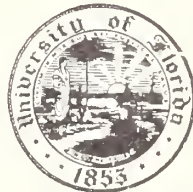




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Cultural Chronology of the Gulf of Chiriquí, Panama

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Preface

This field work was part of a much larger program lasting three years entitled "Inter-relationships of New World Cultures" and organized by the Institute of Andean Research with financment from the National Science Foundation (Ekholm and Evans, 1962). Evidence of interconnection during the Formative period and at other points in time was sought in particular regions of the Intermediate area between Mesoamerica and South America.

The Panamanian region surveyed is the Pacific coast from the Costa Rican border to the Colombian border. It was covered in two consecutive seasons. The first, in February through May of 1961, included the western coast and principal offshore islands from Punta Burica to Punta Mariato in the southwestern corner of the Azuero Peninsula. The second, in 1962, extended the work to cover coastal Darien.

This is a report of the work done in the first season. The participants of the project were Dr. Charles R. McGimsey III of the University of Arkansas, as principal investigator, and two assistants, besides me, who were also graduate students at the time: Mr. William Bishop, geologist, and Mr. Freeman Mobley, ethnologist, both from the University of Arkansas.

In four months we visited over 60 sites and tested 12 of these. To each of the sites that we recorded we assigned a letter-number combination. The letters designated the district, and the numbers, the sites in the order found. The site of El Cangrejal was thus given the code number SL-1, with SL standing for the district of San Lorenzo in the province of Chiriquí, and number 1 standing for the first site found in this district. Island sites could not be assigned to districts, so they were simply given a number preceded by the letters IS which stand for "isla." Thus, Isla Villalba became IS-7, Isla Palenque became IS-3, and Islas Las Secas became IS-11.

Reported in this study are the four most important sites where the most concentrated work was done. These are the sites mentioned above, all of them located in the Chiriquí Gulf. Three are on islands, the fourth on the mainland. Distances between them vary. The closest to each other are Isla Villalba (IS-7) and El Cangrejal (SL-1), separated by 10 kilometers of water channels. The farthest away is Las Secas (IS-11); it is 37 kilometers from Isla Palenque (IS-3), 53 kilometers from Isla Villalba (IS-7), and 55 kilometers from El Cangrejal (SL-1).

The three island sites are located on ridges in back of the beaches, often the highest spot available. The mainland site is on a high bank near the edge of an estuary. All four sites consist of middens formed by the deposition of abundant cultural materials: discarded pottery, stone tools, and the remains of marine and land fauna. These were choice locations and, to judge from the refuse, the occupation of them was continuous.

Listed in summary form, the main aims of this report are as follows: (1) To establish a preliminary chronology for the Gulf of Chiriquí, based on local sequences of pottery; (2) to trace, in time and space, the cultural contacts of the inhabitants of these sites with

each other and with peoples on the mainland; (3) to reconstruct as much as possible the manner of living and the subsistence patterns of the occupants of these sites; (4) to summarize ethnohistorical accounts of the area in an effort to tie these in with the terminal part of the archeological sequence; (5) to place the Chiriquí phases in proper chronological relationship to other Panamanian sequences; and (6) to relate the chronology thus established to those of other lower Central American areas.

Two approaches were used in our pottery classification. The first was a subdivision of the decorated sherds into types, differentiated from each other primarily by decorative treatment and secondarily by paste attributes. Their percentage frequencies were plotted by levels. Since the plain pottery does not always appear to show any distinctive differences in temper or paste, it was not divided into the full, conventional pottery type description, but instead was sorted into groups named A–J. Only one plain ware was distinctive enough to be described fully and was labeled Tarragó Bisquit Ware. Perhaps a larger sample from more sites in Chiriquí, or from sites with deeper stratified refuse, will eventually permit the detailed refinement of the plain wares, but for this study they receive secondary treatment even though the percentages were always calculated and actually show some interesting trends in the site seriation charts.

There are also some small samples of pottery types that fit into the “Classical” Chiriquí wares known for so many decades from the large museum collections; they are listed under their well-known published names.

The pottery type description follows the style established in earlier Smithsonian publications on the archeology of South America, with each type subdivided into the major categories of paste, surface, form, decoration, and chronological position. To these I have added one other category: geographical distribution and comparative materials. For the color identifications of paste or surfaces, words rather than the Munsell Color Chart have been used, for no more precise a code is needed to describe pottery with only simple paints, no polychrome, and variable firing. Hardness is stated in the Mohs scale. It is perhaps interesting to record how the rim profiles were drawn. To facilitate and increase the accuracy of the rim profile drawings, a section from each rim was cut with a blunt-edged carbide geological power saw at right angles to the lip. Unless the rim was badly mutilated, I always cut a section on the right side of the rim exterior so that, when drawn, all rim profiles faced in the same direction. By cutting the rim it was easy to trace the correct profile because it lay flat on the paper.

A second method of analysis used in this report, first separately, and then in conjunction with the type approach, is a modal analysis of all appendages (supports and handles) found in each level of the pits. I have chosen to use “mode” to mean “a small group of inseparable attributes” because this is useful in making geographical comparisons. If, for example, a tripod foot shares a *cluster* of salient attributes with a tripod foot in another area, one can be reasonably certain that some kind of historical relationship, rather than mere chance, accounts for the similarities. In this study, modes have been kept separate from types by using different, though not mutually exclusive, criteria for classification. The main criterion used in the type approach is surface decoration; in the modal approach, the main criterion for distinguishing modes is shape. These criteria could just as well be reversed in another area. The result is that modes and types often crosscut, so that the same mode may appear in more than one type. This may have interesting cultural and chronological implications. The potters, conforming to standardized stylistic patterns (types), were able to isolate features (modes) in this pattern and reproduce them in another context. Chronologically, a mode that crosscuts two types may sometimes indicate contemporaneity as, for example, with Tripod Foot Mode c, which appears in two different but contemporaneous types.

A separate modal approach, based on shape elements rather than on painted motifs, is particularly suited to an analysis of the Gulf of Chiriquí collections because this area belongs to a primarily plastic tradition. Paints and slips were used, to be sure, but vessels of the Gulf were not elaborately painted as they were in the Coclé-Azuero region. Rather,

it is the shape of handles, supports, and rims, and the manner in which these were decorated with plastic motifs, such as applique strips, incisions, and punctations, that make Chiriquí pottery so enormously varied.

Using a modal analysis had advantages of a very practical nature. Handles, feet, and supports are so distinctive that they can be recognized easily in any context. Since the surface collections (Ranere, Appendix 2) were made without any regard to randomness, they contain a disproportionate number of such fragments. A modal approach serves to relate these to the excavated collections. The distribution of certain modes beyond the Chiriquí Gulf has also offered important insights into the influences that came there from Costa Rica and from the central provinces of Panama. In short, modes were used in this study as timemakers and as indices of geographical distribution. From them we could draw inferences concerning wider cultural contacts.

I have used several criteria to interdigitate the site sequences and to mark off units of time into phases: (1) the appearance of new types in the stratigraphic columns; (2) marked contrasts in the percentage frequencies of pottery types; (3) the presence or absence of particular modes; (4) the association of types; and (5) the presence of trade wares from known areas. The use of these criteria was facilitated by the deep stratified sequence of Pit No. 3 at Site IS-3. A very distinctive type of pottery was strongly represented in the bottom levels, different types were associated with the intermediate levels, and the most recent levels were marked by the appearance of several new types. In addition, modes were absent from some levels and present in others, and trade pottery from several phases of the Coclé-Azuero area came in at different levels and served to confirm my phase divisions. The other three sites, none of which had the complete sequence represented, were therefore interdigitated with reference to IS-3. The assumption made was that all four sites were close enough geographically to show the same general chronological trends. Contrasts in the percentage frequencies of pottery types proved useful in coordinating pit levels within a site and in differentiating between units of levels in which certain types were heavily represented from units in which they were not.

The pottery types are described by phase for easy reference, moving from the oldest to the most recent in the sequence. The modes are described separately. Stone tools and shell ornaments found at these sites were not used in establishing a tentative chronology because they did not show enough changes through time. Along with bones and mollusks, however, they are essential to our cultural reconstructions.

A description of surface collections from 26 sites in the adjacent districts of San Félix and Remedios has been appended (Ranere, Appendix 2) to the body of the report, which describes our excavations, to enlarge the scope of this analysis.

In this appendix Mr. Ranere has contributed ethnohistorical data and new insights into the archeological material, making his section an important part of this work.

I would like to thank first Dr. Charles R. McGimsey III, principal investigator of the project, for inviting me to collaborate in the field work and for asking me to report and interpret the results. The success of the expedition was also due to Mr. William Bishop and Mr. Freeman Mobley, who were indefatigable in their search for sites and acute in their observations of the Panamanian countryside.

The authorities of Panama, as well as Dr. Alejandro Méndez, Director of the Museo Nacional, and Dra. Reina Torres de Araúz, Professor of Anthropology at the University of Panama, greatly supported the work by their kind cooperation. The entire survey was facilitated by cartographic aids provided by Ing. Amado Araúz of the Subcomité del Darién and of the Pan American Highway Program.

Ample laboratory space to analyze the collections was generously provided by Professor John Otis Brew, Director of the Peabody Museum of Archeology and Ethnology at Harvard University. A grant from the National Science Foundation and a Thaw Fellowship in the Peabody Museum permitted survival during the summer and fall of 1963, when the first, unrevised version of this monograph was being prepared as a doctoral dissertation (Linares, 1964).

Drs. George Cowgill, James Gifford, and John Ladd were knowledgeable in their advice on how to handle particular problems in the analysis. Mr. Anthony J. Renere worked with me on the Chiriquí collections and expanded this study in his Appendix No. 2. Mrs. Alexandra W. de García-Bryce advised me on the latest sources for Latin American Archeology. Miss Margaret Currier of the Peabody Museum Library was helpful in the initial research. Mr. Arsen Charles took the photographs on plate 14.

From Professor Gordon R. Willey of Harvard University, I have received endless encouragement through the years and most of my knowledge of New World Archeology. My intellectual debt to him is enormous.

Expert advice was provided in 1964 by several investigators of the Museum of Comparative Zoology, Harvard University. Dr. W. J. Clench, Curator of Mollusks, guided my identifications of the shellfish material; Dr. E. E. Williams, Curator of Reptiles and Amphibians, sorted out at a glance any reptiles represented on a mass of tiny fragments. All mammal bones were identified by Mr. Charles Mack.

Mr. William Bishop, geologist for the expedition, made the rock identifications while in the field, and the material identifications in the descriptions of stone artifacts are all his; his report on the geology of the coast, from which Mr. Renere and I have quoted extensively, has been of additional value. Mrs. Charles R. McGimsey did the field cataloging of all materials collected and took the photographs of stone artifacts for plates 19 and 20.

Dr. Clifford Evans and Dr. Betty J. Meggers of the Smithsonian Institution have spent countless hours over the last years teaching me to classify pottery, making suggestions about plans of research, and helping me in every phase of preparing this manuscript for publication. I cannot thank them enough for their generous help.

Dr. Alexander Wetmore, Research Associate of the Smithsonian Institution, provided various maps from his vast collections that were the basis for the final maps produced in this report. To Mrs. Marcia P. Bakry, Scientific Illustrator of the Office of Anthropology, Museum of Natural History, I wish to express my appreciation for preparing the final copies of the maps and seriation charts.

I have profited greatly from conversations with Dr. Claude F. Baudez of the Musée de l'Homme, regarding his archeological investigations in nearby Costa Rica. Recently, Dr. Roberto de la Guardia of the Museo Chiricano in David, Panama, brought me up to date on finds in Chiriquí.

In typical Latin American style, my work became a true family enterprise. Sr. Frank Linares Danz, my father, loaned a jeep to the expedition, and Sr. Guillermo Tribaldos, Jr., my grandfather, made his boat available to us. Sra. Olga Tribaldos de Linares, my mother, did the drawings of the artifacts, prepared an original version of the pottery type frequency charts, and typed this report twice, first as a dissertation, then as a manuscript for publication. Their interest in my work is immensely gratifying. I also thank my husband, J. David Sapir, for his patience and continuous encouragement.

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Philadelphia
March 24, 1967

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Cultural Chronology
of the
Gulf of Chiriquí, Panama

Introduction

GEOGRAPHY OF CHIRIQUÍ

Within the small crescent-shaped Isthmus of Panama, which is approximately 75,500 square kilometers, there are varied climatic and vegetational zones. Despite this variety, the deep jungles and tropical savanna, the lowlands and the highlands of Panama can all nonetheless be considered variations of an essentially tropical environment.

The province of Chiriquí covers 8,960 square kilometers in the southwestern corner of Panama (fig. 1). In contrast to the lowland tropical forests of the neighboring northern province of Bocas del Toro, it offers two, rather than three, of the prevalent Panamanian climatic zones: highlands with appreciable plateaus and valleys and broad coastal plains with savanna vegetation. The highlands are formed by the continuation of the Talamanca Range from Costa Rica into the western part of the isthmus, where it is called the Continental Divide. This mountainous backbone extends across Chiriquí and Veraguas, stopping at a point northeast of the town of Penonomé in the province of Coclé. In the westernmost section it is capped by deposits from Miocene and Pleistocene volcanoes. The now inactive Volcán Barú in Chiriquí is 3,470 meters high, the highest spot on the isthmus; the rest of the Continental Divide averages 1,000 to 2,000 meters in height. Mountain flanks and plains are composed predominantly of Oligocene, Miocene, and Pleistocene marine sediments plus recent alluvium (Bishop, 1961).

The mountains of the Continental Divide determine to a large extent the amount of rainfall and consequently the type of vegetation found on either side of the western section of Panama. Warm, rain-filled clouds formed over the Caribbean hit against the Continental Divide and drop their waters along the

Atlantic coast. There are places in the province of Bocas del Toro where the mean average rainfall a year is 3,500 millimeters.

The Pacific coast of Chiriquí is drier than the Atlantic coast; this is true of all of the isthmus as well. Along Chiriquí, through the southern part of the provinces of Veraguas and Coclé, runs a coastal belt of semideciduous forests and savanna, varying between 5 and 40 kilometers in width. The rainfall here averages 1,500 to 2,500 millimeters; it is concentrated in the marked rainy season extending from May to December. The combination of sufficient rainfall and temperatures in the eighties turns the coastal plains of Chiriquí into Panama's richest agricultural lands. In addition, there are large rivers and innumerable streams to keep the land well watered even during the dry season. From descriptions by the chroniclers of the 16th century, one can be reasonably certain that the rich coastal savannas of Chiriquí existed in aboriginal times.

The body of water south of the coastal plains is called the Gulf of Chiriquí (fig. 2). In the central part of this Gulf, some 16 kilometers south of the city of David, there is a complex embayment of estuaries stretching in an east-west direction for 40 to 50 kilometers. This embayment is formed by the drainage into the sea of several large rivers that flow down from the Cordillera Central (Bishop, 1961). Most important among these are, from east to west, the Rio Madroñal, the Rio Chorchá, the Rios Gualaca and Estí, the Rio Chiriquí, the Rio Cochea, and the Rio David. Minor rivers flowing directly from the skirts of the Volcan Barú into the Gulf are the Rio Piedra, the Rio Chico, and the Rio Platanal.

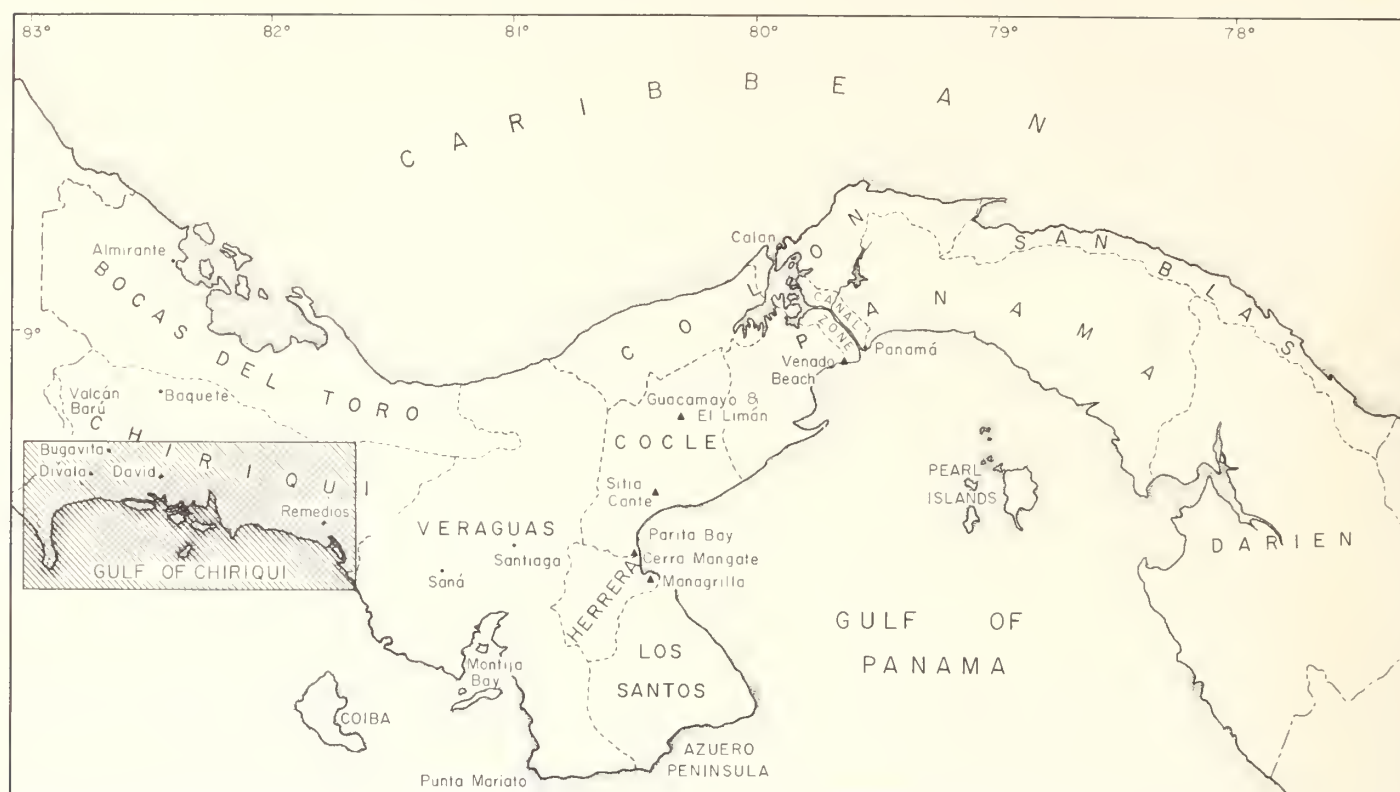


FIGURE 1.—Map of Panama, showing area of research in the Gulf of Chiriquí in relation to selected sites in the Coclé-Azuero area. Research area is shown in hachure.

Great estuaries are formed at the mouth of these rivers; through them flow sluggish, semibrackish waters that are constantly depositing fine silt and clay in the bordering swamps (pl. 1a). Today, these mosquito-ridden swamps are uninhabited by man, but the calm waters that border them are rich in fish, and the adjacent mud flats teem with mollusks and shellfish. They may have provided fishing and gathering grounds for people who lived elsewhere (pl. 1b).

The outer fringes of the estuaries are protected from the action of tides by numerous islands and sandbars. When the tide is low, great expanses of mud and sand are exposed as tidal flats and beaches. Only temporary encampments of fishermen dot these beaches today. Judging from the absence of archeological sites, there were no large prehispanic occupations in this area either.

One of the largest estuaries of the Chiriquí Gulf is the Estero de Horconcitos, formed by the rivers Chorchá, Madroñal, and Corrales. On the western shores of its mouth there are only swamps and mangroves (pl. 2), whereas high savanna lands and some hills, the largest of which is Cerro Pan de Azúcar, render the eastern shores habitable by man. The site of El Cangrejal (SL-1) was found in these savannas (fig. 2).

The Estero de Horconcitos drains into the protected Bahía de Muertos, flanked on the west by the islands of Sevilla and Mono, on the north by the low savannas of the mainland coast, on the east by the higher savanna lands near the town of Horconcitos, and on the south by the large island, Isla Brava. On the western corner of this bay is Villalba (more commonly known as Isla Muertos), where Sites IS-5, 6, and 7 were found (fig. 2).

Two different channels can be taken from the Bahía to reach the open sea and offshore islands. Boca Brava runs between the easternmost tip of Sevilla Island and the westernmost tip of Isla Brava. Heavy surf and treacherous sandbars make this a dangerous route to navigate in any type of craft. The channel that curves around the eastern part of Isla Brava and passes south of Isla de Cedro is a far more navigable route. On the mainland facing it is the village of Boca Chica, connected with the larger town of Horconcitos by a narrow dirt road.

Once the open sea is reached by way of either of the above channels, the waters become choppy and the winds strong. Solitary islands and groups of islands dot the sea at varying distances from the mainland. Isla Palenque, where we found one of the most important sites (IS-3), is just off the southernmost extremity of Isla Brava. Farther to sea is a complex of



FIGURE 2.—Map of the central part of the Gulf of Chiriquí, showing location of excavations and geographical features.

islands called San José. About 10 kilometers south of Isla Brava is found the very large and heavily wooded island called Parida, surrounded by small islands and tiny rock promontories.

The composition of these islands has been described in detail by the geologist of the expedition, Bishop (1961, pp. 7 and 8):

Rocks composing the islands southeast of the estuary and the mainland east of the estuary are highly deformed, and they appear to be older than the strata of the estuary and the marine plain. They consist of shale, siltstone, sandstone and graywacke. Deformation has resulted in severe fracturing, faulting, and recementation of the rocks. Minor recrystallization has occurred in some instances. The strata have an average strike of N 70° W, with a dip to the southwest ranging from vertical to horizontal.

On the islands of San José and Parida there are excellent exposures of pillow lava and columnar jointed lavas. Pillow lavas result when the lava is extruded into the ocean from submarine fissures. Between the "pillows" of lava there are deposits of chalcedonic quartz and green chart and other minerals. These minerals result from the chemical reaction between the sea water and the low temperature components of the lava. Columnar jointing results from the rapid cooling of lava when it occurs as a shallow sill. At one location in Parida island the pillow structure could be observed to grade into columnar jointed andesite. Much of the strata of these islands were sedimentary. The close association of the pillow and columnar jointed lava with the sedimentary rocks would suggest that the lava was intruded into the sedimentary strata during or shortly after their deposition.

The vulcanism which gave rise to these lavas was probably

associated with the severe deformation which produced the present physiography. If the deformation was Recent in age it would explain why this area of Panamá possesses a submergent appearing physiographic character whereas the marine plain to the west and north definitely establishes a recent emergent history.

The shore line of these islands consists of narrow boulders, gravel, or sand beaches and vertical sea cliffs.

Far out to sea, about 40 kilometers from the island of Parida and 24 kilometers from the mainland, is the island complex of Las Secas, formed by two large and three small islands (fig. 2). Site IS-11 was found on Isla Cavada, one of the two large Secas Islands. To reach the site one must land on a narrow beach that cuts across the island and climb for about 100 meters on the steep sides of the nearest hill to the west, appropriately called Cerro Las Huacas. At the time of this survey, the U.S. Geodetic Service had cut a faint trail through the deep vegetation to its lookout tower on the top.

Long distances separate Site IS-11 from the other sites in the Gulf. The mainland Site SL-1 is roughly 55 kilometers away, while Isla Palenque (Site IS-3) is approximately 37 kilometers to the northwest. To reach Isla Villalba (Sites IS 5-7), one must navigate around the bend of Isla Brava through the straits of Boca Chica for at least 53 kilometers.

HISTORY OF ARCHEOLOGICAL WORK IN CHIRIQUÍ

In the year 1838, a native of the town of Santiago de Alanje, together with a companion, found a large graveyard somewhere in the Cordillera de Chiriquí (Lothrop, 1919). Excited by this find he persuaded the famous General Morazán to organize a party and return to exploit the graveyard, but they were never able to relocate it. This is the first documented instance of what later became a lucrative sport among Panamanians and foreigners alike, "la huaquería."

No more was heard of large Indian cemeteries until August of 1859, when the town of Bugavita had a gold rush of its own. In an effort to clear a garden plot, a man pulled a tree from the ground and found adhering to its roots spectacular gold ornaments, more of which lay in the ground below. The news of the treasure spread fast, and within a week the natives of Bugavita had dug more than 225 pounds (or 102 kilos) of golden objects (op. cit. p. 35). Only a few of these objects survived in museums; the bulk were melted down and sold as raw gold. The looting of graves continued through the years. Collectors became more eclectic in their tastes, incorporating

into their collections not only gold images but also pottery vessels and stone artifacts. Finally thousands of Chiriquí pots found their way into museums. One of the largest collections of Chiriquí antiquities in existence was made by an indefatigable explorer, J. A. McNeil, in the 19th-century style. He personally supervised the opening of thousands of graves; the contents were sent to the U.S. National Museum, where they were classified later by William H. Holmes (1888).

Holmes was the first person to publish an exhaustive classification of Chiriquí pottery. He divided the McNeil collection into two plain wares and nine painted wares. Today these wares are called "types": groups of vessels sharing clusters of associated features. Holmes said of the criteria he used to separate wares (Holmes, 1888, p. 84):

The characters upon which the classification is based are somewhat heterogeneous and include material, color, shape, finish, ornamentation, method of manufacture, and evidences of use.

With few exceptions, the criteria used by Holmes to separate wares are perfectly sound, though limited.

They are purely descriptive criteria, devoid of chronological information. Holmes recognized the limitations of his classification. There was little he could do to extract chronological information from the McNeil collection because "Unfortunately our observations in the field are not sufficiently accurate to enable us to utilize associations or methods of occurrence in the graves as a means of classification" (op. cit. p. 84).

There is a sort of pseudochronology in Holmes' thoughts about the evolution of art forms. He was an exponent of the notion that art underwent a necessary process of simplification, from representational forms that copy nature and are hence ideographic, to art forms that are geometric and nonimitative because they are produced by mechanical agencies. He did not, however, let this belief interfere with the excellence of his detailed observations of Chiriquí antiquities.

A second work in classification, this time a monumental volume, was written by George Grant MacCurdy in 1911. It is based on the large Chiriquí collections of Yale University and on sizable private collections, such as those of George G. Heye and Minor C. Keith of New York.

MacCurdy (1911, p. 47) respected Holmes' classification, but recommended two changes of nomenclature: changing Holmes' name Terra Cotta or Bisquit Ware to Armadillo Ware, and Holmes' Tripod Ware to Fish Ware. More fundamental is MacCurdy's addition of three new wares: the Salmon-Colored and the Handled Ware (added as subdivisions of the Unpainted Group) and the Chocolate Incised Ware (added to the Decorated Group of wares).

MacCurdy noticed that the Scarified and Chocolate Incised Wares differed from the rest of the wares, but did not attribute this difference to time or trade. Since his time, the Scarified Group has proved to be a Formative period pottery complex preceding by many hundreds of years the other Chiriquí Wares. The Chocolate Incised Ware is either a Costa Rican trade ware found in Chiriquí or a local imitation of a neighbor's product. The Polychrome Ware of both Holmes and MacCurdy is definitely trade from the Coclé-Azuero region.

A third publication on Chiriquí ceramics, this time a short but very valuable article, was written by Cornelius Osgood in 1935. Osgood took a second look at the Yale collections and, while passing through Panamá, inspected large private collections in Boquete, Chiriquí. Of the Holmes-MacCurdy combined total of 14 wares, Osgood retained only 4 wares that accounted for at least 95 percent of all the Chiriquí

pottery in the collections he studied. These are Armadillo-Terra Cotta Ware, Fish-Tripod-Handled Ware, Lost-Color Ware, and Alligator Ware. The rest he explained as trade items or as problematic pieces. He traced the Polychrome Ware to Coclé; Red Line Ware, White Line Ware, and Chocolate Incised Ware to Costa Rica. The origins of the Serpent-Black Incised Ware, the Maroon Ware, and the Scarified Ware, he left as problematic. With admirable conciseness, Osgood listed the salient characteristics of the four Chiriquí Wares that he retained and plotted their known distribution. The majority of them were found in Bugavita, Divalá, and in an area 30 miles west-northwest of David.

Wolfgang Haberland of the Hamburg Museum has split some of Osgood's groupings and included others, emerging again with 14 wares belonging to what he calls the "Classic Chiriquí" complex of A.D. 1200 to 1500 (Haberland, 1958). Following is a list of Haberland's major revisions:

a. He split the Lost Color Ware into four groups: Negative Ware, Black on Cream Negative, Black on Red Negative, Red on Red Negative.

b. He reinstated the Red Line and Chocolate Incised Wares, plus the Black-Incised or Serpent Ware (which he renamed Punched Band Ware), as Classic Chiriquí pottery types. Osgood had discarded them as being of Costa Rican origin.

c. He eliminated the Scarified Ware from the list because it is older than the Classical Chiriquí pottery types.

d. He added four new wares to the list: Red on Orange, Redbrown Applique, Black Ware, and Unpainted Ware.

The value of all the distinctions made by Haberland cannot be ascertained from the present study. Two of the phases I establish for the Gulf of Chiriquí precede in time his Classic Chiriquí complex. The most recent phase in the Gulf is Classic Chiriquí, but it is represented by only two of the popular types associated with this period on the mainland: Bisquit (or Armadillo) and Fish-Handled-Tripod Ware (renamed Villalba Red Streaked by me, called Red Painted Ware by Haberland). The absence of other "Classic Chiriquí" types in our most recent phase may be due to the fact that Negative, Red on Orange, Chocolate Incised, and Red-Brown Applique are typical mostly of the Highlands of Chiriquí (Haberland, 1958, p. 345).

Splitting, regrouping, and adding new wares to the Chiriquí complex reflects the obvious fact that little is known of the chronological or geographical significance of the Chiriquí ceramics. This is a situation which may be remedied in part by the present study.

The Sites

Four archeological sites were investigated in the Gulf of Chiriquí. The location of each site and its physical appearance are described, and excavation procedures at each pit are reported as fully as possible. The pottery type sequence yielded by these excava-

tions is summarized following each site description, although pottery type descriptions constitute a separate chapter. Cultural remains other than pottery are included in Appendix 1, tables 6 and 7.

ISLA PALENQUE (IS-3)

Location

Palenque is a small island, 2.4 by 1.6 kilometers, located at 82°15' west longitude and 8°10' north latitude, immediately south of Isla Brava. These two islands are separated by a shelf less than a kilometer in length and only one fathom deep.

Isla Palenque is surrounded by waters of relatively shallow depth (1½ to 2¾ fathoms). It is not, however, in a protected location as are the islands in the Bahía de Muertos. Like the islands farther out to sea, it receives the full impact of tides and winds on its southern side.

Although neighboring island complexes may be far away, they are easily accessible from Palenque. Isla Villalba is 20 kilometers away and LasSecas is 37 kilometers out to sea. To reach the mainland site of El Cangrejal (SL-1), one must navigate for 22 kilometers.

In aboriginal times there must have been continuous contact between the inhabitants of all of these islands. Canoes, and perhaps even rudimentary sailboats, probably traveled back and forth much in the fashion that the scattered fishermen of today visit each other in crafts essentially unchanged since prehispanic days.

Site IS-3 is located near the center of the island on a hill 50 meters high (fig. 3). The archeological site

is recognizable by four closely spaced artificial mounds built up in part by the deposition of one to two meters of cultural debris (pottery, bone, stone artifacts, and shell) on a naturally raised ridge one meter high. The ridge is about 100 meters long by 20-25 meters wide and runs northeast-southwest. Another ridge of the same height runs off the west end of the first ridge for about 50 meters. There are also visible middens on this second ridge. The area between the ridges is strewn with scattered potsherds. Judging from excavations at Pit No. 1, located 40 meters to the north of the ridged area, the depth of the deposit is a meager 20 cm. in the flat area surrounding the mounds.

The mounds are covered with grass, while the surrounding area is heavily forested. We were informed that there is a freshwater supply from a sizable stream on the island, although we did not determine its distance from the site.

Excavations

Four pits were excavated at Site IS-3 (fig. 3) but only the largest, Pit No. 3, has been included in this report because it is the only one with considerable depth and cultural refuse. This pit, placed on the farthest mound at the northeast corner of the ridged

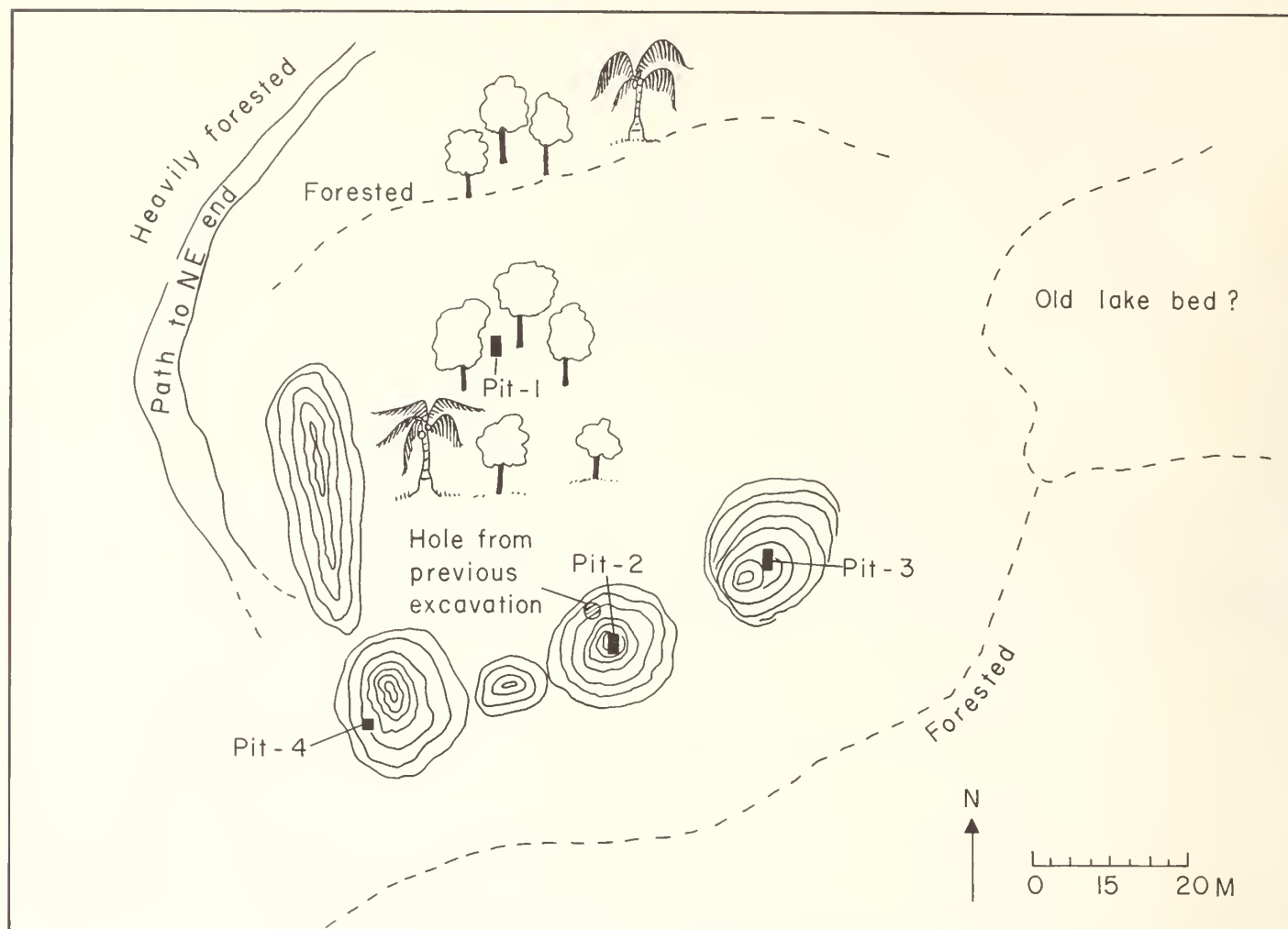


FIGURE 3.—Site map of Isla Palenque (IS-3), showing location of excavations and topographical features.

area, measured two meters north-south by one meter east-west. The arbitrary levels of 10 cm. in thickness were measured from the east wall of the pit, which was one level higher than the west wall.

No natural stratigraphy was visible at the time of the excavations. The following description has been reconstructed in retrospect from field observations on the physical appearance of each level as it was being excavated, which permit subdivision of the deposit into sections. These sections form natural units in terms of the consistency, the color, and the contents of the soil. In addition, these units often correspond to sharp breaks in the amounts of cultural materials present in the levels, though not necessarily to the phase divisions as drawn in this report. Description follows the order of excavation, that is, from top to bottom.

LEVELS 0-30 cm.—Soil was dark brown, soft, porous humus, and with a slight silt content. In the uppermost level there was a large quantity of fragmented rocks, two or three fists in diameter, plus many roots. At 30 cm. the soil turned slightly more yellow, but kept its soft consistency.

In the two top levels (0-20 cm.) the amount of cultural material was impressive: a gunny sack of potsherds per level, plus several small bags of stone artifacts. Some bone fragments, but no shell, were also present.

A fractured vessel was found in Level 10-20 cm. It was laid, face down, 20 cm. from the east wall of the pit and 45 cm. from the south wall.

In Level 20-30 cm. the amount of pottery decreased sharply to about one-half that of the upper levels. This sudden decrease may represent a temporary abandonment of the site by some of its inhabitants.

The three top levels correlate with the third and last phase of the pottery sequence at IS-3. The 30 cm. depth marks, therefore, a cultural change in the deposit.

LEVELS 30-90 cm.—At 30 cm. the soil turned slightly lighter and more compact in texture due to a higher clay content. This trend continued to a depth of 90 cm. where the soil turned definitely hard and compact. Fractured stones were numerous, although less abundant than in the top levels. At 90 cm. a type of laminated shale rock, called locally “laja muerta,” first appeared.

The amount of cultural material found in the Level 30-40 cm. was almost twice that of Level 20-30 cm., confirming the observation that the latter level marked a decline in intensity of occupation.

Two nearly complete vessels and one tall pedestal base were found in Level 40-50 cm. One vessel (p. 26) was leaning against the east wall of the pit at a point 36 cm. from the south wall. Next to the west wall and 40 cm. from the south wall lay a fractured but nearly complete shallow tripod (p. 29). Adjacent to it was a tall pedestal base (p. 52).

From the next level down we extracted several fractured shallow bowls, one inside the other, 76 cm. from the south wall, very close to the east wall.

The presence of nearly complete vessels in three levels of this pit does not necessarily imply that the stratigraphy of Pit No. 3 was disturbed. It clearly was not, judging from the pottery type sequence (see discussion in the following pages). Furthermore, a preliminary sorting of the sherds from Pit No. 2 (not included in this report) showed the same sequence of pottery types.

The unit of levels between 30-90 cm. differs from the preceding unit by having soils that are slightly more compacted due to higher clay contents. Likewise, it differs from those in the unit below by a relatively looser texture and by the absence of “laja muerta” (shale). This unit corresponds only in part to the cultural division which, on the basis of pottery type distribution, has been drawn at the 130 cm. mark.

LEVELS 90-160 cm.—The soil of Level 90-100 cm. had a burned yellow color due to the large amount of “laja muerta” (shale). Its consistency was hard and rocky, becoming so compact at Level 110-120 cm. that a small, sharpened shovel had to be used to

break the ground. Patches of nearly white soil could be observed throughout these levels, resulting from decomposition of limestone rock. Level 140-150 cm. contained very hard, almost pure igneous rock, weathered buff to tan in color. Preserved in it were exfoliated fractures typical of the exposed bedrock of these islands. Levels 150-170 cm. consisted of deeply weathered bedrock of either igneous or metamorphic origin and were practically devoid of cultural material.

The amount of cultural material declined from 1,083 sherds in Level 90-100 cm. to 460 sherds in the next lower level. There was an increase again in Level 110-120 cm. to 960 sherds, followed by a second decline in the next level down. The next two levels contained between 100 and 200 potsherds; only a handful of sherds was found in Level 150-160.

The unit of levels 90-160 cm. does not correspond in its entirety to the earliest phase at the site. Only the levels below 120-130 were included in this phase.

The Pottery Type Sequence

FIGURE 4; APPENDIX 1, TABLE 1

Site IS-3 (Isla Palenque) is a stratified site with a sequence of three phases distinguished from one another by the presence or absence of certain pottery types. The diagnostic types of the earliest phase, the Burica Phase, are Isla Palenque Maroon Slipped which occurs in frequencies of 30 to 40 percent and Plain Ware C which occurs in similar percentages. Levels 130-150 cm. correspond to the Burica Phase.

The middle phase, San Lorenzo, is defined by large percentages of pottery types decorated with red lines, red bands, or a red slip: Arayo Polished Line, Banco Red Line, Caco Red Slipped, Cangrejal Red Line, Castrellón Red Slipped, Centeno Red Banded, Horconcitos Red Banded, Pan de Azúcar Red Line, and Zapote Red Banded. Four of these types are restricted mainly to this phase; the others also occur in the next phase. The plain wares do not show any significant correlation. Levels 30-130 cm. correspond to the San Lorenzo Phase.

The most recent of the phases, the Chiriquí Phase, is marked by the appearance of three new pottery types: Tarragó Bisquit Ware, Villalba Red Streaked, and Cavada Appliqué and Red Banded. Levels 0-30 cm. correspond to the Chiriquí Phase.

EL CANGREJAL (SL-1)

Location

The Estero de Horconcitos bends east at 8° 20' north latitude to receive the waters of the Ríos Madroñal and Corrales and to carry them south to the Bahía de Muertos. The archeological site (SL-1) is on the mainland coast by the eastern edge of the Estero de Horconcitos, only some 100 meters from the edge of the water (fig. 2). Its exact location is 82° 13' west longitude and 8° 19' north latitude. The inhabitants of the site could have sailed directly south, hugging the eastern shores of the calm Bahía de Muertos to reach the eastern tip of Isla Brava, roughly 12 kilometers away. By sailing another 10 kilometers they could have skirted the tip of Isla Brava and reached Isla Palenque. Instead of sailing all the way, they could have walked south, reached the area where the town of Boca Chica stands today, and from there on sailed to Palenque Island. They could have also easily sailed southwest to reach the northeast tip of Isla Muertos, 10 kilometers away.

The site (fig. 5) consists of four roughly ovoidal mounds in a half-moon arrangement. In part they are formed by natural undulations in the savanna; in part they have been built up by about one meter of cultural refuse. Two of them were sterile of cultural material, but potsherds and other artifacts were found on the surface of the flat, unrounded areas, so that the total site area is more than 200 meters square.

The site itself is between a grove of "corozo" palms to the north and the dropoff line to the Estero de Horconcitos on the west. The mound tested is only 16 meters from the edge of the bank that drops off gradually to meet the calm waters of the estero.

A brook called Quebrada del Caco runs about 130 meters to the east of the site. About 90 meters to the northwest is a waterhole called locally "El Zapote." Both of these could have kept the people of SL-1 well supplied with fresh water.

Excavations

Two small pits were excavated in Mound A, the nearest mound to the bank. The surfaces of Mounds B and C, were found to be sterile. Pit No. 2, on the flat area to the northeast of Mound A, yielded a small number of potsherds.

Pits 1 and 3, included in this report, were dug in artificial levels of 10 cm. No natural stratigraphy was observable.

Test Pit 1, measuring 1 by 1 meter, was placed on the northern half of the mound.

LEVELS 0-60 cm.—The soil was brown in color and slightly compact, tending to break into very small clods. Well-rounded and fractured small stones occurred throughout, but were especially abundant in the top three levels.

The amount of cultural material yielded by these levels was uneven. Only 215 potsherds were found in the first level, while the second level (10-20 cm.) had the largest number of potsherds in the entire pit—1,093 sherds. The other four levels in this unit produced between 200 and 500 potsherds each.

Fragments of mammal bones and a small number of shells were found throughout. In Level 30-40 cm. there was a concentration of bones, mainly of fish, in a circular area 20 cm. in diameter in approximately the center of the pit. These bones were associated with pieces of carbon and fired earth, suggesting that this had been a small cooking hearth.

In the southwest quarter of the pit, at Level 50-60 cm., a concentration of small univalve shells of an edible variety was encountered. There were a few rocks at the margins of this shell concentration, but the association between rocks and shells may be accidental.

The upper 60 cm. of the deposit corresponds to the last, or more recent, of the two subphases postulated by this study for Site SL-1.

LEVELS 60-90 cm.—At 60 cm. a sharp change occurred from the brown, slightly compact soil of the upper levels, to a yellowish, hard, and compact soil that tended to break into very large clots. Compactness increased until, in the bottom level, it was a red-brown almost impenetrable clay.

The number of potsherds declined from 342 in the preceding level to 110-158 in Levels 60-80 cm. The bottom level had only 22 sherds. The rare shells found in these levels were often so disintegrated that they appeared as mere white lenses on the soil.

This unit of levels corresponds to the earliest of the two subphases established at SL-1.

Test Pit 3 was placed 3 meters to the south of Pit No. 1 in an effort to increase the sample of the later subphase. It was begun with the dimensions of two meters east-west by one meter north-south, but heavy downpour forced us to reduce the area to one-half at the third level down. Reducing the dimensions facilitated covering the excavated area with a small tarpaulin and also accelerated the work. The sample size in both pits, considered together, is large enough to establish a sequence of deposition for

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FIGURE 4. Pottery type sequence of Pit No. 3, Site Isla Palenque (IS-3).

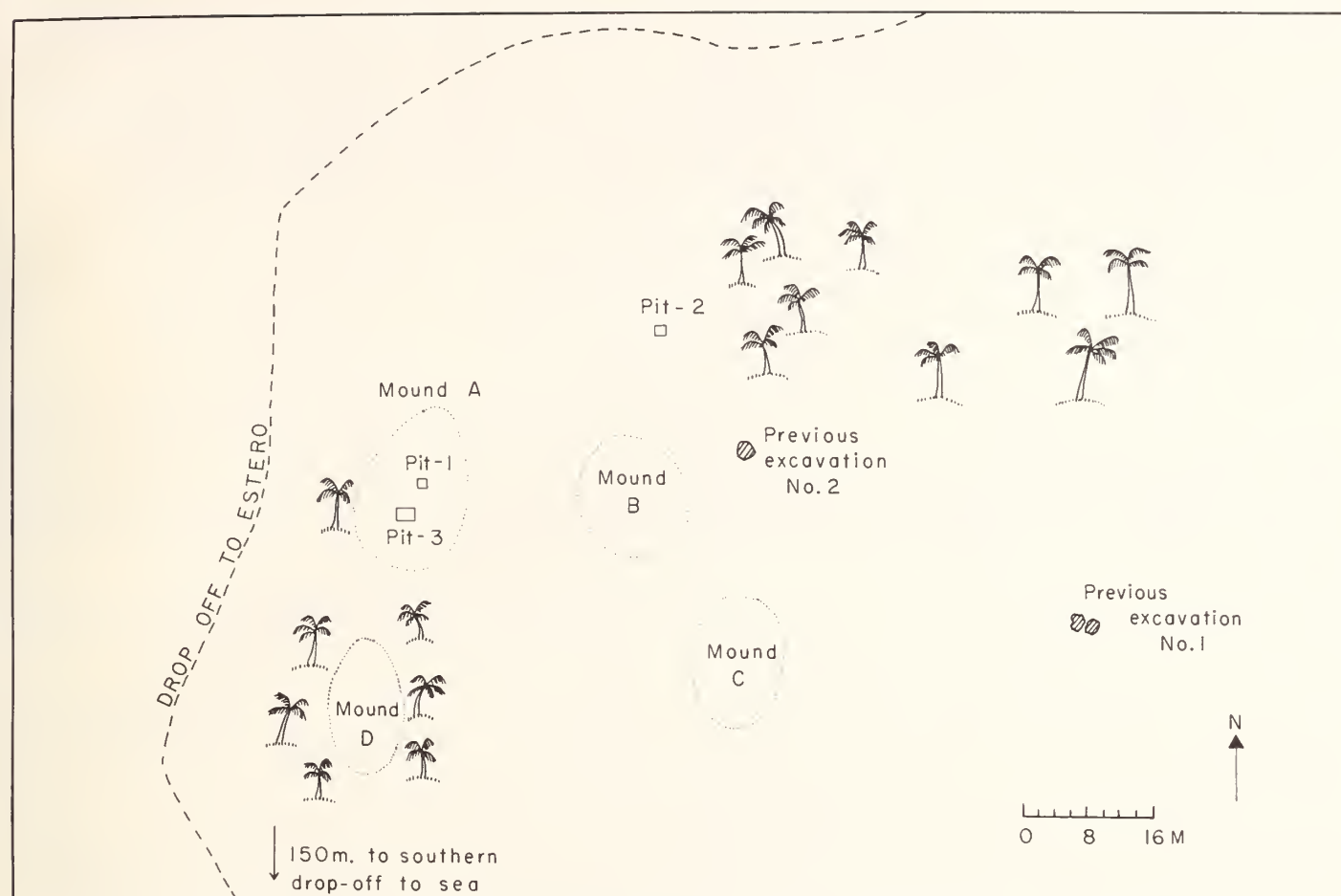


FIGURE 5.—Site map of El Cangrejal (SL-1), showing location of excavations and topographical features.

Mound A, apparently the most heavily concentrated refuse in the area.

LEVELS 0–50 cm.—The soil in these levels was dark brown in color and slightly compact like that in Pit No. 1. Abundant roots and some stones made the digging difficult. In contrast with Pit 1 where the upper 10 cm. yielded only a couple of hundred potsherds, the top level of Pit No. 3 had 1,690 sherds, the highest number of potsherds in the pit. Level 10–20 cm. had 1,665 sherds. At Level 20–30 cm. the southern half was left unexcavated; this caused a sharp reduction to 364 sherds in this level. Between 200 and 500 sherds per level were yielded by the other two levels in this unit.

A small number of edible shells occurred throughout with no concentration in any one level.

The unit of levels corresponds to the latest of the subphases postulated for Site SL-1.

LEVELS 50–90 cm.—The change from a darker clay to a lighter, more compact clay occurred in this pit 10 cm. above the level where the same change took place in Pit No. 1. Otherwise conditions were the same. The number of sherds in Level 50–60 cm.

increased by 200 from the level above. In Levels 60–80 cm. it dropped to ca. 140 sherds; the bottom level had only 41 sherds.

The scattering of bone and shell found in the upper levels continued to the bottom. Carbon specks were collected from these levels for carbon sampling.

This unit of levels between 50 and 90 cm. corresponds to the earliest of the two subphases established for Site SL-1.

The Pottery Type Sequence

FIGURE 6; APPENDIX 1, TABLE 2

El Cangrejal (SL-1) is a single phase site, belonging entirely to the San Lorenzo Phase. Changes in the physical aspect of the soil and the presence or absence of types permits separation of the two pits at SL-1 into subphases: Early and Late San Lorenzo. Two pottery types, Castrellón Red Slipped and Linarte Zoned Red Line, are present in the Late Subphase, but absent from the Early Subphase.

The Early San Lorenzo Subphase includes the two

bottom levels of Pit No. 1: 60–70 cm. and 70–80 cm. (Level 80–90 cm. has not been plotted because it had only 21 sherds.) In Pit No. 3 the Early San Lorenzo Subphase includes the three bottom levels: 50–60 cm. to 70–80 cm.

The Late San Lorenzo Subphase includes the upper

six levels of Pit No. 1 and the upper five levels of Pit No. 3.

The plain sherds of Site SL-1 are difficult to sort into types without a very minute analysis of the paste under a binocular microscope. As with the decorated types, the paste seems undifferentiated.

VILLALBA (IS 5-7)

Location

Isla Villalba, also called Isla Muertos, is a long, narrow island, about 4 kilometers northeast-southwest by only 0.6 kilometers at its widest point. Its exact location is 82°18' west longitude and 8°16' north latitude (fig. 2).

The island is in the Bahía de Muertos, a bay whose calm waters reach a depth of 2 to 4 fathoms. The contour of the surrounding islands and mainland to the north, east, and west is broken by arms of the sea locally known as esteros. The largest is the Estero de Horconcitos with its two branches that extend far inland to receive the waters of rivers that drain into the bay from the highlands. The mosquito-ridden swamplands along these esteros are not suited for habitation; the esteros are navigable waterways and are good for fishing (pl. 2).

The very large Isla Brava safeguards Villalba from the action of the tides. There was probably contact between these islands in prehispanic days. The people of Villalba also navigated around the eastern tip of Isla Brava to reach islands such as Palenque (20 kilometers away) and Las Secas (53 kilometers away). They could not have gone around the western end of Isla Brava as easily because the waters of the channel of Boca Brava are extremely turbulent and dangerous. A series of connecting ridges 120 meters above sea level run as backbones along the center of Villalba (pl. 3 *a, b*). The sites (fig. 7) are on these ridges.

Site IS-5 is on a ridge at the northern end of the island, slightly south of a freshwater stream running east. The site is approximately 50 x 50 meters in a cleared area where the present inhabitants keep pigs and cows. Many sherds are exposed on the beach, where they must have been carried by the action of rain water on the eroding hillside. Only surface collections were made.

Site IS-6 is on another ridge just north of the center of the island—about 1.2 kilometers southwest of Site IS-5. Scattered potsherds were encountered

all along the flanks of the ridge, with no concentration of sherds at any one spot.

Although mentioned in passing by writers like Holmes, Site IS-6 was first described by Haberland (1960 a, p. 10):

The main feature of the site is obviously a low mound, with walls built of boulders, still some 30 cm. above the ground. Two niches were observed, one of which was occupied by the remains of a pillar, . . .

At the time of our visit, six basalt columns that originally served as bases for carved figures lay on top of the mound. Judging from their position, they were once arranged in a circle. The figures that were carved on top of these columns have disappeared. The former owner of Villalba removed two fairly complete statues to his home. These have also been described by Haberland, who calls them "ornamented stone pillars" because the stone figures at the top are dwarfed by the shafts of the columns. One of the statues has a column measuring about 110 cm.; on top of it is a figure of an armadillo only 15.5 cm. high. Haberland (1960 a, p. 14) describes it as follows:

All four legs, the carapace and the head are nicely and typically modelled leaving no doubt as to its identity. The whole figure, which is 9.0 cm. broad and 26.0 cm. long, is set off from the pillar by a small platform at both broad sides, while the head and tail surmount the corners of the base.

The second statue, of a female, measures 58 cm. in height, 20.5 cm. in shoulder width, 23.0 cm. across the knees, and 13.5 cm. in depth across the small of the back (Haberland, 1960 a, p. 14):

The top of the head is horizontal and the face nearly triangular. The nose is prominently modelled, with a wide lower part. The eyes appear nearly closed, the slits were made very low in the half-rounded bulges which are supposed to be the lids. No mouth is indicated. The body is somewhat angular and rough, with prominent buttocks if seen from the side. The upper arms are pressed along the sides of the body, while the short lower arms lie horizontally and meet one another in the middle of the belly. Hands are not especially indicated. If there are legs, they are only faintly discernible and would indicate a squatting position. By comparison with the other figures it is more possible that this is the remnant of a girdle and that the figure was standing. Two small breasts indicate the female sex.

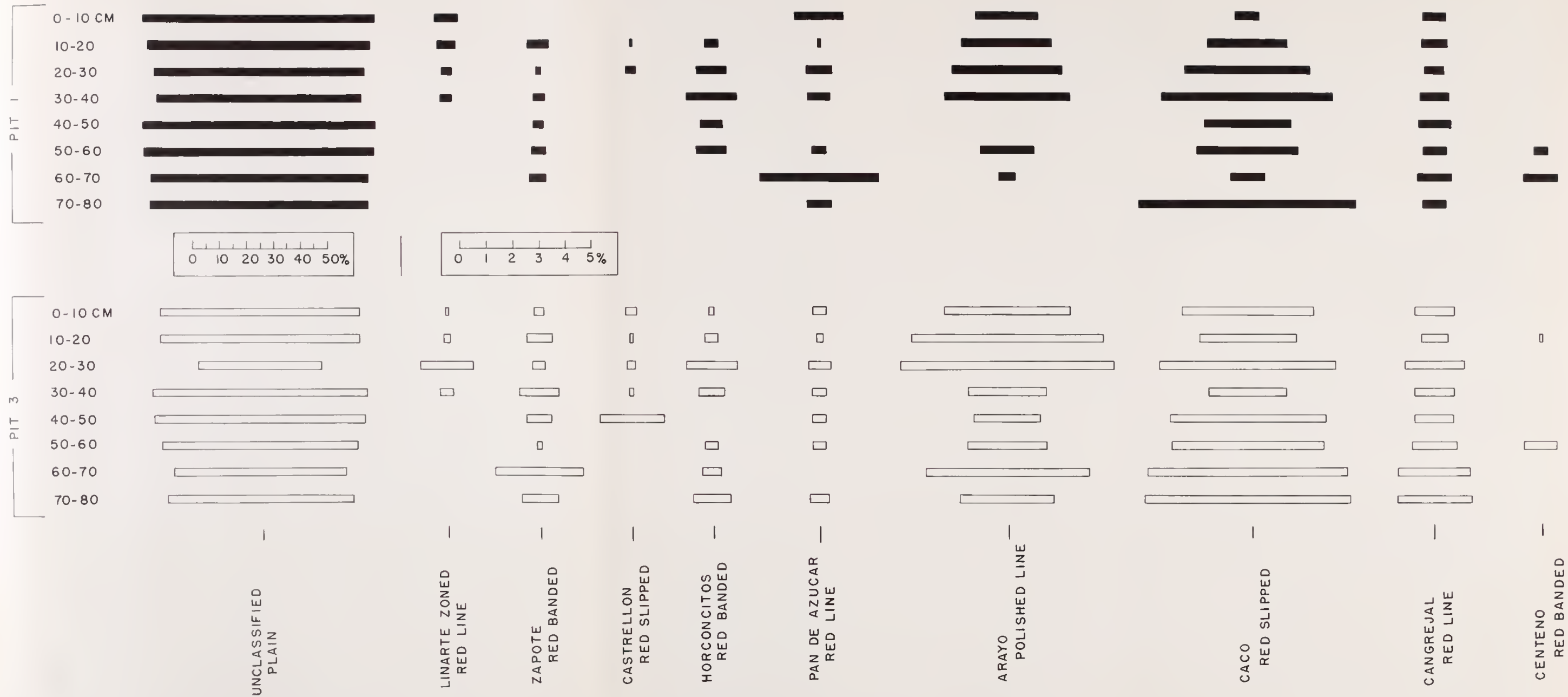


FIGURE 6.—Pottery type sequence of Pits No. 1 and No. 3, Site El Cangrejal (SL-1).

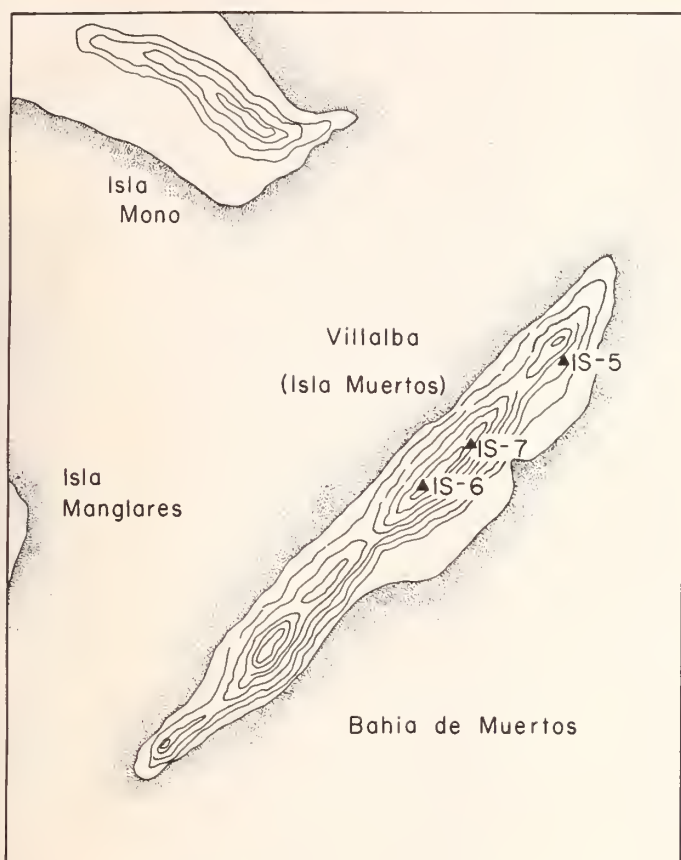


FIGURE 7.—Site map of Isla Villalba (Isla Muertos), indicating location of excavated Site IS-7 and location of surveyed Sites IS-5 and IS-6.

