMAL RELIEF

neg # 85958 (5x7) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXXXII



154916-1



154695



154741

FRAGMENTS OF RED VESSELS WITH RELIEF REPRESENTING
PENDENT ORNAMENTS AND OTHER OBJECTS

alt # 72

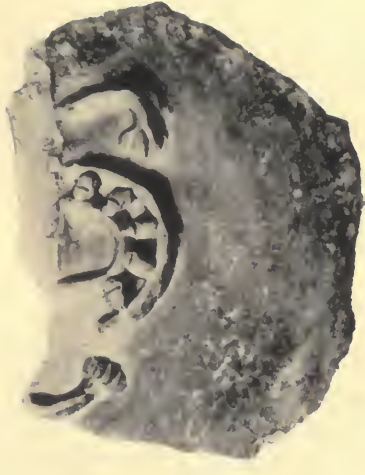
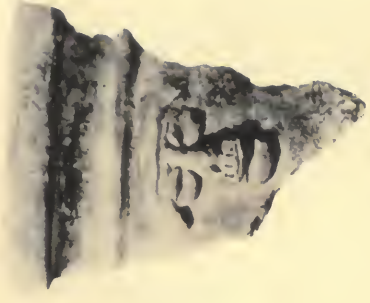
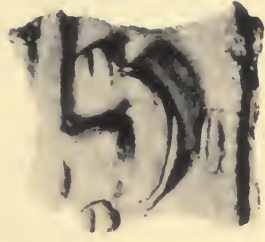
Field Museum of Natural History

Anthropology, Vol. XX, Plate CLXXXIII



FRAGMENTS OF RED VESSELS WITH HUMAN LOW RELIEF
Museum of the American Indian, Heye Foundation

neg # 87221
(5x7 1/2)
al #72



FRAGMENTS OF RED VESSELS WITH HUMAN RELIEF
American Museum of Natural History

My # 87215
(5x 7 1/2)
al# 72



FRAGMENTS OF RED OR BLACK VESSELS WITH HUMAN RELIEF

University Museum

Figs. 2, 6, 8, 10, 11. Red ware. Others black ware

al#72



RED AND BLACK RELIEF, SPOUT, AND PESTLE
Carnegie Museum

Fig. 1. Bat head from black vessel. Figs. 2, 3. Spout and relief from same black vessel. Fig. 4. Pestle. Figs. 5, 7-9. Human red relief. Fig. 6. Handle of ladle

neg # 85938

(5x5 1/2)

al # 72



1



3



2

153983



4

BLACK OLLAS WITH FLYING-BIRD LOW RELIEF AND INCISED DECORATION

Height of Fig. 3, 18 cm.

neg # 85939
(5x5 1/2)
al # 72



154595

1



2



3



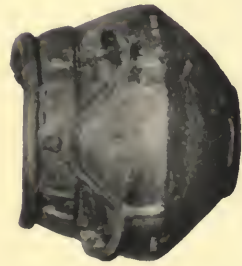
4

154008

BLACK OLLAS WITH ANIMAL RELIEF AND INCISED DECORATION

Height of Fig. 3, 19 cm.

neg # 85957
(5x6)
al # 72



154859



154060



3



4

154547



5

154024

BLACK VESSELS WITH HUMAN OR ANIMAL RELIEF

Figs. 1, 3, 5. Black vessels with human low relief. Fig. 2. Small effigy vessel of fine carved ware.

Fig. 4. Black effigy vessel with tubular spouts, 24 cm. high

79 # 87297
(5½ x 7½)
al#72



BLACK OLLAS WITH HUMAN HIGH RELIEF

Left, Museum of the American Indian, Heye Foundation; height, 34 cm. Right, Peabody Museum, Harvard University; height, 20 cm.

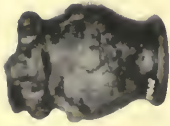
My # 85953
(5 x 5 1/2)
al # 72



154041



2



3

154602



4



5

BLACK RING-BASE OLLIAS
Height of Fig. 5, 14 cm.

My # 85951
(5x6 1/2)
al # 72



1



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154576



3



4

154583



5

154605

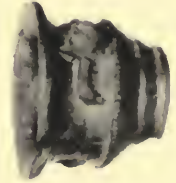
BLACK RING-BASE OLLAS AND BOWLS

Height of Fig. 5, 16 cm.

