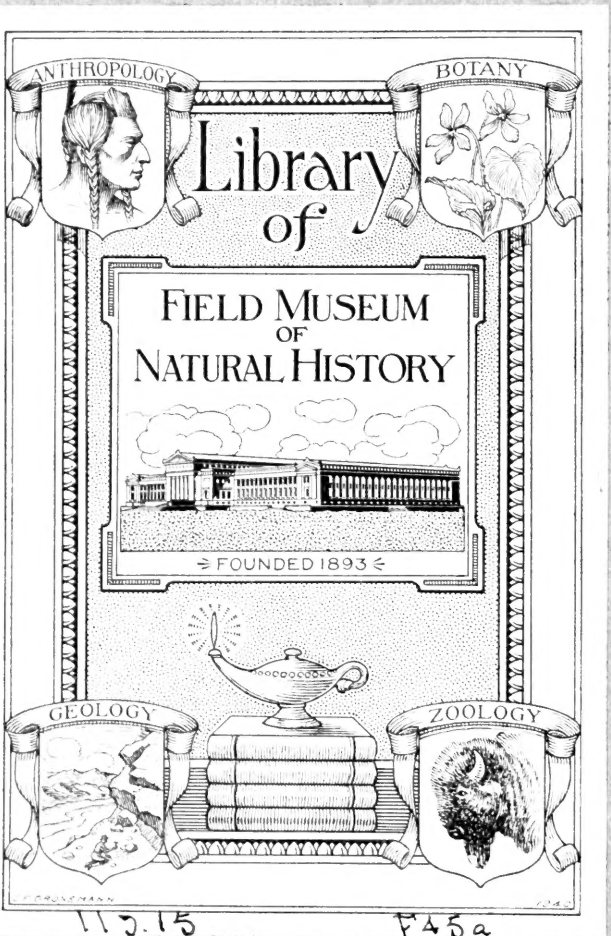
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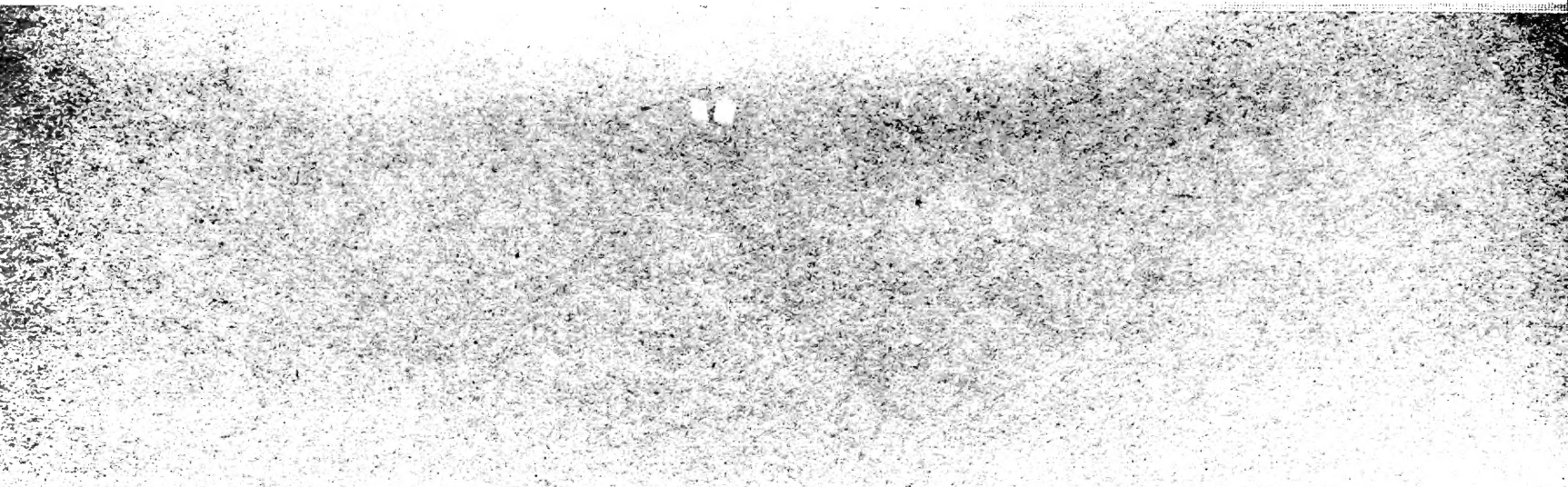

ARCHAEOLOGY OF SANTA MARTA COLOMBIA

THE TAIRONA CULTURE

PART II, SECTION 2

OBJECTS OF POTTERY

BY

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WITH AN APPENDIX ON CERAMIC TECHNOLOGY

BY

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PREFACE

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

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

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

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

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

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

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

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

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ARCHAEOLOGY OF SANTA MARTA, COLOMBIA
THE TAIRONA CULTURE

PART II, SECTION 2

OBJECTS OF POTTERY

CERAMICS

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

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

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

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

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

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

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

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

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

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

ABBREVIATIONS USED

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

VESSELS

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

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

Vessels of Red Ware

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

PLATES AND SAUCERS

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

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

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

TRAYS AND LOW BOWLS WITH LOOP HANDLES

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

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

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

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

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

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

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

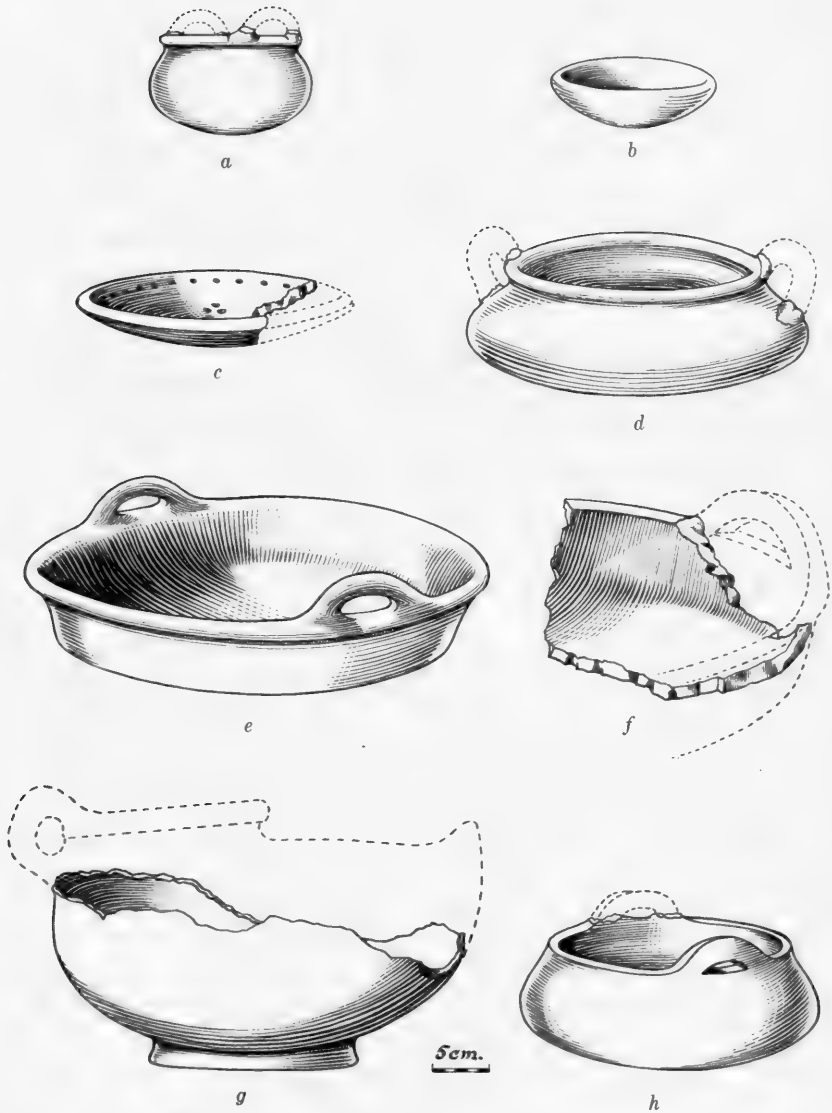


FIG. 1. Vessels of heavy red ware. *a*, *d–f*, *h*, Trays and bowls with loop handles; *b*, *c*, Plate and saucer; *g*, Shoe-shaped vessel.

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

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

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

SHOE-SHAPED VESSELS

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

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

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

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

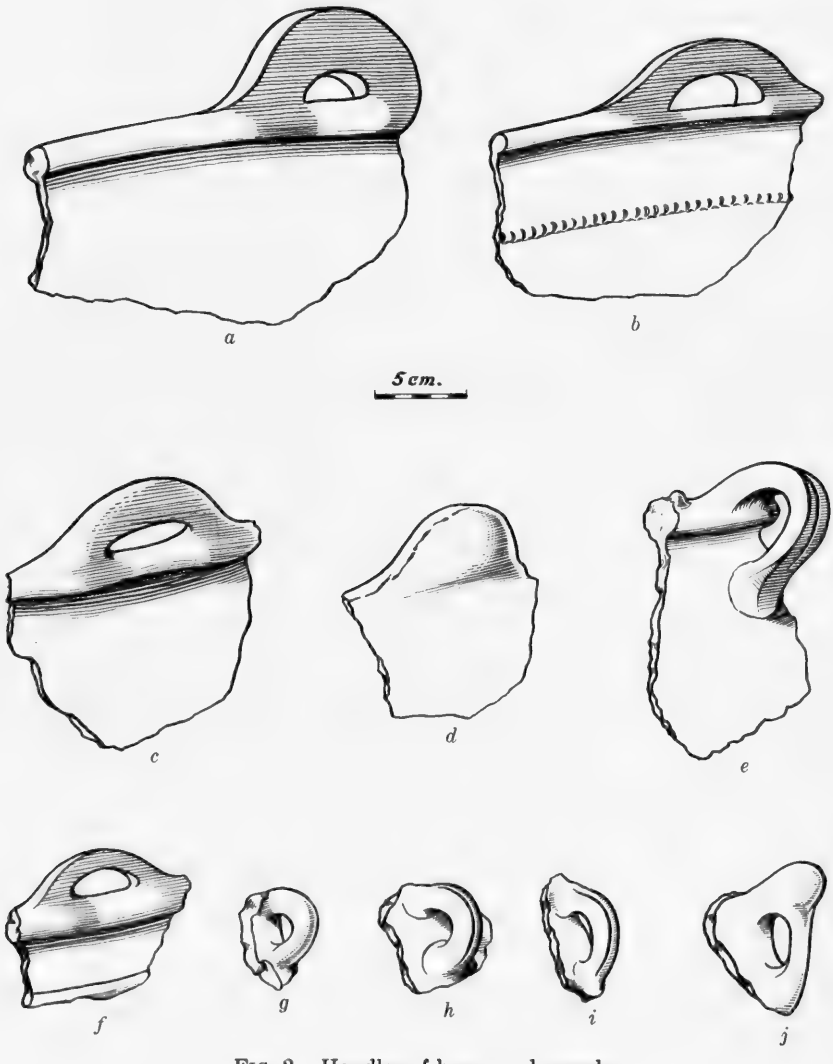


FIG. 2. Handles of heavy red vessels.

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

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

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

PLAIN, ROUND-BOTTOM POTS

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

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

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

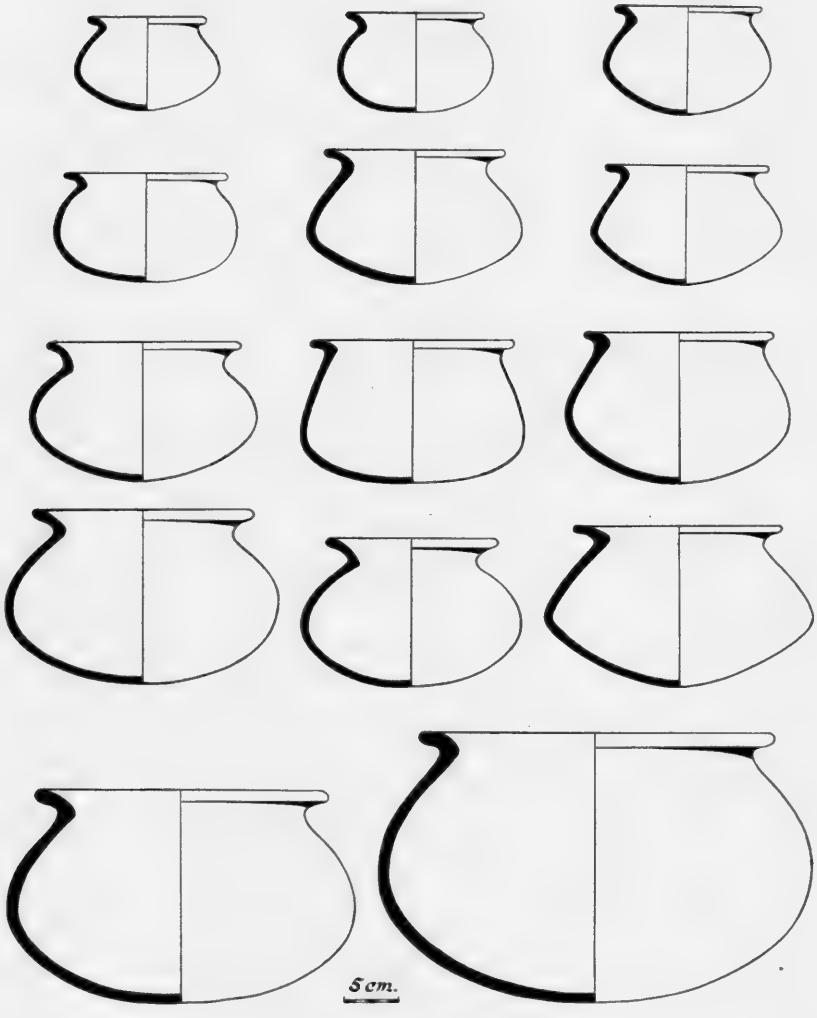


FIG. 3. Plain, round-bottom red pots.

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

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

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

ROUND-BOTTOM JARS OR OLLAS

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

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

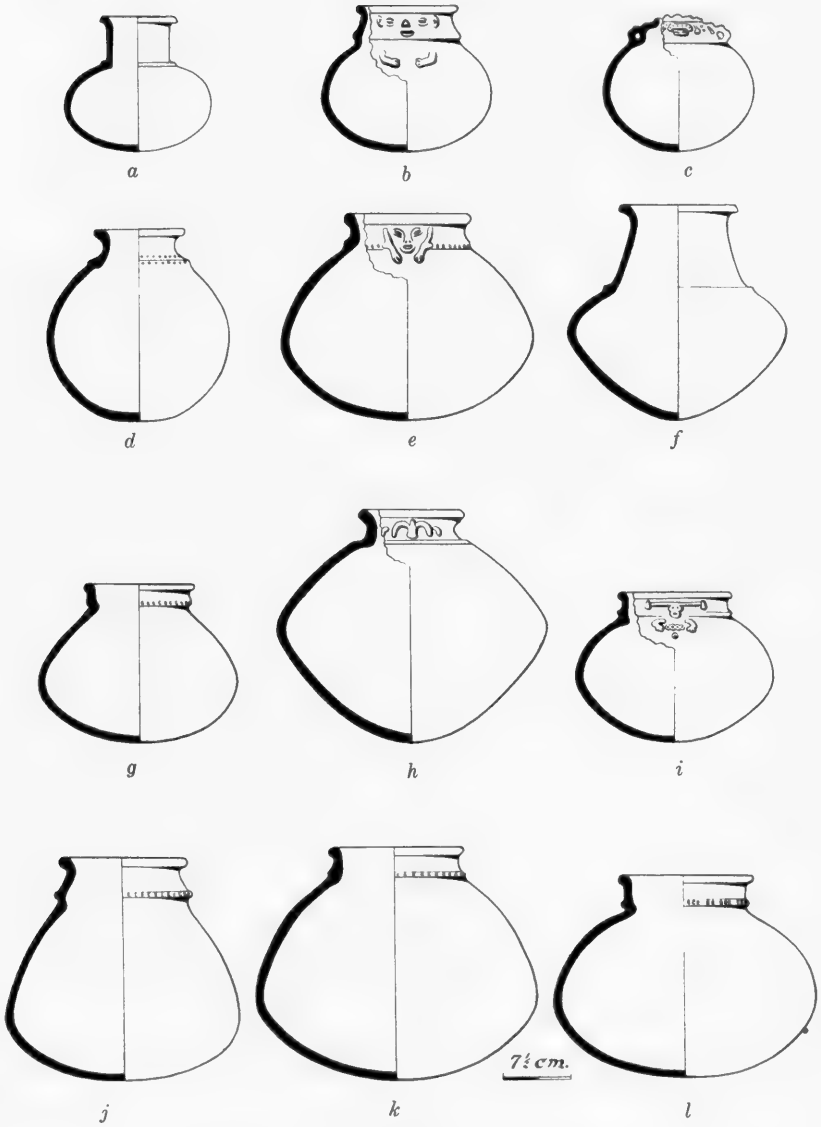


FIG. 4. Round-bottom red jars or ollas.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RING-BASE, NECKLESS JARS

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

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

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

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

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

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

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

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

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

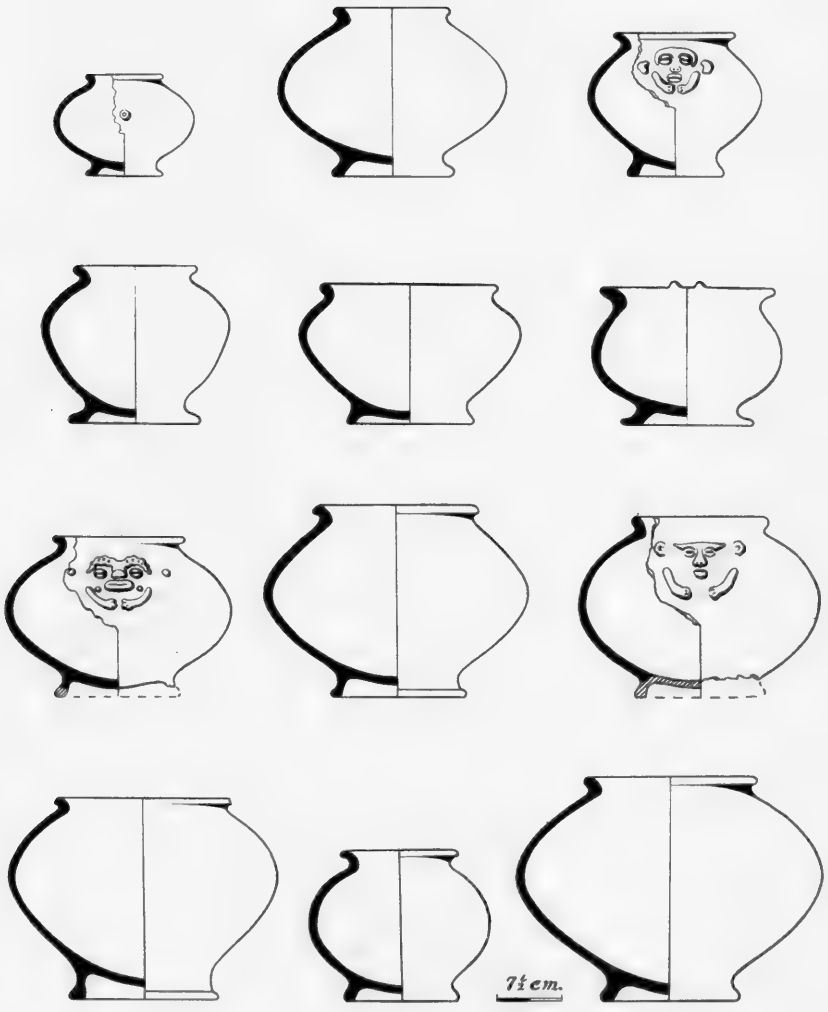


FIG. 5. Ring-base, neckless red jars without carination.

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

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

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

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

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

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

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

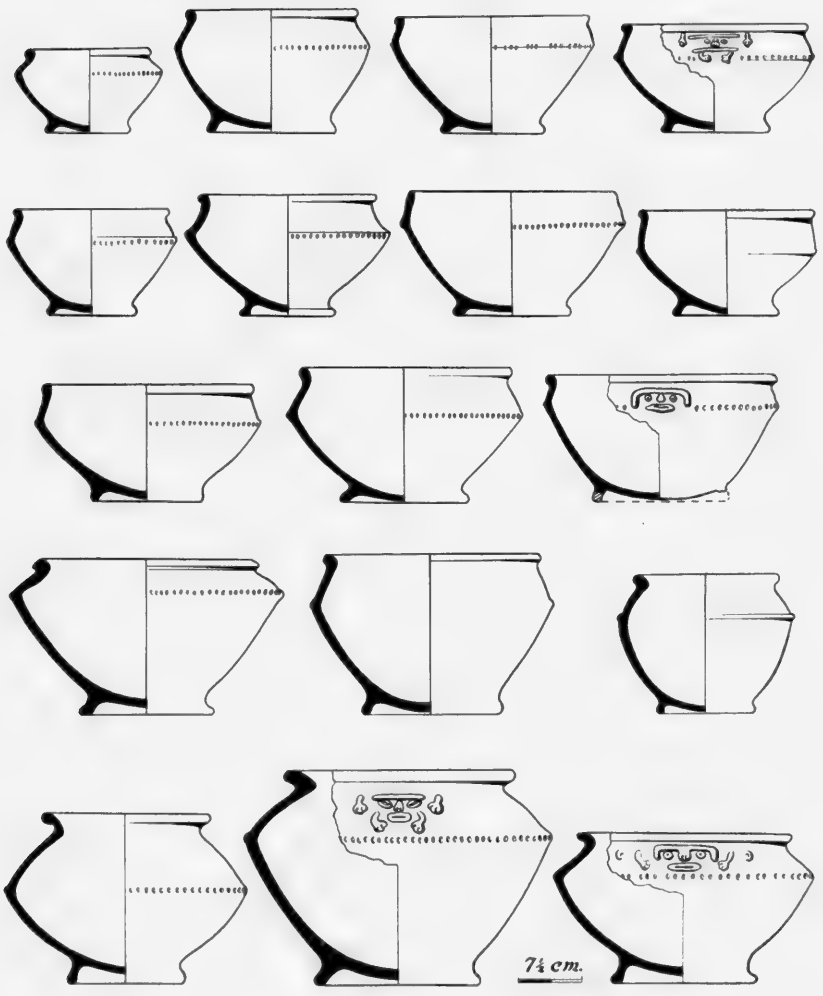


FIG. 6. Ring-base, neckless, carinated red jars and bowls.

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

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

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

DOUBLE-ORIFICE URNS

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

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

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

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

JARS WITH RING BASE AND NECK

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

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

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

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

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

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

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

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

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

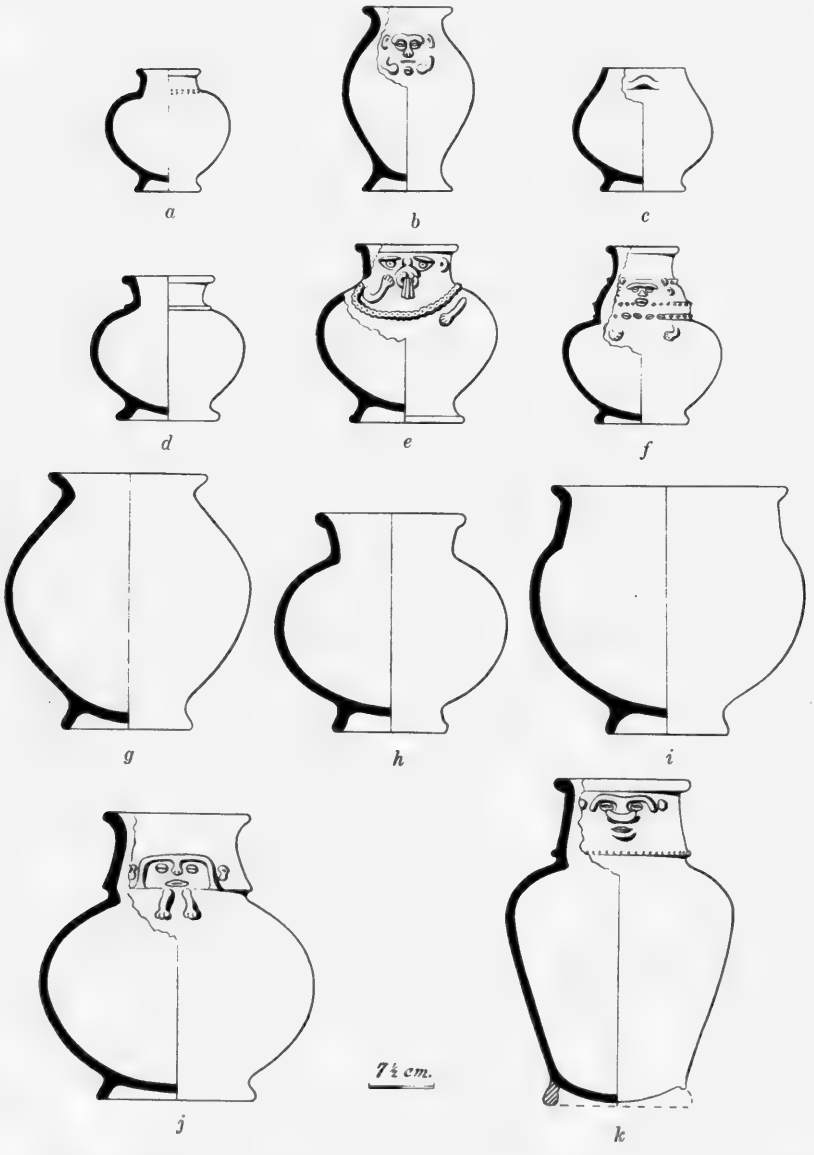


FIG. 7. Red ring-base vessels. *a*, *d–f*, *h–k*, Jars with necks; *b*, *c*, *g*, Neckless jars without carination.

QUASI-CYLINDRICAL RING-BASE JARS

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

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

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

BOWLS OF TRUNCATED CONE SHAPE

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

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

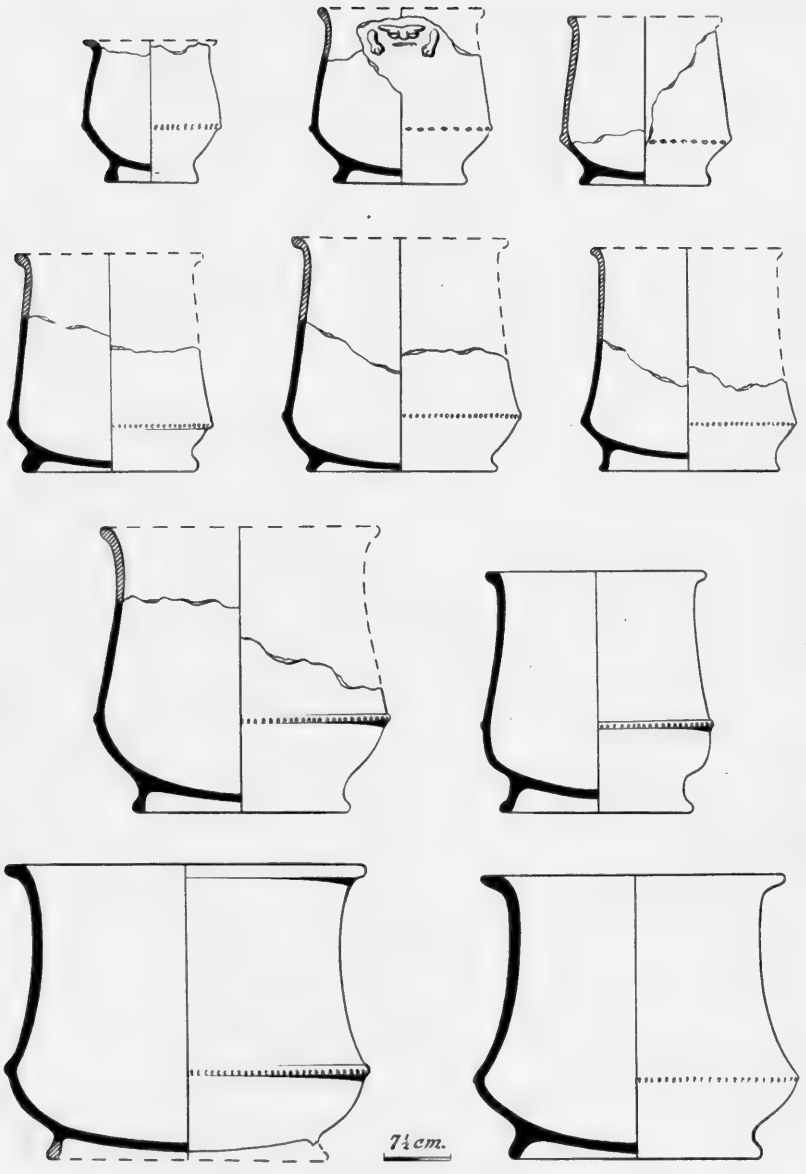


FIG. 8. Red, quasi-cylindrical, ring-base jars.

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

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

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

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

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

GRIDDLES, OR LADLES WITH STRAIGHT ELONGATED HANDLES

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

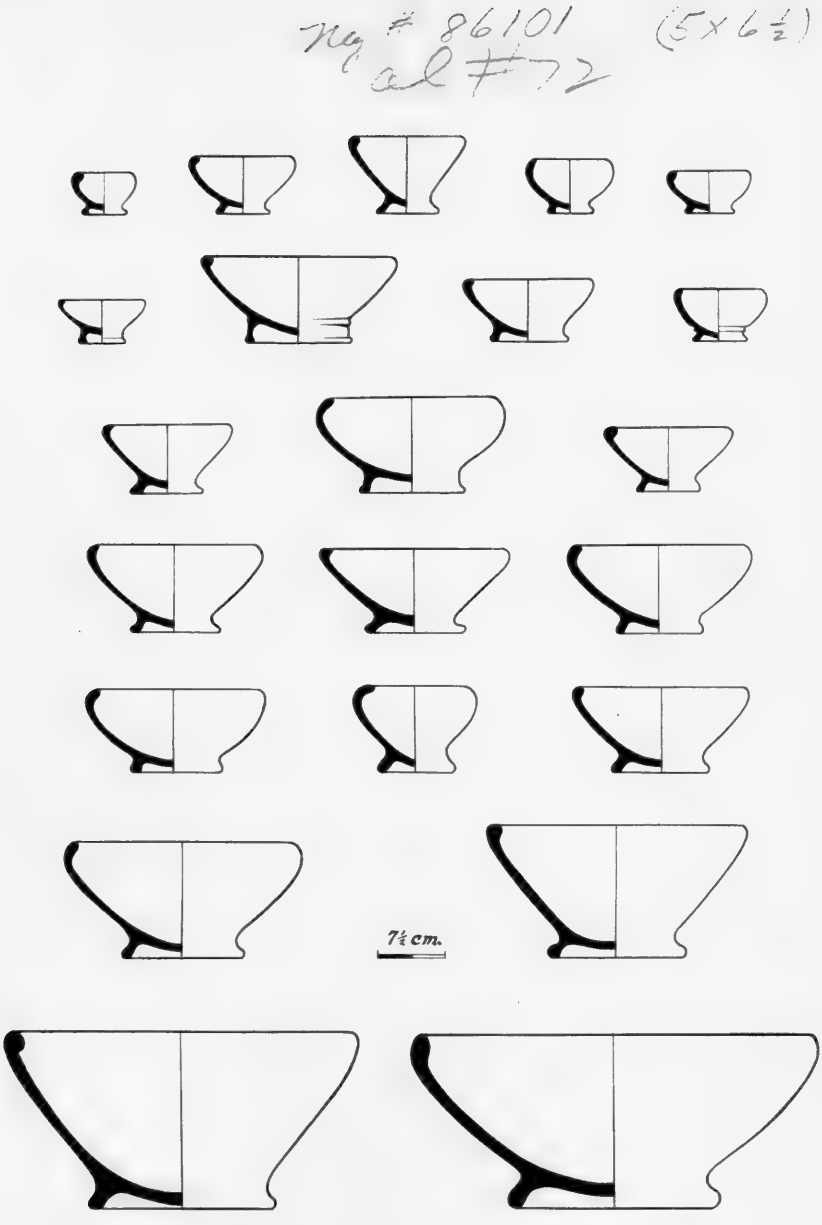


FIG. 9. Red bowls of truncated cone shape.