Only surface collections of sherds were made at Site IS-6. One bag was collected from the potrero at the bottom of the ridge, another from the hillside, and a third from the area of the basalt columns. We found no concentration of refuse. Instead, there were depressions in the ground in the shape of graves.

Site IS-7 is 90 meters north of Site IS-6 on the same ridge. It covers a small area, 10 to 15 meters in diameter, where shell and potsherds appear abundantly on the surface.

Excavations

Two test pits were dug 10 meters apart on the Villalba ridge at the site of IS-7 in arbitrary levels of 10 cm. A summary of the most important physical and cultural changes in these pits has been made by grouping levels into descriptive units. These will be presented from top to bottom in the order of excavation rather than in the order of deposition.

Test Pit 1 measured 2 meters north-south by 1 meter east-west. It was placed a meter away from a large hole made previously by someone unknown; it

showed the largest concentration of sherds in any one spot at the site.

LEVELS 0–50 cm.—The soil was very dark, loose porous humus and contained many roots, especially in the upper 20 cm. Fragments of unworked stone, larger and more rounded toward the top, angular and smaller toward the bottom, were plentiful. Shells were most abundant at the top level; slightly fewer were found in each of the levels below. Sherds were very numerous between 30 and 50 cm. The pottery types in these levels belong to the Chiriquí Phase.

LEVELS 50–70 cm.—The soil became progressively harder in consistency and lighter in color. Fragments of unworked stone became scarcer at 40 cm. and disappeared altogether at 70 cm. No shell was found below 50 cm. The number of sherds decreased sharply from 688 in Level 40–50 cm. to 62 in Level 50–60 cm.

The earth below 70 cm. was hard in consistency because of the large amount of “laja muerta” (shale) found in it. The “laja” also gives it a bright yellow tint. Only a handful of sherds was found between 60–70 cm.; below 70 cm. the soil was sterile. A small hole dug 20 cms. deeper in the center of the pit confirmed that this was the end of the refuse deposit. Level 50–60 cm. was placed in the San Lorenzo Phase.

Test Pit 2, located at the side of the raised area, was 1.5 meters higher than test Pit 1, which was in a depression. Dimensions were 2 meters north-south by 1 meter east-west. Because it was on the side of the mound, the northwest corner was 34 cm. higher than the southwest corner. Excavation followed the contour of the land. The total depth of this pit, 140 cm., was almost twice that of Pit 1.

LEVELS 0–80 cm.—Soil was dark, loose, and porous and contained many unworked stones. Approximately half a kilo of shells was found in the top three levels, increased to a kilo in the 30–40 cm. level, and decreased again by one-half in the next four levels. Potsherds were very abundant in Levels 30–40 cm. and 40–50 cm. (1,561 and 864 sherds respectively). The remaining levels in this pit produced only a few hundred sherds per level. Stone artifacts occurred in the three levels between 30 and 60 cm.

This unit of levels corresponds to the most recent of the two Chiriquí Subphases established for IS-7.

LEVELS 80–100 cm.—In Level 80–90 cm. the soil began to get slightly lighter and became hard, with angular shale fragments, at 100 cm. The number of sherds decreased from 195 in Level 80–90 cm. to 121 in Level 90–100 cm. There were no stone artifacts in this segment of the pit.

LEVELS 100–120 cm.—Below one meter the soil became light in color and fairly soft in texture. The

number of sherds suddenly increased to 411 sherds in Level 100–110 cm. and 194 sherds in the level below. Stone artifacts, which had disappeared at 60 cm., reappeared in Level 100–110 cm. No shells were recovered in this unit.

This and the previous unit of levels correspond to the middle subphase of the occupation at Site IS-7. These subphases, however, have only local importance. In terms of the entire Chiriquí Gulf sequence, both are subsumed under the last or most recent of the Gulf Phases, the Chiriquí Phase.

LEVEL 120–130 cm.—The soil was light in color, like that in sterile levels, but its texture was soft and porous. There were 180 sherds in this level and only two in the level below; for this reason the bottom level does not appear in any of the pottery type frequency charts.

Level 120–130 cm. corresponds to the oldest of the Chiriquí Gulf Phases, the Burica Phase.

The Pottery Type Sequence

FIGURE 8; APPENDIX 1, TABLE 3

Villalba (IS-7) is a two-phase site. The bottom level (120–130 cm.) of Pit No. 2 has been included in the

Burica Phase, the earliest of the Gulf Phases. This level contains a large percentage (33.33 percent) of Isla Palenque Maroon Slipped. The rest of the levels in Pit No. 3, and all of Pit No. 1 have been placed in the last or most recent of the Gulf Phases on the basis of large percentages of Tarragó Bisquit Ware and Villalba Red Streaked. The middle or San Lorenzo Phase is not represented at Site IS-7.

The Chiriquí Phase in turn has been separated into two subphases on the basis of observed changes in the physical appearance of the soil, correlated with the presence and absence or the percentage fluctuations of the pottery types.

The older of the two subphases includes Levels 0–50 cm. of Pit No. 1 and Levels 90–120 cm. of Pit No. 2. The more recent of the two subphases at IS-7 includes all the levels of Pit No. 2, from the surface to 90 cm. These subphases are only of local importance. They indicate that the occupation of Site IS-7 began earlier and lasted longer in the locale of Pit No. 2. As far as the popularity of pottery types is concerned, Tarragó Bisquit Ware and Villalba Red Streaked were more popular in the later than in the earlier of the two subphases.

LAS SECAS (IS-11)

Location

Las Secas is a complex of five offshore islands located some 30 kilometers (about 5 marine leagues) south of the point on the mainland where the Río San Juan empties into the sea (fig. 2). Their exact position is 8° north latitude and 82° 2' west longitude. In contrast to other islands of the Chiriquí Gulf, Las Secas are far away from the mainland, in open sea.

All five islands are within an area 8 kilometers in diameter. Their jagged contours produce narrow shores strewn with boulders or sea cliffs rising vertically to join rugged hills 100 or more meters in height. A few small beaches are found hidden away in protected coves. The composition of these and the geology of Cavada itself have been described by Bishop (1961, p. 22):

The beaches are composed of calcium carbonate sand which is derived from shell and coral fragments supplied to the beach from the adjacent shallow waters which abound with marine fish.

The islands are composed of sedimentary rocks which appear to have been derived from poorly weathered volcanic material.

The most abundant lithologic types seem to be rocks that grade from graywacke to subgraywacke.

Las Secas are surrounded by shallow waters, so clear in places that they are almost transparent. Underlying them are coral reefs teeming with fish. Stretches of soft muddy banks also abound with mollusks of all kinds. It is easy to dive for them from the shore or from any boat anchored nearby. The aboriginal inhabitants of these islands had a rich marine fauna to exploit.

Site IS-11 was found on Isla Cavada, the largest and northernmost of the islands (fig. 9). The site occupies the Cerro Las Huacas. It is easily recognized by the abundant shell and sherd material strewn over an area at least 200 meters in diameter. Near the northern edge of this area, before the slope drops sharply to the sea, there are three shell middens aligned in a northwest-southeast direction. The two outer middens are at least 20 meters in diameter; the central one is much smaller.

The middens are on a naturally raised ridge about 2 meters high. The concentration of cultural refuse,

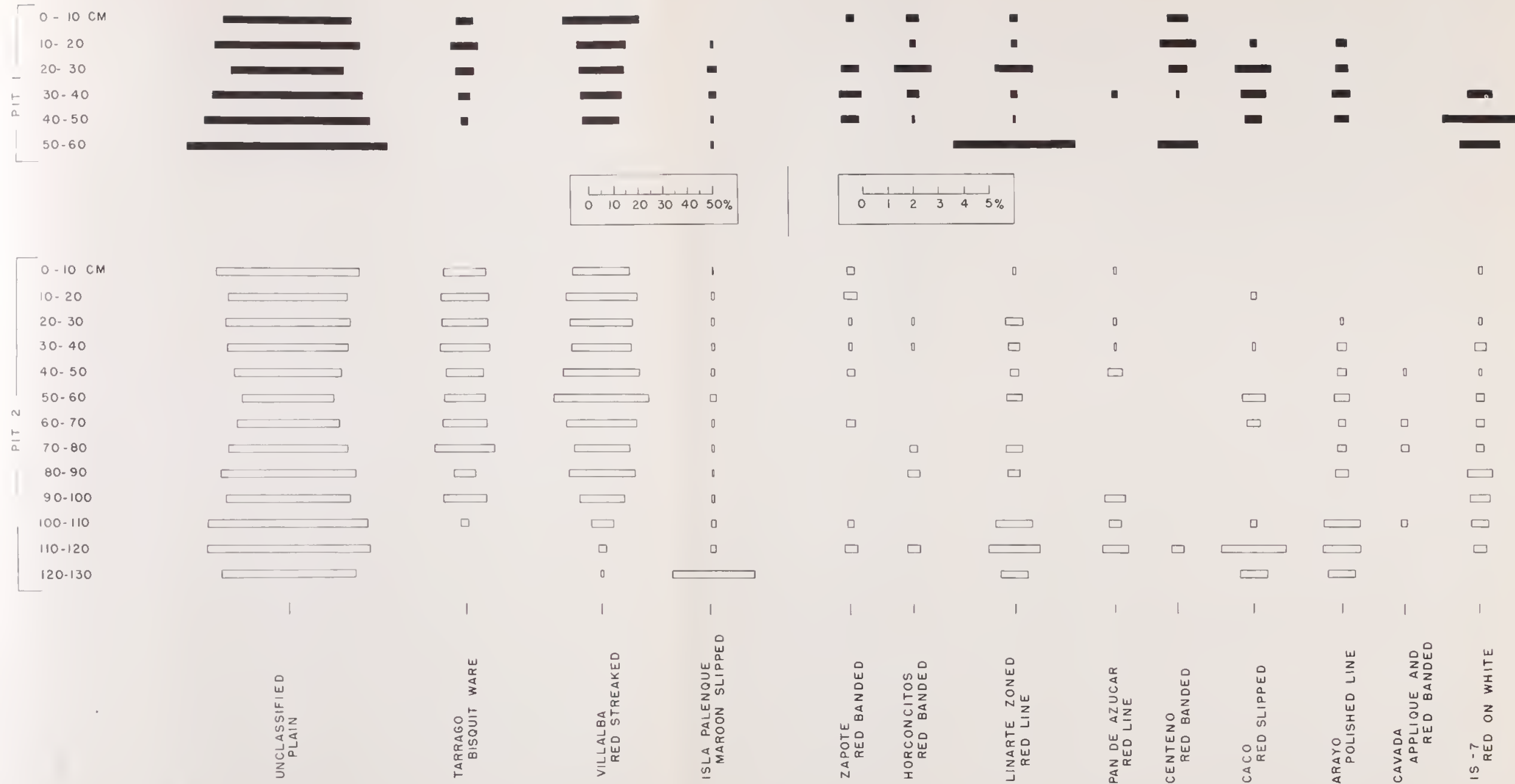


FIGURE 8. Pottery type sequences of Pits 1 and 2, Site IS-7, on Isla Villalba (Isla Muertos).

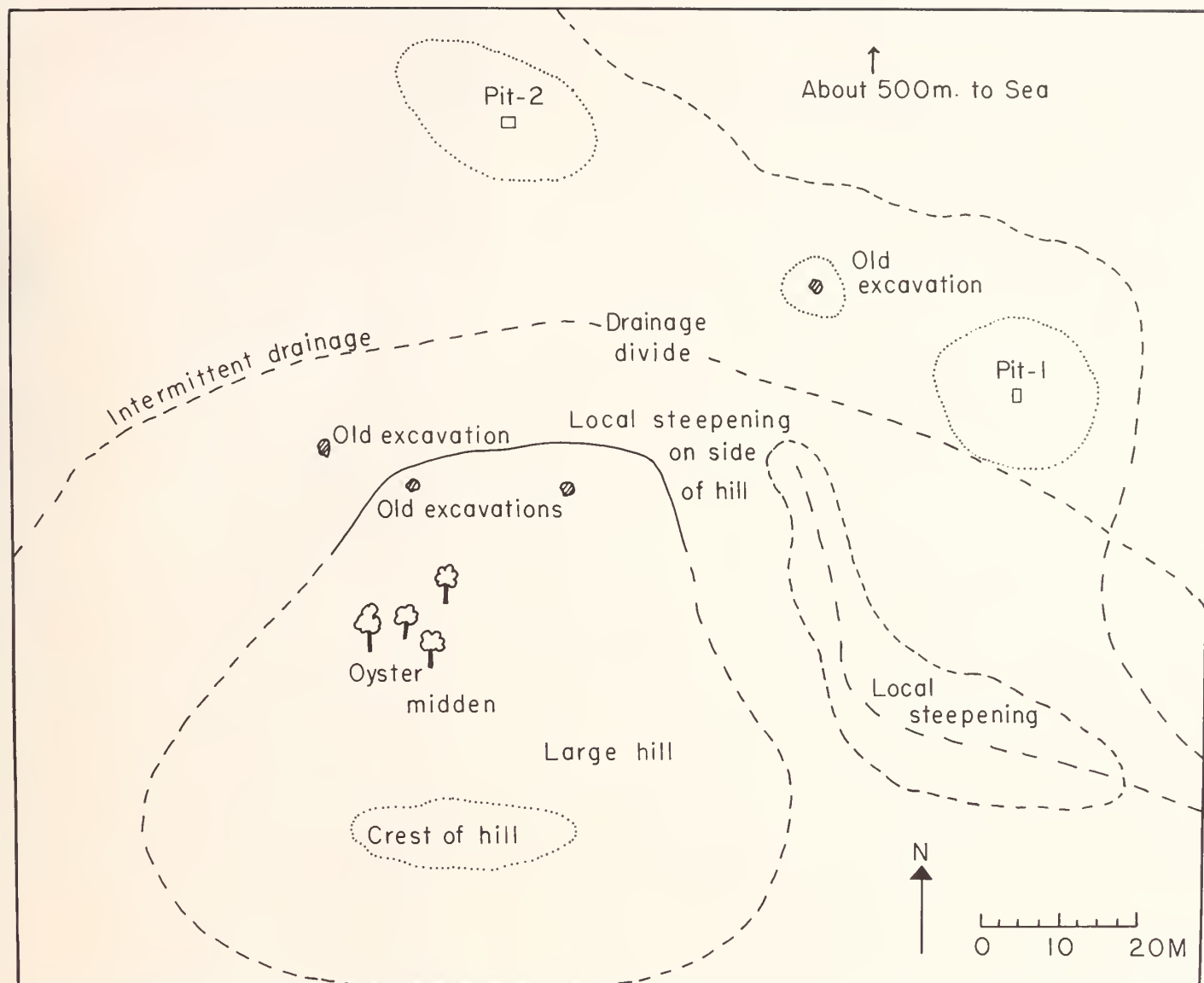


FIGURE 9.—Map showing Site IS-11 on Isla Cavada of the Las Secas complex of islands, with location of excavations and geographical features.

much of it shell, increases the height of the midden to about 3 meters. The two outer middens are hidden by thorn trees and heavy secondary growth. On the westernmost mound, part of a carved basalt column 60 cm. in height was found, with only human feet remaining carved on the top. The rest of the figure had been broken off.

One hundred meters down the hill, on both ends of the beach, there are two freshwater streams. Water must have been carried up the steep sides of the hill to the inhabited area of the site.

Excavations

Two pits were dug on the crests of the shell middens. Only the largest, Pit No. 1, is included in this study.

Test Pit 1 was placed on the crest of the large southernmost midden where the deposit seemed to be deepest (fig. 9). The pit measured 2 meters north-south by 1 meter east-west. As was the case with the other tests, the pit was excavated in 10 cm. thick arbitrary levels. The enormous concentration of shell in the midden would have made it impossible to recognize natural strata if they had been present.

For purposes of description, the levels have been grouped into two sections which are naturally and culturally distinct.

LEVELS 0-60 cm.—The soil consisted of a dark, soft, sandy clay, which was loose and porous, rich in humus, but contained little silt. Numerous roots contributed to the looseness of the soil. Small fragmented angular rocks of a fist to a half-fist in size were abun-

dant in the two top levels and decreased to almost none in Level 30–40 cm.

The amount of cultural material in these levels was enormous. Most of it was shell and potsherds with a small number of bones and some stone artifacts. The concentration of shell was mostly on the eastern walls of the pit, which faces the slope. Evidently the inhabitants of the site threw their refuse over the slope. One gunny sack of shells per level was extracted from the first 40 cm. This quantity was doubled in Level 40–50 cm. It decreased to half this volume in the next level down.

The volume of potsherds was considerably smaller than the amount of shell per level. The top level produced 1,019 sherds; the other five levels, down to 60 cm., had only from 300 to 500 sherds each.

The levels on this unit correspond to the second or more recent of the two subphases established for IS-11.

LEVELS 60–100 cm.—Starting in Level 60–70 cm. the soil turned compact and fairly hard in consistency in the northern half of the pit. Its color also changed to a darkish red and yellow. The southern half preserved the looser, more porous soil. This division in the pit between the northern and the southern half is preserved to level 90–100 cm., where compact red clay extended over the pit area.

The number of potsherds in Level 60–70 cm. was nearly half that of the preceding level. This reduction in the quantity of cultural material also held for the shell. All shell, bone, pottery, and stone artifacts were found in the southern half of the pit. Few sherds

and shells came from Level 90–100 cm., and the next level down was sterile.

Levels 60–100 cm. correspond to the oldest of the two subphases established for Site IS-11.

The Pottery Type Sequence

FIGURE 10; APPENDIX 1, TABLE 4

Las Secas (IS-11) is a one-phase site belonging to the most recent of the Gulf Phases, the Chiriquí Phase. The diagnostic pottery types, Tarragó Bisquit Ware, Villalba Red-Streaked, and La Cavada Applique and Red Banded occur in large percentages.

On the basis of observed changes in the physical appearance of the soil and the incidence of pottery types, the occupation at IS-11 has been divided into two subphases. The recent subphase includes the top six levels of Pit No. 1, while the earlier one includes the four bottom levels.

Pan de Azúcar Red Line, Cavada Applique and Red Banded, and Plain Ware A are types restricted to the older subphase. Arayo Polished Line is most abundant at this time.

In the more recent of the two subphases, a number of plain types appear: E, F, G, Beige Plain, and Polished Black Plain. None of these have been described in detail in this study. Decorated types restricted to the more recent subphase are Red Slipped Bisquit Ware, Red on White, Chocolate Incised, and Black on Red Negative. These types were not found in the other Gulf of Chiriquí sites.

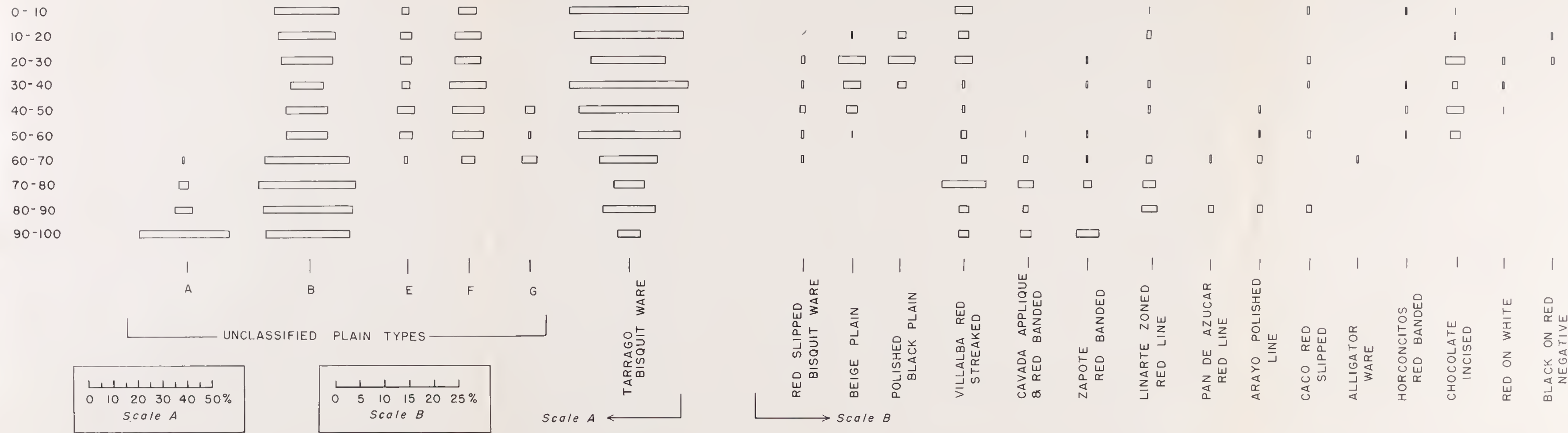


FIGURE 10.—Pottery type sequence of Pit No. 1, Site IS-11 on Isla Cavada in Las Secas Island complex

Analysis of Cultural Remains

The Chiriquí Gulf sites yielded a large quantity of cultural material in the form of potsherds, stone implements, and shell ornaments. The fact that no objects of gold were found is understandable since our collections came from refuse mounds and not from graves. Absent from our inventory are also pottery artifacts such as figurines, needlecases, musical instruments, and rattles. These occur in Chiriquí graves on the mainland and have been described under the Negative or Alligator Wares (MacCurdy, 1911). Since neither of these wares occurs in our excavations in significant quantity, it is not surprising that the pottery objects associated with them are unrepresented.

Artifacts are described under four major categories: pottery types, appendage modes (handles and supports), stone artifacts, and objects of shell. Other materials that may be called cultural in the sense of having been used by man, though not produced by him, such as shells and animal bones, have been summarized in tables at the end of this study. They are more valuable for cultural interpretations than for chronology.

The description of the pottery types is alphabetical within each phase, beginning with the oldest phase, passing to the intermediate phase, and ending with the most recent. Distribution by phase has been graphically presented (fig. 42). The Burica Phase has the following pottery types: Isla Palenque Maroon Slipped and Unclassified Plain Ware C.

The San Lorenzo Phase is typified by the following pottery: Arayo Polished Line, Banco Red Line, Caco Red Slipped, Cangrejal Red Line, Castrellón Red Slipped, Centeno Red Banded, Horconcitos Red Banded, Linarte Zoned Red Line, Pan de Azúcar Red Line, Zapote Red Banded, and Unclassified Plain Wares D, H, I, J.

Cavada Applique and Red Banded, Tarragó Bisquit Ware, and Villalba Red Streaked are restricted to the Chiriquí Phase. Additional pottery types are "Classical Chiriquí": Alligator Ware and Black-on-Red Negative. Probable Costa Rican imports: Chocolate Incised, Red on White. Local variant of Tarragó Bisquit Ware: Red Slipped Bisquit Ware. Unclassified Plain Wares: A, B, E, G, Beige Plain, and Polished Black Plain.



FIGURE 11.—Rim profiles of Isla Palenque Maroon Slipped, thick variety, Burica Phase. All interiors are oriented to the left. Arrows indicate slipped surfaces.

BURICA PHASE

Isla Palenque Maroon Slipped

PASTE:

Method of manufacture: Probably coiling. Trace of coil lines completely obliterated on the surface, but cross sections show faint depressions that may be coil junctions.

Temper: Abundant, well-rounded quartz sand; particles are pinpoint size. Temper particles are lighter in color so that they stand out in gray areas. They are distributed homogeneously throughout the paste.

Texture: Compact and fine grained. The abundant temper grains give a sandpaper feel to the paste. Breaks along fairly straight lines, but not along coil junctions.

Color: Incompletely oxidized firing has produced a buff to light orange line of uniform width along both surfaces, leaving a dark gray core. The oxidation band is the same in the interior as in the exterior. It ranges from a little less than 1 millimeter to 3 millimeters in width, correlated generally with the thickness of the body wall. Occasionally, the oxidation penetrates completely through the cross section, producing an even buff color throughout.

SURFACE:

Color: Light buff to light brown, with occasional areas that are black to gray as a result of fire clouds; however, these are uncommon. On a single vessel, color is relatively uniform.

Treatment: Smoothed to produce a relatively even surface, but not polished, remaining slightly abrasive to the touch and leaving scattered small imperfections.

Some jar necks show in the exterior broad, parallel striations (about 3 mm. wide), indicating scraping with a shell tool.

Hardness: Very soft, 2-2.5.

FORM:

Body wall thickness: There are two distinct groups: thick, ranging from 10-14 mm. and thin, ranging from 3-5 mm. Group 1 belongs in the thick variety; groups 2 and 3 in the thin variety.

Rim and Lip: Three major groupings.

Group 1 (fig. 11 *a-r*; pl. 5 *a-b, d-e*): Everted rims belonging to large globular jars (probably burial urns) with long necks. Rims are thickened externally to form a slanted, enlarged lip that may be anywhere from 1-5 cm. wide. Thickening was done by the addition of one or more coils to the outside of the lip. Traces of coil marks remain on the underside of the lip as undulations separated by shallow grooves or lines made by the unknown tool used in the smoothing process (fig. 11 *m-r*; pl. 5*b*). Contour of enlarged lips either angular, with a flat top and slightly convex under side (fig. 11 *h, i*), or rounded at the top and at

the bend of the lip (fig. 11 *f, g*). Lip is at a 45°-90° angle to the neck.

Rim diameters range from 32-50 cm.

Group 2 (fig. 12 *a-h, k-m*; pl. 5 *c, f, i*): Direct rims (that is, rims that are continuous with the vessel wall) belonging to bowls. Great variety in terms of angle of curvature (incurved in closed bowls, outcurved in open bowls) and in the way the lip is treated.

1. Unmodified, incurved rims with lip and vessel wall the same thickness: as thin as 5 mm. (fig. 12*l*) or as thick as 10 mm. (fig. 12*a*). Diameters are 4 cm. and 15 cm. respectively.
2. Sharply incurved, meeting the vessel shoulder at an angle. The lip tapers toward a point (fig. 12 *b, k, m*; pl. 5 *c, f, i*). Rim diameters average 12 cm.
3. Opened, with a gradual outcurve and internally thickened lips that may be twice as wide as the vessel wall (fig. 12*d-f*). Rim diameters range from 18-26 cm. The thickening may be on the exterior of the lips (fig. 12 *g, h*).

Group 3 (fig. 12 *n-v*; pl. 5 *h, l*): Rims belonging to bowls with curved, short necks; the lips are curved from the vessel wall.

1. Thin, perpendicular rims with a gentle S-curvature. Angle of juncture with the wall of the bowl is marked. Lip slightly thickened (fig. 12 *i, j*; pl. 5 *h, l*). Rim diameters average 20 cm.
2. Angular, with a sharp Z-curvature above the shoulder of the vessel. Lip may be long, flat at the top, and sharply everted at a 45° angle (fig. 12 *n-p*) or it may be only gradually outcurved (fig. 12*q*). Rim diameters range 15-20 cm.
3. Gradually S-curved, with either exteriorly thickened lips (fig. 12 *r, s*) or unmodified lips (fig. 12*t*). Rim diameters average 15 cm.
4. Everted, very thin rims belonging to small jars with short necks. The lip is thin and pointed (fig. 12*u*) or thick and wide (fig. 12*v*). These are less popular than the other rims. Rim diameters average 12 cm.

Group 4 (fig. 12*w*; pl. 5*k*): Sharply incurved rims belonging to bowls with constricted mouths. Marked thickening of the lips by the addition of coil. Rim diameters average 8 cm.

Base and Supports:

1. Concave unmodified base continuous with the side walls of large globular jars. Thickness: 2 cm.
2. Small, thin-walled ringstand 7 cm. wide and 5 mm. high (Ringstand Mode a) associated with outcurved, angular, opened bowls (fig. 12*i*). Ringstands may also occur with incurving or S-shaped bowls, but no whole vessels have been found to confirm this association.

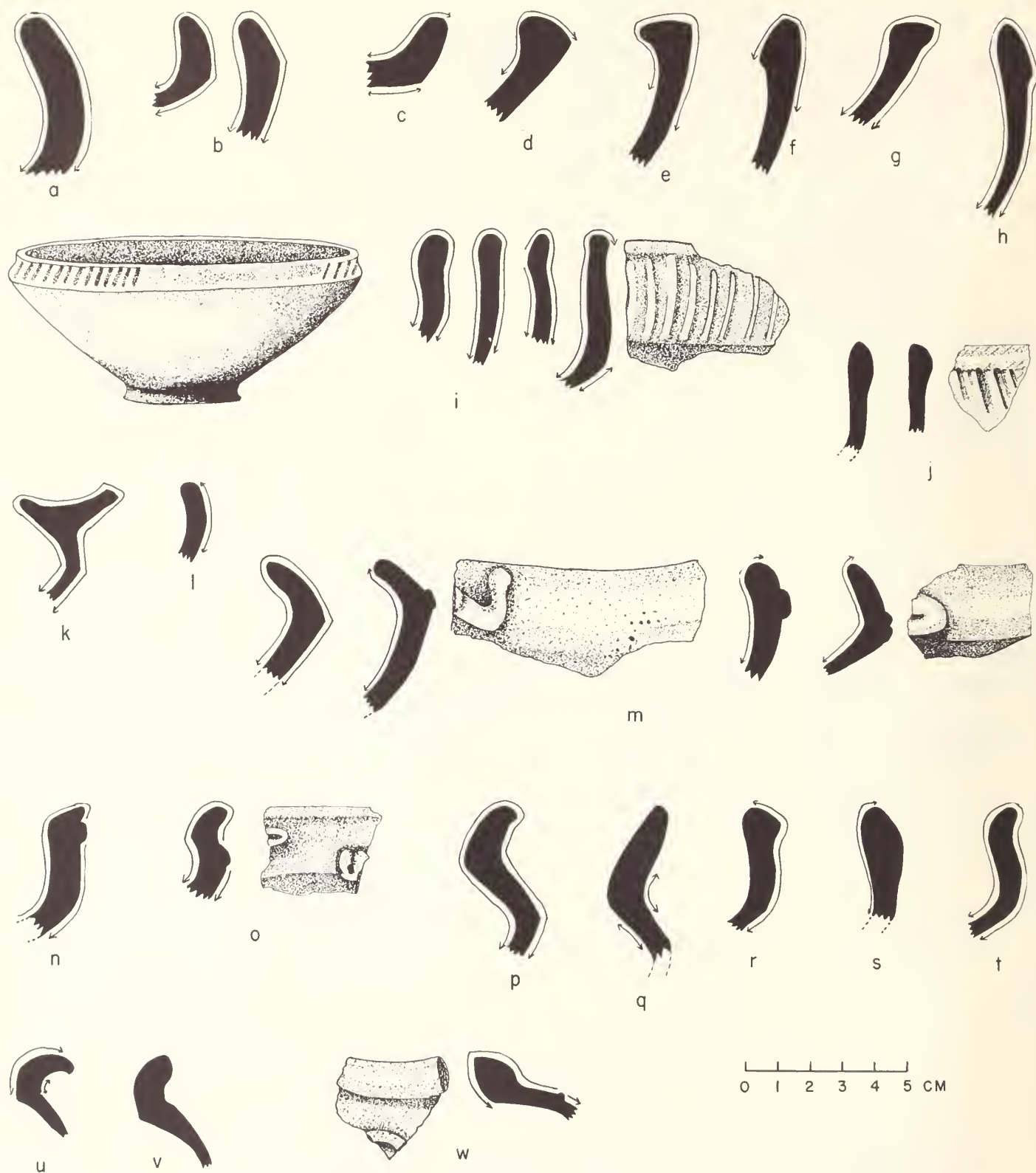


FIGURE 12.—Rim profiles and side views of Isla Palenque Maroon Slipped, thin variety, Burica Phase. All interiors are oriented to the left. Arrows indicate slipped surfaces. Complete vessel in Museum of Natural History, Smithsonian Institution (Catalog No. Archaeology—108300).

3. The tall, hollow tripod foot with a modeled anthropomorphic figure at the top, Mode a1 may belong in this group (see description of Tripod Foot, Mode a1, and page 47).

Reconstruction of major vessel forms:

1. Large, globular-bodied jars with either long, narrow necks or short, wide necks; sharply everted, thickened rims and rounded bases (fig. 11a). These were used in all probability as burial urns (fig. 13).
2. Small jars with thin-walled globular bodies, short, thin or thick necks, and everted rims (fig. 12 u, v).
3. Deep bowls with gradually concave sides terminating in incurving rims with lips that are either unmodified or thickened in either the exterior or in the interior. Bases probably concave.
4. Deep bowls on ringstands with short, fairly straight rims (fig. 12x.; pl. 6a). These were probably used as lids for burial urns of vessel form No. 1 (fig. 13).
5. Shallow opened bowls with a sharp angle at the shoulder and either incurving or outcurving rims.
6. Angular bowls with short S-shaped necks and either strongly everted lips or more gradually outcurving rims.
7. Bowls with incurving sides, constricted mouth, and exteriorly thickened lips.

DECORATION:

Technique: A dark, maroon (brick color) slip applied evenly over the vessel surface; thinness of the slip has caused it to wear off in spots. Polishing of the slip has left prominent tracks running parallel to the rim. Striations produce a slightly variegated appearance. The polishing produces a relatively hard surface, 3.5.

Motif: The slip is applied to cover most of the visible surface and frequently extends into less visible areas such as the underside of the shoulder. When applied to the interior of the large jar necks, the slip extends over the top of the rim, but the exterior of the neck is left unslipped (fig. 11 a-r). Most deep and shallow opened bowls are slipped in the interior also (fig. 12a-i, k, m, n-q, s, t). Closed-mouth bowls are left unslipped inside.

Additional decoration: Many of the bowls have, besides slip, ornamentation of one or more of the following kinds:

1. Shallow parallel diagonal incisions about 3 mm. wide in zones 6-12 mm., placed on the exterior above the shoulder and below the lip (fig. 12j; pl. 6 a-c).
2. Slightly raised parallel diagonal ridges of the same dimensions and placement as described above (fig. 12i).
3. Applique curvilinear ridges and pellets, 5-12 mm. in diameter, just above the shoulder line and below the lip. Some look like an arm motif (fig. 12 m, o, w; pl. 5 c, f, k).

CHRONOLOGICAL POSITION: This is the dominant pottery type in the Burica Phase, the oldest phase in the Gulf of Chiriquí. It is present in very large percentages in the bottom two levels of Pit No. 3 at IS-3 and in the bottom level of Pit No. 2 at Site IS-7. Although the detailed description of the plain wares has been left out of this study, it may be of interest to note that Plain Ware C

differs from pottery type Isla Palenque Maroon Slipped in only one respect; it lacks a red slip. Otherwise they are identical. I suspect that they are in fact the same type, only the thin maroon slip has worn off type C.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

Isla Palenque Maroon Slipped is the predominant and often exclusive pottery type in most of the surface collections from hilltop sites along the shoreline of the Burica Peninsula (Ranere, Appendix 2, pp. 107-119). The Smithsonian Institution (USNM Archeology Cat. No. 108300) has a small collection of rims, body sherds, a complete bowl, probably a lid (fig. 12i; pl. 6a), all of which belong to this type. McNeil made this collection in 1859 at a site called El Banco. There are at least two El Bancos in Chiriquí, one north of David in the highland region near the town of Boquete and another south of Puerto Armuelles on the Burica Peninsula. The McNeil collection may have come from either place.

In recent years the Isla Palenque Maroon Slipped type has been found in several cemeteries of Chiriquí: in Dolega and La Bágala (12 kilometers north of David on the way to Boquete), in Bugavita (near Concepción), in Querévalo and Finca Tinajas (west of David and south of Concepción), and possibly in Cerro Punta (on the skirts of the Volcan Barú). Two of these sites, Dolega and Tinajas, have been described in the literature (Miranda, Pérez and de la Guardia, 1966; de la Guardia, 1966). The others were mentioned by Dr. Roberto de la Guardia (personal communication). I have also seen most of his material firsthand. There is very little doubt in my mind that it belongs to my Isla Palenque Maroon Slipped type and should be in the Burica Phase. The following description is based largely on the published evidence mentioned above. (Figure 13 illustrates some of this material.)

The sites of Dolega and Tinajas are at least 70 kilometers apart, yet the material they contain is very similar. They are cemeteries with secondary urn burials in large urns varying in height from 30 to over 80 cms. The burials are usually marked by river boulders, and the urns are fairly close to the surface. One of the Tinajas urns had two dismembered skeletons inside.

Besides large urns, there were smaller ones with shapes and rims exactly like those of my Palenque Maroon Slipped type, thick variety. Several of the urns were covered by inverted bowls or lids identical to those from my Isla Palenque Maroon Slipped, thin variety (fig. 12i). Other ceramic objects found at Dolega and Tinajas also occur in our Chiriquí Gulf sites. One of these was tripod feet in the shape of women with legs joined and broad hips (de la Guardia, 1966, figs. 9-12); our Mode b3 bears some resemblance to these. A pottery gourd shaped into a face found at Tinajas is unique. There was also a tall pedestal base with triangular cutout designs identical to one from Coclé, illustrated by Lothrop and assigned by him to his Early period (Lothrop, 1942, p. 167, fig. 337c). Stone objects ranged from a tall (66 cm.) base for a statue, of which only the feet remained, to many metates of different sizes and leg shapes.

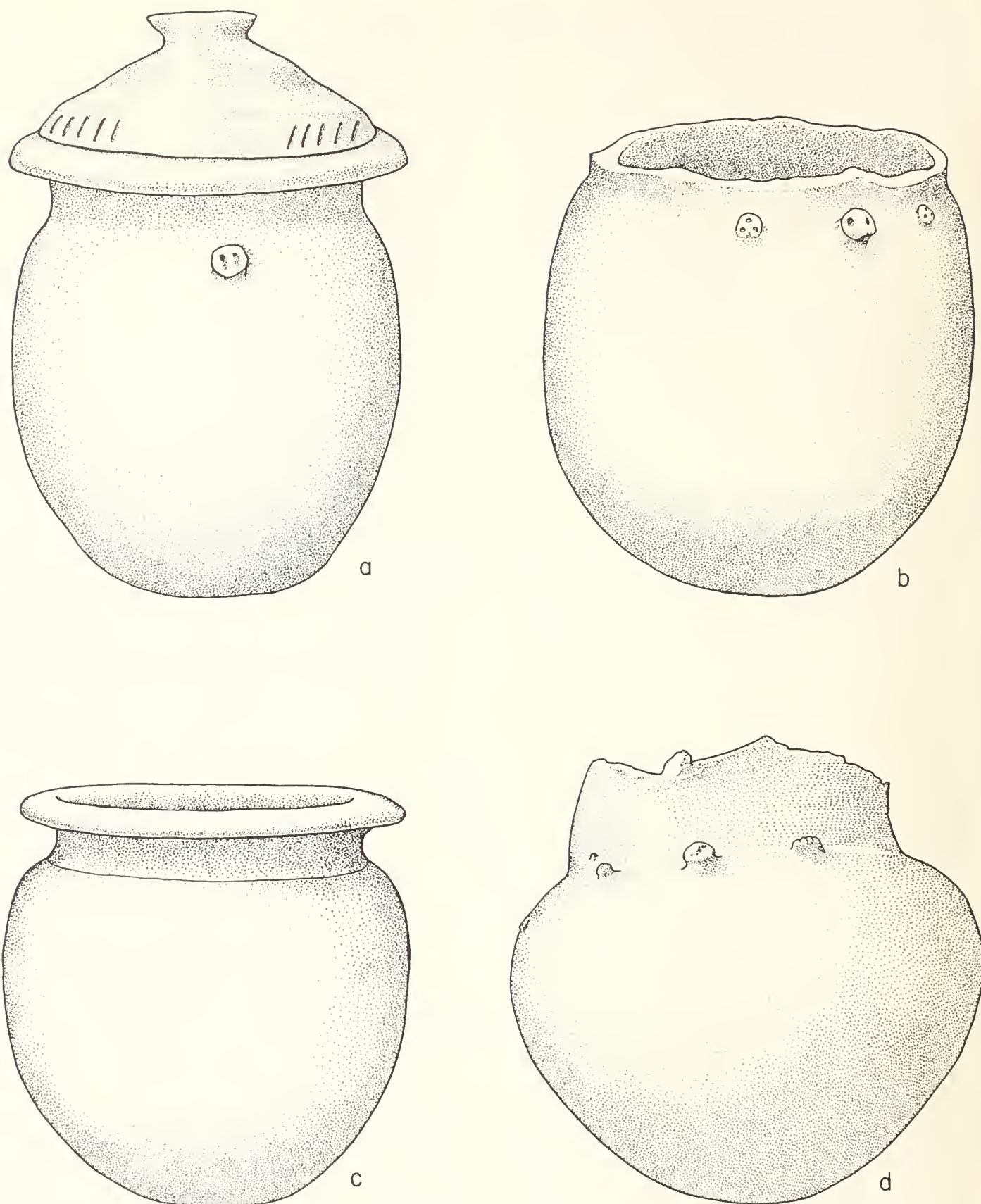


FIGURE 13.—Burial urns of Isla Palenque Maroon Slipped, thick variety, from the sites of Las Tinajas and Dolega reported by other investigators. Redrawn from photographs.

It is now clear from the work by de la Guardia and his students that the Isla Palenque Maroon Slipped type is more widely distributed in Chiriquí than formerly thought (Linares, 1964). It also seems that cemeteries with urn burials existed in the islands, and that we missed them by concentrating on the habitation sites.

An urn with bones inside has been reported recently from Isla Palenque (de la Guardia, personal communication).

Outside of Chiriquí the closest connections of Isla Palenque Maroon Slipped are with the oldest pottery in the Diquís Delta of southwestern Costa Rica: the Brown Ware and the Fugitive Red Wares of Lothrop (1963, pp. 45 to 75). Only some of the types subsumed under each of these headings were found in the bottom levels of the Diquís deep stratigraphic deposits. These types were Large Brown Bowls (including Short and Tall Tripods and a Thick Lip Type), Large Brown Jars with parallel-line incisions, and thin undecorated sherds belonging to a Fugitive Red Ware. The latter were not described in detail except to state that they were slipped in red on one side and that no rims, bases, legs, lugs, or handles were present (op. cit. p. 72).

The Short and Tall Tripods of the Brown Ware (op. cit., p. 49, fig. 22 and p. 66, fig. 43) are exactly like some recently found in the Burica Phase cemetery of Tinajas (de la Guardia, 1966, p. 11, figs. 9-14). The rims of the gigantic Brown Jars (Lothrop, 1963, p. 52, fig. 25, *a,b*) duplicate those of our Isla Palenque Maroon Slipped, thick variety. The large Parallel-Incised Jars, found definitely stratified in the lower levels of Site A, Farm 4 (op. cit. p. 55), show definite resemblances to funeral urns (fig. 13) found in the Burica Phase cemeteries of the coast. Lothrop (op. cit. p. 57) speculates whether the Diquís Jars were for storage or for burial.

Unclassified Plain Wares

Plain Ware C at Site IS-3, Pit No. 3, is the only plain ware in the Burica Phase. In all attributes of paste and surface it is identical to Isla Palenque Maroon Slipped, only it lacks the maroon-colored slip of its decorated counterpart. The slip of this pottery type is thin and may have simply worn off.

SAN LORENZO PHASE

Arayo Polished Line

PASTE:

Method of manufacture: Probably coiling. Vigorous polishing of both surfaces has obliterated all coil junctions.

Temper: A "dirty" clay with some natural impurities: decomposed granitic sand, feldspar, quartz, hematite. The particles, clearly visible in cross section, are homogeneously distributed. Large (1 mm.) particles of rounded hematite stand out in cross section.

Texture: Fairly compact; breaks along straight lines.

Color: An even buff to pale gray depending on the degree of oxidation. Firing is variable. In some sherds it penetrated completely; other sherds have a thin (4 mm.) gray core or, in a few, a core that occupies 75 percent of the cross section.

SURFACE:

Color: Buff to reddish brown on the exterior. Interiors may be pale gray and different in color from the buff exteriors. Fire clouds are rare.

Treatment: On globular jars both surfaces have been polished with a pebble, leaving striations at least 2 mm. in width. This is the only unslipped type where interiors are as smooth to the touch as exteriors. On short-necked jars the interior of the body is unpolished; the inside of the neck may also be polished.

Hardness: Fairly hard, 4.

FORM:

Body wall thickness: Consistently between 0.7-1.0 cm., with the majority 8 mm.

Rims and Lips: There are only a few rims which can be assigned with certainty to this type. At least four groups are distinguishable:

1. Long (5.5-6.0 cm.), unmodified rims gradually everted from the vessel shoulder (fig. 14 *a-g*). Their angle of outflare is generally 45 degrees. Lips vary slightly in shape. Mouth diameters are often difficult to estimate because many of the rims are lopsided, as they have been broken off at the point where the lip continues into a strap handle. Rim diameters are generally between 30-38 cm.
2. Short (3.7 cm.) rims, sharply everted, with the main flatness at the top and the lip rounded (fig. 14 *h-i*). Mouth diameter is difficult to estimate because of the strap handles, but averages 8.5 cm.
3. Inclined direct rims belonging to deep bowls with fairly straight upper sides. The lip is folded on the exterior to form a very narrow (1-2 mm.) ledge (fig. 15f).
4. Straight rims belonging to tall-necked jars; the rim is continuous with the neck. The lip is unmodified and in thickness is equal to the vessel wall (fig. 15g).

Base and Supports: Rounded bases 1-2 mm. thicker than the vessel walls; no tripod feet or supports of any kind are associated with this type.

Appendages: Strap handles are popular, judging from the junctions on the sherds where the straps were once attached and from published drawings of vessels of this type. They may occur singly on vessels with a

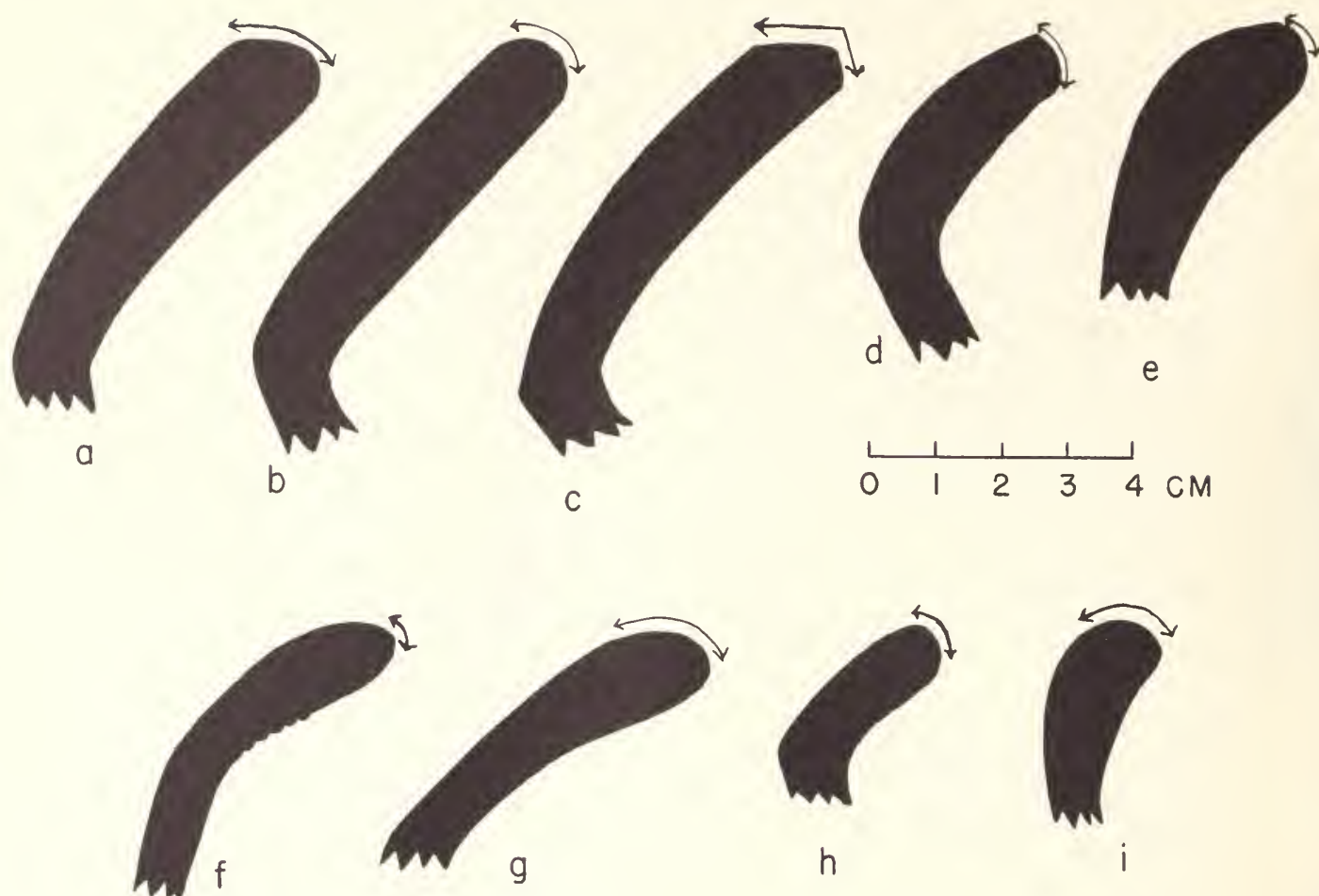


FIGURE 14.—Rim profiles of Arayo Polished Line, San Lorenzo Phase. All interiors are oriented to the left. Arrows indicate slipped surfaces.

modeled neck or paired on vessels with no neck. (Holmes, 1888, fig. 160) (See Strap Handle Mode a, variations a1–a6, page 56.)

Reconstructed vessel forms: All vessels in this type are globular jars; they vary, however, in the treatment of the neck.

1. An estimated 75 percent of the vessels are globular jars without necks and with rims that flare out directly from the shoulder (Holmes, 1888, fig. 160).
2. At least one vessel is an effigy jar; the short neck (2.2 cm.) is decorated with applique pellets to convey the idea of a human face (fig. 15h). The body of the vessel is globular.
3. Several vessels have tall necks (more than 8 cm. high) and globular bodies, the exact shape of which is difficult to reconstruct (fig. 15g).

DECORATION:

Technique: The most diagnostic criteria of this type are narrow (2.5 mm.) and wide (1.2 cm.) polished red lines or bands on the upper half of the vessel. The decorated area never covers the entire exterior surface.

The lines were painted with an applicator (a brush?) unevenly steeped in paint so that width is greater at the top, becoming thinner as the lines are drawn out.

Sections of the lines where the paint was thinnest have eroded.

Motif: Sets of parallel lines meet or cross each other at right angles in the following arrangements:

1. Thin (2 mm. wide) parallel lines, 3–5 mm. apart, are arranged in sets of four to seven lines that meet without crossing (fig. 15b) or actually overlap (fig. 15a). The outside lines may have pendant ovoidal blobs as additional decoration. A wide (1.1 cm.) band encircles the neck.
2. A horizontal band 2 mm. wide or a set of thin, horizontal lines have pendant triangles, 2.0 by 1.5 cm. wide (fig. 15c, d; pl. 7k, m).
3. Sets of thin (3 mm.) parallel lines meet each other at right angles and are separated by wide bands on the outside (fig. 15 e–h; pl. 7 h–j, l, n, o). This is the most common motif in this type.

Additional decoration: Effigy vessels have the neck decorated with applique coffee-bean eyes and applique strips in the form of a nose and two arms (fig. 15h).

CHRONOLOGICAL POSITION: Arayo Polished Line is popular mostly during the San Lorenzo Phase at Site IS-3 and occurs in large percentages in the same phase at



FIGURE 15.—Painted exterior designs and a few rim profiles of Arayo Polished Line, San Lorenzo Phase. All rim interiors are oriented to the left. Arrow on rim indicates red-slipped surfaces. Dark areas indicate red bands.

Site SL-1. Very small percentages also occur in the Chiriquí Phase at Sites IS-7 and IS-11.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: Vessels of this type were put by Holmes (1888) and MacCurdy (1911) in the "Red Line" group, which also includes vessels of Zapote Red Banded, Cangrejal Red Line, Linarte Zoned Red Line, Centeno Red Banded, and Banco Red Line.

A sherd of Arayo Polished Line (fig. 15a) can be identified as identical to part of a complete vessel illustrated in Holmes' report (Holmes, 1888, fig. 160). He gives no provenience.

The sherd in figure 15h is similar to part of a vessel in MacCurdy's report (1911, plate XXV c).

A sherd of Arayo Polished Line found in the Diquís Delta of Costa Rica (Lothrop, 1963, fig. 69a) is decorated with motifs very similar to those on our figure 15g.

Banco Red Line

PASTE: Comparable to Linarte Zoned Red Line. See that type description for details.

SURFACE:

Color: Buff, darkened mostly in the lower half by fire clouds. Interior color is uncertain since this type is represented by complete vessels with constricted necks.

Treatment: The exterior has a low polish that compacts the surface, but does not give it a smooth, shiny texture as does the polishing in Arayo Polished Line.

Hardness: Between 2.5 and 3.0.

FORM:

Body wall thickness: From 6–8 mm., with the range of variation encompassed by an individual vessel.

Rim and Lip: Everted rims with unmodified lips belonging to jars. These are of the same general shape as the rims for Arayo Polished Line and Centeno Red Banded. For a detailed description of these rims, see the type description of Arayo Polished Line.

Bases and Supports: A very slight flattening of an otherwise rounded base lends some stability to the vessel. The base is also thickened somewhat.

Appendages: Larger jars have strap handles that extend from a point on the vessel wall just above the shoulder to the opposite side of the rim. The straps are wider at the top where they join the lip than where they join the vessel wall (Strap Handles, variations a6–a7). Small vessels have no appendages (fig. 16b; pl. 8b).

Vessel shapes: Globular jars with slightly angular to rounded bases (fig. 16a, b; pl. 8a, b), everted rims, and, in the case of the larger vessels, strap handles joining body and lip.

DECORATION:

Technique: See description of Linarte Zoned Red Line.

Motif: The decoration is restricted, as in all the other jar types that are decorated with thin lines, to the section of the vessel between the neck and the shoulder. This section is set off from the rest of the vessel by a horizontal line encircling the shoulder and either a

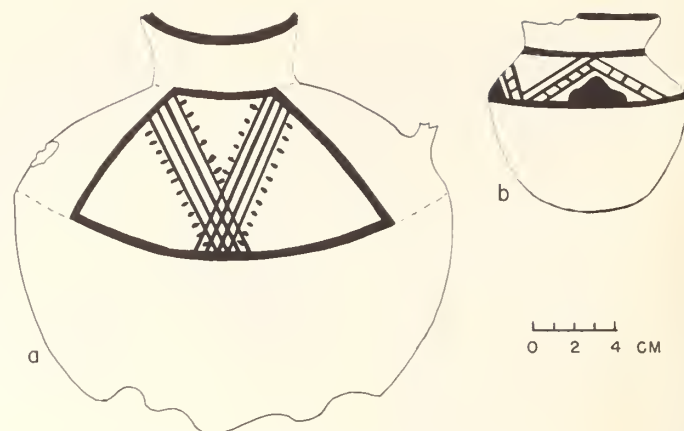


FIGURE 16.—Reconstructed vessels of Banco Red Line, San Lorenzo Phase. Dark areas indicate red bands.

continuous band around the neck or discontinuous neck bands. Two motifs are:

1. Intersecting sets of four parallel thin lines with outer lines decorated by a row of pendant dots or blobs (the motif is almost identical to Arayo Polished Line; compare fig. 15a with fig. 16a).
2. A triangular motif made up of parallel thin lines connected by transversal lines. The area in the center is decorated with solid red splatches of paint (fig. 16b).

CHRONOLOGICAL POSITION: Restricted to the San Lorenzo Phase at Site IS-3.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: Banco Red Line belongs in the same Red Line Ware of Holmes (1888) and MacCurdy (1911) as the types Arayo Polished Line, Cangrejal Red Line, Centeno Red Banded, Horconcitos Red Banded, Pan de Azúcar Red Line, Linarte Zoned Red Line, and Zapote Red Banded.

A vessel of the exact shape as figure 16b, but with slightly varying decoration, appears in MacCurdy's report (1911, fig. 160). No provenience is given.

Caco Red Slipped

PASTE:

Method of manufacture: Probably coiling; traces of coil lines were completely obliterated from the surface, but some interiors show depressions that may be coil junctions.

Temper: A "dirty" clay, probably from a stream, containing waterworn particles of hard clay, decomposed granitic sand, feldspar, quartz, and hematite. The particles of quartz and hematite, ranging from 0.2–0.5 mm., stand out readily in cross sections and are clearly visible on eroded surfaces. They are unevenly distributed throughout the paste.

Texture: Gritty; temper particles are occasionally clustered. Breaks along irregular, angular clcavages. Large air pockets (some 6 mm.) are distributed throughout the paste of the thicker sherds.

Color: Thicker sherds show incompletely oxidized firing that produces a light buff band, usually on the exterior, varying in width from 0.5–4.0, leaving the remaining 75 percent of the cross section dark gray. In thinner sherds oxidation is complete, producing an even buff color throughout.

SURFACE:

Color: Buff, light orange to light gray depending on the degree of oxidation. On any one vessel, color is fairly even because there are few fire clouds.

Treatment: Exterior is compacted by polishing with a pebble that leaves wide striation marks. Interior is typically smoothed but not polished.

Hardness: Fairly hard, 4.

FORM:

Body wall thickness: Two distinct groups: thick (1.2–1.5 cm.) and thin (6–8 mm.).

Rim and Lip:

1. The thick variety of sherds has large rims with varying angles of eversion and lip treatment. They all belong to large globular jars (fig. 17 a–c). Rim diameters vary between 28–33 cm.
2. The thin variety of sherds belongs in two very different rim groups:
 - (a) Everted rims belonging to globular jars. These may be short with rounded lip (fig. 17d) or with a lip that is fairly flat on the outside (fig. 17e). The lip may also be thickened exteriorly (fig. 17d) or tapered to a fine point (fig. 17g). Mouth diameters are, respectively, 16, 20, 16, and 18 cm.
 - (b) Incurving rims belonging to fairly deep bowls. All have unmodified lips. They may be constricted at the shoulder (fig. 17j) or not constricted (fig. 17h–i). A variant is a small angular rim with a lip that is slightly thickened on the exterior (fig. 17l). Mouth diameters are, respectively, 9, 16, 18, and 7 cm.

Base and Supports:

1. Large jars have rounded bases that are slightly thickened (0.5 cm.).
2. Small bowls also have rounded bases, but these are usually unthickened.
3. Deep bowls may rest on pedestal bases, but this association cannot be confirmed without further work.

DECORATION

Technique: A leathery red-brown slip applied on a previously polished surface. After application, the slip itself is polished, leaving horizontal streaks parallel to the rims.

Motif:

1. The slip is applied only to the exterior surface.
 - (a) In one group the slip covers the entire outer surface.
 - (b) In the second group the slip is applied in zones. There is *no* clearly demarcated line where the slipped area ends; instead, there is a shading off of the red zone.