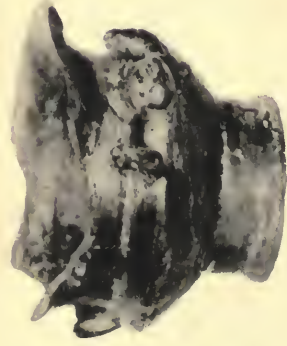
neg # 87212

(5x8)

al # 72



1



2

154960



5



3



4

153753



6

(5:6) neg # 55978

(5x8)

SMALL BLACK RING-BASE BOWLS, AND NECKS OF RED BURIAL URNS OF TYPE B

Height of Fig. 2, 9.5 cm.; urn necks are much larger

Ng # 85946
(5x 7 1/2)
al # 72



1



2



3



4

BLACK RING-BASE BOWLS AND CUPS

Fig. 1. Bowl with broad orifice and constricting ring base, 9.8 cm. high

749 # 83 141 (32 x 8) 2871



1



3

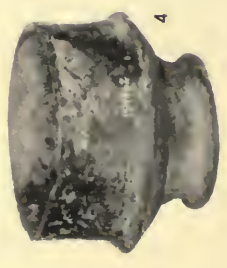


2
154650

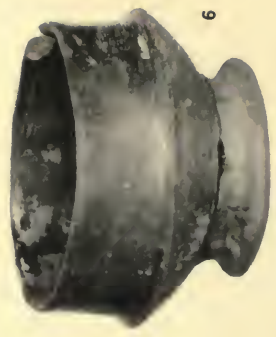


5

153844
BLACK RING-BASE BOWLS
Height of Fig. 5, 11.5 cm.



4



6

154870

ny # 85969 (4 1/2 x 8) alt # 72



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3



4



153882

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153859

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154643

7



153880

8

SMALL BLACK RING-BASE BOWLS AND CUPS, AND KYLICES

Figs. 2 and 3. Kylix-base bowls with broken bases, 13 cm. wide

109. 03178 (5.1) 201

Field Museum of Natural History

Anthropology, Vol. XX, Plate CXCVII

153855



1

153858



2

153861



3



4



5

BLACK RING-BASE BOWLS
Height of Fig. 4, 15 cm.

749 # 85952 (5x 7 1/2) al #72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CXCVIII

154564



1

89541 154568



2



3

154607



4

154017



5



6



7

BLACK RING-BASE BOWLS

Height of Fig. 6, 14 cm.

Key # 85949 (5X1) 25715

Field Museum of Natural History

Anthropology, Vol. XX, Plate CXCIX



1



2



3



4



5

BLACK RING-BASE BOWLS
Width of Fig. 4, 18 cm.

79g # 85968
(5 1/2 x 6 1/2)
col # 72

153831

154580

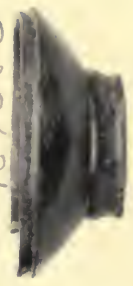
153815



2



1



3



4



5

VARIOUS BLACK RING-BASE VESSELS

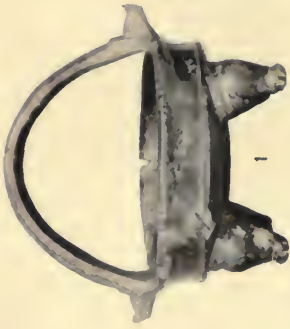
Figs. 1, 3. Grater bowls. Fig. 2. Double-orifice, oval-base vessel. Fig. 4. Unusual large olla. Fig. 5. Unique large bowl. Height of Fig. 4, 29 cm.



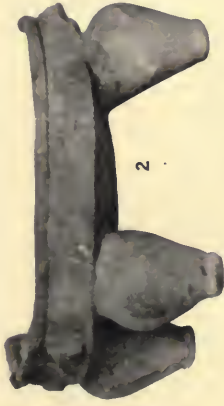
neg # 85956
(5x6)
alt # 72



BLACK ROUND-BASE VESSELS
Height of largest, 17 cm.



ny # 85940
5x6 1/2
al # 92



154856



154539



153967

BLACK TETRAPOD BOWLS AND EFFIGIES

Fig. 5. Small effigy vessel of fine carved ware. Height of Fig. 4, 16 cm.

neg # 85943
(4 1/2 x 7) al# 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCIII



FRAGMENTS OF BLACK BASKET-HANDLES WITH BAT RELIEF
Probably from tetrapod bowls like Fig. 1 in Plate CCII

neg # 85959 (5x7) alt # 2

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCIV



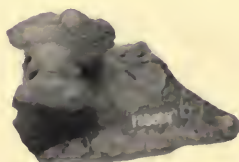
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2



3



4



5



6



7



8



9

ANIMAL RELIEF FROM BLACK VESSELS

Mainly of bats. Fig. 1. Snake. Fig. 9. Bird

neg # 85936

(4½ x 7½) al # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCV



1



2



3



4



5



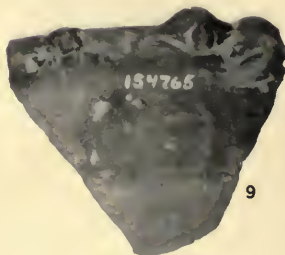
6



7



8



9

ANIMAL RELIEF FROM BLACK VESSELS

Figs. 1, 3. Curassow. Figs. 2, 7. Reptile. Figs. 5, 6, 9. Bat

Neg # 85942 (4 1/2 x 7) #72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCVI



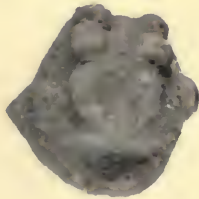
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2



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ANIMAL RELIEF FROM BLACK VESSELS