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

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

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

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

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

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

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

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

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

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

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

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

RELIEF DECORATION OF RED VESSELS

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

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

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

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

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

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

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

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

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

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

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

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

VESSELS OF BLACK WARE

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

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

RING-BASE OLLAS

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

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

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

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

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

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

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

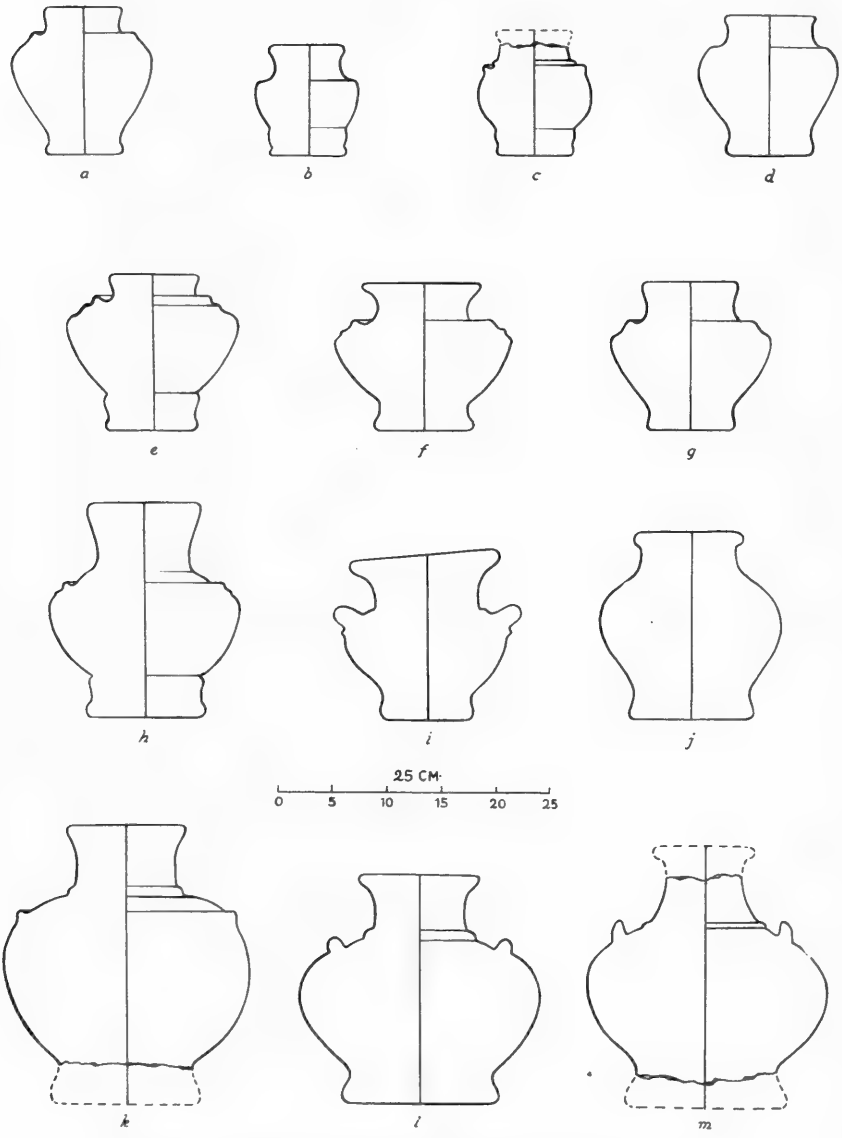


FIG. 10. Black ring-base ollas with animal low-relief.

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

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

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

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

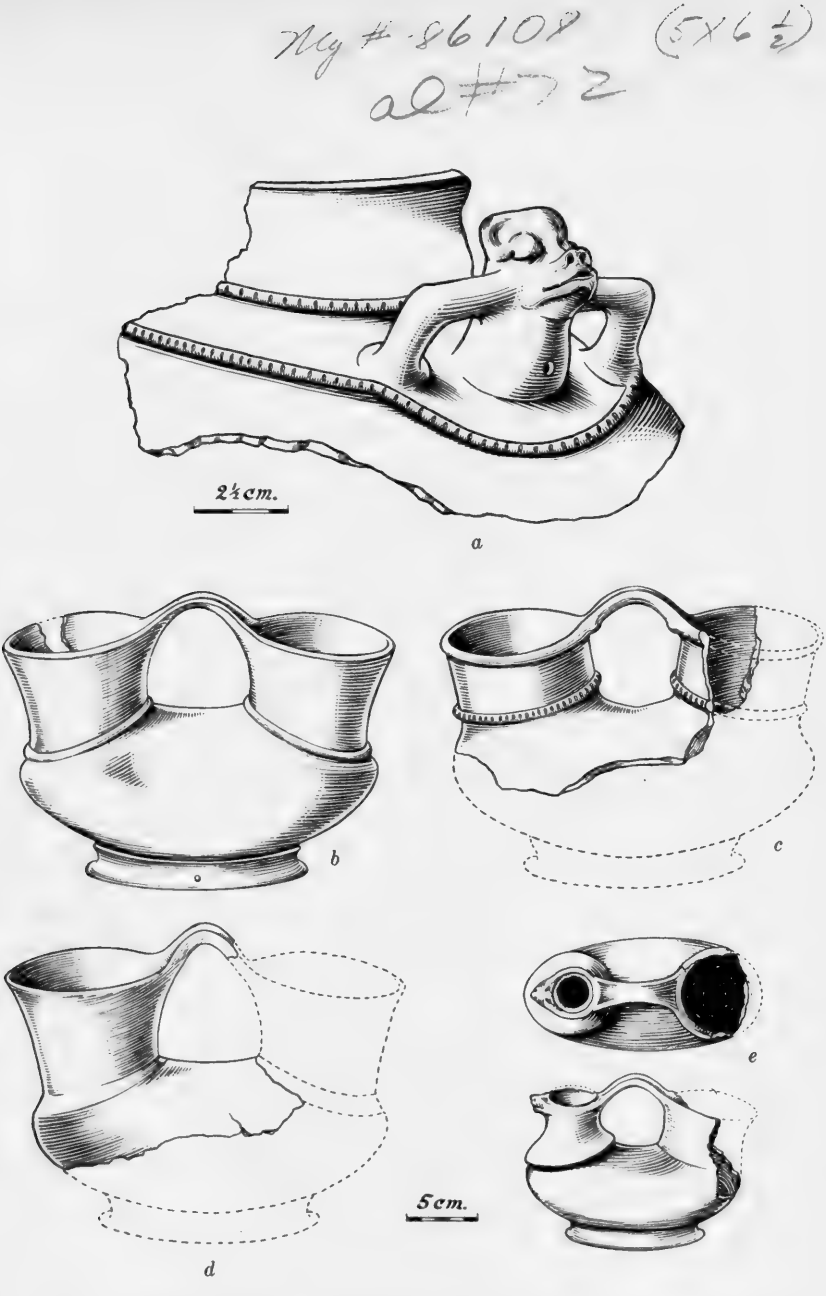


FIG. 11. Black vessels. *a*, Fragment of olla with bat relief; *b–e*, Double-orifice, oval-base vessels.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

RING-BASE BOWLS AND CUPS

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

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

CUPS WITH FLANGES

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

BOWL-CUPS

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

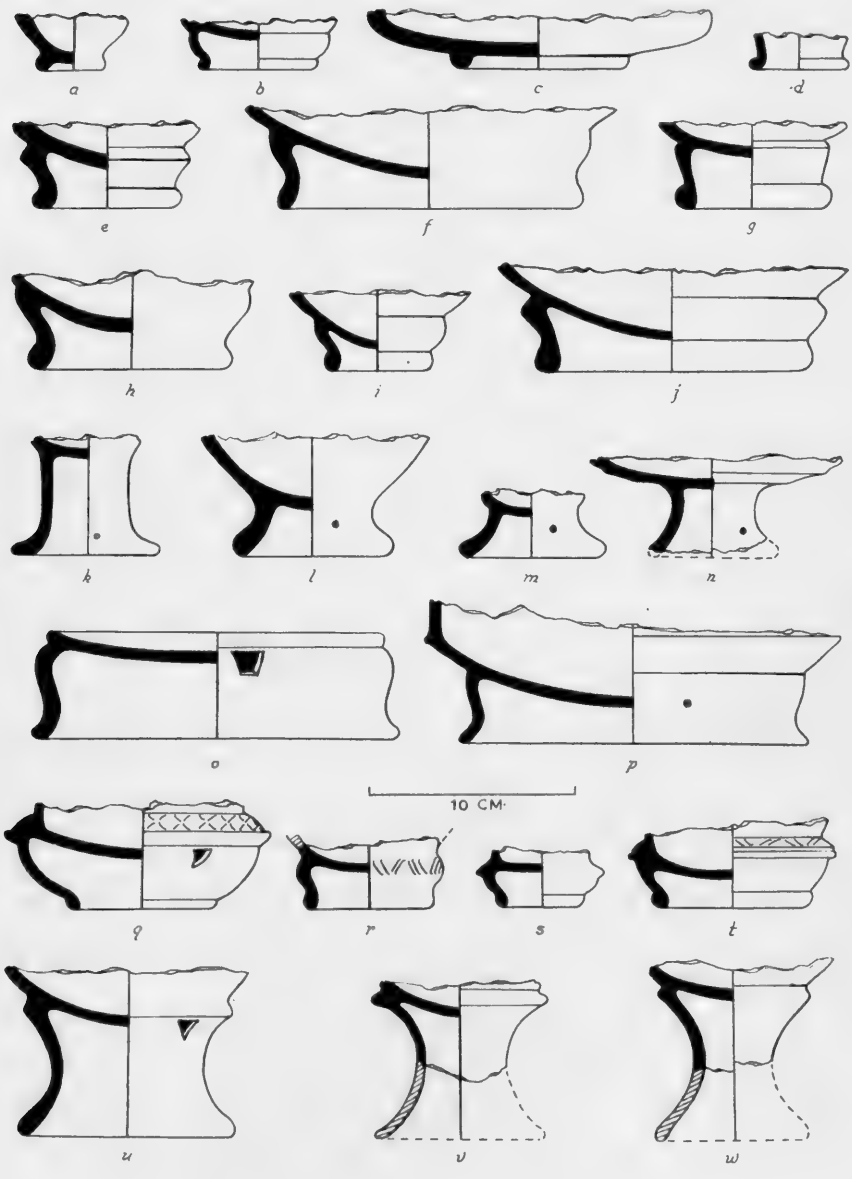


FIG. 12. Ring bases of black vessels.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

the Field Museum Expedition, but the inferred shape was later verified by intact vessels in other collections. Examples are noted from eleven different sites, among which the absence of Nahuange may be significant.

The most artistic bases are high and spool-shaped, with symmetrical concave side (GM, Plate CCXVIII, Fig. 8; Fig. 12, *u*, *v*, *w;* Fig.19, *n;* AM, Fig. 22, *b*). Some are lower (Fig. 12, *n;* Fig. 19, *s*), some less concave (Fig. 12, *k*). Others have very wide bases (UM; Plate CCXIX, Figs. 1, 3). One from Rio Frio (GM; Plate CCXVIII, Fig. 6) is unique, with flat base and straight, converging stem. Generally there is an inset at the junction of base and body, and in some cases this is enlarged to a wide flange as in a bowl from Pueblito with broken base (Plate CXCVI, Fig. 2; AM, Fig. 22, *b*); in some examples this is deeply scalloped and in one (AM) is altered to a band of large, pyramidal cogs. Small, circular holes, or larger, triangular holes are found in some of the bases. The stem is frequently very narrow at its most constricted point, in one case (AM) only 3.5 cm. in diameter, though the width of the bowl is 18 cm. The ware is generally thin, sometimes no more than 7 mm. thick, often highly polished and very black, though a few have a fine-grained, red surface.

The upper bowl section varies, ranging from those with straight, slanting, lower zone and vertical shoulder to convex bowls without carination (Plate CXCVI, Figs. 2, 3); the latter are rare. The sloping, lower zone is often divided into several bands by ridges (Fig. 12, *n;* Fig. 19, *n*, *s*). The vertical shoulder is sometimes decorated with incised lines, as in the case of the fine bowl from Gaira (UM; Plate CCXIX, Fig. 1), 14 x 22 cm., with a base 16.5 cm. in diameter, decorated with a double line filled with dots in triangular pattern. The narrow shoulder of a bowl from Rio Frio (GM; Plate CCXVIII, Fig. 8), has a similar, smaller design, of triple, incised lines.

The rims of most kylix bowls are ornamented by modeling. The simplest decorations are a few scallops, notches, or raised nodes on opposite sides. A kylix with a broken base from Pueblito (Plate CXCVI, Fig. 3), another from the Arecife cave, and two from Rio Frio (GM; Plate CCXVIII, Figs. 6, 8) are illustrations of this type. More characteristic are four low knobs on the rim, the lip of which is filleted by transverse, shallow lines on opposite quarters (Fig. 19, *n*, *s*). In a bowl from Pozos Colorados (UM) the four small nodes are not spaced at the quarters but at intervals of about one-sixth, the rim filleted on the two shorter sections.

In the fine bowl from Gaira (UM; Plate CCXIX, Fig. 1), the rim modeling takes the form of small, conventionalized animals in relief, with head and tail. As much of the rim was missing and is restored it is impossible to say how many figures there were, or if the rim was also filleted.

In possibly the most esthetically shaped kylix, from San Pedro Alejandrino (AM; Fig. 22, *b*), the bottom has a depressed, circular area with fine, incised designs like those on black grater bowls (q.v.).

Bowls with Broad Orifices and Constricting Ring Bases.—This is a very characteristic but not common type, related to the flanged cups (q.v.). Only four relatively complete examples were found, in addition to six bases that presumably came from similar bowls. The orifices are very out-curved and flaring, the bottoms rather shallow and concave. On the exterior, at the base of the flaring lip, is a slanting, flange-like extension that carries a band of incised decoration, generally of parallel, slanting lines forming designs of triangles and chevrons. Below this the high base, with convex surface, curves inwards to a small ring base. Generally, at the top of the ring base and just below its junction with the bottom of the vessel proper, are four rather large, triangular holes. Heights range from 9.8 to 11.5 cm., orifice diameters from 18.5 to 21 cm., the width being almost double the height. The diameters of the basal rings are also less than one-half of those of the orifices, 7.5 to 9 cm.

Proveniences: Arecife Cave, four; Nahuange, three; Pueblito, two; Pueblo Bernardo, one. The most typical example, No. 154022 (Plate CXCIV, Fig. 1), is from Pueblito. One from Nahuange (Fig. 12, *q*) has only three triangular, basal holes, and another (Fig. 19, *b*) only two. Many of the others, especially those from Arecife, have none (Fig. 19, *a;* Fig. 12, *r*, *s*, *t*). One from Nahuange lacks the incised flange decoration.

Large triangular holes in basal rings, and very converging bases seem to be especially characteristic of Nahuange and occur on other types of vessels (Plates CC, Fig. 4; CXCII, Figs. 2, 4; Fig. 12, *o*, *u*).

DOUBLE-ORIFICE, OVAL-BASE VESSELS

This is a very characteristic but uncommon form, consisting of an elongated body resting on an oval ring base. At either end is a broad, vertical neck with wide orifice, and the adjacent parts of the rims of the two necks are connected by a semi-circular, ribbon handle. The ware is relatively thin and hard, dark brown or black. In one of the Pueblo Bernardo examples the surface changes abruptly

from polished black to the bright red that is characteristic of many objects from this site. Two complete and eight fragmentary examples were found by the Expedition (Plate CC, Fig. 2; Fig. 11, *b–e*). The distribution seems to be rather limited: Arecife, five (p. 49); Pueblo Bernardo, two; Pueblito, two; and Cañaveral, one.

The oval bases (four of the specimens consist only of the base) measure from 9 x 11.5 cm. to 10 x 17 cm. The sides of the base vary as much in contour as those of other types of black vessels. In two of them the foot is perforated on the opposite, flatter sides with a small hole like those on certain other ollas and bowls; these holes were apparently drilled after the vessel was baked.

There is considerable variation in proportions and other details, especially the heights of the spouts and their distances apart. In several specimens there is a band of raised filleted decoration at the base of the spouts. Average dimensions are about 18 x 28 cm. One from Don Diego (TM) measures 15 x 30 cm. and 25 cm. high.

One of these vessels deserves especial mention, No. 153610 from Pueblito (Fig. 11, *e*). This is smaller, 8.5 x 16 x 12.5 cm. high, the oval base 8 x 10 cm. with a drilled hole. The spouts are relatively smaller, of an hour-glass shape, and are asymmetrical, one plain while the other is smaller and is modified into the head of an animal.

The loop handles vary considerably in arc, but are always thin and of concave cross section when seen from above; in a few the upper surface is V-shaped. Several fragments were found at Arecife and Cañaveral. One from Arecife, apparently from a vessel of this type, is peculiar, polished, black and thick, with grooved upper and hemispherical lower surface. The lower part of the handle flares instead of joining the spout-rim abruptly, and on this broad flare is a simple incised decoration of lines and dots.

In points such as complex silhouette, thinness of wall, ribbon handle and holes in the basal ring this type belongs with the black ware, and all notes regarding surface refer to black or dark slip. But the only sherd examined or analyzed was found to be of coarse red ware. Possibly the type should have been classed with "Treasure Jars" as a form that may occur with either ware.

RING BASES OF BLACK VESSELS

A study of the plates and figures will show that the ring bases of black vessels differ greatly in form and proportions. A large number of vessels were found of which only the ring base and the

bottom, or even less, remained; the form of the vessel is naturally indeterminable in these cases (Fig. 12). The range in size is greater than here shown. A few bases are very flaring, such as those illustrated in Fig. 12, *l* and *m*, but this is atypical of the region. The majority are relatively vertical or slightly converging, and the sides are never straight but generally in a sigmoid curve which is varied in many forms. In a few cases, such as those illustrated in Fig. 12, *q*, *s*, and *t*, the sides are extremely converging; these bases apparently belonged with the peculiar type of bowl shown in Fig. 19, *a–c*. Very low bases (Fig. 12, *a* and *c*), and very high cylindrical bases (Fig. 12, *k*) are very rare. A few high and very concave bases, such as Fig. 12, *n*, *u–w*, certainly belonged to the kylix type of bowl. Fractures indicate that normally the bottom of the vessel was finished, the point of junction deeply scored, and the basal ring, independently formed, then luted on.

ROUND-BASE BLACK VESSELS

Round-base vessels are rare in dark ware; less than ten were found by the Field Museum Expedition. All known are ollas with relatively or very small mouths except for one bowl (MAI) from Gairaca. This is of sub-hemispherical shape, the orifice diameter almost the maximum width, of thin, polished black ware, 7 x 13 cm.

Most of the ollas are of simple silhouettes and undecorated (Plate CCI), from Nahuange, Masinga, Gairaca, and site 31 at Pueblito (lower pair). The ware tends to be thick. Two other smaller heavy ollas, 6 and 7 cm. wide, were bought at Nahuange and Taganga; one has two rings of large, irregular dots around the base of the neck.

Of the undecorated vessels of this type in other collections only two are of interest. In both, the silhouette is a little complex with horizontal bands. One from Gaira (UM) is sub-globular with a small orifice and short neck (Fig. 20, *b*), of blackened red ware, 21 x 25 cm. One from Gairaca (MAI), 15 cm. wide and 12 cm. high (Fig. 22, *h*), is broad with a wide, sloping neck.

A definite sub-type consists of vessels with the same combination of a flying bird in low relief and a zone of incised decoration of straight lines such as is characteristic of a large group of ring-base ollas. These vessels are quasi-spherical with small, low necks, the decorative zone on the shoulder below the neck (Plate CLXXXVIII, Fig. 1). Three were excavated at Pueblito, and one was bought at Taganga. They range from 13 to 24 cm. in width and a little less

in height. All have a narrow, raised, encircling band below the incised zone, but one lacks the relief, and another both relief and incised decoration. The bottom of one is concave, of the others round or very slightly flattened. A vessel of this type (MAI) has a very unusual and interesting characteristic; the body has a fine red surface while the shoulder with its relief and incised decoration is polished black.

Round-bottom, black vessels are also decorated with low relief in human form in the usual style, the face on the neck of the vessel and the arms on its body. They are thus identical, except for the base, with certain ring-base vessels. The relief is generally rude and archaistic and never so good as in the best of the ring-base vessels. No example of this type was found by the Field Museum Expedition, but specimens exist in other collections: from Gairaca, 9 x 10 cm. (CM; Plate CCXXIV, Fig. 3); and from Pozos Colorados (UM; Plate CCXIX, Fig. 6).

Three ollas with round bases and tall, narrow necks come from the Rio Frio region (GM; Plate CCXVIII, Figs. 2, 4, 5); these tall necks seem to be characteristic of this site, and very similar ollas are found with ring bases. One is plain; one has a relief, human face on the body, the prominent feature of which is a high nose, apparently like a small, looped and grooved handle; the third combines the human relief ornamentation on the body with typical incised and dotted lines. Heights from 18 to 20.5 cm.; widths a little less.

TETRAPOD VESSELS

All the Santa Marta vessels that rest on small legs are tetrapods; no tripod is known. This fact doubtless has considerable cultural and historical import. All are of fine texture and generally of dark ware, polished black, gray, or brown, very rarely of fine red.

Owing to the obvious resemblance between a tetrapod vessel and a quadruped animal, most of them are to some extent effigy in character. There are three main types: bowls, frequently with ribbon basket-handles, ollas, and effigy vessels.

Bowls.—Bowls are generally shallow, except for the legs, and with maximum diameter at the rim, except for the relief. Type 1 is very shallow, with a thin, semi-circular, ribbon basket-handle extending from rim to rim, and high-relief bat heads at the base of each end. The heads are generally small, stylized, and on the flaring bases of the handles (Plates CCII, Fig. 1; CCIII, Figs. 1, 3, 4). The cross section of the handle is always flat or slightly convex on the

lower side, concave or flat with marginal ridges on the upper side, the width at the minimum point between 2 and 2.5 cm. Handle fragments were found at Pueblito, Cañaveral, Taganga, Arecife, and Gairaca. In a variant fragment from Gairaca (Plate CCIII, Fig. 2) the entire relief figure of a bat, upside down, is on the side of the bowl below the handle, which shows two drilled holes for mending a crack. Basket-handles are also found on vessels with tubular spouts (q.v.; Plate CCXXI, Fig. 6), and on some very shallow, ring-base bowls (Fig. 19, *r*), suggesting close temporal relationships between these types. Other species of bats are portrayed, sometimes a leaf-nosed bat with a crest, and arms that are clasped or hold a stick behind the head (CM; Plate CCXXIII, Fig. 3; Gairaca), a feature often found on vessels of other types. Heads of this type are sometimes placed on the side of the bowl below the handle (MAI; Plate CCXVI, Fig. 3; Cinto Arriba). This bowl is slightly oval; as the rim is restored the handle is presumptive. The ware is gray. In one fragment (MAI) the bat head is in relief, not in the round; in another from Don Diego (AM), the bat heads are hollow, with traces of incised designs below them. Another, with fragmentary bat heads on the sides and traces of the handle (one leg missing), from the ceremonial center of Pueblito (Plate CCII, Fig. 2), is larger, coarser, and heavier than the others. A bowl of red ware, without a trace of the black surface that may have been entirely eroded, from Pozos Colorados (UM), has a handle very wide at the base, 4–5 cm.; the span is greater than that of the rim so that the base of the handle bends inwards above the animal relief.

The legs of all are bulbous and asymmetrical, relatively straight on the inner side, sinuous on the outer. The bases are enlarged in all, and several have incised lines, evidently to represent toes. All are hollow, with an air-vent on the inner side. Those of the fine example purchased at Dibulla (Plate CCII, Fig. 1) contain rattling pellets, and another (MAI; Plate CCXVI, Fig. 3) also rattles, probably containing gravel; this feature was not noted on the others.

Bowls of type 2 lack the basket-handle and the rims are very flaring; the four known examples are all from Gairaca. Two (CM) have bulbous feet and lack any relief ornamentation (Fig. 21, *a*); they are relatively deep. A shallower one with bulbous feet, one of them missing (FM; Plate CCII, Fig. 3), has at the base of the side, at opposite points, between each pair of legs, a small knob that may be a vestigial representation of the bat heads. Unusual in many ways is one (CM; Plate CCXXIII, Fig. 4) with quasi-cylindrical

hollow elephantine legs, slightly bent in the middle and enlarged at the ends, probably to represent knees and toes; the air-vents are at the front. The rim is very flaring and there is a filleted lower flange with relief above it, a conventionalized flying bird at one end and an animal head at the other.

A small, black, fragmentary, tetrapod cup from Bonda (UM) is unique. It resembles the neck of a vase, constricting towards the rolled rim. The feet are short, solid, and very spreading, quasi-conical and quite different from most of the feet. Dimensions: 8 cm. high and 11 cm. wide.

Ollas.—This group is based on one example, No. 154539 (Plate CCII, Fig. 4), found, with many other unusual specimens, in the stone-capped grave at Nahuange. It is made of polished black ware, oval shape, 21 x 15 cm. and 16 cm. high. The birds'(?) heads on either side are hollow and connect with the interior of the vessel, without septum. The short, hollow legs show the same unusual feature. They were filled with beads when found. Two of them have small, pierced holes in their bases, indicating that the vessel was not intended as a liquid-container.

Effigies.—No true animal-effigy, tetrapod vessel was found by the Expedition, but several examples are known in other collections, and some of these are among the most striking examples of ceramics of the region.

One of the finest is described under the classification of "Spouted Vessels" (BM; Plate CCXXI, Fig. 5). It has the additional peculiarity that the bases of the four feet are enlarged into hollow, depressed balls, all of which seem to be connected.

Another excellent effigy tetrapod is in the Paris Trocadéro Museum. This Museum is at present (1937) being rebuilt, and it was impossible to secure a photograph or a good sketch, but a drawing based on a rude sketch made by me in 1924 may be seen in Fig. 21, *h*. The body is spheroid, the neck of the vessel altered to represent the head of an animal with a long snout, possibly a peccary. The four feet are rather naturalistic and each is provided with a groove dividing it into halves, like a hoof. The specimen is polished black pottery, 25 cm. high and long, 20 cm. wide.

Three tetrapod, animal-effigy vessels of polished black pottery (GM; Plate CCXVIII, Figs. 9–11) were secured by Gustav Bolinder at Rio Frio, a little southeast of Santa Marta. Very similar to each other, and a little different from anything secured by the Field Museum Expedition, they probably pertain to a slightly variant

phase of Tairona culture. All seem to be to some extent asymmetrical. The bodies are ovoid from side to side, the width being greater than the length. The four legs are short and either tapering or cylindrical. The heads of the animals form the necks of the vessels, with convex surface, a slightly rolled rim, and low-relief facial features and ears that are as much human in shape as animal-like. In the vessel illustrated in Plate CCXVIII, Fig. 10, height 21 cm., the head is turned and faces sideways; the legs are hollow and rattling. The vessel shown in Plate CCXVIII, Fig. 9, height 15 cm., probably had the same shape, but the head is turned to the other side; the tail-end is broken away. The height of the vessel shown in Plate CCXVIII, Fig. 11, is 16.5 cm.

Other vessels that rest on tetrapod supports are most of the ornately incised and carved, small effigy vessels that are described separately; they compose a special type of ware related to the ocarinas, and forms other than tetrapods are included. The legs are short and solid, never hollow and bulbous as with the bowls considered above (cf. Plate CCII, Fig. 5).

Legs of Tetrapod Vessels.—A large number of separate feet were found in the excavations; presumably all of these came from tetrapod vessels like those already described. Drawings of a selection of thirteen of these, showing the variations of shape and size, are shown in Figure 13.

With a few exceptions, all are thin black ware and are hollow, bulbous, and asymmetrical. Only two specimens of solid pottery were found that look like vessel legs, although they may have been used for other purposes; both may be relief. One of these from Arecife (Fig. 13, *d*) is of gray ware.

The smallest leg, from Pueblito (Fig. 13, *a*), is 2.5 cm. thick and high; the largest (Fig. 13, *l*) from Pueblito, is about 8 x 8 cm. Some of the smaller ones may be solid; at least they show no perforation, but almost all, especially the larger ones, have one or two holes leading to the hollow interior. These holes are either round, or long slits, generally on the straighter, interior side, sometimes at the side, and even on the convex front. There are two holes in some, sometimes a pair at the rear, sometimes one on either side. The presumption is that these large, hollow feet contained rattling pellets, but it was not possible to be certain, in the few cases where rattling was noticed, that this was not caused by dirt within.