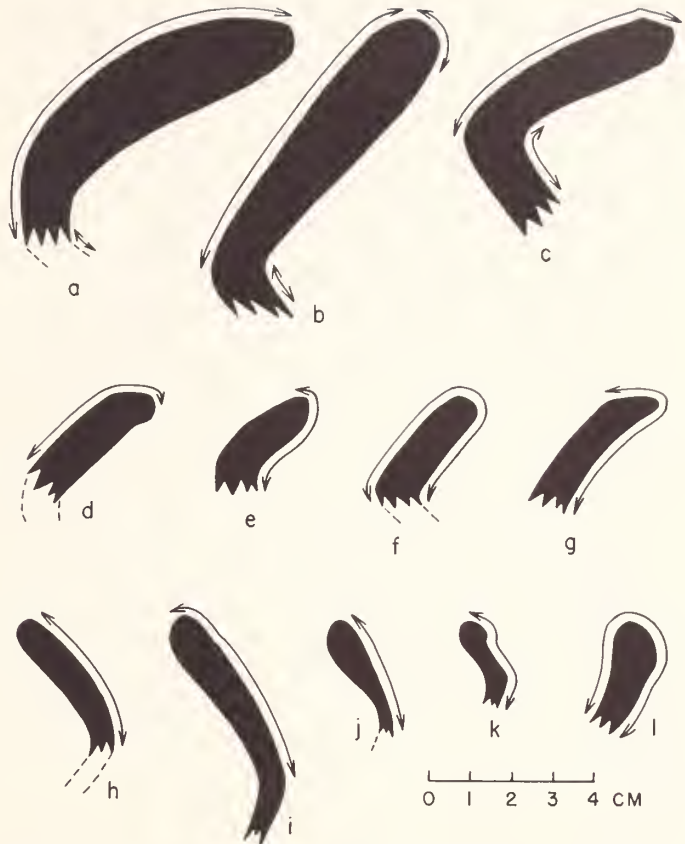


FIGURE 17.—Rim profiles of Caco Red Slipped, San Lorenzo, and Chiriquí Phases. All interiors are oriented to the left. Arrows indicate slipped surfaces.

2. The interiors of the thick rims and some of the exteriors are slipped.
3. The thin rims show wide variation in the slipping. A few are slipped only on the interior, most are slipped only on the exterior, and a few are slipped on both surfaces.

CHRONOLOGICAL POSITION: Caco Red Slipped occurs in all three phases of the Chiriquí Gulf, but it is most popular in the San Lorenzo Phase (the middle phase) at Sites IS-3 and SL-1. It occurs in very small percentages at Sites IS-7 and IS-11.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

This type has not, to my knowledge, been described in the literature. It is absent from the reports of Holmes (1888) and MacCurdy (1911).

Cangrejal Red Line

PASTE:

Method of manufacture: Coiling. Coil marks remain as faint undulations separated by depressions (coil junctions) on the interior surface of the bowls. The exterior has been polished, obliterating all coil marks.

Temper: Like Zapote Red Banded and Castrellón Red Slipped, a fairly "pure" clay mixed with little, if any, tempering materials. Natural inclusions are mostly

abundant rounded hematite nodules 0.5–3.0 mm. in diameter. Very few feldspar particles appear as white specks in cross section.

Texture: In most sherds the paste is so compacted that there are no air pockets visible in cross section. Where present, air pockets are very small and shallow. Breaks are clean and fairly straight. The fracture point is usually at the shoulder where the rim incurves markedly.

Color: A light buff to dark gray, depending on degree of oxidation. Some sherds show complete oxidation so that they are a light buff throughout the cross section. In others, incomplete oxidation has produced a dark gray core 1–5 mm. wide. Thin oxidized bands (2 mm.) extend along the surface on either side of the core.

SURFACE:

Color: Ranges from bright orange to light buff or cream. Extensive fire clouds cover the areas below the shoulder of the vessel, occasionally extending up into the decorated portions of the rim. Bowls were probably laid upright in the firing process.

Treatment: Polishing has produced surfaces varying from smooth to shiny. On some sherds the interior surface has been polished more than the exterior. Where vigorous polishing has occurred, shiny striations appear parallel to the rim.

Hardness: Hard, 4.

FORM:

Body wall thickness: Two distinct groups, one thick (8–10 mm.) and one thin (4–7 mm.). In the thin group, individual vessels fluctuate in thickness from 4 mm. below the shoulder line to 7–8 mm. at the shoulder and the rim. The wall of the thick variety is often, though not always, thinner at the shoulder.

Rim and Lip: All are direct rims belonging to deep bowls with incurving walls and constricted mouths. There is marked variation in the length of the rims, but only slight differences in lip treatment. Variations include:

1. Long (8.4 cm.) incurving, direct rims with unmodified rounded lips of the same general thickness as the body wall above the shoulder (fig. 18a). Rim diameter: 26 cm.
2. Long (6.4 cm.) incurving direct rims thickened gradually below the lip to 4 mm. thicker than the body wall just above or below the shoulder. Lip is slightly tapered (fig. 18d). Rim diameter is 24 cm.
3. Long (5.0 cm.) incurving rims with either thickened lips (fig. 18b) or lips that are markedly tapered (fig. 18c). Some rims of the same general length (4.7 cm.) are completely unmodified so at no point are they wider than the vessel wall. Rim diameters average 18–20 cm.
4. Short (3.0–4.0 cm.) and fairly thin (7 mm.) rims 1–2 mm. thicker than the wall below the shoulder line. Their angle of incurve may be sharp (fig. 18e) or gradual (fig. 18g). Lips are rounded. Rim diameters average 15–18 cm.

Base and Supports: Vessels have a concave base resting on strapped feet that are placed approximately 3

centimeters below the shoulder line (fig. 18h; pl. 9a).

See complete description under Strapped Feet Modes.

Reconstructed vessel shapes: All vessels of this type are variations of deep or shallow bowls with incurving side walls, constricted mouths, and tripod feet in shape of flat straps. The main groups are:

1. Large, very deep bowls, approximately 14–16 cm. deep from the lip to the interior, and a calculated diameter at the shoulder of at least 30 cm. Rims are direct, and the mouth diameter is around 26 cm. They rest on strapped feet.
2. Bowls that are slightly smaller than Form 1, with a depth of 10 cm., a shoulder diameter of 20–22 cm., direct rim, and mouth diameter around 18–20 cm. Supports consist of strapped feet.
3. Shallow bowls, only 5–6 cm. deep, with walls that are thinnest below the shoulder. They rest on strapped feet and have rim diameters that range from 15 to 18 cm.

DECORATION:

Technique: Thin, red lines of a bright rich red or leathery brown are painted on the polished, unslipped exterior section of the bowl between the lip and the shoulder. The lip is painted with a red band with uneven borders that extends for 4 mm. onto the bowl interior. Frequently, drips of paint show on the interior surface. The red paint was applied either thickly to cover the under surface or thinly so that the underlying surface shows through.

The individual thin lines that decorate the exterior vary in width between 1 and 4 mm, due to unequal pressure of the painting tool. They are wider near the lip band where the applicator was more steeped in paint, becoming narrower as the line was drawn out. Where two lines intersect, they frequently overshoot. The lines are fairly straight, but they are not evenly spaced.

Motif: The section between the lip and shoulder is marked off by a red band on the lip and a thin (2–3 mm.) band circling the vessel at the shoulder line. Sets of thin parallel lines drawn diagonally to the rim are arranged in a zigzag pattern around the vessel. The spaces between the thin lines are in the shape of triangles with apexes facing alternately up or down. Two predominant motifs are discernible:

1. Several lines, 4.5 cm. long and 1–4 mm. wide, are arranged in sets that join alternately at the rim or at the shoulder to define a trianguloid area. Within one vessel, the sets of lines may either meet or be as much as 2 cm. apart. The lines defining the triangles have pendant shorter lines, 6–9 mm. long, jutting into the empty triangular space (fig. 18g; pl. 9b, c). Within one vessel, these decorative short lines may jut at different angles from each other.
2. The number of parallel, diagonal lines varies between 6 and 10 in a set, and they may be anywhere from 5 to 9 centimeters long, depending on the size of the vessel. The space left between the sets of lines is filled entirely with paint, creating a

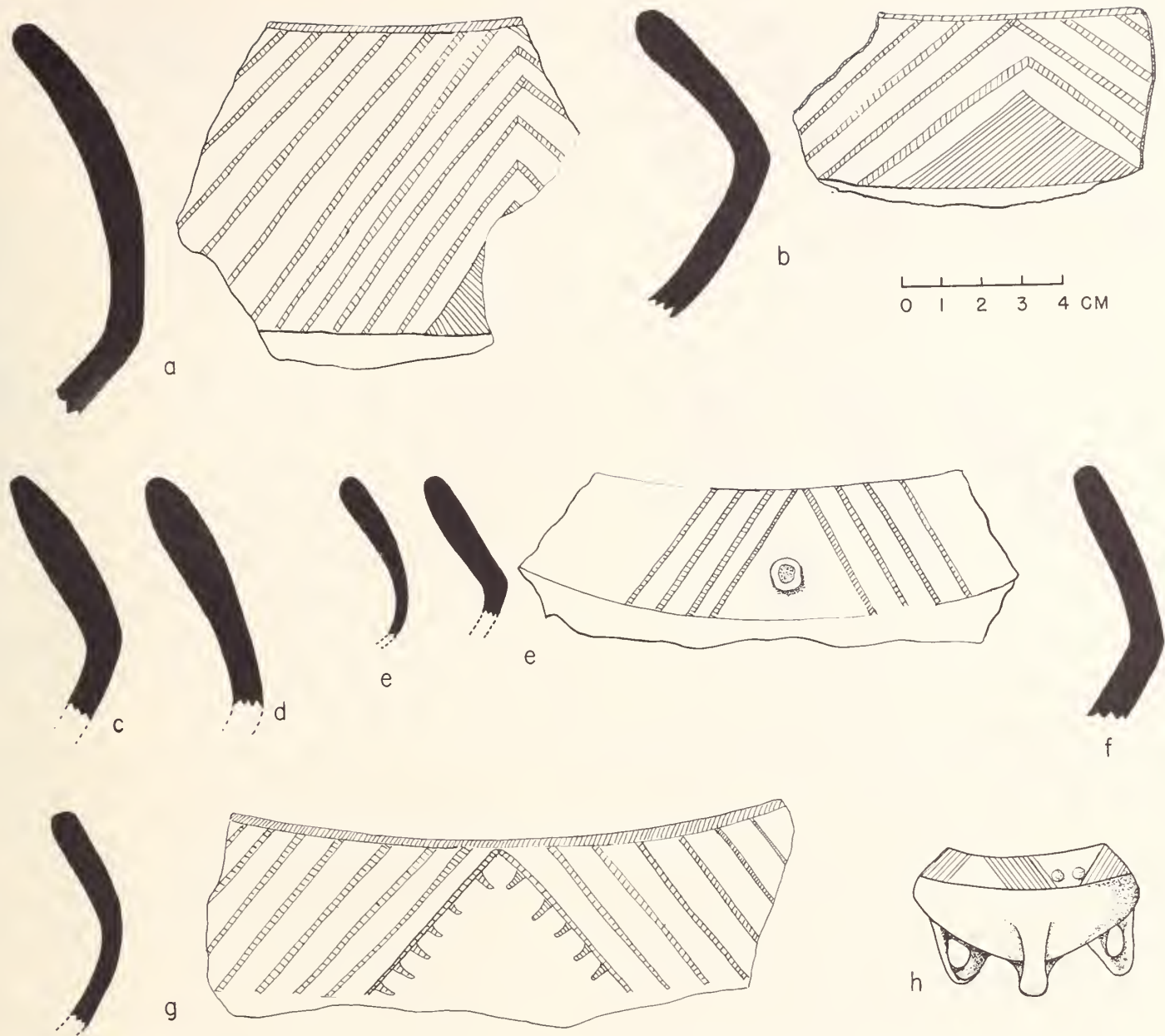


FIGURE 18.—Rim profiles and exteriors of Cangrejal Red Line, San Lorenzo Phase. Hachure indicates red-painted areas. All rim interiors are oriented to the left. *h*, Reconstructed vessel shape.

motif of solid red triangles, alternately facing down from the lip or up from the shoulder (fig. 18 *a*, *b*; pl. 9 *d*, *e*).

Additional decoration: A few of the shallower bowls have applied in the center of the triangular space between the sets of lines one or two small round nubbins 0.7–1.0 cm. in diameter (fig. 18 *e*, *h*; pl. 9*a*).

CHRONOLOGICAL POSITION: Cangrejal Red Line occurs in the San Lorenzo Phase and in the Chiriquí Phase at Site IS-3. It is very popular in the San Lorenzo Phase at Sites SL-1 and IS-3, but is largely absent from the other two sites.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

A bowl of this exact type, with decorative motif No. 2, has been described by MacCurdy (1911, p. 93). He includes it within his Red Line Ware and gives its provenience as El Banco. Unfortunately, there are several El Bancos in Chiriquí Province.

It seems curious that the Cangrejal Red Line type is absent from our excavation at Villalba (IS-7) where the other San Lorenzo Phase types are present. Haberland (1960a) found a whole vessel of this type in his excavations at Villalba.

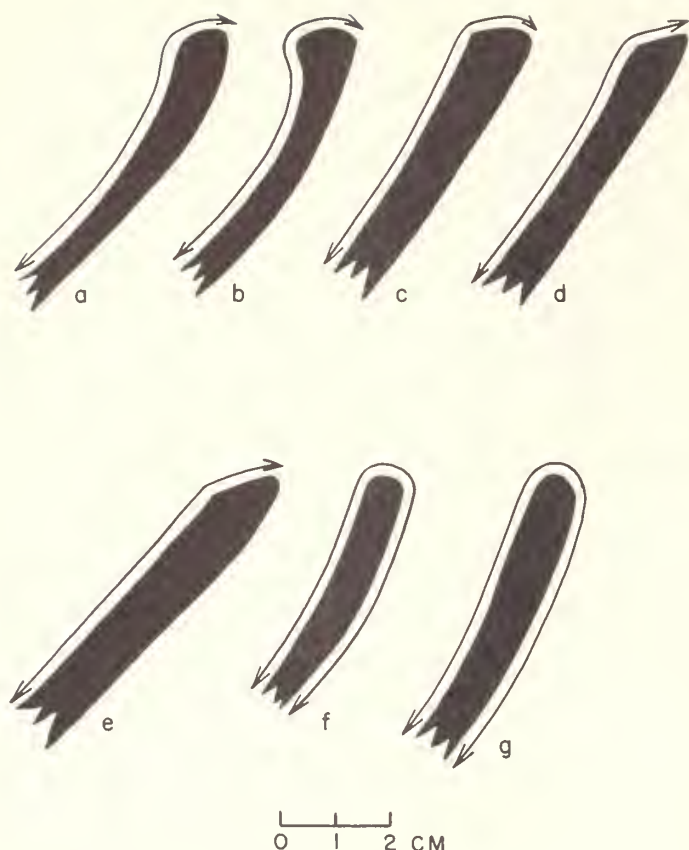


FIGURE 19.—Rim profiles and interiors of Castellón Red Slipped, San Lorenzo Phase. Hachure and arrows indicate red-slipped areas. All rim interiors are oriented to the left.

Castellón Red Slipped

PASTE:

Method of manufacture: Probably coiling; all traces of coils have been obliterated in the polishing process.

Temper: Little, if any, tempering material has been added to the clay. The most abundant particles are rounded hematite nodules varying in size from small (a pinpoint) to fairly large (3 mm.); occasional feldspar particles show in cross section as white specks. Both are natural inclusions in this type of clay.

Texture: Compacted because of the lack of temper particles added to the clay. Small air pockets are visible in cross section. Breaks along fairly straight lines; the broken edge is sometimes jagged in appearance.

Color: Typically fairly uniform red-buff with a wide (6 mm.) gray core, so light in color as to be almost imperceptible. Cores are located in either the center or along the interior of the cross section. In spite of these cores, the oxidation is fairly complete. A small minority is less completely oxidized, leaving a wide band (6–8 mm.) of light gray at either the center or the interior, contrasting with the thin (1–2 mm.) red-buff band along the oxidized edge (or edges).

SURFACE:

Color: The majority is bright orange; some are an attenuated buff, and few are lighter buff in color. Extensive fire clouds produce dark gray areas on the exterior and frequently extend over the lip to form an irregular band along the interior of the rim; occasionally, the fire clouds also extend down into the inside of the bowls.

Treatment: Both surfaces have been polished. Striation marks horizontal to the rim are clearly visible, especially on the unslipped exterior surface. Polishing has produced an even, smooth, compacted surface.

Hardness: Fairly hard (4).

FORM:

Body wall thickness: Fairly uniform; 7–10 mm.

Rim and Lip: All sherds of this type are open bowls varying slightly in rim and lip treatment. The main variations are:

1. Slightly incurved rims that become gradually thicker toward the top and have a fairly rounded lip or are interiorly thickened at the tip (fig. 19 a, b). Rim diameters are 20–24 cm. respectively.
2. Same as above, only the rims are completely unmodified and the lip is rounded (fig. 19 f, g). Rim diameters are 18 and 24 cm. respectively.
3. Straight, outflaring rims with lips that are flat at the top; in some the lip forms an angular shelf, 1.0–1.2 cm. wide, around the rim (fig. 19 c–e). Rim diameters are 24 and 28 cm.

Base and Support: No complete vessels were found; neither have they been reported in the literature. The association of the following support modes with Castellón Red Slipped is therefore tentative, based on a similar distribution and on shared attributes of paste and decoration. Detailed description of the modes is given under Ringstands and Pedestal Bases (pp. 50–53).

1. Ringstands that are plain or slipped on the exterior and slipped brightly in red in the interior (Ringstand, Modes b, c).
2. Low pedestal bases with an unslipped, incised exterior and a bright red slip in the interior (Pedestal Base, Mode a).

Reconstructed vessel forms: All are deep open bowls of two shapes, differing only slightly.

1. Concave side walls that are fairly thin (7 mm.) and insloping rims that are either left unmodified or have the lip thickened to twice that of the body wall. Rim diameters range from 18 to 25 cm. These bowls probably rest on ringstands or on pedestal bases.
2. Straight-sided flaring bowls with *outcurved* rims and flat lips. Walls of vessels are 0.7–1.0 cm. thick, increasing toward the rim. They may be associated with pedestal bases and ringstands.

DECORATION:

Technique: The majority has a bright rich red slip applied thickly on a previously polished surface; in rims of group 1, the slip is a dark red-brown color due to extensive fire clouding. In some specimens the slip has worn off (pl. 10 j–m).

After application, the slip has been polished with a pebble, leaving striation marks parallel to the rim. The polishing produces a hard surface.

Motif: Two groups depending on the area covered by the slip:

1. In more than 75 percent of the sherds the slip is applied to the vessel interior, covering the entire lip. Except on markedly bevelled lips (fig. 19 *c-e*), the slip extends over the lip, forming a narrow (1 mm.), irregular band on the exterior of the bowl.
2. A small number, all with rim shapes of the second group, are slipped on both surfaces (fig. 19 *f, g*). In these the slip is less heavily applied; it has a streaked appearance, with the unslipped surface showing through in spots.

CHRONOLOGICAL POSITION: Castrellón Red Slipped is restricted to the San Lorenzo Phase. It occurs in small percentages at Isla Palenque (IS-3) in the middle levels. At the Cangrejal site (SL-1) it occurs in the top five levels, with its maximum popularity in level 40-50 cm. It is absent from Site IS-7.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: No vessels of this type have been reported by either Holmes (1888) or MacCurdy (1911) because this pottery type precedes in time the wares that they describe in their reports.

Flaring bowls are common in the Coclé polychrome styles at Sitio Conte (Lothrop, 1942, Part II, p. 9) and may have inspired the Castrellón Red Slipped bowl form.

Centeno Red Banded

PASTE:

Method of manufacture: Coiling. Coil junctions have been obliterated from the exterior surface, but on the interior they are prominent as wide, folded depressions parallel to the rim.

Temper: An almost "pure" clay with a fair amount of very small rounded nodules of hematite inclusions, natural in this type of clay.

Texture: Compacted because of the lack of temper particles added to the clay. No air pockets are visible. Breaks cleanly.

Color: A completely oxidized cream color of the same even shade throughout. The surfaces are the same color as the cross section.

SURFACE:

Color: Even cream-color zones, broken by fire clouds, are visible in restricted areas.

Treatment: The exterior has been polished when the clay was wet so as to float fine clay particles, giving the surface the appearance of having been slipped.

No attempt has been made to polish the interiors or even to obliterate coil junctions.

Hardness: Fairly hard, 3.5-4.

FORM:

Body thickness: Variation from 0.7-1.0 cm. may occur on the same vessel.

Rim and Lip: Everted, with lips that are gradually thickened and flat at the top. In a single vessel the height of the rim may vary, depending on whether or not the cross section is taken at the point where the lip extends into the strap handle.

Base and Supports: A slightly thickened rounded base; no known supports of any kind.

Appendages: Strap Handle Mode c (pp. 55-56).

Reconstructed vessel forms: Effigy jars with a tall neck (3 cm.) and rounded thickened bases (fig. 20a). Rims are outflared and unmodified. One or two strap handles extend from the lip to meet the vessel wall above the shoulder and below the neck.

DECORATION:

Technique: Red-painted bands on the polished unslipped exterior surface. Bands are two widths: wide ones range from 0.7-1.0 cm. and narrow ones from 2-3 mm. Individual bands usually fluctuate in width to encompass the range of variation because of unequal pressure of the applicator. Some of the narrower lines show greater width at the beginning, where the applicator was more steeped in paint, becoming narrower as the band was drawn out. Thickness varies from complete coverage of the underlying surface to a thin coat of paler color as a result of incomplete coverage.

Broad bands were applied first, then narrow lines added, with intersections overlapping the broad ones and occasionally extending beyond them. Overshot intersections are typical of the narrow lines. Lines are generally straight, but not always evenly parallel.

Motif: Wide bands divide the decorated area, which is between the base of the neck and the shoulder, into rectilinear zones containing straight, narrow lines (fig. 20; *a-c*; pl. 7 *a-f*). Occasionally, wide bands meet to form a more extensive solid red area.

The typical arrangement is 3 parallel lines, 2-4 mm. apart, following the contour of the zone and leaving the center blank. The inner thin lines may have pendant ovoid blobs 5-9 mm. in length and 10-13 cm. apart, with spacing relatively consistent on a single sherd (fig. 20b; pl. 7c, f).

A red band also occupies the interior of the rim adjacent to the lip (fig. 20a). The strap handle is painted with red on the top and along the edges (fig. 20c).

Additional decoration: The neck may have applique designs of a circle with a small hole in the center and a strip divided by incisions (fig. 20a). Although other parts of the neck are missing, the details indicate that this was probably an effigy vessel.

CHRONOLOGICAL POSITION: Centeno Red Banded occurs in small percentages in the San Lorenzo Phase at Site IS-3. It also occurs sporadically in the same Phase at Sites SL-1 and IS-7. Traces of the type are found in the Chiriquí Phase at Site IS-11.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: No Centeno Red Banded has been described in the published literature, but it belongs in the general "Red Line Ware" category of Holmes (1888) and MacCurdy (1911).

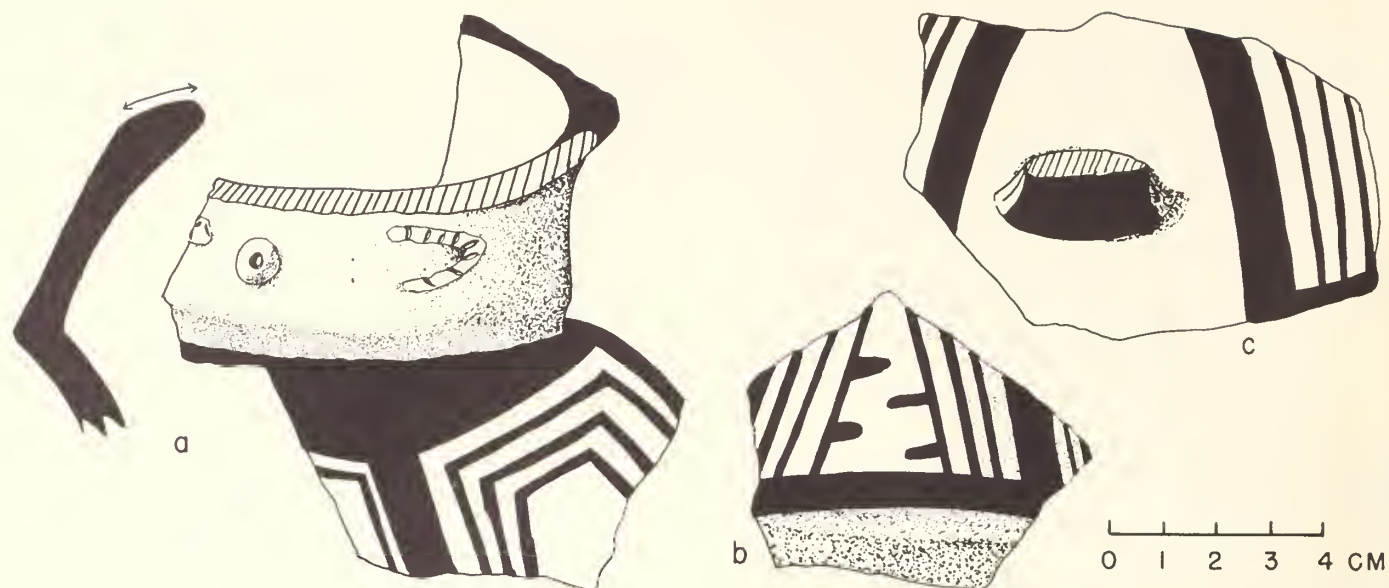


FIGURE 20.—Painted designs on the exterior surface and rim profiles of Centeno Red Banded, San Lorenzo Phase. Rim interiors are oriented to the left. Arrows on rims indicate red-slipped surface. Areas filled in black represent red-painted bands.

Horconcitos Red Banded

PASTE AND SURFACE: Like Linarte Zoned Red Line; see that type description for details.

FORM:

Body wall thickness: 8–10 mm.

Rim and Lip: Sharply everted, with a thick rim and a flat lip (fig. 21a; pl. 11e).

Base and Supports: Rounded, slightly thickened base.

Appendages: None.

Reconstructed vessel form: A large globular jar with a rounded, slightly thickened base, a constricted mouth, and a sharply everted rim with a wide (1.3 cm.) flat lip.

DECORATION:

Technique: Red bands 1 cm. in width are painted roughly parallel to each other (fig. 21b; pl. 11a, d). Individual bands fluctuate in width between 8 and 9 mm., depending on the amount of paint applied.

Motif: The bands are painted on the shoulder below the rim. The interior of the lip may be painted with a wide (1.5 cm.) band (fig. 21a).

Additional decoration: The most characteristic decoration in this type is shallow incisions, averaging 1 cm. in length and 2–3 mm., in width, made on the rim interior below the painted band (fig. 21a). Wide painted bands may also occur on the exterior (fig. 21b). The exterior of the rim may bear a red dab.

CHRONOLOGICAL POSITION: This type spans both the San Lorenzo and the Chiriquí Phases, but is most popular in the levels of Site IS-3 in the San Lorenzo Phase.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

A vessel of Horconcitos Red Banded has been included by MacCurdy in the Red Line Ware (1911, Plate XXV, fig. d). Its provenience is Divalá, roughly halfway between David and Puerto Armuelles.

Undoubtedly, this type belongs in the same Red Line Ware category of Holmes (1888) and MacCurdy (1911) as most of the other types in the San Lorenzo Phase.

Linarte Zoned Red Line

PASTE:

Method of manufacture: Coiling. Coil junctions have been largely obliterated from the exterior surface and usually from the interiors. In a few sherds, the interiors show traces of coil junctions in the form of faint depressions running parallel to the rims.

Temper: A fairly "pure" clay containing small, rounded nodules of hematite, natural in this type of clay. In

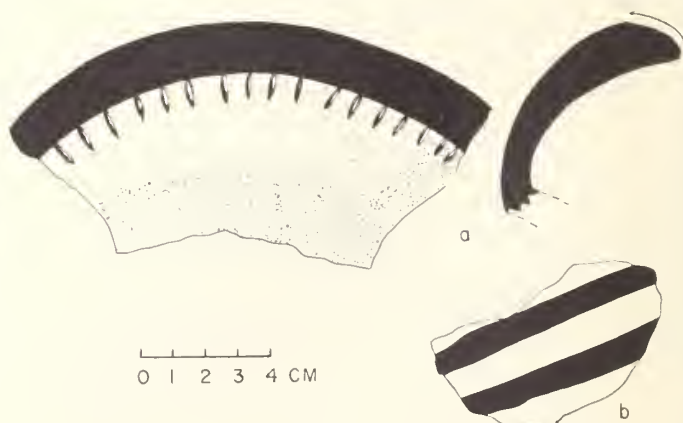


FIGURE 21.—Type sherds of Horconcitos Red Banded, San Lorenzo Phase. Rim interiors are oriented to the left. Arrow on rim indicates red-slipped surface. Areas filled with black represent red-painted bands. a, Interior and profile of same rim sherd. b, Exterior surface of body sherd.

addition, the clay contains a very small quantity of decomposed granitic sand.

Texture: Ranges from very compact in sherds with "pure" clay to slightly porous in those containing small amounts of decomposed granitic sand. No air pockets are visible in cross section. The breaks vary from clean and fairly straight to jagged edged.

Color: Orange-buff to very light gray. A few of the sherds have been completely oxidized. In most cases, incompletely oxidized firing has left a band of buff color varying in width from 1 to 4 mm. along the outer surface and a gray band along the interior of the cross section.

SURFACE:

Color: Exteriors are a rich yellow to orange except in areas grayed by fire clouds. In a single vessel the color is relatively uniform.

The interiors are either light buff or gray, that varies from very light to almost black.

Treatment: Exteriors are always polished, but the degree varies from very intensive polishing done with a pebble when the clay was wet, so as to float the fine particles and give the appearance of having been slipped, to a less intense polishing that creates a less shiny appearance.

The interiors were brushed, leaving faint striations running in varying directions.

Hardness: Fairly soft, 2.0–2.5.

FORM:

Body wall thickness: Ranges from 5 to 9 mm. on a single vessel.

Rim and Lip: Vessels of Linarte Zoned Red Line share the same general kinds of rims as the following three types: Arayo Polished Line, Centeno Red Banded, and Banco Red Line. These are everted rims with unmodified lips and diameters that vary depending on where the strap handles are attached. For a detailed discussion of these rims, see Arayo Polished Line.

Base and Supports: Rounded bases slightly thickened so as to add some measure of stability to the vessel.

Additional features: All vessels of this type have a "stepped" body wall (fig. 22*c, f-i*); that is, they have a shelf that extends 3–5 cm. below the neck, breaking the contour of the upper half of the vessel wall into two sections.

Appendages: The lip tapers at one side, or at opposite sides of the vessel, into strap handles that decrease in width as they join the vessel wall (Strap Handle Modes a1–a6). For a complete description of these, see p. 55.

Reconstructed vessel forms: Globular jars with rounded slightly thickened bases, a stepped vessel wall, and outflaring rims that extend into strap handles.

DECORATION:

Technique: Narrow (2 mm.) and wide (8 mm.) bands painted in red on a previously polished surface. Individual bands vary in width from 1.5 mm. to 3.0 mm. Like all the bands in related types, they are wider at the top where the applicator was more steeped in paint than at the bottom where the paint thins out. Parallel lines are not equidistant; some are as close as 2 mm., while others are 4 mm. apart.

Motif (fig. 22*a-i*; pl. 12*a-h*): A red band is painted around the lip. The upper half of the vessel is set off from the lower half by a band around the base of the neck and one or two wide bands that encircle the vessel at the shoulder line (as in Centeno Red Banded). The upper half is divided again into two horizontal sections by a band under the shelf or depression on the vessel wall.

Wide, vertical bands separate the patterns of four to six thin (2–3 mm.) parallel lines that have been arranged so as to meet at right angles or to crosscut each other. In contrast to some of the decoration on Arayo Polished Line or in Centeno Red Banded, the thin lines of this type seldom follow parallel banded areas. There are two main motifs:

1. Narrow lines, in sets of four or five, meet each other at right angles, alternating first near the neck band, then at the shoulder band (fig. 22*a-c*). The sets of narrow lines may also meet along a horizontal plane at the center of the vessel (fig. 22*e-g*); an additional feature in some is a small, curving "tail" (fig. 22*a*; pl. 12*d*). The thin outer line in a set often has a row of dots or pendant small blobs (fig. 22*a-b*; pl. 12*c, e*).
2. Sections of narrow lines intersect rather than just meet. Sets of only three parallel lines may crosscut (fig. 22*d*), or the number of narrow lines in a set may be five or more (fig. 22*i*; pl. 12*a*). Rather than being arranged into bands, several lines (often more than 10 in number) may intersect to fill triangular spaces (fig. 22*f*; pl. 12*h*).

Additional decoration: The strap handles that accompany this type have applique incised strips, punctations, and coffee-bean motifs. No applique decorations appear on the vessel wall itself.

CHRONOLOGICAL POSITION: Linarte Zoned Red Line occurs late in the San Lorenzo Phase and continues into the Chiriquí Phase. It reaches its maximum popularity in the upper levels of Pit No. 3 at IS-3; it also occurs in the upper levels of both SL-1 pits. Sites IS-7 and IS-11 have traces of this type.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: Neither Holmes (1888) nor MacCurdy (1911) include drawings of vessels that are exactly like the sherds of Linarte Zoned Red Line, but one of the vessels that MacCurdy (1911, Plate XXV, fig. a) has in his Red Line Ware is similar to figure 22*f*. Undoubtedly, the Linarte type belongs in the Red Line Ware of Holmes (1888) and MacCurdy (1911).

One sherd of this type has been recorded as a trade sherd in the Diquís area of Costa Rica (Lothrop, 1963, fig. 69*d*). Its painted motif is exactly like that appearing in our figure 22*e*.

Pan de Azúcar Red Line

PASTE: Like Linarte Zoned Red Line; see that type description for details.



FIGURE 22.—Body wall profiles and decoration on Linarte Zoned Red Line, San Lorenzo Phase. Dark areas indicate red thick and thin bands.

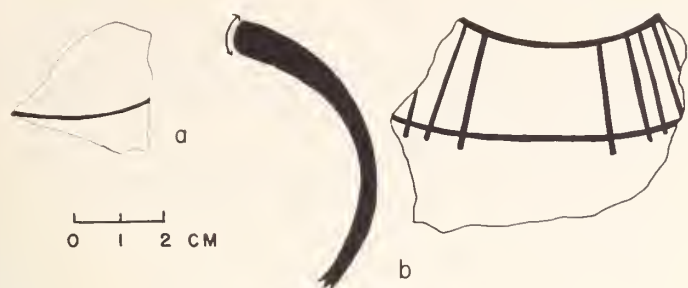


FIGURE 23.—Type sherds of Pan de Azúcar Red Line, San Lorenzo Phase. Rim interiors are oriented to left. Arrow on rim indicates red-slipped surface. Dark bands on exterior are red painted.

SURFACE:

Color: An even buff color; fire clouds rare or absent.

Treatment: A low polish that leaves faint horizontal striation marks.

Hardness: Between 2.5 and 3.

FORM:

Body wall thickness: Consistently thin walled, averaging 5 mm.

Rim and Lip: Incurved direct rims belonging to shallow, open bowls. The rim is slightly thicker near the mouth than lower on the body wall (fig. 23b).

Bases and Supports: Rounded unthickened bases. No supports.

Appendages: None.

Reconstructed vessel forms: Rounded bowls with curving or slightly angular shoulders, constricted mouth, and unmodified base and rim.

DECORATION:

Technique: Thin red lines that vary in width individually from 1–2 mm. decorate the exterior of the bowl between shoulder and rim. Overshot intersections are characteristic.

Motif: A thin line encircles the bowl at the shoulder and around the lip (fig. 23 a, b). Parallel lines that are not equidistant, but vary from a couple of millimeters to over two centimeters apart, are drawn between the lip and the shoulder band. They may cross over the band.

CHRONOLOGICAL POSITION: Pan de Azúcar Red Line spans the San Lorenzo and the Chiriquí Phases; its largest percentages are in the San Lorenzo Phase. It is not the predominant or even a popular type in the San Lorenzo or the Chiriquí Phases.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: This type belongs to the general “Red Line Ware” of Holmes (1888) and MacCurdy (1911), but in neither of their reports is there an exact duplicate of a vessel of this type.

Zapote Red Banded

PASTE:

Method of manufacture: Probably coiling, though all traces of coil junctions have been obliterated from both visible surfaces.

Temper: A homogeneous “pure” clay containing very little feldspar, but large amounts of small rounded hematite particles up to 0.5 mm. diameter, which occur naturally in this type of clay.

Texture: Compacted because of the lack of extraneous temper particles added to the clay. Small air pockets are occasionally visible in cross section. Sherds break along fairly straight lines.

Color: Incomplete oxidized firing has produced a light, gray unoxidized band varying in thickness from 1–8 mm. on 75 percent of sherds. Band may be on interior, exterior, or center of the cross section. In about one-fourth, complete oxidation has produced an even buff color throughout.

SURFACE:

Color: About half of the sherds are an even light buff or orange-red color on both surfaces. The other half are light to dark gray on both surfaces or, more commonly, only on the exterior. Dark fire clouds occur on most sherds around the bend of the lip, suggesting the vessels were placed upside down during firing.

Treatment: Both the interior and the exterior surfaces were polished with either a rounded pebble, that left wide striation marks, or a more pointed tool. The degree of polishing varies markedly depending on the tool used. The use of a pebble has compacted the surface producing an even, smooth texture in most of the sherds. In the others, incomplete polishing with a narrower tool (probably the point of a stone) left puck marks and air pockets between the smoother polishing striations.

Hardness: Fairly hard, 4.

FORM:

Body wall thickness: 0.6–1.1 cm.

Rim and Lip: All belong to outflaring plates or open bowls, differing slightly in contour and lip treatment. Major groupings:

1. Outflaring straight-sided direct rims with modified lips. Rim may be slightly thickened and end in a rounded lip (fig. 24h), or it may be pronouncedly thickened and have a flat lip with a small hook in the interior or exterior (fig. 24b,g). Thickening was probably done by raising the clay toward the tip with an upward pressure of the fingers, rather than by adding extra coils; no traces of coil marks or junctures are visible anywhere. Rim diameters range between 20 and 24 cm.
2. Rims belonging to open, shallow bowls. They are markedly thickened so that the rim is twice as thick as the body wall (fig. 24a). Rim diameters range between 28 and 30 cm.
3. Unmodified rims belonging to deep bowls. The lip may be either flat at the top with an angular bent in the interior and rounded on the exterior (fig. 24c, d) or simply rounded (fig. 24e, f). Rim diameters range between 18 and 23 cm.

Base and Supports: No whole vessels were found, but ringstands and pedestal bases of the same paste and decoration (bands and chevron designs in the interior)

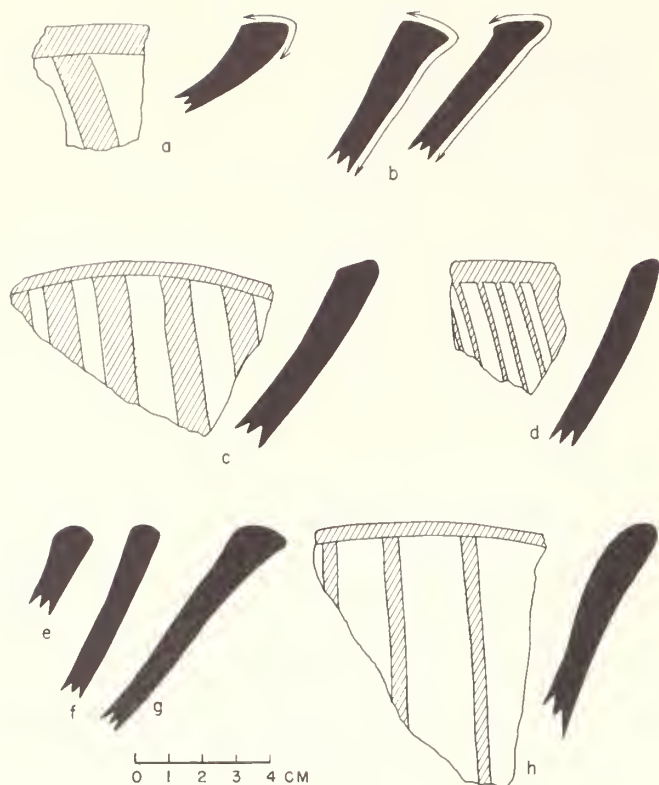


FIGURE 24.—Rim profiles and designs on the interior of Zapote Red Banded, San Lorenzo Phase. Hachure indicates red-painted bands. Arrows around rim profile indicate red slip. All rim interiors are oriented to the left. First drawing in group a is of an exterior.

as Zapote Red Banded occur in levels with rims and body sherds of this type. They may belong together.

See the illustrations and description of the following modes: (1) Ringstand, Mode b (p. 51) and (2) Pedestal Base, Mode i (p. 53).

Reconstructed vessel forms:

1. Deep, outflaring, straight-sided bowls resting on ringstands or low pedestals. Walls are of fairly even width (8 mm). Rims are thickened (1.2–1.4 cm.) and have flat tops. Rim diameters range from 21–24 cm.
2. Deep open bowls with concave walls terminating in rounded or flat lip. Bowls rest on pedestal bases or ringstands. Rim diameters are 18–23 cm.
3. Shallow open bowls with markedly thickened rims, twice as wide as the body wall, flat lips and ringstands, or pedestal bases.

DECORATION:

Technique: Red-painted bands on the unslipped but polished exposed interior surface. Bands are of two general widths: 8–10 mm. (fig. 24c; pl. 10a–c, e–h) and 2–3 mm. (fig. 24d; pl. 10d). Individual bands are of uniform width. The paint varies in density from complete coverage of the underlying surface to a thin coat that reveals, in spots, the underlying surface.

The edges of the bands are more transparent than in the center. Some bands are fairly even and well drawn, while in others the edges are jagged from careless application of the paint.

Exteriors are mostly unslipped. A few sherds are slipped with a bright red on the exterior surface and on the lip; the interiors of these are left undecorated (fig. 24b).

Motif: Evenly spaced, parallel bands, alone or combined with zones of solid color. Lips are always painted in red; paint occasionally continues over the lip and merges with a band 1 cm. wide painted around the exterior of the rim. Typical arrangements are:

1. Parallel bands, drawn at right angles to the lip (fig. 24a, c, d, h; pl. 10a, b, d, e, g, h). In complete specimens, the bands would meet at the center to form chevron designs. The bands may be wide (0.7–1.0 cm.) or narrow (2–3 mm.) as in figure 24d, plate 10d, and they may be closely spaced or far apart.
2. Red painted bands placed obliquely to the rim so that they meet before the center of the vessel to form concentric triangular designs (pl. 10c, f).
3. A less typical arrangement is for the interior of the bowl to be left undecorated and for the exterior to be covered with a rich red slip that extends over a wide, flat lip. The slip is polished with a pebble, forming a hard surface and leaving polishing striations parallel to the rim (fig. 24b).

CHRONOLOGICAL POSITION: Zapote Red Banded occurs in all three Chiriquí Gulf Phases, but is most popular in the San Lorenzo Phase at SL-1 site.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: An open bowl of this type, decorated in the interior with chevron designs and resting on a perforated pedestal base, appears in MacCurdy's report (1911, fig. 159). The provenience he assigns to this vessel is El Banco.

No other vessels of this kind have been portrayed in the Chiriquí literature. Flaring bowls are a very common form, however, in the pottery of Sitio Conte, especially in the Early Coclé Polychromes (Lothrop, 1942, Vol. VIII, p. 9). The rim profiles of the Coclé bowls are not unlike those of Zapote Red Banded; the Coclé bowls also rest on ringstands like the ones that occur associated with this type at IS-3. It is not farfetched, therefore, to suggest that our flaring bowls may have been inspired by forms from the Coclé area. The geometric chevron patterns may likewise be a simplified version of the curvilinear polychrome designs of Early and Late Coclé. Late and possibly Early trade sherds occur in the San Lorenzo Phase of the Chiriquí Gulf.

Unclassified Plain Wares

At Site IS-3 plain sherds belonging to the levels placed in the San Lorenzo Phase were sorted into groups that showed a distinctive trend in the percentage frequency charts for that site (fig. 4). Some of these groups shared specific attributes of paste and

surface treatment with certain decorated types and in some cases might be the badly eroded surfaces of a slipped type, where the slip has totally disappeared.

PLAIN WARE D.—Identical in paste composition to Caco Red Slipped (p. 26). The clay has miscellaneous particles of vegetable matter in it that appear to be the result of natural admixture rather than the conscious addition as a temper. Texture is gritty with large air pockets distributed throughout the paste. The exterior had been compacted by polishing with pebbles. Surface color and paste color is buff.

PLAIN WARE H.—Same paste as Centeno Red Banded (p. 31). Distinctively this clay is very pure,

with very small rounded particles of hematite throughout the well-compacted paste. Color of surfaces and cross section of sherds is a light cream.

PLAIN WARE I.—Identical in all features to Plain Ware D except in color and firing. Cross section of sherds is a dark gray.

PLAIN WARE J.—Strikingly different from all other plain ware types in several features. All sherds are thick, some over 3 centimeters, with a light-colored paste mixed with particles of angular, crushed quartz ranging up to 2 mm. in size. The temper is very abundant and appears on the surfaces so that the surface texture is gritty and coarse.

CHIRIQUÍ PHASE

Cavada Applique and Red Banded

PASTE AND SURFACE: Like Zapote Red Banded; see that type description for details.

FORM:

Body wall thickness: Ranges from 6–10 mm.

Rim and Lip: One of the features by which the type can be differentiated from Zapote Red Banded is in the treatment of rims and lips. Most of the rims of Zapote Red Banded are thickened in the interior and flattened at the top, and the exterior is left unmodified; with few exceptions, the rims of Cavada Applique and Red Banded are modified on the exterior. The lip is flattened on the outside so as to form a short (.8–1.5 cm.) perpendicular shelf (or a sort of neck) around the rim (fig. 25 *a-b, d, g, h*).

The rims may vary markedly in thickness, from 6 mm. to 12 mm. (fig. 25; comp. *a* and *g*); variation is considerable within a single vessel. The rim may be thicker than the body wall (fig. 25*a-c*) or the reverse (fig. 25*h*).

Bases and Supports: Like Zapote Red Banded, vessels may rest on ringstands and (or) pedestal bases, but this association has not been confirmed.

Reconstructed Vessel Forms:

1. Deep, outflaring, straight-sided (fig. 25*d*) or curved-sided (fig. 25*a*) bowls with lips that are flattened on the exterior and unmodified in the interior.
2. Shallower bowls of the same contour as the deeper bowls (fig. 25*b, c, f, h*).

DECORATION:

Technique: Two techniques are predominant: red paint and applique. They may be used separately or in conjunction with each other.

1. The painted designs are narrow bands, 4–6 mm. wide, put on rather sloppily with an applicator that was unevenly steeped in paint.
2. The applique designs consist of narrow rolls and pellets of clay that have been pressed into the vessel

on the flat outside of the lip to form zoomorphic designs.

Motif:

1. Crosshatch of red bands covers part of the vessel interior and extends over the lip to cover the flat band on the rim exterior (fig. 25*g, h*; pl. 11 *f-h*).
2. Most of the applique designs on the flat surface of the lip exterior are incomplete (fig. 25*a-d*; pl. 11*i*). What remains are small, curved bands with perpendicular incisions on them; they may have been arm motifs.

The two complete applique elements are zoomorphic. One is a representation of a crablike animal (fig. 25*e*; pl. 11*j*), rendered by clay pellets incised in the center to represent eyes, mouth, and claws. The other is a birdlike head that protrudes from 4–6 mm. from the curvature of the bowl (fig. 25*f*). Incisions on the side of the head represent the beak; the eyes are also rendered by incisions. Designs on the vessel wall may represent wings.

Additional decorations: Two of the rims decorated with applique designs also have red painted decorations. In one instance the paint is applied to the top and to the exterior of the lip (fig. 25*b*); in another instance the painted band is only on the top of the lip (fig. 25*a*).

CHRONOLOGICAL POSITION: Cavada Applique and Red Banded occurs in the most recent of the Gulf Phases, the Chiriquí Phase. It occurs in very small percentages in the top levels of Pit No. 3 at IS-3 and in the middle levels of Pit No. 2 at IS-7; it is slightly more popular in the bottom levels of Site IS-11.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: The bowls of this type are probably an outgrowth of Zapote Red Banded.

The Stirlings found a rim of a shallow bowl of this type (Stirling, 1964b, fig. 23, p. 274) in one of their sites in Bocas del Toro (site BOC-2). It is identical to figure 25*g*.

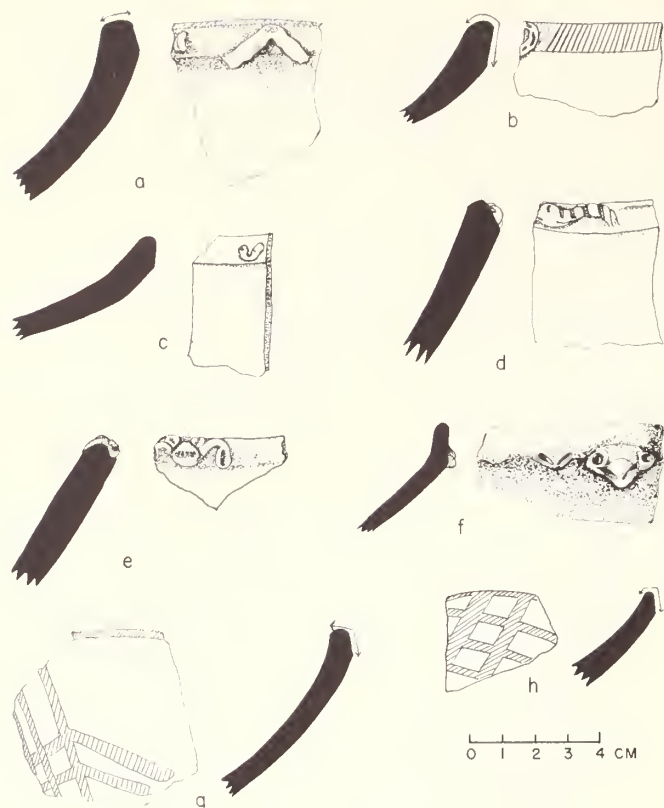


FIGURE 25.—Rim profiles and exteriors of Cavada Applique and Red Banded, Chiriquí Phase. Rim interiors are oriented to the left. Hachure indicates red paint.

Tarragó Bisquit Ware

PASTE:

Method of Manufacture: Probably coiling; no traces of coil junctions remain on either surface.

Temper: Two slightly different kinds of temper; one occurs in Villalba (Isla Muertos) and another at Isla Las Secas.

1. At Villalba (IS-7): Minute particles of pumice, also small pinpoint inclusions of a black and shiny, laminated mineral (probably magnetite).
2. At Las Secas (IS-11): The added fraction is coarser and consists of particles of angular crushed quartz and other crushed rocks of different kinds.

Texture: Porous and friable. Loosely packed with only a few air pockets. Breaks irregularly with jagged contours.

Color: A very homogeneous buff is characteristic of the variety occurring at IS-7. Reddish and grayer shades occur at IS-11. In any one vessel of either variety, color is uniform due to completely oxidized firing throughout the cross section.

SURFACE:

Color: Ranges from buff to reddish orange to pale gray. No fire clouds, except in rare instances, occur in the IS-11 variety.

Treatment: The exterior surface has been lightly smoothed by rubbing with some object, or with the hand, so that

tiny temper particles have been dragged across, leaving hardly noticeable striations. There is a sandpapery feel to the surface.

The interior surface has been left totally unsmoothed; temper particles, puck marks, and scattered imperfections make the interiors coarse and abrasive to the touch.

Hardness: Varies from very soft (2) to slightly harder (2.5).

FORM:

Body wall thickness: Characteristically very thin: 4–6 mm.

Rim and Lip: The variety of rims that occur in the Bisquit Wares is enormous (see “Armadillo Ware,” MacCurdy, 1911, pp. 48–71; “Terra Cotta Ware,” Holmes, 1888, pp. 67–80). Here I will describe only rim variants in Tarragó Bisquit Ware from IS-7 and at IS-11:

1. Outflaring, short rims from globular jars:
 - (a) Straight, short (2–3 cm.) rims, with exteriorly folded lips. Rim and neck may be thin (4 mm.) or thick (7 mm.); (fig. 26 *a, b*; pl. 13 *a, d, f*). Rim diameters range from 8–12 cm.
 - (b) Short (1.3–2.6 cm.) outcurved rims (fig. 26 *c–e*; pl. 13 *g*). Lip may be exteriorly thickened or left unmodified. Rim diameters range from 6–8 cm.
 - (c) Sharply everted and short (2–3 cm.), with markedly thickened ovoidal lips that have flat tops (fig. 26 *n, o*). Rim diameters 14–16 cm.
2. Outflaring rims from globular jars, slightly longer (3.5–5.0 cm.) than group 1.
 - (a) Rims may be gradually outflared with markedly or moderately tapered lips (fig. 26 *p–q*; pl. 13 *e*). Rim diameters 12 and 14 cm.
 - (b) Sharply outflared with thickened lips that are flat at the top (fig. 26 *s*) or unmodified lips (fig. 26 *t*). Rim diameters are 12 and 14 cm. A variant is a slightly less sharply outcurved rim (fig. 26 *u*) with a diameter of 22 cm.
 - (c) Long (5.5 cm.), gradually outflared, with an exteriorly thickened lip and rim diameter of 30 cm. (fig. 26 *v*).
3. Outslanted rims belonging to fairly deep bowls with unmodified lips; rims are long (4.0–5.5 cm.). The lip may be thicker than the vessel wall (fig. 26 *l*) or it may be of uniform width throughout (fig. 26 *m*; pl. 13 *b*).
4. Direct rims belonging to bowls:
 - (a) Rims from deep bowls with incurving sides. Lip may be unmodified (fig. 26 *f*) or interiorly thickened with a flat top (fig. 26 *g*). Rim diameters are 16–18 cm. respectively.
 - (b) Rims from shallow bowls with outcurved sides. Lip may be unmodified (fig. 26 *k*) or interiorly thickened (fig. 26 *i, j*). Rim diameters are 14, 18, 15 cm. respectively.
 - (c) A type that is popular at Site IS-11, but absent from IS-7, is an inslanted or notched rim (fig. 26 *h*; pl. 13 *b*) with a diameter of 16 cm.

Base and Supports:

1. Globular jars and deep bowls have rounded to fairly pointed bases of the same thinness as the vessel walls. Flat bases are very rare.

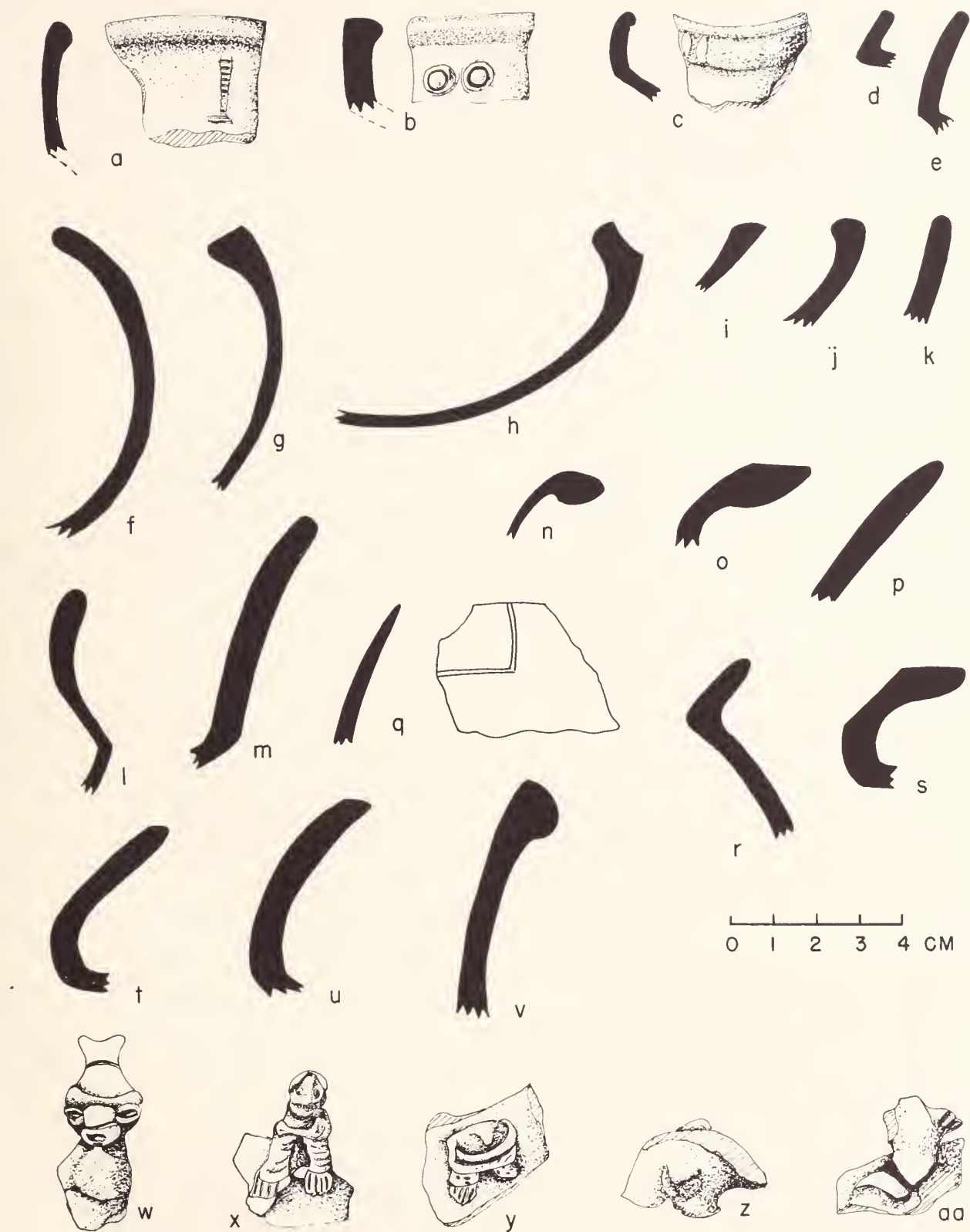


FIGURE 26.—Rim profiles, side views, and adornos of Tarragó Bisquit Ware, Chiriquí Phase. Rim interiors are oriented to the left.

2. Two kinds of supports have been found in our Tarragó Bisquit Ware:

- (a) Hollow mammiform tripods with pellets in the interior (Mode fl); turn to the section on tripod feet for a complete description, and see page 67 for the distribution.
- (b) Short pedestal bases (Pedestal Base, Modes f, m); for a complete description turn to the section on pedestal bases, and for the distribution see page 67.

Appendages: Vessels of the Bisquit Ware rarely have handles (see Holmes, 1888, or MacCurdy, 1911). None were found in the Tarragó variant of the Bisquit Ware.

Reconstructed vessel shapes: The vessel shapes of the "Armadillo-Terra-Cotta-Bisquit Ware" (of which our Tarragó Bisquit Ware is part) are enormously varied. They have been described by Holmes (1888) and MacCurdy (1911).

All of the following shapes occur: deep or shallow, open or constricted hemispherical bowls with incurving or outcurving sides; fairly deep, angular bowls with flaring sides; globular jars with constricted mouths and either short necks or no necks, and flaring rims; some of these may have two orifices.