Fig. 1. Bat. Fig. 3. Reptile. Figs. 4, 6. Iguana. Fig. 7. Monkey. Fig. 8. Porpoise(?).
Fig. 10. Bird. Fig. 11. King vulture. Fig. 12. Parroquet. Fig. 13. Eagle or hawk

neg # 85941 (5 x 7 1/2) alt # 72



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ANIMAL RELIEF FROM BLACK VESSELS

Figs. 1, 5, 6, 8. Bat. Fig. 2. Skull of armadillo(?); probably a snout. Fig. 3. Lizard or iguana.
Fig. 4. Manati. Fig. 7. Monkey(?)

neg # 87282
Q# 72

(5x7)

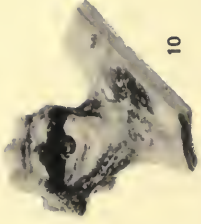
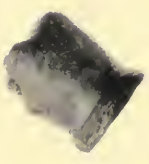
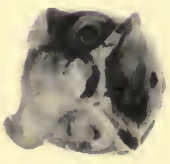
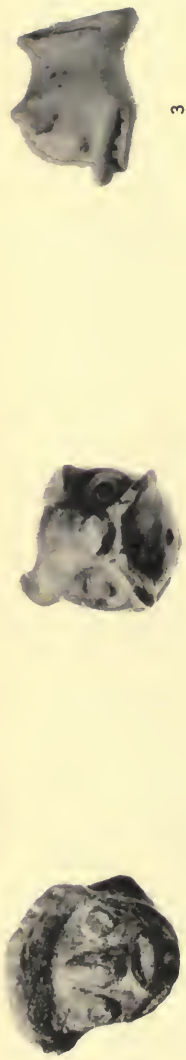
Field Museum of Natural History

Anthropology, Vol. XX, Plate CCVIII



ANIMAL RELIEF FROM BLACK VESSELS
Museum of the American Indian, Heye Foundation
Mainly bats

neg # 87218



ANIMAL RELIEF FROM BLACK VESSELS
 University Museum
 Mainly bats

My # 87225
(5x7)
aH72



BIOMORPHIC RELIEF FROM BLACK VESSELS
American Museum of Natural History

Fig. 4. Probably head of red ladle handle. Fig. 6. Spout

neg # 85-935 (4x7) Q#72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXI



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BIOMORPHIC RELIEF FROM BLACK VESSELS
Human, some with nose ornaments and labrets; and birds

ny # 85931

(4 1/2 x 7) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXII



HUMAN OR ANTHROPOMORPHIC ARMS AND LEGS

Relief from black vessels or whistles

neg # 85991 (5x6) al # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXIII

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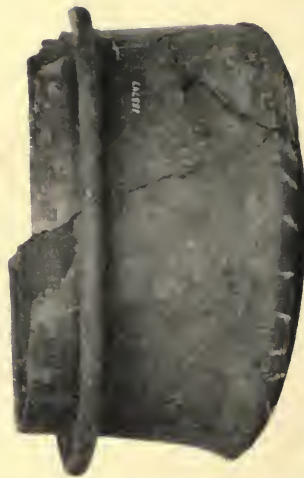
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TREASURE JARS OF USUAL TYPE

Figs. 1-3. Black ware, with covers. Figs. 4, 5. Red ware. Height of Fig. 4, 31 cm.



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neg # 85-955
(5 x 6 1/2)
al # 72

154581



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154545



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TREASURE JARS OF NAHUANGE TYPE

Height of Fig. 4, 13.5 cm.



neg # 85937
(5 x 5 1/2)
alt # 72

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PAINTED WARE

Mainly treasure jars and covers; the large cover is of incised black ware and originally belonged to the large jar in Plate CCXVII, Fig. 5. Height of Fig. 4, 25 cm.

al#72



VARIOUS VESSELS

Museum of the American Indian, Heye Foundation

Fig. 1. Black ring-base bowl. Fig. 2. Black ring-base olla. Fig. 3. Black tetrapod bowl (largely restored). Fig. 4. Red treasure jar. Fig. 5. Red round-bottom jar. Height of Fig. 2, 15 cm.

My # 87280
(5 1/4 x 7 1/2)
al # 72



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VARIOUS VESSELS

Museum of the American Indian, Heye Foundation

Fig. 1. Red treasure jar. Fig. 2. Black ring-base jar. Fig. 3. Red ring-base jar. Fig. 4. Black ring-base jar with animal relief. Fig. 5. Black treasure jar of Nahuange type with incised decorations; its cover is shown in Plate CCXV, Fig. 4. Fig. 6. Black ring-base cup. Height of Fig. 5, 25 cm.

Ng # 87216

(5x8) al # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXVIII



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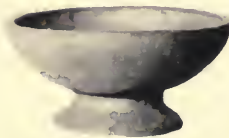
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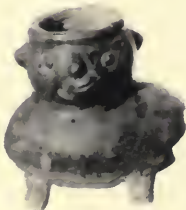
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VARIOUS VESSELS OF POLISHED BLACK WARE
Göteborgs Etnografiska Museum

Figs. 1, 3. Ring-base ollas. Figs. 2, 4, 5. Round-bottom ollas. Figs. 6, 8. Kylix-base bowls. Fig. 7. Grater-bowl of grayish yellow ware. Figs. 9-11. Tetrapod effigy vessels. Height of Fig. 1, 19 cm.