In almost every case the front side of the leg is enlarged and bulbous near the top. In a minority the base converges towards a

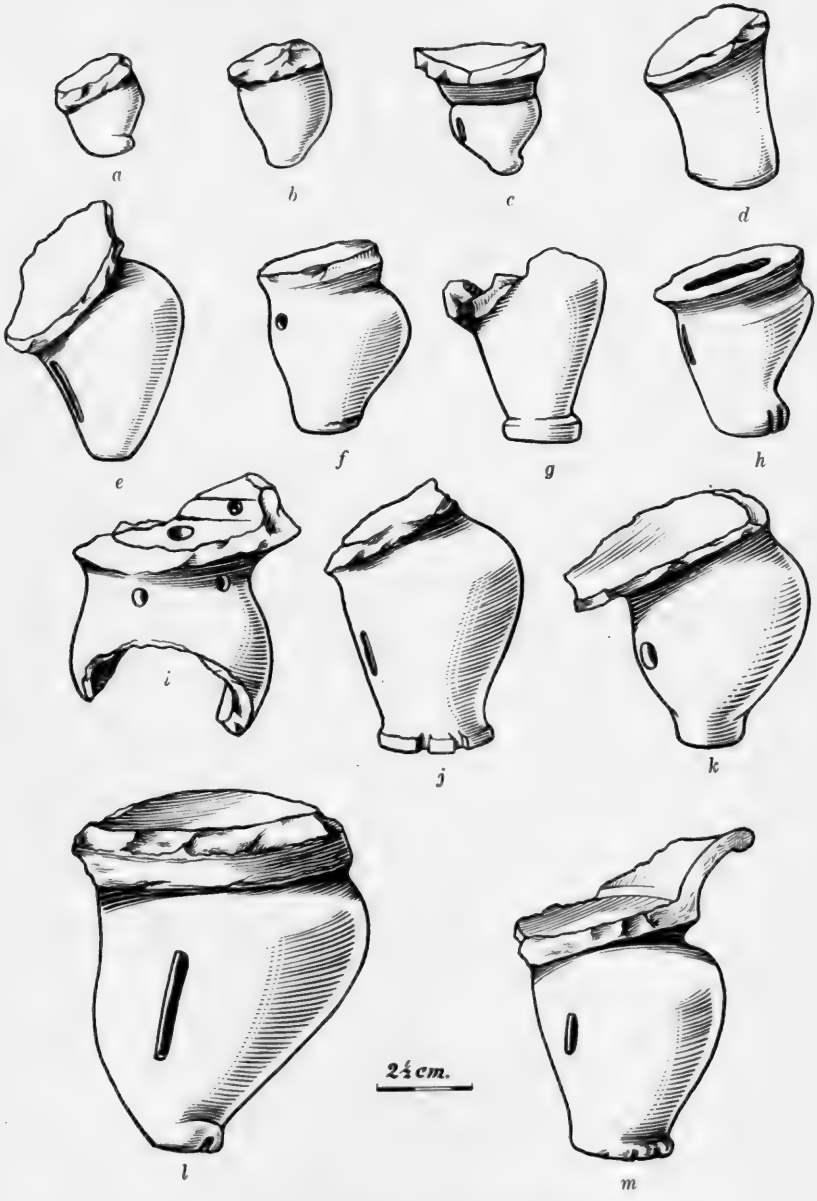


FIG. 13. Legs of tetrapod vessels.

small but flat round base (Fig. 13, *e*, *f;* Plate CCXLIV, Fig. 11), or the base may be elongated (Fig. 13, *k*), or it may be provided with a ferrule (Fig. 13, *g*). Generally, however, the base is enlarged on the outer side; this is apparently the conventionalized representation of an animal's foot, and this identification is further often verified by vertical incisions, obviously to represent toes (Fig. 13, *h*, *j*, *l*, *m*). Fig. 13, *i*, from Pueblito, illustrates a peculiarity noted in several other entire vessels. In addition to two holes in the hollow leg, near its junction with the vessel, there is a perforation leading from the bottom of the vessel to the interior of the leg, and another through the adjacent side of the vessel from the interior to the exterior; these bowls obviously could not have been used for holding liquids.

Several examples indicate that the legs were molded separately and then luted to the body of the vessel, the point of contact on the vessel having first been deeply scored to facilitate firmer adhesion. Legs were found at most of the sites, specifically Arecife, Palmarito, Guachaquita, Gairaca, Nahuange, Taganga, and Pueblito, but no site seems to display any peculiarities in this line.

The legs from Gaira (UM), however, are mainly of an orange-buff surface without any trace of blackening; vessels with a fine, smooth surface of this color seem to be characteristic of this site. The legs from here and from Pozos Colorados present no marked peculiarities of form, but possibly show the same characteristics to a more exaggerated degree, with larger ferrules or longer cylindrical projections at the base. One black leg from Gaira is practically hemispherical with a very short, cylindrical projection at the bottom.

The feet in the New York collections, from San Pedro Alejandrino and other sites, include fine pottery, both red and black. One of them, with a small flat triangular base, shows a large circular clay pellet within, indicating that it was certainly intended to rattle; another ends in a rather sharp point, and others are conical, with a rather large, thick disk at the base.

VESSELS WITH TUBULAR SPOUTS

This type is not common. It subdivides into two quite different groups: vessels with a single straight short spout, and those of "stirrup" type, with two longer, curved spouts that coalesce in a single orifice. The resemblance of the latter to certain Peruvian forms, especially the Chimu, is obvious.

Single Spouts.—Only two practically complete vessels of the type are known, in addition to a number of spouts which naturally were

especially liable to fracture. They are related to the black ring-base ollas. The most complete one, from Mamatoco (GM; Plate CCXXI, Fig. 6), of thin black ware, 14.5 x 18 cm., has the typical small tie-holes(?) in the ring base, a filleted medial carination and two raised, broken places at opposite points on the rim. These latter presumably represent the bases of a ribbon basket-handle, and connect the type with certain tetrapod and plain bowls (Plates CCII, Fig. 1; CCXXIII, Fig. 3; Fig. 19, *r*). On the side opposite the spout is a low-relief flying-bird figure. The other example lacks the medial carination and any evidence of a basket-handle (MAI; Fig. 22, *f*), 12.5 x 17 cm. A circular hole from which the spout was evidently broken is flanked by low-relief crescents, probably representing wings, and on the opposite side is the typical low-relief flying-bird. The winged spout and flying-bird relief are found on the fragments of a carinated vessel (CM; Plate CLXXXVI, Figs. 2, 3). The high-relief head with a crest probably represents a curassow; similar heads, presumably from similar vessels, are frequently found (Plate CCV, Figs. 1–3). The rest of the shoulder of the vessel is decorated with a band of incised design of parallel lines and triangles, similar to those on black ollas with flying-bird relief. It apparently also had a ribbon-loop basket-handle with perforated holes for crack-mending. Near the bird head are four small, round perforations through the wall, two near the base and two near the rim; the same feature is found on another spouted, and on a tetrapod vessel (Figs. 13, *i;* 24, *g*).

Plain cylindrical spouts were found at Bonda and Teran (Fig. 14, *a, c, d*); the type may be characteristic of the upper Manzanares River. Lengths from 4 to 6 cm., shaft diameter about 2.5 or 3, orifice width from 3 to 4 cm. There is always an angle at the lower base. A sherd with spout from Pozos Colorados (UM) is shorter, and lacks the basal angle and the low relief crescents.

Bulbous or mammiform spouts are also found (MfV; Plate CCXLIV, Fig. 14). One from Pueblito (Fig. 14, *b*) is larger, 3 x 5 x 9 cm., with a projection like a spine at the base. A bulbous spout from Don Diego (AM; Plate CCX, Fig. 6), 4 x 2 cm., is decorated with a grotesque human face in relief.

A definite sub-type is large, bulbous, of thin ware, often a sandy brown or gray color, in the form of an animal head that somewhat resembles a crocodile. The snout is large, flat, and square at the end, from which projects a short cylindrical tube; the eyes are prominent and protruding (UM; Plate CCXXVI, Fig. 6). One is 10.5 cm. long (MfV; Plates CCXXII, Fig. 6; CCXLIV, Fig. 12). Another

from the Arecife cave (Plate CCVII, Fig. 2) resembles very much the skull of an armadillo.

Less obviously, but probably spouts of another type, are solid projections or fragments with narrow-bore perforations. A small, black, fragmentary, ring-base bowl from Pueblito (Fig. 24, *g*) has such a horizontal perforated cylindrical extension that may also have served as a handle. The vessel may have been a handled censer. Its relationship with one of the spouted vessels above mentioned is shown by the four small drainage(?) holes, two in the side wall and two in the bottom. Possibly of the same nature is a fragment of reddish ware from Taganga, the end decorated with carved monkey(?) heads (AM; Plate CCXXVIII, Fig. 3; shown from the end).

Double "Stirrup" Spouts.—Except for this one common feature these vessels are variant; all are animal effigies and might have been thus classified. Most of them are of thin black ware, their relationships being with tetrapods, effigies, and fine, carved, effigy vessels, but a genetic relationship with the large, double-orifice urns (Plate CLXXI) and the double-orifice, oval-base vessels (Plate CC, Fig. 2) is presumptive.

Two with very similar spouts are otherwise radically different. The semi-circular spouts, with a ring at upper and lower ends and relief knobs at mid-height, unite in a short, vertical orifice. One (BM; Plate CCXXI, Fig. 5), from "the hills behind Santa Marta," about 23 cm. high, is the figure of an animal with unidentifiable head and thick tail; the four legs end in flattened hollow balls that are apparently all connected. The other (CM; Plate CCXXIII, Fig. 2), 15 x 19 cm. and 11 cm. high, from a grave at Gairaca, is a tubular ring in the form of a coiled eel or snake, the large head projecting over the tail.

An effigy from San Pedro Alejandrino is similar, obviously a snake, but smaller, 7.5 x 11 cm. and 9 cm. high, and is of fine carved brown ware, in which class it belongs (AM; Plate CCXXII, Fig. 1). A small stirrup spout from Chorrera Cordoncito, made of rude, red ware, is well modeled in the form of a bird (MfV; Plate CCXLIV, Fig. 16). This site is about fourteen leagues south of Rio Hacha; the other specimens from here show some divergence from typical Santa Marta objects, and the region is probably outside the true Tairona area.

The Nahuange stirrup-spouted vessels of thin black ware are, as usual, peculiar and more effigy in character. The spouts represent

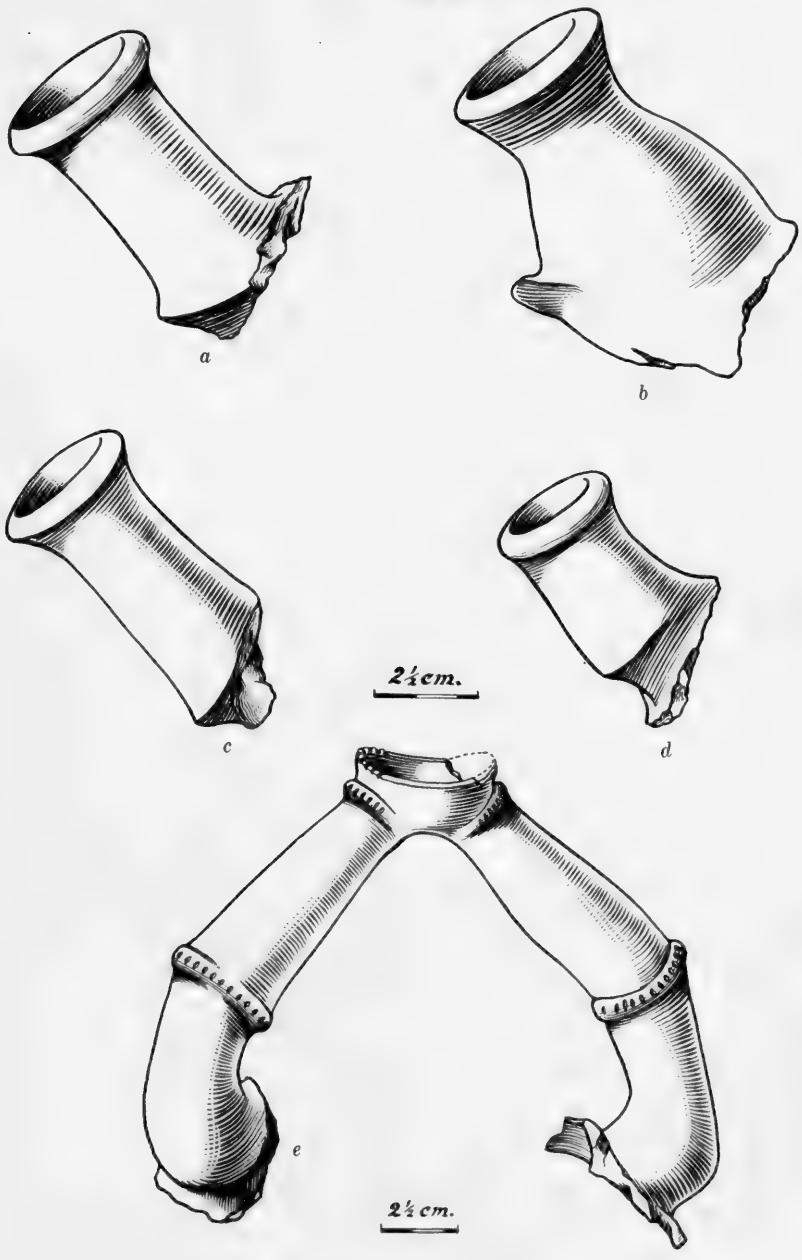


FIG. 14. Tubular spouts from black vessels.

the upraised anthropomorphic arms of an animal, the hands coalescing in an oval bowl (Plate CLXXXIX, Fig. 4; Fig. 14, *e*). The vessel is large, 20 cm. wide and 24 cm. to the spout orifice. The general concept is similar to that of the double-orifice urn (Plate CLXXI), an apical head without orifice, flanked by two spouts. The squat, globular body, with low-relief teats near the arms, is surmounted by the low-relief head of an animal. Two short bands of incised decoration lead from near the ears to the eyes. The spout orifice where body and arms join is very constricted.

EFFIGY VESSELS

True effigies in which the entire vessel is modeled in the shape of an animal or person, such as are especially characteristic of the Chimu region of Peru, are very rare in the Santa Marta area. No vessel in any degree approaching an effigy is of coarse red ware, the nearest approximations being of polished black ware or fine red ware that may originally have had a black surface. It is an indication of influence from Peru that the purest effigies are those with stirrup spouts (q.v.); these spouts are one of the characteristics of Chimu effigy pottery.

From these practically pure effigies there is an unbroken gradation through vessels showing less and less naturalistic shape, and less and less naturalistic elements, in the round or in high-relief, to vessels showing only a little low-relief ornamentation, generally human, and then to simple-silhouette, undecorated vessels.

Next to the stirrup-spouted vessels in degree of effigy nature come the tetrapod effigies (q.v.), especially the excellent examples in the Paris Trocadero and the Gothenburg museums. Tetrapods naturally lend themselves to the representation of quadruped animals, and all tetrapod vessels, which seem to be antecedent to tripods in Middle America, may have had quadruped animals as their prototype. In a slightly different class are the small effigies of heavy, brown, finely carved and incised ware (q.v.); most of these are tetrapods.

Less purely effigy in nature are vessels with ring, flat, or round bases. These are considered in the present section, which comprises effigy vessels and fragments that lack the specific characteristics entitling them to classification elsewhere.

Only one practically complete vessel is placed in this category, a large, black, ring-base vessel from Gaira in the form of a bird (UM; Plate CCXIX, Fig. 4; Fig. 20, *d*). The spheroid body is topped

by a typical olla neck, broken and evened off. A bird's head in the round, hollow and connected with the interior of the vessel, projects from one end. The wings, now partly broken, are represented by solid, sloping flanges on either side; they probably originally connected at the back.

Here might be mentioned a fragment of relief, also from Gaira, that probably came from a somewhat similar vessel. Of solid, thick, flat, brownish pottery, it resembles a fragment of a plate (UM; Plate CCXXVI, Fig. 10), but it had one small place of attachment measuring 3 x 2 cm. instead of the average thickness of 1 to 1.5 cm. The edge is also thickened at certain places, and notched, and on the surface are two parallel, curving, incised lines. The length, probably maximum, is 15 cm., the present partial width 9 cm. The object can best be interpreted as a bird's or bat's wing, a fragment from a large effigy vessel.

Several fragmentary vessels, or vessel fragments, apparently of unusual shapes and with naturalistic, human elements in the round or in very high relief, probably should be considered in this category.

A tall olla of oval cross section, flattened at the front, 20 x 23 cm., is of uncertain height owing to the missing lower half, probably about 26 cm. (UM; Plate CCXIX, Fig. 5); purchased at Taganga, of coarse, buff paste, the surface much blackened. The high-relief human(?) head is hollow, with an air-vent, but not connected with the interior of the vessel. The ends of the low-relief looping necklace curve around the olla neck and hang down the back. Low-relief elements probably represent teats and umbilicus. On either side are three places where relief in full round has been broken away; these probably were shoulders, hands, and thighs, the attachment places for the feet being missing.

A large fragment of yellowish-red ware, 15 cm. long, with a hollow leg and arm (GM; Plate CCXLVII, Figs. 2, 4; two views) may have come from such a vessel as the above. Other fragments, apparently of effigy vessels, with hollow human arms in the round (MAI, Plate CCXXVII, Figs. 13, 14; UM, Plate CLXXXV, Figs. 5, 7) are apparently from vessels of other forms. All are of dark ware, black or gray, from Nahuange and other sites. One, of polished black ware from Gaira (UM; Plate CLXXXV, Fig. 12), apparently came from a large cylindrical jar with a horizontal convex top, on which was the human head.

RELIEF FROM BLACK VESSELS

Both in Field Museum and in other collections, quantities of fragments of relief from finer vessels were secured, the shapes of which vessels are difficult of determination. Since relief elements may be of either solid or hollow pottery, and as the interiors of hollow relief elements may be either continuous with the interiors of the vessels or separated from them by a septum, it is difficult or impossible to distinguish between relief from vessels and from parts of whistles, figurines, ladles, and similar objects, unless adjacent parts are included. As whistles are generally blown from the effigy head, the air-shaft usually distinguishes these heads; such identifiable fragments are considered under the description of whistles. Certain other relief elements may be actually handles, spouts, or even tetrapod feet of vessels.

Relief may be low, and modeled or molded in shaping the vessel, or it may be high or in the round, in which case it was often modeled independently and subsequently luted to the vessel. Often the two are combined. The most usual technique is a combination of animal head in high relief or the round, with arms and, less often, feet and body in low relief. The head is sometimes also in low relief, and occasionally arms may also be in the round. Heads in relief with arms in the round are seldom found.

The commonest relief element is the flying bird, probably an eagle, typically found on polished black ollas. In addition to those shown on the vessels, a few examples may be seen in Plate CCXI, Figs. 6–8. In a few cases a bat is substituted for the bird. Other examples of animal low-relief are shown in Plate CCV, Figs. 4, 5, 6, 9, and Plate CCIV, Figs. 3, 6. Most of the animals that are identifiable seem to be bats.

The bat head is probably the commonest round, or high-relief element. It appears in many different forms, and several species are probably depicted. One of the most frequent forms is a large bat head in the round with a high, flat, often serrated crest on the forehead. It frequently has anthropomorphic arms in the round, the hands uppermost and often apparently clasped behind the head or grasping a stick or bar that passes behind the head (Plates CCIV, Figs. 2, 4, 7; CM, Plate CLXXXVI, Fig. 1; UM, Plate CCIX, Figs. 1–4, 7; MAI, Plate CCVIII, lower two rows; Fig. 11, *a*). Often this element becomes very conventionalized and would be unrecognizable were it not for many naturalistic prototypes; eyes are often omitted, as in an example (AM; Plate CCX, Fig. 2), shown from

below, of hollow, reddish pottery with several filleted rows on the lower jaw. The fine bat head from Dibulla (AM; Plate CCX, Fig. 7) is very large, about 7 x 7 cm. The large, full, round figure (MAI; Plate CCVIII, lower right), from Cinto Arriba, is very unusual in that it shows a complete anthropomorphic figure, 13 x 12 x 5 cm.

Bat heads are also found in more naturalistic forms, generally smaller and showing the two ears. Other animal relief includes birds such as curassows and pelicans, snakes and other reptiles, jaguars, monkeys, crocodiles, and several other kinds of animals. Most of them are identifiable from the photographs, but only those in Field Museum were examined by a zoologist. Dr. Wilfred H. Osgood, Chief Curator of Zoology in Field Museum, examined these and identified some with certainty, others with probability, while some he found too generalized or conventionalized to be identifiable.

Of the relief animals in Plate CCIV not already noted as crested bats, Figs. 3, 5, and 6 are also bats, Fig. 6 being very naturalistic. Fig. 1 is a fine snake's head, although arms are shown; it contains a rattling pellet. Fig. 9 is a bird, seated on the rim of a vessel and facing inwards.

The animal heads shown in Plate CCV are all of solid pottery; those in Figs. 5, 6, and 9 are bats. Fig. 8 is unidentified and Fig. 7 is a reptile, facing upwards with the nose to the vessel rim. The three heads at the top, in the round, are common and typical forms. Figs. 1 and 3 represent birds, probably the curassow; the other was identified by the natives as a *pasarroyo* and by Dr. Osgood as a reptile. Two fine large examples, probably curassows (GM; Plate CCXLV, Figs. 1, 2), are 3 cm. and 4 cm. in length (see also CM, Plate CCXLII, Fig. 3; and UM, Plate CCIX, Fig. 10). The fine incised and carved reptile head (CM; Plate CCXLI, Fig. 1) should be noted.

The animal heads in Plate CCVI are a miscellaneous group. They were tentatively identified by Dr. Osgood as follows: Figs. 1, bat; 2, 5, and 9, uncertain; 3, reptile; 4, 6, iguana; 7, monkey; 8, porpoise(?); 10, bird; 11, king vulture; 12, parroquet; 13, eagle or hawk. The birds in the lower row, at least Figs. 10–12, probably are from ocarinas, the mouth-orifices of which were in the birds' tails.

The animal heads and other objects in Plate CCVII are larger and coarser, though of black or gray pottery and different from the relief on red vessels. The animals were tentatively identified

by Dr. Osgood as follows: Figs. 1, 5, 6, and 8, bats; 2, armadillo skull(?); 3, lizard or iguana; 4, manati; 7, monkey(?).

Fig. 2 apparently illustrates a spout and is described under that heading. Fig. 1 shows a large, hollow, thin, black head, probably a relief ornament; the mouth is a narrow, open slit at front and sides, closed only by the large canine teeth. Figs. 9–11 display elements that, if biomorphic, are simplified beyond recognition; they are from the coast sites of Arecife, Nahuange, and Gairaca. All are hollow; Figs. 4, 8, and 10 rattle, and Fig. 11 has a hole in the point. Most of the other heads are hollow, a few solid.

Two solid animal heads from Taganga (GM; Plate CCXLV, Figs. 5, 6) are probably relief from vessels and may represent jaguars. In the Berlin Museum are a number of such relief fragments (Plate CCXLIV, Figs. 3–10). Most of these, Figs. 3, 6, 8, 9, 10, and 16, are from Chorrera Cordoncito, about 14 leagues south of Rio Hacha, and probably belong to a slightly different culture. Though well molded, they look slightly different from true Tairona ceramics. The heads, of reddish pottery without slip, are mainly dome-shaped and the eyes are round with depressed centers. Two other very fine, and very large, relief figures, apparently both jaguar heads (MfV; Plate CCXX, Figs. 3, 6) have their ears perforated, probably for suspension. The fine, polished, dark-brown, animal head (MfV; Plate CCXXII, Fig. 5) is probably also a relief element; it is hollow and rattles, 10 cm. long, collected by De Brettes on the coast of Santa Marta. Its relationship to certain spouts is evident.

A large, hollow figure of a bird, of gray pottery, 7 cm. high, stood on the rim of a vessel, probably a bowl (AM; Plate CCX, Fig. 1). Most of the relief in the Museum of the American Indian (Plate CCVIII) consists of bat heads, but a few examples of other animals are shown in the upper row; among these is a small animal with a thick, curving tail, and a small face, possibly a monkey, with nose and mouth asymmetrical. (See also Plates CCX, Fig. 5, AM; CCIX, Figs. 5, 6, 9, UM.)

Human relief is not so common on black or fine red ware as on the coarse and massive red pottery. The most easily identifiable fragments are those of faces and limbs. The faces generally show a large nose-ornament, usually of the crescentic or winged type, and a cylindrical labret in the center of the lower lip. Often a quid of coca is shown in the cheek, generally the left. Incised lines and dots that may represent tattooing are frequently shown on the cheeks (Plate CCXI, Figs. 1–5; UM, Plate CLXXXV, Figs. 1, 3, 4; MAI,

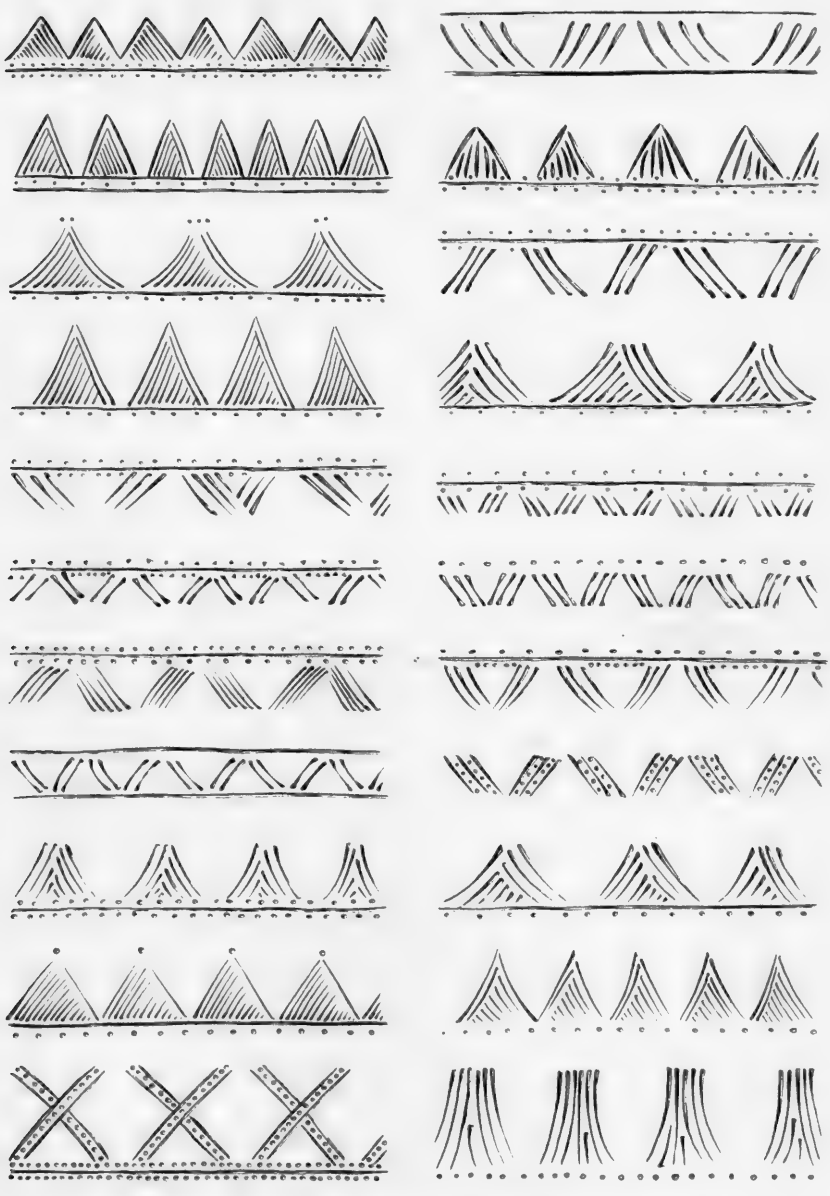


FIG. 15. Incised decorations from small black ollas and bowls.

Plate CCXXVII, Fig. 12; CM, Plate CCXLII, Fig. 8). One head (Plate CCXI, Fig. 3) has a high, pierced, nasal septum as if for the insertion of a metal nose-ring, a feature that often appears in human figurines from the central Colombian highlands.

Human or anthropomorphic arms and legs in full round are common relief elements (Plate CCXII; UM, Plate CCXXVI, Figs. 4, 8, 9; MAI, Plate CCXXVII, Fig. 15); in view of their fragile nature they are seldom found on actual vessels and it is difficult to assign the fragments to their proper types of ceramics. Many of them probably come from effigy vessels, figurines, or whistles. Most of them are of solid, polished, black or brown pottery, and may be large or small, simple or ornate. The arms with well-formed hands often grasping a bar or stick are probably from the common relief of a bat head with a flange above the forehead. On the larger and better made of these fragments, especially on the legs, adornments such as anklets and leg-bands, and sometimes parts of costume are shown. In an unusual sherd of red-black ware from Nahuange (Fig. 25, *f*) semi-hollow objects in the round like grotesque human arms connect the body and neck of the vessel.

Non-biomorphic elements such as knobs and lugs are often found on vessels. Sometimes these may serve as handles; some may be reduced from biomorphic relief. Knobs are sometimes found on the widened, flat rims of vessels, as on a sherd from Mandigua (Fig. 25, *c*, *e*).

INCISED DECORATIONS

Geometric, incised decorations are found only on vessels of fine texture, generally black, and mainly in bands or zones in association with biomorphic low relief. These generally consist of short, parallel, straight or slightly curving, slanting lines, and lines of dots (Figs. 15, 16). More extensive, and curvilinear designs are so rare as to suggest importation. Such is the design (Fig. 16, *i*) on an olla from the stone-lined grave at Nahuange, from which came many unusual objects. At the bottom of this Figure are shown drawings of a few more unusual, incised decorations on sherds. The decorations on two of them (Fig. 16, *p*, *q*) resemble the above-mentioned but the sherds seem to be from other sites. A very unusual, curvilinear design (Fig. 16, *r*) from Pueblo Bernardo is deeply incised in brown ware. A unique sherd (Fig. 16, *o*) of a small globular vessel, from Pueblito, has small repeated designs in low relief, probably carved but possibly stamped or molded. The analysis of a sherd of this vessel proved it to be of the usual black-ware composi-

FIG. 16. Incised decorations from black vessels.

tion. Another fragment (Fig. 16, *n*), possibly of a whistle, of heavy, thick, hollow, gray, irregular pottery has small, deep, triangular impressions. Naturalistic incised designs are unknown.

TREASURE JARS

These vessels are so named because they were probably made exclusively for mortuary use, to hold offerings of ceremonial objects such as monolithic axes, batons, and broad-winged stone objects, and also ornaments such as jade pendants and beads. Those excavated by the Field Museum Expedition were mainly found in graves and ceremonial sites and contained many of the finest specimens secured.

Though of an unmistakable type and purpose, no other class of vessel varies so widely in detail. They occur in all sizes from very small to large, in coarse red, fine red, polished black, and painted wares, with and without ring bases, with and without relief ornament or incised decoration, and in several very different types, shapes, and proportions.

The one uniform feature is that all consist of two parts, the lower body, and a bowl-cover of the same ware, made to fit, which rests upon a lip or collar. They are classified into two main types with two sub-types of each:

A. With flanged lip:
   1. Broad
   2. High

B. With inset lip (Nahuange type):
   1. Black
   2. Painted

A. JARS WITH FLANGED LIP

The most common type. The bowl-cover rests on a projecting horizontal flange a little below the rim.

A1. BROAD FLANGED-LIP JARS

The majority belong in this class. Bases are convex or flattish. Ware varies from thick coarse red to fine thin black; sizes large to small; several with relief ornamentation.