Obviously, we did not find the full range of form variation in our small excavations. The following shapes are represented in our Tarragó Bisquit Ware:

1. Globular jars with short, straight, or everted rims that have unmodified or exteriorly thickened lips. Rounded bases.
2. Globular jars with flaring, relatively long rims and rounded bases.
3. Deep bowls with insloping walls and either unmodified or thickened rims. Bowls of this type may end in rounded bases or may rest on short pedestals.
4. Shallow bowls with outsloping walls and either plain or unmodified lips. They may have rounded bottoms or may rest on either tripod feet or pedestal bases.

DECORATION:

Technique: Generally unslipped, though there are a few sherds with a light salmon-color polished slip that looks almost indistinguishable from the paste color. They are definitely in the minority. MacCurdy put them into a "Salmon-colored Sub-group," part of the Armadillo group (MacCurdy, 1911, pp. 71-72).

All decoration is plastic, consisting of small modeled and applique zoomorphic and anthropomorphic adornos, applique fillets and nodes, incisions, and punctations.

Motif: The following adornos were found in our excavations:

1. Anthropomorphic figurine of the upper half of a creature with a tall headdress and some object in the mouth (fig. 26w; pl. 13i). The face was built up by application of pellets that were pushed in to form the ears, the nose, the eyes, and the mouth. A shallow incision divides the eyes and the mouth

in half. The torso of the figurine is too eroded to reconstruct.

2. Tiny figure of a human sitting down against a flat back, with arms crossed at the knees (fig. 26x). The body was built up by thin rolls of clay that were later incised to portray toes, arms, and legs. Two very small (2 mm.) coffee-bean eyes and a protruding nose complete the face. Like all the adornos of this type, this figurine is stylized and crudely rendered. Its body parts and its position are nevertheless perfectly identifiable.
3. Tiny figurine of a man squatting down, with arms crossed on the knees (fig. 26y; pl. 13h). There are small punctations and incisions on the arms and on the legs.
4. Zoomorphic head, perhaps of an armadillo (fig. 26z) and a tiny design of a frog seen from the back (fig. 26aa).

CHRONOLOGICAL POSITION: Tarragó Bisquit Ware occurs in the Chiriquí Phase, the most recent phase in the Gulf. It is present in small percentages in the top levels of Site IS-3. The largest percentages are at Sites IS-7 and IS-11.

COMPARATIVE MATERIAL: In museum collections of Chiriquí pots the world over, there are thousands of vessels of this type; their only rival in popularity is the Villalba Red Streaked type (called in the literature The Fish-Tripod-Handled Ware).

Tarragó Bisquit Ware was for the first time described in detail by Holmes (1888, pp. 67-80), who called it "The Terra-Cotta Group." MacCurdy (1911, pp. 48-72) renamed the type "Armadillo Group" because he found the recurrent motif to be the whole or parts of the armadillo animal. He also subdivided the group into the "Armadillo" proper and the "Salmon Coloured Groups" (op. cit., pp. 71-72).

Osgood (1935) combined their names into "Armadillo Terra Cotta Ware." According to Haberland (1958, p. 343):

He [Osgood] also demonstrated that there is no reason to divide this ware into two sub-groups like MacCurdy's, since the difference in colour shade is due to variable firing temperatures.

Neither Osgood nor Haberland are correct in affirming that there are no more than firing differences in the type. Some sherds are definitely slipped in a salmon color, but this distinction appears to have little temporal or spatial importance.

Our Tarragó Bisquit Ware is, beyond doubt, the same as the "Armadillo-Terra-Cotta Bisquit Ware" of Holmes (1888), MacCurdy (1911), Osgood (1935), and Haberland (1958). By retaining the term "Bisquit Ware" and adding the name Tarragó, I hope to convey the fact that it belongs to the same group as the one described in the literature.

Osgood (1935, p. 240) summarizes the mainland distribution of the Armadillo-Terra-Cotta Bisquit Ware as Bugavita, Divalá, and a place 30 miles west-northwest of the city of David.

The Tarragó Bisquit Ware bears undeniable affinities to ceramics that occur in the Diquís area of southern Costa Rica. Photographs of whole vessels from the General Valley, Potrero Grande, Cañas Gordas, and the Osa Peninsula (Stone, 1958, fig. 6, *d-g* and fig. 7*a*) are identical to the whole vessels of the Arnadillo-Terra-Cotta Bisquit Ware described in Holmes (1888) and MacCurdy (1911).

Villalba Red Streaked

PASTE:

Method of manufacture: Coiling. Traces of coil junctions are clearly visible on the interior as marked depressions or ridges.

Temper: Coarse, sand-sized fractions added to the clay compose about 10 percent of the paste. Pinpoint particles of angular quartz and feldspar, the most abundant minerals, show up in cross section as white specks clearly visible to the naked eye. They are distributed homogeneously throughout the paste. Minor amounts of magnetite and hornblende are also represented.

Texture: Friable, crumbly, and loosely packed, with fairly large (2–4 mm.) air pockets frequently visible in cross section. Breaks irregularly with jagged contours.

Color: Ranges from orange-red to gray-buff or dark gray, sometimes almost black, depending on the degree of oxidation. Firing is variable. Some cross sections show a gray core up to 75 percent in width of the sherd body wall, with the exterior and interior outlined by a light-colored band, 1–2 mm. wide.

SURFACE:

Color: Two distinct groups:

1. Charcoal gray to almost black due to large fire clouds that nearly cover the entire vessel.
2. Buff to light gray with small or no fire clouds.

Treatment: Unpolished. The exterior of the vessel and the interior of the rim have been rubbed so that the surface is fairly smooth; the vessel interior has been left almost untouched. Surfaces are abrasive and have scattered imperfections.

Both the interior and the exterior surfaces undulate irregularly, suggesting that coil junctions were incompletely worked into the clay by applying uneven pressure with the hand. Traces of coil junctions remain as crude folds on the exterior of the rim and under the shoulder.

Hardness: Soft, 2.5–3.

FORM:

Body wall thickness: Two groupings: thin (5–7 mm.) or thick (9–13 mm.). An individual vessel may encompass the range of variation.

Rim and Lip: All rims are sharply everted and their lips thickened exteriorly by the crude application of coils. Rims vary in length, lip treatment, thickness, and diameters. There are at least two groupings:

1. Large, everted rims (5.7–7.0 cm. tall) curving out-

ward directly from the vessel shoulder (fig. 27 *a, b*). Opposite ends of the rim are frequently carried upward and extended into large strap handles; if the rim has broken off the vessel at the point where the straps commence, one side may be as much as 2.5–3.0 cm. taller than the other (fig. 27 *a, c*).

In the majority of the cases, the lip has been thickened exteriorly by the addition of a coil. Another coil may have been added below the lip. Coil junctions were often left untouched so that they show on the outside as folds varying in width between 0.7 and 2.5 cm. (fig. 27 *b, e, f*; pl. 13*l*). In other sherds there was some attempt to obliterate the coils. (fig. 27*d*).

A few of the tall rims have unmodified lips (fig. 27*a*), but these are definitely in the minority.

Mouth diameters vary from 22 to nearly 28 cm.

2. Shorter rims (1.3–3.5 cm.) everted at a sharper angle than group 1 rims and thicker in comparison. There are several variations:

- (a) Sharply everted, flat at the top, with an angular, tapered, unmodified lip (fig. 27*g*). Rim diameters average 17 cm.
- (b) Gradually everted with a tapered unmodified lip (fig. 27*s, t*). Rim diameters 16 and 18 cm.
- (c) Very thick and short with either unmodified (fig. 27*i, k*) or thickened lip (fig. 27*h, j, l, m*). Rim diameters 14 and 16 cm.
- (d) Short and thinner rims with modified lips and diameters averaging 14–15 cm. (fig. 27*n-p, x, y*).
- (e) Slightly longer shafts (average 3.0 cm.) and modified lips (fig. 27*q, r, u-w*). Rim diameters range from 16 to 20 cm.

Base and Supports: Two clear-cut groups:

1. Concave, rounded bases devoid of any supports. A certain stability to the vessels is afforded by a thickening of the base.
2. Vessels with tall, hollow tripod feet in the shape of fish (Mode e, variations e1–e4). See description under Tripod Feet.

Appendages:

1. Round Handle, Mode b; for a complete description, see p. 56.
2. Strap Handle, Mode b; for a complete description, see p. 55.

Reconstructed vessel forms: Two general groups:

1. Globular jars, wider than they are tall, with rounded, thickened bases, and sharply everted rims that may be tall (5.7–7.0 cm.) or short (1.3–3.5 cm.). A few have no handles. The majority have strap handles that connect the lip with the shoulder or round handles vertically placed between lip and vessel shoulder; some round handles are placed horizontally between two points on the shoulder.
2. Tall tripods (20–30 cm.) with small bodies and tall hollow legs in the form of fish. Short, sharply everted rims.

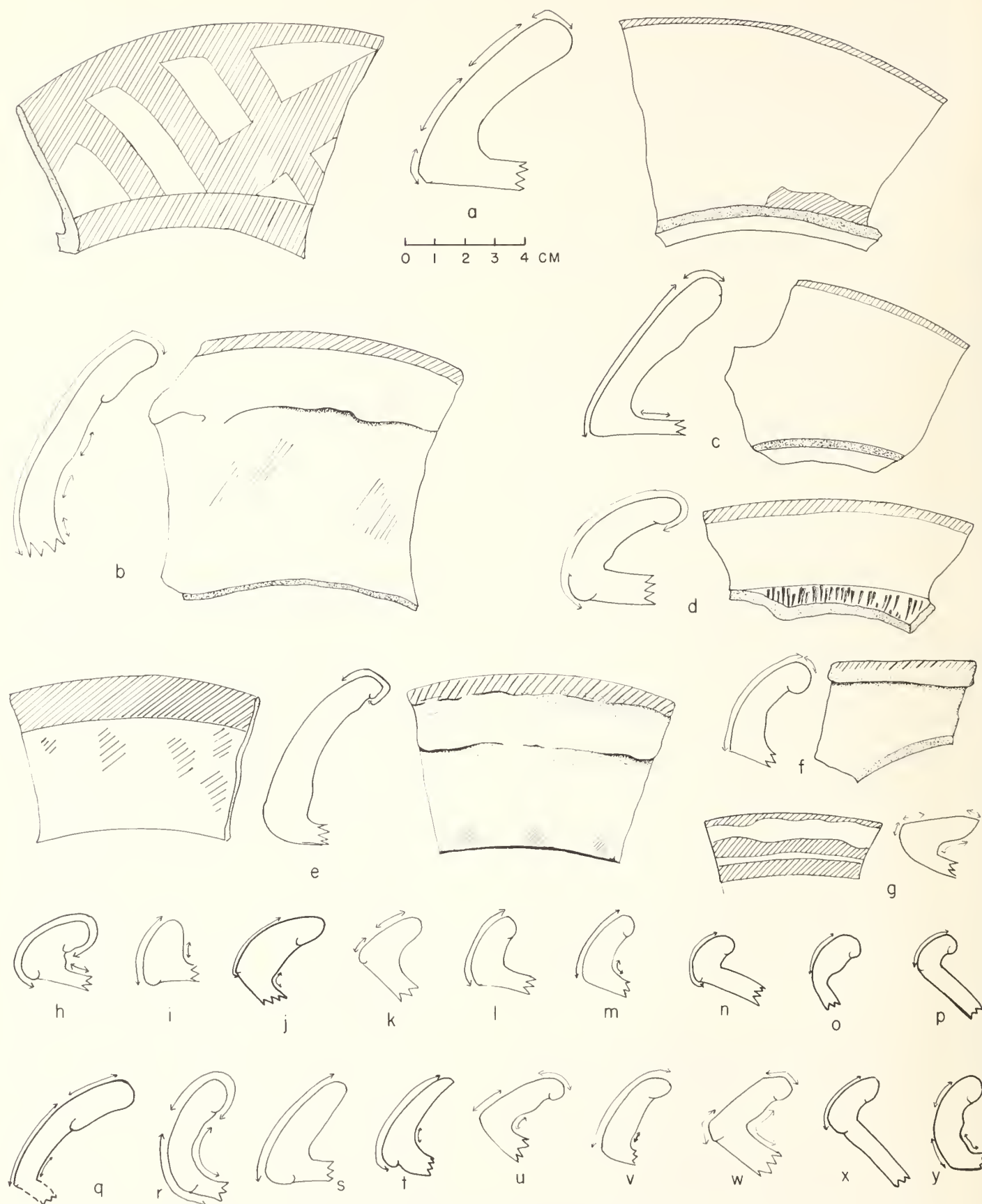


FIGURE 27.—Rim profiles, exterior and interior views, Villalba Red Streaked, Chiriquí Phase. Hachure indicates red bands. Rim interiors are oriented to the left.

DECORATION:

Technique: A bright orange-red paint was sparingly applied with a wide brush to the exterior of the vessel, rarely covering the whole surface. In some the paint rubbed down with the hand before it dried, to produce a streaked appearance. Painted bands are carelessly executed; individual ones vary in width between 1.1 and 2.0 cm., and their edges are irregular.

The rim exterior is rarely streaked in red; interiors of rims are painted completely or in part. The paint extends beyond the angular curvature of the shoulder.

Motif:

1. Either red bands or streaks are painted on the exterior of the vessel walls. Variations include:
 - (a) Wide, carelessly drawn bands varying in width between 1.2 and 2.0 cm., applied singly or in pairs, encircling the vessel at its maximum diameter; large loops or triangles, facing up or down, are drawn from the horizontal bands to the neck of the vessel.
 - (b) A series of short streaks or smudges.
2. The interior of the rims is always decorated, either covered entirely with red, or with a wide (1.5 cm.) band of red that extends over the lip (fig. 27*e*). This band may be placed around the bottom of the rim; it may be extended for fractions of a centimeter below the vessel shoulder. Some rims have slightly more complicated arrangements of intercrossing bands (fig. 27*a*, interior; pl. 13*m*) or parallel bands (fig. 27*g*).

CHRONOLOGICAL POSITION: Villalba Red Streaked is one of the two most popular types diagnostic of the Chiriquí Phase, the last or most recent of the phases in the Gulf. It occurs in largest percentages at Site IS-7; it appears, though in smaller quantities, from bottom to top of the stratigraphic column at Site IS-11. At Site IS-3, it occurs in the two top levels; it is absent from SL-1.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: Villalba Red Streaked was first described by Holmes (1888, pp. 91-109), who divided the type into two groups: the "Handled Group" and the "Tripod Group."

MacCurdy (1911, pp. 76-92) kept Holmes' distinction between the two groups and renamed them respectively "Painted" and "Unpainted Handled Ware" and the "Fish Tripods." Keeping the two groups separate, he admitted to be merely a matter of descriptive convenience (op. cit. p. 77):

It is true that many vessels of similar material, form and finish are mounted as tripods; but these are placed for convenience with the tripod or fish group.

Osgood (1935, p. 237) recognized the affinities between these two groups and combined them into one type which he called "Fish-Tripod-Handled Ware." Haberland (1958, pp. 342-343) reaffirmed the fact "that the groups, formerly used by MacCurdy, are only aspects of the same pottery type." Sherds of our Villalba Red Streaked type are indistinguishable from the "Fish-Tripod-Handled Ware" that occurs in mainland graves. I have changed

the name because most of the specimens are not fish tripods, and some have no handles. The distribution of this ware on the mainland has been summarized by Osgood (1935, p. 240) as being Bugavita, Divalá, and a point 30 miles west-northeast of the city of David. It occurs in other areas as well.

Unclassified Pottery Types

Three of the following types have not been given new type names because they either represent local imitations of foreign wares or are trade items. The other two, "Alligator Ware" and "Black and Red Negative," are well-known "Classic Chiriquí" pottery types. Since they appear in our sequence in such small numbers, they may have been brought in as trades from adjacent mainland coast and highlands of Chiriquí where they are so abundant. Stratigraphic work in these other areas is necessary before renaming or redefining these types. They are being cursorily described for the purpose of comparisons.

Alligator Ware

Only one sherd of this type occurs in Level 60-70 cm. of Pit No. 1 in Site IS-11 (fig. 28; pl. 14*k*). Paste and surface treatment are like Cavada Applique and Red Banded, which also belong in the Chiriquí Phase.

DECORATION: The decoration is its most salient characteristic. The background color is a white or cream-colored slip on which designs are painted in red and black. The lip and the designs on the exterior under the lip are painted with a black band. Below the design is another band circling the vessel; it is painted in red.

The motif consists of black bands that are about 4 mm. wide, arranged in triangles with pendant round dots in the center.



FIGURE 28.—Sherd of Alligator Ware, Chiriquí Phase (especially diagnostic of "Classical Chiriquí Culture"). Red areas indicated by horizontal lines, white by perpendicular broken lines, and black areas are filled with black.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

The alligator group is one of the four most abundant of the Classical Chiriquí Wares. It has been described in detail by Holmes (1888) and MacCurdy (1911). Osgood (1935) worked out the distribution as being Bugavita, Divalá, and an area 30 miles west-northwest of the city of David.

The affiliations of this ware are to the east with the Diquís area of Costa Rica. Lothrop (1963, p. 78) has named the Costa Rican variant the Polychrome Group (Black-and-Red-Line), rather than Alligator Ware as in Chiriquí, because he sees slight divergences in design, size, and shape. His report (op. cit., pp. 78-87) should be consulted for a detailed comparison of the Alligator Ware of Chiriquí and the Polychrome Group (Black-and-Red-Line) of the Diquís Delta.

Black-on-Red Negative

This is another of the popular "Classical Chiriquí" pottery types. In the Gulf its popularity is very small; it occurs only in the top levels of Site IS-11. In paste and surface treatment, it is exactly like Villalba Red Streaked; see that type description for details.

DECORATION: The technique of Negative Painting is well known in the New World. MacCurdy (1911, pp. 104-106) describes it in detail in reference to the Chiriquí Lost Color Group.

The motif of the few sherds found in the Gulf Site IS-11 is simple and geometrical. It consists of black horizontal and vertical dipped bands on a red-orange slipped surface. The bands alternate with larger zones of black (fig. 29; pl. 14/).

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL: What we call Black-on-Red Negative is the old Lost Color Group of Holmes (1888) and MacCurdy (1911). They describe complete vessels of this ware in their respective reports.

Osgood (1935) kept this ware as one of the basic four pottery types of the "Classical Chiriquí culture." He worked out its distribution as being the same as the other three basic Chiriquí Wares: Bugavita, Divalá, and an area 30 miles west-northwest of the city of David.

Haberland (1958, pp. 340-341) argues that the Lost Color Ware is a catchall category which includes four different types: Negative Ware, Black-on-Cream Negative, Black on Red Negative, and Red on Red Negative. The significance of all of these divisions is not clear; they seem unnecessary unless they convey geographical or chronological information.

In the Diquís region there is a ware which is very similar, if not identical, to the Negative Painted Type of Chiriquí. Of the Costa Rican ware, Stone (1958, p. 47) remarks:

Globular ware with negative painting is common throughout the region (Diquís), particularly in the uplands. Here it is found with a red slip and black dip as in the delta, and with a cream slip and black dip.

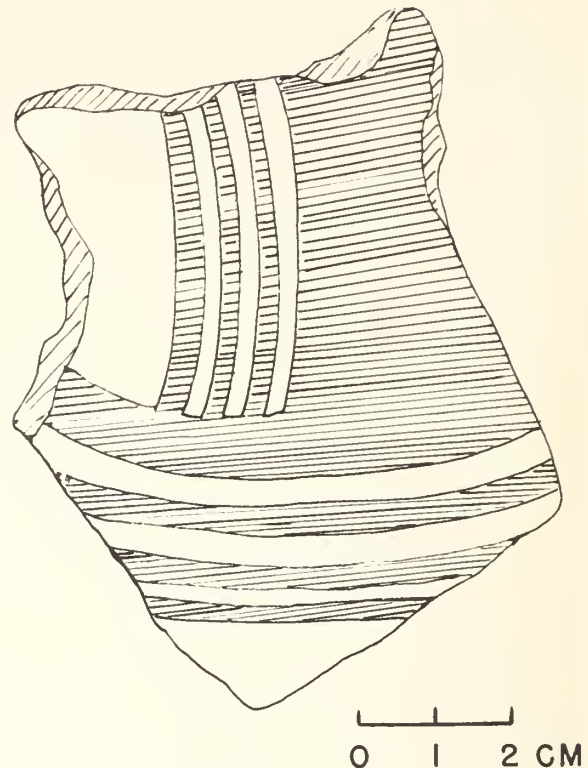


FIGURE 29.—Sherd of Black-on-Red Negative, Chiriquí Phase (especially diagnostic of "Classical Chiriquí Culture"). Hachure indicates red area; black areas are left blank.

Chocolate Incised

PASTE:

Method of manufacture: Probably coiling, though no traces of coil junctions remain on either surface.

Temper: Pinpoint particles of angular quartz distributed homogeneously.

Texture: Fairly smooth; breaks cleanly, but not along coil junctions.

Color: An even light buff caused by complete or almost complete oxidation.

SURFACE:

Color: Light gray to beige.

Treatment: Polished to produce an even surface.

Hardness: 2.5 to 3.

FORM:

Body wall thickness: Characteristically thin, averaging between 4 and 6 mm.

Rim and Lip: Short rims belonging to open bowls. Rims are fairly straight, curving inward only when they join the vessel shoulder. The lip is slightly enlarged so that it forms a small ledge around the mouth of the vessel.

Base and Supports: Tripod feet in the shape of feline heads (see description of Tripod Feet Mode II).

Major vessel forms: A shallow open bowl with very thin walls resting on hollow tripod feet containing pellets.

DECORATION: A very thick, reddish chocolate slip is applied on both surfaces of the bowl to cover the entire area. Then the outside of the rim above the vessel shoulder is decorated with fine shallow incisions drawn when the surface was very hard prior to firing. They are arranged in a motif of concentric triangles around the entire exterior of the vessel. The front part of the tripod foot is also decorated with shallow incisions (see description of Mode II, p. 50).

CHRONOLOGICAL POSITION: This type occurs in sizable percentages in the top half of Pit No. 1 at Site IS-11 (fig. 10). The whole of this pit belongs in the Chiriquí Phase.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

The first complete description of vessels belonging to this type appears in MacCurdy (1911, pp. 95 and 96). He describes a small group of eight specimens, all tripods, which he named collectively "The Chocolate Incised Group." Two of the three vessels that are illustrated in his report come from the area of Divalá, directly west of the city of David, between this city and Puerto Armuelles in the Burica Peninsula.

Osgood (1935) disposed of this ware as being trade from Costa Rica where a type of pottery very similar to it occurs in large numbers. The Costa Rican ware takes its name from its Chiriquí counterpart; it is named "Chocolate Ware." Lothrop (1926, vol. II, p. 227) says the following about the Costa Rican ware:

Vessels of this class are found most abundantly in the Nicoya peninsula, whence they passed freely in trade to the Lake of Nicaragua, the Highlands of Costa Rica, and even to the distant Province of Chiriquí in Panamá.

In a recent article, Haberland (1958) argues the reverse from Osgood and insists that the Chocolate Incised Ware is a local product of Chiriquí. I agree with him, but feel that its inspiration is the widespread Chocolate Ware of Costa Rica.

Red on White

PASTE AND SURFACE: Similar in all respects to Villalba Red Streaked; see that type description for details.

FORM:

Body wall thickness: Ranges from 6–10 mm.

Rim and Lip: Unknown.

Base and Supports: Unknown.

Major vessel forms: The fragment of a shoulder indicates that the shape may have been that of a carafe, but this is not certain without a more complete specimen.

DECORATION:

Technique: A white slip is put on the vessel first, and then a bright orange-red paint is applied in either wide bands or rectangular zones. The decorated surface is then polished.

Motif: Orange zones in either wide (1.2 cm.) bands or rectangular zones at least 2.5 cm. wide and 4.0 cm. long.

These zones are placed on the upper part of the shoulder.

The exact placement of the band motif is unknown.

CHRONOLOGICAL POSITION: This type occurs in Site IS-7 in substantial percentages in almost all of the levels of Pit No. 2 and in the middle three levels of Pit No. 1.

GEOGRAPHICAL DISTRIBUTION AND COMPARATIVE MATERIAL:

I have been unable to find the same exact pottery type in any of the Panamanian regions or in Costa Rica. It probably is a local imitation, in a very simplified version, of painted carafe forms that occur in the Coclé-Azuero region.

Red Slipped Bisquit Ware

This type resembles, in all attributes, the Tarragó Bisquit Ware. The only difference is that it is slipped on the exterior with a heavy red slip that peels off easily.

It occurs only in the upper levels of Pit No. 1 in Site IS-11. All of the occupation of this site has been placed in the last of the Gulf Phases, the Chiriquí Phase. Red Slipped Bisquit Ware represents a localized variant of the Tarragó Bisquit Ware.

Unclassified Plain Wares

The plain sherds from Pit No. 1 at Site IS-11, whose occupation lies entirely within the Chiriquí Phase, were separated into rough groupings called wares, differentiated from each other on the basis of temper and set apart from the decorated types by their plainness. It is possible that some of these are nothing more than eroded decorated types.

PLAIN WARE A.—Identical in paste composition to Linarte Red Line (p. 32). The distribution in the sequence is also similar.

PLAIN WARE B.—Probably a variant of Villalba Red Streaked (p. 41) because in all features of paste it is identical. It is possible that the red slip had merely eroded off some of the sherds.

PLAIN WARE E.—Buff-colored paste, compacted but with air holes resulting from small particles of vegetal matter in the clay; buff-colored surface; occasionally darker areas from fire clouds. Sand particles too fine to call intentional temper. There is no resemblance to the decorated types.

PLAIN WARE G.—Similar in all paste and color features to Plain Ware E and F with only difference in the amount of quartz sand temper particles. Temper abundant, causing a friable texture and a puckered irregular surface. There is no resemblance to the decorated types.

BEIGE PLAIN.—In all paste features this ware is like Tarragó Bisquit Ware. Unlike its counterpart, however, the surface has been compacted by the use of a pebble polisher. Nevertheless, it may be simply a variant of Tarragó Bisquit Ware.

POLISHED BLACK PLAIN.—Paste is hard, homogeneous clay with practically no visible temper particles. Sherds are consistently 5 to 10 mm. in thickness with both the surface and cross section color a dark gray to black.

APPENDAGE MODES

Vessel supports (tripod feet, ringstands, and pedestal bases) and handles from all pottery types are described following an outline that permits becoming progressively more specific. For example, the category "tripod feet" is broken into different modes which, in turn, are further subdivided into modal variations that take into account minute differences between individual specimens. The modes under each category are given letters, and the variations of each mode are designated as numbers attached to the letters. A system of dual numbering has the advantage of allowing the incorporation of new modes in future studies. The number of supports and handles per level is given in Appendix 1, table 5.

The concept of modes used in this approach is defined as a small cluster of attributes. Together these attributes may be called a technique (applying clay stripes), a decorative effect (effigy legs), or an element of shape (outslanded feet). Since these categories of analysis crosscut the three phases, the modes and their variations have been described independently of the pottery types. The distribution of appendage modes in relation to the phase divisions (p. 67), however, breaks down as follows:

1. Modes mainly in the Burica Phase: Tripod Foot a1.
2. Modes mainly in the San Lorenzo Phase: Tripod Feet a2-a6, b1-b3, c1-c2; Pedestal Bases b, e, f, g, h, k, l; Strapped Feet a, c; Ringstand c; Ladle Handle a; Strap Handle b, c; and Double Handle b.
3. Modes that begin in levels placed at the very end of the San Lorenzo Phase, but whose main distribution is in the levels placed within the Chiriquí Phase: Tripod Feet e1-e4; Pedestal Base m; Round Handle a; and Double Handle a.
4. Modes that occur equally in the San Lorenzo and Chiriquí Phases: Tripod Foot g; Pedestal Base a; Ringstands b, d; Strapped Handle a; and Horizontal Handle a.
5. Modes in the Chiriquí Phase only: Tripod Feet f, h; Pedestal Bases c, d, i, j; Strapped Foot b; Strap Handle d; Round Handle b; and Double Handle c.
6. Modes occurring in all three phases: Ringstand a.

FIGURE 30.—Tripod feet modes from all three Chiriquí Gulf Phases: Burica, San Lorenzo, and Chiriquí. Horizontal lines indicate areas painted red. Distribution by phase is shown in figure 43 and occurrence by pit level in table 5. a, Mode a1 (front and side views). b, Mode a2 (front and side views). c, Mode a3 (front and side views). d, Mode a4. e, Mode a5. f, Mode a6 (front and side views). g, Mode b1 (front and side views). h, Mode b2 (front and side views). i, Mode b3 (front and side views). j, Mode c1. k, Mode c2. l, Mode c1 (side and front views). m, Mode c2. n, Mode f1. o, Mode f2 (side and front views). p, Mode f3 (side and front views). q, Mode c4 (front and side views). r, Mode g. s, Mode h (side and front views). t, Mode c3 (front and side views). u, Mode i1. v, Mode i2 (front and side views).

Supports

Tripod Feet

Mode a

FIGURE 30a-f; PLATE 15b, c

Variations a1 to a6: Mode a with all of its variations consists of effigy tripod feet decorated to represent zoomorphic or anthropomorphic figures.

1. Modal variation a1 shows a modeled anthropomorphic figure added to the top of a tall (about 24 cm.) tripod foot. The legs of the figure are rendered as applique bands 1 cm. in width, ending in unincised round pellets 1.5 cm. in diameter. The thighs are depicted with oval pellets measuring 1.5 by 2.5 cm. The torso itself is a solid tube 2 cm. in diameter; the top has been broken off (fig. 30a). Only one specimen of this tripod foot has been found; its provenience is Pit No. 3, level 150-160 cm., Isla Palenque. This level corresponds to the Burica Phase.

Mode a1 shares with the pottery type Isla Palenque Maroon Slipped the same unmistakable attributes of paste, surface treatment, and red slip.

Comparisons with other areas show interesting parallels. The Veraguas Tall Tripods have modeled figurines added to the top (Lothrop, 1950, figs. 40 and 41). These are figurines of animals, however, and only their heads, not their bodies, are shown. They are not very similar to our Mode a1.

The exact duplicate of our Mode a1 appears in a vessel which Stone places somewhere in the Atlantic Watershed and the Highland region of Costa Rica (Stone, 1958, fig. No. 11, g).

A tripod similar to our Mode a1 has been illustrated recently by Stirling in his report on Almirante Bay, Bocos del Toro (Stirling, 1964b, Plate 30b). The Almirante Tripod has red horizontal lines painted on the exterior, which are missing from our specimen; otherwise they are alike.

2. Modal variations a2-a6 consist of lumps of clay and small strips and pellets applied to the exterior surface of solid, long, tripod legs in order to convey the idea of body parts.

There was some latitude in the way that this decorative technique was put into effect. The idea of a



face could be simply rendered by the application of slit pellets to form coffee-bean eyes, a strip to form a nose, and slits to render the mouth (fig. 30f). On the other hand, the face could be built up first by shaping a lump of clay on the top of the tripod foot into a circular or semilunar form that stood out from the leg wall. To this protuberance were added the face features (fig. 30b, c, e; pl. 15b, c).

The manner of rendering arms and legs is strict: long strips for the arms and legs; incised, flattened pellets for toes and fingers.

There was freedom in the position in which the extremities could be portrayed. The legs could be rendered curled upward (fig. 30b) or downward (fig. 30c). The hands could face downward (fig. 30d), or one arm could be extended with its hand face back, while the other hand was forward (fig. 30f).

These anthropomorphic effigy legs occur at IS-3 in the bottom levels. In Pit No. 3 of SL-1, they occur in the top two levels and in Level 50-60 cm.; in Pit No. 1 of the same site, there is one of these effigy legs in the bottom level. They are absent from the other sites. In terms of phases, these modes, except a1, occur at the beginning of the San Lorenzo Phase.

An exact duplicate of Mode a2 appears in a complete vessel described by MacCurdy (1911, fig. 155). This was reportedly found at Caldera, situated between the cities of David and Boquete, in the Province of Chiriquí. MacCurdy (op. cit. p. 92) notes that this vessel resembles the pieces found by Hartman in Orosí, Costa Rica.

Turning to Hartman's report (1901, Plate 65), we can verify some resemblance of Modes a2-a6 to vessels from the Orosí region of Costa Rica. This resemblance is based not only on the use of body-part motifs, but also on the shape of the legs (long and pointed), on their being solid rather than hollow, and on being decorated with red paint.

Mode b

FIGURE 30g-i; PLATE 15d-e

Variations b1-b3: Mode b consists of a feature of shape: strong outcurving of the tripod feet so that they flare out, probably protruding beyond the vessel walls. This outcurve appears on very short feet (fig. 30i; pl. 15e) or in longer feet (fig. 30g, h; pl. 15d). The foot may be nearly circular (fig. 30h; pl. 15d) or it may be flat on the exterior and tapered toward the back (fig. 30g).

Mode b, variations b1-b3, is restricted in time to the San Lorenzo Phase, and in place to Isla Palenque.

Strongly outcurved solid tripods are not found in the "Classical Chiriquí" pottery types reported by Holmes (1888) and MacCurdy (1911). The only

specimen I know of was found in the mainland site of Las Tinajas, south of the town of Divalá, on the coast halfway between the city of David and the town of Puerto Armuelles. This specimen is in the Smithsonian Institution (USNM Archeology Cat. No. 108272); it is exactly like Mode b3. The tripod feet recently found in Tinajas, associated with the Burica Phase urns (de la Guardia, 1966), are very similar to Mode b3 in representing closely spaced female legs and thighs. The Tinajas tripods are, however, tall and straight and decorated with pellets; these features are not present in Mode b3.

One tripod foot that is very similar to Mode b3, in spite of not being outcurved, also has been reported from the Diquís Delta (Lothrop, 1963, fig. 22, f). It belongs in the Early Monochrome Pottery horizon.

Mode c

FIGURE 30j-k; PLATE 15a

Variations c1 and c2: Mode c consists of incisions used as a technique for portraying either body parts (as in the eyes and mouth) or items of clothing, such as headdresses (fig. 30j). The incision may be long and so shallow as to be almost imperceptible (Mode c1) or short (1.0 cms. on the average) and deep (Mode c2).

The use of incisions is widespread in the pottery of many areas, including that of Veraguas and Chiriquí, but I have been unable to find exact duplicates of Modes c1 and c2 in any published literature. It should be observed, however, that the use of perpendicular incisions on a horizontally applied band around the top part of the tripod foot and coffee-bean eyes appears also in the e3 and e4 variants of the Fish Tripod Feet. It is conceivable that the c1 and c2 Modes, which belong in the San Lorenzo Phases, are somehow the precedent of the e Modes, which belong to the later Chiriquí Phase.

Mode e

FIGURE 30l, m, q, t; PLATE 15f

Variations e1-e4: A technique of applying incised fillets and incised flattened clay pellets on specific spots on the tripod legs to convey a very schematic impression of the body parts of an animal (fish or armadillo). Pellets pinched laterally and then incised represent the fins of the fish (fig. 30m); a flattened incised area at the tip creates the effect of a fish's tail (fig. 30l); incised pellets at the top of the tripod create a mouth or two eyes (fig. 30t; pl. 15f). Horizontal, shallow incisions combined with punctated bands and perpendicular incised bands create the effect, according to MacCurdy (1911), of an armadillo (fig. 30q).

These kinds of decorations occur on tripod feet that

do not necessarily share the same general shape. For example, Mode e1 is on a tripod leg that is sharply curved inwardly, while Mode e3 is on a perfectly straight tripod foot. Modes e1-e3 are on tall (11-15 cm.) hollow tripods; Mode e4 is on a short (6 cm.) solid tripod. Tripod Modes e2 and e3 can be assigned with certainty to the pottery type Villalba Red Streaked because they share added features of paste and surface treatment. The hundreds of complete tripod vessels described in the literature confirm this association (Holmes, 1888; MacCurdy, 1911).

Mode e is, like the type Villalba Red Streaked, restricted to the Chiriquí Phase. It occurs in the top levels at IS-3 and IS-7 and in most of the levels of IS-11.

Variant e1 is aberrant in one respect. Neither the paste nor the surface treatment links it with the type Villalba Red Streaked, to which the other modes in this group belong. The link is with Tarragó Bisquit Ware; they share all features of paste, surface, and decoration.

Exactly the reverse happens with Mode e4. The paste and surface treatment links it with Villalba Red Streaked, but in all of the illustrations and in the whole vessels that I have inspected, this exact mode occurs associated with the pottery type Tarragó Bisquit Ware (MacCurdy, 1911, plate IX).

The tall tripods of Veraguas (Lothrop, 1950) have legs that are decorated with techniques bearing little resemblance to Modes e1-e4. The relationships are, rather, to the east.

In Costa Rica our modes occur in even greater proliferation than in Chiriquí. A variant of the Tripod Ware has been appropriately designated the "Chiriquí Group (Fish Ware)" by Lothrop (1926, Vol. II, p. 338 and Plate CLXXV). On this ware, Modes e1-e4 occur abundantly as incision on lateral flaps to create fin motifs, incised bands at the top to render the mouth of a fish, coffee-bean eyes, and so forth.

Mode f

FIGURE 30n-p; PLATE 16b, c

Variations f1, f2, f3: This mode consists of an element of shape often called "mammiiform": a bulbous tripod foot with a width at the top of approximately two-thirds of the height of the leg and a tapered point. This shape occurs in otherwise dissimilar tripod feet. Mode f1 is plain and hollow, having formerly contained clay pellets in the inside; the paste and surface treatment of this tripod is that of Tarragó Bisquit Ware. Mode f2 is solid inside, with occasional red splotches of paint. In paste and surface treatment it resembles pottery types that are popular in the

San Lorenzo Phase. Mode f3 is solid, but with added incisions at the end to create the effect of toes. There is only one instance of Mode f3 in Level 40-50 cm. of Site IS-11. To my knowledge it is not common in Veraguas or in Coclé.

In Chiriquí mammiiform supports are one of the most common forms accompanying the tripods of the Armadillo-Terra-Cotta-Bisquit Ware, which is our Tarragó Bisquit Ware (MacCurdy, 1911, Plate VI).

Mammiiform feet are not typical of vessels of Veraguas or of Coclé. The immediate ties are again with Costa Rica, where they occur in a large number of pottery types like the Black Line Ware (Lothrop, 1926, Plate CLX) or Chocolate Ware Bowls (op. cit. Plate CII), etc. The exact mammiiform feet that occur in our Tarragó Bisquit Ware (Mode f1) are found in the Diquís region on vessels that correspond, on the basis of added features of paste and surface treatment, to our Mode f1 (Stone, 1958, fig. No. 6 d, e). Our Mode f2 is more similar to modes occurring in the other Costa Rican areas.

Modal variations f1-f3 are restricted in time to the Chiriquí Phase, the most recent of the Gulf Phases.

Mode g

FIGURE 30r

Long and hollow tripods with thin walls and probably pellets in the interior. Only one variant has been illustrated, but Mode g also includes slightly different shapes, less wide at the top and completely undecorated.

The description of this mode is impaired by the fact that no complete tripods of this kind remain. It is difficult to trace its geographical relationships.

Mode g occurs in the Chiriquí Phase.

Mode h

FIGURE 30s; PLATE 16a

A short (6 cm.) and thin (2.5 cm.) incurved tripod foot with a deep incision down the center.

In shape, size, paste surface treatment, and in red overall slip covering the interior and the exterior, Mode h is identical to Mode variant e4. In time and place they are also contemporaneous, being restricted to the Chiriquí Phase and to IS-11.

The idea of dividing the foot into two vertical halves is also inherent in all of the tripods where Mode e occurs, except in the above-mentioned e1 variant. There is, however, a difference. The Fish Tripods (or e Modes) are hollow inside, and the slit is actually a wide cut into the interior of the leg where the

pellets are lodged. In contrast, the h Modes are solid, and the slit is only a deep incision on the exterior.

The exact duplicate of Mode h is found in the Diquís Delta in the Red Ware which belongs to the Early Polychrome Horizon (Lothrop, 1963, fig. 43 e).

Mode i

FIGURE 30*u, v*; PLATE 16*d*

Variations i1 and i2: A feature of shape consisting of tripod feet in the form of animal heads (felines). They measure 5.0 cm. in length by 3.4 cm. at the widest point. The feet are hollow and contain pellets inside. A wide slit on each side marks the mouth, while the eyes are rendered as smooth bumps on the sides of the head.

The two variants of Mode i (i1 and i2) are exactly alike in shape, but differ in other attributes. Mode i1 is slipped red-brown and bears horizontal lines drawn when the surface was very hard prior to firing. Mode i1 is slipped in white and bears on the front two wide (6–8 mm.) bands painted black.

Neither variant of Mode i is indigenous to Panama. None of the Chiriquí tripods or the tripods of Veraguas and Coclé have legs in the shape of feline heads.

Mode i is definitely of Costa Rican inspiration, if not of origin, appearing in two pottery types that are indigenous to that area. The exact relationships follow.

The variant i1 is part of a shallow bowl slipped in a dark reddish-chocolate color, bearing incisions around the exterior of the rim and on the front of the tripod feet (fig. 30*u*; pl. 16*d*). Bowls of this kind belong to the Chocolate Incised pottery type, which occurs with substantial frequencies (up to 5 percent) in the top five levels of IS-11, an occupation that corresponds to the Chiriquí Phase. The Chocolate Incised type has been directly imported from Costa Rica or is a local product of Costa Rican inspiration. Mode i1 is duplicated in an illustration for the Chocolate Ware that occurs in the Diquís Delta (Lothrop, 1963, fig. 20, d).

Mode i2 is also indigenous to Costa Rica where it appears in pottery type Red and Black in the Diquís region. A vessel bearing the exact same tripod foot as i2 has been found in the General Valley of Costa Rica in a grave side by side with an iron knife and an iron ax (Stone, 1958, p. 48; fig. 7*b*). According to Stone (1958), this same type of pottery occurs in the upland parts of the Diquís region as well as on the coast and on the Osa Peninsula of Costa Rica.

This find in Costa Rica of a vessel bearing the same tripod feet as our Mode i2, together with artifacts of European origin, lends a tentative terminal date to our sequence. Our Mode i2 was found in the middle level (40–50 cms.) of Pit No. 1 at Site IS-11. This

level, together with all the occupation at Site IS-11, has been placed in the Chiriquí Phase, the most recent of the Gulf Phases. By implication, the Chiriquí Phase must have a terminal date at the Conquest or shortly following it.

Ringstands

Mode a

FIGURE 31*a, b*; PLATE 6*a*, BASE

A very short ringstand (height 2.0 cm.) with a diameter of 8.7 cm. Wall thickness is 7 mm. Other associated features are a slightly bevelled underside and a rich red slip in the interior.

The time span of Ringstand Mode a is as follows: it is the only kind of ringstand or support that occurs in the three bottom levels of Pit No. 3 at Site IS-3 (excepting the bottom level, 150–160 cm., which has only 11 sherds in it). In these three levels there are seven ringstands of Mode a, an impressive number considering that these are the levels with the smallest total sherd sample. These levels correspond to the oldest phase in the Gulf, the Burica Phase.

The occurrence of this mode in other levels of this pit (one in Level 60–70 cm. and two in Level 10–20 cm.) is somewhat puzzling. It may be considered mixture, revivalism, or simply persistence. I would argue for mixture. At any rate, the greatest popularity of Mode a is undoubtedly in the lower levels at IS-3.

Mode a also occurs at Site IS-7. In Pit No. 2 (Pit No. 1 is not discussed) this ringstand has a scattered distribution; four single modes occur in widely separated levels throughout the pit. As in Site IS-3, traces of pottery type Isla Palenque Maroon Slipped appear

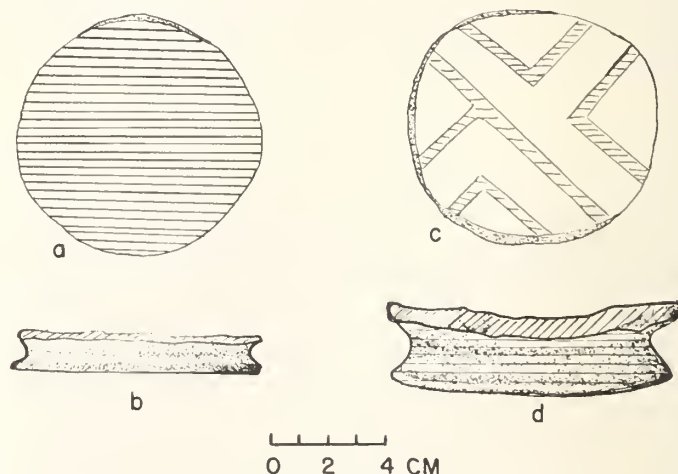


FIGURE 31.—Ringstand Modes of Burica, San Lorenzo, and Chiriquí Phases. Hachure indicates areas painted red. *a*, Mode a (interior). *b*, Mode a (side view). *c*, Mode c (interior). *d*, Mode d (exterior).

from top to bottom of the IS-7; the scattered occurrence of this mode is, therefore, not surprising.

Mode a is absent from Sites SL-1 and IS-11 where the pottery type Isla Palenque does not appear.

Recent finds in Chiriquí show that these shallow ringstands occur on bowl-shaped lids for funeral urns (fig. 13).

Modes b, c, d

FIGURE 31c, d; PLATE 17h

These ringstands are slightly taller (2.5 to 3.0 cm. high) and have bigger diameters (9.0–9.5 cm.) than Mode a. An additional feature consists of a red slip on the exterior surface. The interior may be plain, slipped in red, or painted with red bands (pl. 17f, g).

Modes b, c, and d occur in Site IS-3 in scattered levels down to 110–120 cm. They are absent from Sites SL-1 and IS-11. At Site IS-7 one Mode b and one Mode d occur in level 40–50 cm. of Pit No. 2. Their scattered distribution renders these modes useless for making chronological distinctions.

As for geographical comparisons, these same ringstand modes occur in the Red Line Ware of MacCurdy (1911, fig. 157), but are very scarce in the more popular types that he discussed.

Farther to the east, ringstands such as Modes b, c, and d are not particularly popular in the ceramics of Veraguas. Ringstands are a well-known feature of the Coclé pottery, but do not closely resemble the Chiriquí ones.

Pedestal Bases

All these are not of equal distribution and chronological importance. Some are isolated examples, occurring only once in our stratigraphic columns. The best time markers of the San Lorenzo Phase are Pedestal Base Modes b, e, f, g, h, k, and l, and for the Chiriquí Phase, Pedestal Base Modes c, d, i, and j. See p. 67 for distribution by phase.

Mode a

FIGURE 32a; PLATE 17c

A flaring-sided pedestal base with red slip on the outside and in the interior; parallel lines and wedges are incised on the exterior.

Mode b

FIGURE 32b

A short, sharply everted pedestal foot, punctured on the sides by circular holes and decorated around the top and on the sides with red-painted bands. One of these occurs in Level 70–80 cm. of Site IS-3.

Mode c

FIGURE 32c

It is a tall, fragmentary pedestal base that is too incomplete to merit description. It occurs in the Level 10–20 cm. of Site IS-3. It is decorated along the sides with red bands.

Mode d

FIGURE 32d; PLATE 17b

A short, plain, thin-walled ringstand, 3.5–4.0 cm. high, with a constricted neck (5.5 cm. wide) and a flaring base (9.0 cm. in diameter). In paste composition and surface treatment this pedestal base belongs in the Tarragó Bisquit Ware. An illustration of a similar base appears in MacCurdy's (1911, fig. 72) report.

Mode d occurs in the Gulf islands exclusively in the Chiriquí Phase. One specimen was found in the top level of IS-3, Pit No. 3. They are most popular, however, in the middle to top levels of the Pit at IS-11.

Mode e

FIGURE 32e; PLATE 17e

Shallow pedestal (could be called a ringstand) with a notched base. One occurs in Level 120–130 of Site IS-3.

Mode f

FIGURE 32f

Tall (8.0 cm.) pedestal bases with flaring sides. Their diagnostic feature is a red paint, usually in bands, on the outside. These bands may be arranged in different motifs.

Time-place distributions are as follows: one occurs in Level 60–70 cm. of Site IS-3 in the San Lorenzo Phase. They are more popular at Site SL-1 in the same phase; in total four are found in the top levels of both pits. Mode f is absent from either of the two other sites.

Exactly the same Mode f occurs in the Red Line Ware of MacCurdy (1911, Plate XXV, fig. f).

Mode g

FIGURE 32g; PLATE 17d

A tall (10 cm.) plain pedestal base with a rectangular, wide incision on the middle of either face. The interior may be plain or decorated with red bands in geometrical patterns (pl. 17f, g).

Paste and surface treatment equate with the pottery type Zapote Red Banded.

Two of these modes occur in Level 40–50 cm. of IS-3, corresponding to the San Lorenzo Phase.

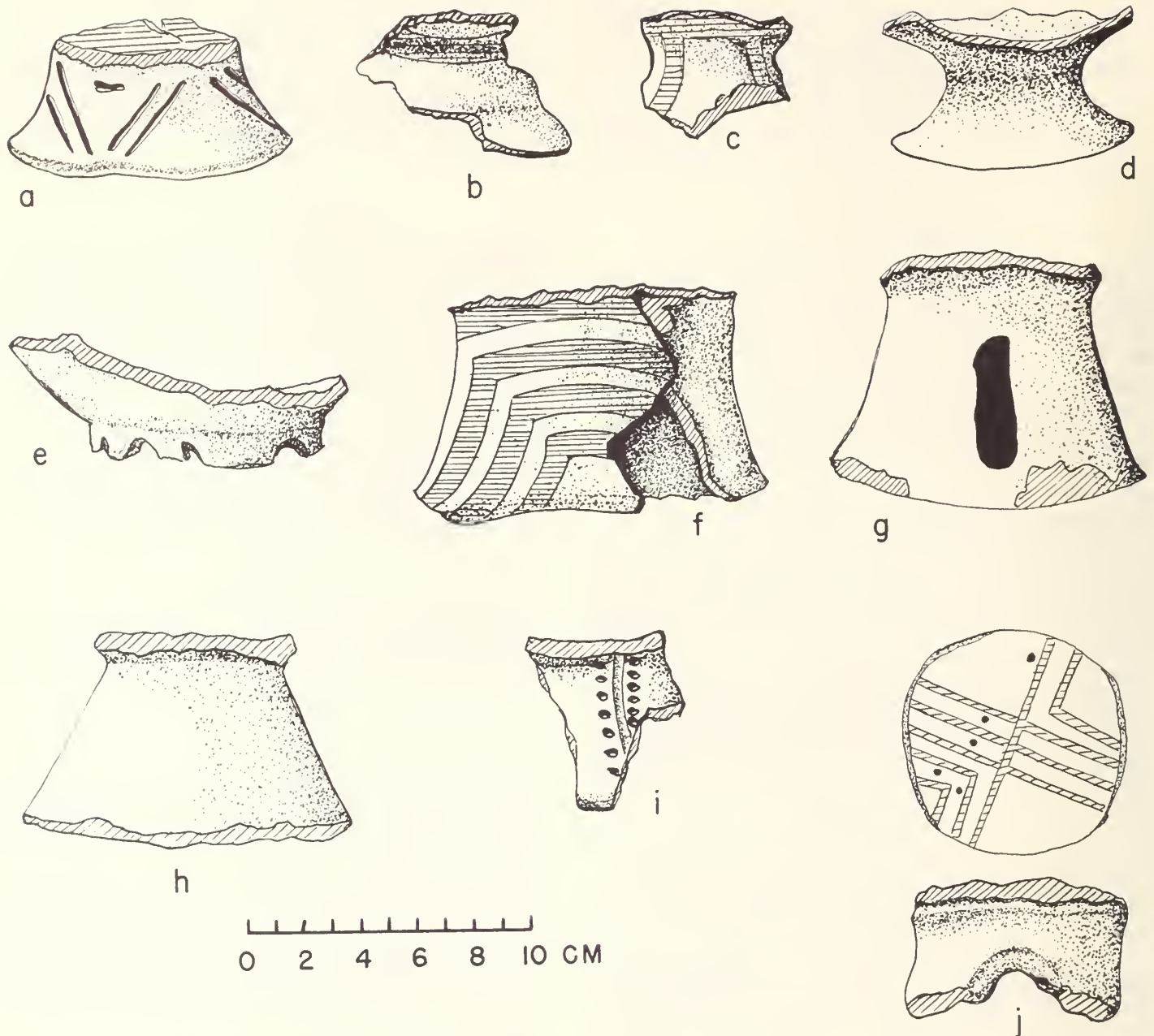


FIGURE 32.—Pedestal Base Modes of the San Lorenzo and Chiriquí Phases. Hachure indicates red-painted areas. *a*, Mode *a*. *b*, Mode *b* (side and profile views). *c*, Mode *c*. *d*, Mode *d*. *e*, Mode *e*. *f*, Mode *f*. *g*, Mode *g*. *h*, Mode *h*. *i*, Mode *i*. *j*, Mode *j* (side and interior views). Modes *k*–*m* not shown.

Mode g is restricted in time to the San Lorenzo Phase. It occurs mostly in Site SL-1 where it is quite popular in the middle to top levels. Its infrequency at IS-3 can only be explained on the basis of insufficient sample.

Mode h

FIGURE 32*h*

A tall (9 cm.), plain pedestal base, in paste and surface treatment like Mode g, only without the cutout design on either of its phases. The interior may be plain or decorated with red bands (pl. 17*f*, *g*). In distribution it is restricted primarily to the San Lorenzo Phase.

Mode i

FIGURE 32*i*

A short, thin-walled ringstand, with straighter walls than Mode d, decorated with incisions arranged as follows: short (2-3 mm.) shallow oval incisions on both sides of a shallow perpendicular incision.

Mode m resembles Mode d in paste composition and surface treatment. It also belongs to the Tarragó Bisquit Ware in the Chiriquí Phase.

Mode i is found only at Site IS-11, where it is very popular.

Mode j

FIGURE 32*j*

A heavy set pedestal with a rounded notch at the bottom of either side. The interior is decorated with very thin lines and dots. One such mode occurs in Level 20-30 cm. of the pit at IS-11.

Mode k

A variant of Mode e, only without the side punctures. One occurs at Site IS-3, Level 60-70 cm.

Mode l

A variant of Mode c, only with bright red bands in the interior and a beige slip around the rim.

Mode m

A "heavy set" pedestal with thick walls and no decorations. The mode that occurs in Level 50-60 cm. of IS-3 may or may not be the same as the Mode m from Level 80-90 cm. of Site IS-11. Their form is generally similar, but the paste is not.

Strapped Feet

The strapped feet have been divided into four categories to insure their correct classification. Only Modes a and b have been found still attached to the underside of vessels. Undoubtedly these served as supports.

Category c includes the bases of vessels bearing, on three different spots, marks where straps had once been attached; the straps have since been broken off. There is little doubt that category c represents the remains of strapped feet.

Category d, however, may include straps that served as handles and not as supports. A strong indication that this may be the case, at least in Sites IS-7 and IS-11, is afforded by the absence here of pottery type Cangrejal Red Line. Bowls of this type always have strapped feet. Mode d will, therefore, be disregarded for descriptive or chronological purposes.

Modes a, b, c

FIGURE 33*a, b*; PLATE 17*a*

Flat, ribbon-like straps (1.0 to 1.4 cm. thick and 5.0 cm. high) are placed underneath the vessel in a tripodal arrangement. This renders the vessel very stable. The interior of the vessel may be plain (fig. 33*b*) or decorated with red bands (fig. 33*a*).

Mode c, which does not appear in figure 33 consists of vessel bases bearing the marks where straps had once adhered.

In the Gulf, Strapped Feet Modes a-c belong in the San Lorenzo Phase and are popular at Sites IS-3 and SL-1. They are absent from Sites IS-7 and IS-11.

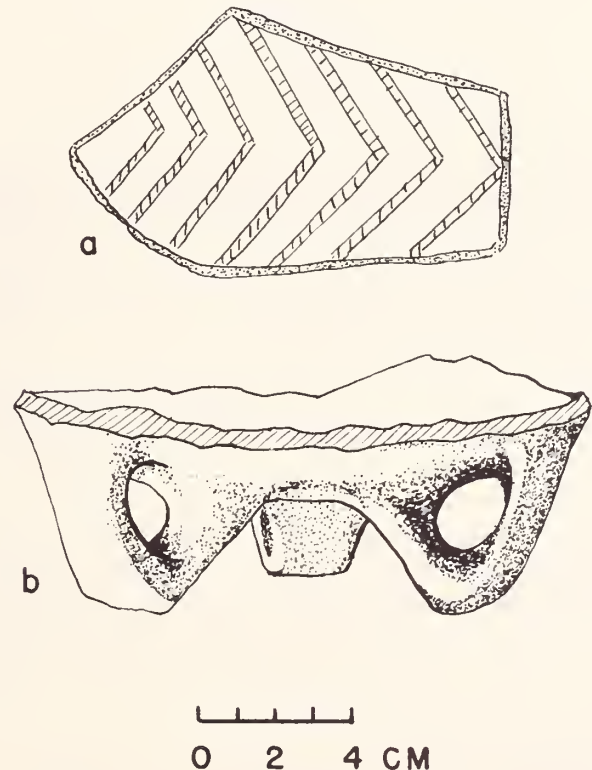


FIGURE 33.—Strapped Feet Modes of the San Lorenzo and Chiriquí Phases. Hachure indicates areas painted red. *a*, Mode a (side view). *b*, Mode b (interior).

Strapped feet are practically unknown in the most popular pottery types of the Classic Chiriquí Phase such as Fish-Tripod-Handled Ware (our Villalba Red Streaked) or Armadillo-Terra-Cotta-Bisquit Ware (our Tarragó Bisquit Ware). The only type in Chiriquí that has strapped feet is the Red Line Ware of Holmes (1888) and MacCurdy (1911). Most of the types into which I have subdivided their Red Line Ware are diagnostic of the San Lorenzo Phase.

Veraguas exported to our region the idea of strapped feet. Costa Rica could not have done this because the looped legs that occur in the northern sector of the country as well as in western Nicaragua are very different from ours (Lothrop, 1926, Plates CLXVII b, c; CLXXIII d; fig. 225c).

Exactly the same strap feet as the ones in the Chiriquí Gulf occur in Veraguas. Lothrop (1950, p. 38) describes them as follows:

Tripod vessels of various sizes and shapes, supported by looped ribbons of clay, are characteristic of Veraguas and of no other region.

Strapped feet are not popular in the Coclé-Azuero region, although they do occur sporadically (Lothrop, 1942, Fig. 252a; Plate IIIk).

Handles

Double Handles

Mode a

FIGURE 34 a-e; PLATE 18 j-l

Variation a1-a5: Large, looped handles that curve upward from two spots on the shoulder of the vessel and join the rim at the level of the lip. The width of the handle across to the two points on the shoulder may be anywhere from 9.5 to 11.0 cm.; the height varies from 6.6 to 8.0 cm.

The handles may be round and completely plain (Mode a1, fig. 34a; pl. 18k) or they may be nearly plain, except for two pellets at the top (Mode a4; fig. 34d). Incisions also may be added as decoration. The incisions may vary in length from 1-2 cm., but they are always fairly deep. They may cover a large section of the handle and also decorate the flat shelf that joins the rim to the lip (Mode a2; fig. 34b; pl. 18l). Two rounded pellets are commonly placed on the spots where the handle loops join the lip. The pellets may be left plain, or they may be incised (Mode a5; fig. 34e).