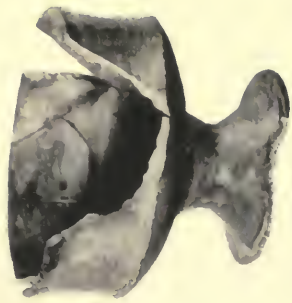
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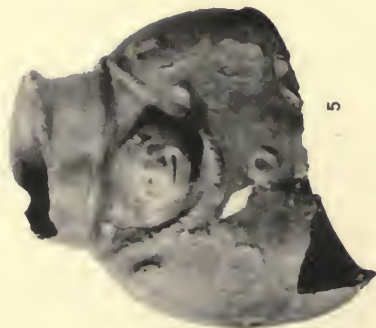
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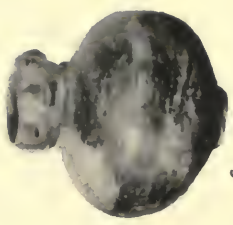
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VARIOUS BLACK VESSELS

University Museum

Figs. 1, 3. Kylix-base bowls. Fig. 2. Neck of ring-base olla. Fig. 4. Bird effigy vessel. Fig. 5. Human effigy vessel. Fig. 6. Round-base vessel. Height of Fig. 4, 18 cm.

neg # 87227 (5x8) aL#72



VARIOUS VESSELS AND OBJECTS
 Museum für Völkerkunde, Berlin

Fig. 1. Small effigy vessel or figure (possibly of a variant culture). Figs. 2, 7. Ring-base bowl and cup. Figs. 3, 6. Heads of jaguars(?); probably relief from vessels. Fig. 4. Very small treasure jar. Fig. 5. Ring-base olla. Fig. 8. Cover of treasure jar. Height of Fig. 2, 10.5 cm.

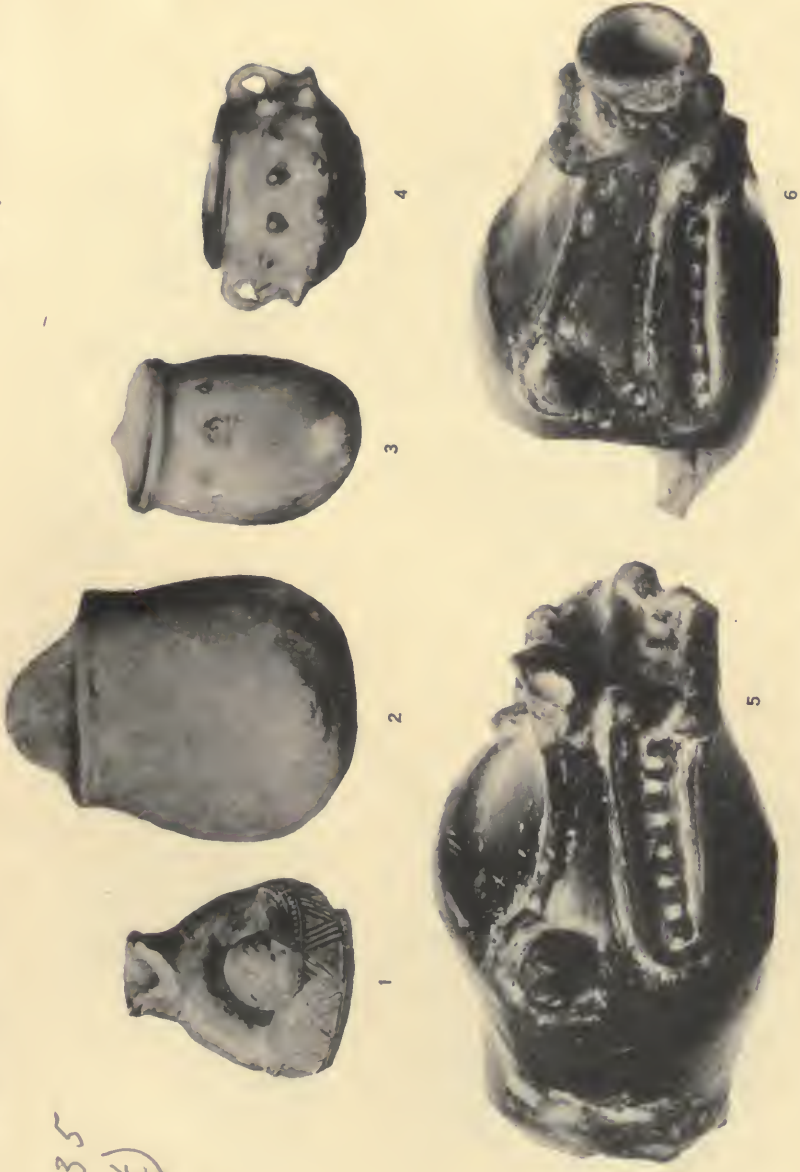
779 # 87228
(5x7)
al # 72



VARIOUS VESSELS

Figs. 1-3. Black ring-base ollas, Museum für Völkerkunde, Berlin; 16, 20 and 19 cm. high. Fig. 4. Red round-bottom olla, Museum für Völkerkunde, Berlin; 15 cm. high. Fig. 5. Tetrapod effigy with stirrup spout; British Museum, 23(?) cm. high. Fig. 6. Vessel with tubular spout, Göteborgs Etnografiska Museum; 14.5 cm. high