Jars of coarse red ware (Plate CCXIII, Fig. 5; Fig. 17) run the gamut of size and naturally include all the largest. Of the twenty-three secured by the Field Museum Expedition all the large ones, and almost all the others, came from Pueblito. One fragment was secured at Pueblo Bernardo and two jars of the smaller sizes at

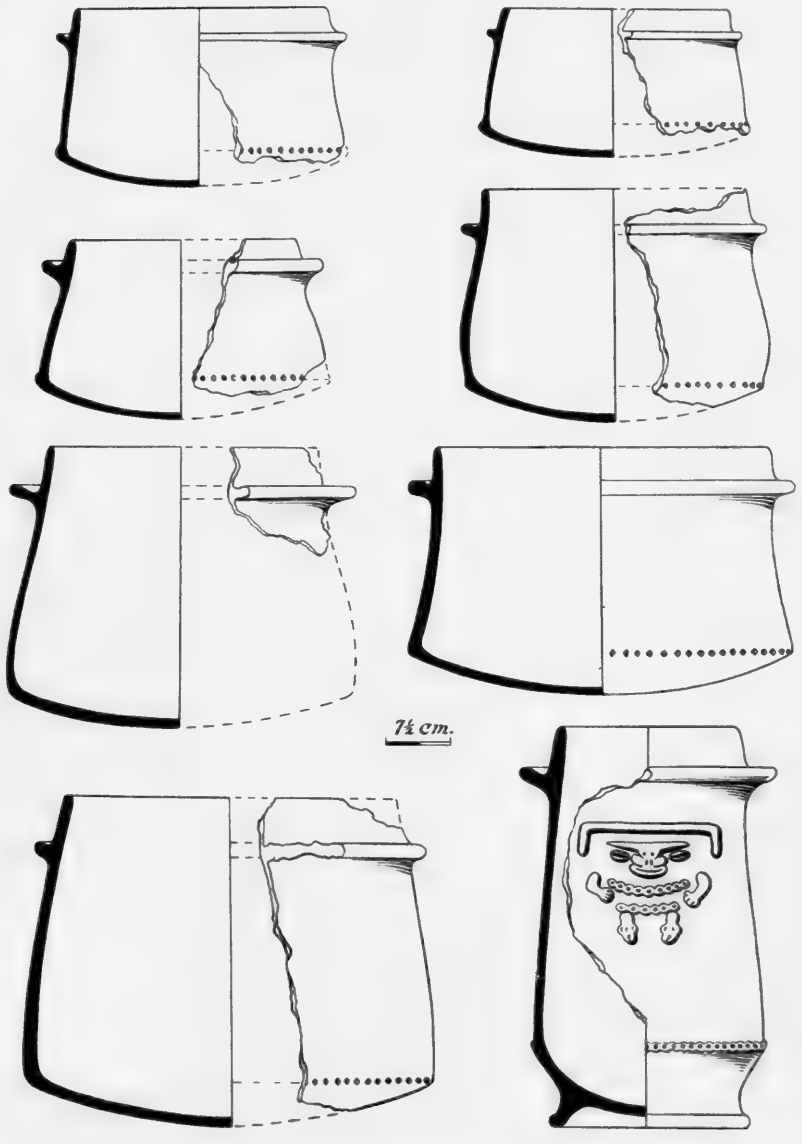


FIG. 17. Red treasure jars.

Nahuange. Most of them, with their contents of ceremonial and ornamental objects, were excavated in sites 1, 31, and 32 at Pueblito. The other proveniences represented by the many jars in other collections are San Pedro Alejandrino (MAI, UM), Tairo (MAI), Gairaca (UM), and Las Tres Cruces (CM).

The largest jar, by far, as calculated from its fragments (Plate CLXXVII, Fig. 5), measured 58 cm. wide, more than 25 cm. high, width of lip 4 cm., lip to rim distance 6 cm. The relatively deepest jar (Fig. 17, lower left) is 33 cm. wide by 23 cm. high, with a narrow lip 1.5 cm. wide. The relatively shallowest is 30 cm. wide and 11.5 cm. high. The smallest measured 8.5 cm. wide and 4.5 cm. high (MfV; Plate CCXX, Fig. 4); the rim above the cover-lip is very short and slanting. The largest complete jars measure 45 x 36 cm. (MAI) and 41 x 32 cm. (UM).

The bases are generally convex, sometimes markedly so, the sides from vertical to very slanting, generally almost straight but often slightly convex or concave. One small jar, 7 x 10 cm. (MAI), has base and sides so convex that it is practically hemispherical. Maximum width is generally at the base, where this meets the sides in a filleted carination, but the cover-lip is usually of equal diameter, the rim being less. The cover-lip was molded separately and luted to the body. It is of varying widths and at various distances from the rim; frequently it is concave on the upper surface so that the rim of the cover-bowl may rest on it more firmly.

Relief decoration was found on only two of these jars. It is of appliqué, of the same art as most relief on coarse red vessels. Owing to the necessities of the vessel shape, the relief arms are unnaturally placed. One (MAI; Plate CCXVI, Fig. 4) from Pueblito, 20 x 14 cm., has a very convex base, very sloping side, and traces of red slip. The other is the largest jar (Plate CLXXVII, Fig. 5); the relief is of unusual type, with oval eyes and open, toothed mouth.

Both of the above-mentioned vessels, as well as several others, have perforated holes near the rim, generally two, sometimes two pairs; these were probably used for tying on the cover.

Treasure jars of black ware with cover-lips are normally small and highly polished. They are characteristic of Nahuange. One of intermediate type, from Pueblito (Plate CCXIII, Fig. 2), has a partly blackened but unpolished surface and is of thicker ware. A few are of relatively large size, the surface not highly polished; possibly some of the red vessels originally had a black surface. These are from San Pedro Alejandrino (UM), 32 x 22 cm., and (MAI) 17 x 13 cm.; and Gaira

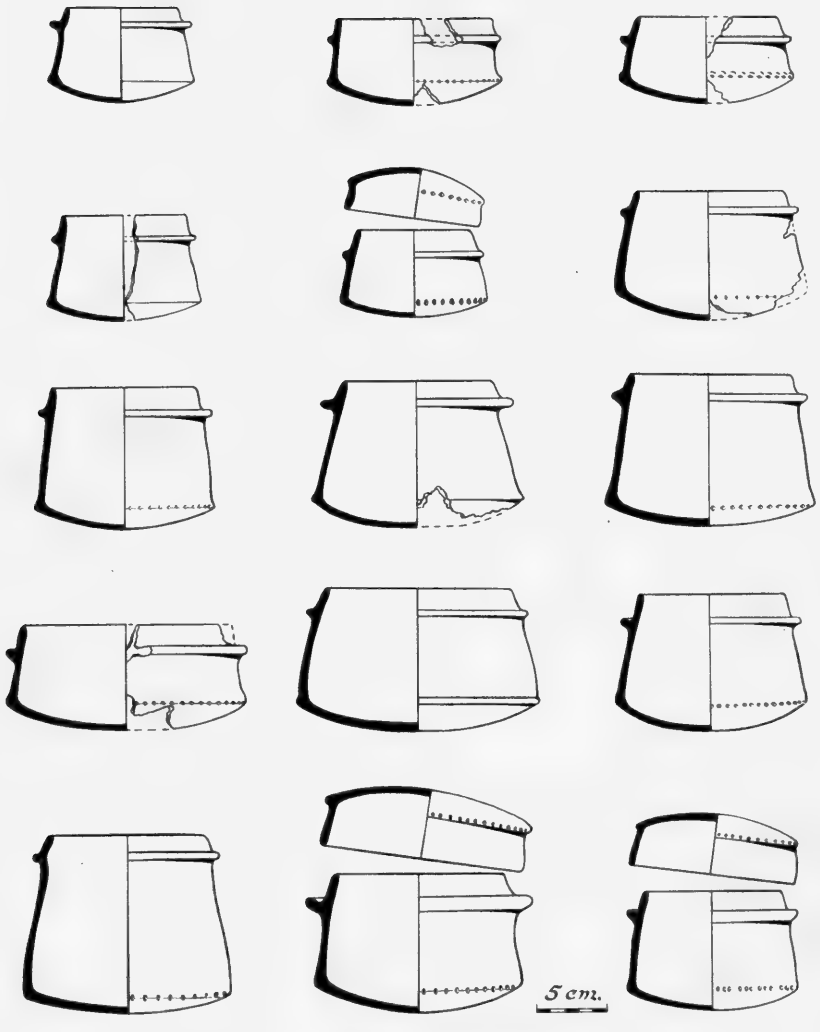


FIG. 18. Small red or black treasure jars.

(UM; Fig. 20, *h*), 22 x 13 cm., the latter heavy with a very slanting side. Another (MAI) is blackened only to the cover-lip, being of a gray color above; it has perforated holes near the rim.

Small black treasure jars are typical of Nahuange, where some fourteen of type A1 with cover-lips were found; most of these have a highly polished, black surface (Plate CCXIII, Figs. 1, 3; Fig. 18). All were excavated from sites 2 and 3 (pp. 36, 37). The sizes vary from 6.5 cm. high and 11 cm. wide to more than 10 cm. high and 20 cm. wide. The smallest are of very thin ware, only 3 to 5 mm. in thickness, and with a high black polish. The bases are typically convex, the angle with the side slightly projecting and filleted; the sides are generally slightly concave and sloping inward towards the top.

A small polished black treasure jar, now in the Heye Foundation but secured by the Field Museum Expedition, presumably at Nahuange, has the very unusual feature of a simple, incised decoration on the side (MAI; Fig. 22, *c*). It is of unusual shape and has a very slight cover-lip and an almost flat base, 9 x 17 cm.

A2. High Flanged-lip Jars

Only four treasure jars of the high type are known; three have ring bases, a feature unknown to the broad jars, and two of these have the unusual feature of relief decoration. One from Pueblito (Plate CCXIII, Fig. 4; Fig. 17, lower right), 31 cm. high and 20 cm. wide, has typical appliqué relief decoration; that of the other (MAI; Plate CCXVII, Fig. 1), 23 x 20 cm., shows an unusual standing, human or monkey figure. The third ring-base jar (AM; Fig. 21, *e*), 33 cm. high and 15 cm. wide, is of thick polished black ware. One of unusual shape, with very convex base and concave side, 27 cm. high and 15 cm. wide (UM; Fig. 20, *g*), from Pueblito, is of plain, rude, rather heavy red pottery.

B. JARS WITH INSET LIP

This type is characteristic of Nahuange; except for one small unique bowl from the neighboring bay of Gairaca all were secured at Nahuange, and all except one, purchased there and therefore of uncertain exact provenience, were excavated in the large tomb (pp. 32–36). The bowl-cover fits over a constricted neck. The type occurs in thicker black ware, plain or incised, and in painted ware.

B1. Black Jars

Seven examples are known, three plain and four incised. The plain ones have flat bases, and two of relatively small size have

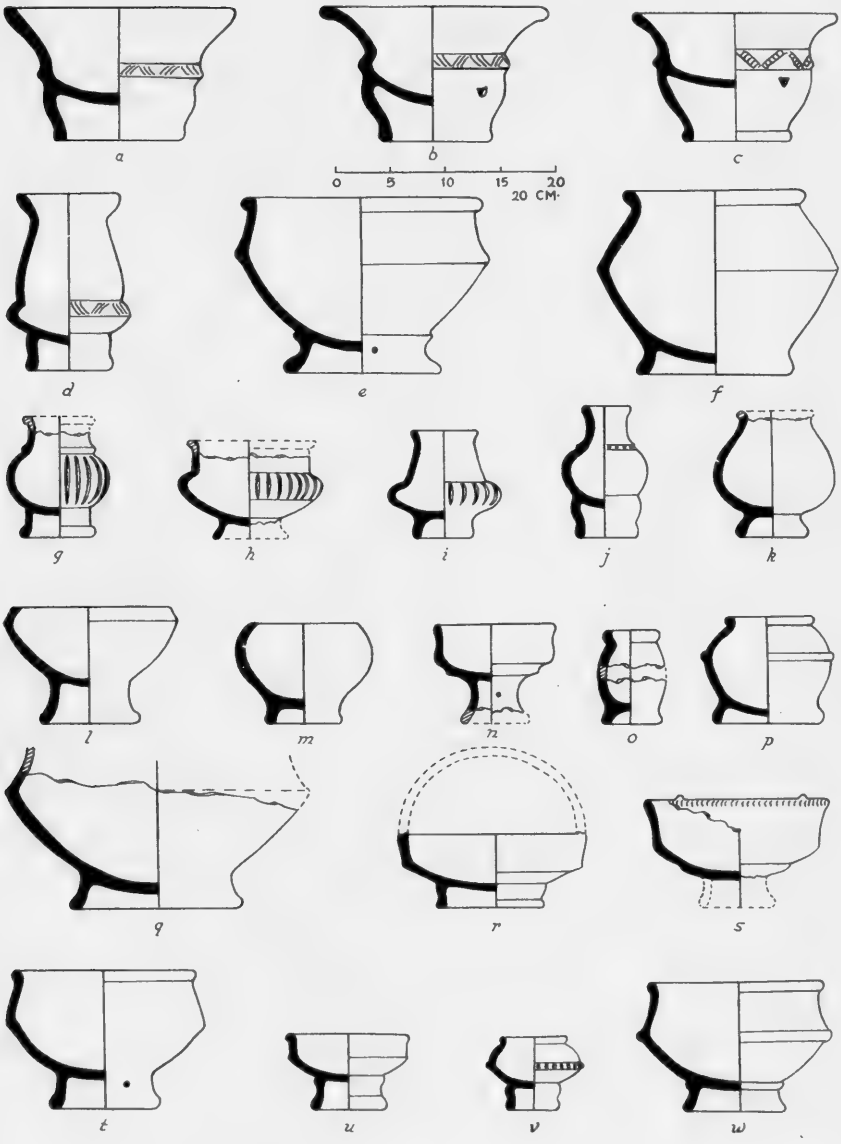


FIG. 19. Various black vessels. *a–c*, Bowls with broad orifices and constricting ring bases; *d–f*, *l*, *p–r*, *t–w*, Ring-base bowls and cups; *g–k*, Ring-base ollas; *m*, *o*, Miniature vessels; *n*, *s*, Kylix bowls.

straight, vertical sides (Plate CCXIV, Figs. 1, 2), 7 x 15.5 cm. and 7.5 x 7.5 cm., both of rather heavy ware. The third (Plate CCXIV, Fig. 4) is larger, 13.5 x 20.5 cm., and rather rude and asymmetrical, the side slanting, the neck even more so, with a narrow cover-ledge. Just below the ledge, on opposite sides, is a small, horizontal, loop handle with a small orifice, probably used for tying on the cover. The paste is more like that of the convex-base vessels.

The three incised jars, or rather bowls, have very convex bases and very sloping sides and necks. The paste is unusual, gray, sandy in texture, medium thick but of light weight, and, in the largest example, soft, rotten, and fragile. The two smaller ones are closely related in shape and design. The sides are decorated with a band of vertical incised lines, relatively widely spaced, broad and shallow, enclosed between horizontal lines at top and bottom. The smaller also has a horizontal line of dots above and below. On opposite sides is an undecorated space provided with a pair of low, circular knobs. In the larger specimen (Plate CCXIV, Fig. 5), 22.5 x 12.5 cm., these are placed horizontally; in the smaller (Plate CCXIV, Fig. 3), 12.5 x 9.3 cm., they are placed vertically, the area bordered with vertical incised lines and lines of dots. The largest bowl, in which many of the finest specimens were found (No. 16, p. 34) (MAI; Plate CCXVII, Fig. 5), 32 x 25 cm., is decorated on the side with broad, shallow, incised lines, crosses, and dots, exactly like those on the cover of the painted jar (Plate CCXV, Fig. 4; Fig. 16, *g*). This cover doubtless belonged to this bowl, although according to the field notes it was found on the painted jar. The latter is quite likely, as the two large jars are of identical diameter and height, and no painted cover was found to match the large, painted jar. The black, incised cover, moreover, does not exactly fit the painted jar. On the large, black, incised bowl there is also a very conventionalized, very low-relief, human face on one side and a small, low ring on the other, as well as low-relief, conventionalized feet at the base of the side.

The small, low bowl from Gairaca (Fig. 24, *i*), 8 x 3.8 cm., with flat base and vertical side, has a typical, carved and incised design on the side, consisting of short, straight lines in chevron pattern and circles in triangles.

B2. PAINTED JARS

Four of the five known vessels of painted ware (q.v.) are treasure jars, all of type B. They vary greatly in size but are homogeneous in shape. Bases are flat, sides vertical, and slightly convex, necks relatively high and, as in all cases, plain. All except the largest had

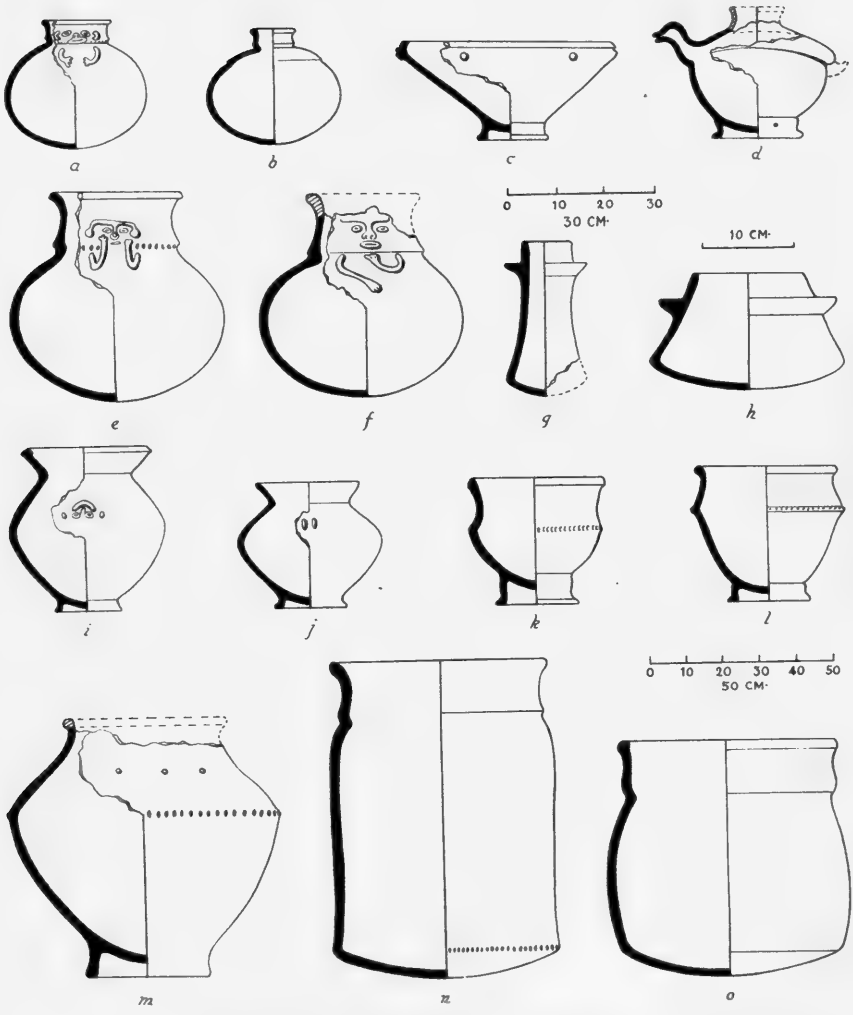


FIG. 20. Vessels in the University Museum, Philadelphia. *a*, Round-bottom red olla; *b*, Round-bottom black olla; *c*, Black ring-base bowl; *d*, Black effigy vessel; *e*, *f*, Burial urns of type B; *g*, *h*, Treasure jars; *i*, *j*, Red ring-base neckless jars without carination; *k*–*m*, Burial urns of type A; *n*, *o*, Burial urns of type D.

covers painted in designs similar to those on the sides of the vessels, all of which are described under "Painted Pottery" and shown in Fig. 23. The largest (Plate CCXV, Fig. 4), 32 x 25 cm., contained many of the fine ornaments that were found in the stone grave of Nahuange. The smallest (Plate CCXV, Fig. 3) is only 10 x 8 cm. This and a larger one (Plate CCXV, Fig. 5) are similar in shape and design and both have, at one point just below the cover-ledge, a small, round depression; a similar depression is on each of the covers near the rim. When these depressions are placed together, the painted designs on jar and cover match. They would seem to have no other function than to indicate the proper placement of the cover. The fourth jar (MAI; Fig. 22, *g*) is a trifle different in shape.

COVERS OF TREASURE JARS

Obviously, the covers of treasure jars were ordinarily made especially to fit the jar, of the proper size and the same type of ware and decoration.

Covers of red treasure jars ordinarily have practically vertical, low sides, but little higher than the distance from the lip to the rim of the jar, the tops (or inverted bottoms) convex. In most cases the edge where the side meets the top is filleted (MfV; Plate CCXX, Fig. 8). The cover of the largest known jar must have been about 50 cm. in diameter, but no covers were found over 24 cm. The maximum height is always less than one-half the diameter, the height of the side about one-third. One bowl from Pueblito, presumably of this type, is deeper: diameter 15 cm., maximum height 10 cm., height of side 7.5 cm.

The covers of the smaller, thinner, black jars are usually of the same shape (Plate CCXIII, Figs. 1–3). Diameters vary from 11 to 15.5 cm., maximum heights from 4 to 5.5 cm., heights of sides from 2 to 3 cm. Sides are straight, slightly convex, or slightly concave. A few lack the projecting filleted basal edge. The ware is generally thin, and the surface very highly polished black.

In two examples the convex top, or inverted bottom, is decorated with incised designs. That of one from Nahuange, very low with very convex top, 5 x 14 cm., with a side height of 3 cm., is in rather broad parallel lines with irregular, encompassing rings of dots. That of a rather large low bowl (UM) from Bonda Sabana, 6.5 x 21 cm., is a large six-pointed star made of dotted lines, the interior plain, the periphery finished in fine, incised lines in chevron pattern parallel to the lines of the points of the star.

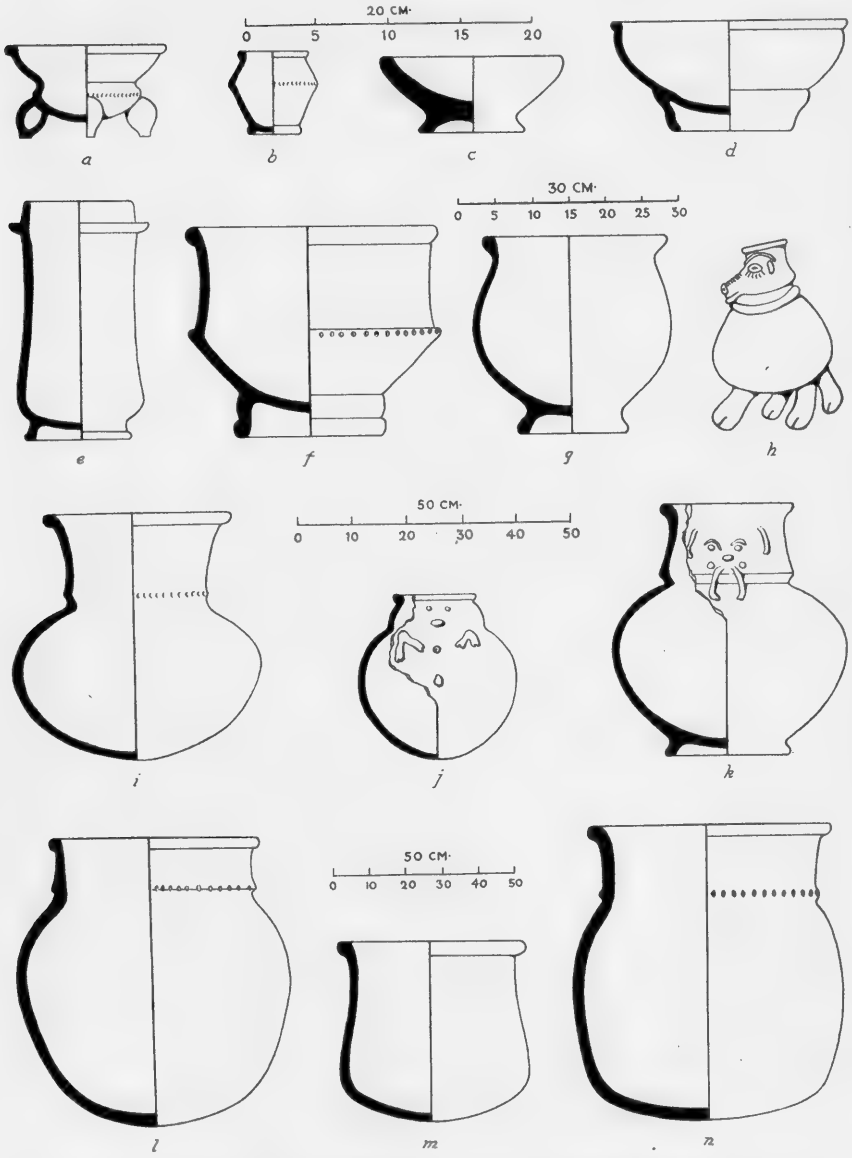


FIG. 21. Vessels in other collections. *a*, *l*, *m*, Carnegie Museum, Pittsburgh; *b*, *e*, American Museum of Natural History, New York; *c*, *d*, *f*, *g*, *i*, *n*, Museum of the American Indian, Heye Foundation, New York; *h*, Musée du Trocadero, Paris; *j*, *k*, Collection of Mr. William M. Sutherland. *a*, *h*, Black tetrapods; *b*, *d*, *f*, Black ring-base bowls and cups; *c*, Bowl of truncated cone shape; *e*, Treasure jar; *g*, Red ring-base neckless jar without carination; *i*, Burial urn of type B; *j*, Round-bottom red olla; *k*, Red jar with ring base and neck; *l–n*, Burial urns of type D.

Covers of treasure jars of Nahuange type B1, with inset lips, were probably always made to fit the jar, in size, shape, and ware. That of the black, incised jar (Plate CCXIV, Fig. 5) is of the same ware and resembles its jar very much, with very convex top and low, slanting, concave side. The decoration, a band of vertical, incised lines, is the same as that on the jar, and on opposite sides, near the edge, is a pair of low, rounded knobs to match those on the jar. Maximum diameter 22 cm., height 9 cm.

The bowl (Plate CCXV, Fig. 4) that was found covering the largest painted jar in the Nahuange grave was certainly made for another (MAI; Plate CCXVII, Fig. 5) which it matches in size, ware, and decoration. Ware is black, light, and porous, 7 mm. thick; maximum dimensions 28.5 x 10.5 cm. The simple design on the side, of large x's in shallow, wide, incised lines and dots (Fig. 16, *g*) is repeated four times. On the opposite sides there is a vertical plain band and a pair of low round knobs near the basal edge.

The three covers to the painted treasure jars (Plate CCXV, Figs. 2, 3, 5) are of simple shapes, the tops practically flat, the sides straight, slightly slanting, and relatively high. The ware, rather thick and light in color, and the painted designs on top and sides (Fig. 23, *a*, *b*, *e*, *f*, *h*, *i*), matching those on the corresponding jars, are described under "Painted Ware." Two have, near the rim at one point, a circular depression; when this is placed above a similar depression on the jar the designs match. The cover (Plate CCXV, Fig. 2) to another jar (MAI; Fig. 22, *g*) lacks this depression. While this cover fits and matches this jar, it was not found covering it, but lay in the Nahuange grave inside the very large, black, incised jar (MAI; Plate CCXVII, Fig. 5), in which position it contained beads and other ornaments and ceremonial objects.

PAINTED WARE

By the term "Painted Ware" is meant dichrome pottery, vessels painted in designs of one color on a surface of a lighter color. Trichrome or polychrome pottery is unknown. Since it was found only at the site of Nahuange (pp. 31–39) and mainly in one grave it must be considered not typical of Santa Marta ceramics. The analysis of the only available painted sherd indicates, however (Appendix: Non-Typical Local Sherd "*b*"), that its composition is closely related to that of the black ware, and it is considered a local type. The pigment used in the painting is iron oxide.

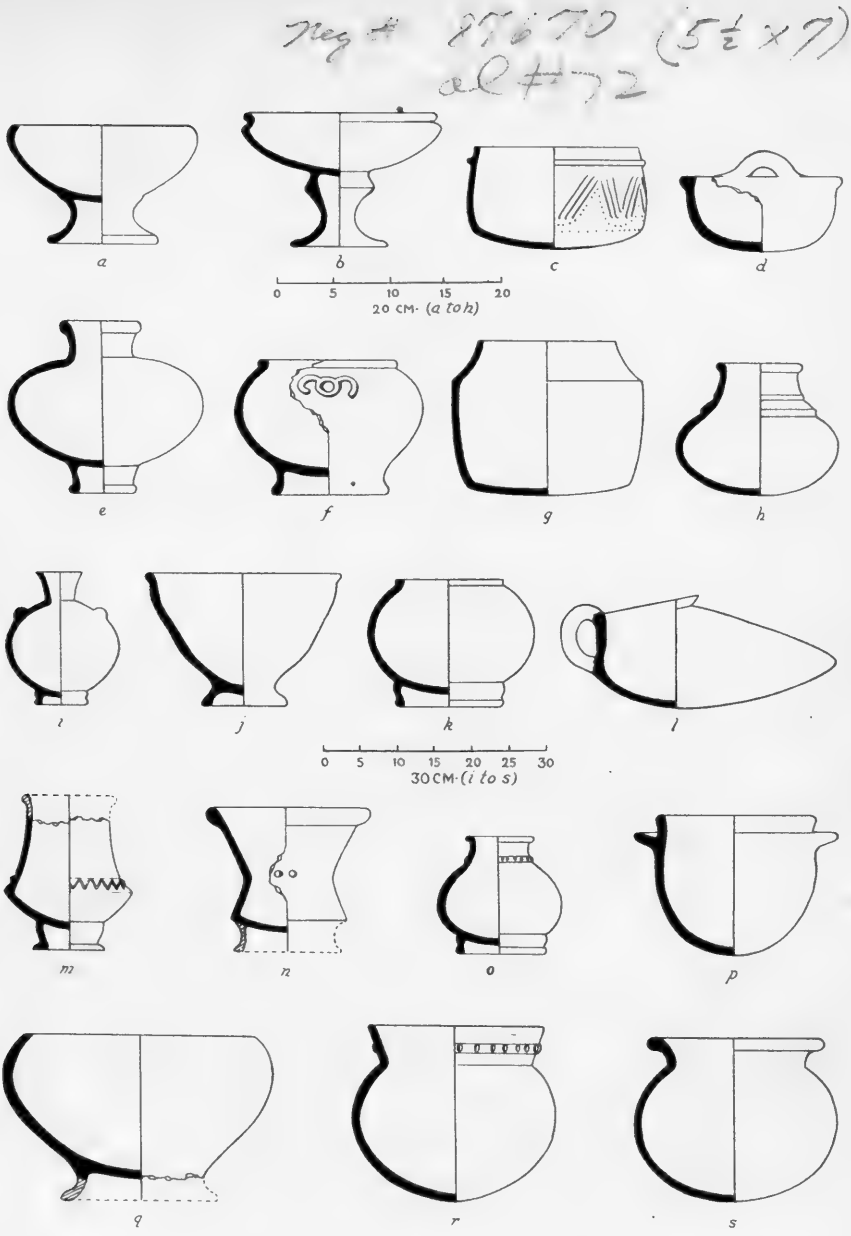


FIG. 22. Vessels in other collections. *a*, *c*, *d*, *f–m*, *q–s*, Museum of the American Indian, Heye Foundation, New York; *b*, *n*, *o*, American Museum of Natural History, New York; *e*, *p*, Carnegie Museum, Pittsburgh. *a*, Fine red bowl with flaring base; *b*, Kylix bowl; *c*, *g*, Treasure jars; *d*, *p*, Bowls with loop handles; *e*, *i*, *o*, Black ring-base ollas; *f*, Vessel with tubular spout; *h*, Black round-base vessel; *j*, *q*, Red bowls of truncated cone shape; *k*, *m*, *n*, Black ring-base bowls and cups; *l*, Shoe-shaped vessel; *r*, *s*, Round-bottom red jars.