The lower parts of the handle loops adjoining the vessel shoulder are usually round. In at least one of the variations, however, the handle straps are fairly

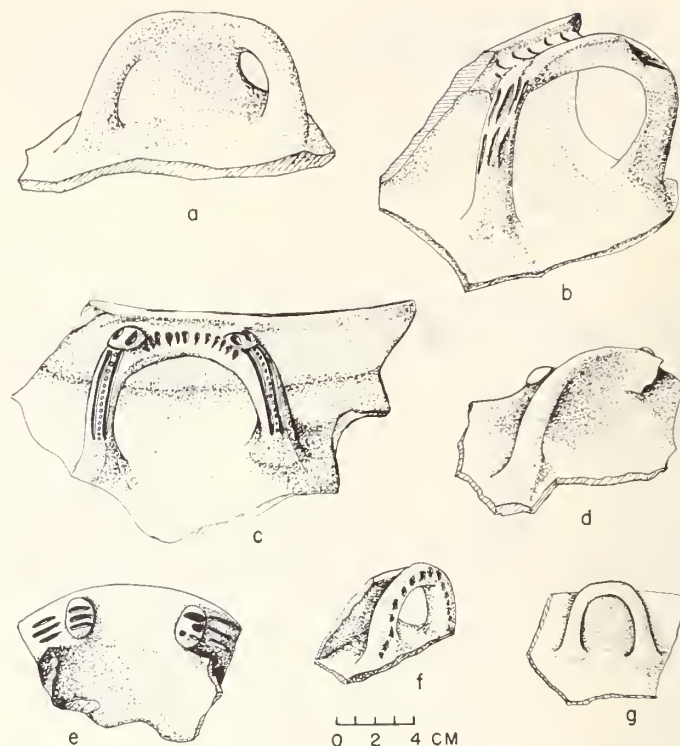


FIGURE 34.—Double Handle Modes of the Chiriquí Phase. a, Mode a1 (exterior). b, Mode a2 (interior and side views). c, Mode a3 (exterior). d, Mode a4 (interior and exterior views). e, Mode a5 (interior view). f, Mode b (slanted view). g, Mode c (exterior).

flat (Mode a3, fig. 34c). In this same specimen the decoration on each strap consists of two long parallel incisions with a row of punctations in the middle and short (4 mm.) incisions at the top.

At Site IS-3, Pit No. 3, Mode a first appears in levels belonging to the later part of the San Lorenzo Phase, but its largest occurrence (12 in total) is in the topmost level belonging to the Chiriquí Phase. This mode is also found in the Chiriquí Phase levels of Site IS-7, Pit No. 2, and in the middle to top levels of Pit No. 1 at Site IS-11. It is absent from Site SL-1 where the occupation belongs solely to the San Lorenzo Phase.

Double Handle Mode a has not been previously reported from Chiriquí. Distribution is farther to the east in the district of Remedios. In the surface collections from this area double handle modes are common (see Ranere, Appendix II). We were fortunate to find two complete, very large jars with Double Handles Mode a in a private collection in the city of Remedios. These jars measured 53 cm. from the lip to the pointed base. They were 38 cm. in maximum diameter and 21 cm. in diameter at the

mouth. The double handles were 21 cm. across at the top.

How far east along the coast these handle modes spread is hard to ascertain. Lothrop (1950, fig. 11 a-b) includes the picture of two double handles that are different from the Gulf ones in bearing zoomorphic motifs. They were found in southwestern Veraguas.

In a collection from Utivé, about 25 miles northeast of Panama City, made by M. W. Stirling in 1951, and now stored at the Smithsonian Institution (USNM Archeology, Cat. No. 398456-475), there is a plain double handle exactly like Mode a1. It is reasonable to suppose, therefore, that Double Handle Mode a represents an influence into the Gulf area from farther to the east.

Mode b

FIGURE 34f

A much smaller double handle than Mode a. It measures 5 cm. across the bottom of the loop and in height is only 4 cm. Otherwise shape is the same.

The decoration consists of three rows of short and wide incisions along the entire loop.

There is only one example of Mode b in Level 80-90 cm. of Site IS-3.

Mode c

FIGURE 34g

A small double handle of the same general dimensions as Mode b, only plain. Nothing is known about its geographical distribution. Chronologically it is contemporaneous with the other double handles since it occurs in the top levels of Pit No. 3 at IS-3 belonging to the Chiriquí Phase. It is absent at Site IS-7, but occurs at Site IS-11. No double handle modes are found in Site SL-1.

Strap Handles

This category includes variations on one theme: handles that are flat in cross section and extend from one side or from opposite sides of the vessel wall to merge with the rim. All of these straps bear some form of decoration, either painted or in the form of applique designs.

Mode a

FIGURE 35a-g; PLATE 18a-c

Variations a1-a7: All strap handles in this group are fairly flat in cross section (thickness 1.2-1.5 cm.). They are broader at the top, where they meet the lip, than at the bottom where they join the vessel wall. The arch where the straps bend down to meet

the vessel wall is usually sharp; this is the spot that is usually decorated. Regardless of any other decoration, the edges of all these straps are always painted in red.

Mode a1 (fig. 35a) has no decoration except red bands on the sides and a wider (2.5 cm.) red band at the top. The other variations have some form of applique incised decoration in addition to red bands. Mode a2 (fig. 35b) has a winding incised fillet, and in shape is much longer and flatter than the other strap handles. In Modes a3 to a6 the applique fillets are not winding, but are placed fairly straight; they are also incised (fig. 35c-f; pl. 18k-l). Round incised pellets are often placed on the same area as the applique fillets. Punctations (Mode a3) or incisions (Mode a6) may be added to decorate this spot.

In at least one of the modes (Mode a7, fig. 35g; pl. 18a) the decoration is zoomorphic, consisting of a frog measuring 5 cm. across the arns with a body 2.2 cm. long and 1.6 cm. wide. The wrinkled skin of the frog has been clearly rendered by closely spaced punctations made with a hollow reed.

Strap Handle Variations a1-a6 are found in all four of the Gulf sites. At IS-3 strap handles occur in both the San Lorenzo and Chiriquí Phases, but are absent from the Burica Phase. At Sites SL-1, IS-7, and IS-11 they occur in all the levels.

The Strap Handle Mode a with all its variations is characteristic of several pottery types of the Gulf: Arayo Polished Line, Horconcitos Red Banded, Banco Red Line, and Linarte Zoned Red Line. Since no whole vessels belonging to these types were found in our excavations, it is difficult to match the variations with the specific pottery types to which they belong. Reference should be made to illustrations in the reports of Holmes (1888, fig. 160) and MacCurdy (1911, Plate XXV).

Undecorated strap handles occur in the pottery of Veraguas (Lothrop, 1950, figs. 58 and 59). Lothrop (op. cit., p. 44) is of the opinion that they probably are copies of Chiriquí prototypes.

Strap handles are very rare in the pottery of Coclé.

Mode b

A narrow (2.5 cm.) strap handle with a small applique decoration in the exterior came from Level 80-90 cm. at Site IS-3. As an isolated mode it is of limited chronological or geographical importance.

Mode c

FIGURE 35h

A narrow (2 cm.) strap handle with red-painted bands along the sides; the rest is broken off. It belongs to pottery type Centeno Red Banded. Two of these

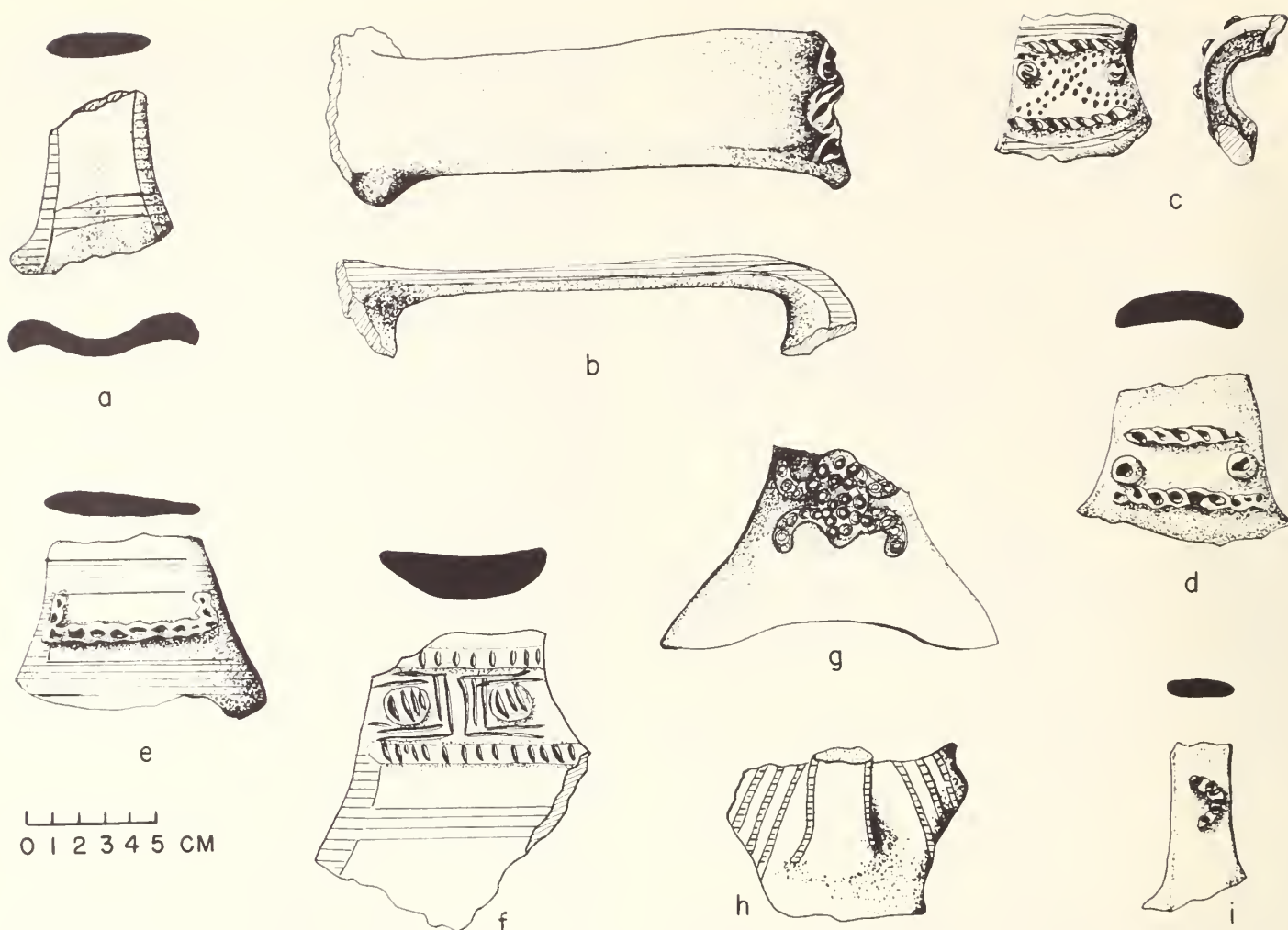


FIGURE 35.—Strap Handle Modes of the San Lorenzo and the Chiriquí Phases. Parallel lines indicate area painted red. *a*, Mode a1 (front view and profiles of either end). *b*, Mode a2 (top and side views). *c*, Mode a3 (top and side views). *d*, Mode a4 (profile and top view). *e*, Mode a5 (profile of top view). *f*, Mode a5 (profile of top end, of side, and front view). *g*, Mode a7 (top view). *h*, Mode b (top view). *i*, Mode d (top view).

modes occur in Levels 100–110 and 80–90 cm. of Pit No. 3 at Site IS-3.

Mode d

FIGURE 35*i*

A very flat strap, varying in width from 0.8 to 1.0 cm., painted all over with a red slip. The paste composition, surface treatment, firing, and slipping make this mode a part of the pottery type Villalba Red Streaked and thus belongs in the Chiriquí Phase. It is found in IS-7, which has the largest percentages of this pottery type.

Round Handles

These are handles that are nearly circular in cross section. They are arranged in a tight loop and placed on the body wall usually horizontal to the rim.

Mode a

FIGURE 36*a*

A plain, round handle with a thickness of 1.5 to 2.0 cm. It bears no decoration. How it was placed in relation to the rim is difficult to determine since no sherds with both handle and rim have been found in any of our sites.

Mode a, together with all of the other round handles, is a mark of the Chiriquí Phase. At Site IS-3 it occurs in the top seven levels. At Sites IS-7 and IS-11 it occurs throughout the deposit. It is absent from SL-1.

Mode b

FIGURE 36*b–e*; PLATE 18*f, b*

Variations b1 to b4: This mode encompasses several round handles which have in common a red slip; most of them also bear incised pellets for decoration.

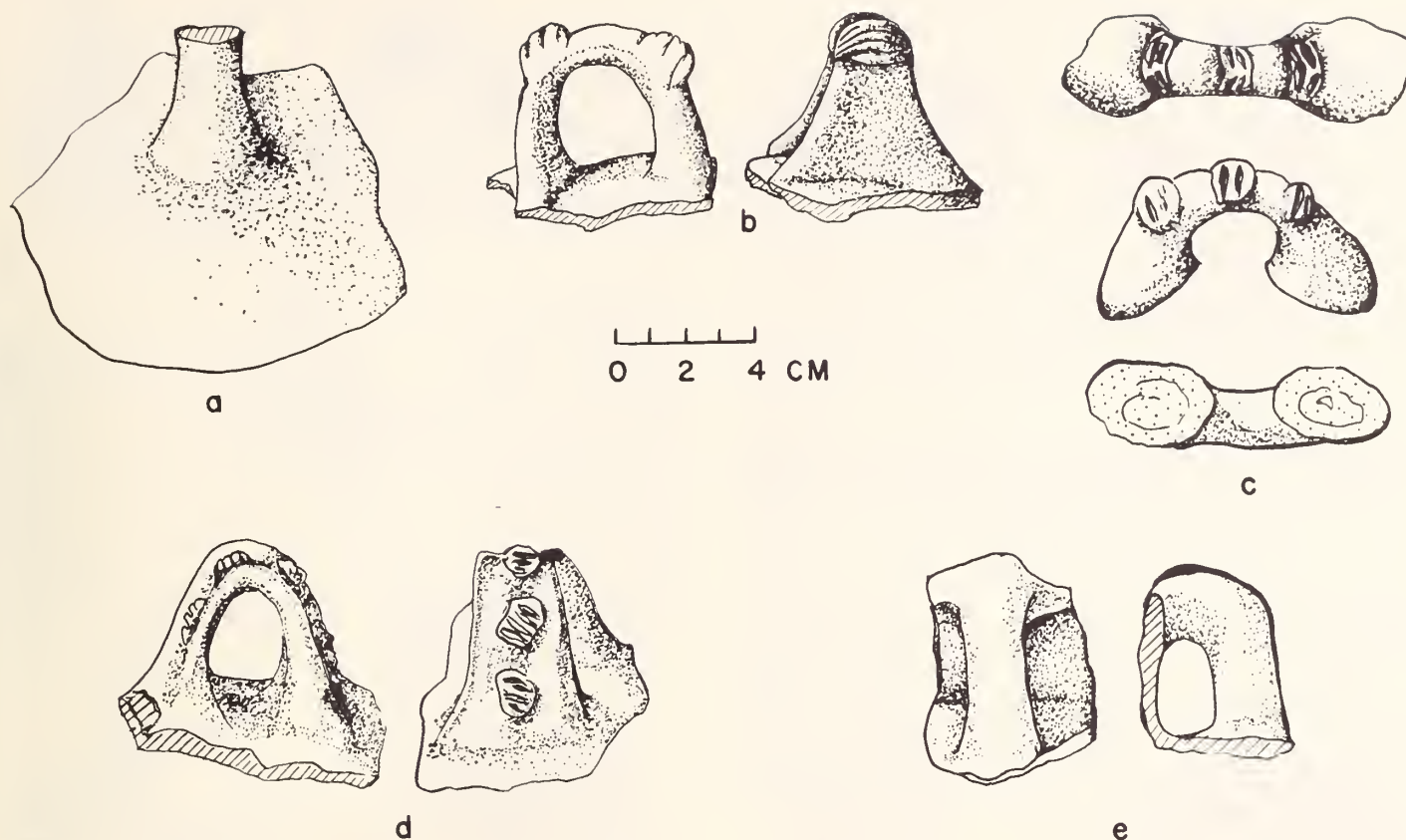


FIGURE 36.—Round Handle Modes of the Chiriquí Phase. *a*, Mode *a*. *b*, Mode *b*1 (side and end views). *c*, Mode *b*2 (side, top, and underside). *d*, Mode *b*3 (side and end views). *e*, Mode *b*4 (end and side views).

Mode *b*1 (fig. 36*b*) is flat at the edges, but round on top. It is sharply curved and has two incised pellets on either side of the top section.

Mode *b*2 (fig. 36*c*; pl. 18*f*) is similar to Mode *b*1, only it is round in cross section at all points. Three incised pellets adorn the top part.

Mode *b*3 (fig. 36*d*) is the flattest of all these modes; it has been put in this group because it shares all the other attributes with the rest of the *b* modes—red paint and incised pellets. Few incised pellets decorate the exterior at the top and on the sides. Mode *b*4 is plain. It measures 2.2 cm. in width and is 4.0 cm. at the top. It was placed vertically from the vessel wall to the rim. Mode *b*4 (fig. 34*e*; pl. 18*h*) is a vertical round handle joining shoulder to vessel wall.

Mode *b* with all of its variations is restricted to the latter part of the Chiriquí Phase. It is absent from both IS-3 and SL-1, but occurs in substantial numbers at Sites IS-7 and IS-11.

The paste, surface treatment, and decoration leave little doubt that Mode *b* belongs to the pottery type Villalba Red Streaked (or Fish-Tripod-Handled Ware, as it is called in the literature). The exact Modes *b*1, *b*2, *b*3, and *b*4 are portrayed in vessels of

the Handled Group of Painted Ware (MacCurdy, 1911, fig. 122, Plate XX).

Round handles are absent from Veraguas or Coclé pottery. The relationships are to the east with Costa Rica. In fact, there is a pottery type here which bears the same name as the Handled Group of Painted Ware and has very similar handles to our Mode *b* (Lothrop, 1926, Vol. II, fig. 240, Plate CLXXXII). Whether this Panamanian ware influenced the Costa Rican variant, or the reverse, is hard to ascertain from distributional data alone.

Ladle Handles

Ladle handles is my term for broad and flat projections attached to one side of a plate. These plates are known from other regions as incense burners; this may have been their original use.

Mode *a*1 (fig. 37*a*; pl. 18*d*) measures 8 cm. at the top and approximately 9.5 cm. at the point where it joins the plate. It is decorated with two raised parallel ridges 1.5 cm. apart on each side of the front surface; six coffee-bean pellets are placed between these raised ridges. The edges, as well as the area in the center, are

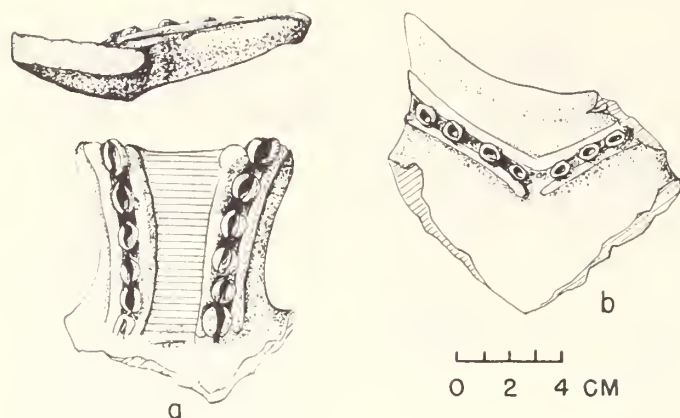


FIGURE 37.—Ladle Handle Modes of the San Lorenzo Phase. *a*, Mode a1 (profile and front views). *b*, Mode a2 (front view).

slipped in red. It was found in Level 90–100 cm. of Pit No. 3 at IS-3.

Mode a2 (fig. 37*b*; pl. 18*e*) differs slightly from Mode a1 in being unpainted, in having the ends more pointed, and in having the decoration in a V-arrangement rather than at both sides of the handle. One example came from Level 20–30 cm. of SL-1, Pit No. 2.

Both ladle handles belong to the San Lorenzo Phase.

Incense burners are primarily a Middle American rather than a South American trait. They have been found from Michoacan in Mexico all the way down to Colombia and Ecuador (Lothrop, 1942, pp. 174–176). No incense burners have yet been reported from the Veraguas area, but they occur abundantly in Sitio Conte. These may have round handles or flat rectangular handles very similar to ours (Lothrop, 1942, figs. 354, 355, and 356). The incense burners that occur in Costa Rica have large handles modified into zoomorphic forms (Lothrop, 1926, Vol. II, figs. 255 and 256). They do not look at all like Gulf of Chiriquí, Panama, ladle handles.

Horizontal Handles

These are fairly flat, undecorated looped handles that are placed one on each side of a globular neckless vessel, either parallel to the vessel lip or at a slight angle to it (fig. 38*a–c*). In length they average 8 cm. and in thickness anywhere from 0.75 to 1.75 cm. They are uncommon, being restricted solely to Site IS-3 in levels of the San Lorenzo and Chiriquí Phases.

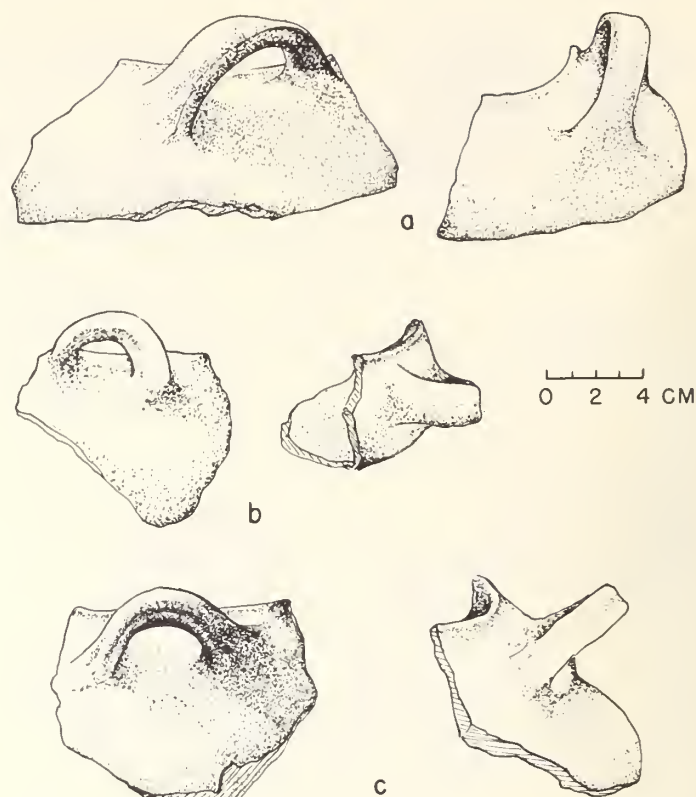


FIGURE 38.—Horizontal Handle Modes shared by the San Lorenzo and Chiriquí Phases (exterior and side views). *a*, Mode a1. *b*, Mode a2. *c*, Mode a3.

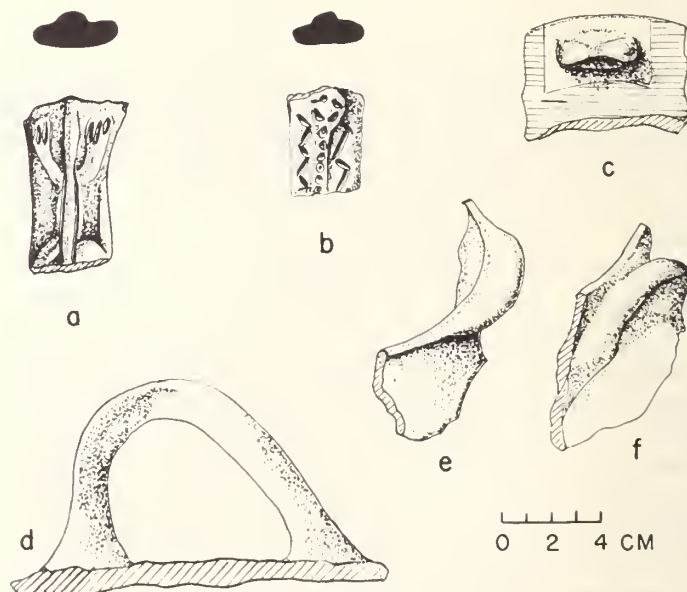


FIGURE 39.—Miscellaneous Handle Modes from the San Lorenzo and Chiriquí Phases. *a*, Mode a1 (profile and front views). *b*, Mode a2 (profile and front views). *c*, Mode b (front and side views). *d*, Mode g. *e*, *f*, Mode j (two side views).

Miscellaneous Handles

Some handles not classified into the mode groupings occurred in scattered levels of the San Lorenzo and Chiriquí Phases and are illustrated in figure 39*a-f*. Each handle will be described separately.

Handle *a* is small and flat, decorated by an applique design, probably a reptile motif. It is restricted in time to the San Lorenzo Phase.

Handle *b* is a variant of *a*, showing an incised design rather than an applique design. It also occurs in the San Lorenzo Phase.

Handle *c* is a small knob placed near the rim. One occurs in Level 10–20 cm. of Pit No. 3 at Site SL-1.

Handle *d* is a very large, rounded handle, similar to some that occur in Veraguas. It comes from Villalba Site (IS-7) in a level of the Chiriquí Phase.

Handle *e* is a lobe representing either an extension of the lip or a raised shelf under it. Two specimens occur in a level of Site IS-11 belonging to the Chiriquí Phase.

Miscellaneous Applique Motifs

These are applied ribbons of clay on coffee-bean motifs, incised or punctated. They occur in several types from San Lorenzo and Chiriquí Phases.

Motifs *a*, *b*, and *g* (fig. 40 *a*, *b*, *g*) occur at IS-3 and SL-1 in levels belonging to San Lorenzo Phase. In paste composition they are identical to the types of these phases. Motifs *a* and *b* also have traces of red paint in the exterior edges of the applique motif. Motif *d* (fig. 40*d*) is different; it is applied to a black, polished ware not found in the Gulf. It is probably a trade item.

Motifs *c*, *e*, *f*, *h*, and *i* (fig. 40 *c*, *e*, *f*, *h*–*i*) are found at IS-7 and IS-11 in levels belonging to the Chiriquí Phase. The paste composition of these motifs is indisputably Tarragó Bisquit Ware. The coffee-bean motif and the incised wavy bands are common in the Classical Chiriquí pottery illustrated by MacCurdy (1911).

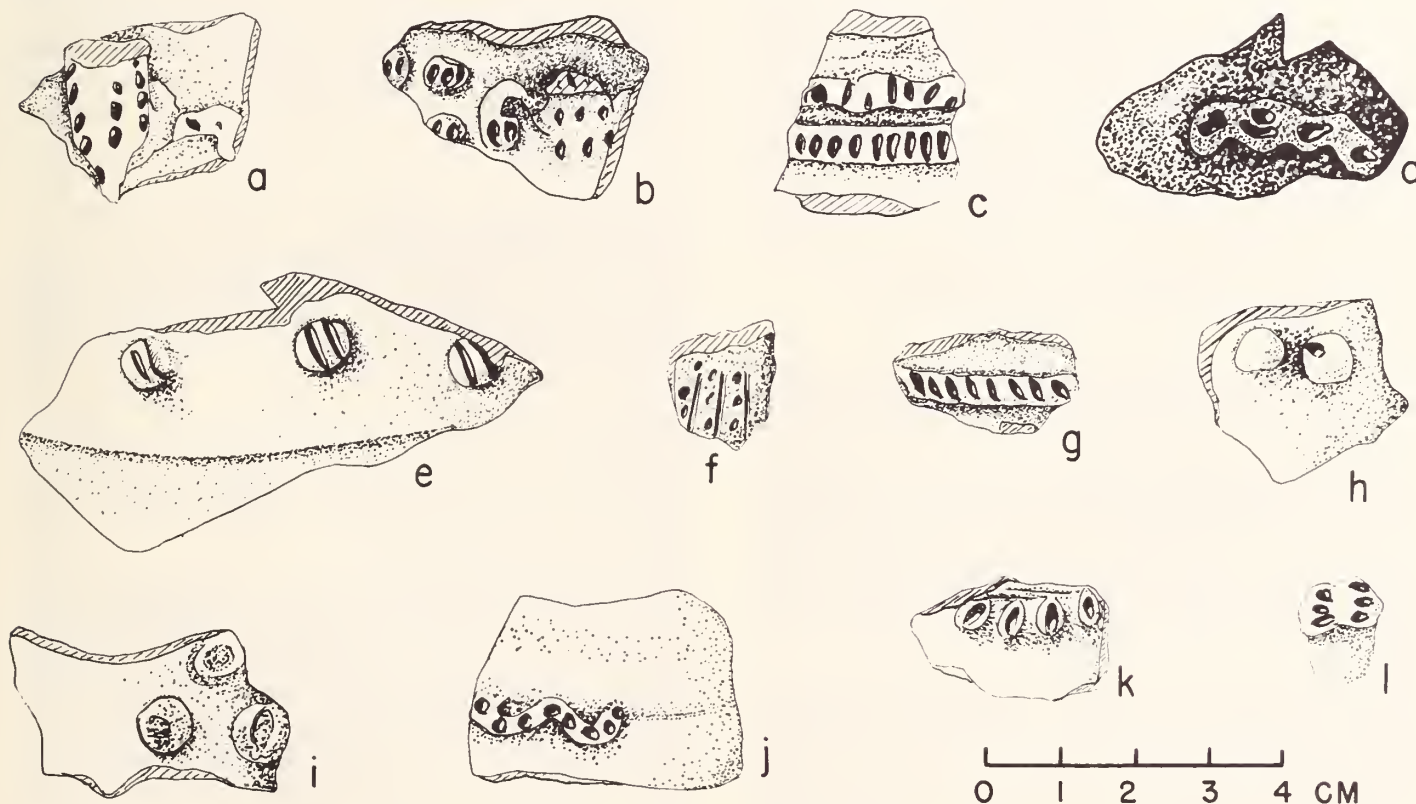


FIGURE 40.—Applique motifs of the San Lorenzo and Chiriquí Phases.

STONE ARTIFACTS

Twelve kinds of stone implements have been found in the Chiriquí Gulf sites. Their distribution by levels is summarized in Appendix 1, table 6 and by phases on p. 69. They correlate with the three phases as follows:

Burica Phase: No stone artifacts of any kind.

San Lorenzo Phase: At Site IS-3 in levels of this phase, stone artifacts occur only toward the end of the phase and not at the beginning. The same thing happens generally at Site SL-1 of the same phase.

Chiriquí Phase: The stone inventory is almost the same as it is for the latter part of the San Lorenzo Phase. The only artifact types exclusively associated are sandstone saws and scrapers.

Celts

Celts are rare in levels belonging to the San Lorenzo Phase, but occur in respectable numbers in levels belonging to the Chiriquí Phase, especially at Site IS-11 which yielded nine of them. At Site IS-3 they occur in the upper half of Pit No. 3. Only one was found at SL-1 in Pit No. 1, Level 10-20 cm. At IS-7 three came from the top levels of both pits; one was found in Level 90-100 cm. of Pit No. 2.

There are some differences in the shape. The following groupings are based on these differences.

GROUP 1

Material: Light to dark bluish-gray porphyritic rock with phenocrysts of feldspar and an aphanitic groundmass.

Description: Fairly large (9-10 cm. long) and broad (5.7 cm.), biconvex in cross section, with either or both ends battered from reuse as a hammerstone. The sides may be fairly straight or slightly convex (pl. 19f). The butt end is blunt. Initially they had been polished all over. These celts are typical of Site IS-3.

GROUP 2

Material: Several kinds—a dark gray aphanitic basalt, a phyllite, high in silica, and a light bluish-gray aphanitic cryptocrystalline rock.

Description: Smaller than Group 1 celts (average length, 8 cm.; average width, 4 cm.). Two are roughly diamond-shape in outline (pl. 19k, l). In the larger ones the ends have been used for either pecking or hammering. Rough marks of percussion chipping are evident along the longer sides and occasionally large concoidal chips have been removed from the ends (pl. 19h, j). Cross sections vary from biconvex to diamond-shape. Most had been polished originally.

These celts are typical of Site IS-11. The larger ones (pl. 19k, j) resemble closely the Group 1 celts from Site IS-3.

GROUP 3

Material: A gray, aphanitic microcrystalline equiangular rock; one specimen has been identified as basalt.

Description: Long (average 13 cm.) and fairly narrow (average 6 cm.) with straight edges tapered toward the butt and a cross section that is convex on one side and a truncated pyramid in shape on the other side. Tiny to large chipping scars, which in some cases have been smoothed over, are evident along the longer sides (pl. 19b).

The prominent feature of this group is the long flat facet on one of the polished faces (pl. 19b, e). This type of faceted celts is characteristic only of Site IS-7. In the same site was found a very well-finished fragment (the bit end only) of a highly polished celt with a sharp bevelled cutting edge (pl. 19c). The face may have been faceted, but this is hard to tell from its fragmentary condition.

GROUP 4

Material: Basalt porphyry.

Description: Polished on both surfaces with a bevelled broad bit and a sharp, pointed butt (pl. 19d). Large chipping scars are evident along the longer sides. Only one occurs in Site SL-1.

GROUP 5

Material: A dark, gray or blue-black aphanitic basalt.

Description: Small, biconvex, highly polished celts. Two were found at Site IS-11, one is Level 80-90 cm., and one in Level 40-50 cm.

Very small elongated celt with a small bulge on the lower part nearest the bit end (pl. 19i). Biconvex in cross section, with a rounded butt and a straight, well-polished tapered cutting edge. Chipped all over by percussion. Size: length 7 cm. and width 2 cm.

Small, tubular celt, biconvex (almost round) in cross section with sides that taper gradually toward the ends (pl. 19g). Cutting edge is very small and sharp. It has been beautifully polished all over. Size: 9 x 2 cm.

Flakes

Only five flakes occur, all of them from Site SL-1, Pit No. 1. Four were found in Level 10-20 cm. and one in Level 70-80 cm. They will be described together.

Material: Four are flakes from quartz fragments: crystalline quartz, milky quartz, and jasper. There is only one basalt flake.

Description: Flakes with either use chipping along an edge or a corner, or unmodified except for the blow which detached it from the core. The flake shown in plate 20f has a long area of use retouch chips on one corner. The flakes can be as long as 3.0 cm. or as short as 1.5 cm.

Manos

In the San Lorenzo and Chiriquí Phases; none associated with the Burica Phase. At Site IS-3 manos were found in the top two levels and in the fifth level. At Site SL-1, Pit No. 1, there are two from Level 20-30 cm. and one from the bottom level. No manos were found at Site IS-7. At Site IS-11 there was one mano in Level 10-20 cm. and another in Level 90-100 cm. Two varieties occur with the same chronological distribution.

GROUP 1

Material: Several kinds of rock—a brown, aphanitic, microcrystalline rock composed chiefly of feldspar, a light green granite rock rich in quartz and in feldspar, and an equiangular gabbro rock composed equally of a white intermediate plagioclase feldspar and a green mineral. The majority are granite or gabbro.

Description: In this group belong the manos that were shaped before being used for grinding (pl. 20t). The shape or size of many specimens is hard to reconstruct because only the end portions remain. Cross sections are planoconvex or ovoid; only one is triangular in cross section. Both faces, or in a few cases only one face, were used for grinding; they are smooth to the touch. The grinding face in some is slightly convex front to back. Length may reach 24 cm. (pl. 20t). Thickness varies between 4-7 cm.

GROUP 2

In this group are elongated, irregular-shaped cobbles, unmodified except for the faces which have been smoothed in grinding. The grinding surface is flat so that the cross sections are planoconvex. In at least one specimen the end has been lightly used for pecking. The only complete one found (pl. 20u) measures 22 x 7 x 8 cm.

Metates

Four occur in the San Lorenzo and the Chiriquí Phases, but like all other stone artifacts, they are absent from the Burica Phase. At Site IS-3 there was one metate in Level 10-20 cm. and two in Level 90-100 cm. There are no metates at SL-1, although

several manos were found here. The reverse is true of Site IS-7 where no manos were found, but one metate fragment was uncovered in Level 50-60 cm. of Pit No. 2. Las Secas produced manos but no metates.

Of the four specimens, three are shaped legs (pl. 20r) and the fourth is a large fragment of a trough-shaped metate from Site IS-3 (pl. 20s). They will be grouped together for description.

Material: Different kinds of rocks—a dark brown phaneritic, granitic rock composed mainly of acidic to intermediate plagioclase feldspar, a light, gray, vesicular, aphanitic rock with macrocrystalline crystals, a brown porphyritic rock with large phenocrysts of intermediate plagioclase feldspar, and a phaneritic groundmass.

Description: Three of the metate legs were reused after they had broken off, two as pecking stones, and a third for abrading (possibly to enlarge a hole). The shape of the legs varies: one is roughly triangular with rounded edges, a second one is a truncated cone in outline and nearly circular in cross section, and a third is planoconvex in cross section. The largest measures 12 cm. in height.

The fourth (pl. 20s) consists of a boulder unmodified except for the deep (8 cm.) depression at the center. Only portions of the sides in the depression have been smoothed by usage. One of the short ends is closed off for the obvious reason of preventing the grain from spilling out.

Net or Line Weights

These occur only at Site IS-3 in scattered levels between 10 and 100 cm. These levels represent the San Lorenzo and early Chiriquí Phases.

Material: Most are made of a green aphanitic rock composed of rounded to angular fragments or grains of crystalline and amorphous material.

Description: Small and flat ovoidal cobbles generally unmodified except for a slight pecked notch on the same place in both of the longer sides. The notches have not been smoothed but are, instead, left rough as if to hold a cord from a line or a net. Some are as large as 6 by 10 cm. (pl. 19m, n); others are fairly small (pl. 19o-q).

Pebble Polishers

These occur almost exclusively in the San Lorenzo Phase at Sites SL-1 and IS-3 and are most popular at Site SL-1. No pebble polishers were found at Site IS-7. Only one doubtful specimen came from the top level of the pit at Site IS-11.

This distribution fits in very well with the fact that the pottery types with polished exteriors are typical of the San Lorenzo Phase and are most popular at Site SL-1. Sites IS-7 and IS-11, which lack pebble polishers almost entirely, have large percentages of pottery types Villalba Red Streaked and Tarragó Bisquit Ware, both of which have unpolished surfaces.

Material: Porphyritic rock with an aphanitic groundmass of intermediate composition; one pebble has been identified as granite.

Description: Small, irregularly shaped, smooth, and shiny pebbles with parallel striation marks across one or both faces (pl. 20*g-i*). Slight polishing facets can be observed in some. Average diameter is 3 cm.

Pecking Stones

These occur in the top half of the pit at Site IS-3, in Level 20-30 cm. of Pit No. 2 at SL-1, in Level 50-60 cm. of Pit No. 2 at IS-7, and in scattered levels down to 70-80 cm. in the pit at IS-11. They span both the San Lorenzo and the Chiriquí Phases. All will be described together.

Material: Very fine-grained aphanitic, cryptocrystalline rocks composed of feldspar, magnetite, and hornblende. Some are metamorphic; others are igneous.

Description: Unmodified cobble, usually ovoid in shape and biconvex in cross section, with pecking marks at the ends and occasionally on the long sides (pl. 20*j*). They were probably used to shape tools. Length 6-14 cm.

Pounding-Anvil Stones

Represented in both the San Lorenzo and the Chiriquí Phases at all sites except Villalba (IS-7).

Material: Several kinds of rocks—a light gray aphanitic microcrystalline rock, a greenish, phaneritic, medium to fine-grained rock, and a rusty-brown aphanitic groundmass with a few large phenocrysts of light feldspar.

Description: Natural cobbles, round to oval, usually planoconvex in cross section so that one of the faces is nearly flat; some have both faces flat. On the center of the flat face (or faces) there is a pecked depression possibly used to hold small nuts while they were being cracked (pl. 19*a*). The ends and the long sides show extensive evidence of battering; this indicates these stones were used also for pounding.

Projectile Points

Only five were found in our excavations, all from Pits No. 1 and No. 3 at Site SL-1 in the San Lorenzo

Phase. They divide into two groups on the basis of material.

GROUP 1

Material: A dark gray to black aphanitic rock of high density, probably a basalt.

Description: Each point is described separately.

1. Essentially straight sided (one side is slightly convex) with small angular tapered shoulders and a contracting stem (pl. 20*a*). Bulbar face flat and essentially unworked in the body portion, though several accidental (?) flakes have been removed. The bulbar face of the stem was chipped to reduce the size of the bulb of percussion. Truncated triangle in cross section with previous flake scars evident in upper face. Steep sided with edges modified by irregular, steep secondary percussion chipping. Tip broken off. Size: 7.0 x 1.9 x 1.2 cm.

2. Straight sided with angular tapering shoulders and straight contracting stem not quite coming to a point (pl. 20*b*). Bulbar face flat and unmodified; bulb of percussion not present. Opposite face exhibits two long flake scars resulting in a ridge down the center of the artifact. Edges and base are shaped by steep-sided percussion flakes removed from the non-bulbar face. Thin in cross section. Size: 5.5 x 2.0 x 0.6 cm.

3. Appears to be a fragment of a steep-sided projectile point with a flat truncated pyramid cross section and an unworked lower (bulbar?) face (pl. 20*e*). Size: 2.1 x 1.4 x 0.6 cm.

GROUP 2

Material: Jasper, a variety of quartz.

Description: Each point is described separately:

1. Convex, irregular sides, rounded, tapering shoulders (more pronounced on one side), and a straight-sided contracting stem (pl. 20*d*). Bulbar face generally flat and unworked. Upper face shaped along steep sides by irregular percussion. Small secondary chipping along edges. Size: 3.3 x 1.4 x 0.8 cm.

2. Equilateral triangle in cross section (pl. 20*c*). Shaped by percussion flaking, almost entirely primary. Tapers gradually to a point with the butt broad and blunt. Edges at butt end have been dulled for 1.5 cm. from the base. Size: 5.5 x 1.1 cm.

Sandstone Saws

These occur exclusively in the Chiriquí Phase at Site IS-11 where they come from almost all levels. They were probably used to cut ornaments and fishhooks out of shell.

Material: A brown siltstone or fine-grained sandstone composed of an igneous mineral.

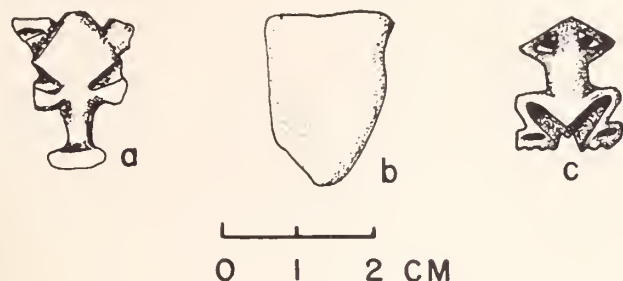


FIGURE 41.—Shell pendants from Las Secas Site (IS-11), Chiriquí Phase.

Description: Thin in cross section (4–5 mm.) and tubular in shape, with flat and smooth surfaces. The most characteristic feature is the bevelling, through polishing, of one or both sides so as to form five abrading edges that may be used for cutting soft materials like shell. In specimens with two cutting edges these may be parallel to each other (pl. 20*m*, *n*) or at angles to each other (pl. 20*p*, *q*). This is also true of the specimens in which only one of the edges has been bevelled for cutting (pl. 20*l*). Width ranges from 2–4 cm.; thickness from 4–6 mm.; length is unknown.

Scrapers

A few scrapers occur in sites of the Chiriquí Phase. They are of little use in chronology or distribution and have thus been put into a single group.

Material: A cryptocrystalline quartz that in some specimens looks like agate.

Description: Angular with what appears to be chipping marks along one edge; otherwise unmodified. Specimens are sharp enough to have been used for scraping hides and so forth.

Sharpening Stone

Only one found in IS-3, Pit No. 3, Level 70–80 cm.

Material: A light, yellow-green aphanitic, vesicular rock, which is composed mainly of feldspar with very minor amounts of magnetite.

Description: Texture makes it excellent for polishing celts and sharpening the edges of stone objects. Both faces used. One face has four concave depressions, resulting from polishing objects like celts. Length is broken off at 16 cm.; thickness is 2.5 cm.

BONES AND SHELL ORNAMENTS

Three small ornaments, probably pendants, were found only in the Chiriquí Phase at Site IS-11. Two are shell and one bone. Each of these pendants will be described separately.

A small figurine (fig. 41*a*) has the shape of a lobster, if looked at from the narrower end; if turned around, one may conceivably see a female figure instead. Length is 2.2 cm. and width 1.6 cm. at the widest point. The carving has been done by careful incising on very soft shell, probably oyster. The back part of the pendant is left unworked. The specimen was found in Level 20–30 cm. at Site IS-11, Pit No. 1.

A small pendant (fig. 41*b*) is in the shape of a flat (5 mm. thick) celt, measuring 2.3 cm. in length and 1.6 cm. in width. The simulated cutting edge (called a bit in a stone celt) has been bevelled. The top, or butt end, is slightly thicker than the bit end as in most stone

celts. This specimen was found in Level 30–40 cm. of Pit No. 1 at Site IS-11 in the Chiriquí Phase.

A small bone pendant is beautifully carved in the form of a frog (fig. 41*c*). The details are amazing: tiny toes, legs curled upward, and bulging eyes that are split in the middle. Length measures exactly 2 cm., and width is 1.3 cm. across the legs. The back is flat and shows no details. A perforation through the body leaves little doubt that it was used as a pendant. The specimen was found in Level 30–40 cm. of IS-11, together with the preceding specimen.

Stone (1963) describes shell ornaments, most of which represent a frog, from the Diquís region of Costa Rica. They are very similar to this specimen. The frogs in the Diquís have been found with vessels of the Red-and-Black Ware (or Polychrome Ware) which in Chiriquí is called Alligator Ware. The same association holds for the Gulf.

The Sequence, Cultural Inventory, and Way of Life of the Gulf of Chiriquí Inhabitants

The various layers of cultural materials in the refuse deposits of the various sites were interdigitated into a single chronological sequence (fig. 42). The framework was provided by the stratigraphy of Site IS-3 with its deep refuse deposit in Pit 3 (fig. 4). Certain pottery types were restricted to the earliest, the intermediate, and the most recent of the occupation levels. The percentage frequencies, at each site, of the pottery types that form the basis for the sequence at the Gulf of Chiriquí are presented in figures 4, 6, 8, and 10.

Presence or absence of Appendage Modes (supports and handles, fig. 43), and, to some extent, the time distribution of stone artifacts (fig. 44) were also useful criteria. These, as well as the presence or absence of pottery types, are considered the "internal" criteria of chronology.

External criteria, on the other hand, are provided by trade wares; in our case, sherds that are important for chronology come from the Coclé-Parita area. John Ladd, who has made an exhaustive classification of the pottery types in that area (Ladd, 1964), personally identified each of the trade sherds. The division of the phases on the basis of the "internal" criteria was carried out independently of the information based on trade wares. In fact, it was not until the very end of the analysis that trade sherds were plotted by levels and matched with the already established phases. The result was very satisfactory; Ladd's phases correlated well with my San Lorenzo and Chiriquí Phases. Each will be summarized, beginning with the oldest and moving to the most recent.

THE SEQUENCE

Burica Phase

It was named after several sites on Punta Burica (Appendix 2, p. 107) that produced a high frequency of the pottery type Isla Palenque Maroon Slipped, the diagnostic pottery of the Burica Phase. While this report was in preparation, the same pottery was isolated in other mainland cemeteries. Since the Burica Phase name has already been used in a preliminary publication (Linares de Sapir, 1966, pp. 405-414), it has therefore been retained here.

The Burica Phase is represented by the two bottom levels of Site IS-3 (Isla Palenque) and the bottom level of Pit No. 2 at Site IS-7 (Isla Villalba), with the diagnostic pottery type reaching a frequency as high as 40 percent in some levels. It is possible that Plain Ware C is actually part of Isla Palenque Maroon Slipped (p. 23). If the badly eroded surfaces of this type actually caused misclassification and the group of Plain Ware C were added, the frequency would have been raised to at least 79 percent in the two bottom levels of the sequence (fig. 4).

Appendage Modes typical of the Burica Phase are Tripod Feet Mode a1 and the very shallow Ringstand Mode a. No other support or handles of any kind are associated with the pottery of the Burica Phase in the Chiriquí Gulf sites. Ranere (Appendix 2, p. 115) has nevertheless found additional modes associated with Isla Palenque Maroon Slipped in the districts of Punta Burica, San Felix, and Remedios. Stone artifacts were absent from these areas.

One of the eleven sherds in the bottom level of Pit No. 3 at Site IS-3 has been tentatively identified as a Venado Beach type. It is a small rim sherd (pl. 14) that looks exactly like a complete vessel labeled Venado Beach in the Peabody Museum, Harvard University. Levels directly above this one produced trade pottery identified by Ladd as being Coclé, but their eroded condition makes it impossible to tell whether they are Early or Late Coclé. Associations with the Venado Beach sherd tend to favor an early date for the Burica Phase.

San Lorenzo Phase

The intermediate phase in the Gulf sequence is called San Lorenzo Phase, after the district in which the Site SL-1 (El Cangrejal) is located and where pottery types characteristic of the San Lorenzo Phase were found in highest frequency (fig. 6). The San Lorenzo Phase thus includes all of the levels of Site SL-1, plus the middle ten levels between 30 and 130 centimeters at Site IS-3 (Isla Palenque); it is poorly

represented at Site IS-7 (Isla Villalba) and entirely absent from Site IS-11 (Las Secas).

Pottery types restricted to the San Lorenzo Phase are Banco Red Line and Castrellón Red Slipped. Types that show their highest frequency in the San Lorenzo Phase, even though they are found in other phases also, are Arayo Polished Line, Caco Red Slipped, Cangrejal Red Line, Centeno Red Banded, Horconcitos Red Banded, Linarte Zoned Red Line. The Unclassified Plain Wares H, I, and J at Site IS-3 are most popular in the San Lorenzo Phase also.

To date, no cemeteries with only San Lorenzo pottery types have been found, and some of the pottery types with their highest popularity in the San Lorenzo Phase, namely Arayo Polished Line, Banco Red Line, and Linarte Zoned Red Line are found in Classical Chiriquí graves (MacCurdy 1911; the Red Line Group). This would not appear to negate the value of establishing the intermediate San Lorenzo Phase. Future work on the mainland should prove if the San Lorenzo Phase has importance there from a chronological standpoint, but on the islands of the Gulf of Chiriquí the pottery types with their highest frequency in the San Lorenzo Phase are definitely older and in lower strata beneath the Chiriquí Phase types.

Chiriquí Phase

This is the last and most recent occupation in the Chiriquí Gulf (fig. 42). It is characterized in the top levels by the appearance of three important pottery types: Tarragó Bisquit Ware, Villalba Red Streaked, and Cavada Applique and Red Banded. The first two occur in large percentages (20 to 30 percent) at Sites IS-7 and IS-11. Since these are two of the most popular wares in the "Classical Chiriquí Culture," corresponding, respectively, to Armadillo-Terra Cotta Ware and Fish-Tripod-Handled Ware in the nomenclature of Osgood (1935 pp. 236-7), the phase was simply named Chiriquí. Some of the pottery types that characterize the San Lorenzo Phase continue into the Chiriquí Phase, but in very small percentages (fig. 42).

The Chiriquí Phase is further characterized by the occurrence of the following Appendage Modes, some of which may have actually appeared in the very late part of the San Lorenzo Phase, achieving maximum representation in the Chiriquí Phase (fig. 43): Tripod Feet Modes e1 to e4, f and h; Pedestal Base Modes c-d, i, m; Strapped Feet Mode b; Ringstand Mode d; Strap Handle Mode d; Round Handles Modes a and b; and Double Handle Mode c.

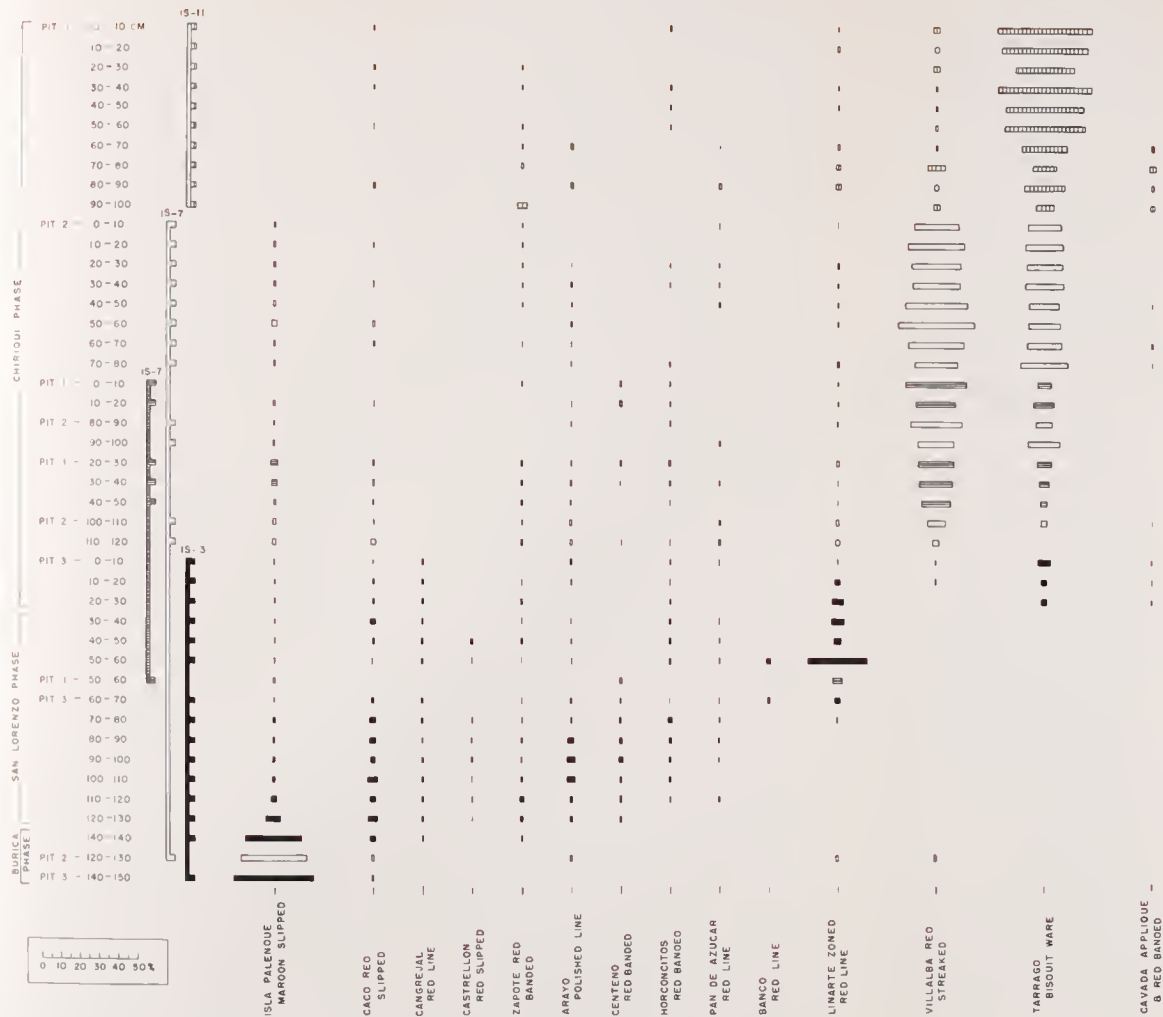


FIGURE 42.—Seriated sequence of selected stratigraphic pits in the Gulf of Chiriquí area, showing ceramic trends and presence or absence of pottery types in each of the three phases. (Pit 3—140-140 should read 130-140.)

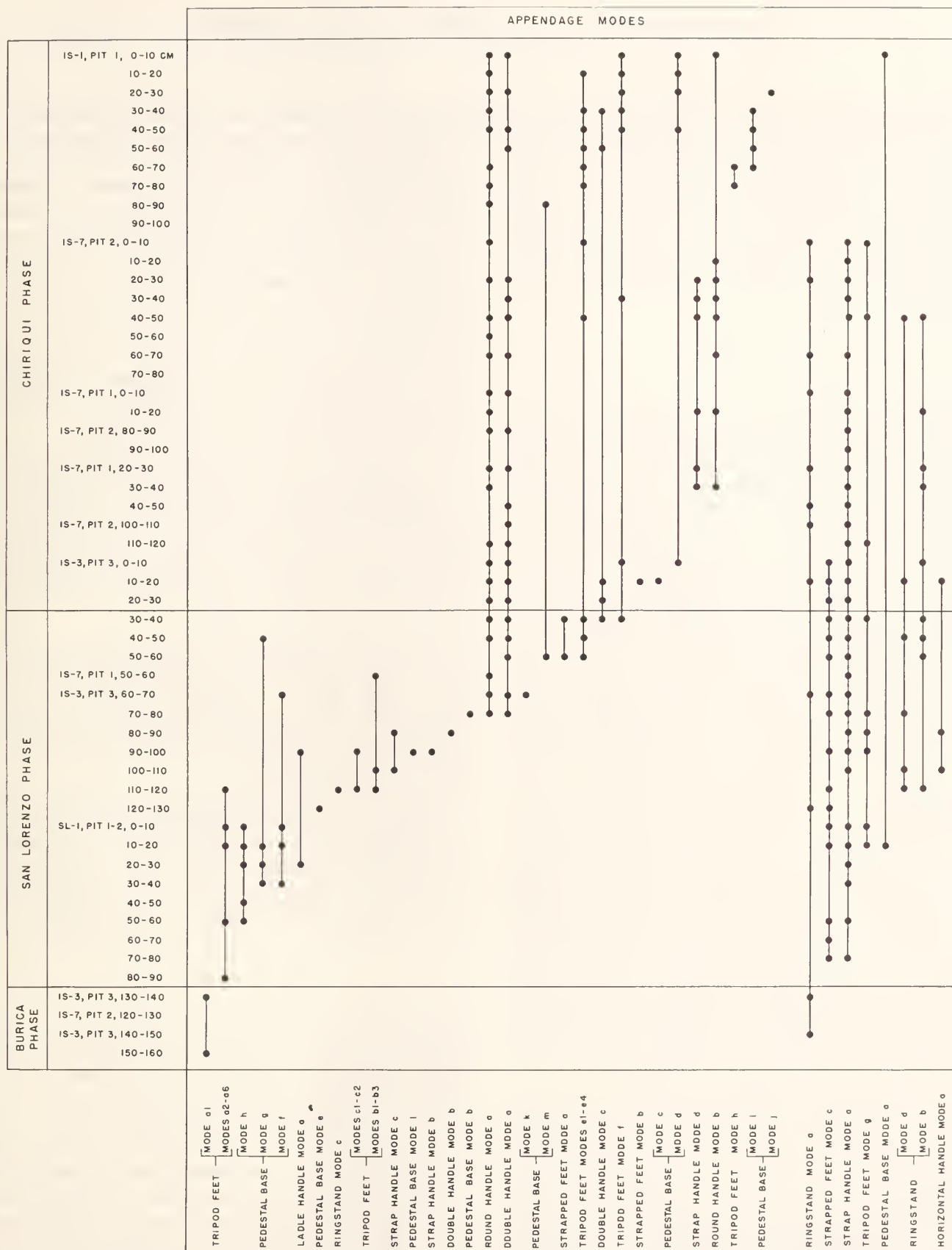


FIGURE 43.—Distribution of Appendage Modes in the San Lorenzo and Chiriquí Phases. Only presence or absence indicated. (IS-1 should read IS-11.)

THE CULTURAL INVENTORY AND WAY OF LIFE

The limited extent of the excavations in the Gulf Islands, plus the perishability of materials, preclude detailed reconstruction of the social and material culture of the Gulf people throughout the years. It is possible, however, to suggest a schematic outline of the main subsistence patterns in each of the phases, based on stone artifact distributions (fig. 44) and on the occurrence of mollusks (fig. 45) and bones (Appendix 1, table 7).