749 # 87235
(5x7½)
ac # 72



VARIOUS SMALL VESSELS, AND BLACK RELIEF AND SPOUT

Figs. 1-4. American Museum of Natural History. Figs. 5, 6. Museum für Völkerkunde, Berlin. Fig. 1. Small effigy vessel of fine carved ware in form of snake, with stirrup spout, 9 cm. high. Figs. 2, 3. Shoe-shaped vessels, 12 and 9 cm. high. Fig. 4. Small brown knobbed ring-base bowl, 6.5 cm. high, uncharacteristic and possibly exotic. Fig. 5. Animal head relief, 10 cm. long. Fig. 6. Spout in form of animal head, 10.5 cm. long

My # 87240
(5x7)
alt # 72



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UNUSUAL VESSELS

Fig. 1. Small effigy vessel of fine carved ware in form of coiled snake; ca. 10 cm. high. Collection of Mr. W. R. Angell.
Fig. 2. Vessel in form of coiled snake(?) with stirrup spout, Carnegie Museum; 15 cm. diameter. Figs. 3, 4. Tetrapod bowls, Carnegie Museum; 12 and 7.5 cm. high

neg # 87239
(5x7)
al # 72



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RELIEF, OCARINA AND OLLAS

Fig. 1. Part of vessel with animal head relief; Museum für Völkerkunde, Berlin. Fig. 2. Ocarina in form of toad, 14 cm. long; Carnegie Museum.
Fig. 3. Black round-base olla, 9 cm. high; Carnegie Museum. Fig. 4. Black ring-base olla, 11.5 cm. high; Carnegie Museum

Neg # 85932 (5x6 1/2) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXV

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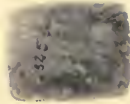
STAMPS, DISKS, AND TOBACCO PIPE

Figs. 1-3. Cylindrical stamps. Figs. 4, 5. Small disks. Fig. 6. Flat stamp. Figs. 7, 9. Bead and pendant. Fig. 8. Tobacco pipe. Length of Fig. 3, 8 cm.

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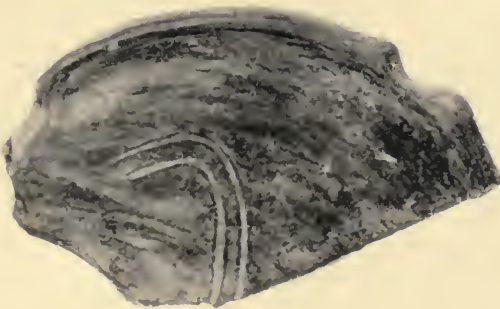
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SMALL OBJECTS AND FRAGMENTS

University Museum

Figs. 1-3. Small discoidal and rectangular cut sherds. Figs. 4, 8, 9. Human legs from vessel relief or ocarinas. Fig. 5. Head of figurine. Fig. 6. Spout of vessel of brown ware in form of animal head. Fig. 7. Ladle handle or torso of figurine of red ware. Fig. 10. Relief from effigy vessel of brown ware, bat wing(?). Fig. 11. Cylindrical stamp. Length of Fig. 10, 15 cm.

al#72



RATTLE, STAMP AND RELIEF FRAGMENTS

Museum of the American Indian, Heye Foundation

Figs. 1-5, 7. Animal heads; probably all from ocarinas. Fig. 6. Part of cylindrical stamp. Fig. 8. Rattle in form of animal. Figs. 9-11. Relief, possibly handles, from red vessels. Fig. 12. Relief from black vessel. Figs. 13-15. Human arms and legs from black effigy vessels. Length of Fig. 8, 19 cm.

neg # 87222

(5x7½) 20772

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXVIII



PESTLES, STAMPS, AND OTHER OBJECTS

American Museum of Natural History

Figs. 1, 5. Pestles. Figs. 2, 4. Cylindrical and flat stamps. Fig. 3. Possibly spout. Fig. 6. Pestle, possibly salt shaker. Fig. 7. Handle of ladle. Height of Fig. 1, 10 cm.

neg # 85930 (4 1/2 x 7) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXIX



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RUDE MINIATURE VESSELS
Height of Fig. 1, 3 cm.



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ny # 85970

(5x8) Q#72



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WELL-MADE MINIATURE VESSELS

Figs. 1-4, 9, Black ware. Figs. 5-8, Red ware. Height of Fig. 2, 5 cm.