In the American Museum are a few sherds and fragmentary vessels of very similar appearance. An analysis of one from the "Region of the Chimilas" indicated a composition identical with that of the Nahuange sherd. The Nahuange vessels are therefore presumably importations from this region, probably on the southwest side of the Sierra Nevada, not far from the town of Fundacion. The mineralogy of this region is probably not very different from that of the Santa Marta district; the clays are probably of a similar composition. Another provenience of painted pottery on the south side of the Sierra is Molina, near Villanueva, fifty miles south of Rio Hacha. Other painted vessels, however, point in the direction of Venezuela, as do the jade objects found in the Nahuange grave. Sherds with somewhat similar, simple designs, painted in brown or red on a pink-buff or cream slip, are recorded from San Ramon and Barrancas, near Rio Hacha. The composition of analyzed sherds from Rio Hacha, however, indicates a technical difference, as these are sherd-tempered.

Nine examples of painted pottery were found, eight vessels in the grave at Nahuange (Plate CCXV) and one, a sherd, in the soil in near-by site 2. The analysis of the sherd is given in the Appendix. One jar was exchanged to the Museum of the American Indian (Fig. 22, *g*).

The eight vessels consist of four jars of the treasure-jar type, B2 (q.v.), three of which have covers of the same ware; one is a vase with ring base. The latter was found within a bowl of black, incised ware. These four treasure jars are of a type that is especially characteristic of Nahuange. The form is more fully described under the heading of "Treasure Jars"; the present interest is in the decoration. Extended drawings of the painted designs on the seven specimens in Field Museum are illustrated (Fig. 23).

The designs, now generally faint and eroded, are painted in shades of red or brown on buff or cream. On those that were encrusted with dirt it was difficult to remove the encrustation without erasing the design also.

The largest vessel, No. 154572 (Plate CCXV, Fig. 4), has a very faint design (Fig. 23, *j*). The designs are large, geometric, and mainly curvilinear. The ware is rather thick, probably 8 mm. average thickness, and 1.2 cm. thick at the rim.

The decoration of jar No. 154584 (Plate CCXV, Fig. 5) is in better preservation. The designs on the side of the vessel and the side of the cover match and are identical, and that on the top of

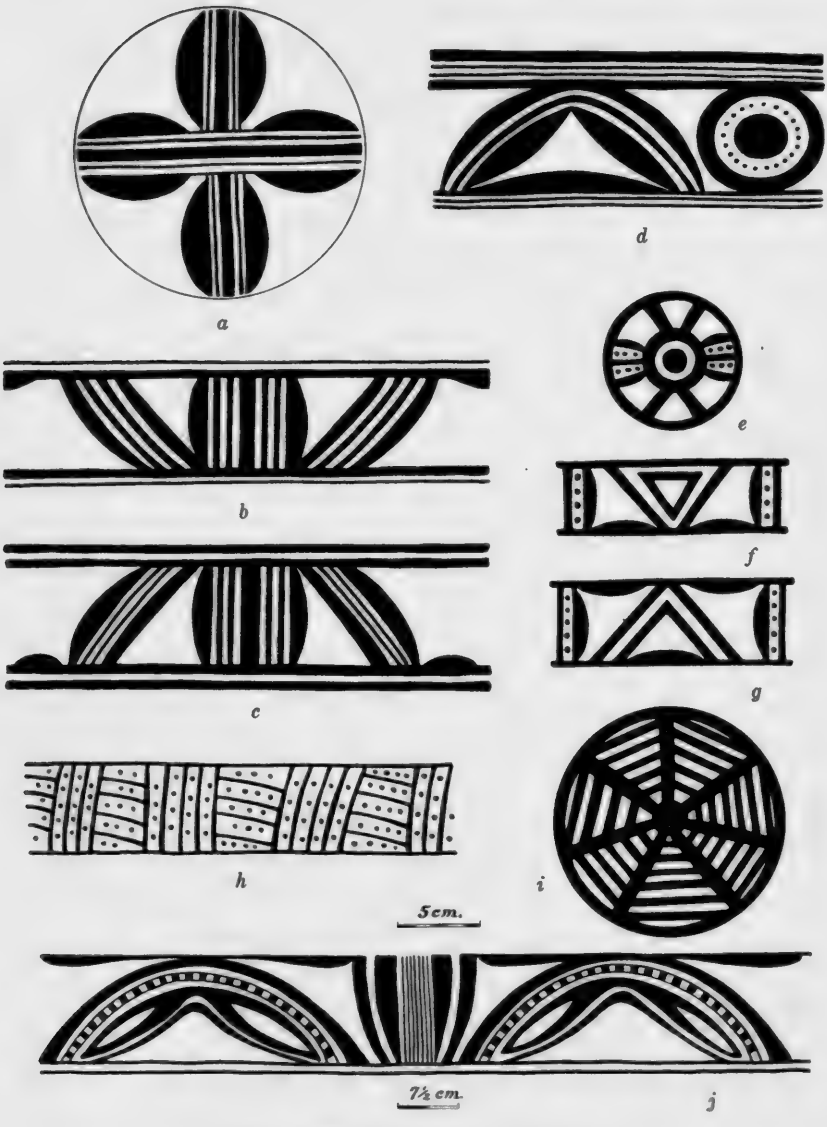


FIG. 23. Designs from painted vessels.

the cover is similar (Fig. 23, *a–c*). The slip is a pinkish-buff; the designs are in red. The design on the smaller jar and cover, No. 154552 (Plate CCXV, Fig. 3), shows the same general concept (Fig. 23, *e–g*). The paste is thick and of light color.

The vase, No. 154805 (Plate CCXV, Fig. 1), is of a simple shape with ring base and wide orifice, somewhat similar to some shapes found in black vessels; the basal ring is quite flaring. It is 14 cm. wide and 12 cm. high; thickness of paste about 1 cm. The design, of the same nature as the designs on other painted vessels, is in red-brown on whitish-buff (Fig. 23, *d*), and is repeated on either side.

The designs on the other treasure jar are different and the red color is darker and brighter than in the other specimens. The top of the cover (Plate CCXV, Fig. 2) is painted with broad lines radiating from the center and connected by shorter, parallel lines, the side with short, thin, parallel, vertical and horizontal lines filled with dots (Fig. 23, *h*, *i*). The surface and designs of the jar (MAI; Fig. 22, *g*) are very similar to those on its cover, parallel lines and dots, rather simple and rudely made, on buff ware with a cream slip.

LIGHT-COLORED WARE (EXOTIC)

A very few fragmentary objects were found made of a paste of very fine texture, a smooth-surfaced, creamy or buff ware very different in superficial appearance from any other paste found in this region. The shapes are also unique, as well as the decoration of fine, thin, deep, short, incised lines. The exotic nature was borne out by an analysis of a sherd from Vista Nieve, a high-mountain site; the composition of the paste was found to be very different from that of typical Santa Marta sherds (Appendix: Sherd Apparently of Alien Provenience "*g*"). The vessels were almost certainly imported. The Collection of Dr. F. C. Nicholas in the American Museum contains some very similar vessels and fragments, of cream-colored ware daintily decorated with small designs in fine, thin, deep, short, incised lines; these come from El Cerro, six miles below Calmar(?) on the Magdalena River. This region is therefore presumably the source of the ware. In the same collection is a similar sherd from Don Diego.

The only three fragments that suggest any vessel shape seem to be olla necks, or, less probably, kylix bases. No. 153824 from Pueblito (Fig. 24, *a*) is apparently the mouth, neck, and rim of a small-mouth jar of hard, light-colored ware. No trace of a glaze or of the marks of a potter's wheel are noticeable. The rim is bent

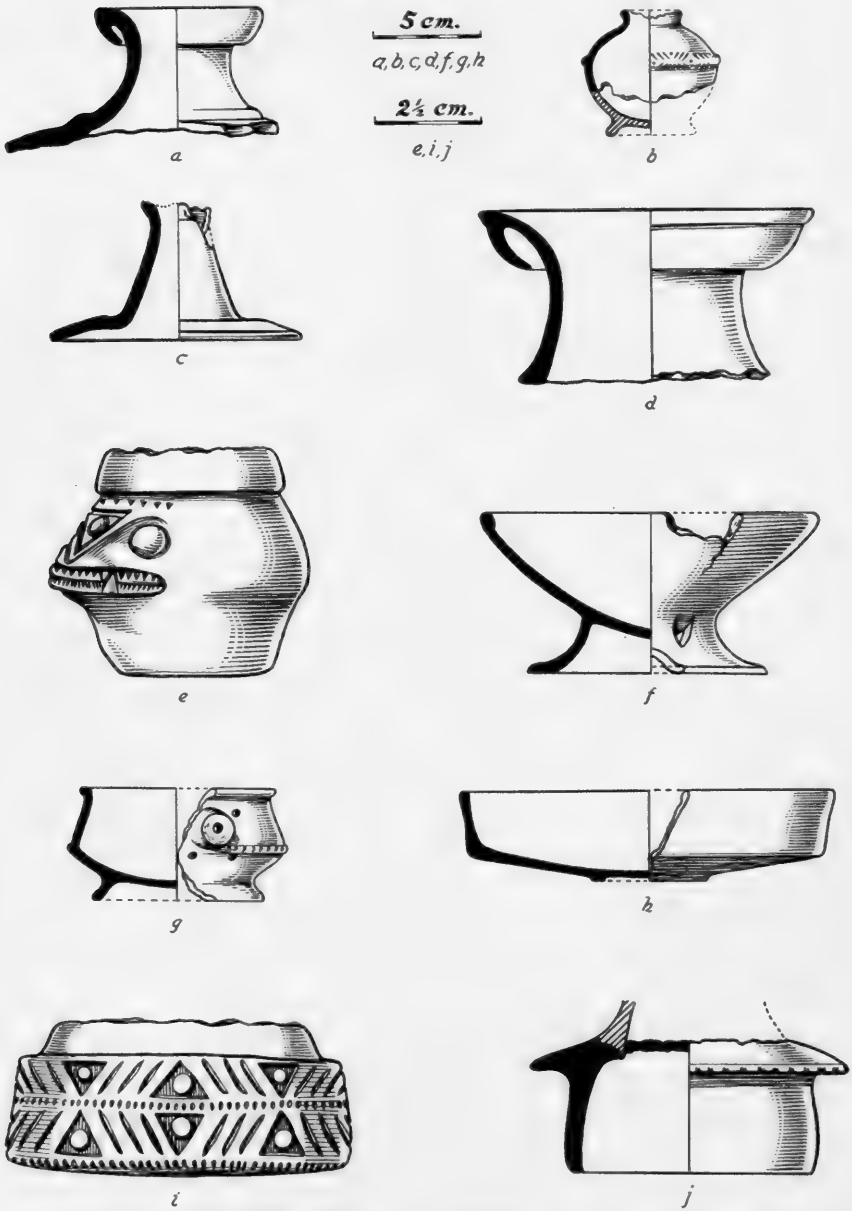


FIG. 24. Unusual small vessels and fragments. *a*, *c*, *d*, Parts of vessels of exotic light-colored ware; *b*, Black ring-base olla; *e*, Small effigy vessel of fine carved ware; *f*, Black grater bowl; *g*, Vessel with tubular spout; *h*, Ring-base bowl; *i*, Treasure jar; *j*, Miniature vessel.

over like a collar, the minimum width of the orifice being 2.5 cm., that of the rim 7.5 cm. There are two rings of dots around the outside of the rim, and on the shoulder just below the neck is a band of decoration in fine, incised lines consisting of rows of dots, concentric lines, and a band of cross-hatching. Gregory Mason secured an almost identical neck at Gairaca (MAI). It has three rows of small dots near the rim and a collar at the base of the neck with a band of finely and delicately incised decoration consisting of a line of dots and a band of parallel, slanting, short lines.

No. 154608 (Fig. 24, *d*), excavated at Teran, is similar but larger, of white ware, undecorated, 15 cm. in width at the rim and 8.5 cm. in height. The base is perfectly flat but the base rim is irregular. It may be that the latter is merely chipped, and this specimen looks more like a slightly damaged pot-rest than the broken neck of a vessel.

The third specimen, No. 154896, from Gairaca (Fig. 24, *c*), is a high, conical object of fine, smooth, buff pottery. The larger end is very flaring, like the neck of a vessel or the base of a kylix bowl. The pointed end is broken and the orifice there very narrow. It may be either the high base or the narrow neck of a vessel, probably the former.

A sherd of this ware, with fine, incised cross-hatching, found at the mountain site of Vista Nieve, was analyzed. Two analyzed sherds from the American Museum and the Heye Foundation, unfortunately of unknown proveniences, are of similar composition. A ring base of whitish ware, bought at Taganga, very much resembles the painted olla (Plate CCXV, Fig. 1) and might be such a vessel with the paint eroded, but is at present undecorated, rather rudely finished, and apparently had a rim now missing.

OTHER OBJECTS

Except for ocarinas, pottery objects other than vessels are uncommon. In addition to those here noted, a few pottery beads were found (p. 228; Plate CXXIII). Small, effigy vessels of fine, carved ware are classified here, as the vessel form is evidently secondary to the effigy shape and they are intimately related to certain classes of ocarinas; both are of brown or black pottery. Most of the other objects are of red ware, generally thick, sometimes solid. Miniature vessels and cut sherds may be of any ware; the former might well have been considered as vessels. On the other hand, ladles, considered as vessels, might well have been classified here; they resemble pestles in many particulars.

Pestles

Short, thick, conical pestles of heavy red pottery are apparently characteristic of the culture, though not common; they may have been used for grinding salt crystals, chili, or similar substances. The bases are hemispherical and often worn, sometimes striated, the body tapering. Though heavy and with thick walls, there is probably always a small hollow interior which often, or normally, contains a rattling pellet, though in no case was any air-vent noted. The handle end is probably always modified into an animal head. Some of the objects considered to be fragmentary ladle-handles may be actually pestles.

Pestles such as are described above are found in the following museums:

AM (Plate CCXXVIII, Fig. 5): 5.5 x 10 cm.; pitted base; animal head.

AM (Plate CCXXVIII, Fig. 1): worn base; animal head; rattles.

CM (Plate CLXXXVI, Fig. 4): 5.5 x 8 cm.; animal head with large cup-shaped eyes; rattles.

FM (Fig. 25, *d*): 4 x 8.5 cm., the only one found by Field Museum Expedition; Bonda; base with radiating striated lines; broken and probably bore an animal head.

UM: 4.5 x 10.5 cm.; Bonda; human head.

MAI: Three from Tairo, Pueblito, and Gairaca; base of one pitted, of another striated; end of one in an animal head with a long snout.

An object (GM) that is probably a double-ended pestle, 5 x 10 cm., is of apparently solid, reddish pottery, quasi-cylindrical with slightly concave sides and very convex ends, both punched with many small, round depressions.

A unique object from Dibulla (AM; Plate CCXXVIII, Fig. 6) probably partakes of the nature of a pestle. The base of the quasi-globular body is worn as if it had been used for grinding. It may have been used as a rattle also, although there is a broken hole which prevents determination; the walls are thick red pottery, but the interior is hollow. The upper end is enlarged into a human head and at the top are two rows of large holes, six in one line, five in the other. The purpose of these holes is unknown; while the interpretation may be unduly based on modern analogy, it would serve perfectly as a combined salt-grinder and salt-shaker.

RATTLES

Only one object that was apparently primarily a rattle is known from this region, a unique specimen (MAI; Plate CCXXVII, Fig. 8) from Gairaca. It is a figurine of a quadruped animal, possibly a reptile, 19 cm. long by 7.5 cm. wide, and 14 cm. high to the top of the tail. Of heavy red pottery, it would be presumed to be solid if it did not produce a rattling sound.

Certain other objects seem to be secondarily rattles. Pottery pestles (q.v.) often or generally produce a rattling sound; here also the walls are very thick and the objects would be presumed to be solid but for this sound and the evidence of one or two broken examples. Hollow tetrapod legs and hollow relief elements, generally animal heads, on vessels are also sometimes provided with rattling pellets, but the usage is apparently unusual.

STAMPS OR "SEALS"

Small, symmetrical, pottery objects with deeply incised or carved designs are generally termed, and considered to be, stamps or seals, though this identification is probably purely deductive. Stamps with a flat surface and projecting handle, characteristic of Mexico, were probably used for this purpose, but cylindrical "seals," characteristic of the Colombian highlands, may have served some other purpose.

Cylindrical objects of this character are certainly native to the Santa Marta region, though not common; seven examples are known, three excavated by the Expedition. One example of the stamp

type was purchased at Taganga, but since the provenience of the specimen is uncertain, this type cannot be certified for this culture. All these objects are of heavy red pottery, generally coarse in texture.

A cylinder (Plate CCXXV, Fig. 1) excavated at Pueblito is small and rude, 3 x 4.5 cm., the ends rough. It is pierced by a longitudinal shaft. Four encircling and ten longitudinal, deep grooves produce thirty cog-like rectangular knobs. A fragmentary cylinder secured by Gregory Mason at San Pedro Alejandrino (UM) is similar in all respects but with more projections, four horizontal rows, and apparently at least fourteen vertical ones. Another small, rude cylinder (UM; Plate CCXXVI, Fig. 11) from Mamatoco, about 3.5 cm. long and wide, has a small central shaft, and two decorative bands of triangles with parallel, slanting lines.

The best complete cylinder (Plate CCXXV, Fig. 2), from Bonda, has a deeply carved design, repeated on opposite sides, of guilloches and triangles with central dots, elements typical of the art of the region. It has the longitudinal shaft and high, terminal ridges; dimensions 3 x 4.3 cm. A fragmentary cylinder from Gairaca (MAI; Plate CCXXVII, Fig. 6) has a deeply carved design of triangles, slanting lines, and circles. A specimen secured by Dr. F. C. Nicholas at Dibulla (AM; Plate CCXXVIII, Fig. 3), 7 x 3.5 cm., is solid without any shaft; the eroded design is of concentric circles. The largest cylinder, fragmentary (Plate CCXXV, Fig. 3), had a large shaft, about 2 cm. in diameter; the maximum diameter was apparently about 5 cm., length 8 cm. The design is deeply carved in two bands with central and terminal encircling lines. Like many of the unusual objects, it was excavated at Nahuange, in site 3.

The flat stamp with a handle (Plate CCXXV, Fig. 6), purchased at Taganga and therefore of uncertain comparative value, is of solid pottery, 3.7 x 5.7 x 3.8 cm. The quasi-rectangular base contains a very deeply molded, simple design. In the center is a long rectangular depression with five raised knobs; on either side of this is a row of depressed triangles, and a deep depression at each corner. Probably also a handled stamp is an object of solid pottery from Don Diego in the form of a pestle (AM; Plate CCXXVIII, Fig. 4; shown from the end). The end is round and flat, with a geometric rosette design that is deeply incised and sharply cut.

TOBACCO PIPES

The existence of tobacco pipes in the pre-Columbian cultures of Santa Marta is open to question. No example was excavated and

none is known in other collections, but one was purchased in Bonda, together with other archaeological objects (Plate CCXXV, Fig. 8). Since in size and shape it resembles pipes recently found in Venezuela the presumption is in its favor. It has a small bowl with very short stem, 2.7 x 3.7 x 3.2 cm., and was probably provided with a longer stem of a reed or similar vegetal material. The orifice in the stem is relatively large. The surface varies from reddish to blackish in color.

SUPPORT FOR FIGURE

An unusual object, one of the only known pair, a pottery stand for the support of a figurine (UM; Plate CCXXXII, Fig. 6), was lent to the University Museum by Mr. William A. Sutherland, formerly of Santa Marta. Its purpose is beyond question. It is of low, truncated cone shape, the sloping side deeply carved with a typical Tairona design consisting of parallel, triangular lines enclosing circles. Two large holes penetrate the stand from top to bottom, and in front of each, in natural position, is a human foot in relief. Unquestionably the legs of a human figure were inserted in these holes; probably the figure was of gold. Dimensions 7 x 3 cm.; ware orange-buff.

ABSENCE OF SPINDLE-WHORLS

The absence of identifiable pottery spindle-whorls—or whorls of any material—is a noteworthy characteristic. If present, a goodly number of them should have been found. In the Berlin Museum is one from the collection of De Brettes and presumably from the coast of Santa Marta; but as it is unique in this region, and identical with whorls from the central highlands, it has been considered a trade object.

SMALL DISKS

Small pottery disks may have served any one of several purposes, such as covers or stoppers for vases, as parts of games, or as toy replicas of larger plates. Only two were secured by the Expedition, both of coarse red pottery, apparently without slip, and both excavated at Mandigua. One (Plate CCXXV, Fig. 4) is circular, 6.5 cm. in diameter, thin, 8 mm. in thickness, and slightly concave with a slightly thickened rim. A similar specimen, of uncertain provenience (AM), is 5.5 cm. in diameter. The other, fragmentary (Plate CCXXV, Fig. 5), 7.8 cm. wide and 7 mm. thick, is rather rudely made but thin, the rim slightly upcurved. Just inside the rim is an irregular ring of small perforations. Much larger and thicker disks or plates with a similar ring of perforations are known

(Fig. 1, *c*), which indicates that the smaller specimen, at least, may be a miniature, model toy.

CUT SHERDS

Potsherds with the broken edges ground to regular shapes are common in many parts of America and are found in the Santa Marta region. Some are roughly circular, others roughly rectangular. Some of the former may have been used as olla-covers, but the most usual assumption is that all were used in games or for some esoteric purpose. Most of them are of thin ware, generally black or dark, but sherds of both thick and thin red wares were also employed.

Round, cut sherds were excavated at Pueblito and Cinto (UM; Plate CCXXVI, Fig. 1); average diameter 2.5 to 5 cm. One of unusual width, 9.5 cm., of thick red ware, found at Gairaca, may belong in a different class. Many quasi-rectangular sherds were excavated at Nahuange (UM; Plate CCXXVI, Figs. 2, 3) and one at Palmarito; sizes range from 2.5 x 3 cm. to 4.5 x 4.5 cm.

MISCELLANEOUS SMALL OBJECTS

A small sherd of black pottery, 2.8 x 3 cm., excavated at Pueblito, the edges ground to oval shape, has a biconical, drilled perforation near one end that permitted its use as a bead or pendant (Plate CCXXV, Fig. 9).

A small, thick, ovoid ball, 1.8 x 3 cm., excavated at Gairaca, has a punched perforation (Plate CCXXV, Fig. 7), and presumably was a large bead.

At Taganga was purchased a much eroded but well-molded human phallus of solid red pottery, 3 x 7 cm. It might have been the handle to a ladle. Since its original provenience is doubtful, it is not shown in the plates.

A small object of solid dark pottery, of unknown purpose, 4.2 x 2 cm., purchased at Teran, is tapering and conical with a deep, broad, conical depression at the broader, flat end (Fig. 25, *b*).

A fragmentary object of solid, very red ware and uncertain purpose (Fig. 25, *a*) was presented as having come from Durcino near Gaira. It is covered with deeply incised designs and may be a stamp or seal.

In an urn with a child's burial at Gairaca was found a fragment of polished black ware of very unusual form and uncertain nature (Fig. 24, *j*). Not enough remains to make the shape certain; it may be a ring-base bowl with a flange, the base now missing, and shown

upside down in the Figure, but the appearance is more that of a stopper-cover for an olla, the cover fitting inside the vessel neck and resting on the flange, instead of outside, as in the case of treasure jars.

MINIATURE VESSELS

Very small, pottery vessels fall naturally into two classes: those that are carefully made, either of black or red ware, generally miniature examples of larger vessels (Plate CCXXX), and those that are heavy and rudely shaped (Plate CCXXIX).

The small, rude vessels are often difficult to distinguish from fragments of red relief from urns, but seven examples were found that show no evidence of having been broken away from larger vessels; their purpose is problematical. Three of these, from Mandigua (Plate CCXXIX, Figs. 1, 2) and Taganga (Plate CCXXIX, Fig. 3), are of a rude crucible shape, very poorly formed, with slightly constricted bottoms and vestigial ring bases. Two others, from Pueblito and Pueblo Bernardo, are of vase or lamp-chimney shape, with good ring bases and constricted orifices (Plate CCXXIX, Figs. 4, 5). Each has a pair of punched holes, probably for suspension. Those in the complete specimen are on opposite sides near the rim, those in the broken specimen close together on one side. One from Bonda (Plate CCXXIX, Fig. 7) is shorter and broader. The last, from Pueblito (Plate CCXXIX, Fig. 6), is of a peculiar heart-shape with a rather pointed base. The orifice is small, and the rim—and neck, if any—are broken off.

Some of the carefully made miniatures are small replicas of much larger vessels and may have served as toys or as mortuary representations. Others are merely the smallest sizes of vessels which are normally small; these probably should not logically have been included in this group. There is a continuous gradation in size, and some specimens here considered as miniatures may be larger than some considered in their proper grouping according to shape.

A selection of the better-made miniature vessels is shown in Plate CCXXX. With the exception of Fig. 5, those in the upper row are of finer ware, mainly polished black, and are very small sizes of normally small vessels; the rest are small replicas of normally large vessels and are of the coarser red ware, except Fig. 9.

Four (Plate CCXXX, Figs. 1–4) are carefully made ring-base vessels of various forms. Two were excavated in site 31 at Pueblito, two bought at Taganga. Two are decorated with incised designs and one with relief. The latter (Plate CCXXX, Fig. 2), 5 x 5 cm.,

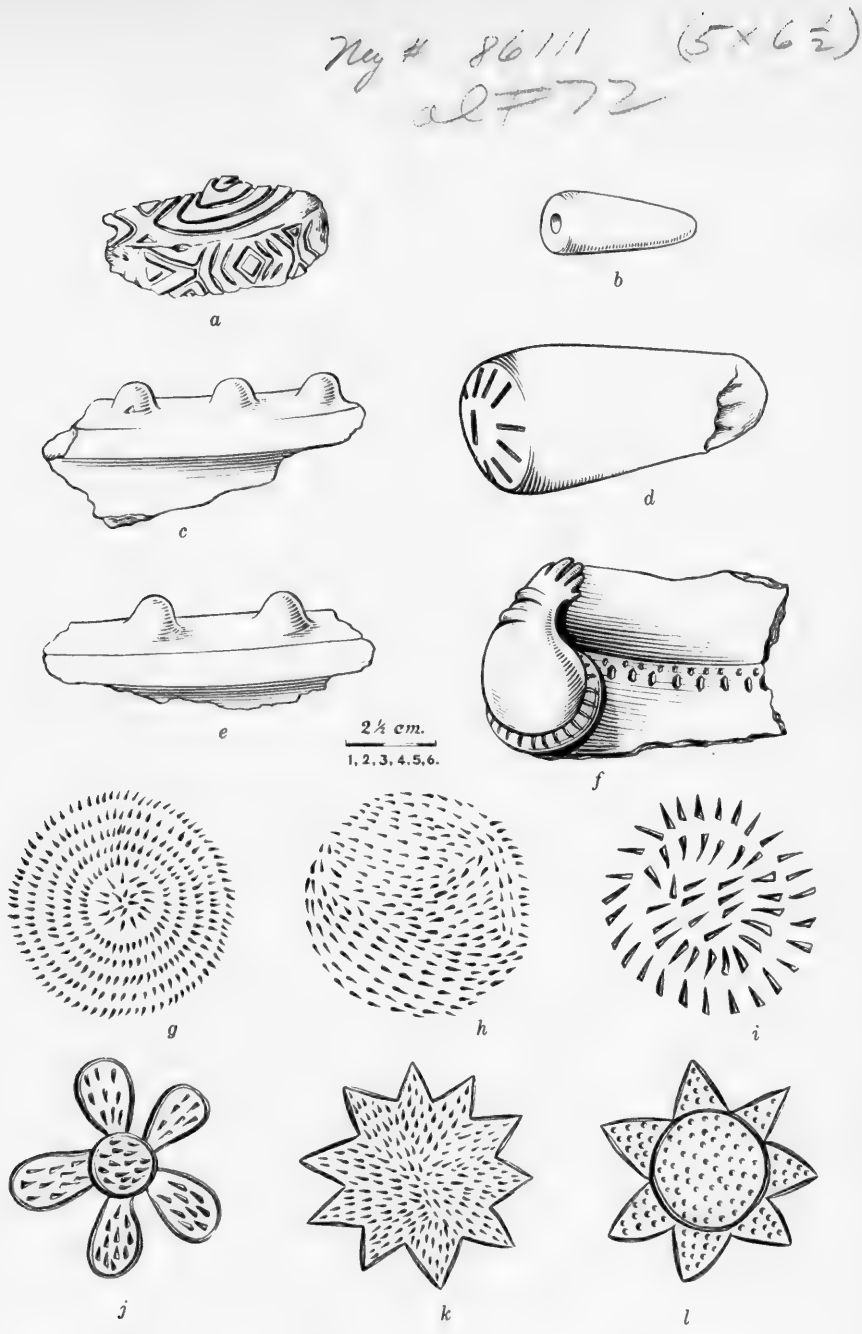


FIG. 25. Unusual small objects and fragments. *a*, *b*, Miscellaneous small objects; *c*, *e*, *f*, Relief from black vessels; *d*, Pestle; *g–i*, Interiors of red grater bowls; *j–l*, Interiors of black grater bowls.

excavated at Pueblito, is unusual. On one side there is a band of relief decoration that extends, slanting, from the rim to a filleted ring near the base; this relief is hemispherical in section and is decorated with incised straight lines and dots. The same decoration (Fig. 16, *e*) is found on two other larger vessels. The small hemispherical bowl (Plate CCXXX, Fig. 9), of very thin gray ware, was also excavated in site 31 at Pueblito.

Five other miniature vessels were found in the ceremonial center of Pueblito. One is a tall olla (Plate CCXXX, Fig. 8), of heavy yellowish ware, 8.5 cm. high. Another of similar shape, of thin red ware, containing beads, was excavated in site 31 (Fig. 19, *o*). The interior is constricted at the base of the neck, a feature found in some large burial urns of type B. One of black ware that contained beads and gold ornaments was found in the stone grave in site 29 (p. 92), and another of thin brown ware, also containing beads, in site 32. The last is a dainty bowl of kylix-base type, well shaped, of thin red ware, 8.5 x 11 cm. (Fig. 19, *n*), already described as a kylix bowl.

Five miniature vessels were found at Gairaca. A double-handled bowl of red ware (Plate CCXXX, Fig. 7), 11 cm. wide, is of the same shape as much larger vessels, and was probably a girl's toy cooking-vessel, as it was found in a child's burial. Another single-handled vessel of heavy red pottery, 9.5 x 7 x 5.5 cm. (Plate CCXXX, Fig. 6), was probably also a toy. The other three are ring-base bowls, one the shape of a cover-bowl to a burial urn, of heavy red ware, rudely made, another of black ware, quasi-globular, with inverted rim (Fig. 19, *m*).