Burica Phase

The Burica Phase is surprisingly devoid of any cultural material except pottery. There are no stone artifacts, no remains of mollusks, fish, or mammals. This situation may be partly explained by the factor of preservation. Where shells are abundant in a midden, they contribute as much calcium as the soil can absorb so that other materials such as bone can be preserved. From a glance at figure 45 and Appendix 1, table 7, it is evident that the sites with the greater number of bone remains are also the ones with the greatest amount of shell concentration. There are no shells and consequently few bones at Sites IS-3 and IS-7. What about the lack of stone artifacts? If we observe figure 44, we note that the absence of stone artifacts is a phenomenon of the lower levels of Sites IS-3 and IS-7, not only those that belong to the Burica Phase.

Although the true explanation for this situation cannot be recognized from existing evidence, we can offer some suggestions. The people of the Burica Phase may have thrown their food refuse in areas other than those we excavated, or they may have eaten mollusks and fish at the beach and thrown their remains into the sea. If this is assumed to have been the case, it is more difficult to explain the absence of stone artifacts except to state simply that these people did not practice agriculture (though most people at the time did farm). Whatever nonagricultural tools were missing, one can blame on chance.

A second possibility is that the people of the Burica Phase lived elsewhere, only visited the islands intermittently, and did not farm on them. At the islands they lived on marine fauna, traces of which have disappeared.

A third explanation may simply be one of insufficient sample. The intensity of the occupation in the Burica Phase, judged crudely from the fact that the number of sherds in levels of a two by one meter strata cut

of the Burica Phase never reached 200, was scanty as compared to subsequent phases. Nevertheless, the absence of stone artifacts at Site IS-3 continues in all the levels up to 100 cm. (Appendix 1, table 6). In these levels sherds number in the five hundreds and yet stone artifacts are missing. For this reason I prefer the explanation that the Burica Phase people, as well as the people of the early part of the San Lorenzo Phase at IS-3, did not live permanently on the island.

No remains of house structures were found in the Burica Phase or in any of the phases. This may be the fault of our small test excavations and the lack of preservation. We found no burials either.

The people of the Burica Phase probably came to the islands from the mainland north and southwest of David, somewhere between Punta Burica and the Chiriquí Gulf Islands. This is the area where all of the Burica Phase sites have been found to date. None have been found east of David or of the Chiriquí Gulf. The ultimate origin of the Burica people may thus lie to the west in Costa Rica.

As soon as they arrived on the islands these people apparently started trading with the Parita Bay area far to the east of the Gulf; presumably they also traded with people even farther away, as there is one sherd of Venado Beach in the lowermost level of Pit No. 3 at Site IS-3.

None of the forms, decorative techniques, or paste composition of Isla Palenque Maroon Slipped are carried over into the types of the San Lorenzo and Chiriquí Phases. Apparently, the Burica Phase people of Site IS-3 eventually abandoned the island, perhaps by the pressure of the people in the following phase.

San Lorenzo Phase

Cultural material other than pottery occurs at Isla Palenque (IS-3) in levels belonging to the San Lorenzo Phase, as well as in the bottom levels of Site El Cangrejal (SL-1), whose entire occupation belongs within the San Lorenzo Phase. If we recognize that the paucity of material makes all inferences highly tentative, we can hazard some interpretations.

During the San Lorenzo Phase the inhabitants of Isla Palenque fished and hunted in the earlier part, but turned mostly to agriculture in the latter part. The kinds of fish that they caught have not been identified, but they are probably the same

species existing in the area today and known locally by the following names: bonito, sierra, pez gallo, hurel, and mero. Lines and/or nets were weighed down by "sinkers" made of notched pebbles.

The only mammal hunted was *Odocoileus virginianus* (Chiriquí White-tailed Deer), a large deer with branching antlers that lives in the open savanna between the mountains and the Pacific side, all the way from Costa Rica to the Bayano River in eastern Panamá. It favors the thickets with secondary growth, rather than the deep forest (Goldman, 1920). The same type of deer was also hunted by the inhabitants of El Cangrejal (SL-1). It is interesting to note that at both sites the only remains found are parts of the thigh and leg (Appendix 1, table 7). This may mean that hunters brought back to the village only the easily transportable parts of the animal which contain most of the good meat. On a small island such as Palenque there is little hope of finding deer a few months after the island has been settled by man. The people of IS-3 probably went hunting on Isla Brava where, even today, people from Boca Chica go to hunt. They may have hunted also in the vicinity of Site SL-1. Projectile points used in hunting are found for some reason only at Site SL-1 and not at IS-3.

Only one type of shell, *Melongena patula*, which occurs in brackish waters, was found in Level 30-40 cm. of Site IS-3. At this time in their history the inhabitants did not rely solely on mollusks for food. This may be due to the fact that Isla Palenque, though small, offers good agricultural land. Furthermore, the site is near the big island of Isla Brava where the inhabitants could have gone to cultivate their fields much in the same manner that the present inhabitants on the mainland of Boca Chica go to Isla Brava to farm.

In contrast, the inhabitants of SL-1 used mollusks as a substantial part of their diet. In figure 45 only the presence or absence of mollusks has been indicated; from field notes, one knows that they were abundant, especially in the top six levels of Pit No. 1. Incidentally, the inadequacy and arbitrariness of the sample from such small pits may be indicated from the fact that Pit No. 3 has such a small number of shells. Most of the species of mollusks, whether bivalves or univalves, live in mud flats and mangrove swamps. The only bivalves found at SL-1 are *Anadara grandis*, *Anomalocardia subrugosa*, and *Lunarca bucaruana*. Univalves are more numerous. Among them are *Melongena patula* and *Strombus* sp., two very large shells with plenty of meat. Tiny species such as *Cerithidea* sp., found in brackish water bays or entirely out of the water clinging to reeds and twigs, were gathered also. The species

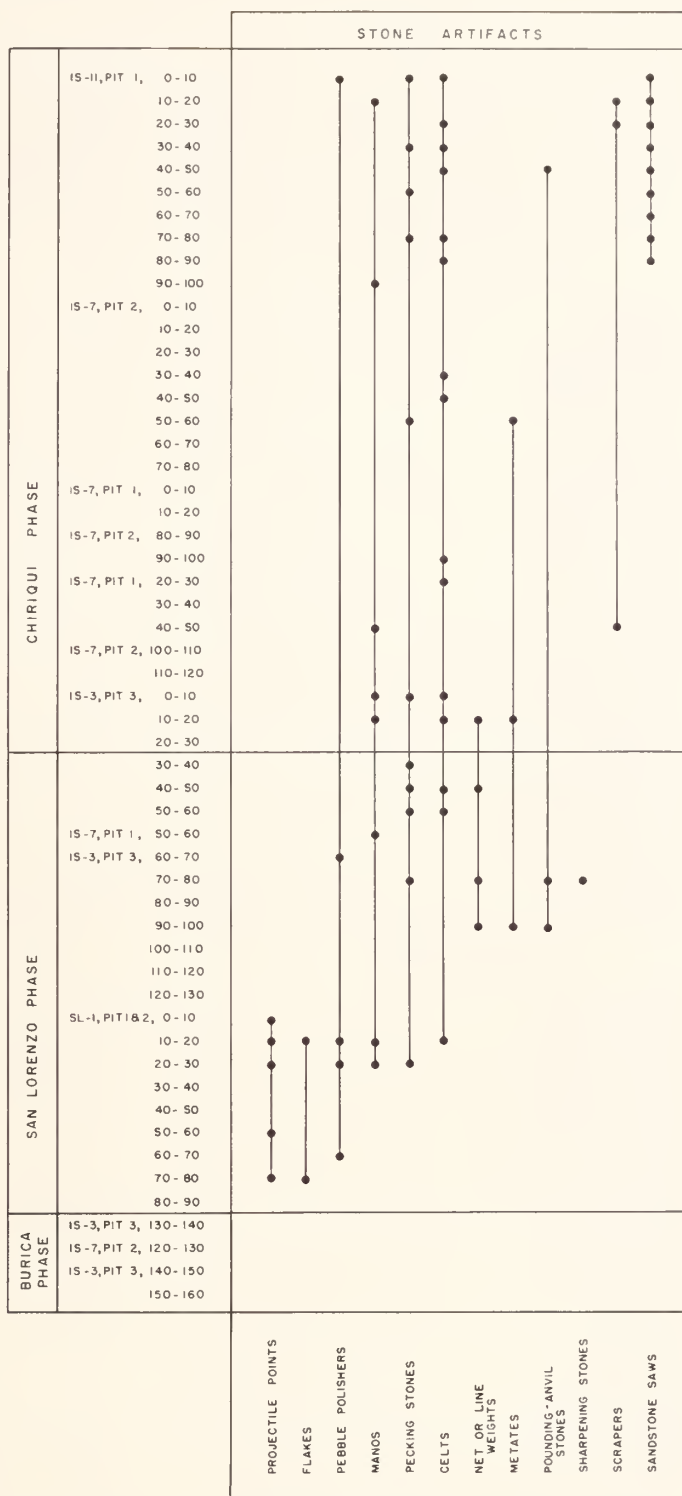


FIGURE 44.—Occurrence of stone artifacts in the San Lorenzo and Chiriquí Phases. Only presence or absence indicated.

Thais kioskiformis and *Littorina* sp. are found clinging to rocks between the mid-tide and high-tide line.

The people living at El Cangrejal (Site SL-1) had rich mud flats and swamps to exploit. When the tide retreats, great expanses of mud are exposed below the bank on the edge of Site El Cangrejal (SL-1). The

	IS-3							IS-7														
	Pit 1, Levels							Pit 1, Levels						Pit 2, Levels								
	1	2	3	4	5	6	7	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9
GASTROPODS																						
<i>Cerithidea</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Conus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fasciolaria princeps</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fissurella virescens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Latirus ceratus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Littorina varia</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Littorina</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Melongena patula</i>	-	-	-	x	-	-	-	-	x	x	-	-	-	x	-	-	x	x	-	x	-	-
<i>Muricanthus radix</i>	-	-	-	-	-	-	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Natica chemnitzii</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Nerita scabricosta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Oliva</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Oliva porphyria</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Petalocochus innumerabilis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Purpura patula pansa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Siphonaria gigas</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Strombus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-
<i>Strombus galeatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Strombus granulatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tegula pellis-serpentis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thais crassa</i>	-	-	-	-	-	-	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thais kiosquiformis</i>	-	-	-	-	-	-	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thais melones</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PELECYPODS																						
<i>Anadara (Cunearca)</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara grandis</i>	-	-	-	-	-	-	-	x	x	x	-	-	-	-	-	-	-	x	-	x	-	-
<i>Anadara multicostata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	x	-	-	-	-	-
<i>Anadara obesa</i>	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara tuberculosa</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anomalocardia subrugosa</i>	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Arca pacifica</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cardita laticostata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chama frondosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Dosinia dunkeri</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lunarca bucaruana</i>	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ostrea</i> sp.	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ostrea fisheri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ostrea pinctada</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pitar tortuosus</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda maritima</i>	-	-	-	-	-	-	-	x	x	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Protothaca asperina</i>	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Spondylus princeps</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FIGURE 45.—Distribution of mollusk remains by site. Only presence or absence indicated.

	IS-11										SL-1																	
	Pit 1, Levels										Pit 1, Levels									Pit 3, Levels								
1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	
GASTROPODS																												
<i>Cerithidea</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Conus</i> sp.	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fasciolaria princeps</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fissurella virescens</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Latirus ceratus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Littorina varia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Littorina</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Melongena patula</i>	-	-	-	-	-	-	-	-	-	-	-	x	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Muricanthus radix</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Natica chemnitzii</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Nerita scabricosta</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Oliva</i> sp.	x	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Oliva porphyria</i>	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Petalconchus innumerabilis</i>	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Purpura patula pansa</i>	-	x	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Siphonaria gigas</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Strombus</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-
<i>Strombus galeatus</i>	-	-	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Strombus granulatus</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tegula pellis-serpentis</i>	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thais crassa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thais kiosquiformis</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Thais melones</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PELECYPODS																												
<i>Anadara (Cunearca)</i>	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara grandis</i>	-	-	-	-	-	-	-	-	x	-	-	x	x	x	-	x	-	x	-	-	-	-	x	-	-	-	-	-
<i>Anadara multicostata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara obesa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anadara tuberculosa</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Anomalocardia subrugosa</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Arca pacifica</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cardita laticostata</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chama frondosa</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Dosinia dunkeri</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lunarca bucaruana</i>	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ostrea</i> sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ostrea fisheri</i>	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ostrea pinctada</i>	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pitar tortuosus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Polymesoda maritima</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Protothaca asperina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Spondylus princeps</i>	-	x	-	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FIGURE 45—Continued

people could gather mollusks here or go to the mangrove swamps nearby.

Besides hunting, fishing, and collecting mollusks, the Indians of the San Lorenzo Phase practiced agriculture. What species of plants they grew remains unknown. Most likely corn was one of them since manos and metates were found at the site. The Indians may have also gathered nuts, probably of the pejobaye (*Guilema gasipaes*) palm, which they cracked with the help of pounding-anvil stones. To clear the land, they used polished celts that were probably hafted unto strong handles.

The people of both IS-3 and SL-1 made large quantities of pottery, which they polished with the aid of small, round pebbles (called by us pebble polishers); they chose smooth pebbles so as to compact the surface and leave few striation marks.

Traces of any structures were absent; probably they were made of straw. We know nothing about the composition of their families and of the structure of their society.

We know that they traded, directly by sea, or indirectly by land, with the Late Coclé people of the Parita Bay.

Chiriquí Phase

The same patterns of agriculture combined with hunting and fishing, which existed in the San Lorenzo Phase, continued into the Chiriquí Phase in the Gulf.

Hunting and gathering mollusks were activities of secondary importance to the inhabitants of Isla Palenque; they lived mostly from farming, supplemented with some fishing. Few bone remains of fish have been found; that they were caught is mainly an inference based on the presence of notched, flat cobblestones that were supposedly used as weights. For farming they used celts; these may have served the dual purpose of felling trees and breaking the ground. Once the celts were useless in agricultural pursuits, they were employed as hammerstones, perhaps to shape other tools.

The inhabitants of Site IS-7 occasionally supplemented their diet with mollusks gathered in mud flats or mangrove swamps. In contrast, the inhabitants of Site IS-11, who lived very far out to sea, relied heavily on mollusks. The refuse piles they left behind are real shellmiddens. While an average of two to three pounds (1-1.5 kilos) of shell was found in each of the levels of Site IS-7, an average level of Site IS-11 yielded 30 to 40 lbs. (15-20 kilos) and on occasion up to 75 lbs. (35 kilos) of shell, not counting the enormous quantity of decomposed shell that was irrecoverable.

The people living in these sites gathered different species of mollusks. Site IS-7 is located on a protected bay not far from the brackish waters of the mangrove swamps bordering the estuaries. Las Secas Islands, on the other hand, are located far out in the open sea. The species of shells found at each naturally reflect this environmental difference. Most of the mollusks that occur in Site IS-7, whether bivalves or univalves, are species that live in mud flats or mangrove swamps. Among the Pelocypods (bivalves) in these habitats are *Anadara grandis*, *Anomalocardia subrugosa*, *Dosinia dunkeri*, *Pitar tortosa*, and *Polymesoda maritima*. Other kinds of bivalves such as *Lunarca bucaruana* live intertidally on the reefs. Most of the gastropods (univalves) that we found at SL-1 are available at low tide on mud flats; among these is the large mollusk, *Melongena patula*, and other smaller species such as *Muricanthus radix* and *Natica chemnitzii*. The small species *Littorina varia* clings to rocks between mid-tide and high tide in the same way as *Siphonaria gigas*. The very large shell *Strombus*, with abundant food, is found just below the tide line.

Only two of the eleven species of bivalves at Site IS-7 occur at Site IS-11: *Anadara grandis* and *Ostrea* sp. The rest of the species at IS-11 are found in completely marine, sandy, or rocky habitats. Several of the smaller species such as *Arca pacifica* and *Chama frondosa* adhere to the underside of rocks in intertidal zones.

Of the eight species of gastropods (univalves) at IS-7, only three occur at Las Secas. Most of the others that are typical of Las Secas are small species that live between rocks intertidally, such as *Nerita scabricosta*, *Tegula pellis-serpentis*, and *Fissurella virescens*. At Las Secas are found also the species *Fasciolaria princeps*, a very large shell (up to 20 cm. in length) found offshore, and the beautiful and colorful species *Oliva porphyria*, which lives in sandy beaches buried just below the surface. *Siphonaria gigas* is an interesting smaller species, which adheres to rocks and breathes air.

One of the important shells not used for food is the *Purpura patula pansa*, found commonly on rocks in exposed locations. This mollusk has its mucous glands modified for the secretion of a purple fluid. This fluid was used by the Indians of western Central America to dye textiles (Keen, 1958, p. 376).

The islands of Las Secas are surrounded by rocky cliffs and coral beds where, when the tide is low, many mollusks are found. The people who lived here gathered their mollusks around these rocks rather than wading in muddy waters or in mangrove swamps. In contrast to the settlers of Isla Villalba who must have fished little, those of Las Secas relied heavily on fish. Although the species that they caught have

not been identified, there are numerous bones of large and smaller fish and even rays. These settlers also hunted; the inhabitants of Villalba apparently did not. The Indians caught iguanas and big lizards (Appendix 1, table 7) much in the fashion of the Guaymí Indians of today, who eat these reptiles. In addition, the people of IS-11 hunted deer of two species. The smaller of the two species, *Mazama americana*, is commonly known by the name of "brocket" in English and "cabra del monte" in Spanish. It prefers wooded habitats and lives in thickets in remote areas. It is easily identified by its small size and unspiked antlers. Today it is found in the area of Boquete in Chiriquí and in the province of Bocas del Toro (Goldman, 1920).

The larger species of deer hunted by the IS-11 inhabitants is the well-known species *Odocoileus virginianus* (Chiriquí White-tailed deer). It occurs in the open savanna regions in the Pacific coastal lands of the Isthmus; it is a widespread species occurring all the way to the United States. The only bones found in the refuse belonging to this species are fragments of the thigh and leg of the deer. It is possible that the people went away to hunt and only brought back the largest and most edible portions of the animal.

In spite of the heavy reliance on hunting, fishing, and mollusks, the inhabitants of Las Secas also cultivated. One mano was found in the excavations (Appendix 1, table 6), plus many celts. Another type of artifact that is very intriguing is the sandstone saw, consisting of a flat abrader with beveled edges; it was probably used to shape hooks, made of shell, for fishing. Manos and metates used for grinding corn, plus celts, were found in the upper levels belonging to

the Chiriquí Phase at Site IS-3. The celts were used in felling trees or digging the ground.

The people living on the island at the beginning of the Chiriquí Phase traded items with the Late Coclé dwellers of the Parita Bay region. At the end of the Chiriquí Phase, the trading was with the people of the Herrera Phase in the Azuero Peninsula (Parita Bay), who came later than the people of the Late Coclé occupation.

During the Chiriquí Phase, Las Secas and Villalba may have been used as ceremonial gathering places, if one attributes some religious purpose to the carved stone basalt columns found on both islands. Those at Site IS-6 on Villalba were originally arranged in a circle on top of a walled mound with niches (Haberland, 1960a).

The most immediate source for the pottery types of the Chiriquí Phase that appear in the Gulf Islands is the mainland lowland area north and south of David. Thousands of graves of the "Chiriquí Culture" have been excavated here. They yielded vessels belonging to the four well-known Chiriquí wares, but in what percentages each ware was represented, and where, is not known. Only the two types mentioned appear in the Gulf in large numbers; the two others, Alligator Ware and Negative Ware, are only represented in very small quantity in the last part of the occupation (fig. 10). Perhaps this indicates that there are chronological differences within the Chiriquí Culture; perhaps it is a matter of geographic distribution, Alligator and Negative Wares being more typical of the Highlands. These questions can only be settled by an archeological study of the Chiriquí Highlands.

European Conquest and Assimilation of the Indians of Chiriquí

Since the most recent aboriginal occupation in the archeological sequence, the Chiriquí Phase, lasts until the European Conquest, it is of interest to review here the chroniclers of the 16th and 17th centuries for information on the Indians of Chiriquí. This task is beset with difficulties. Places mentioned in the chronicles are often impossible to identify, and references to the inhabitants are no more than inventories of gold contributed and souls converted. Many questions remain unanswered. For example, to what kind of

cultural unit did the Spaniards refer by the term "provincia"? Was it a territory, one of several tribes, a linguistic group, a residence group, or a kinship unit? Interpretations to these and many other questions may eventually be found in the yet unpublished manuscripts of this epoch. With the records now available, we can only hope to piece together a brief and sketchy historical outline in proper chronological order.

EARLY EXPLORATIONS OF COASTAL CHIRIQUÍ

When Pedrarias became governor of Castilla del Oro in 1514, he initiated armed explorations called *entradas* into the unknown western regions of the Isthmus. The first was by land. In 1515 Captain Gonzáles de Badajoz, with a contingent of soldiers, marched from Darién as far west as the Azuero Peninsula, where he was defeated by the cacique París. The following year an overland expedition, under the Licenciado Gaspar de Espinosa, was more successful in overrunning the Gulf of Parita and the Azuero Peninsula. From here Espinosa dispatched a sea expedition under Bartolomé Hurtado and Hernán Ponce to explore the coast west of the Azuero Peninsula. Lothrop (1963, p. 6) says of this voyage:

Their fleet consisted of three small dugout canoes from Chirú and two large ones with 18 thwarts (36 paddlers) from Guararí. Supposedly they ventured as far as the Gulf of Nicoya in northwestern Costa Rica.

With watercraft of this sort, Captains Hurtado and Ponce must have been forced to touch land at

several points to get food and supplies. Apparently, they stopped at the island of Cébacó, where they were met by a very friendly chief, and also visited Isla Coiba, where they procured some gold from the inhabitants (Anderson, 1914, pp. 198-199). These two islands are off the south coast of Veraguas. They may have stopped also in the Gulf of Chiriquí. We know that they tried to land on the Golfo Dulce in Costa Rica, but were persuaded against it by a group of Indians called Chiuchires, who were armed to the teeth. The Chiuchires lived at or near the Diquís Delta (Lothrop, 1963, p. 6).

The next *entrada* led by Espinosa in 1519 did not proceed beyond the Azuero Peninsula. His third venture the following year took him all the way by sea to the province of Chiriquí. At least four different accounts of this expedition exist: one is by Bartolomé de Las Casas, another is by Andagoya, a third one is by Herrera, who plagiarized from the other two, and

a fourth is by the historian Fernández de Oviedo y Valdés. Only Herrera's account has been ignored in the following composite summary of events.

The Licenciado Espinosa left the town of Panama by sea, commanding the two ships that had previously been built by Balboa to explore the coasts of the Pacific. He landed on Isla de Cébacó, whose inhabitants had been visited four years earlier by Bartolomé Hurtado and Hernán Ponce. The Indians offered no resistance. Instead they cooperated by telling Espinosa of the great riches that the cacique Urraca had in store in his mountain habitat to the north. An attempt to steal Urraca's gold resulted in a resounding defeat for Espinosa's forces. His and his men's lives were saved only by the intervention of land forces under Pizarro, but the Spaniards were no match for this Indian chief. They were forced to flee in a great hurry to their ships.

Espinosa and Pizarro then sailed together westward across the Gulf of Chiriquí to the province of Burica. Here they stopped at an island which they called Sancto Matías (probably Isla Burica off the peninsula of the same name). From this island they went to the mainland where many Indians came out to fight, but were soon defeated. Villages were raided and women and children were captured. Learning that a wealthy chief lived nearby, Espinosa sent Francisco Campañón with 50 men to raid him. After a four days' journey from the Burica Coast into the mountains, they came upon the inhabitants of the Indian town:

. . . where they had a palisade made out of wood like a fortress, and the Spaniards entered it and killed many because they . . . (the Indians) . . . could not leave the inside of the palisade, stumbling one over the other, and the Spaniards had a good chance to use their force, their arms and their swords. (Acosta, p. 77).

Espinosa then ordered one of his ships to sail on to the Gulf of Lúcar in Nicaragua, while he returned by land to Panama. The other ship presumably followed him by sea because we next find Espinosa in the province of Huista in Chiriquí loading a ship with maize and sending it on to Panama. This ship may have been anchored near the Bay of Muertos where Isla Villalba (IS-7) is located. Of the province of Huista, Andagoya has the following words to say (Markham, 1865, pp. 24 and 25):

The people of this province and of that of Burica were almost exactly the same in the fashion of their clothes, and in their customs. The women wore a truss round their loins, as their clothing; and the men were naked. The country is fertile, with plentiful supplies of fish, and a great quantity of swine, which were caught with large nets of stuff like hemp, called by the Indians *nequen*, the meshes being a finger in breadth. These nets were fastened at the entrance of a wood where there was a herd of swine, who came against the nets and were unable to get through the meshes. Then the people called out, the nets fell

over the swine, and they were killed with lances, so that none escaped, of those who fell into the nets.

Leaving this province on our way to Panamá by land, we arrived at a mountainous district, with a cold climate, where we found some forests of very beautiful oaks covered with acorns. There were three or four chiefs in this province, and their villages were well fortified with palisades made of very strong thorny plants, intertwined and forming a thick wall. Throughout these districts the Indians were seized and bound. From Burica to this province, which is called Tobreytota, nearly every chief has a different language from the others. From this hilly country we turned to descend towards the sea, and came to the province of Natá, where the town was founded which is now called Natá.

The next Spaniard to venture into the lands of what is today the province of Chiriquí was Gil González Dávila (or de Avila), who sailed westward from the Pearl Islands in 1522 hoping to reach Nicaragua. Dávila wrote a letter explaining his journey; the treasurer of his party, a man named Andrés de Cerezada, left a detailed itinerary of the Indians met and of the gold gathered. The section of Cerezada's account which deals with the islands and mainland regions of western Panamá is worth quoting in full (Peralta, 1883, pp. 27 and 28; my translation):

He left the island of Las Perlas Tuesday January 21 of 1522, arriving at the island of Ceguaco which is more than 50 leguas away, baptizing the chief and 184 people, including those baptized on the way back; he (the chief) gave 1844 pesos and 7 tomines of gold. To this island the chief Guanant, who lives in the mainland, sent 86 pesos, 4 tomines of gold.

The island of Madera is 15 leguas by sea from Ceguaco: there came the chiefs of the region, who are Tucug, Pera, Huysca, el Coao, Brocatebagia, Tacuria; 37 persons turned Christian, they gave 1095 pesos, 4 tomines of gold.

The island of Cebo is 12 leguas by sea from the island of Madera; 6 persons were baptized, the chief gave 39 pesos, 4 tomines of gold.

Chiriquí is 5 leguas of the island of Cebo on the mainland, and from here on the Captain proceeded by land. A chief came from the highlands and 8 people took communion; the cacique from the sierra gave 56 pesos of gold.

The chief Copesiri is 6 leguas ahead; 44 persons were baptized, he gave 55 gold pesos, and the chiefs of Calaacasala, who came there, gave 174 pesos, and the chiefs of Barecla 84 pesos, and chief Cherique 26 pesos, which makes a total of 339 gold pesos.

The chief Charirabra is 3 leguas ahead: 64 persons were baptized, he gave 55 pesos, and other chiefs 35 pesos, making a total of 90 pesos.

The chief Burica is 10 leguas ahead: there were baptized 47 persons, he gave 249 pesos and six tomines of gold, and Andrés Niño brought here 120 pesos given by a chief of the island of Quica, and 64 pesos given by the chief of the Island of Madera which are 433 pesos, 6 tomines of gold.

Only one of the islands that Cerezada mentions, Ceguaco, can be positively identified as the island of Cébacó in the Gulf of Montijo. His account is of much value because it proves that at least some of the Gulf of Chiriquí Islands and many points on the mainland coast of this province were populated at the time of the conquest by numerous Indian chiefdoms.

The year after Dávila's expedition, Pedrarias ordered Benito Hurtado to build a town in the province of Chiriquí. The name chosen for the town was Fonseca, and the place was near the present towns of San Lorenzo and Horconcitos (fig. 2), a few kilometers east of our Site El Cangrejal (SL-1). It was built in the year 1523. I have translated the account of Hurtado's experiences in this town as recorded by Las Casas (1951, vol. 3, pp. 399-400).

When he (Hurtado) arrived he sent for the peoples of that land; his call was answered by the people of Chiriquí, and afterwards by a people called Bareclas, and then by those of the province of Burica and the people who lived on the Gulf of Osa (Golfo Dulce), all of it a heavily settled land that extends for about one hundred leagues. All of those people came without offering resistance because they were startled by the wars and the cruelties that they had heard of, or had suffered when, in the past years, Espinosa had traversed those lands. The Spaniards were two years in that town (Fonseca) with the Indians serving them, but they (the Indians), not being able to endure so much servitude and continuous tyranny, revolted and killed some of the Spaniards, who finally agreed to abandon their town. All that land, as well as thousands of leagues of land nearby, was at one time full of people but is today deserted and inhabited by wild beasts, mainly tigers.

The discovery of Perú in the 1530s brought to a halt the first period of discovery and conquest in the Isthmus. For several decades no more "entradas" were made into the western provinces of Panama; instead, all able-bodied soldiers went to seek riches and adventure in Perú.

From the above accounts of the first half of the 16th century we can make some general observations relevant to the archeological situation. None of the four islands visited in 1522 by Dávila and recorded by Cerezada can be positively identified as one of our Chiriquí Gulf Island sites. Nevertheless, some of the conditions existing in them may have also applied to our islands. Each of the islands he mentioned was governed by one chief only. To judge from the

number of baptisms, 184 in one isle and 6 in another, the size of the population may have varied considerably.

Not only the islands, but also points along the mainland coast of the Chiriquí Gulf were heavily inhabited. The Burica Peninsula was dotted with villages along the coast and in the interior. This fact differs with few finds of surface collections along the Burica coast belonging to our most recent Chiriquí Phase (see Ranere, Appendix 2, p. 113). The Indians of the Province of Huiste, in the vicinity of the Bay of Muertos where our site Isla Villalba (IS-7) is located, were said by Andagoya to be, "in the fashion of their clothes and in their customs," almost exactly like those of Burica. He does not mention whether or not they spoke the same language, but there apparently was some sort of cultural continuity between the two areas. This fact may be significant since IS-7, like Punta Burica, has an occupation belonging to our most recent occupation, the Chiriquí Phase. The area around our site of San Lorenzo (SL-1) may, however, have been uninhabited at this time since, in order to populate the town of Fonseca, Indians were sent for from as far away as the Golfo Dulce in Costa Rica. It is interesting to note that Site SL-1 lacks the most recent Chiriquí Phase.

Concerning the seaworthiness of prehispanic Indian crafts, it is revealing to note that the Spaniards themselves were able, in borrowed canoes, to cover enormous distances. Bartolomé Hurtado and Hernán Ponce went from the Península de Azuero as far west as the Gulf of Nicoya in Costa Rica. Francisco de Campañón, in a small canoe, navigated from the Gulf of Chiriquí to the town of Natá in the province of Coclé. It is not surprising, therefore, that the prehispanic Indians of our islands probably made voyages as far east as the Azuero Peninsula and as far west as Punta Burica—and probably much farther.

17TH-CENTURY EXPLORATIONS OF COASTAL CHIRIQUÍ

A hundred years after the first Spanish contacts with groups on the mainland and coast of Chiriquí, the Audiencia de Panama commissioned a pilot called Diego Ruíz de Campos to carry out a detailed survey of ports in the Pacific. The *Relación* which he wrote in 1631 is an important document since it contains detailed description of two of our Chiriquí Gulf sites; the first of these is Las Secas (Cuervo, 1891, p. 49):

Turning west four leagues to the sea (from the Río San Félix) there are the Secas islands which are nine in number and which though called *Islas Secas* (dry islands) all have fresh water and some have coconut palms. They are hilly and forested and in some parts they have some small beaches of sand where boats and ships can arrive. In all of them there is nothing important except water and lumber.

The second one of the islands that Diego Ruíz de Campos talks about is Villalba, more commonly known as *Isla Muertos* (Cuervo, 1891, p. 50):

On the eastern part of the river of Chiriquí there joins another river called the river of Chorchá which is 'caudaloso' and has much wood to construct ships and other 'baxeles' and on them have been built very big and good ships. At the mouth

where the river Chorchá joins the Chiriquí river there is a small island called *isla de Muertos* which is heavily forested.

The archeological analysis made in this study would favor the hypothesis that the occupation of Villalba (*Isla Muertos*) and Las Secas lasted until the European Conquest. It would be logical, therefore, to expect that Diego Ruíz de Campos would have found these islands inhabited by Indians. We forget, however, that more than 100 years had passed since the early Spanish explorers cruised around them in their efforts to explore lands farther to the west. The Indians of these islands could have been exterminated or taken into slavery; those that survived probably fled to the mainland. Living in such circumscribed surroundings, they were an easy prey to conquerors. For this reason it is not surprising that the pilot de Campos found these islands uninhabited. In fact, he includes in his report a description of the only 30 natives who survived after the conquest on the island of Taboga near Panama City (Cuervo, 1891, pp. 20 and 21). They represented a population which, a century before, had probably consisted of several hundred.

MAINLAND INDIANS OF CHIRIQUÍ

Indians living on the mainland managed to survive the first Spanish raids more successfully than did their neighbors on the islands. The task of colonizing these groups was left in the hands of Franciscans and Dominicans, whose policy was to resettle them into towns in order to facilitate their conversion and control. With this end in mind, the Spaniards established a number of towns on the savannas of southern Chiriquí that served both as centers for *encomenderos* and as places from which to spread the faith. The first of these was Remedios, founded in 1589. It was followed two years later by the towns of Pedro de Montijo and Santiago de Alanje. In 1623 the Indian town of San Lorenzo was built on the shores of the Río Fonseca, not too far from the spot where 100 years earlier stood the town of Fonseca.

From Remedios and San Lorenzo the energetic Fathers proceeded to advance on the Guaymí Indians who lived in the highlands in the eastern part of Chiriquí and adjacent Veraguas. The best known of these missionaries was Fray Adrián de Santo Tomás. He lived with the Guaymí between 1622 and 1637

and left us a very complete account of their customs, which has been translated in a publication on the pottery of Veraguas (Lothrop, 1950, Appendix 11).

The coastal savannas and the highlands north of the Gulf Islands were populated at the time of the Conquest by Indian groups who set themselves apart from the Guaymí, who were their enemies. They were catechized by missionaries based in the town of Alanje. I shall discuss later how the distribution of these Indian groups conforms closely to the distribution of the 'Classical Chiriquí' ceramics, made until the time of Conquest and used to define the most recent occupation in the Gulf. Here it suffices to point out that a knowledge of these Indians is useful in drawing analogies to the Chiriquí Phase occupation. Fortunately, there is a fairly detailed account of a visit to them made by a missionary called Fray Antonio de la Rocha sometime in the first three or four decades of the 1600s. It was first published in 1681-82, but it was not until several years ago that a reprinted version brought it to the eyes of a larger public (de la Rocha, 1964, pp. 82-132). Until then

it had been assumed that the Guaymí were the only inhabitants of Chiriquí in the 16th and 17th centuries, since they are the only ones that remain. In the following pages I have presented a summary of points in Fray Antonio's account, which are useful to us here.

The two most important groups described by Fray Antonio de Rocha are the Doraces and the Zuries with whom he had longest contact. I have worked out their approximate homeland as being the area of what is today Caldera, Boquete, and the skirts of the Volcán Barú (fig. 2). Their homeland was high, cold, and thickly forested with abundant streams and rocky outcrops. They had large cultivated fields, on the savanas bordering the mountain slopes facing either ocean, where they grew maize. Other edible products were plantains (Spanish? introduction), cacao, and pejibaye (*Guilielma gasipaes*). They ground and processed maize into a *mazamorra* (thick gruel), which they diluted to make fermented chicha. There are passing references to stored maize from the year before, but this apparently referred to a small number of cobs stored by hanging in woven bags inside the houses and probably used for seed. There is no mention of manioc, either sweet or bitter. Other than maize, the most important food source was the pejibaye, a type of palm which yields clusters of a hard fruit with a rich pulp and a small nut. The Indians ate them cooked; they cracked and mashed the nuts, adding the pulp to their 'chicha': 'Si la llevan en sus viajes, es cocida, o cruda para asar y con este sustento solo andan lucios y gordos como si comieran capones' (de la Rocha, 1964, p. 91).

Unfortunately, data on agricultural practices is very scanty; there is no information on the ownership, location, size, and distance of their maize fields. All we know is that the men did the planting and that temporary huts were built near their maize fields in the agricultural season. Other subsistence activities mentioned by Fray Antonio were fishing, which was secondary, and hunting, which occasionally supplied them with a wild peccary.

The settlement pattern was definitely dispersed: a cluster of houses here, another a mile apart. Houses were built of "tierra," secured on the outside by strong poles attached with vines and covered with palm leaves. The house dimensions were given by Fray Antonio as 30 or 40 feet long by 20 feet wide. They had two doors, one facing the path, the other facing the forest for quick retreat in case of enemies. Furniture was scanty: a metate for grinding, a hammock for sleep, two large vessels for cooking cacao or fermenting chicha, gourds as drinking cups, net bags for storage.

Of these details, the most interesting are Fray Antonio de la Rocha's remarks on the social and

political organization of the Doraces and Zuries. Since the purpose of the trip he describes was, precisely, to negotiate for a place to build a church, he had to deal primarily with individuals who had authority in the different groups.

What we gather from Fray Antonio's scattered remarks was that there were three types of people with authority: *caciques* (chiefs), *cabras* (warriors?) and *elders*. That membership in all of these categories was ascribed and the people in it constituted a social group with rights and obligations in common, seems questionable. There were only one or two *caciques* per 'provincia' (territory). There was an older *cacique* ('*cacique mayor*') and then, in some instances, a '*cacique menor*,' which we can conclusively gather from several remarks was the 'nephew' of the first. The title to the chiefdom was not inherited by a chief's son, *but by his nephew* (my emphasis): "This *cacique* Nori did not rule because here the sons do not inherit but the nephews do, and the latter give him a hand in the government since one will inherit him" (de la Rocha, 1964, p. 116). It seems possible, therefore, to postulate that chiefly title was inherited matrilineally. Fray Antonio de la Rocha mentions at least one instance when succession between uncle and 'nephew' was a source of friction within a group.

There were a number of neighboring Indian groups with whom the Doraces and the Zuries traded or fought. First, there were those Indians probably of mixed backgrounds, who were living in the town of Alanje. By the time Fray Antonio's account was written, the encomienda system had been abolished, but some Indians had stayed in town. To the southeast of the Doraces and Zuries were the Guaymí, an enemy tribe with whom they fought for many wars. To the north were the Northern Guaymí. Near the Bahía de Almirante in Bocas del Toro was a group called Duy, who had been friendly before but were now enemies. Toward the southern coast were the Dolegas, "who are the strongest of all because they live in a town together under one head and the others don't dare" (de la Rocha, 1964, p. 104). Near these were the Querébalos and then the Bugabas. The location of these people was probably at or near the towns bearing their names today. It was the custom of the Spaniards either to give a new town the name of a saint or to keep the aboriginal name of a group as the new town name.

We have no way of guessing what were the cultural and linguistic links between these groups. All we know is that the Doraces and the Zuries spoke the same language and intermarried extensively. This did not deter them from being in a precarious state of friendliness, for they were constantly accusing each

other of being abusive and of being traitors. "This is the best and enjoyable conversation which they have, saying bad things about each other, not only those of different nations, but those from one house about another, and this way they never live in peace, and in their gatherings when one says yes, the other says no, without more reason than passion or kinship" (de la Rocha, 1964, p. 115; my translation).

A third type of activity which Fray Antonio describes is trade, which apparently was open to anyone. Out of the mountains, they extracted several types of resins, Achioté (*Bixa Orellana*), and cacao; these, plus blankets which women wove out of cotton, were traded to the Spanish in the savanna town of Alanje in exchange for axes, machetes, beads, and dogs. They then returned to the highlands and had 'ferias' (ad hoc get together for the purpose of exchange) with their neighbors, the Dolegas, where a large amount of bargaining took place. Fray Antonio complains that they didn't gain anything in these, for they exchanged what they traded at Alanje for the same quantity of the original products.

In summary, what emerges as a general picture of the Chiriquí Highland groups from Fray Antonio's account is a number of territorially defined groups (provincias), which were in either precarious alliance, or at war with each other. Neither the institution of chieftainship, nor war, nor trade was a powerful enough mechanism to fuse a number of these groups together. Within each of these groups there were people of different rank, but there is no evidence, except for the chieftainship, and this was weak, that status was inherited rather than based on achievement in war or in age.

Absent were such features of class or occupational groups as have been ascribed to the Circum-Caribbean chiefdoms: multivillage confederations, permanent warriors, a strong class system, etc. The reason for their absence couldn't solely have been the Conquest, for though the Spaniards had been successful in killing many Indians and reducing others to serfdom in the coastal savannas and in the islands, those of the highlands were still relatively untouched.

INFERENCES

Turning now to the problem of linking the last phase in the Chiriquí Gulf with the ethnohistorical groups described by Fray Antonio, I think we can assume that the people he mentions—the Zuries, Doraces, Dolegas, Bugabas, and Querébalos—were the descendants of the makers of 'Classical Chiriquí' ceramics. The distribution of these groups in a roughly triangular area north and east of the town of David corresponds exactly to the distribution of 'Classical Chiriquí' pottery as plotted by Osgood (1935, fig. 1, p. 239). At least some of this pottery was made until the time of the Conquest (p. 50) and perhaps even later. If the Spaniards did not describe Indians making pottery, it was probably because pottery-making was hardly a new and novel art to the Spanish. At any rate, since the Chiriquí Phase in the Gulf is defined, precisely, by the appearance of types belonging to 'Classical Chiriquí' pottery, it is probable that it was the ancestors of one of Fray Antonio's groups who moved into the islands several centuries before the Conquest.

Migrations of people to the islands, during and perhaps before the Chiriquí Phase, may have been due to a constant state of warfare and fission among mainland populations. There is no reason to believe

that this was a condition brought on by the Spaniards. For one thing, the highland groups were relatively untouched when Fray Antonio visited them, and they were constantly being involved in raids and small-scale fighting. Also, all of the descriptions of Panamanian groups from the Coclé and Azuero area, and from as far east as Darién, stress the bellicosity of the Panamanian Indians. Hostility was not only inter-group, but also within a single group; fission may have been caused occasionally by problems of succession to political power.

The shift in habitation from the mainland to the islands did not necessarily entail a whole new adaptation to a different environment. Before the Spanish established their towns on the coast, there must have been many Indians living near the coast and using the resources of the sea to supplement their diet. This was certainly so in Punta Burica, as mentioned by Cerezada (1883). Furthermore, a fairly large population could live comfortably on the islands by cultivating additional maize fields on the larger islands nearby or on the mainland.

Living on islands may have encouraged a more nucleated settlement pattern than Fray Antonio de-

scribes for the highland Indians. He does mention, however, the case of the Dolegas, who lived in one single clustered town under one chief, but this seems to have been a rather atypical situation. What seems more certain is that each island group was unified under a single chief, whatever were the other ranks present in the society. This was precisely the situation found by Cerezada (1883) 100 years before, when he visited some other western Panamanian Islands.

Trade between peoples on different islands, as well as with groups on the mainland, was probably exten-

sive, as in Fray Antonio's days. Perhaps some of the pottery found in the Chiriquí Phase, whose provenience was the Coclé-Azuero area or Costa Rica, was traded directly by sea, using the islands as stopping places for 'ferias.' Many of the items which they traded may have just disappeared, judging from the items that were included in a man's household in Fray Antonio's time: cotton blankets, hammocks, and net bags. Of the other objects mentioned by the Father, large pots and metates, we have many examples in the excavations.

Chronological Summary and Comparisons with Other Areas

CHRONOLOGY OF CHIRIQUÍ

During the 1961 project, we surveyed the coast from Punta Burica in Chiriquí to the western half of the Azuero Peninsula looking for preceramic sites like Cerro Mangote (McGimsey, 1956) or early ceramic sites like Monagrillo (Willey and McGimsey, 1954). We were unable to find any such early sites. Large shellmiddens were observed in Veraguas near the town of Mariato in Montijo Bay, but these have been tested subsequently by McGimsey (personal communication) and found to date after A.D. 1. Since there are no protected bay areas where mollusks can live in large numbers, it is therefore doubtful that early shell-gathering peoples inhabited the Chiriquí and Veraguas coasts.

In the survey we found no evidence of "stepping-stone" settlements, resulting from connections by sea between Middle and South America via the Chiriquí Gulf. Our excavations were of limited scale and our archeological phases of such recent date, that negative evidence of this sort does not rule out the possibility that such sites do exist and may be found by future field research. Trade sherds from Parita Bay and Coclé, found in sites on the Islands of the Gulf of Chiriquí, and Chiriquí sherds in the Diquís Delta of Costa Rica (Lothrop, 1963) indicate that the people of this general area carried on trade over fairly long distances; at least some of this trade must have been by sea.

The oldest ceramic complexes found to date in Chiriquí are Scarified Ware and Aguas Buenas Complexes. Neither was present in our Chiriquí Gulf excavations. They are nonetheless relevant to our

discussion since they establish the lower, or earlier, part of the sequence for the region upon which all three phases of the Gulf of Chiriquí must be superimposed.

Scarified Ware was first recognized as typologically very different from the other wares of the "Classical Chiriquí Culture" by Holmes (1888, pp. 87-90) and MacCurdy (1911, pp. 96-100). They did not postulate, however, that it was older than the other pottery.

In recent years it has been shown that Scarified Ware is probably an 'early' complex, older than the 'Classical Chiriquí' ceramics. Some of the work has been done by Haberland (1962), who renamed it La Concepción complex, taking the name from a large cemetery of Scarified Ware, located about 35 kilometers west of David in the Solano Finca (fig. 46) at the entrance to the town of Concepción.

I have also excavated at Solano on two different occasions: first in 1959 in the cemetery, and then in 1961 as part of the fieldwork for this report. The area excavated in 1961 was a shallow undisturbed refuse deposit in back of the cemetery (material unpublished). The pottery in all of the levels was Scarified Ware; no other complexes were found stratified in our cuts.

The shape of the Finca Solano graves has not been described in detail, but the pottery found in them has the following characteristics. All vessels are decorated by the alternation of areas covered by a dense, red slip and areas that are incised. The incisions are closely spaced and roughly parallel to each other;

exact vessel form has not been found in La Concepción at Finca Solano, but one with very similar shape has been reported from a private collection, known for certain to have come from here. Although fewer graves have been dug in Penonomé than in Concepción, there is enough material to notice that the similarity in paste, decorative techniques, and shape between the Coclé and the Chiriquí Scarified Wares is striking. There is little doubt in my mind that they are part of the same tradition.

The Pueblo Nuevo material has been assigned an age of 2045 ± 45 B.P. or 95 B.C. (Feriz, 1959, p. 186). This date has been corrected for the Suess effect to read 2290 ± 45 B.P. or 340 ± 45 B.C. (Ladd, 1964, p. 12). Unfortunately, the initial charcoal sample was not from Pueblo Nuevo at all (Haberland, 1962, p. 388), but from another site in Chiriquí, as yet unspecified, said to have yielded pottery resembling that of Pueblo Nuevo. Clearly then, there are too many undemonstrated assertions about the similarity of all of these complexes for the single date to be readily accepted as clearly associated with the pottery complex under discussion. Nevertheless, assigning the Scarified Ware to a period between 300 B.C. and A.D. 300 (Baudez, 1963, p. 46) seems quite reasonable on the basis of shared similarities with the Zoned Bichrome Period of Costa Rica.

Turning now to the area east of Concepción, looking toward Costa Rica, we find another 'old' complex called Aguas Buenas, located in the highlands along the frontier. The type site is the Haciendas Aguas Buenas (fig. 46), just west of the border village of Cañas Gordas in Costa Rica (Haberland, 1955 pp. 224–230). The site has refuse middens atop hills; these were not dug stratigraphically so that the temporal relationship between the types of pottery found here is unclear. I assume that what is called Aguas Buenas are two wares that closely resemble each other: a Red Ware and a Red Rimmed Ware. These were described on the basis of four nearly complete vessels and a number of sherds. In general, the characteristics can be summarized as: looped handles (V-shaped in cross section), slab legs, rich applique ornamentation, incising, and a dark, red slip applied to the whole vessel or to parts of it.

Besides the two Red Wares described above, Haberland (op. cit. p. 228) also found a few sherds of "Scarified Ware as published by Holmes." These were a part of an annular base and straight full feet. In addition, there was a 'rare' Ware, one with geometrical paintings on a cream background.

Like Scarified Ware, the Aguas Buenas complex is apparently also widespread. At least six sites, among them Barriles (fig. 46) on the outskirts of the Volcan Barú (Stirling, material unpublished), have been

identified as Aguas Buenas (Haberland, 1960b, p. 13). How these differ from each other, or from the type site, is not known.

The problem of comparisons will be made easier when the full description of the Aguas Buenas material is published. Here we are concerned mainly with its possible chronological placement. It is the opinion of Haberland (1962, pp. 386–388), who is acquainted with both complexes, that Aguas Buenas and Scarified Ware are typologically very different, and that this difference also shows up in their different geographical distributions. Scarified Ware is found close to David and then farther east; Aguas Buenas is found fairly west of David in the area on both sides of the border. Since sherds of both complexes were found mixed at the type site of Aguas Buenas near Cañas Gordas, he placed them in the same period (Haberland, op. cit. p. 388).

Coe and Baudez (1961, p. 513) consider Aguas Buenas as slightly later in time than Scarified Ware, and the monochrome sherds to be "extremely similar to Early Polychrome monochromes of the Tamarindo zone." They believe the deposit was mixed. I agree with Coe and Baudez' judgment, and based on relationships with their well-worked-out sequence would place Aguas Buenas at A.D. 0–300.

There may be, nevertheless, more typological continuities between Scarified Ware and Aguas Buenas than Haberland assumes. Some of the vessels seem to me very similar indeed. For this similarity to be translated into valuable comparisons in terms of space and time, more stratigraphic work is certainly necessary. Here I will hazard to predict that they will be found to be local variations, perhaps at different points in time, of a single, widespread 'early' tradition.

The temporal relationships of Scarified Ware and the Aguas Buenas complex to the early Burica Phase in the Gulf sequence are worthy of comparison. The Burica Phase is the oldest of the three phases established for the Gulf of Chiriquí. Recently the distribution of this phase has been considerably expanded by finds from half a dozen sites on the mainland with secondary urn burials, where the only pottery is Isla Palenque Maroon Slipped (Miranda, Pérez, and de la Guardia, 1966; de la Guardia, 1966).

Neither Scarified Ware nor what I understand as Aguas Buenas was represented in any of our cuts. Nevertheless, the Burica Phase may turn out in future excavations to be found stratified after Scarified Ware, directly or through the intermediary of the Aguas Buenas Phase. All one can do at present is make comparisons.

The technique of incising was not present in the collections from the Gulf Islands, but it was repre-

sented abundantly in the collections in the Burica Peninsula (Ranere, Appendix No. 2). The Burica incising is different, however, from Scarified Ware incisions. It occurs less frequently. The prominent characteristic in Scarified Ware, namely the alternation of red slipped bands and areas incised with closely spaced parallel lines, is missing. Likewise, the type of burial shaft graves with Scarified Ware is very different from secondary urn burials in Burica. The continuity may be expressed better in the plain sherds. Scarified Ware is frequently indistinguishable in paste composition and slip from Isla Palenque Maroon Slipped.

Similarities of the Burica Phase to Aguas Buenas may be more marked, but detailed comparisons cannot be made until that complex has been published with detailed descriptions.

No radiocarbon dates are available as yet to establish the beginnings of the Burica Phase. I have nevertheless placed them at A.D. 300–500. This estimate is based on the presence of Coclé sherds, probably Early Coclé, and a possible Venado Beach sherd in levels of this phase. Also, a tall pedestal base with cutout triangular designs has been found in the Burica Phase site of Tinajas (de la Guardia, 1966, fig. 13). It is identical to the one from Coclé, illustrated by Lothrop (1942, p. 167, fig. 337c) and assigned by him to his Early period.

The exact duration of the Coclé tradition is not known, but it does not seem to have started earlier than A.D. 500. Ladd places Early Coclé in "the second half of the first millennium A.D." (Ladd, 1964, p. 222), together with Venado Beach which has two different dates: 1750 ± 60 B. or A.D. 200 and 1125 ± 65 B.P. or A.D. 825 for two separate burials. Lothrop (1960, p. 96) notes that "No stylistic differences between the burials were noted during excavation and there was no reason to expect much difference in age." Ladd favors the latter date. The terminal date of A.D. 800 for our Burica Phase is tentatively based on the radiocarbon date for the next phase.

Because neither the San Lorenzo nor the Chiriquí Phase is represented alone in the surface collections from the Burica Peninsula, Ranere (Appendix 2, p. 116) is of the opinion that the two phases may be contemporaneous in that district. This may well be the case. In the Gulf Islands, however, there does seem to be a chronological difference between the two phases in spite of overlap at the sites where both phases are present. The maximum frequencies of the San

Lorenzo pottery types occur earlier in the stratigraphic columns than the appearance of the Tarragó Bisquit Ware and the Villalba Red Streaked types. In this connection it is interesting to note that a San Lorenzo Phase site has been found recently at Batipa, on the mainland (fig. 46), near our site of El Cangrejal (SL-1). Batipa also has the San Lorenzo Phase predominantly represented, with sherds from the next phase sparsely represented. This duplicates the situation in the Burica collections but not at El Cangrejal, where the San Lorenzo types occurred exclusively.

The next occupation in the Chiriquí Gulf is the San Lorenzo Phase which I have tentatively placed between A.D. 800 and A.D. 1100. This estimate accords with one radiocarbon date for this phase of 930 ± 100 B.P. or A.D. 1020 (M-1308), which comes from a charcoal sample from Site SL-1, Pit No. 3, Level 60–70 cm.; the entire occupation of this site belongs in the San Lorenzo Phase. An estimate for the end of this phase is around A.D. 1100, based on estimates for the beginning of the next phase.

The beginnings of our Chiriquí Phase should be placed in the Gulf at around A.D. 1100. A carbon-14 sample from Las Secas (IS-11, Pit No. 2, Level 40–50 cm.) yielded a date of 115 ± 100 years ago (M-1309), but this date is clearly wrong since Las Secas Islands have not been occupied by man since the 17th century (p. 78). A terminal date for the Chiriquí Phase should be placed at the time of the Conquest (A.D. 1500) or slightly later. A grave containing Alligator Ware has been found, together with iron tools (Stone, 1958, p. 48). Alligator Ware, though rare in our sites, does occur at Site IS-11 (fig. 10) toward the end of this phase. Furthermore, a Tripod Foot, Mode i2, which in Costa Rica has been found in association with an iron knife (op. cit., p. 50, fig. 7b), also appears at Site IS-11. The entire occupation of this site falls within the Chiriquí Phase.

It seems quite possible that the Chiriquí Phase could have begun in the Chiriquí Highlands prior to its introduction into the Gulf at around A.D. 1100. Otherwise, 400 years, from A.D. 1100 to A.D. 1500, seems too short a time span for the development of the "Classical Chiriquí Culture." Future excavations in the highlands may push back the date for this phase and help subdivide it into subphases, but nothing at present modifies our estimate of the time span of the Chiriquí Phase in the Gulf.

RELATIONSHIPS WITH NEIGHBORING PANAMANIAN AREAS

The geographical boundaries of the Chiriquí sequence have been extended by Ranere's welcomed study (Appendix 2, p. 107) of the surface collections made in 1961 from 25 sites east and west of the Gulf Islands, in the districts of Punta Burica, San Félix, and Remedios (fig. 46). His study should be consulted in detail. Here we will give only a short summary of his finds for the purpose of comparison.

From the district of Punta Burica, Ranere (Appendix 2) analyzed a total of 826 sherds from 17 surface sites; he divided these sherds into types, appendage modes, and plastic motifs. In addition, he analyzed a total of 70 sherds from a one-meter excavation at site BA-8, which he found to be unstratified. One of the Punta Burica sites (BA-9) yielded two sherds belonging to the Scarified Ware and one sherd belonging to the Aguas Buenas complex. This same site (BA-9), plus nine other sites, also had the Burica Phase represented by large amounts of type Isla Palenque Maroon Slipped. The Burica Phase and the San Lorenzo Phase occurred together at three additional sites in Punta Burica. Two pottery types that do not occur in the Gulf Island sites were found here: Quebrada Baúles Brushed Ware and Balsa Polished Ware. Only two of the Punta Burica sites had the Chiriquí Phase represented by a couple of sherds.

Some of Ranere's data from Punta Burica raise interesting questions. The fact that he found all three "old" complexes—Scarified Ware, Aguas Buenas, and the Burica Phase—represented at the same site (BA-9) suggests that this is the area to search in the future for clarification of the geographical and temporal relationships between these complexes. I have interpreted all three complexes as being variations, at different points in time, of a widespread tradition (p. 85), but it is possible, of course, that they are, rather, geographical variations at the same point in time. A few sherds found in the surface is too scanty an evidence, however, on which to base any premature statements in this direction. Another unexplained phenomenon is the paucity of evidence in this district for the Chiriquí Phase. Hundreds of vessels belonging to the "Classical" Chiriquí wares have been reported from cemeteries in this area.

Turning now to the collections analyzed by Ranere (Appendix 2) from eight sites in the districts of San

Félix and Remedios (fig. 46), totaling a number of 2,623 sherds, we see that both the San Lorenzo and Chiriquí Phases are represented here, but that the Burica Phase is totally missing. Except for two sites, one of which (RE-3) may have only the San Lorenzo Phase represented, and another (RE-1) which may have only the Chiriquí Phase represented, the other six sites had sherds belonging to types found in both phases.

Ranere (Appendix 2, p. 115) mentions that certain ceramic features such as plastic decorations are present in the San Félix and Remedios district but are missing from the Gulf Islands and the San Lorenzo district to the west. These features have in turn close counterparts in the pottery from Veraguas. Contrary to what was thought 20 years ago (Lothrop, 1948, p. 143), the Chiriquí and Veraguas "cultures" were not that separate or distinct.

Neighboring Chiriquí on the east is the province of Veraguas, which is known archeologically from Lothrop's study (1950) of grave vessels. He described these under one monochrome ware belonging to a single "culture," contemporaneous with the Chiriquí and Coclé "cultures." Typical forms of Veraguas pottery rest on strapped feet and tall pedestal bases; some are effigy vessels. Since these features also occur in the San Lorenzo Phase but are absent from the other two Gulf Phases, I have postulated a wave of influence from Veraguas into the Gulf at this time. If this hypothesis is borne out by future work in Veraguas, the beginnings of the "Veraguas culture" may be set at around A.D. 800. Older complexes from Veraguas, as yet undescribed, have been dated as early as A.D. 100 (McGimsey, personal communication).

The end of the Veraguas "culture" may be placed at the time of the Conquest. Trade vessels from Veraguas have been found in the mainland graves of Chiriquí; the jaguar metates of both of these areas are virtually identical and Lothrop (1950, p. 85) believes that at least 56 percent of the metal products found in Chiriquí were imported from Veraguas. These associations assure the partial contemporaneity of both "cultures" (fig. 47).