Key # 85928 (5x7) al # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXXI



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POSSIBLE FIGURINES

Figs. 1, 2. Fragments of small hollow figurines or ocarinas. Fig. 3. Part of large hollow figurine or ocarina. Fig. 4. Solid figurine of yellowish ware. Fig. 5. Massive, hollow human leg from figurine; ocarina or effigy vessel. Height of Fig. 4, 8.5 cm.

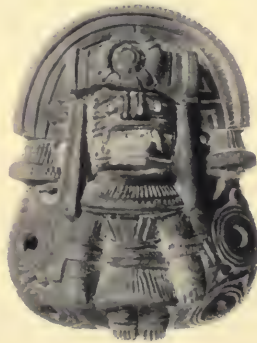
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OCARINAS AND OTHER FINE SMALL OBJECTS

Fig. 1. Field Museum. Figs. 2-5. University Museum. Fig. 6. Property of Mr. William M. Sutherland. Figs. 1, 3. Ocarinas of finest carved type. Fig. 2. Small ocarina. Fig. 4. Small whistle in form of coiled snake. Fig. 5. Small effigy vessel of fine carved ware. Fig. 6. Support for figure. Height of Fig. 1, 9 cm. Height of Fig. 3, 8.5 cm.

neg # 85944 (5x7½) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXXIII



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OCARINAS AND FRAGMENTS

Width of Fig. 1, 7.5 cm.

Key # 85933
" # 85954

(5 1/4 x 7) 20772

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXXIV



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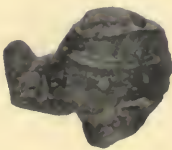
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OCARINAS IN ANIMAL FORM

Possible identifications: Figs. 1, 3, 11, 13. Bats. Fig. 2. Jaguar. Figs. 4, 6. Monkeys or humans. Fig. 5. Bear. Figs. 8, 12. Birds. Fig. 10. Owl. Fig. 14. Parrot. Height of Fig. 1, 6.2 cm.

764 # 85934 (4 1/2 x 7) alt # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXXV



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OCARINAS, WHISTLES, AND FRAGMENTS IN ANIMAL FORM

Possible identifications: Fig. 1. Tapir or other quadruped. Figs. 2, 5. Toads or frogs. Fig. 4. Owl.
Figs. 7, 8. Bats. Fig. 9. Birds. Height of Fig. 1, 8.5 cm.

Key # 87226 (5 1/2 x 8) al # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXXVI



THREE UNUSUAL OCARINAS
Museum of the American Indian, Heye Foundation
Length of central ocarina, 11.5 cm.

Key # 87231

(54 x 7) 22#72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXXXVII



OCARINAS AND SMALL EFFIGY VESSEL

Museum of the American Indian, Heye Foundation

Figs. 1, 2. Figurine ocarina, 8 cm. long. Figs. 3-5. Small ocarinas. Fig. 6. Head of ocarina. Fig. 7. Small carved effigy vessel. Fig. 8. Triple figurine ocarina. Height of Fig. 8, 9 cm.; Figs. 3-7 in proportion