Two miniature vessels were excavated at Mandigua, a fragment of the base of a tiny red olla with a low ring base, the lower edge scalloped with large knobs, and a small, rude, heavy, low, round-base bowl with one lug on the rim, 6.5 x 2.8 cm. Two other small round-base bowls were found. One from Los Congolos (Plate CCXXX, Fig. 5) is tiny and red, 4.3 x 2 cm., with a pair of perforations near the rim. The other, from the Arecife cave, is a deep bowl with everted rim, of thin, very red ware, 12 x 7 cm.

FIGURINES

In contradistinction to Mexico and Central America, simple pottery figurines, either animal or human, are practically unknown in this region. Fragments of animal or human figures are very common, but the majority of these are obviously either parts of

whistles or ocarinas or fragments of relief from vessels, and almost all the remainder could be such and presumably are. Only a very few objects were found by the Expedition that are presumably simple figurines (Plate CCXXXI, Figs. 3–5).

Two very similar and very peculiar figurines come from the same place. They are so different in appearance from most Tairona ceramics as to suggest that they belong to a different culture, though other objects from these places near Gaira show no such pronounced peculiarities. A cultural difference might be expected here, as the region is very arid and sandy. It is not impossible that they are post-Columbian, though they display no non-aboriginal characteristics. Both are apparently of solid pottery, light in color and rudely made, though naturalistic. One of these (Plate CCXXXI, Fig. 4) was presented to the Expedition as having come from Dursino, near Gaira. It represents a man with a child on his back. The child is facing backwards, and bound; only the head is visible. There is a compressed band around the man's body and a large hole in the breast, below which the arms are folded. The feet are large, as are the facial features. On the head is a flat turban, and a sort of kerchief covers the back of the head and the sides of the face. The general effect is good but the details are rude; 4 x 4.5 x 8.5 cm.

The similar specimen (UM; Plate CCXXVI, Fig. 5) was secured at Gaira by Gregory Mason. It consists of only a head, which is of light-colored paste, 3 x 3.5 x 4 cm., solid, but pierced from top to neck with a small shaft. The slightly concave, flat top, and the kerchief on the sides of the face are the same as in the preceding specimen. The nose is elevated, the eyes, nostrils, and mouth incised.

The same cowl and flat crown are seen on an ocarina of uncertain provenience (MfV; Fig. 26, *d;* Plate CCXLIV, Fig. 17), also of reddish-yellow pottery, and on the bone figurine from Gairaca (Plate CXXV).

The other objects in Plate CCXXXI may be fragments of figurines, but in view of the almost total absence of these they probably are of another nature. The specimen in Plate CCXXXI, Fig. 5, is a massive, short, thick, hollow leg and foot, probably human, with buttocks and traces of male sex organs; it might be the base of a human effigy vessel. Bought at Taganga, the original provenience is uncertain. Another short leg or foot, also secured at Taganga, 4 x 6 x 6.5 cm., is solid and massive, like an elephant's foot, oval at the base, with five or six extensions as if for toes. This may also be a supporting leg of an effigy vessel.

Plate CCXXXI, Fig. 3, shows a large, hollow, seated female human figure, of thick pottery, the head missing; 8 cm. wide, present incomplete thickness and height 5.5 cm. and 8 cm.; also purchased at Taganga. Though there are no whistle orifices in the part preserved, and no whistles of this type are known, it is most likely a part of a whistle. The legs are short and elephantine, probably hollow and possibly originally rattling, with small holes in the soles.

The two small fragments in human form (Plate CCXXXI, Figs. 1, 2), of fine, hollow, incised pottery, may also be parts of whistles, possibly of the nature of the fine one shown in Plate CCXXXVII, Figs. 1 and 2.

Two similar objects of solid red pottery in the rude form of birds with head and tail broken off were bought at Taganga. As they have slightly flattened bases on which they rest, obviously they are not relief fragments; if they were whistles, as is probable, the orifices were in the heads and necks.

It should be noted that most of the above possible figurines were bought at Taganga, the exact proveniences being unknown. The fishermen of this village range the coast to Rio Hacha or beyond and may have secured these specimens beyond the limits of the Santa Marta culture; possibly it would have been better not to include them herein.

From Dibulla, near the eastern limit of the Tairona culture, comes a very interesting figure (AM; Plate CCXXXVIII, Fig. 2). In general appearance it resembles Santa Marta objects, a large human or anthropomorphic hollow figure of thin, polished gray pottery, 11 x 7 x 4.5 cm. The legs are short and end in enlarged disks with slightly concave bases. The head is probably that of a bat, with pointed, pig-like nose and a square contour with horns at the corners. There is a hole in the top of the head with smaller holes flanking it, a larger asymmetrical hole at the rear side of the head, and a tiny orifice at the crotch. There seems to be no air-shaft or vent and the figure is more likely a figurine than an ocarina.

Another figurine (MfV; Plate CCXLIII, Fig. 3) is of very unusual type and resembles certain Venezuelan or Amazonian figures; it is included here because it was found by Karsten in a river near Santa Marta. It is a large female figure, 26 cm. high, of reddish clay without slip, and is not a whistle. It is decidedly non-Tairona in appearance, but the other objects said to have been found with it are typical of the region. A figure from Barrancas near Rio Hacha (AM), of much the same type of art, suggests the original provenience

of the Berlin specimen. The latter, however, is an ocarina, with four finger-holes, and is of cream-colored ware.

OCARINAS AND WHISTLES

One of the most outstanding characteristics of Santa Marta ceramics is the number, variety, and quality of the pottery ocarinas and whistles. Numbers of complete or fragmentary specimens are found in almost every collection and often are the finest objects. The ocarinas—whistles with finger-holes by which the sound is modulated and several tones produced—far outnumber the whistles of a single note, and surpass the latter in size and beauty. Practically all the ocarinas, but not the whistles, belong, as regards ware, with the small effigy vessels of fine carved ware (q.v.), of rather thick black or brown pottery, with finely modeled or carved features, and incised lines which are generally filled with white coloring.

The large number and variety of ocarinas have, for the sake of convenience, been classified in a number of types and sub-types. Some of these are rather homogeneous and clear-cut, represented by a number of examples; others are less obvious, with few examples, or even with only one:

(1) Fine, large, ornate, crescentic, anthropomorphic
  a. Semi-circular head-dress
  b. Smaller head-dress
(2) Flying animals
  a. Crescentic eagles
  b. Other birds
  c. Bats
(3) Cylindrical
  a. Standing, anthropomorphic
  b. With head-dress
(4) Small, standing, anthropomorphic
(5) Large, anthropomorphic
  a. Standing
  b. Seated
(6) Small naturalistic animals
  a. Birds
  b. Snakes
(7) Large naturalistic animals
  a. Toads or frogs
  b. Quadrupeds
  c. Owls
(8) Large naturalistic human; Esmeraldas type
(9) Tubular
(10) Pear-shaped
(11) Multiple
  a. Double pear-shape
  b. Double naturalistic
  c. Triple
(12) Rude zoomorphic whistles

1. FINE, LARGE, ORNATE, CRESCENTIC, ANTHROPOMORPHIC OCARINAS

Pre-eminent among all Santa Marta, and indeed among all pre-Columbian American ceramic products are the large, crescentic ocarinas of brown or black pottery with ornate details very finely carved or incised. They are also the largest of the ocarinas. Their relationship with the small effigy vessels of fine, carved ware is close. Regarding one of these (MAI; Plate CCXXXVI, left) the late Marshall H. Saville wrote: "The incised technique . . . is of such beauty of design and execution . . . that in this class of ornamentation the Tayrona were unsurpassed among the native artists of the New World." (Indian Notes, vol. 4, p. 363, fig. 87. Museum of the American Indian, Heye Foundation; New York, October, 1928.) The five known complete examples show a relative homogeneity; the lower part is crescentic and of oval cross section, hollow, with four round finger-holes at the front which are connected by ornamental, carved guilloches and decorated with raised circles in triangles. Seated on this, as in a hammock, is a human or anthropomorphic figure, ornately adorned, hollow, with the mouth-orifice at the top of the head and a rectangular vent at the back of the neck. The air-channel is a narrow slit and the head is solid except for this shaft. There are generally two transverse suspension holes in the figure. The two sub-types differ mainly in degree of ornamentation.

a. WITH SEMI-CIRCULAR HEAD-DRESS

These are the most delicate and ornate type of carved and incised pottery. The only complete example is aberrant; the other four consist of only the head. The figure probably represents either the principal Tairona god, or a priest wearing the god's mask. The mouth or muzzle is very projecting, with great canine teeth. Wooden masks[1] of almost identical nature are worn by the Kagaba-Arhuaco "mamas" or shamans today (K. Th. Preuss, Forschungsreise zu den Kagaba. Anthropos, vols. 14–15, 1919–20, Figs. 30, 31). These masks were probably inherited from the Tairona. The face is generally decorated with fine, incised designs of slanting lines and dots. The head is surrounded by a great semi-circular head-dress, doubtless representing a vertical feather crown; such great feather head-dresses are worn by the Kagaba priests in association with these masks. Circular, pitted ear-ornaments are always shown.

Two practically identical specimens, both with the muzzle somewhat battered, show the finest examples of this type. The ware is

[1] Preuss terms these *Muluku* and *Hisei* masks.

grayish rather than black, the depressions filled with white; 7.5 cm. wide. The broken example in Field Museum (Plate CCXXXIII, Fig. 1) was the gift of Carlos A. Ponce de Leon and said to have been found at Perihuetano. The details of the better-preserved specimen (MAI; Plate CCXXXVI, Fig. 1) are seen to better advantage in the published natural-size drawing of it (Saville, loc. cit.). The other two heads (AM, Plate CCXXXIX, Fig. 2; CM, Plate CCXLI, Fig. 4) are similar and but slightly inferior in technique.

The only known complete example (UM; Plate CCXXXII, Fig. 3) is slightly aberrant and possibly should have been considered another sub-type. It was secured by Gregory Mason at Gaira; 8.5 x 6 x 3.5 cm. The lower crescentic part is fused with the head-dress so that in effect it has merely a rounded base. The figure is not so obviously seated on the crescent. The ware is dark brown, the depressions are filled with white. Although exquisite and in perfect condition, the carving and incising are not quite so dainty as in some of the other fragments. Details of body apparel are shown, such as skirt, bracelets and tassels, neckerchief, nose-ornament, and cowl at the sides of the face, but the details of the head-dress are somewhat different from the others of its type.

b. WITH SMALLER HEAD-DRESS

The ware and the crescent form are similar; details of the figure are more variant, without the semi-circular head-dress, and the incised workmanship is not quite so fine. Four complete examples are known, and seven heads that presumably came from ocarinas of this type.

The figure varies from the naturalistic human, and the human with mask or facial adornment, to an anthropomorphic eagle. The plainest human figure (CM; Plate CCXLI, Fig. 5), 7 cm. wide, has a short trifurcated head-dress, probably representing feathers, and the unusual feature of the mouth-orifice at the front. In a more common form, generally large and of brown ware, the head-dress forks and falls on either side, and the face is disfigured by an immense nose-ornament and a labret (CM, Plate CCXLI, Fig. 3; FM, Plate CCXXXIII, Fig. 2). One of the finest complete ocarinas (MAI; Plate CCXXXVI, right), 10 x 8.5 x 4 cm., secured, like one of the above mentioned, at Bonda, has the facial ornaments somewhat worn, but it was doubtless of similar type, and the same is probably true of two other slightly battered fragments (AM, Plate CCXXXIX, Fig. 4; MAI, Plate CCXXXVII, Fig. 6). A small complete ocarina from Gaira (UM; Plate CCXL, Fig. 2) is very

plain and apparently simplified. The face is projecting and rectangular without facial features. Although somewhat eroded, it apparently always lacked any carved decoration on the lower crescentic part. Another rather rude fragment (CM; Plate CCXLI, Fig. 6) is somewhat of the same type. Two other fragmentary figures or heads from Taganga (GM; Plate CCXLV, Figs. 3, 4) may belong to this type, but exhibit some peculiarities. One shows a complete figure, though lacking the crescentic base; the other is the face with very projecting jaw typical of type 1*a*, but apparently lacking the semi-circular head-dress.

An exquisite unbroken ocarina of highly polished black ware, No. 153539, bought at Taganga and therefore of uncertain exact provenience (Plate CCXXXII, Fig. 1), 8.5 x 9 x 5 cm., has interesting peculiarities. The points of the crescent terminate in reptile heads, and the head-dress is flat with rolled ends. The anthropomorphic figure has a long curving beak which connects with a spheroid object with carved human face at the front. This object is held in the hands. Whether this represents a cup from which the figure drinks, a concept common to much of South America, or a human head being eaten, is difficult to decide. Dr. Walter Lehmann (Ein goldner Adlerschmuck aus Costa Rica, IPEK, 1925, pp. 165–197) believes that it represents the latter, a giant eagle-god feeding upon a human head, a mythological concept common to much of Central America.

A small ocarina (MfV), slightly broken, is of variant type. The crescent seems to have only two finger-holes, the open tips providing the other two. The figure is apparently an anthropomorphic bat with his hands to his head, standing on the crescent. The body is pitted with dots filled with red coloring.

2. FLYING ANIMAL OCARINAS

Almost all these animals are birds. The tail is extended and contains the mouth-orifice at the end, the head being solid. The air-vent is on the under side.

a. CRESCENTIC EAGLES

Polished thin black ware; wings outspread and crescentic, somewhat resembling type 1. Four finger-holes in the upper surface, generally surrounded by a raised circle which is often decorated with radiating lines. Tail with mouth-orifice elongated and plain. Head of a hawk or eagle, with incised collar. The lines are generally filled with white. The type is rather uniform and common; fragments are found in all collections but there is only one complete

specimen (Plate CCXXXIII, Fig. 4), 7.5 x 6 x 4.5 cm., from Pueblito. Other specimens are from Gairaca and Dibulla. One from Pueblo Bernardo is larger, of reddish ware, the two ends of the crescent open; probably in this fragmentary example there were only two other finger-holes. In a fragmentary specimen from Gairaca the ends of the crescent seem to have been connected by a bar.

The elongated tail mouth-piece is often enlarged in a T-shape. A number of fragments were secured at Taganga, Gairaca, and Teran. Most are plain; a few show relief heads. One (UM; Plate CCXL, Fig. 9) has a bat(?) head on one side. In another (CM; Plate CCXLI, Fig. 2) the flanks of the T are modeled in the form of reptile(?) heads.

b. OTHER BIRDS

Several different forms that might possibly be considered subtypes are included. First are several with crescentic wings but more compact than those of type 2*a*, and depicting doves or other non-raptorial birds. The finest and largest (UM; Plate CCXL, Fig. 3) is a gift of Sr. Rafael Robles and is said to come from Remolino, eight leagues up the Magdalena River from Barranquilla. If this provenience is correct, it indicates the extension to this point of a culture very similar to the Tairona, for the specimen shows several very typical Santa Marta characteristics. Large, 6.5 x 5.5 x 5 cm., of heavy dark brownish ware, it shows the typical four finger-holes with guilloches, mouth-orifice in tail, and vent in breast. Well modeled and decorated, with much cross-hatching, though in lines coarser than the best Tairona work, the bird seems to be a dove. The suspension holes are unique in being close together in the tail on either side of the vent. On the top they nearly meet within a raised circle resembling the carnelian buttons in Plate CXVI. Other smaller examples from Pueblito (UM) represent doves and curassows (Plate CCXL, Figs. 5, 7). Brown, gray, and orange-buff pottery; the suspension hole is generally horizontally transverse through the tail.

Three others are non-crescentic and variant. A large naturalistic bird of heavy black ware, from Don Diego (AM; Plate CCXXXVIII, Fig. 3) has folded wings shown only by incised lines. There are two finger-holes, one at the center of the back, the other at the side; a transverse, horizontal, suspension hole perforates the neck. A small, ruder specimen has outspread wings, but not in crescentic form (CM; Plate CCXLII, Fig. 11).

A small flying-bird ocarina from Pueblito (Plate CCXXXIV, Fig. 12), 3.8 x 2 x 3.8 cm., is unique in having the mouth-orifice in the head. Dainty and naturalistic, covered with small dots, it has two finger-holes in the body, and a suspension hole in each wing.

c. BATS

The sub-type consists of a unique specimen, No. 153551 (Plate CCXXXIV, Fig. 1), from Pueblito, 6.2 cm. long, of ware ranging from red to black. It has the T-shaped tail mouth-piece and small semi-circular wings with suspension holes in them. The head is that of a bat, well carved, with a single finger-hole at the top.

3. CYLINDRICAL OCARINAS

The body is cylindrical, with two finger-holes in a vertical line on the front and another on the flat base, the mouth-orifice being in the top of the head.

a. STANDING, ANTHROPOMORPHIC

A definite and common type of polished black pottery. The pose and arms are anthropomorphic, the head that of a bat. Legs are missing, the lower part being a non-biomorphic cylinder, generally tapering, the base often with a ferrule. This ring and the shoulders and arms are generally decorated with incised lines filled with white; a circle of dots sometimes surrounds the finger-holes. Heights are from 6 to 10 cm., the known proveniences Pueblito and Taganga. The suspension holes are generally in the shoulders or elbows (FM, Plate CCXXXIII, Figs. 3, 5; UM, Plate CCXL, Fig. 1; CM, Plate CCXLII, Fig. 6; PM, Plate CCXLIII, Figs. 1, 2).

b. WITH HEAD-DRESS

Represented by a unique small specimen, from Pueblito (MAI, Plate CCXXXVII, Fig. 4), 5 cm. high. The arms are missing. The finger-holes are not in the central line, and each is surrounded by a ring of dots. The head is probably that of a bat, but is not naturalistic and is surrounded by a large head-dress somewhat resembling the head-dresses of type 1*b*.

4. SMALL, STANDING, ANTHROPOMORPHIC OCARINAS

The figures are small, standing, human or anthropomorphic, simple and symmetrical, with disproportionately small legs. The mouth-orifice is in the head and the single modulating finger-hole at the umbilicus. Heights are from 3.5 to 7.5 cm., with an average of 4.8 cm. for the eight examples.

The definitely human specimens are among the smallest, daintiest, and most naturalistic, with fine incised decorations. One from Gaira (UM; Plate CCXXXII, Fig. 2), of reddish pottery like many of the Gaira objects, has head and ears covered by a cowl or kerchief that extends to the neck; the smallest of all, from Pozos Colorados (MAI; Plate CCXXXVII, Fig. 5), has the fine incised details in the black pottery strongly brought out by white coloring. In three others the face is upturned and eroded and may represent an animal. One from Los Congolos (MAI; Plate CCXXXVII, Fig. 3) and one from Gairaca (FM; Plate CCXXXIV, Fig. 6), found in an urn with a child's burial, are very similar. Another with similar head from Gairaca (FM; Plate CCXXXIV, Fig. 4) has the vestigial legs separated but meeting at the feet. Two finely incised examples have the legs tapering to the feet. A small specimen from Bonda (FM; Plate CCXXXIV, Fig. 7), of hard, polished dark pottery, has a broad, non-human face. The largest specimen, from Taganga (AM; Plate CCXXXVIII, Fig. 7), of gray pottery, is even finer; the head is that of a bat with very projecting snout. An eroded figure, probably human, of this size and type (MfV; Plate CCXLIV, Fig. 2; Fig. 26, *b*) was secured by Preuss from a hill above Pueblo Viejo, in the mountains on the edge of the Arhuaco country.

5. LARGE, ANTHROPOMORPHIC OCARINAS

A heterogeneous group with almost no uniform characteristics.

a. STANDING

The figures are relatively large, well made, naturalistic, and often asymmetrical. Especially noteworthy are two in Berlin, secured by Preuss on the Santa Marta coast, and probably from the same site. Of polished black pottery, one 8, the other 9 cm. high, with the mouth-orifice in the top of the head and a single finger-hole at the umbilicus. One (MfV; Plate CCXLIV, Fig. 13; Fig. 26, *a*) is human, with details of importance: an immense discoidal labret, quid of coca, prominent bound-up genitals, and an object like a small quiver for blow-gun darts bound at his side by a band around the waist. This band is folded so that the rear end hangs down behind like a tail. The figure is said to have traces of green coloring on it. The other (MfV; Plate CCXLIV, Fig. 15; Fig. 26, *e*) has an animal head and a girdle of the same type as the one mentioned above. In each hand he holds an unidentified object and on the back he carries a quiver or a carrying-basket. The body is covered with impressed dots filled with white, doubtless to represent a jaguar.

A very naturalistic standing jaguar figure from Don Diego, also of black pottery with pitted white dots (AM; Plate CCXXXVIII, Fig. 4), holds in his paws a baby jaguar. The relief tail is curved up the back and there are two finger-holes at the hips and suspension holes at the arm-pits; 8.5 cm. high. A fragmentary plainer figure from Los Congolos (MAI; Plate CCXXVII, Fig. 7) has an animal-like face, monkey or jaguar, but the human attributes of a labret and a coca quid in the left cheek. Of thick, heavy, dark pottery with a finger-hole on either side of the body.

b. SEATED

The two largest and best, in Berlin, are human, the others animal, anthropomorphic, or naturalistic. The largest human figure (MfV; Plate CCXLIV, Fig. 17; Fig. 26, *d*), 11 cm. high, is of reddish-yellow pottery and has a flat turban and a cowl at the sides of the face, both of these characteristics of Gaira. Labret and coca quid; two finger-holes, one on the left side and one on the bottom, and a large orifice in the back of the neck. The other (MfV; Plate CCXLIII, Fig. 4), 6.5 cm. high, of polished brown pottery, the incised details filled with white, also shows the labret and cowl. There are three large finger-holes in a vertical line.

Bats and jaguars are the animals most frequently found. The best anthropomorphic bat, from Don Diego (AM; Plate CCXXXVIII, Fig. 6), of polished black pottery, 8 cm. high, has three finger-holes in a line down the abdomen, including one at the anus, and a suspension hole through the jaws. The elongated head has two leaf-shaped objects that curve backward to meet in a point behind (UM, Plate CCXL, Fig. 8). Other bats are ruder (CM; Plate CCXLII, Figs. 2, 10). One, with the body covered with dots, has the three vertical finger-holes, and suspension holes in the arm-pits; the other, plain and naturalistic, 7 cm. high, has two small finger-holes in a horizontal line on the abdomen. A naturalistic but stylized bat with the wings folded (FM; Plate CCXXXIV, Fig. 3), of brown pottery from Pueblito, 5 cm. high, has a single finger-hole with a raised disk around it at the umbilicus.

Two seated anthropomorphic figures are almost identical. One from Pueblito (FM; Plate CCXXXIV, Fig. 2), of brown pottery, 5 cm. high, with a finger-hole on either side of the body and a third at the anus, has a jaguar tail in relief curving asymmetrically up the back; the other (PM; Plate CCXLVI, Fig. 1) has a bat-like nose. A small, rather rude figure from Mamatoco, probably a jaguar, of brown pottery, 4.3 cm. high (UM; Plate CCXL, Fig. 4), is

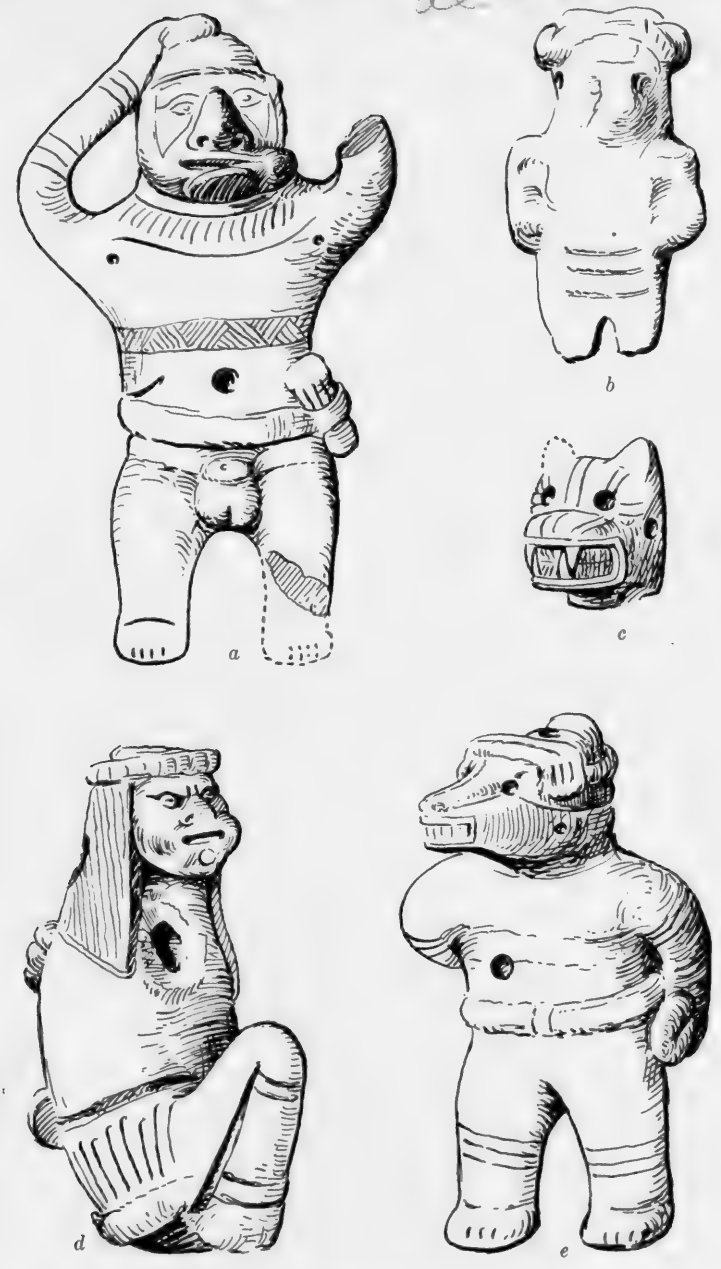


FIG. 26. Whistles and ocarinas, Museum für Völkerkunde, Berlin. *a*, *b*, *d*, *e*, Ocarinas; *c*, Head of ocarina. *a*, Height, 9 cm.; others in same proportion except *d*, 11 cm. high.

pitted and showing male genitals, with a single finger-hole at the umbilicus. Another with body covered with pitted dots and showing male genitals (FM; Plate CCXXXIV, Fig. 5), of brownish pottery from Pueblito, 7 cm. high, seemed much more like a bear than a jaguar to the Field Museum zoologists. There were three finger-holes in the medial line, including one at the anus.

A small, rude figure from Don Diego, of heavy pottery (AM; Plate CCXXXVIII, Fig. 5), of uncertain biomorphic identity, has perforations connecting the top of the head, back of neck, umbilicus, and anus; it may not be a functional ocarina.

6. SMALL NATURALISTIC ANIMAL OCARINAS

a. Birds

Small, standing birds differ from flying birds in having the mouth-orifice in the head. Wingless owls are probably represented, with two finger-holes, one on either side of the body; suspension holes are through the neck. One from Pueblito (Plate CCXXXIV, Fig. 8) is of dark pottery, 5 cm. high; the other, from Gairaca (Plate CCXXXIV, Fig. 10), reddish, 4.5 cm. high, has three pairs of deep depressions: in the eyes, the top of the head, and the back of the neck.

b. Snakes

Represented by a unique specimen from Taganga (UM; Plate CCXXXII, Fig. 4), a tiny whistle without modulating finger-hole, 3 cm. high, of fine workmanship and decoration, different from the other rude whistles. A little, coiled snake with daintily incised decorations and a tiny transverse suspension hole. The mouth-orifice is in the top of the head, the vent at the back of the neck.

7. LARGE NATURALISTIC ANIMAL OCARINAS

a. Toads or Frogs

These are naturalistic and rather large, of heavy pottery. Two postures, recumbent and seated. One of gray-brown pottery, 14 x 9 x 6.5 cm. (CM; Plate CCXXIV, Fig. 2), has three finger-holes on the back, two on the left side and one on the right. There is a mouth-orifice in the nose, a vent in the throat, and a large, round hole in the abdomen, made after baking but apparently not broken. A decoration of broad, shallow, incised lines is on the back. A fragmentary similar specimen (Plate CCXXXV, Fig. 2) with two symmetrical finger-holes on the back, from Perihuetano, was presented to the Field Museum Expedition by Sr. Carlos Ponce de

Leon. A fragment of a seated toad of black pottery from Gairaca (Plate CCXXXV, Fig. 5) has an incised decoration up the spine and a finger-hole on the left side of the back; there may have been another on the missing right side, but the finger-holes could not have been quite symmetrical.

b. QUADRUPEDS

Naturalistic animals with short legs and thick tails in which is the mouth-orifice. One from Don Diego (AM; Plate CCXXXVIII, Fig. 1) is comparatively small and well modeled, 8 x 4 x 6.5 cm., with a finger-hole symmetrically placed on either side of the back, and a suspension perforation through the neck. A headless specimen, 8.5 x 5.5 x 4 cm., from Pueblito, decorated with a few incised lines (Plate CCXXXV, Fig. 1) has a finger-hole on either side of the body. Several other fragments were secured at Cañaveral and Pueblito.

c. OWLS

The type is represented by only one large very naturalistic head from Pueblito (Plate CCXXXV, Fig. 4). The narrow mouth-orifice is in the top of the head. Around the neck is a collar of carefully carved, deep designs, guilloches, and triangles with central disks.

8. LARGE NATURALISTIC HUMAN OCARINAS

Only one of this type is known (MAI; Plate CCXXXVII, Figs. 1, 2), of uncertain exact provenience but secured by Gregory Mason near Santa Marta. Though fragmentary, it is considered an ocarina on account of the two pierced holes in the chest, one on either side but slightly asymmetrically placed. It is rather large, the torso being 8 cm. long, hollow, and of thin brown pottery; the hollow portion ended at the hips. It bears a close superficial resemblance to the figurines from Esmeraldas, Ecuador. Both front and rear views are reproduced in order to show the costume, which may give some idea of one type of native dress. Collar, belt or sash, arm-bands, wrist-bands, and carrying-bag are portrayed. A double scarf of some type extends from the breast, where the two ends are gathered together, over the shoulders and under the collar, and is held together at the back by some square object. The two ends fall separately below the hips. Possibly two fragments of small human figures in Field Museum (Plate CCXXXI, Figs. 1, 2) are from ocarinas of similar type.

9. TUBULAR OCARINAS

Type 9 is represented by only a single specimen (MAI; Plate CCXXXVI, center) from Mamaron, near Gairaca. Of chocolate-brown, polished pottery, 11.5 x 3 x 2 cm., the body is long and tubular, of oval cross section. This is divided on the front by double or triple horizontal incised lines into alternate plain and decorated zones, the decorated ones of deeply cut triangles and parallel, slanting lines. No arms or legs are shown. At the upper end is a human head with very fine incised and pitted decoration, with crescentic nose-ornament, and a large semi-circular head-dress, in the top of which is the mouth-orifice, the vent being at the back of the shoulders. There are three finger-holes in a vertical line at the front, one on each undecorated band, and at the bottom a larger, oval hole.