The connections between the Chiriquí Gulf and the Coclé-Azuero area are noticeable as much in subtle aspects of vessel shape (p. 36) as in actual

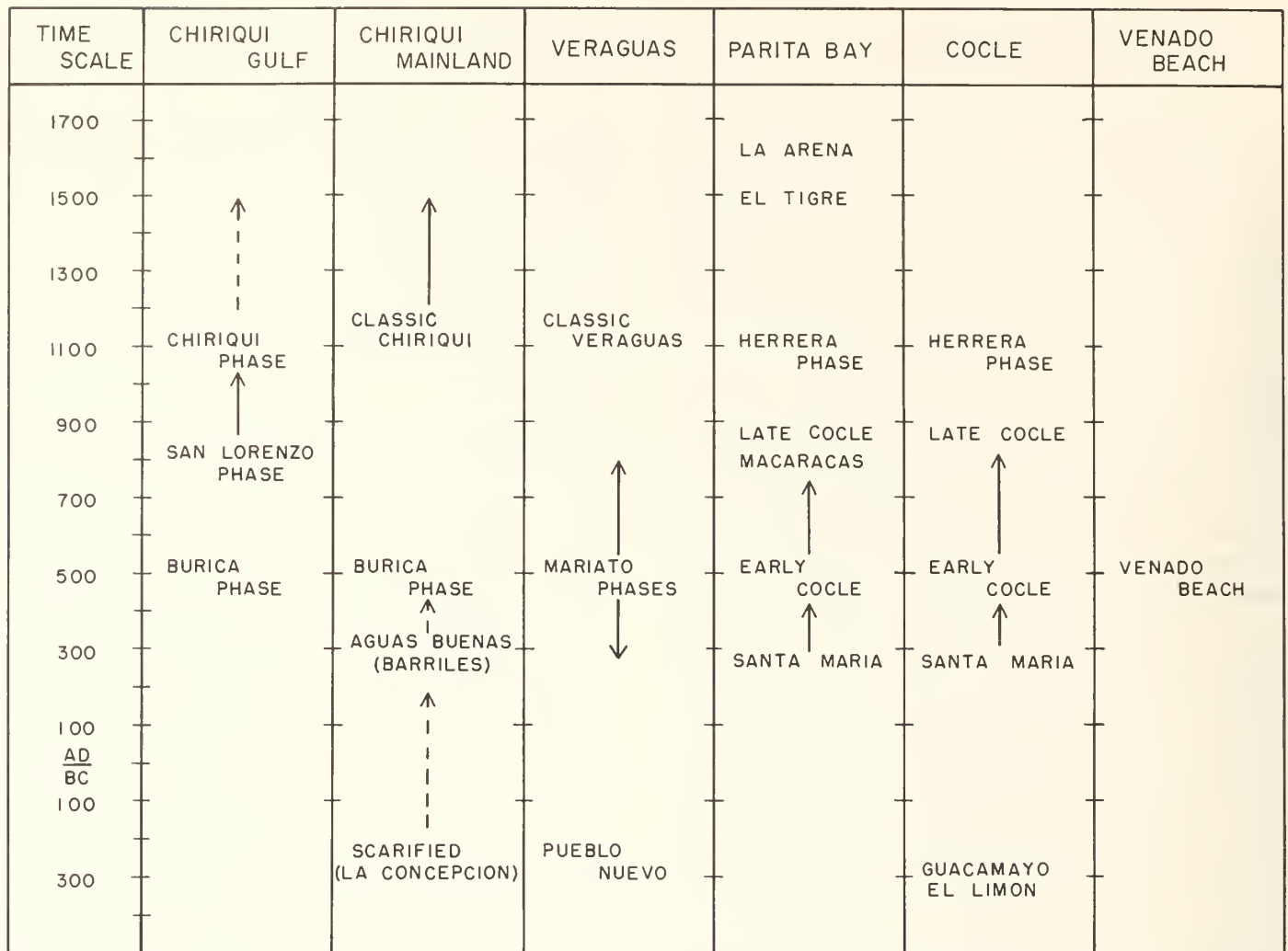


FIGURE 47.—Chronological chart of regional archeological sequences in western and central Panama with approximate time periods indicated. The Burica Phase and Aguas Buenas estimates may be older by two or three hundred years than shown here, and the Herrera Phase of Parita Bay and Coclé should be placed at A.D. 1300.

trade sherds found in levels of most of the Gulf sites (tables 1-4).

Levels belonging to the Burica Phase contain a few sherds, unfortunately too eroded to be assigned with certainty to Early or Late Coclé, though there is no doubt that they are Coclé. Their early position in our sequence and their association with Venado Beach sherds strongly suggest, however, that they are Early Coclé. The Early Coclé Phase, defined by Lothrop (1942) at Sitio Conte, is also represented at sites in the Parita Bay and at Venado Beach in the Canal Zone. Ladd (1964, p. 222) places Early Coclé in the second half of the first millennium A.D. The associations with our Burica Phase material would favor a date 300-500 A.D. and lasting until A.D. 800.

One sherd definitely identified as Late Coclé and 25 Macaracas sherds of the Higo and Pica Pica

varieties (Ladd, 1964, pp. 97-120) were found in levels belonging to our San Lorenzo Phase. Late Coclé is the most recent of the two phases separated at Sitio Conte by Lothrop (1942) and also found at the Parita Bay sites. Macaracas is an Azuero polychrome type representing a local variant of Late Coclé polychromes that is also found at Sitio Conte (Ladd, 1964, pp. 95-120). Neither the Late Coclé Phase nor Macaracas Polychrome Varieties have been assigned date estimates in the literature; cross-datings with the San Lorenzo Phase and the beginnings of the Chiriquí Phase would, therefore, favor a range of years for Late Coclé and Macaracas between A.D. 800 and A.D. 1200 or 1300.

Following the first few levels of the Chiriquí Phase, there is a hiatus in trade material in levels correspond-

ing to the middle part of this phase. Then in the top levels, representing the terminal part of this phase, are found trade sherds belonging to the Herrera Phase, Azuero ceramic group in Parita Bay, thought by Ladd (1964, p. 223) to postdate Late Coclé. These relationships help estimate a date for the Herrera Phase between A.D. 1200 or 1300 to A.D. 1500. What has been listed in tables 1 and 4 as Azuero belongs to the ceramic tradition from this area, but the phase, Late Coclé or Herrera, is not known with

certainty. It is interesting to note that Ladd's chronological arrangement of the Parita Bay Phases and my arrangement of the Gulf sequence, done independently from each other before the results of the carbon -14 tests were in, agree almost perfectly. The only problem is a puzzling Late Coclé sherd found in Level 70-80 cm. of Site IS-11, together with Herrera Phase sherds. This is probably a case of mixture since one isolated sherd does not serve to invalidate his or my sequence.

CHRONOLOGICAL LINKS WITH OTHER AREAS

In an article which he wrote a few years ago, Baudez (1963) nicely summarized known archeological phases in lower Central America into a framework of six periods. He obtained the information on Chiriquí by correspondence in 1962 from McGimsey, who had made a preliminary inspection of the collections while in the field (McGimsey, 1961). I have suggested below some revisions in the names used for the Chiriquí Phases—in their description and in their chronological placement. These are the inevitable changes that come with a full analysis of the material and in no way should be interpreted as detracting from the value of McGimsey's apt field observations and Baudez' valuable synthesis.

The first two periods in Baudez' article need not concern us here since Period I is Preceramic and Period II precedes any complexes yet found in Chiriquí. We will start the discussion with Period III, manifestations of which appear in Chiriquí, though not in the Gulf. In Period III, dating from 300 B.C. to A.D. 300, Baudez (op. cit. p. 46) has placed the following phases: Scarified Guacamayo Phase, Veraguas Province; Scarified Phase, Chiriquí Province; Early Diquís Phase (pottery from the deepest levels in Lothrop's excavation in the Diquís region in southwestern Costa Rica); Zoned Bichrome Period, northwestern Costa Rica; Aviles and San Jorge Phases, Isthmus of Rivas.

The placement of the Scarified Phase in this period seems quite reasonable. The similarities between Scarified Ware and some of the pottery types of the Zoned Bichrome Period in northwestern Costa Rica have been stated by Coe and Baudez (1961, pp. 512 and 513) as follows:

In the Chiriquí area of Costa Rica and Panamá, the group dubbed "Scarified Ware" by Holmes (1888) is quite similar to some of our zoned bichrome varieties, especially to Bocana Zoned Incised. Here again zones of parallel incised lines are

opposed to red-slipped areas; as one moves south on this early horizon, it is interesting to note that the incised areas increase in size at the expense of the color areas.

Baudez has been kind enough to show me his material from the Valley of Tempisque in the Province of Guanacaste, Costa Rica. There is little doubt in my mind that his *Variété Non Peignée* of the Bocana Incisé Bichrome in the Catalina Phase of the Zoned Bichrome Period (Baudez, 1967, pl. 19 C, E, I, J) is similar to the Scarified Ware, especially to the Zone Scarified variety of Haberland (1962, pp. 384-385). The decoration in both varieties consists of slipped surfaces alternating with zones of individually made, irregularly spaced parallel incisions.

In spite of the above similarities, Scarified Ware lacks the two colors, the dentate rocker stamping, the fork punctations, and the use of multiple brush to produce black lines, all characteristic of the Zoned Bichrome Period.

Turning now to the Diquís Delta, we find a Fugitive Red Ware and Brown Wares in the Early Monochrome Horizon, the oldest phase here (Lothrop, 1963). Only the Brown Wares have been described in full (op. cit. pp. 45-65); they occur from top to bottom of the Diquís refuse. The technique of Parallel Line incising as applied to the large jars of the Brown Ware is "definitely older than any painted technique except negative painting" (op. cit. p. 55). This technique consists of "incised bands of parallel vertical lines on the shoulders, interspaced with incised conical lugs which project about 2 inches (5 centimeters)" (op. cit., p. 57). The same kind of decoration also occurs in slightly smaller jugs. It is not associated with any slips or paints, the name Brown Ware being based on the natural color of the clay itself.

The resemblances between the pottery of the Early Diquís Phase and the Scarified Ware of Panama are

based solely on the technique of parallel-line incision which they share. The shapes, the presence of lugs, the absence of a slip, the large size, characteristics found in the Brown Ware jugs of the Diquís Delta, are all missing from the Chiriquí Scarified Ware. Lothrop (op. cit. p. 111) does not draw any connections between the two.

I am of the opinion that the similarities of Early Diquís Monochrome Horizon typified by the Fugitive Red and Brown Wares are with our Burica Phase.

The Pacific coast of Nicaragua forms one archeological area with northwest Costa Rica; together they form the Greater Nicoya subarea. I do not see any close similarities between the pottery types of the Aviles and San Jorge Phases (Norweb, 1961, p. 12) and the Scarified Wares of Chiriquí. In short, during Period III of Baudez, the closest relationships of the Scarified Ware of Chiriquí are with types of the Zoned Bichrome Period of northwest Costa Rica; the most distant are with the Aviles and San Jorge Phases of Nicaragua.

In Period IV, dating from A.D. 300 to A.D. 500, Baudez (1963, p. 47) has placed, among other phases, the so-called Thin Red Phase of Chiriquí. The pottery type referred to is the thin variant of our type, Isla Palenque Maroon Slipped. It was provisionally identified in the field by McGimsey who tentatively named the phase after the type. Here, I prefer a geographical name for the Burica Phase and tend to span the bulk of its occupation in the Gulf between Period IV and Period V, together with Early Coclé and Venado Beach.

In Period V, dating between A.D. 500 to A.D. 800 Baudez (1963, op. cit. p. 48) includes the following phases: Early Coclé Phase, Parita Bay; El Hatillo Phase, Parita Bay; Alvina Phase, Parita Bay; Venado Beach Phase, Canal Zone; Fine Red Line Phase, Chiriquí Province; Early Polychrome Phase, northwest Costa Rica; Curridabat Phase, Highland Costa Rica.

From this period the Fine Red Line Phase of Chiriquí, which is our San Lorenzo Phase, should be removed, renamed, and placed in the subsequent

period. Instead, the Burica Phase should be included here also; in terms of trade wares, it is contemporaneous with Venado Beach and Early Coclé in spite of not having the bold geometric multicolor painting that is common to other phases of this period. It may be added that the Curridabat Phase of Highland Costa Rica does not have this painting either, nor does the bulk of the Early Diquís Monochrome material.

Baudez (op. cit. p. 49) includes the following phases in Period VI, dating between 800 A.D. and the Conquest: Late Coclé and La Mula Phases, Parita Bay; Classic Veraguas Phase, Veraguas Province; Gross Red Line and Armadillo Phases, Chiriquí Province; Classic Boruca Phase, southwestern Costa Rica; Cartago Phase, central Costa Rica; Middle and Late Polychrome Phases, northwest Costa Rica; White Polychrome Phase, southwestern Nicaragua.

It now seems clear from Ladd's subsequent study (1964, pp. 51-66) that El Hatillo Phase, placed by Baudez in Period V, refers not to a phase but a pottery type with several varieties belonging to the Herrera Phase, which comes after Late Coclé and, therefore, should be put in Period VI. As for the Classic Veraguas Phase, its beginnings may be contemporaneous with our San Lorenzo Phase.

The Gross Red Line and Armadillo Phases correspond to my Chiriquí Phase. Gross Red Line is the type now called Villalba Red Streaked and Armadillo refers to my Tarragó Bisquit Ware. The beginnings of the Chiriquí Phase are contemporaneous with Late Coclé, but the trade wares in the latter part of this phase belong to the Herrera Phase of Parita Bay.

In terms of the Panamanian Phases, I would therefore divide Baudez' Period VI into two others: Period VIa, which would include Late Coclé, the San Lorenzo Phase, and the beginnings of the Chiriquí Phase and would last between A.D. 800 and 1200; Period VIb, which would include the latter part of the Chiriquí Phase and the Herrera Phase and would last between A.D. 1200 and 1500 or slightly later.

FINAL REMARKS

Taking an overview now, we can say with some confidence that Chiriquí archeology in the last 10 years has begun to emerge out of the purely "flat" historical stage where it has languished since the time of the grand pioneers, Holmes (1888) and MacCurdy (1911), who wrote their descriptions of Chiriquí ceramics more than 50 years ago. In fact, the history of Chiriquí can now be extended to the period between 300 B.C. and A.D. 300, roughly corresponding to the Late Formative and Proto-Classic in Mesoamerica, when there was in the western part of the Isthmus a widespread ceramic horizon represented by Scarified Ware, or variations thereof, found in a number of interrelated sites: La Concepción, Pueblo Nuevo, El Limón, Guacamayo, and, perhaps, Aguas Buenas. Most of these complexes remain ill-defined, based as they are solely on funerary finds whose associations and interrelationships are far from clear, with virtually nothing being known of the culture that produced them. No matter how these complexes are defined and redefined in the future by further investigation, it seems certain that they will be found to precede by many hundreds of years the better known "Classical" Chiriquí ceramics.

It is precisely this chronological gap between the "early" complexes and "Classical" Chiriquí Culture that the excavations in the Gulf can now adequately fill. The oldest phase here, the Burica Phase, is prob-

ably a continuation of the old complexes at a later point in time (p. 85). Around A.D. 800, a second tradition, typified by the San Lorenzo Phase which emphasized linear decoration by painting rather than a slip and incisions, appeared in the Gulf in a restricted area around the Estero de Horconcitos and the Bahía de Muertos. It was influenced by the Veraguas style in the neighboring area to the east and may have even borrowed shapes and decorative techniques, without ever adopting polychrome painting, from as far away as the Coclé-Azuero area. The transition from the San Lorenzo Phase to the subsequent Chiriquí Phase was a gradual one, arguing for some continuity in the population. By at least A.D. 1100 in the islands, and perhaps much earlier on the mainland, the third tradition, "Classical Chiriquí," had attained a distinctiveness and a coherence that only the Spanish conquest could disrupt. Sameness in ceramic style should not, however, imply political cohesion or cultural or linguistic unity. The various Indian groups that the Spaniards found in Chiriquí showed significant variations in all three respects.

Although many questions about Chiriquí archeology remain unanswered by our study, the limited excavations in the Chiriquí Gulf have nevertheless given us the first basic time sequence on which we shall be able to elaborate in the future a fuller picture of the culture-history of this important part of the New World.

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Appendix 1

TABLES 1-7

TABLE 1.—*Frequency of pottery types from Pit No. 3, Site Isla Palenque (IS-3)*

Levels (cm.)	Plain Ware Variety C		Plain Ware Variety D		Plain Ware Variety H		Plain Ware Variety I		Plain Ware Variety J		Arayo Polished Line		Banco Red Line		Caco Red Slipped	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-10	—	—	1,545	74.10	—	—	55	2.64	52	2.49	—	—	—	—	13	0.62
10-20	—	—	921	72.01	—	—	71	5.55	2	.16	1	0.08	1	0.08	16	1.25
20-30	—	—	324	64.67	—	—	52	10.38	—	—	—	—	—	—	5	1.00
30-40	—	—	563	61.13	—	—	122	13.25	—	—	2	.22	—	—	27	2.93
40-50	—	—	590	50.38	—	—	297	25.36	—	—	1	.09	1	.09	13	1.11
50-60	—	—	341	36.08	—	—	278	29.42	—	—	1	.11	25	2.65	4	.42
60-70	—	—	583	64.49	6	0.66	124	13.72	—	—	6	.66	11	1.22	6	.66
70-80	—	—	705	67.72	10	.96	99	9.51	—	—	7	.67	—	—	30	2.88
80-90	—	—	664	66.60	8	.80	124	12.44	—	—	34	3.41	—	—	32	3.21
90-100	19	1.75	618	57.06	29	2.68	177	16.34	—	—	45	4.16	—	—	28	2.59
100-110	17	3.70	320	69.57	19	4.13	6	1.30	—	—	22	4.78	—	—	25	5.43
110-120	75	7.81	573	59.69	46	4.79	18	1.88	—	—	15	1.56	—	—	30	3.13
120-130	82	18.10	186	41.06	46	10.15	11	2.43	—	—	6	1.32	—	—	25	5.52
130-140	63	44.06	16	11.19	5	3.50	—	—	—	—	—	—	—	—	4	2.80
140-150	82	46.07	6	3.37	3	1.69	—	—	—	—	—	—	—	—	1	.56
150-160	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	10.00
TOTAL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

TABLE 2.—Frequency of pottery types from Pit No. 1 and Pit No. 3, Site El Cangrejal (SL-1)

Levels (cm.)	Plain Ware		Arayo Polished Line		Caco Red Slipped		Gangrejal Red Line		Castrellón Red Slipped		Centeno Red Banded	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
PIT NO. 1												
0-10	186	86.51	5	2.33	2	0.93	2	0.93	-	-	-	-
10-20	910	83.26	37	3.39	33	3.02	11	1.01	1	0.09	-	-
20-30	401	78.47	21	4.11	24	4.70	4	.78	2	.39	-	-
30-40	357	76.77	22	4.73	30	6.45	5	1.08	-	-	-	-
40-50	216	87.10	-	-	8	3.23	3	1.21	-	-	-	-
50-60	296	86.55	7	2.05	13	3.80	3	.88	-	-	2	0.58
60-70	129	81.65	1	.63	2	1.27	2	1.27	-	-	2	1.27
70-80	90	81.82	-	-	9	8.18	1	.91	-	-	-	-
80-90	20	90.91	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-
PIT NO. 3												
0-10	1,258	74.44	79	4.67	83	4.91	25	1.48	7	.41	-	-
10-20	1,239	74.41	120	7.21	62	3.72	18	1.08	2	.12	1	.06
20-30	168	46.15	29	7.97	24	6.59	8	2.20	1	.27	-	-
30-40	473	80.03	17	2.88	17	2.88	9	1.52	1	.17	-	-
40-50	161	78.54	5	2.44	12	5.85	3	1.46	5	2.44	-	-
50-60	297	73.51	12	2.97	23	5.69	7	1.73	-	-	5	1.24
60-70	97	64.38	9	6.16	11	7.53	4	2.74	-	-	-	-
70-80	98	69.01	5	3.52	11	7.75	4	2.82	-	-	-	-
80-90	30	73.17	3	7.32	-	-	1	2.44	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-
Levels (cm.)	Horconcitos Red Banded		Linarte Zoned Red Line		Pan de Azúcar Red Line		Zapote Red Banded		Modes		Trade Pottery— Coclé (Late?)	Grand Total Per Level
	No.	%	No.	%	No.	%	No.	%	No.	%		
PIT NO. 1												
0-10	-	-	2	0.93	4	1.86	-	-	14	6.51	-	215
10-20	6	0.55	8	.73	2	.18	9	0.82	76	6.95	-	1,093
20-30	6	1.17	2	.39	5	.98	1	.20	45	8.81	-	511
30-40	9	1.94	2	.43	4	.86	2	.43	33	7.10	1	465
40-50	2	.81	-	-	-	-	1	.40	18	7.26	-	248
50-60	4	1.17	-	-	2	.58	2	.58	13	3.80	-	342
60-70	-	-	-	-	7	4.43	1	.63	13	8.23	1	158
70-80	-	-	-	-	1	.91	-	-	9	8.18	-	110
80-90	-	-	-	-	-	-	-	-	2	9.09	-	22
TOTAL	-	-	-	-	-	-	-	-	-	-	-	3,164
PIT NO. 3												
0-10	4	.24	2	.12	9	.53	7	.41	216	12.78	-	1,690
10-20	9	.54	4	.24	4	.24	17	1.02	188	11.29	1	1,665
20-30	7	1.93	15	4.12	3	.82	2	.55	107	29.39	-	364
30-40	6	1.02	3	.51	3	.51	9	1.52	53	8.97	-	591
40-50	-	-	-	-	1	.49	2	.98	16	7.80	-	205
50-60	2	.50	-	-	2	.50	1	.23	54	13.37	1	404
60-70	1	.68	-	-	-	-	5	3.42	19	13.01	-	146

TABLE 4.—*Frequency of pottery types from Pit No. 1, Site Las Secas (IS-11)*

Levels (cm.)	Plain Ware Variety A		Plain Ware Variety B		Plain Ware Variety E		Plain Ware Variety F		Plain Ware Variety G		Alligator Ware		Arayo Polished Line		Black on Red Negative			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
0-10	-	-	268	26.30	28	2.75	71	6.97	-	-	-	-	-	-	-	-		
10-20	-	-	84	23.46	16	4.47	38	10.61	-	-	-	-	-	-	1	0.28		
20-30	-	-	80	21.62	16	4.32	39	10.54	-	-	-	-	-	-	2	.54		
30-40	-	-	76	13.43	16	2.83	83	14.66	-	-	-	-	-	-	-	-		
40-50	-	-	82	16.63	35	7.10	64	12.98	20	4.06	-	-	1	0.20	-	-		
50-60	-	-	79	16.53	27	5.65	59	12.34	4	.84	-	-	1	.21	-	-		
60-70	2	0.65	105	34.31	5	1.63	16	5.23	19	6.21	1	0.33	3	.98	-	-		
70-80	5	4.10	48	39.34	-	-	-	-	-	-	-	-	-	-	-	-		
80-90	7	7.22	35	36.08	-	-	-	-	-	-	-	-	1	1.03	-	-		
90-100	16	36.36	15	34.09	-	-	-	-	-	-	-	-	-	-	-	-		
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Caco Red Slipped		Cavada Ap- plique and Red Banded		Chocolate Incised		Horconcitos Red Banded		Linarte Zoned Red Line		Pan de Azúcar Red Line		Polished Black Plain		Beige Plain			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
	0-10	3	0.29	-	-	1	0.10	3	0.29	2	0.20	-	-	-	-	-	-	
	10-20	-	-	-	-	1	.28	-	-	3	.84	-	-	6	1.68	1	0.28	
	20-30	2	.54	-	-	15	4.10	-	-	-	-	-	-	20	5.41	21	5.68	
	30-40	2	.35	-	-	6	1.06	2	.35	2	.35	-	-	9	1.59	20	3.53	
	40-50	-	-	-	-	17	3.50	2	.41	2	.41	-	-	-	-	11	2.23	
	50-60	2	.42	1	0.21	10	2.09	1	.21	-	-	-	-	-	-	1	.21	
	60-70	-	-	3	.98	-	-	-	-	4	1.31	1	0.33	-	-	-	-	
	70-80	-	-	4	3.28	-	-	-	-	3	2.46	-	-	-	-	-	-	
80-90	1	1.03	1	1.03	-	-	-	-	3	3.09	1	1.03	-	-	-	-		
90-100	-	-	1	2.27	-	-	-	-	-	-	-	-	-	-	-	-		
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Red on White		Red Slip- ped Bisquit Ware		Tarragó Bisquit Ware		Villalba Red Streaked		Zapote Red Banded		Modes		Trade Pottery				Grand Total Per Level	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Azuero	Azuero?	Coclé (Late)	Herrera		
	0-10	-	-	1	0.10	492	48.28	37	3.63	-	-	106	10.40	1	6	-	-	1,019
	10-20	-	-	-	-	158	44.13	8	2.23	-	-	40	11.17	-	2	-	-	358
	20-30	2	0.54	2	.54	111	30.00	13	3.51	1	0.27	46	12.43	-	-	-	-	370
	30-40	2	.35	2	.35	271	47.88	3	.53	2	.35	70	12.37	-	-	-	-	566
	40-50	1	.20	5	1.01	197	39.96	2	.41	-	-	54	10.95	-	-	-	-	493
	50-60	-	-	2	.42	196	41.00	5	1.05	1	.21	87	18.20	-	2	-	-	478
	60-70	-	-	1	.33	71	23.20	3	.98	1	.33	68	22.22	-	-	-	3	306
	70-80	-	-	-	-	15	12.30	11	9.02	2	1.64	29	23.77	1	2	1	1	122
80-90	-	-	-	-	21	21.65	2	2.06	-	-	25	25.77	-	-	-	-	97	
90-100	-	-	-	-	4	9.09	1	2.27	2	4.55	5	11.36	-	-	-	-	44	
TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,853

TABLE 5.—Frequency of miscellaneous sherds, necks, supports, handles, and rims at Sites IS-3, IS-7, IS-11, and SL-1 (pit numbers in parentheses)

Levels (cm.)	Miscellaneous Sherds						Necks						Supports					
	Sites																	
	IS-3 (3)	SL-1 (1)	SL-1 (3)	IS-11 (1)	IS-7 (1)	IS-7 (2)	IS-3 (3)	SL-1 (1)	SL-1 (3)	IS-11 (1)	IS-7 (1)	IS-7 (2)	IS-3 (3)	SL-1 (1)	SL-1 (3)	IS-11 (1)	IS-7 (1)	IS-7 (2)
0-10	11	-	5	11	-	2	7	-	9	-	3	2	17	1	24	20	1	2
10-20	3	-	5	2	1	1	1	10	8	-	1	-	19	10	22	10	1	1
20-30	-	-	5	4	4	3	2	4	4	-	2	1	4	10	8	6	3	1
30-40	-	-	3	6	1	2	3	-	1	-	7	4	21	7	-	8	3	3
40-50	11	-	-	3	2	2	4	-	-	-	3	3	27	3	1	7	1	5
50-60	9	-	4	2	1	-	2	-	-	-	-	-	11	1	6	10	-	-
60-70	10	-	1	2	-	1	3	-	-	4	-	1	13	1	3	12	-	1
70-80	11	-	1	-	-	1	2	-	-	-	-	-	10	-	1	8	-	-
80-90	1	-	1	11	-	2	2	-	-	-	-	1	7	1	-	4	-	-
90-100	5	-	-	1	-	-	9	-	-	-	-	2	9	-	-	-	-	-
100-110	-	-	-	-	-	2	4	-	-	-	-	2	6	-	-	-	-	1
110-120	12	-	-	-	-	1	5	-	-	-	-	3	10	-	-	-	-	1
120-130	-	-	-	-	-	3	2	-	-	-	-	-	4	-	-	-	-	-
130-140	-	-	-	-	-	-	2	-	-	-	-	-	4	-	-	-	-	-
140-150	5	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
150-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	78	-	25	42	9	20	48	14	22	4	16	19	163	34	65	85	9	15
	Handles									Rims								
	Sites																	
	IS-3 (3)	SL-1 (1)	SL-1 (3)	IS-11 (1)	IS-7 (1)	IS-7 (2)	IS-3 (3)	SL-1 (1)	SL-1 (3)	IS-11 (1)	IS-7 (1)	IS-7 (2)						
	0-10	38	5	13	14	7	2	147	8	165	61	23	20					
	10-20	38	5	12	4	9	4	104	51	141	24	21	13					
20-30	15	9	11	6	10	7	40	22	79	30	32	20						
30-40	30	4	1	9	19	17	70	22	48	47	55	50						
40-50	26	-	-	6	13	22	109	15	15	38	50	28						
50-60	19	1	3	10	2	1	65	11	41	65	4	13						
60-70	16	-	1	3	-	5	75	12	14	47	2	30						
70-80	13	1	1	6	-	-	97	8	16	15	-	10						
80-90	10	-	-	2	-	3	68	1	5	8	-	10						
90-100	3	-	-	2	-	4	76	-	-	2	-	9						
100-110	3	-	-	-	-	21	14	-	-	-	-	46						
110-120	-	-	-	-	-	9	82	-	-	-	-	24						
120-130	-	-	-	-	-	-	36	-	-	-	-	7						
130-140	-	-	-	-	-	-	6	-	-	-	-	-						
140-150	-	-	-	-	-	-	9	-	-	-	-	-						
150-160	-	-	-	-	-	-	-	-	-	-	-	-						
TOTAL	211	25	42	62	60	95	998	150	524	337	187	280						

[illegible]

[illegible]

TABLE 7.—Animal bones from Sites IS-3, IS-11, and SI-1

Excavated Levels			Fish	Reptile			Mammal			
Site	Pit	Level (cm.)	Uniden- tified species	Basiliscus	Iguana	Large lizard	Homo sapiens	Mazama americana	Odocoileus virginianus	Uniden- tified scrap
IS-3	3	0-10	—	—	—	—	—	—	—	1
		10-20	—	—	—	—	—	—	—	—
		20-30	—	—	—	—	—	—	—	—
		30-40	—	—	—	—	—	—	—	—
		40-50	—	—	—	—	—	—	—	1
		50-60	X	—	—	—	—	—	—	—
		60-70	—	—	—	—	—	—	—	—
		70-80	—	—	—	—	—	—	—	—
		80-90	—	—	—	—	—	—	—	—
		90-100	—	—	—	—	—	—	—	—
		100-110	—	—	—	—	—	—	3 phalange	—
		110-120	X	—	—	—	—	—	—	1
		120-130	X	—	—	—	—	—	1 calcaneum	—
IS-11	1	0-10	X	—	—	—	1 fifth right metatarsal 1 femur shaft	—	—	—
		10-20	X	—	—	—	—	1 left radius 1 left femur shaft	1 molar	—
		20-30	X	—	—	—	—	—	1 left tibia proxi- mal fgt. 1 left astragalus 1 right humerus distal end 1 metatarsal distal fgt.	—
		30-40	X	—	1 jaw	—	—	—	—	—
		40-50	X	—	—	—	—	—	—	—
		50-60	—	—	—	—	—	1 right tibia dis- tal end	—	—
		60-70	X	—	—	1 jaw fgt.	—	—	—	—
		70-80	X	—	—	—	—	—	—	—
		80-90	X	—	1 jaw fgt.	—	—	—	—	—
		90-100	X	1 jaw fgt.	—	—	—	—	—	—
SL-1	1	0-10	—	—	—	—	—	—	—	—
		10-20	—	—	—	—	—	—	—	—
		20-30	—	—	—	—	—	—	—	—
		30-40	X	—	—	—	—	—	1 metacarpal	—
		40-50	X	—	—	—	—	—	1 ulna	—
		50-60	X	—	—	—	—	—	1 humerus	—
		60-70	X	—	—	—	—	—	1 tibia	—

Appendix 2

ANALYSIS OF POTTERY SURFACE COLLECTIONS FROM THE PACIFIC DISTRICTS OF PUNTA BURICA, SAN FÉLIX, AND REMEDIOS IN CHIRIQUÍ, PANAMA

Anthony J. Ranere

This particular study reports on the 17 surface collections and one small test excavation made in the Punta Burica District, the 4 surface collections made in the San Félix District, and the 3 surface collections made in the Remedios District by members of the field project in 1961. All three districts lie in the Chiriquí Province, but they are not contiguous (fig. 46). In fact, Punta Burica District is separated from the other two districts by an air distance of approximately 120 kilometers.

The aims of this paper are: (1) to determine the distribution of pottery types in the Punta Burica, San Félix, and Remedios districts of Chiriquí; (2) to describe those types which have not appeared in the literature; (3) to modify those types which have been described on the basis of additional data from the collections; and (4) to establish a rough chronology for the districts under consideration.

Dr. Olga Linares de Sapir has made available the collections used in this study and has supervised my work for several years. In the process, she has taught me all I know about ceramic analysis and has prodded me along when the work on this paper faltered. My debt to her is clearly a great one. I am further indebted to Dr. Betty J. Meggers and Dr. Clifford Evans for their patience and assistance while this paper was being prepared for publication. My own ineptitude in drawing was kept from being exposed by Charles Schurcliff, who made the drawings in figures 48-55.

The present contribution is a revised version of a research paper presented to the Department of

Anthropology, Harvard College, in partial fulfillment of the requirements for the degree of Bachelor of Arts, with honors in the subject of Anthropology, in 1964.

Natural Setting

The Burica Peninsula, where all but one of the Punta Burica sites are located, juts southward approximately 20 kilometers in the Pacific, forming the western boundary of the Gulf of Chiriquí (fig. 46). The width of the peninsula varies from 11.7 kilometers at the latitude of Puerto Armuelles to less than 5 kilometers near its seaward extremity. A ridge runs completely down the length of the landform slightly off-center to the west, corresponding to the political border between Panama and Costa Rica. This ridge caps a mountainous and rugged terrain.

Terraces can be seen throughout the eastern region, which is the only one that concerns us here. They are not continuous, ranging from 92 to 182 meters in length, but they do seem to occur at constant elevations along the coast. These terraces represent elevated marine-cut benches. Bishop (1961) states that the surface rocks consist of soft gray to light green clay, a very fine-grained calcareous sandstone and siltstone, conglomerates, and thin lentils of lignite. He further classifies the soils as residual, that is, formed by weathering of underlying strata, or as resulting from deflation from adjacent areas. The terraces, with well-developed soils and proximity to water, provide good habitation areas.

The eastern coast of the peninsula is characterized by a wide sand beach composed principally of angular to subangular grains of quartz and a wide variety of igneous minerals including magnetite. A number of small streams which drain the eastern half of the peninsula contribute much of the materials for the formation of the beach, while marine erosion contributes the remainder. This section of the coast, being somewhat sheltered, is not subject to the violent surf characteristic of other Chiriquí Gulf coastal regions and therefore is more favorable for water travel and exploitation of the water resources.

The San Félix and Remedios districts are contiguous and share the same geographic and geologic features. The shoreline of this combined region consists of a wide sand beach broken occasionally by rock outcroppings which extend to the sea. The many streams which flow through the region provide the beach sand which consists of subangular quartz grains and a number of igneous minerals.

A plain covered with marine clay extends inland from the beach for a distance of eight miles, covering the extremities of the older igneous rock strata (Bishop, 1961). The plain is separated from the beach by a low escarpment. A number of small estuaries extend back into the plains, producing a rather varied coast line.

The Sites

The following descriptions were taken from the Site Survey Sheets of the 1961 expedition. Since I have not visited any of the sites myself, I can add nothing more to the site descriptions. For location of the sites, see figure 46.

Punta Burica District

BA-5: The site is located 2.5 kilometers southwest of the coast at Puerto Armuelles and 2.25 kilometers west of the coast at Corotú. It is a habitation site on the top of a level plain cut off on two sides by the Corotú River. The elevation of the site is 70–80 meters and it covers approximately one acre. The site is located in a cleared but not cultivated field with a few scattered trees. The soil is composed of clay material with quartz grains. Three benches are developed in material adjacent to the stream valleys. There was a coverage of humus which varied in thickness from 0.7 to 2.0 meters.

One group of sherds was found in a bank which had been eroded by the river. One group was found 50 cm. from the bank top, while a few were found 200 cm. from the top. Occupation of the site appeared to be scattered.

BA-6 (El Rompío): A cemetery site 2.5 kilometers from El Rompío town proper and 3 kilometers from

the town of Palo Blanco at a spot 2 kilometers inland. The nearest fresh-water source is the Rio Palo Blanco, 1 kilometer away. On the site are closely placed holes which may or may not have been graves, 1.5–2.0 meters long and 1.0–1.5 meters deep. They were apparently oval in shape, covered with a dome-like layer of small boulders. Site elevation is 10–20 meters; extent of the site area is given a minimum of 200–300 square meters. The ground is covered with virgin timber and moderate undergrowth and is not cultivated. The soil is extremely sandy.

Potsherds were taken from the backfill of previous grave excavations. The site has been extensively potted and is in danger of total destruction because of this.

BA-7: A probable habitation site located 1.5 kilometers west of Charco Azul proper on the eastern side of rolling mountains where the elevation is 120–150 meters. This is a region of rolling steep-sided hills covered with grasslands and a few scattered trees. Formerly the site was a forested area, but it was cleared for a pasture about seven years ago. The land is deeply gullied. The soil is a thick, clay sort, slightly silty, and more weathered than beach material. It also contains more clay and humus than beach soil, being older geologically.

Potsherds were collected from the surface and excavated from a test pit dug on the deeply gullied side of a slope near the top of the hills. All sherds were found in the top 50 cm., below which was sterile soil. Occupation of the site appeared to be scattered.

BA-8 (Quebrada Baúles): A habitation site located less than half a kilometer west of the coast between two streams; the northern is called Quebrada de Balsa (70 meters distant), and the southern is called Quebrada Mamey (150 meters distant). This is a flatland region about 25–30 meters in elevation. The site itself is on a rise one meter above the flatland. The extent of the habitation zone is unknown, but exceeds 100 meters in length. The area was formerly planted with maize, but is now covered with platanillo and guarumo. The major soil constituent is clay-sized material with a high percentage of fine, angular quartz sand and humus.

Potsherds were collected from the surface and from the hole of a previous excavation. A small test excavation 80 x 90 cm. was undertaken with the following results:

Level 0–10 cm., 8 sherds.
Level 10–25 cm., 6 sherds.
Level 25–35 cm., 3 sherds.
Level 35–45 cm., 6 sherds.
Level 45–60 cm., 13 sherds.
Level 60–70 cm., 7 sherds.

Level 70–80 cm., 20 sherds.

Level 80–90 cm., 4 sherds. Between 85–90 cm. there is a slight change in the soil, which becomes more sandy and lighter in color due to redistribution of magnetite.

Level 90–100 cm., 2 sherds. These sherds might have been intrusive. Damp sand is first encountered at this level.

Level 100–110 cm., sterile.

BA–8a (Quebrada Baúles): A continuation of BA–8 about 70 meters to the northwest. This places BA–8a 6 meters south of Quebrada Balsa. It is on the side of a raised mound about 1.0–1.5 meters in height.

Potsherds were taken from the backfill of two previous excavations (potholes) 2 meters apart.

BA–9: A habitation site 19 kilometers south of Puerto Armuelles on the first point north of Charco Balsa and 50–100 meters south of Quebrada Limones. It is located on the slope of a hill immediately above the beach and to one side of a present-day dwelling. The land is planted in maize and supports a few scattered trees. The soil is residual, consisting of fine sandstone with a high percentage of clay.

Potsherds were found on the slope of a hill planted in maize. The slope is 20 degrees, the grade is 30 percent, and the elevation is 40–60 meters. The site appears to be worth excavating.

BA–10: A habitation site some 100 meters west of the coast and 20 meters north of Quebrada Charco Azul. The area of the site is flat and 50 meters in elevation; there are plateaus and hills to the north and west. Maize and rice were once planted in this area, but it is now a pasture for cattle. The soil is principally clay.

Potsherds were found in an eroded hillside ravine in the first 65 cm. of ravine facing. Occupation of the site appeared to be scattered.

BA–11: A habitation site due west of the coast from La Quebrada de Charco Azul in the Quebrada de Manzanillo. This is a deep (about 10 meters) stream channel that runs in a big “S” from the coast. The sides are densely overgrown with bijao and chichica plants. Soil is residually derived from highly argillaceous rock. There is also some clay shale, which is quite contorted.

Potsherds are in the east-west bend of the stream in a gully that runs north-south about midway up the banks of the gully.

BA–12: A habitation site 1.5 kilometers from Mellicita and about 1 kilometer from the coast. It extends for approximately 150 meters along a branch of the Quebrada de Mellicita. Vegetation takes the form of tall grass, scattered trees, and brush. The soil is sandy, but compact.

Potsherds were found in the banks on either side of the branch. The banks rise steeply for about 8 meters in this area. All sherds came from 0–40 cm. below the surface.

BA–13: A habitation site approximately 100 meters west of the coast on a high plateau 50 meters from the Quebrada de Félix Sanchez. The plateau was cultivated until a few years ago, but it is now open grassland. The soil is a highly silty to fine sand clay, locally derived from residual weathering.

Potsherds were collected from the surface of the site.

BA–14: A habitation site 150–200 meters west of the coast, 75 meters north of the Corotú River, and 125–150 meters south of Quebradas Grandes. The site is on a plateau overlooking the sea. The area was once under slash-and-burn cultivation and is now cleared as far back as the river. There is some minor gullying. The soil is residually derived, silty, and clayey.

Potsherds were collected from the plateau area and from the slope of the hill below.

BA–15: A habitation site 100 meters south of Caña Blanca and 330 meters inland on the first plateau from the sea; area is 10 hectares. Vegetation is grassland with a few scattered trees. The soil is residually derived, silty, and clayey.

Potsherds were collected from the surface of an eroded gully about 2 meters below the crest of the plateau.

BA–16: A habitation site 750 meters west of the coast and 500 meters south of Quebrada Calabazo. This region is flat, some 40–50 meters in elevation and about a hectare in area. The land had just been burned for planting at the time it was visited.

Potsherds were found along the eroded edges of the plateau.

San Félix District

SF–1 (La Merejilda): A habitation site to the south of Las Lajas and to the east of Cerro El Jobo. The Rio San Félix is 300 meters to the east. The site is located between two quebradas. The area is now a pasture for cattle, which are driven through the eroding bank where the sherds are found. The soil is light colored and chalky.

Potsherds were collected from the eroded bank to a depth of at least 15 cm. and for a length of more than 200 meters in an east-west direction. Potsherds were also found to a depth of 15 cm. on small raised mounds adjacent to the eroded bank. Although this is not an impressive site, the concentration of sherds may warrant eventual excavation.

SF–2 (Cerro El Jobo): A habitation site directly south of Las Lajas, three quarters of the way to the beach on a large hill north of the Quebrada del

Gato. The area has been burned recently for cultivation of maize and root crops. The red clay soil is compact and ferruginous.

Potsherds were found on the surface of the hill on both the east and west faces, from 25 meters from the bottom to the top of the hill. Sherds were also found adhering to the roots of large trees. Occupation was relatively scattered, although concentration of sherds may justify eventual excavation.

SF-3 (El Escudo): A habitation site in the town of Santa Cruz, west of the fence which separates the two houses from the property called El Escudo. At the time it was visited, the property was undergoing plowing in order to convert it into a pasture. The soil is of a compact red ferruginous clay type. A quebrada runs some 100 meters west of the site.

Scattered potsherds were collected on the surface of what is today the refuse area of the town of Santa Cruz. A tractor working there, at the time of the visit, was uncovering many sherds as it plowed the ground. Sherds were collected over an area of at least 175 square meters.

SF-4 (El Zapote): A habitation site southeast of Las Lajas in the direction of the Playa del Jobo. It is located next to the Quebrada Mamey. The land is a pasture for cattle. The soil is black humus to a depth of at least 15 cm.

Potsherds were found to a depth of 15 cm., although no sherds were visible on the surface.

Remedios District

RE-1 (El Arbol Pan): A habitation site and possibly a cemetery located several kilometers directly west of Cerro San Cristobal, between Quebrada del Espavé and Quebrada del Arbol Pan. The site is on a slight rise and extends about 250 meters northwest-southeast by 50 meters in the opposite direction. The region has been plowed in order to plant pangola grass. The soil is a rich dark brown clay, which is quite compact.

Potsherds were found on both raised and low areas, as well as in the hole of a previous excavation. The concentration of sherds warrants eventual excavation.

RE-2: A habitation site approximately 2 kilometers east of the old bridge at the Salado River along the old highway to Panama City. The site is 100 meters south of the road. The area is cleared with some scattered brush. The soil is a red ferruginous clay.

Potsherds were found at specific spots, not scattered in the usual manner. Sherds were excavated to a depth of 10 cm. in a spot which might have been a house location. The soil in the excavation contained a good deal of carbon.

RE-3 (Potrero Grajales): A habitation site south-east of the town Remedios and 300 meters east of the Quebrada del Serracín on the side of Cerro la Garita, the largest hill in the vicinity. The land is presently cleared for pasture. The soil is a dark brown compact clay.

Potsherds were scattered in small numbers over an area 100 meters square. A number of sherds were found from 0-20 cm. below the surface where the cattle had possibly trampled them. On the Cerro la Garita was the 16th-century town of Remedios which was burned by pirates.

Pottery Type Descriptions

Of the pottery types encountered in the surface collections from the Punta Burica, San Félix and Remedios Districts, all but two are described by Dr. Linares de Sapir in the main body of this volume. The descriptions of the two new types encountered in these collections are recorded.

Balsa Polished

PASTE:

Method of manufacture: Coiling. Coiling junctions are invisible on the surface, but in a very few instances can be seen in cross section.

Temper: Small rounded red (hematite) and black (magnetite?) particles. These inclusions are distributed homogeneously throughout the paste and are characteristically less than 1 mm. in diameter, although the hematite grains reach a diameter of 4 mm. on rare occasions.

Texture: Uniform, fine, and compact. Breaks along straight lines.

Color: Off-white to buff-orange and more rarely, light gray. Occasionally there is an oxidation band of light orange extending inward 1-3 mm. from either side or just from the outside of the sherd. Less frequently a gray core 2-3 mm. thick is found. Some fire clouding is noticeable, but not to any appreciable amount.

SURFACE:

Color: Dirty white to buff, with some gray areas due to fire clouding.

Treatment: The exterior is characteristically very highly polished. The interior is sometimes lightly polished and sometimes smoothed, both being equal in incidence.

Hardness: Fairly hard; 3.5-4.

FORM:

Body wall thickness: 5-13 mm.

Rim and Lips:

Group 1 (fig. 48a): Slightly outflaring rim which is an extension of the body wall. Diameter of the rim is 17 cm.

Group 2 (fig. 48b): Everted rim slightly thickened on the inside, having an angular profile. Rim diameter is 14 cm.



FIGURE 48.—Rim profiles of Balsa Polished, groups 1-3, Burica Peninsula.

Group 3 (fig. 48c): Extension of the body wall. The rim has a grooved lip like that of a sugar bowl. Striations in the groove indicate that the vessel probably had a top. Rim diameter is 22 cm.

Bases and Supports: None in the sherd sample.

Appendages: Flat strap handles, about the thickness of the body wall and relatively small.

Reconstruction: Open bowls are the only form clearly identifiable from the sample.

DECORATION: A uniform red strip 1-2 mm. wide is painted along the lip of the rims and extended completely around the vessel mouth. The rest of the exterior is polished, but not painted. The color of the paint is a rich red.

In one instance there is evidence for some sort of applique decoration. This takes the form of a broken circular knob 6 mm. in diameter, extending outward from the body wall 2.5 cm. below the lip.

CHRONOLOGICAL POSITION: This type occurs in association with both Isla Palenque Maroon Slipped and Castellón Red Slipped Wares, the first diagnostic of the Burica Phase, and the second diagnostic of the following San Lorenzo Phase in the central Chiriquí Gulf sequence.

GEOGRAPHICAL DISTRIBUTION: Balsa Polished is found only in collections from sites BA-8, BA-8a, and BA-13, all located near the tip of the Burica Peninsula.

COMPARATIVE MATERIAL: This type may have some affinities with the Red Lined Ware of Holmes (1888, pp. 109-111) and MacCurdy (1911, pp. 92-95), but no direct connection can be ascertained. Balsa Polished was not described by Linares de Sapir in this volume, but a number of Red Lined Wares were. Balsa Polished may simply be another one of the Red Lined Wares.

Quebrada Baúles Brushed

PASTE:

Method of manufacture: Probably coiling, although coil junctions are completely obliterated.

Temper: Small angular quartz particles with minor inclusions of rounded, red particles (hematite) and other minerals.

Texture: Coarse and somewhat friable. Air pockets are frequent. Fractures irregularly.

Color: Buff to reddish-brown. Sometimes there is a gray to black zone extending in from the interior surface, caused by incomplete oxidation on firing.

SURFACE:

Color: Dirty buff to dirty brown. Occasional gray to black areas due to fire clouding.

Treatment: Traces of coiling are removed, and the exterior body wall is roughly scraped. The surface appears to have been roughed with either cording, or a stiff brush, or a scraping tool. Rough parallel striations, generally 2-4 mm. apart, are visible on a number of sherds. The rim and neck of these vessels are not roughened, but instead are lightly polished. The surface of the body sherds is differentially eroded, giving a heavily pitted effect. The interior surface is smoothed but not polished.

Hardness: Very soft; 2.

FORM:

Body wall thickness: 5-15 mm.

Rims and Lips:

Group 1 (fig. 49a-f): Everted rims apparently belonging to large globular jars with short necks. Rims are all exteriorally thickened by addition of coils, whose junctions are sometimes not entirely obliterated. The contour of the lip is angular, tending toward being rectangular. The angle formed with the neck ranges from 60 to 90 degrees. Rim diameters vary from 29 to 45 cm.

Group 2 (fig. 49g): Vertical to slightly everted rim thickened by what appears to be a single coil added

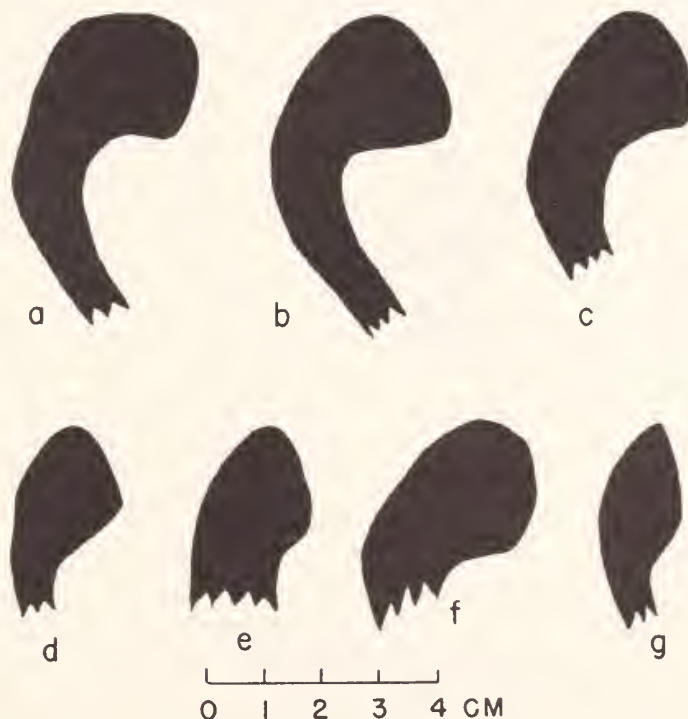


FIGURE 49.—Rim profiles of pottery type Quebrada Baúles Brushed, groups 1 and 2, Burica Peninsula.

to the exterior. The lip comes to a point, forming three sides of a diamond from 0 to 20 degrees off of vertical.

Bases and Supports: None in the sample.

Reconstruction: Large globular jars with short necks and large openings are the only type represented.

DECORATION: See surface treatment.

CHRONOLOGICAL POSITION: This type is associated with Isla Palenque Maroon Slipped, a diagnostic type of the Burica Phase in the central Chiriquí Gulf sequence. It is also associated with Castrellón Red Slipped, which is diagnostic of the San Lorenzo Phase in the same Gulf sequence.

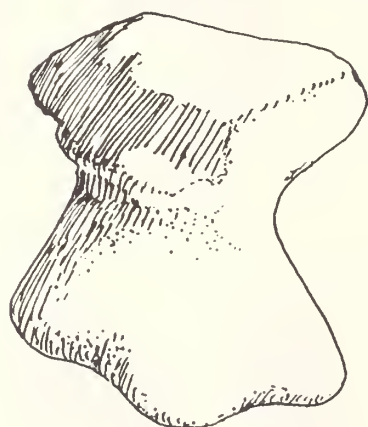
GEOGRAPHICAL DISTRIBUTION: Quebrada Baúles Brushed is found only in the BA-8, BA-8a, and BA-13 sites on the Burica Peninsula. These sites are near the southern tip of the peninsula.

COMPARATIVE MATERIAL: None.

Geographical Distribution of Pottery Types and Modes

Punta Burica District

The oldest materials among the collections included in the analysis come from the district of Punta Burica. At site BA-9, there were evidences for the occurrence of La Concepción complex and/or the Aguas Buenas complex. A three-toed tripod foot (fig. 50) in the collection from this site is duplicated on a vessel of the Scarified Ware group in the Peabody Museum, Harvard University. Moreover, the same three-toed tripod foot on Scarified Ware vessels is pictured by Holmes (1888, fig. 118) and by MacCurdy (1911, pl. XXVI, f). Since this tripod foot



0 1 2 CM

FIGURE 50.—Three-Toed Tripod Foot belonging to Scarified Ware of La Concepción complex from Site BA-9 in the Burica Peninsula.

does not occur in any of the other pottery types found in Chiriquí or adjacent areas, the find, even though only a single sherd, can be taken as incontrovertible evidence of the presence of La Concepción complex in the BA-9 surface collection. It is interesting to note that Linares de Sapir found no trace of this complex in her collections.

The same site (BA-9) also produced an applique figure in the form of a bird decorating one of the rim sherds (fig. 51). This figure closely resembles one pictured by Haberland (1955, p. 227, fig. 5) and assigned by him to the Aguas Buenas complex. Although applique figures are common in a number of Chiriquí pottery types and in types found in adjacent areas, I have not seen one similar to this particular applique bird in any of the literature.

Exactly what the occurrence of these two sherds means in terms of the chronological sequence is difficult to ascertain. The predominant pottery type in the site collection is Isla Palenque Maroon Slipped, characteristic of the Burica Phase. The alternative interpretations we have to choose from in order to explain the presence of the three-toed foot and applique bird figure are as follows: (1) One may dismiss the evidence for both La Concepción and Aguas Buenas complexes as being too tenuous and assign the site to the Burica Phase. (2) One may admit the evidence and label BA-9 a two- or three-phase site, depending on the relationship between La Concepción, Aguas Buenas, and the Burica Phase (Is Aguas Buenas a contemporary of La Concepción complex or of the Burica Phase, or does it fall within the two?). (3) One may dismiss the evidence for the Aguas Buenas complex, move up the date for La Concepción complex, and label BA-9 a two-component site. (4) One may admit the evidence and either lower the initial date given for the Burica Phase, or raise the terminal date for La Concepción and/or Aguas Buenas complex, making them overlap or at least appear shortly after one another.

I am inclined to accept the fact that the three-toed foot belongs in La Concepción complex and, with some reservations, I am inclined also to accept the fact that the applique figure belongs to the Aguas Buenas complex. Furthermore, I suspect that the two complexes are largely contemporaneous and have a terminal date around A.D. 300. All three pottery types found at BA-9 have their origins north of the site location; La Concepción is associated with the lowlands and foothills of the central Chiriquí Province (Haberland, 1962), Aguas Buenas is associated with the highland area on the Panamá-Costa Rica border (Haberland, 1955), and Isla Palenque Maroon Slipped may have had its prototype somewhere in

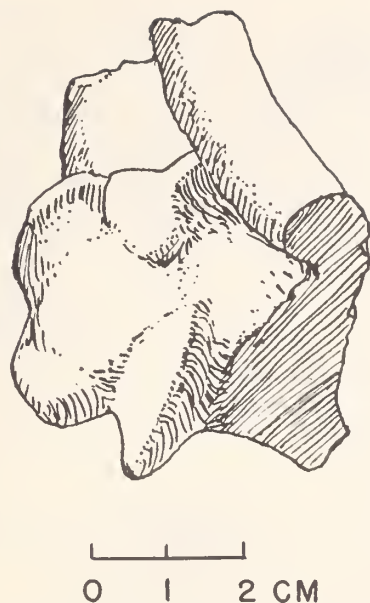


FIGURE 51.—Applique figurine from Site BA-9, Burica Peninsula, resembling figurine from Aguas Buenas complex in Costa Rica.

the Diquís area, though this inference is highly tentative at present. If we postulate a general southward or southeastward migration of people (or diffusion of pottery types), then, on purely distributional grounds, La Concepción complex would arrive on the Burica Peninsula before or at the same time as the Aguas Buenas complex. The Isla Palenque Maroon Slipped prototype, being farther away, would arrive later. Excavation is needed to confirm or deny any of these alternatives.

The major pottery type at BA-9 is Isla Palenque Maroon Slipped, the principal trait of the Burica Phase. Starting with BA-14 and working northward up the east coast of the Burica Peninsula to the location of BA-5 (fig. 46), there are eight other sites in which the dominant or sole type is Isla Palenque Maroon Slipped: BA-14, BA-16, BA-15, BA-12, BA-11, BA-10, and BA-7. Furthermore, this type occurs at BA-8 and BA-13, although not as the main type. The presence of a single pottery type would seem to indicate a concentrated population on the east coast of the peninsula during the Burica Phase.

At BA-8, BA-8a, and BA-13, pottery types occur which place part of their occupation in the San Lorenzo Phase. Castellón Red Slipped, diagnostic of the San Lorenzo Phase, occurs in the BA-8 and BA-8a collections. Also represented at BA-8 are two additional San Lorenzo Phase types, three sherds belonging to Arayo Polished Line, and four sherds belonging to the general category of Red Line Ware (Banco Red Line?). All three sites also contain two

pottery types not previously described in the literature, Balsa Polished and Quebrada Baúles Brushed.

The types found at BA-8 and BA-8a (which is 200 meters from BA-8) are basically the same, with the absence of Isla Palenque Maroon Slipped at BA-8a being the exception. This might be explained by the hypothesis that BA-8 was the original habitation area and that sometime after the advent of the San Lorenzo Phase, this area was expanded, or reoccupied, to include the BA-8a area. On the other hand, absence of this type could simply be the result of an inadequate sample.

There are five trade sherds in the BA-8 collection, one of which has been tentatively identified as Coclé, though its fragmentary condition makes it impossible to assign it to Early or Late Coclé (fig. 52a). The only other identifiable sherd closely resembles pottery from the Nicoya area in Costa Rica. Lothrop (1963, p. 89) illustrates several trade sherds from Nicoya that employ bar and circle motifs similar to the sherd from Punta Burica (fig. 52b). Lothrop dates these trade sherds in the Middle Polychrome period, which Baudez and Coe have assigned to the period between A.D. 750-1100. This date agrees with the Burica and San Lorenzo Phase dates assigned by Linares de Sapió and also to the date of the Coclé Polychrome (fig. 47).

BA-13 has been classified as a two-phase site, even though it contains no sherds considered diagnostic of the San Lorenzo Phase by Linares de Sapió. The Burica Phase is represented here by Isla Palenque Maroon Slipped sherds. The sample is small, only eight sherds, and it does contain Balsa Polished and Quebrada Baúles Brushed, both of which are associated with diagnostic San Lorenzo Phase pottery types at sites BA-8 and BA-8a.

The decrease in the number of sites on the Burica Peninsula, from 13 in the Burica Phase to 3 in the San Lorenzo Phase, suggests a general abandonment of the coastal area at the end of the Burica Phase. The reasons for this abandonment are not known, but it may have been due to renewed pressures from outside areas, represented by new types of pottery.

From the archeological evidence, it would seem that abandonment of the Burica Peninsula was all but completed in the Chiriquí Phase. Only two sherds characteristic of this phase are found in the collections from the peninsula, one at BA-5 and the other at BA-10, both of which are on the northern half of the peninsula. The two sherds belonged to the readily identifiable Tarragó Bisquit Ware.