74 # 87223
(5x7)
al # 72

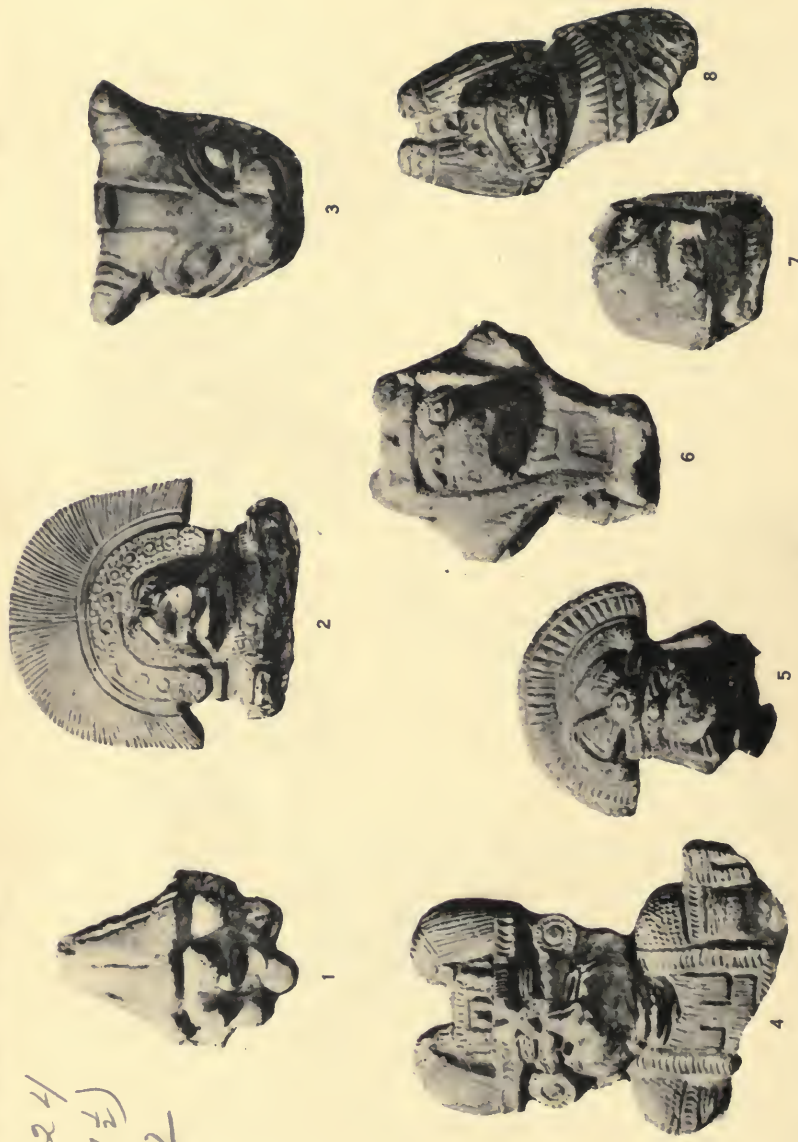


OCARINAS AND FIGURINE

American Museum of Natural History

Figs. 1, 3-7. Ocarinas. Fig. 2. Figurine; height, 11 cm.

neg # 87224
(5 x 7 1/2)
al # 72



FRAGMENTARY OCARINAS OR WHISTLES
American Museum of Natural History
Height of Fig. 4, 6.5 cm.

neg # 87234
(5 x 6 1/2)
al # 72



OCARINAS AND WHISTLES
University Museum
Height of Fig. 1, 6.5 cm.

neg # 87279

(5¼ x 7½) al # 72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXLI



OCARINAS AND RELIEF HEAD
Carnegie Museum

Fig. 1. Reptile-head relief from vessel. Figs. 2-6. Ocarinas and fragments. Width of Fig. 5, 7 cm.

alt # 72



OCARINAS AND FRAGMENTS OF RELIEF
Carnegie Museum

Figs. 1, 5, 9. Large animal-relief heads from red vessels. Figs. 2, 4, 6, 7, 10, 11. Ocarinas and whistles. Figs. 3, 8. Relief heads from black vessels. Height of Fig. 6, 10 cm.

neg # 87229 (5 x 7 1/2)
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Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXLIII



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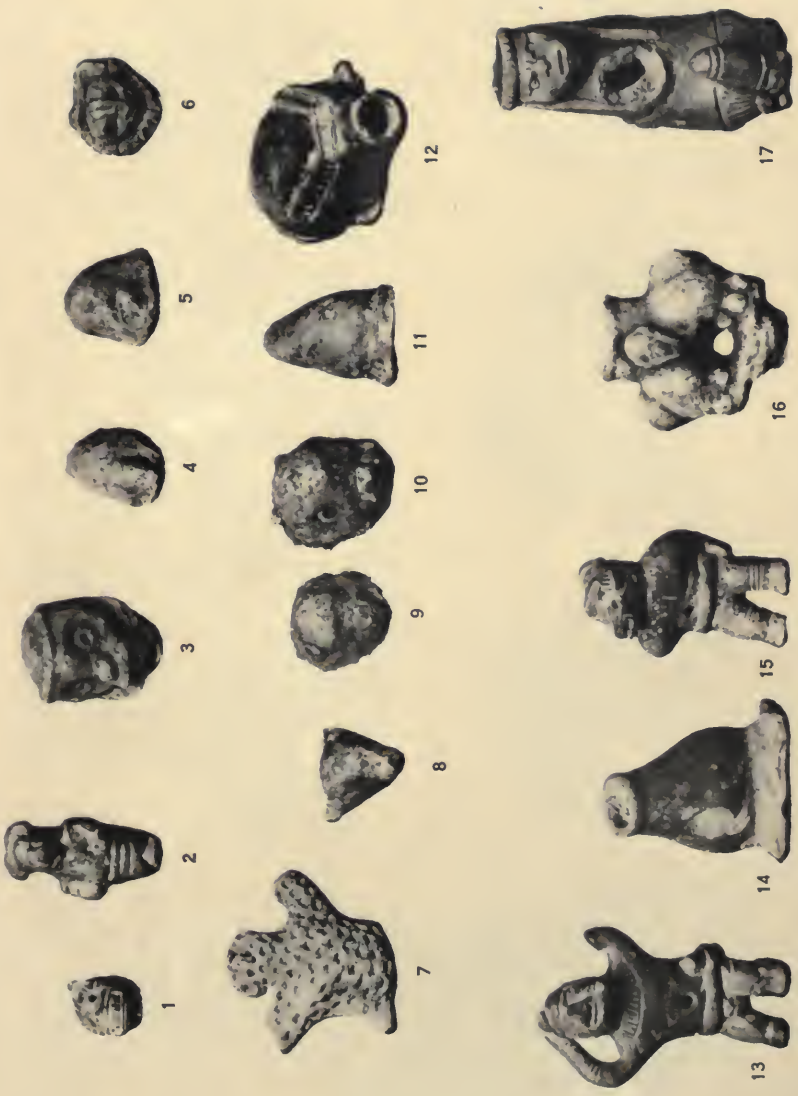
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OCARINAS AND FIGURINE