10. PEAR-SHAPED OCARINAS

A rather definite type, small, with sub-globular bodies in which are the finger-holes, and animal heads with the mouth-orifices. Heights from 2.3 to 4.3 cm.; proveniences Cañaveral, Taganga, Guachaquita, Gairaca, and Pueblito, mainly coastal sites. One of the Gairaca specimens was found in an urn with a child's burial. About one-half of the specimens have a single finger-hole at the front, the others a hole on either side; there are suspension holes in the neck. The heads are sometimes conventionalized and unidentifiable, especially the smallest ones (Plate CCXXXIII, Figs. 8, 10); some are wide with little depicted except the eyes (Plate CCXXXIII, Figs. 7, 9). The larger ones sometimes have naturalistic heads (Plate CCXXXIII, Fig. 6; UM, Plate CCXL, Fig. 10). A small example of polished black pottery (CM; Plate CCXLII, Fig. 4) has a human face decorated with slanting, incised lines on either side which extend both above and below the eyes.

11. MULTIPLE OCARINAS

Multiple whistles have a single mouth-orifice but have two or three shafts which lead to separate vents; they generally have modulating finger-holes.

a. DOUBLE PEAR-SHAPE

The simplest form of double whistle is twin-fused and pear-shaped (Plate CCXXXV, Fig. 8; UM, Plate CCXL, Fig. 11) with two lower lobes and a single animal head, generally naturalistic. Ordinarily there is a small finger-hole in each lobe, but one (Plate CCXXXV, Fig. 7), the largest, has none. All known proveniences are Pueblito; heights 3.3 to 6 cm.

b. DOUBLE NATURALISTIC

Represented by two specimens. In the complete example (FM; Plate CCXXXV, Fig. 9) the twin lobes are altered into birds with high-relief heads, and the mouth-orifice is in the broken tail. It is shown in the plate from above with the twin heads at the bottom. Daintily made. The suspension hole is vertical; in the pear-shaped type it is horizontal through the head. Twin air-shafts in the fine bat head (MAI; Plate CCXXVII, Fig. 2), from Tairo, prove that this fragment must have belonged to a much larger and different example of the type.

c. TRIPLE

Three shafts lead from the mouth-orifice into lobes, each with an air-vent. Only one complete example is known (MAI; Plate CCXXXVII, Fig. 8), a standing, human figure, 9 x 6 x 2.5 cm., of brownish pottery, naturalistic, of excellent workmanship. A wide mouth-orifice is in the top of the head with vents at the back of the neck and the back of either shoulder, one resonance cavity being the body, the others the bulbous upper arms; the transverse suspension holes are in the arm-pits. A large hole has been broken in the abdomen, but there were apparently no finger-holes. The nature of the body of the only other known fragmentary specimen, from San Pedro Alejandrino, is uncertain. The head (AM; Plate CCXXXIX, Fig. 6), showing the beginnings of the triple shafts, is that of a conventionalized bat.

12. RUDE ZOOMORPHIC WHISTLES

A very few whistles without modulating finger-holes, of heavy, reddish pottery, undecorated and rudely made in animal forms, are known. All four are from Bonda, probably purchased, and differ so much from typical Tairona ocarinas that they may be of more recent manufacture. Two resemble a tadpole or fish with bent tail (Plate CCXXXV, Fig. 6), 5.5 cm. long. Another (Plate CCXXXV, Fig. 3), 5 cm. long, resembles a turtle, with two short hind feet but no front feet. Both of these have the mouth-orifice in the nose. The last (UM; Plate CCXL, Fig. 6) is a legless animal with long neck and the mouth-orifice in the elongated tail.

HEADS OF OCARINAS AND WHISTLES

As most ocarinas have animal heads from which they are blown, fragmentary whistle-heads can generally be identified, but in most cases they cannot be assigned to their respective types; a few have been classified. Bat heads of several types or species are the most

common; jaguars and birds are also found. Some of the bat heads are as large as 5.5 cm. One jaguar head is very large and naturalistic (GM; Plate CCXLV, Fig. 7). An unusual head, unfortunately photographed from above (AM; Plate CCXXXIX, Fig. 1), from San Pedro Alejandrino, portrays an animal with a long, conical snout and knobs on the head, possibly representing hair. (See also MAI, Plate CCXXVII, Figs. 1–5; FM, Plate CCXXXIV, Figs. 9, 11, 13, 14; AM, Plate CCXXXIX, Figs. 3, 5, 7, 8; UM, Plate CCXL, Fig. 8; CM, Plate CCXLII, Fig. 7; MfV, Plate CCXLIV, Fig. 1; GM, Plate CCXLV, Figs. 3, 4; MfV, Fig. 26, *c*.)

SMALL EFFIGY VESSELS OF FINE CARVED WARE

Almost as characteristic of Santa Marta ceramics as the fine, carved ocarinas, with which they are intimately associated in technique and art, is a group of small, effigy vessels lavishly decorated with dainty incised and carved designs in high and low relief. These are, like most of the ocarinas, of rather thick, heavy, brown pottery, the lines and recesses often filled in or painted with a thick white substance. They were presumably made specifically for mortuary or ceremonial purposes.

All these show animal or human heads in high relief, and most of them rest on four short, solid feet which are generally of truncated conical or cylindrical shape. In many cases the feet are seen really to be the feet of a seat or bench, generally with concave upper surface and resembling the stone seat shown in Plate XCIII, Fig. 2, on which the upper, effigy part of the vessel rests.

Strangely, no good example of this characteristic type was secured by the Field Museum Expedition, but the small though select collection in the Peabody Museum of Harvard University has six excellent examples. As the art is typically Tairona and as they were secured at Taganga and Bonda they are certainly not exotic.

Apparently most typical are small vessels with a reptilian head in the round, stylized and beautifully carved, at either end. Most of them rest on four solid legs. Sometimes the heads project from a spheroid olla, deeply carved with typical guilloches and disks, that rests on the four-legged seat (PM; Plate CCXLVI, Figs. 6, 7); average height 6.5 cm. The nature of the base is less obvious, the decoration different and poorer, in an example from Los Congolos (UM; Plate CCXXXII, Fig. 5). Sometimes the head is larger and less projecting, and probably represents a toad or frog rather than the snake or iguana that is more usual (PM; Plate CCXLVI, Fig. 4).

An example from Pueblito (FM; CCII, Fig. 5) is larger, 12.5 cm. long including the relief heads, more bowl-like and deeper; it lacks the seat-like base.

Frequently a man is seated on the bench. The latter lacks the twin reptile heads in one fine example (PM; Plate CCXLVI, Fig. 5); the man's legs replace the front legs of the seat. The orifice of the vessel is behind his head. The modeling is very fine; the pitting probably represents a textile cape and the face is decorated with fine lines that may denote tattooing. More typically the seat has the twin relief reptile heads. The largest and most ornate effigy vessel (PM; Plate CCXLVII, Figs. 5, 6; shown from front and side), 17.5 cm. high, from a grave near Santa Marta, shows a human figure, possibly masked, that closely resembles those of some ocarinas.

The same concept of a man sitting on a four-legged seat with twin animal heads is employed in two rather rude and grotesque figures which, although presumably from this region, differ very greatly from typical Tairona ceramics and may belong to a different culture. One (MfV; Plate CCXX, Fig. 1) is of polished, brownish-black pottery, 9.7 cm. high, 13.5 cm. maximum width, secured by Preuss on the coast of Santa Marta. The interior is hollow, with an orifice in the top of the head. The other from Rio Frio (GM; Plate CCXLVII, Figs. 1, 3; front and rear views), 14.5 cm. high, is of buff pottery. The animal heads are very small. This seems to be a figurine, presumably hollow but without any large orifice. The figure has no legs, but a large, broken penis seems to be present. The nasal septum is perforated and probably originally held a metal ring. This is a common feature in the central Colombian highlands, but otherwise unknown in the Tairona region.

A minority of examples lack the tetrapod base; four have flat bases and one a ring base. A fine ornate small effigy olla is in the form of a seated man with hands covering the eyes (PM; Plate CCXLVI, Fig. 3), the orifice in the top of the head; height 8 cm. A small olla with large orifice and large reptile head (FM; Fig. 24, *e*), 6 cm. high, from Pueblito, probably belongs in this category. As it is much eroded and broken, it may originally have had a second symmetrical head, and more ornamentation than is shown.

Coiled snakes are common concepts in this ware. One is the ring snake (AM; Plate CCXXII, Fig. 1), described under the head of "Spouted Vessels"; the fine carving places it in the present category also. A coiled-snake effigy olla of another type (FM; Plate CLXXXIX, Fig. 2), 10 x 11 x 8 cm., was excavated in site 3 at

Nahuange (p. 37). Of polished, black, heavy pottery, the stylized head, in the round, is fine and typical; the scales are shown in relief by alternate sections of hatching and cross-hatching. A coiled-snake effigy olla of different shape (Collection of Mr. William R. Angell; Plate CCXXIII, Fig. 1), ca. 10 x 10 cm., was found at El Recuerdo on the road from Santa Marta to the finca of Cincinnati.

One small ring-base vessel of this ware is known (MAI; Plate CCXXXVII, Fig. 7), from Gairaca, 10.5 x 5.5 x 5 cm. Of heavy brown ware, the two animal heads are large, ornately carved, and of unusual type. The decoration on the body is typical but uncommon.

APPENDIX: THE TECHNOLOGY OF SANTA MARTA POTTERY

BY
DONALD HORTON

INTRODUCTION

Technological studies of pottery are a relatively recent development in the archaeological field. The advantages of technological analysis—its possible scientific objectivity and unlimited technical resources—have been stated by Anna O. Shepard, and recognized by an increasing number of archaeologists. The method is undoubtedly to be regarded as a permanent addition to archaeological technique. In order to facilitate its development, reports of analyses should, at this stage, include more than the analytical data and interpretations. Discussion of purpose and methodology should be given place. In the following report of a technological study of sherds from Santa Marta such matters are treated.

Although the inclusion of technical discussions of a theoretical nature is desirable and necessary at the present time in order to build up a literature of methodology available for future workers in this field, it is expedient not to burden the general archaeologist with the reading of such material, except as he may voluntarily inquire into the methods by which our conclusions have been obtained. We therefore present our report in two sections: the first, a general description of the sherds based on our technical studies; the second, technical in character, a detailed presentation of our data along with discussion of pertinent technical questions. Miss Shepard has followed a somewhat similar course in separating her summaries of analytical data from her discussion of the data (The Pottery of Pecos, vol. 2, part 2, 1936). Our purpose is slightly different in that we wish to present a non-technical description for the archaeologist and a technical description for the specialist. It is hoped that such an arrangement will prove sufficiently elastic to permit the development of a sound technical literature on ceramic analysis without rendering the essential pottery description too difficult of access to the non-specialist.

The general aims of technological study of pottery have been formulated by Miss Shepard as, first, "To follow the history of the potter's craft," and secondly, "To study the evidences of trade relations and foreign influences." In our study of the Santa Marta

material the first of these general purposes was not considered. A chronological ceramic sequence has not yet been established. The present work was undertaken chiefly to establish the general ceramic characteristics of the area and to determine whether certain sherds, peculiar in shape, decoration, color, and texture, were of local manufacture. The evidence on the latter question is presented in a negative way. The character of undoubtedly local wares is shown, and the presumably imported sherds are compared with the local types. A difference of clay or temper is tentatively regarded as strengthening the stylistic evidence that certain sherds are imported. To present the same conclusion in a positive way it would be necessary to make a field investigation of the natural resources of Santa Marta and adjacent regions, as well as a technical study of neighboring ceramic types. Such an extensive research was not possible in connection with the present work, and in fact could hardly be justified by the nature and quantity of pottery available from the area.

More important for our analysis than either of the foregoing general aims of technology were certain limited problems of a specific nature, for the solution of which the limited material available seemed adequate. (1) As an aid to the stylistic classification can it be shown that all the local pottery is from the same source? Does each of the recognized types have its peculiar texture and composition? Is there technical evidence that the manufacture of certain shapes and styles was limited to specific sites? (2) A black-slipped ware and a red-slipped ware are recognized. Are they properly so described? Are the red and black surfaces truly slipped? What is the technical character of these surfaces? (3) A ware of fine, soft fabric seems to fall into a class of its own so far as texture and other physical features are concerned, but stylistically it would be more appropriate to class it with the black-slipped ware. Traces of a dark slip are actually found on some of these soft fabrics and there is reason to believe that these may, in fact, have been black ware from which the slip has been eroded by exposure to weather. It is one of the special difficulties involved in study of the sherds from Santa Marta that some of them have been lying on or near the surface of the ground long enough to have been seriously affected both by chemical and mechanical weathering. Is there any technical evidence to support this classification? Answers to these and similar questions are presented in this report.

The work was done in the Ceramic Laboratory of the University Museum, Project 14753 of the Works Progress Administration. All

of the members of the Project Staff took some part in the work and their valuable assistance is gratefully acknowledged. Mr. Joseph Berman is especially to be thanked for checking our identifications of minerals.

To Dr. Edward Watson, Chairman of the Department of Geology of Bryn Mawr College, thanks are given for the use of a petrographic microscope, without which our work could not have been finished. Dr. Dorothy Wyckoff of the same Department gave friendly and valuable advice on several aspects of the petrographic analysis. Our preliminary work was done in the laboratory of the Geology Department of the University of Pennsylvania with the permission of the Departmental Chairman, Dr. F. E. Ehrenfeld. Mr. A. W. Postel of the same Department materially assisted our work by lending us a Wentworth recording stage, as well as other needed items of laboratory equipment, and we asked his advice frequently. Heavy mineral separations were obtained with a centrifuge in the Department of Physiology of the University of Pennsylvania Medical School. The use of this centrifuge was kindly granted us by Dr. D. W. Wilson. Our photomicrographs (Plate CCXLVIII) were made by Mr. Reuben Goldberg, Photographer for the University Museum.

GENERAL DESCRIPTION OF THE WARES

In the mineral composition of the Santa Marta sherds so few qualitative differences are to be found that a single statement of the variety of minerals present will suffice for all the local wares. Quartz, feldspar, hornblende, as separate grains or combined in rock fractures, micas, and iron-oxide nodules, are the chief non-plastic constituents. The quartz appears in the hand specimen usually as glassy particles, the feldspars as white, opaque, angular grains with lustrous, flat cleavage surfaces, the hornblende as black, opaque, highly lustrous grains. The micas are most prominent in the sherds of fine texture, in which they are present in relatively greater proportion than the other minerals, although mica is a significant constituent of all the fabrics. Similarly the red oxidized-iron nodules are more noticeable in the finer-textured sherds, and in those in which there is a strong color contrast between the fabric and the nodules.

Significant differences on the basis of which the sherds may be classified in groups are found rather in the size and relative proportions of mineral grains (texture) than in qualitative differences.

Three such types are recognized. The textural terms used in describing them refer to their appearance to the unaided eye, and these terms, such as "coarse-textured" and "moderately tempered," are obtained by approximation from the analytical data given in the second part of our report. Miss Shepard's table of equivalents is employed (loc. cit., p. 444).

TYPICAL LOCAL SHERDS

Type 1.—Red-orange slipped sherds; typical Ridgway value 7″ (Terra Cotta) to 13‴ (Fawn). Generally thick-walled (8–14 mm.), coarse-textured, moderately tempered; quartz and feldspar prominent, hornblende present but not prominent. The sherds of this first type are tempered in the proper sense of the word; that is, a quantity of non-plastic material was added to the potter's clay in preparation of the paste. The quantity of material added was relatively constant in the sherds under examination. The tempering material itself is judged to be a residual sand derived from a dioritic rock. The clay to which it was added is described as red-burning, non-refractory (begins to vitrify at 1000° C.), slightly micaceous. It is of sedimentary origin.

No evidence was obtained in this study as to the method of construction of the vessels. The finishing was evidently done with a burnishing tool. The elongated facets or shallow grooves left by the tool were not smoothed off. To some, but not all, of the surfaces a thin wash of clay was added. The suspension was largely absorbed by the fabric and is therefore present only as a very thin layer on the surface of the sherd. The clay used in the surface wash was evidently the finer fraction of the pot-clay itself, since it fires to a color similar to that of the fabric, and, on refiring to high temperature in the laboratory, loses its identity. The wash was applied carelessly in some instances; the areas under projections were not always covered. Although the firing must have been done in an oxidizing atmosphere to produce the red or orange color characteristic of sherds of this group, many have dark cores. These are attributable to carbonaceous matter in the clay, which was not oxidized because of the thickness of the vessel walls. The porosity of the fabrics, which may be important in this connection, was not determined. Several sherds have patches of carbon black on their surfaces, attributable to smoke during or subsequent to firing.

A few sherds, with surfaces rough and unpolished, and tempering grains completely exposed, are thought to be very much weathered examples of type 1.

The twenty sherds analyzed represent vessels of many different stylistic types, from a number of sites.

Type 2.—Black slipped and brown non-slipped sherds. Typical Ridgway values, 17''' (Wood Brown), 13'''' (Cinnamon-Drab) and Carbon Gray; wall thickness from 4 to 12 mm.; texture medium to fine, inclusions moderate to sparse in quantity; hornblende relatively prominent, and mica more evident in the finer-textured fabrics.

The sherds of the second group show a textural gradation from medium to fine with a correlative increase in the volume of mica (chiefly muscovite). If the sherds are arranged in a series in descending order of fineness of texture, there is an overlapping at the lower end with the fine-textured sherds of type 3. From this point of view, therefore, the two groups may be regarded as members of the same series. Similarity in color after refiring further strengthens this conclusion. For convenience, and to indicate that the evidence on this point is not definitive, the two types are described separately. In view of the lack of constancy in the proportion of inclusions, the fineness of texture (in many of the sherds the inclusions are not clearly visible to the unaided eye), and the micaceous character of the finer fabrics, it is concluded that these sherds contain only the inclusions naturally present in the pot-clay itself. No additional tempering was used.

The sherds of type 2 may be subdivided on the basis of surface character. Practically all the sherds have a black outer surface. In several cases the slip has been worn thin or removed by erosion. The surface beneath the slip was evidently burnished as in type 1. Several sherds show shallow facets, although one or two have been smoothed to a perfectly plane surface. The unslipped vessels were possibly first fired in an oxidizing atmosphere, with consequent oxidation of the iron in the outer portions of the fabric, then, while still very hot, coated with an organic slip which was immediately carbonized. Internal evidence, best shown in the molecular changes effected in the hornblende grains, indicates that the temperature of first firing was about 800° C. The thirty sherds of this type analyzed comprise nearly all the vessel types and proveniences represented in the University Museum.

A few sherds especially characteristic of the site of San Pedro Alejandrino are grouped here because they are practically identical in mineral composition and texture with type 2, but are brown (13''', 17'''), or brown with black smoke-mottling, and lack slip.

A second sub-type is represented by a few vessels of the site of Gaira (Dr. Mason's "fine red ware"). A tetrapod bowl of this subtype was examined and proved to have a fine texture and a complement of mineral inclusions which would place it well down in the gradational series of type 2. Its peculiarity consists in its thoroughly oxidized fabric (11″, 11″ *i*) and polished but non-slipped surface.

Type 3.—Brown, Ridgway values 13″″ and 17‴, thin-walled (3–5 mm.); soft, gritty (evidently abraded) surfaces; texture very fine, markedly micaceous.

Our reasons for believing that these fine-textured sherds belong to the gradational series of type 2 have been given above. The fine, micaceous character of the clay is perhaps in itself the factor which made the thinness of the vessels possible. One small vessel of this group has a black slip well preserved. The softness of the fabrics, due to the abundant mica, may have been the reason for the erosion of an original black slip in all but this one instance. Occasional traces of a slip of obscure character are found on several sherds.

Although this explanation is plausible, the sherds are classed as a separate group to emphasize the fact that more direct evidence is needed. From the geological point of view, it is quite logical to expect that such a variation in the texture of a clay might occur vertically in the deposit in a single clay pit, or horizontally in a relatively restricted area. In such a case, the textural gradation of groups 2 and 3 might have been produced at one place. If the variation in the natural clay were regional, and the distance between the coarser phase and the finer phase of the clay were several miles, it might be argued that the two correlated types of pottery were made by different potters, perhaps even in different settlements; and one should expect to find in each case a constancy of texture which would entitle the sherds from that locality to be classed separately as a type of the ware. In the case of the sherds under discussion, it is not a question of classing them as two separate wares, since in style the two groups are homogeneous.

[The sherds of type 3 represent vessels that seem to be identical in form with those of type 2. The vessel with the black slip previously noted is a very typical black olla with flying-bird relief and incised designs, from Gairaca. Vessels of type 3 ware are relatively uncommon, probably not 10 per cent of those of type 2. J.A.M.]

In any case, the fine, micaceous sherds of type 3 are to be classed as local on the basis of their mineralogical composition, and there

are no strong reasons why they should not be included with the black and brown sherds.

The precise provenience of the groups described above is not immediately to be inferred from the mineralogical analyses. Because of differences in the colors to which they fire at 1000° C. it is probable that groups 1 and 2 were made in different places, or at least from different clays. Even this distinction between the two groups may be more apparent than real. Beyond this, all other indications are that the geological features of the region are marked by uniformity. We have not been able to obtain any satisfactory geological data for the area by which to check this surmise.

NON-TYPICAL LOCAL SHERDS

Practically all the sherds analyzed fell into the above three classes. Of the other few, selected because of unusual megascopic appearance, seven types have been identified, each represented by from one to three sherds, far too small a number for certain characterization. The first, "*a*," "*b*," "*c*," and "*d*," differ little if at all in mineralogical composition from type 2, the difference being mainly in surface treatment, and they are therefore considered to be local wares; type "*b*" is the "Painted Ware." The other three, "*e*," "*f*," and "*g*," differ more radically and are therefore presumed to represent vessels of alien provenience; type "*g*" is the "Light-colored Ware."

(*a*) Two sherds decorated with punctate bands have a mottled surface coloration, in shades of gray and orange. The fabric is gray. The mineralogy is similar to that of the other local wares, but includes "microlitic" glass and microcline. The texture is characterized by an abundance of inclusions and their unusual uniformity in size (fine texture). This uniformity can be seen with difficulty under a hand-lens but is very clear in thin-section.

[The unusual nature and rarity of this type is shown by the fact that the two sherds, selected for analysis from the Collections of the University Museum and the Heye Foundation, belong to the same vessel, the original large collection having been divided. The sherds are not large enough to show the shape of the large vessel. Not only is the surface appearance unusual, but also the decoration, a band of two parallel horizontal lines of rather large deep dots enclosed between horizontal lines. The sherds are from Gaira, a site characterized by a number of unusual objects. J.A.M.]

(*b*) Two sherds of orange fabric have a buff-colored slip, which is white in cross section, and may have been white originally on the

surface. Thin, somewhat eroded bands of red iron-oxide paint are evident on the slipped surface. The mineralogy and texture of the sherds should place them about midway in the series of type 2. Possible difference in the clay was not investigated by refiring because only two small sherds of this ware were available.

[These sherds represent the "Painted Ware." One is from Nahuange, the only site where this ware was found by the Field Museum Expedition; the other, from the American Museum, is from the "Region of the Chimilas," probably southwest of the Sierra Nevada, and may point to the region from which the Nahuange vessels came. J.A.M.]

(*c*) One sherd has a dark polished inner surface, a buff, uniformly oxidized fabric, and an outer surface of Prussian-red color. This outer surface has been colored by a thin slip, apparently iron-oxide (ochre). The mineralogy and texture of the fabric would place this sherd also in the category of group 2.

[Objects with the surface colored bright red, mano stones (p. 147) even more than pottery vessels, are characteristic of Pueblo Bernardo, the provenience of this sherd. J.A.M.]

(*d*) A sherd with dark inner surface and a red-slipped outer surface has an unusually equigranular uniform texture. The hand specimen shows an abundance of fine grains of plagioclase and quartz. The fabric is black. In thin section the inclusions (mineralogically of group 2, but with fewer grains of hornblende and other accessories) stand out in strong contrast to a clay matrix of very fine, homogeneous texture. This clay is diatomaceous. It contains siliceous tests and fragments, some of rectangular shape.

[This vessel was unusual in several characteristics: red surface, very black fabric, and dark interior, the exterior surface with the very unusual feature, for red ware, of incised decoration. It comes from the mound of the grave at Nahuange, the source of a number of unusual objects. J.A.M.]

SHERDS PRESUMABLY OF ALIEN PROVENIENCE

(*e*) Two sherds are sherd-tempered. These are the only sherds in the entire sample with this type of inclusions. The sherd fragments are easily recognizable. In texture and mineralogy both the sherd fragments and the matrix in which they are contained differ from the local ware. The texture is fine. The chief mineralogical difference is the lack of plagioclase feldspar, lack of characteristic accessories, and abundant presence of orthoclase feldspar. One of the

sherds has a red-slipped outer surface. The microscopic appearance of one of these sherds is shown in the photomicrograph (Plate CCXLVIII, Fig. 4). Several light and dark sherd inclusions are evident.

[The two sherds were picked up near Rio Hacha, on the edge of the Goajiro country. Sherd-tempered pottery is a characteristic sharply distinguishing Goajira ceramics from those of Santa Marta. J.A.M.][1]

(*f*) Two glazed sherds, thought to be Spanish, have mineralogical and textural peculiarities which confirm the stylistic attribution. Although they might have been made in South America by Spanish technique, there is no evidence that they were made of the materials used in the local wares.

(*g*) Three sherds of buff clay contain an abundance of silt. The texture is fine. A characteristic of the mineralogy is the presence of aggregates of biotite and opaque grains, yellow in reflected light, probably nodules of earthy limonite.

[These sherds represent the "Light-colored Ware" (q.v.). One is from the high-mountain site of Vista Nieve; the others, from the collections of the American Museum and the Heye Foundation, are of uncertain proveniences. The unusual mineralogical composition corroborates the evidence of unusual shapes to the effect that the vessels are not of local manufacture. J.A.M.]

TECHNICAL DATA

TECHNIQUE

The emphasis of this study was put on the preparation and examination of thin-sections, although in a few cases heavy minerals were separated and identified in immersion liquids. Rosiwal analyses of inclusions were made with a Wentworth recording stage. For grade-size analyses an ocular micrometer was used.

No new technical methods were employed in preparation of the thin-sections. The more friable sherds were impregnated with balsam. An optical abrasive (No. 303½) made by the American Optical Company was found to be more satisfactory for the final grinding than the finer grades of carborundum.

[1] Both sand and potsherd temper are attributed to Goajiro ceramics by S. Linné on the basis of a statement by Bolinder (S. Linné, Technique of South American Ceramics, Map 3a and Table, pp. 32–33). In order to verify this statement, we examined thin sections of twenty-seven typical sherds from various Goajiro sites, as represented in the collections of the University Museum. With a few exceptions the sherds were found to be tempered with sherd fragments or with both sherd and rock fragments (D.H.).

For separating heavy minerals from the clay matrix for identification an electromagnet was not available. A satisfactory separation was made in bromoform, using a centrifuge and a specially designed separatory tube. A standard glass centrifuge tube, 11.5 cm. long, diameter 2.7 cm., was fitted with a narrower inner tube drawn to a pipette end. The inner tube was 11 cm. long and 1.5 cm. in diameter at the upper end. The lower end was drawn to a point with an aperture 2 mm. in diameter (large enough to pass the largest grains of heavy minerals observed in the thin-sections). The smaller tube was suspended in the larger tube through a rubber stopper, which was cut with a flange to overlap the outer tube and prevent the stopper from being drawn into the outer tube by centrifugal force. The overlapping flange was 1 cm. thick and projected 0.5 cm. beyond the rim of the tube. Enough bromoform was used to fill the inner tube to about two-thirds of its length. The powdered and oven-dried sample was then poured into the inner tube. When centrifuged at about 5,000 r.p.m., a clean concentration of heavy minerals passed through the pipette end of the lower tube into the bottom of the larger tube. The light fraction was removed in the inner tube and thus the mixing of heavy minerals and clay particles by convection currents was avoided. We found that we were able to make cleaner separations in this way than by any other heavy-liquid method.

Sherds were refired in a gas muffle-furnace. The maximum temperature obtainable in a half hour was 1000° C. Although no direct temperature readings were made during the firing, the furnace had previously been calibrated with a Fery radiation pyrometer and the variation of temperature after one-half hour of firing was found to be not more than plus or minus 25°. An oxidizing atmosphere was maintained.

Mineral identification in liquid immersion media was carried out by the usual methods. The recording of refractive indices of clay particles was abandoned in the course of the work. The variation was found to be so great, even within a single sherd, as to make the determination valueless. It is believed that this variation may be attributed to surface films of iron or carbon.

DESCRIPTION OF TEXTURE

The most important figures which refer to texture are considered to be those of volume and grading. The volume percentages are given to the nearest whole number. Figures in the first decimal place are considered to be insignificant in relation to the accuracy

of the method as well as unnecessarily confusing to the reader. Grading is represented in two ways: (1) According to the scale suggested for field description by Miss Shepard (loc. cit., p. 444): fine, medium, coarse, very coarse. (2) According to the geological classification of Wentworth: silt, very fine sand, fine sand, medium sand, coarse sand, very coarse sand, granule (see W. H. Twenhofel, Treatise on Sedimentation, p. 25, 1926).

The first classification is primarily of interest to the archaeologist as a basis for a simple, accurate, field description. The second is an aid to technological interpretations of the texture for understanding both the potter's technique and the geological nature of the materials employed. Thus the question whether the clay was "self-tempered" or artificially tempered may be illuminated by this geological classification, and from it one may also obtain a notion as to what type of clay, residual or sedimentary, should be looked for in the field if the source of the potter's material is to be found.

Our textural calculations are slightly different from those of Miss Shepard. In "The Pottery of Pecos" she gives the percentage of the total inclusions in each size-grade. We give volume of inclusions in each size-grade as a percentage of the total cross-section area of the sherd; thus, where Miss Shepard may say of a sherd whose volume of temper is 30 per cent, that 50 per cent of the inclusions are very fine, 30 per cent fine, 15 per cent medium, 5 per cent coarse, our figures would be 15 per cent of the total area of the cross section very fine, 10 per cent fine, etc.

Our purpose is to preserve the direct relationship between the microscopic measurements and the appearance of the texture to the unaided eye. With practice the interpretation of our data in terms of the megascopic appearance of the texture should be relatively easy. The proper descriptive field term may be developed directly from these figures. Miss Shepard's proposed scale, which we accept, depends on an estimation of the percentage of *visible inclusions* in the total volume of the fabric. Miss Shepard found as the result of experiment that, other conditions being equal, inclusions of medium grade or larger are visible to the unaided eye. In our type 1, which by Shepard's classification has an average texture of 30–6–6–1, and which would be described as "sparsely tempered" (less than 15 per cent of inclusions visible), the actual visibility of the particles is greater than this theoretical limit. The contrast of white particles against a red or orange matrix gives visibility to grains of fine-sand grade. When the fine-sand fraction (part of the

"fine grade") is taken with the medium, coarse, and very coarse sand fractions the average of total visible inclusions is 17 per cent, to be described as "moderately tempered." Similarly, the small black hornblende grains which in type 2 stand in strong contrast to the buff matrix, both because of their color and their brilliant luster, are visible below the limit of the medium grade, although in this case their effect is not great enough to warrant use of the term "moderately tempered." Yet in the foregoing cases since the term "fine" as used by Miss Shepard includes both fine sand (in this case visible) and very fine sand (not visible) the figures of the field classification do not suggest what proportion of the grains should be considered visible to the unaided eye and therefore serve as a basis for classification. The geological classification is more sensitive in that more categories are given.