The Spanish chroniclers (Markham, 1865, pp. 24-5) present a conflicting opinion. According to their accounts, the Burica Peninsula was well peopled at the time of the Spanish arrival. Perhaps the Indians

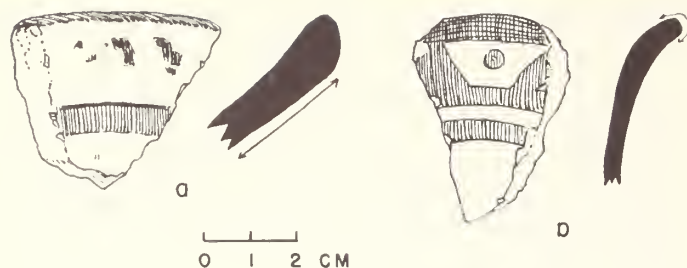


FIGURE 52.—Polychrome trade pottery at Site BA-8. *a*, Coclé (early or late?). *b*, Middle Polychrome period, Greater Nicoya area, Costa Rica.

of the Chiriquí Phase moved away from the coastal areas of the peninsula and back into the hilly areas which were not explored by the 1961 archeological survey. Or perhaps the survey simply failed to locate the sites in use at the time of the Chiriquí Phase.

Site BA-6 is the only single Chiriquí Phase site in the Punta Burica district. It differs from the other sites by not being a habitation site, but rather a cemetery, and by not being located on the Burica Peninsula proper, but to the east of it (fig. 46). The sherds collected from this site came from the backfill of pothunters who have all but destroyed the site. The pottery types found at BA-6 are all diagnostic of the Chiriquí Phase. The dominant type was Tarragó Bisquit Ware; 10 globular vessels of this type were partially reconstructed. Villalba Red Streaked was also present; the sherds appeared to belong to shallow bowls with tripod feet. Two of these tripod feet were included in the sample. In addition, the site yielded sherds from a small round-bottomed globular jar, which belong in the Negative Painted Ware category. Four sherds of Chocolate Ware, fragments of a shallow bowl decorated with incision, complete the sample from BA-6.

San Félix and Remedios Districts

We can now skip across the central Chiriquí Gulf area into the San Félix and Remedios districts, approximately 120 kilometers to the east (fig. 46). These two districts are geographically contiguous and share a number of pottery types and modes. The Burica Phase is not represented, thus the first evidence of occupation belongs to the San Lorenzo Phase. RE-3 is the only site that might be assigned to the San Lorenzo Phase as a single phase site, but evidence supporting this assignment is tenuous. The only decorated type is Caco Red Slipped, which is characteristic of the San Lorenzo Phase. RE-3 produced, however, a round handle which proved to be restricted to the Chiriquí Phase in the central Chiriquí

Gulf area. Three strap handles, common to both phases, also occurred at this site.

Sites SF-1, SF-2, and SF-3 have been placed in both the San Lorenzo and Chiriquí Phases. The sample from SF-4 was insufficient to assign it to any phase, but it probably belongs here also. All three sites contain Caco Red Slipped, diagnostic of the San Lorenzo Phase. In addition, Congrejal Red Line occurs at sites SF-1 and SF-2, while Castellón Red Slipped occurs at SF-1. Both types belong principally to the San Lorenzo Phase. Tarragó Bisquit Ware, diagnostic of the Chiriquí Phase, is found at all three sites, while the SF-1 collection contains a double handle (fig. 53), diagnostic of the same phase.

There is only one site, RE-1, which may have had an occupation restricted to the Chiriquí Phase. The site contained the very diagnostic trait from the Chiriquí Phase, the double handle. The surface sample contained only one unidentifiable painted sherd; the rest were plain sherds, characteristically thick. A collection taken from the back dirt of a pothole in the site area, however, yielded two sherds belonging to Congrejal Red Line, a San Lorenzo Phase time marker. This may indicate that a San Lorenzo occupation underlies the Chiriquí Phase occupation represented by the surface collections. Slash punctuation and anthropomorphic serpent designs were the only plastic decorations present.

The following modes occurred in the two districts of San Félix and Remedios (table 4), which cannot be assigned to any one phase: Applique ridging; applique ridge notching; applique raised knobs; fine-line incis-

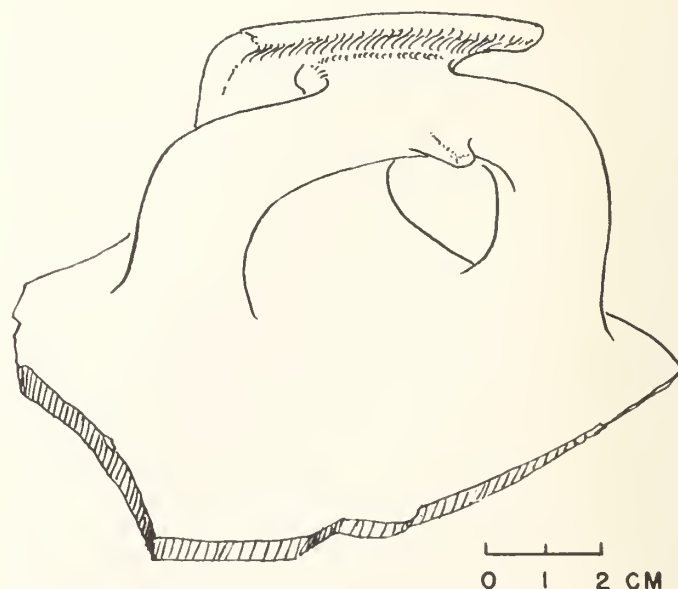


FIGURE 53.—Double Handle Mode from Site SF-1, San Félix district; a Chiriquí Phase marker.

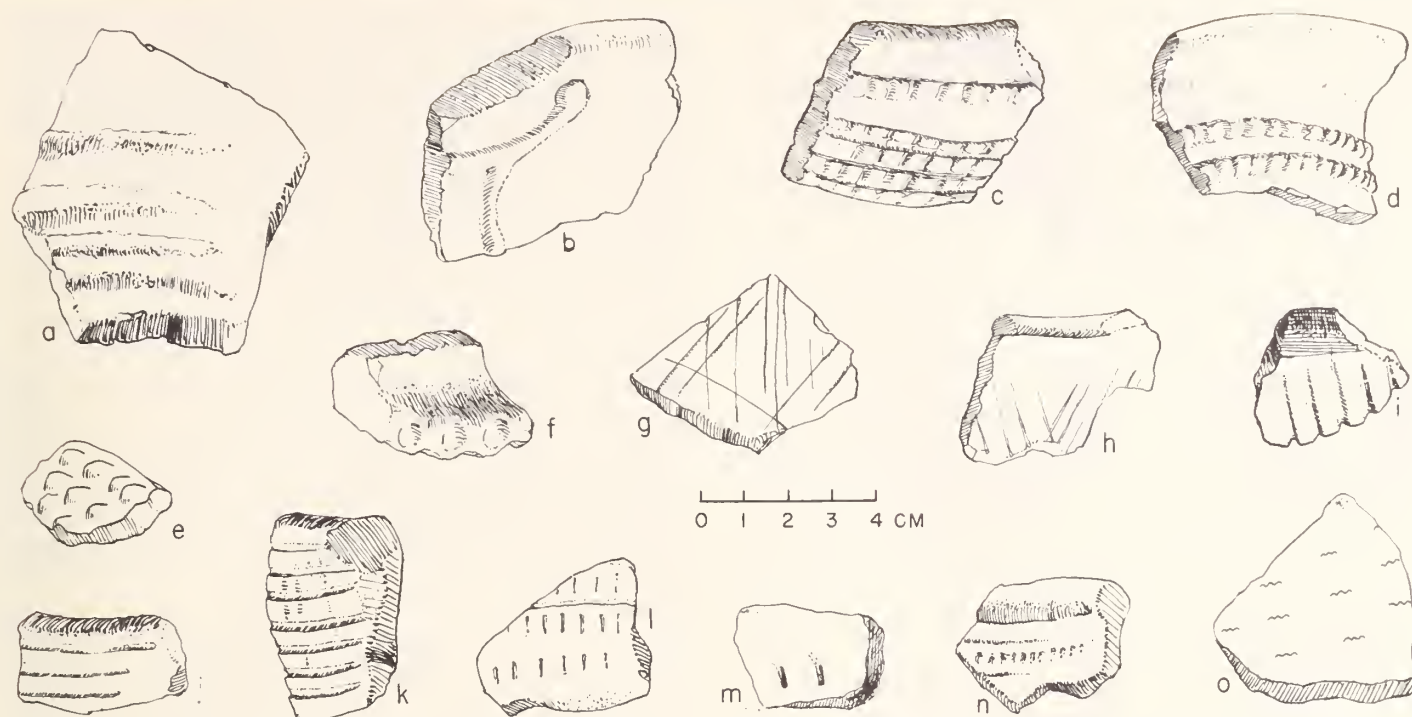


FIGURE 54.—Decorative Modes from the districts of San Félix and Remedios. *a-b*, Applique ridging. *c-d*, Applique ridge notching. *e-f*, Applique raised knobs. *g-h*, Fine line incising. *i-k*, Broad line incising: *l-m*, Slash punctation. *n-o*, Shell edge stamping.

ing; broadline incising; slash punctations; and shell-edge stamping (fig. 54).

The Cultural Sequence

Summary

The cultural sequence established and defined by Linares de Sapir for the central Chiriquí Gulf area can be applied to the districts of Punta Burica, San Félix, and Remedios with considerable success. There are regional variations in the definition of archeological phases, however, which make it necessary to broaden the descriptive content of these temporal units to make them apply accurately to the entire Chiriquí Gulf area.

The initial Burica Phase is the one most easily defined in the cultural sequence. In order that the description of this phase encompass the Punta Burica district, it needs to be expanded in the following instances. The tripod foot (Mode *al*) does not occur in the Punta Burica district, but a different one does (fig. 55*a*) and should be added to the description. The ringstand (fig. 55*e*) found in our collections is like Ringstand Mode *a* in the Gulf of Chiriquí collections (p. 50). In addition, seven strap handle fragments and one round handle are definitely classified as Isla Palenque Maroon Slipped in the Punta Burica collec-

tions (fig. 55 *a-c*). The occurrence of these handles is rare and should be included in the phase description (and pottery type description) as such. Incision, a plastic decoration which occurs in the central Chiriquí Gulf area as well as on the Burica Peninsula, should also be included. (In this particular case, where a single pottery type is diagnostic of a phase, any changes in phase description are simply a matter of change in the pottery type description of Isla Palenque Maroon Slipped. This will not be the case, however, in the succeeding two phases.)

The San Lorenzo Phase is a bit more complicated to modify. First, it will probably be necessary to include Balsa Polished and Quebrada Baúles Brushed as diagnostic of this phase, although additional research is needed to substantiate this. It is difficult to separate the San Lorenzo Phase from the Chiriquí Phase in the San Félix and Remedios districts on the basis of surface collections. It appears, however, that the San Lorenzo Phase in these districts had round handles which do not occur at this time period in the central Gulf area. On the other hand, my collections lacked tripod feet, pedestal bases, and a number of pottery types considered diagnostic of this phase in that area. The following decoration modes (fig. 54*a-o*) should be noted as occurring (although they cannot be considered diagnostic, since they seem to last into the Chiriquí Phase): Applique ridging;

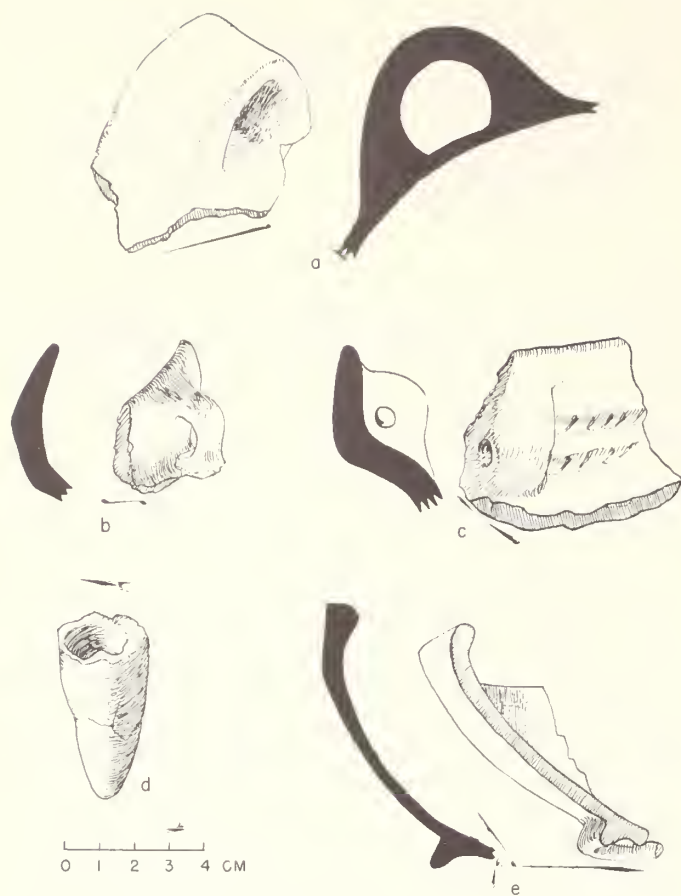


FIGURE 55.—Appendage Modes in sites of the Burica Peninsula associated with Isla Palenque Maroon Slipped, Burica Phase. *a-c*, Looped handles. *d*, Tripod foot. *e*, Ringstand.

applique ridge notching, applique raised knobs; fine-line incising; broad-line incising; slash punctation; scoring; and shell-edge stamping. Shell-edge stamping probably stands the best chance of eventually being proven diagnostic of this phase.

The Chiriquí Phase description does not apply completely to the San Félix and Remedios districts. The two diagnostic types, Villalba Red Streaked and Cavada Applique and Red Banded, are absent from the two districts, while Remedios even lacks Tarragó Bisquit Ware. Also absent from these districts during the Chiriquí Phase are pedestal bases and tripod feet, both of which are found in the central Gulf area. The principal diagnostic trait for the Chiriquí Phase in the San Félix and Remedios districts is the double handle. Strap handles and horizontal handles occur in this phase, but cannot be considered diagnostic.

Conjectures

Although it is difficult to speak conclusively about chronological sequence relying primarily on data from surface collections, particularly those collections which

are not the product of random sampling, the data from San Félix and Remedios bring up an interesting point. The occurrence of pottery types of the San Lorenzo and Chiriquí Phases always in association (in other words, the lack of single occupation sites of either phase), particularly in the San Félix district, suggests that the division made by Linares de Sapir between these two phases is even less marked here than in the Gulf of Chiriquí. Excavation in these districts, or even more surface collections for analysis, could provide the answers to the question as to whether or not the San Lorenzo and the Chiriquí Phases are chronologically distinct as in the central Chiriquí Gulf area, or whether they are in the San Félix and Remedios districts largely contemporaneous. It may be the case that only in the San Félix-Remedios area are the two phases synchronous, and that they are somewhat distinct in the central Chiriquí Gulf area.

At the beginning of the San Lorenzo Phase, the island sites in the Gulf were inhabited by people coming in from the Chiriquí mainland, probably replacing the people of the Burica Phase, or at least replacing their cultural assemblage. These new inhabitants introduced pottery types decorated with red bands and red lines, which spread in both directions, for we find Castellón Red Slipped and Arayo Polished Line pottery types on the Burica Peninsula and Caco Red Slipped, Castellón Red Slipped, and Cangrejal Red Line in San Félix and Remedios.

Then, sometime after A.D. 1000, another group of people seem to have moved out into the coastal areas of the central Chiriquí Gulf and onto the islands; or what is more likely, there was a diffusion of two pottery types in this direction, namely Tarragó Bisquit Ware and Villalba Red Streaked. The three districts examined in this report were actually peripheral to this pattern of communication between the mainland Chiriquí and the island people. The Tarragó Bisquit Ware, being a popular type, diffused across the district of Alanje to the northern part of Punta Burica. It also diffused eastward to San Félix, but not as far as Remedios. Villalba Red Streaked did not even diffuse as far as San Félix. At this time, both San Félix and Remedios were apparently west of the main communication channel.

At the same time as Chiriquí Phase pottery types were diffusing into the central Chiriquí Gulf area, another cluster of traits was moving eastward into the Chiriquí Gulf area. This diffusion is perhaps most easily traced by use of the double handle. There is no reference to double handles in either Holmes (1888) or MacCurdy (1911). Double handles are pictured by Lothrop (1950, p. 20, fig. 11) and assigned to the provenience of Bubí, which is in the

southwest coastal area of Veraguas, not too far from Remedios. Linares de Sapir (p. 55) notes a double handle exactly like the ones found in the central Chiriquí Gulf area (which are like the ones found in Remedios) in a collection made by M. W. Stirling in 1951 from a locality 25 miles northwest of Panamá City. The direction of the diffusion was westward from this point to the islands of the Chiriquí Gulf. Double handles are not known from the Burica Peninsula.

Another trait found in the San Félix and Remedios districts, which seldom occurs in the districts to the west, is plastic decoration. Such decoration had a wide distribution in Central America to be sure, but on Veraguas exists almost to the exclusion of other decorative techniques. Lothrop (1950) pictures a number of plastic decorative modes that are similar and sometimes identical to those occurring in the two districts of San Félix and Remedios. Ladd (1964, plate 14) illustrates plastic decorations from the Parita Bay area, some identical to those found in these two districts (slash punctation, applique ridge notching, fine-line incising, lip grooving, shell-edge stamping, scoring, broad-line incising, and applique ridging).

The San Félix and Remedios districts did not form, during the Chiriquí Phase, an integral part of the "Chiriquí Classical Culture" sphere. They were in a transitional zone between the two well-defined late styles of Chiriquí and Veraguas, sharing characteristics with both. This variation in local styles accords well with the large number of Indian groups (provincias) found by the Spaniards within what is today the Province of Chiriquí. The area around San Félix and Remedios was probably occupied by the Guaymí, as opposed to the "Classical Chiriquí" area of the Doraces, Zuries, etc. (Linares de Sapir, p. 79).

As a final summary, it may be said that the analysis of the surface collections from Punta Burica, San Félix, and Remedios has served to expand and clarify the phases of the Central Gulf sequence and has also contributed important information on the limits and distributions of each phase. Interesting suggestions have been brought forth by the appearance of some traits that were absent from the Central Gulf area and by the lack of well-documented single-phase sites for either of the two last phases. What is needed now are substantial excavations placed at selected sites to secure the chronology for these districts and to tie them in with neighboring regions. The first step has been taken in this analysis.

TABLE 1.—*Distribution of pottery types in the district of Punta Burica*

Pottery types	BA—Sites																	
	Total	16	15	14	13	12	11	10	9	8a'	8a	8'	8	7a	7'	7	6	5
Isla Palenque Maroon Slipped, thin variety	78	6	1	5	—	—	2	1	26	—	—	—	3	—	9	14	—	11
Isla Palenque Maroon Slipped, thick variety	434	33	1	33	3	36	20	18	117	—	—	7	22	19	42	52	—	31
Quebrada Baúles Brushed	115	—	—	—	2	—	—	—	—	9	34	19	51	—	—	—	—	—
Balsa Polished	50	—	—	—	3	—	—	—	—	2	6	16	23	—	—	—	—	—
Castrellón Red Slipped	15	—	—	—	—	—	—	—	—	3	2	5	5	—	—	—	—	—
Tarragó Bisquit Ware	32	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	30	1
Villalba Red Streaked	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	28	—
Negative Painted Ware	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Chocolate Incised	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—
Scarified Ware	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—
Polychrome Trade Ware	5	—	—	—	—	—	—	—	—	—	—	—	5	—	—	—	—	—
Decorated, unclassified	21	—	—	—	—	8	—	—	5	—	—	—	8	—	—	—	—	—
Plain, unclassified	40	3	1	1	—	5	—	—	3	3	3	4	8	1	5	2	—	1
TOTAL	826	42	3	39	8	49	22	20	152	17	45	52	125	20	56	68	64	44

TABLE 2.—*Distribution of pottery types in the districts of San Félix and Remedios*

Pottery types	Habitation sites								
	TOTAL	RE-3	RE-2	RE-1a	RE-1	SF-4	SF-3	SF-2	SF-1
Castrellón Red Slipped	2	—	—	—	—	—	—	—	2
Congrejal Red Line	10	—	—	2	—	—	—	2	6
Caco Red Slipped (thin)	8	—	—	—	—	—	—	—	8
Caco Red Slipped (thick)	508	192	—	—	—	—	21	289	6
Tarragó Bisquit Ware	53	—	—	—	—	—	11	21	21
Villalba Red Streaked	64	—	—	—	—	—	—	—	64
Decorated, unclassified	26	—	—	3	—	—	6	5	12
Plain Ware, unclassified	1,695	375	121	58	57	20	402	359	303
Plain Ware, thick	251	13	—	35	170	—	14	7	12
Polychrome Trade Ware	6	1	—	—	—	—	—	2	3
TOTAL	2,623	581	121	98	227	20	454	685	437

TABLE 3.—*Distribution of appendage modes (handles, supports) in the districts of Punta Burica, San Félix, and Remedios*

Appendage Modes	Sites												
	TOTAL	RE-3	RE-1a	RE-1	SF-3	SF-2	SF-1	BA-14	BA-12	BA-11	BA-9	BA-7a	BA-7
Handles	145	4	3	45	27	18	38	—	—	2	7	1	—
Double	4	—	—	3	—	—	1	—	—	—	—	—	—
Horizontal	2	—	—	2	—	—	—	—	—	—	—	—	—
Strap	115	3	2	32	21	17	31	—	—	2	7	—	—
Round	24	1	1	8	6	1	6	—	—	—	—	1	—
Bases and Supports	22	—	—	4	9	3	—	1	1	—	2	1	1
Flat, thickened	2	—	—	—	—	1	—	—	—	—	—	1	—
Ringstand	14	—	—	2	8	2	—	1	—	—	1	—	—
Pedestal	1?	—	—	—	1?	—	—	—	—	—	—	—	—
Looped Feet	2?	—	—	2?	—	—	—	—	—	—	—	—	—
Tripod Feet	3	—	—	—	—	—	—	—	1	—	1	—	1
Appendages, misc.	3	—	—	—	—	—	—	1	—	—	2	—	—
TOTAL	170	4	3	49	36	21	38	2	1	2	11	2	1

TABLE 4.—*Distribution of plastic decorative motifs in the districts of Punta Burica, San Félix, and Remedios*

Motifs	Sites													
	TOTAL	RE-3	RE-2	RE-1	SF-4	SF-3	SF-2	SF-1	BA-14	BA-12	BA-11	BA-9	BA-7	BA-5
Applique Ridging	21	1	—	—	2	1	11	2	—	—	—	4	—	—
Applique Ridge Notching	10	—	—	—	—	—	10	—	—	—	—	—	—	—
Applique Ridge Scalloping	3	—	3	—	—	—	—	—	—	—	—	—	—	—
Applique Raised Knobs	7	—	—	—	—	1	5	1	—	—	—	—	—	—
Anthropomorphic Applique	8	—	—	3	—	1	—	4	—	—	—	—	—	—
Fine-line Incising	10	1	—	—	—	—	6	—	—	1	1	1	—	—
Broad-line Incising	18	—	—	—	—	—	13	1	1	—	—	—	1	2
Engraving	6	6	—	—	—	—	—	—	—	—	—	—	—	—
Slash Punctuation	7	1	—	1	—	1	3	1	—	—	—	—	—	—
Scoring	3	—	—	—	—	—	15	—	—	—	—	—	—	—
Circular Depressions	1	—	—	—	1	—	—	—	—	—	—	—	—	—
Shell-Edge Stamping	2	1	—	—	—	—	—	1	—	—	—	—	—	—
TOTAL	96	10	3	4	3	4	51	10	1	1	1	5	1	2

TABLE 5.—*Number of sherds in each pottery type of the test excavation at site BA-8 in the Punta Burica district*

Pottery types	Level (cm.)									
	TOTAL	90-100	80-90	70-80	60-70	45-60	35-45	25-35	10-25	0-10
Isla Palenque Maroon Slipped	14	—	1	4	2	3	1	—	—	3
Balsa Polished	22	1	1	6	2	4	2	2	1	3
Castrellón Red Slipped	13	—	2	1	1	2	2	—	3	2
Red Lined	1	—	—	—	—	—	—	—	1	—
Quebrada Baúles Brushed	13	—	—	8	2	2	1	—	—	—
Incised	1	—	—	—	—	—	—	—	1	—
Plain, unclassified	6	1	1	1	—	2	—	1	—	—
TOTAL	70	2	5	20	7	13	6	3	6	8



PLATE 1

Typical estuaries south of David, showing water level at low tide. *a*, Note absence of turbulence and mangrove vegetation on mud embankments. *b*, Temporary encampment of fishermen marked by coconut grove on the background; hidden from view by tall secondary growth.



PLATE 2

Typical mangrove vegetation on western shores of the Estero de Horconcitos. *a*, Closeup of areal roots; note area to left cut down by coastal inhabitants for firewood. *b*, Bank eroded by action of tides.



PLATE 3

Views of islands in the Gulf of Chiriquí. *a*, High ground on center of Isla Muertos; Site IS-7 to the right of picture. *b*, Landing area on western tip of Isla Muertos; note rocks accumulated by action of sea, used by prehistoric inhabitants for tools. *c*, Protected bay on northern side of Isla Palenque, showing temporary encampment of modern fishermen.



PLATE 4

Views of field with the vegetation cut and burned for maize planting in the San Félix district (see Appendix 2). *a*, Slope of Site SF-2, showing area of scattered surfaced sherds. *b*, Ridge of Site SF-2, where surface sherds were concentrated.



0 1 2 3 4 5 CM

PLATE 5

Rim sherds of Isla Palenque Maroon Slipped, Burica Phase. *a, b, d, e*, Thick variety. *c, f-l*, Thin variety.

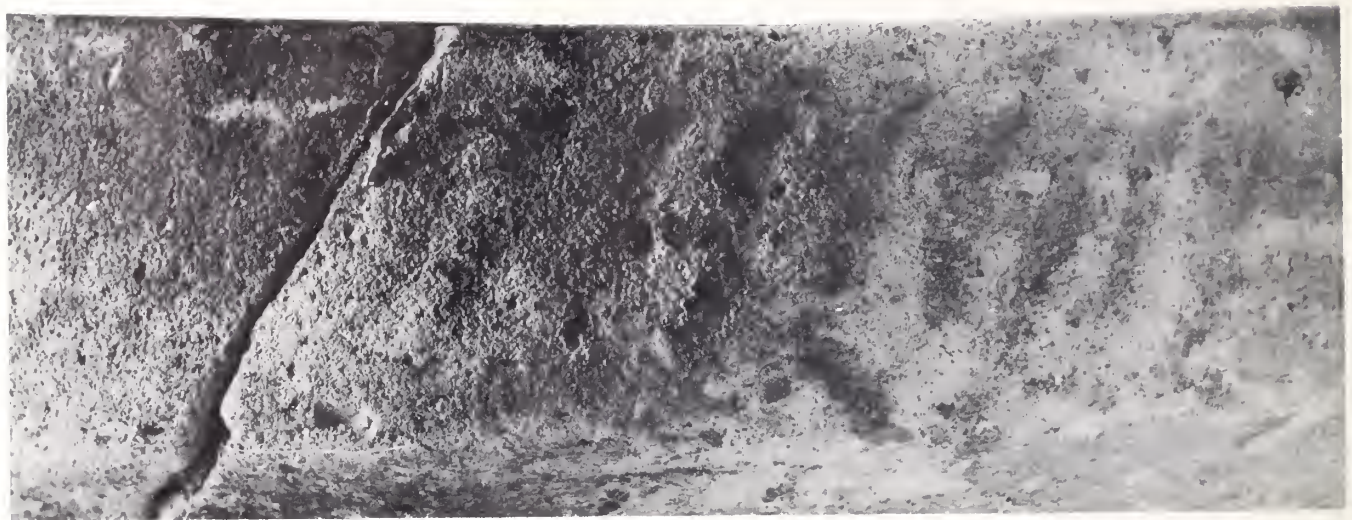


PLATE 6

Isla Palenque Maroon Slipped, thin variety, *a*, Complete vessel, Museum of Natural History, Smithsonian Institution, Catalog No. Archeology: 108300; rim diameter 21 cm. *b*, *c*, Rim details of same vessel, showing shallow incisions.



PLATE 7

Type sherds diagnostic of San Lorenzo Phase. *a-f*, Centeno Red Banded. *g-o*, Arayo Polished Line.



a



b

PLATE 8

Vessels of Banco Red Line type, San Lorenzo Phase. *a*, Restored vessel; diameter at its greatest width, 21 cm. *b*, Small complete vessel; diameter at its greatest width, 9 cm.

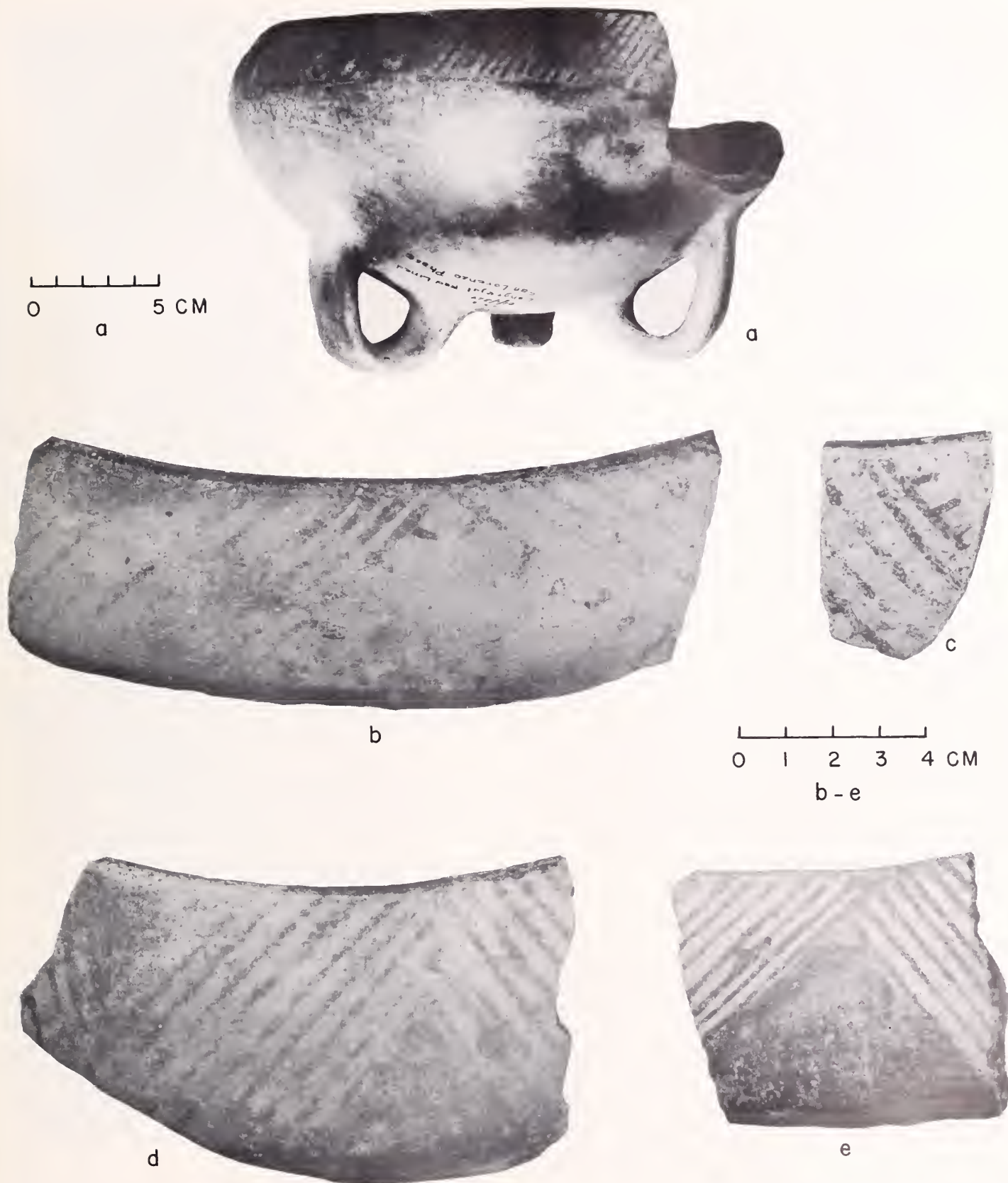


PLATE 9

Vessel and rims of Cangrejal Red Line type, San Lorenzo Phase. *a*, Bowl with strapped feet. *b-e*, Rim sherds showing thin red-line decoration.

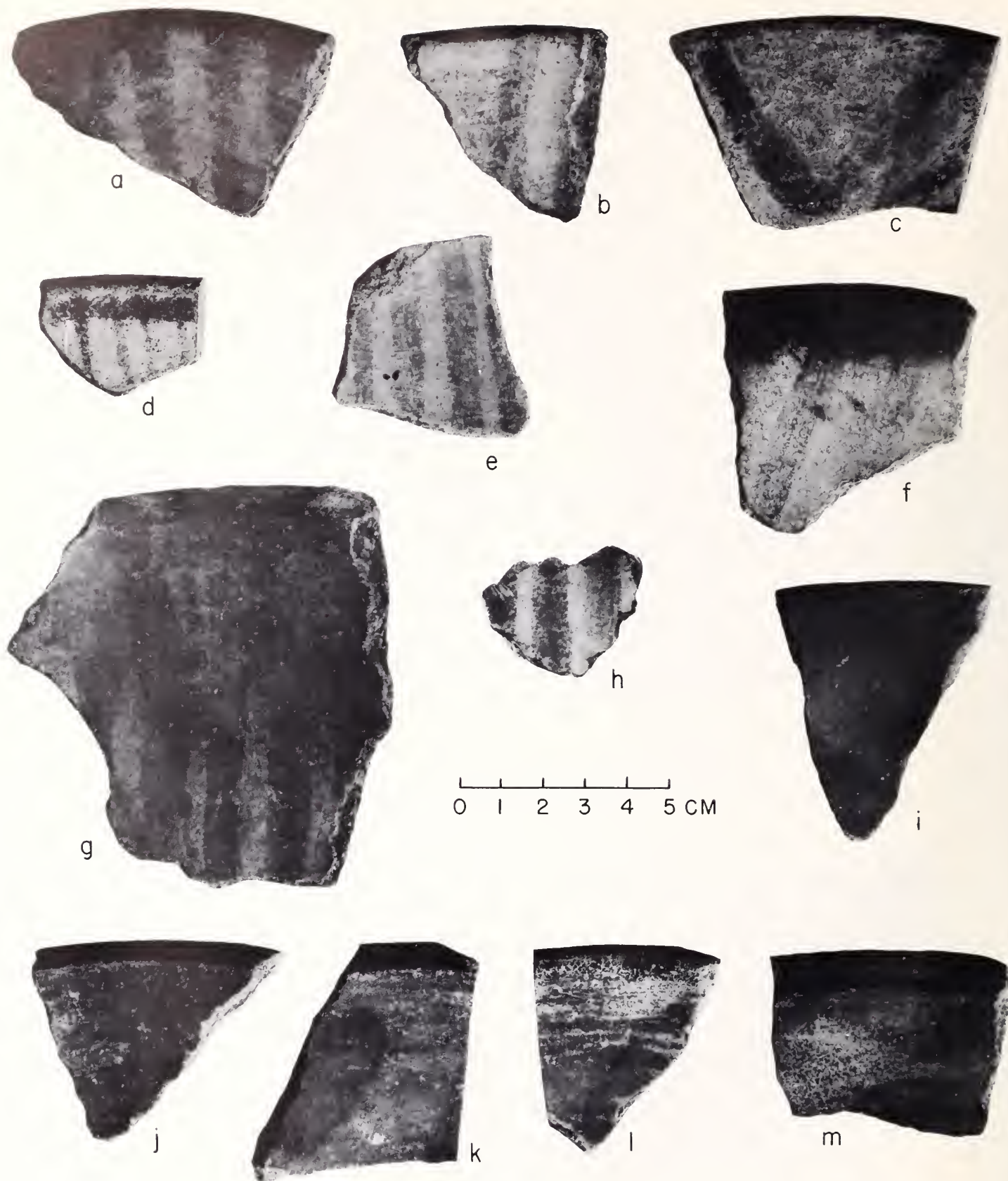


PLATE 10

Type sherds diagnostic of San Lorenzo Phase. *a-h*, Interior of Zapote Red Banded rims. *i-m*, Interior of Castellón Red Slipped rims.

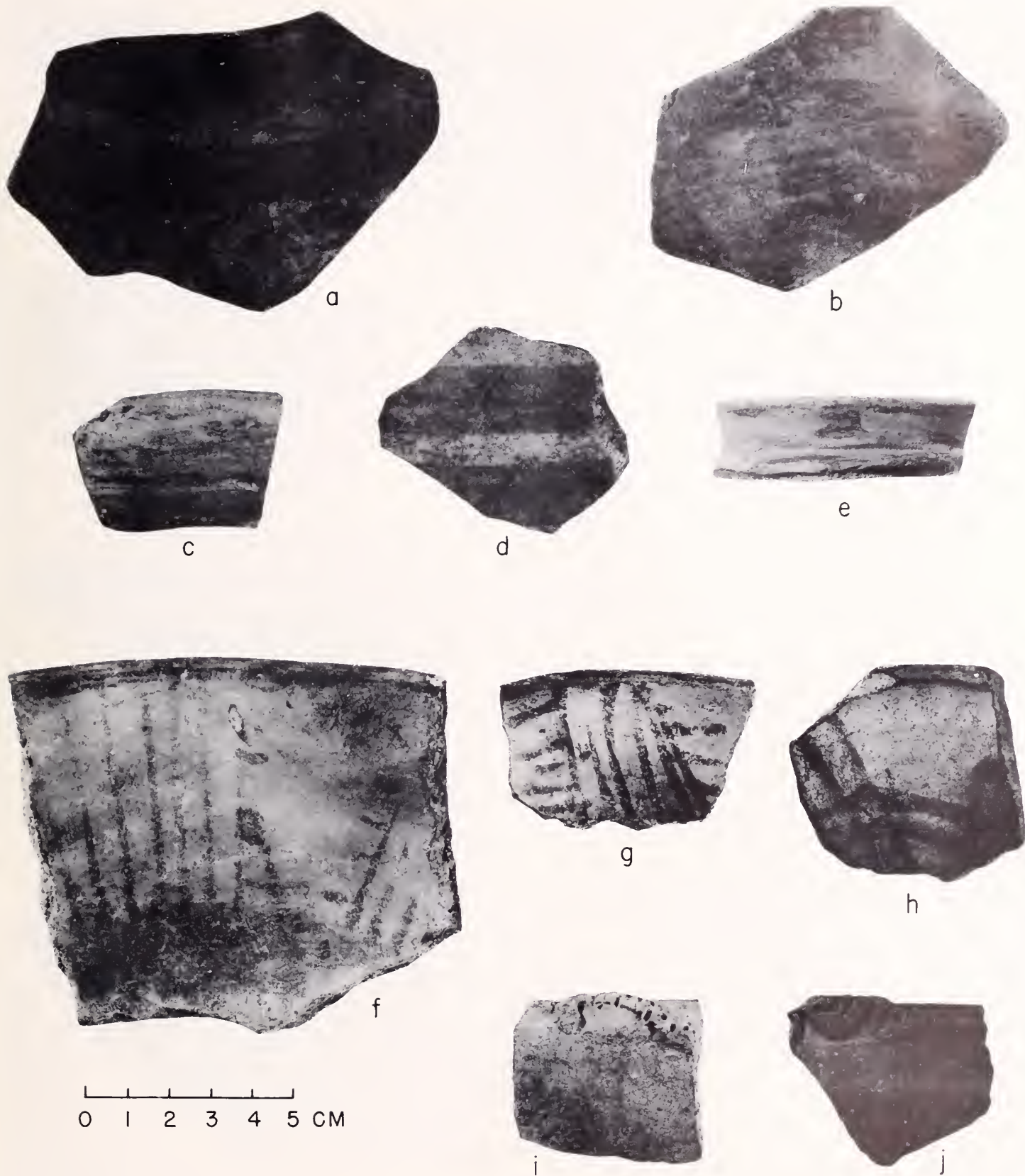


PLATE 11

Type sherds diagnostic of San Lorenzo and Chiriquí Phases. *a-e*, Horconcitos Red Banded, diagnostic of San Lorenzo Phase. *f-j*, Cavada Appliqué and Red Banded, diagnostic of Chiriquí Phase.

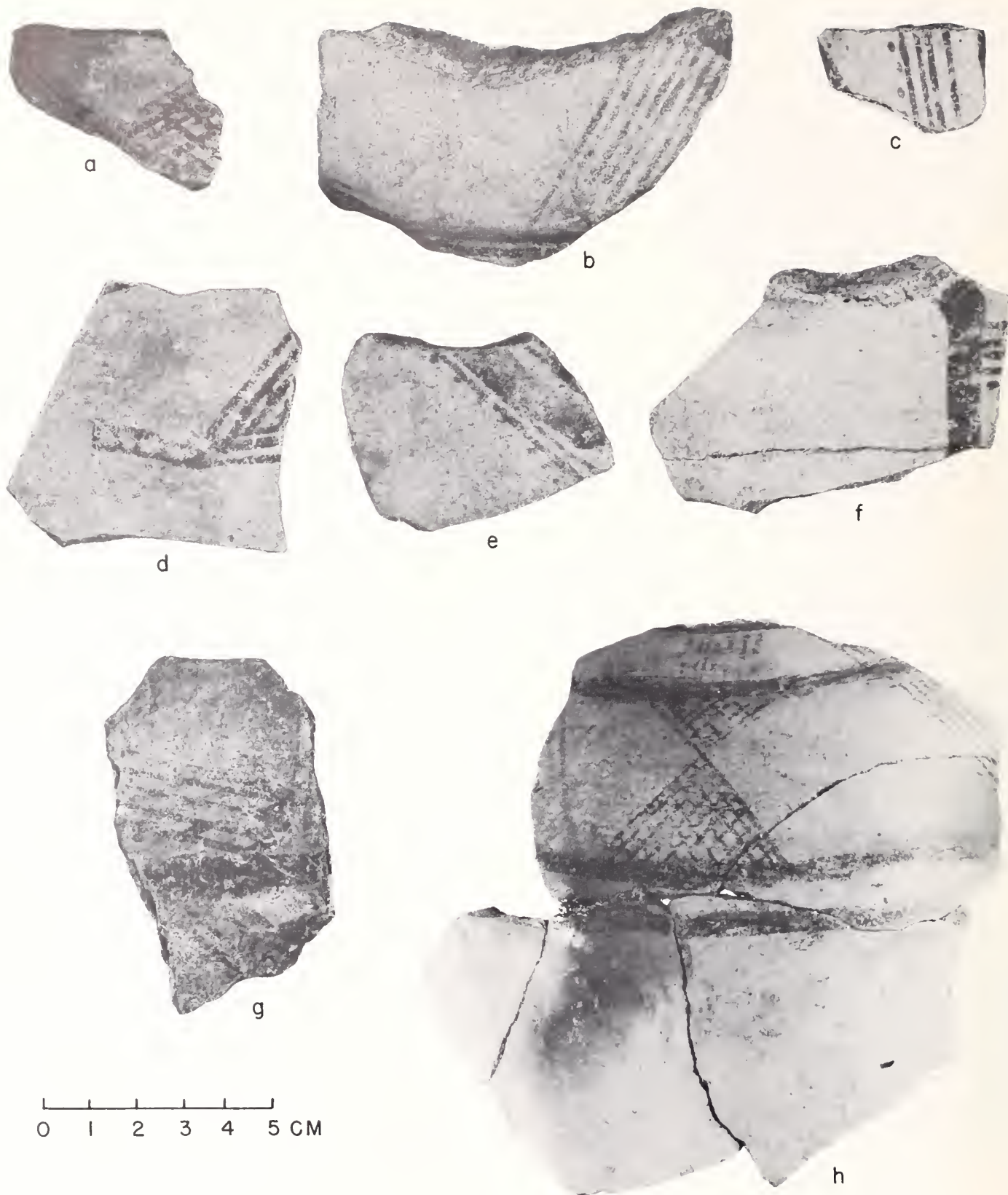


PLATE 12

Type sherds of Linarte Zoned Red Line, San Lorenzo Phase.



0 1 2 3 4 5 CM

PLATE 13

Type sherds diagnostic of the Chiriquí Phase. *a-i*, Tarragó Bisquit Ware. *j-m*, Villalba Red Streaked.

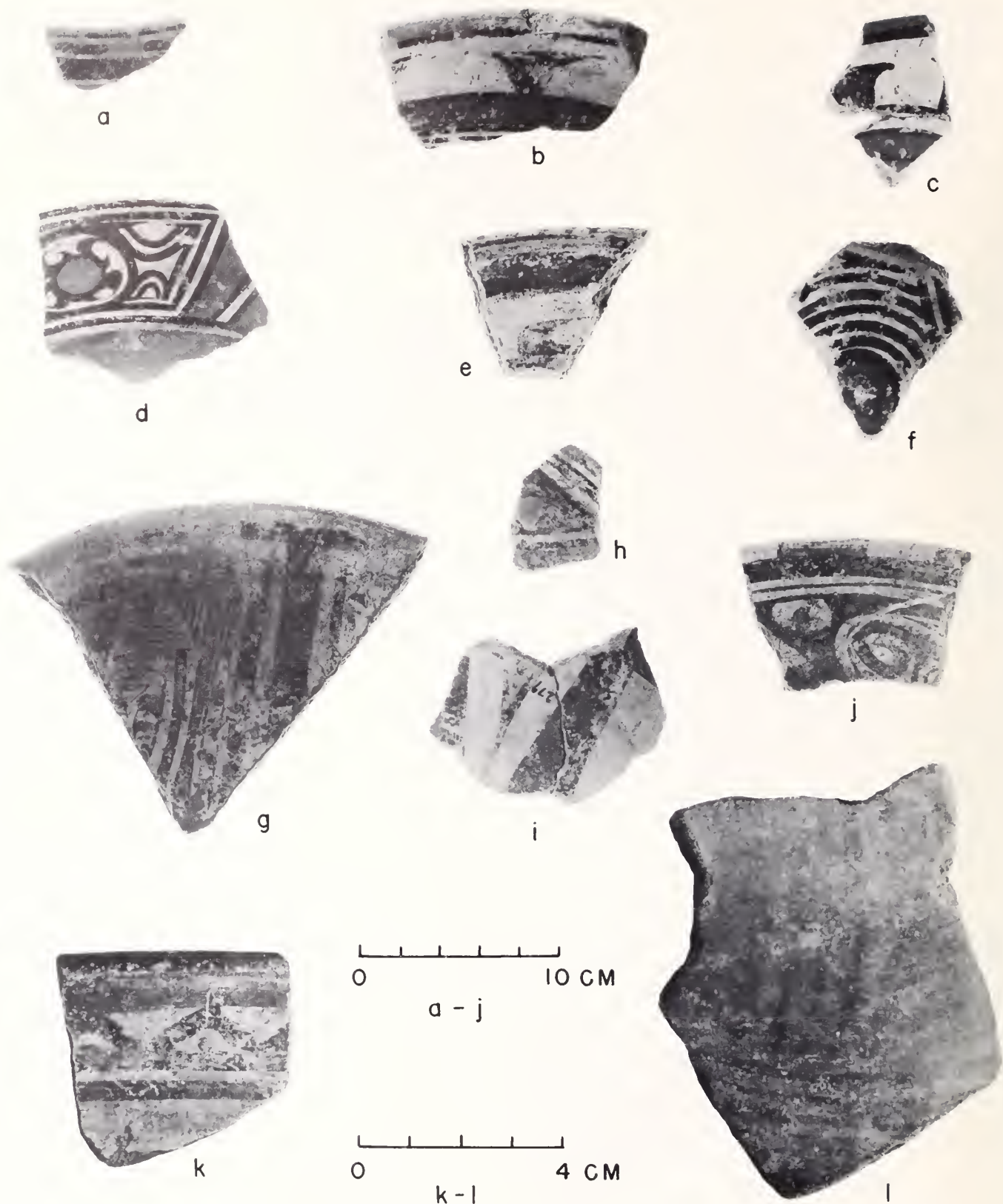


PLATE 14

Trade pottery from other Panamanian regions and sherds of Classical Chiriquí pottery. *a*, Possibly Venado Beach, Canal Zone. *b-g*, Coclé polychromes, probably Late Coclé. *h-j*, Macaracas type, Higo variety. *k*, Alligator Ware, Classical Chiriquí Culture. *l*, Negative, Black-on-Red, Classical Chiriquí Culture.



PLATE 15

Tripod Feet Modes of San Lorenzo and Chiriquí Phases. *a-e*, San Lorenzo Phase. *a*, Mode c1. *b*, Mode a5. *c*, Mode a2. *d*, Mode b2. *e*, Mode b3. *f, g*, Chiriquí Phase. *f*, Mode e3. *g*, Mode h.

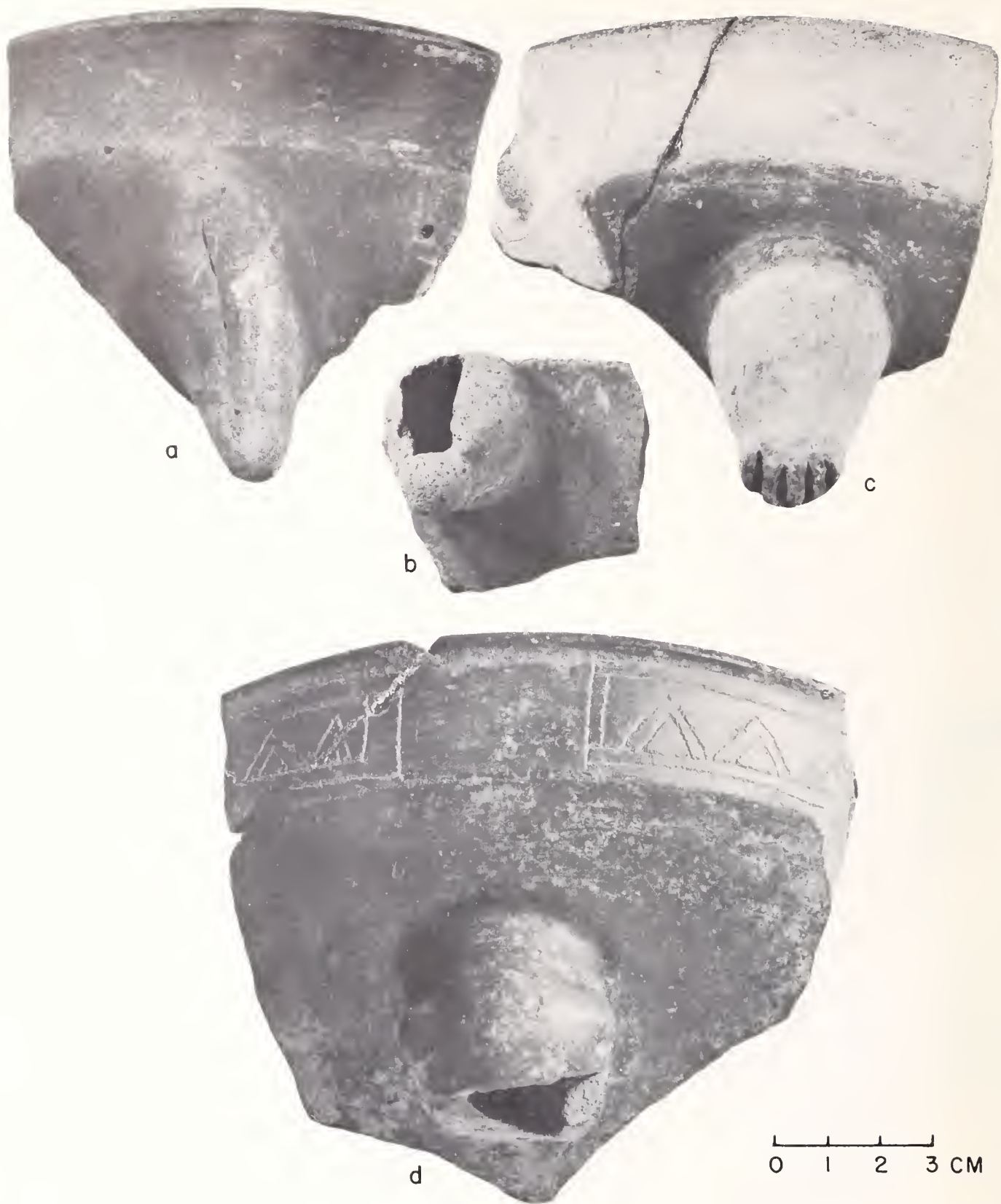
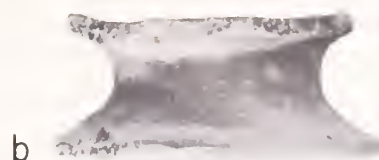


PLATE 16

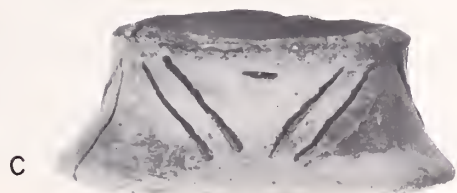
Local and Trade Tripod Feet Modes in Chiriquí Phase. *a*, Mode h. *b*, Mode ii. *c*, Mode f3, probably trade from Diquís, Costa Rica. *d*, Mode ii, belongs to Chocolate Incised Ware, trade pottery from Diquís, Costa Rica (?).



a



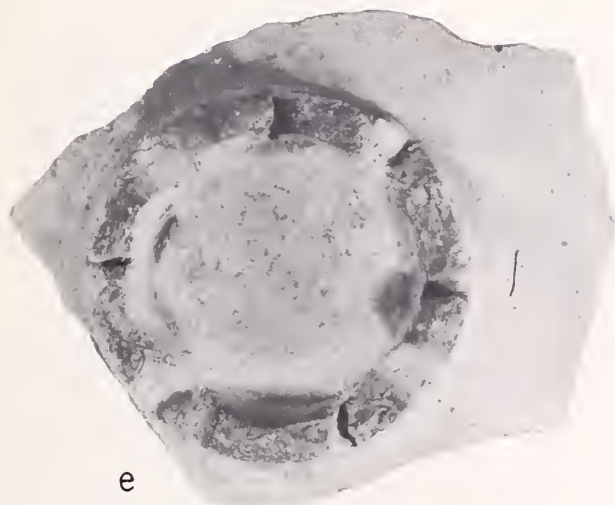
b



c



d



e



f



g



h

0 5 CM

a

0 4 CM

b-h

PLATE 17

Strapped Feet and Pedestal Base Modes and Ringstands, diagnostic of San Lorenzo and Chiriquí Phases. *a*, Strapped Feet, Mode a, San Lorenzo Phase. *b*, Pedestal Base, Mode f, Chiriquí Phase. *c*, Pedestal Base, Mode a, San Lorenzo and Chiriquí Phases. *d*, Pedestal Base, Mode i, San Lorenzo Phase. *e*, Pedestal Base, Mode g, San Lorenzo Phase, top view. *f-h*, Ringstand, Mode b, two interior and one exterior views, San Lorenzo and Chiriquí Phases.



PLATE 18

Handle Modes of the San Lorenzo and Chiriquí Phases. *a-c*, Strap Handles. *d-e*, Ladle Handles. *f-h*, Round Handles. *i*, Horizontal Handle. *j-l*, Double Handles.



PLATE 19

Stone artifacts of San Lorenzo and Chiriquí Phases. *a*, Pounding-anvil stone. *b-l*, Celts. *m-q*, Line or net weights.

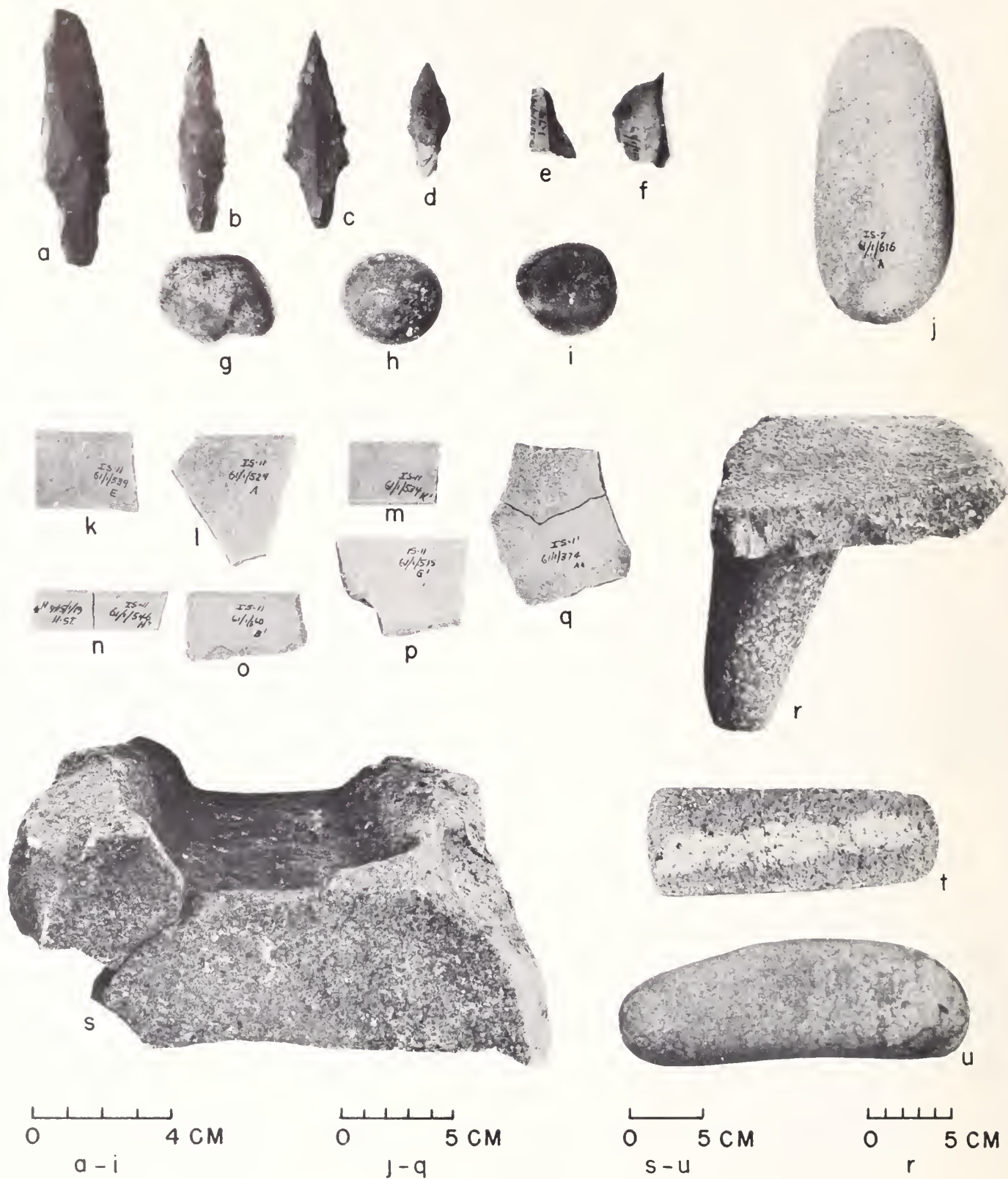


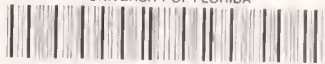
PLATE 20

Stone artifacts of San Lorenzo and Chiriquí Phases. *a-e*, Projectile points. *f*, Flake. *g-i*, Pebble polishers. *j*, Pecking stone. *k-q*, Sandstone saws. *r*, Metate leg. *s*, Saddle-shaped metate. *t-u*, Manos.

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