Figs. 1, 2. Ocarina, 7 cm. high; Peabody Museum, Harvard University. Fig. 3. Figurine, probably not of Tairona culture, 26 cm. high; Berlin Museum für Völkerkunde. Fig. 4. Ocarina, 6.5 cm. high; Berlin Museum für Völkerkunde



Key # 87230
 (5 x 7 1/2)
 al # 72

OCARINAS AND OTHER SMALL OBJECTS AND FRAGMENTS
 Museum für Völkerkunde, Berlin

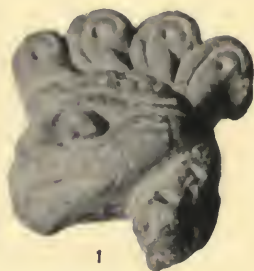
Figs. 1, 2, 13, 15, 17. Ocarinas and fragments. Figs. 3, 6, 8-10. Relief fragments from Chorrera Cordoncito, probably outside of Talrona culture. Fig. 11. Probably leg of tetrapod vessel. Figs. 12, 14. Probably spouts. Fig. 16. Stirrup handle-spout from Chorrera Cordoncito. Height of Fig. 17, 11 cm.

neg # 87296

Field Museum of Natural History

(5x7½) aQ#72

Anthropology, Vol. XX, Plate CCXLV



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HEADS OF WHISTLES AND RELIEF HEADS

Göteborgs Etnografiska Museum

Figs. 1, 2, 5, 6. Solid animal-relief heads. Figs. 3, 4, 7. Heads of ocarinas.
Width of Fig. 7, 4.5 cm.

My # 87233
(5 x 7 1/4)
al # 72



SMALL CARVED EFFIGY VESSELS AND OTHER OBJECTS

Peabody Museum, Harvard University

Fig. 1. Ocarina. Fig. 2. Black ring-base olla, 10 cm. high. Fig. 3. Small carved effigy vessel, same proportion. Figs. 4-7. Small carved effigy vessels. Height of Fig. 4, 6.5 cm.

ny # 87238

(5x8)
al#72

Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXLVII



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FIGURINE, RELIEF FRAGMENT, AND SMALL CARVED EFFIGY VESSEL

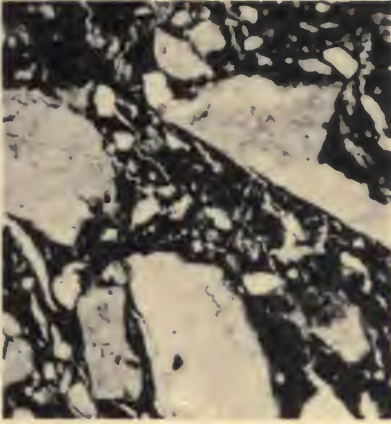
Figs. 1, 3. Seated figurine, possibly non-Tairona, described as small carved effigy vessel, front and rear views, 14.5 cm. high; Göteborgs Etnografiska Museum. Figs. 2, 4. Human arm and leg; two views, probably from large effigy vessel, same proportion; Göteborgs Etnografiska Museum. Figs. 5, 6. Small carved effigy vessel, front and side views, 17.5 cm. high; Peabody Museum, Harvard University

Ng # 87219

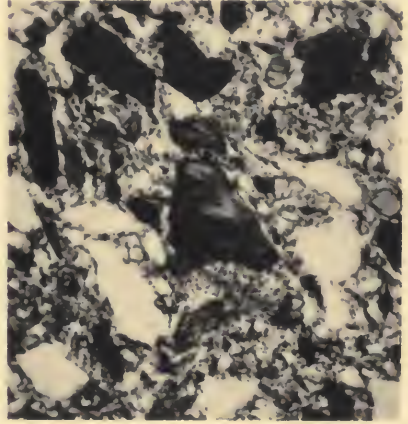
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Field Museum of Natural History

Anthropology, Vol. XX, Plate CCXLVIII



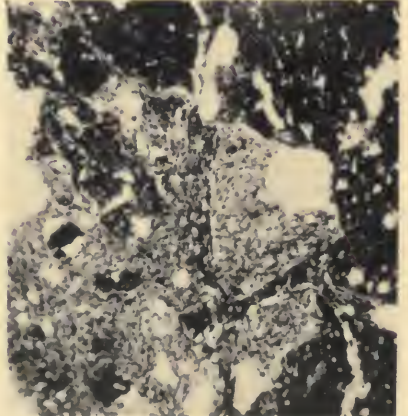
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PHOTOMICROGRAPHS OF FOUR SHERDS

Fig. 1. Type 1, coarse feldspathic ($\times 50$, ordinary light). Fig. 2. Type 2, medium hornblende ($\times 50$, ordinary light). Fig. 3. Type 3, fine micaceous ($\times 50$, crossed nicols). Fig. 4. Sherd-tempered, exotic Goajira ware ($\times 50$, ordinary light)