In considering grading we have to deal with what is in many cases a continuous distribution. Yet it is desirable for convenience to be able to refer to the characteristic size of temper by a single descriptive term which would indicate this characteristic just as the terms "sparsely" or "moderately" tempered describe apparent volume of inclusions. In our report, type 1 is spoken of as of "coarse texture." The average grading is 30–6–6–1 (Shepard's scale). But though the volume of coarse and very coarse grains represents only 7 per cent of the cross-section area, these grains, because of their striking visibility, give an impression of coarseness. Although the fine and medium grains are more abundant than the coarse, it is this 7 per cent of coarse grains which gives the fabric its characteristic appearance. In order to give a single term which will emphasize this quality we have described type 1 as coarse in texture. In type 2 the average for the medium grade is only 3 per cent, with a range of 1 to 8, and the coarse grade is lacking. A majority of the sherds of this type are described as of medium texture and some as fine. This practice is partially subjective and therefore not completely satisfactory.

The development of a flexible system for describing texture involves many difficulties which technologists will have to consider as they accumulate experience in attempting to describe and classify their material.

A second set of problems, as yet uninvestigated, is involved in an attempt to determine whether or not a paste was tempered by the potter. Texture is an important criterion, though many other factors must be taken into consideration. We have concluded

that our types 2 and 3 were not tempered; the grading curves have a natural slope best shown by the geological classification. The bulk of the inclusions are in the silt grade and the grading curve falls off gradually to the medium sand grade. This is the type of curve to be expected of a natural sediment. In contrast with this, the grading curve of type 1 has two maxima, best shown by the geological classification (see p. 416). Although it will be necessary to examine grade-size distributions of many sediments to substantiate this point, the writer has found such a double-maximum curve to be very rare in the geological literature. A curve of this type given by De Magnée and Macar is interpreted by them as evidence of mixing of sediments (Données nouvelles sur les sables des Hautes Fagnes, Ann. Soc. Géol. de Belg., T. 59, pp. 263–288, 1936). We have similarly interpreted our curve as indicating the mixing of tempering material with the clay and its natural inclusions. On the basis of texture alone, this might be a questionable inference, but in the case of our type 1, the constancy of inclusions, their shape and mineralogical character, and the finding of similar inclusions, not mixed with clay, as a filling in the two hollow legs from Gaira (cf. "*d*" above), all support our conclusion. Nevertheless, it must be admitted that criteria for "tempering" have still to be worked out as new experience in ceramic technology is accumulated.

SAMPLING

Approximately 150 sherds were examined with a wide-field, binocular microscope and classified tentatively on the basis of this examination. Thin-sections of eighty sherds were prepared. Rosiwal analyses of volume of inclusions were made on fifty sections, and twenty analyses of size-grade of inclusions were made; thirty-five samples were refired, and three of the refired sherds were sectioned; fifteen heavy mineral concentrations were obtained, and the minerals identified in immersion liquids.

Insofar as it was desired to give a technical description of the chief classes of local sherds, the sample may be considered adequate. Type 1 is represented by eighteen sections, type 2 by forty sections, and type 3 by ten sections. In the case of the non-typical sherds we met many difficulties because of the small number of sherds available for analysis. For instance, the sherd described under "*d*" in the foregoing section was the only one of its kind. In mineralogy it seemed to belong with the local groups, but there were minor differences, both in kind and quantity. Since there were no sherds

with the same peculiar texture and matrix with which to compare it, we must remain in doubt as to whether the observed differences really distinguish it as a representative of a new class, all of whose members would be found to have these differences in common, or whether the differences are attributable to natural variation in the local geology. If the differences are of a major order, as in the case of the putative Spanish sherds "*f*," the evidence is more convincing, but where the geological variations themselves are slight over a wide area, and the technical features of the pottery over this area are uniform, a single example of a variant type gives rise to insoluble problems. The analytical data can be given, but their interpretation remains in doubt, and the technologist may waste hours in the attempt to find a really diagnostic difference. Thus in the case of the local wares we spent much time in an attempt to show whether there were differences in composition correlative with site differences. Since the mineralogy of the whole group is more or less homogeneous, we looked for differences in the composition of the feldspars and the hornblendes. Minor differences were found, but these showed no correlation with sites. If the material had been sufficiently abundant to allow us to have, say, ten sherds from each site, we should have been able to tell from the thin-sections themselves that the variation in each site was of the same order as the variation in the group as a whole. The additional task of identifying a series of plagioclase feldspars and hornblendes would have been unnecessary.

In another phase of the study a similar difficulty in interpretation was met. On refiring, the local sherds showed a range of oxidation colors from 9″ to 13″. One or two sherds which have a gritty, possibly eroded surface, and a medium texture of the second mineralogical type, fired to an unusual orange color (10′ *i*). Are these to be considered examples of a distinct class on this basis? It could very well be so, if it were found that ten such sherds refired to colors outside the range of the other local types. But a variation represented by but two or three sherds remains doubtful. One hesitates to dismiss it as insignificant; to describe it without interpretation is presumably all that can be done. Individual descriptions may make a report too cumbersome to be practical, yet a synthesis and interpretation are not justified.

Such difficulties, doubtless, were the factors that led Miss Shepard to insist that technological work could be of optimum value only where the ceramic material is both abundant and well understood stylistically. Only when these conditions can be met is it possible

to work on a statistical basis. An entire class of imported sherds may be recognized under such conditions more easily than a single sherd may be recognized as an import, and the relative efficiency of the technological work will increase immeasurably with a relatively slight increase in the actual magnitude of the task. The writer feels that the difficulty encountered in the present work may serve as a demonstration of the validity of Miss Shepard's contention.

MINERALOGY OF THE LOCAL WARES

INCLUSIONS

Essentially the same mineral association is found in all the sherds, with a few noted exceptions. The group differences are variations in grading and quantity of these minerals. The chief constituents are orthoclase, plagioclase, quartz, and hornblende. The minor constituents include epidote, clinozoisite, muscovite, biotite, pyroxene, zircon, titanite, actinolite, organic silica, magnetite, and iron-oxide concretions.

Orthoclase: Commonly clouded by minutely microscopic inclusions, judged to be weathering products, and larger flakes of sericite.

Plagioclase: Many of the larger grains carry sericite and grains or patches of epidote and clinozoisite. Weathered grains are common, but in some sherds the plagioclase is fresh. The typical species is in the oligoclase-andesine range. Extinction angles on lamellar twins run from 20° to 30°. Bent lamellae were observed and crystals showing strain polarization are common.

Quartz: Many grains show polarization. Two general classes of quartz are recognized: large angular rock fragments, including many with mosaic texture, and small sub-rounded grains, probably the silt or fine sand fraction of the clay.

Hornblende: Generally less abundant than the foregoing minerals, but in some sherds hornblende grains are a considerable part of the total inclusions. The species range from pargasite (gamma 1.670) to basaltic hornblende (gamma as high as 1.735). The most common species has a gamma index of 1.687 (hastingsite). Ordinarily only one species is present in a single sherd, but occasionally two distinct species with different pleochroism are recognizable.

When the sherds have been oxidized, particularly near the surface of the fabric, the hornblende has gone over wholly or partly to oxyhornblende, pleochroic in yellow and dark brown, with parallel extinction, and with higher refractive indices. Many large grains were observed in which the outer edges had been oxidized and the

inner portion unaltered, or grains in which oxidation has occurred along prominent cleavage-cracks. Such a grain is shown in Plate CCXLVIII, Fig. 2, a photomicrograph of a sherd of group 2. Several grains of hornblende are evident. The wedge-shaped grain in the center of the photograph shows color-mottling due to oxidation. The lighter areas are the green, unaltered portions of the mineral, and the darker areas are orange-brown, oxidized. That this change took place when the sherds were fired is indicated by the fact that there is a progressive alteration of hornblende to oxyhornblende from the core to the margins of many sherds.

For a description of this alteration see Winchell (Elements of Optical Mineralogy. Part 2: Descriptions of Minerals, 3rd ed., p. 252, 1933): "Basaltic hornblende may be produced by the oxidation of the iron of common hornblende (with loss of H) without destruction of the crystals; this change occurs in nature when common hornblende is heated to about 800° under oxidizing conditions, as in certain lava flows; it is easily produced artificially . . . oxyhornblende has higher gravity, refringence and birefringence than common hornblende, but its extinction angle is 0°, or very small, in all cases in which oxidation is complete or nearly so."

Rock fractures: Fairly numerous. They include various combinations of orthoclase, plagioclase, quartz, and hornblende. The texture is usually granular, with suggestions of crushing. The textures suggest an igneous rock as the source of material (an inference strengthened by the occasional occurrence of zoned plagioclase and hornblende). The mineralogy indicates a quartz-diorite or a hornblendic granodiorite. We have not been able to obtain any literature dealing with the geology of this section of Colombia in order to check this conclusion.

Except for that small proportion of the inclusions which can be attributed to the potter's clay, the grains of feldspar, quartz, and hornblende are all angular in shape. They are poorly sorted. The characteristic size-distribution for the coarse-grained sherds is from silt to very coarse sand, and correspondingly for sherds with finer texture from silt to medium sand or coarse sand. Three characteristics of the material in type 1, that is, grain shape, grain-size distribution, and alteration products in the feldspars, lead us to conclude that the potters obtained their tempering material from a deposit of coarse residual sand, which had suffered little transportation. A handful of such a sand corresponding mineralogically with the

tempering material was found as a filling in two hollow legs from Gaira.

Clinozoisite and epidote are present both in feldspar as already mentioned and abundantly as separate grains. A colorless amphibole, identified as actinolite, is present in some but not all sections. Pyroxene (probably augite), zircon, and titanite are strictly accessories. Biotite and biotite-like mica are abundant. There occur large flakes evidently introduced with the temper, but most of the biotite is minute and appears to be a clay constituent. Muscovite, not present in all sherds, is quite distinctive of the fine-textured sherds of types 2 and 3. Small grains of organic silica, which are present in most of the sections, are undoubtedly a constituent of the clay. Many of them are fragments of diatoms, and may be taken as evidence that the clay used is of sedimentary origin.

Red, opaque grains of all sizes from silt to coarse sand are present in most sections. In the well-oxidized fabrics these red inclusions are prominent. Since most of them contain mineral inclusions they might be taken to be sherd fragments, but this interpretation is rejected because many of the red grains are rounded like natural concretions.

CLAYS

The clay matrix in all of these local sherds is essentially coarse-grained (as clays go), micaceous, with brown micas conspicuous, and with the clay particles themselves of micaceous habit, strongly birefringent where the iron content has been oxidized and thus rendered translucent. As already remarked, in discussion of the minerals, the clay is slightly silty, and contains siliceous remnants of what are probably diatom frustules. It can accordingly be regarded as of sedimentary origin.

Several sherds (thirty in all) were refired half an hour in an oxidizing atmosphere at a temperature of approximately 1000° C. One example of the red-orange ware proved to be non-refractory; bloating occurred on this one sherd, and other sherds of type 1 showed incipient vitrification. All of the sherds fired to some shade from 9″ to 13″, and distinctions between types are not easy to make on the basis of different shades of the same fundamental colors. It would be hard to differentiate the black-slipped ware (from which the black surface is oxidized rapidly at 1000°) and the brown micaceous sherds on the basis of their oxidation colors. A group of three red-orange sherds which resemble the black ware in mineralogy and texture have a distinctive oxidation color (10′) which seems to be

characteristic and may indicate that they represent a distinct subtype of different clay composition.

DESCRIPTIONS OF THE LOCAL TYPES

The mineralogical summary just presented is applicable to the whole local group. Certain general quantitative and qualitative differences in mineralogy are characteristic for specific types. On the basis of mineral content and texture three types of sherds are recognized. Each of these can be characterized in general by its texture and its prominent mineral: (1) Coarse, feldspathic; (2) medium to fine, hornblendic; (3) fine, micaceous. These three classes tend to be in correspondence with the ceramic classification.

(1) Red-orange type. The sherds of this group are coarse-textured, heavy, thick-walled. A majority of them have dark cores, indicating incomplete oxidation, while the surfaces are oxidized.

Thickness: Av. 9 mm. Range: 8–14 mm. (measurement of wall thickness only. Flanges, bases, and applied figures are much thicker).

Color: Outer surface, 7″ to 17″*i*. Typical: 9″ (Testaceous).
Inner surface, 9″*h* to 17″″*c*. Typical: 13‴ (Fawn).

Hardness: Av. 4.5. Range: 3–6.

Refired: Fabric color, 9″*i* (Cacao Brown) to 11″ (Pecan Brown).
Slip color, 9″ to 11″.

Mineralogy: Orthoclase and plagioclase are more abundant than quartz. Orthoclase slightly less than plagioclase in quantity. The large, opaque, white feldspar grains present a striking appearance in the hand specimen, especially in those sherds in which the core is black, and the feldspar inclusions stand in strong contrast to the dark matrix. Among them occur grains with a maximum diameter of 2 mm.

Texture: Volume of inclusions. Average total inclusions (eleven typical sherds): 41 per cent, range 29 per cent to 47 per cent. The total content of feldspars and quartz taken together averages 38 per cent. The range is from 23 per cent to 46 per cent. Hornblende and accessories are on an average 3 per cent of the volume of the sherds. Range of hornblende and accessories: 1–9 per cent. At least 17 per cent of the inclusions are visible (fine sand to very coarse sand, incl.). The sherds can be said, therefore, to be "moderately tempered" (Shepard's scale). Grading: The characteristic texture of this group is shown by the following particle-size distributions (averages for six sherds).[1] A finer-textured example of this type is shown in the photomicrograph (Plate CCXLVIII, Fig. 1).

SHEPARD SCALE

	Fine	Medium	Coarse	Very coarse
Average	30	6	6	1
Range	17–41	1–9	2–15	0–2

WENTWORTH SCALE

	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand	Very coarse sand
Average	14	12	4	6	6	1
Range	9–17	8–18	0–6	1–9	2–15	0–2

Surface: The surfaces have been rather irregularly smoothed (parallel facets from the smoothing tool are quite conspicuous on some). The smoothing

[1] The average volume of inclusions is given as 41 per cent but it will be noted that the total of the grading percentages is 43 per cent. This apparent discrepancy is due to the different number of thin-sections analyzed in each case.

has produced a slight parallelism in the clay particles of the matrix at the surface. To some of these smoothed surfaces a thin wash has been applied, a wash which apparently contained very little clay, since it is evident in thin-section that the color has been absorbed by the clay to a fairly uniform depth (about 0.06 mm.). There is no evidence of a separate surface layer. When the sherds were refired to 1000° the fabrics and surfaces were oxidized to the same colors. The coloring agent can therefore be assumed to have been derived from the potter's clay itself.

(2) Black type. The sherds of this type have a medium to fine texture and contain considerable hornblende. The accessory minerals, especially epidote and biotite, are prominent.

Thickness: Av. 7 mm. Range: 4–12 mm.

Color: Generally the sherds are black only on one surface. The characteristic colors of the slipped surfaces are shades of neutral gray, carbon gray, and sooty black (1″″″*m*), etc. The characteristic colors of the non-slipped surfaces are 13‴ and 13″″. The fabrics are generally oxidized along their margins, showing color bands in cross section. Typical colors are 13 and 17 (″ and ‴). Range 9″*b* to neutral gray.

Hardness: Fabric Av. 4. Range: 2–6. Slip: Av. 5. Range: 2.5–7.

Refired: Fabric color, 10″ (Cacao Brown/Pecan Brown) to 12″ (Vinaceous-Tawny/Orange-Cinnamon). Slip: 9″*k* (Walnut Brown) to 12″*i* (Pecan Brown/Mikado Brown).

Mineralogy: The sherds show a concentration of hornblende, and accessory minerals, especially epidote and biotite. Altered hornblende is prominent in many of our sections. Mica increases in relative abundance toward the finer end of the series. Red iron oxide nodules occur sparingly.

Texture: Volume of inclusions: Av. 22 per cent. Range: 14 per cent to 41 per cent. The sherds are "moderately tempered." The total volume of quartz and feldspar is 15 per cent. Range: 9 per cent to 25 per cent. The volume of hornblende averages 6 per cent. Range: 2 per cent to 18 per cent. The accessories such as epidote and clinozoisite were calculated with the hornblende and are estimated to be about 2 per cent. The mica, which is prominent in the finer-textured sherds, was not measured. Grading: Particle size distributions are given for six sherds.

SHEPARD SCALE

	Fine	Medium	Coarse	Very coarse
Average	20	3	...	...
Range	12–31	1–8	...	...

WENTWORTH SCALE

	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand
Average	9	7	4	3	....
Range	3–13	6–9	3–9	1–8	....

The photomicrograph (Plate CCXLVIII, Fig. 2), which has already been mentioned with reference to the oxidation of hornblende, illustrates one of the coarser fabrics of this type.

Surface: The outer surfaces are generally smooth, but some show the parallel flutings of the smoothing tool. These outer surfaces have a dark gray or brownish slip of variable thickness. Brush strokes are evident on several pieces crossing the burnishing facets and in one instance leaving the unslipped surface exposed as a decorative feature. The pigment is evidently carbon; it is completely oxidized by refiring at high temperature, leaving no visible ash. The slipped outer surfaces are generally harder than the non-slipped inner surfaces. The slip appears in thin-section as a microscopic opaque line (0.01 mm.) or an opaque black layer (0.05 mm.).

(3) Brown micaceous type. Megascopically this ware is quite striking because of its thin walls, peculiar brown color, soft fabric, and generally gritty surface. The texture is fine and prominently micaceous. The only

inclusions clearly visible to the unaided eye are glittering white mica flakes, and iron oxide concretions, which are frequently soft and powdery.

Thickness: Av. 4 mm. Range: 3–5 mm.

Color: Characteristic surface and fabric colors: 13 and 17 (''' and '''').

Hardness: Av. 3.5. Range: 2.5–5.5.

Refired: Characteristic surface and fabric color: 13'' (Orange Cinnamon).

Mineralogy: In these sherds, orthoclase is scarce. Small grains of plagioclase and quartz are prominent. Hornblende is present, but is a minor constituent. Biotite and muscovite are sufficiently abundant to give the sherds a micaceous texture. Muscovite, both as minute flakes and as lamellar "books," is characteristic. Actinolite was observed in all the sections of this type.

Texture: Volume of inclusions: Av. 12 per cent. Range: 8 per cent to 23 per cent. The average volume of feldspar and quartz is 10 per cent. Range: 8 per cent to 15 per cent. Hornblende and accessories 2 per cent. Range: 1 per cent to 8 per cent. The micas were not measured but are estimated at 10 per cent to 15 per cent. The type is described as "sparsely tempered." Grading: The size distributions of five sherds were recorded.

SHEPARD SCALE

	Fine	Medium	Coarse	Very coarse
Average	11	...	...	...
Range	8–15	...	...	...

WENTWORTH SCALE

	Silt	Very fine sand	Fine sand	Medium sand	Coarse sand
Average	9	2	0	...	...
Range	8–10	0–4	0–1	...	...

A photomicrograph of a sherd of this type is given in Plate CCXLVIII, Fig. 3. The micaceous character of the fabric is shown clearly.

Surface: The surfaces have been smoothed, but parts of the original surface have been eroded, leaving a residual surface gritty and uneven. No trace of slip was found in any of the sections, but one or two sherds bear what seem to be tiny remnants of a dark surface either slipped or polished. One of the black-slipped vessels belongs texturally to type 3 and may indicate that all were once black.

INDEX

neg. 85974
(5½ x 6)
al #72

153668

154592

RED ROUND-BOTTOM JARS OR OLLAS

Upper right, 17 x 13 cm.

LARGE BURIAL URN OF TYPE B
Height, 80 cm.

BURIAL URNS OF TYPES A AND B

Carnegie Museum, Pittsburgh

Left, type A; height, without the missing ring base, 71 cm. Right, type B; height (rim estimated), 66 cm.

BURIAL URNS OF TYPE B

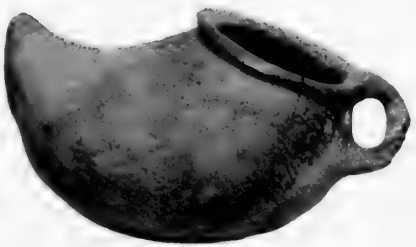
Museum of the American Indian, Heye Foundation

Height of larger, 77 cm. Both are restored in part

BURIAL URNS OF TYPE B

Museum of the American Indian, Heye Foundation
Height of largest, 72 cm.

1



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154942

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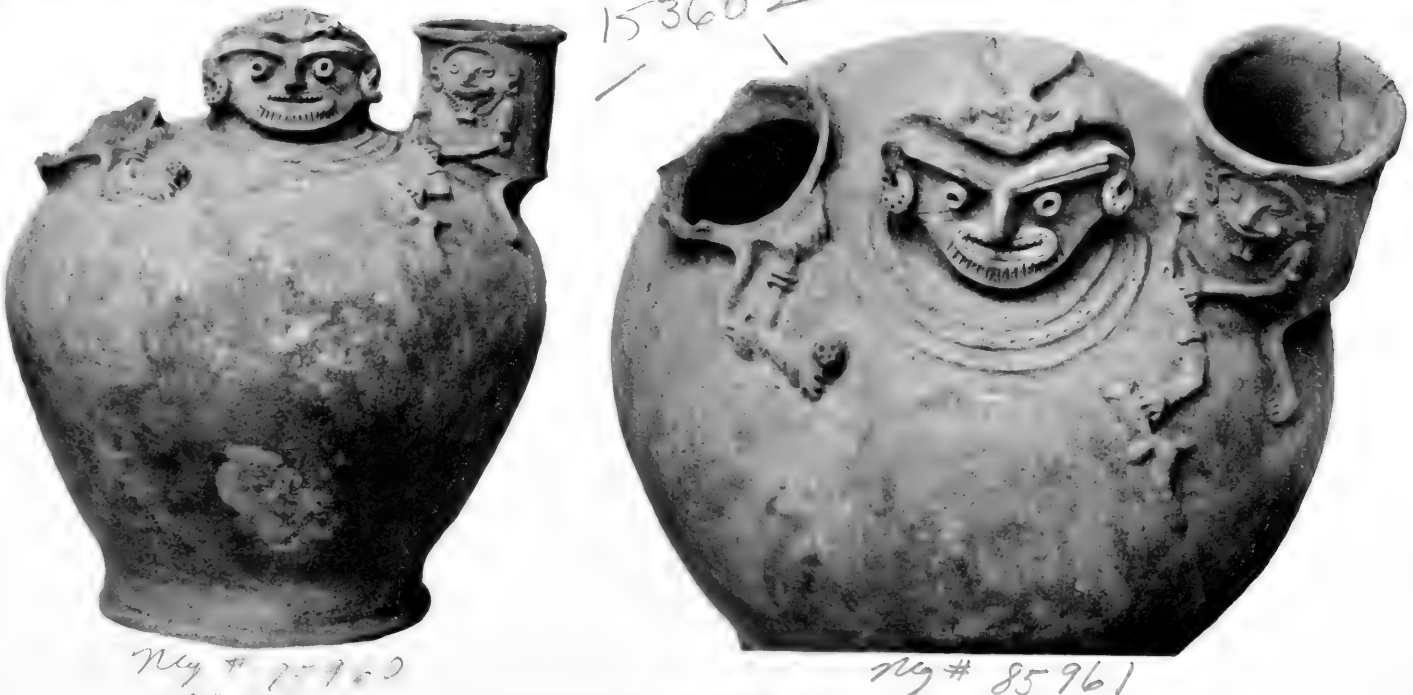
VESSELS OF RED WARE OF SIMPLE SHAPES

Figs. 1, 3. Red, ring-base neckless jars without carination. Fig. 2. Shoe-shaped vessel. Fig. 4. Bowl of truncated cone shape. Fig. 5. Plain round-bottom pot. Width of Fig. 4, 38 cm.

Neg # 85973
(5X6½)
al-H72

RED, RING-BASE, NECKLESS, CARINATED JARS AND BOWLS

Height of largest, 25 cm.



DOUBLE-ORIFICE URN; FRONT AND TOP VIEWS

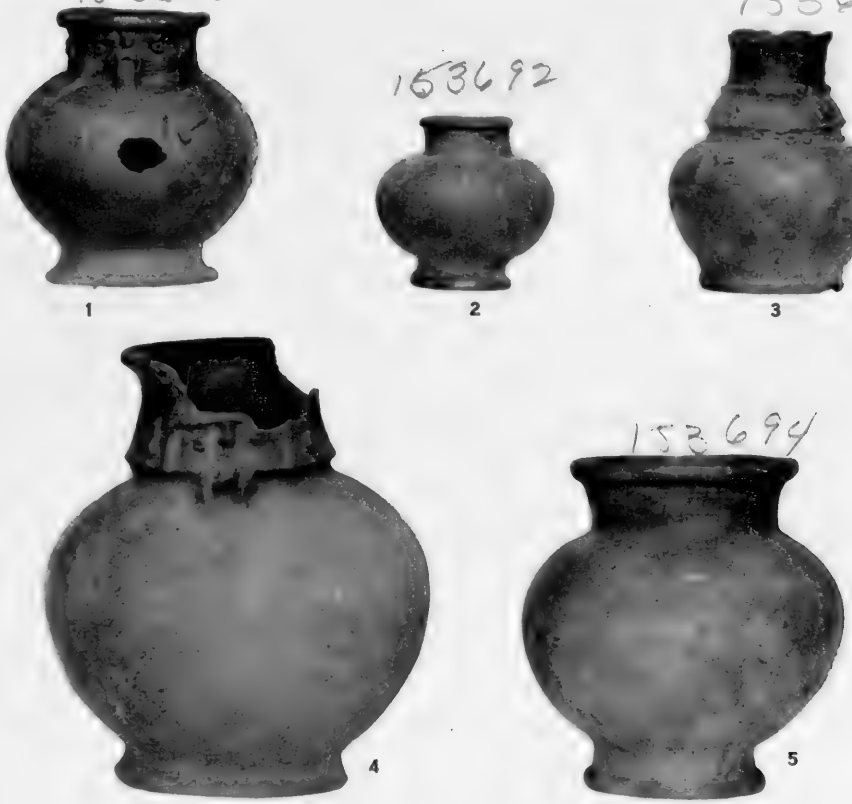
Height, 56 cm.

Neg # 85972
(5x6½)
al#72

153685

153692

153694



1 2 3 4 5

RED JARS WITH RING BASE AND NECK

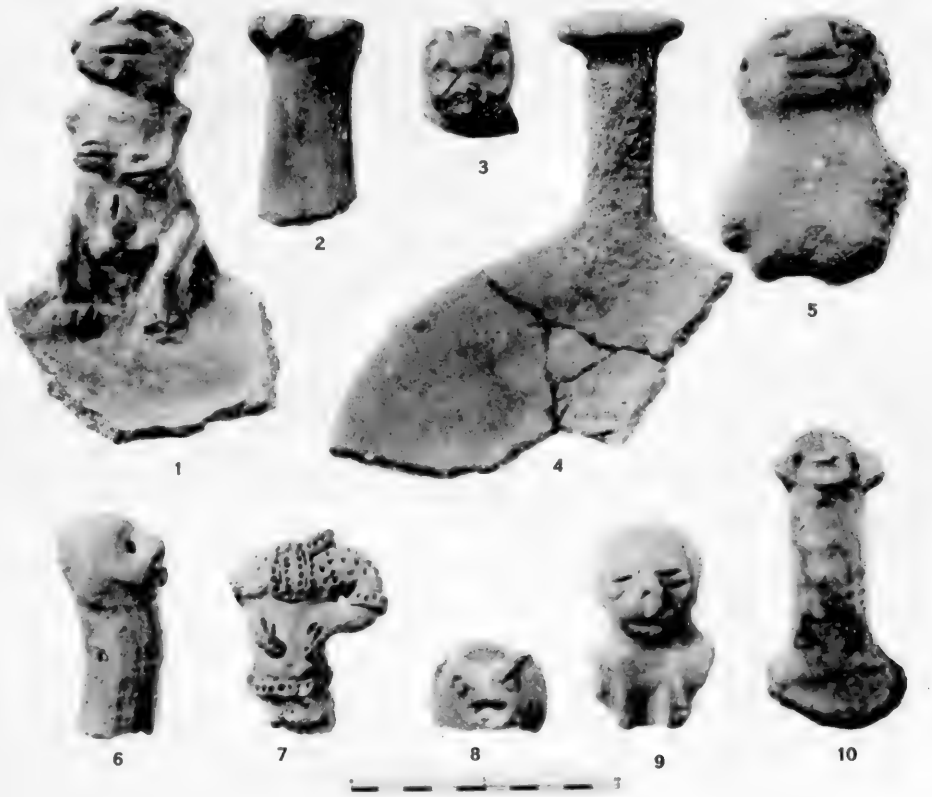
Height of Fig. 4, 34 cm.

1

3

RED JARS WITH RING BASE AND NECK

Fig. 1. With proper cover-bowl; Museum of the American Indian, Heye Foundation; height of jar, 32 cm. Fig. 2. Field Museum; base missing; height, 40 cm. Fig. 3. University Museum; base missing; height, 49 cm.



HANDLES OF LADLES
University Museum
Length of Fig. 5, 10.5 cm.

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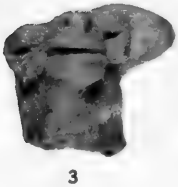

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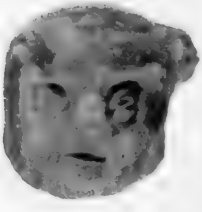

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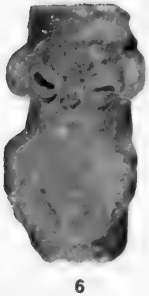

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HANDLES OF LADLES

Length of Fig. 1, 14 cm.

HANDLES OF LADLES

Museum of the American Indian, Heye Foundation

FRAGMENTS OF LARGE RED VESSELS WITH HUMAN LOW RELIEF

Probably mainly from necks of burial urns of type B; Fig. 5 is from large treasure jar

FRAGMENTS OF LARGE RED VESSELS WITH HUMAN LOW RELIEF

Probably mainly from necks of burial urns of type B

FRAGMENTS OF RED VESSELS WITH HUMAN RELIEF

Figs. 1–3. Probably from necks of burial urns of type B. Figs. 4, 6. Necks of round-bottom red jars. Fig. 5. Top of double-orifice urn

Ny # 85975 (5×7½) alt # 72

FRAGMENTS OF RED VESSELS WITH HUMAN LOW RELIEF


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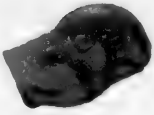
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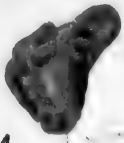
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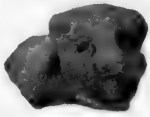
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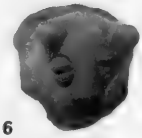
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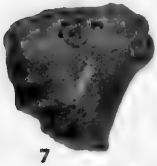
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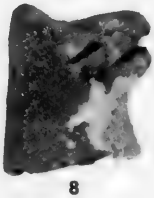
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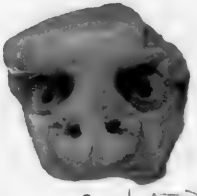
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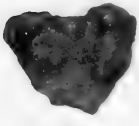
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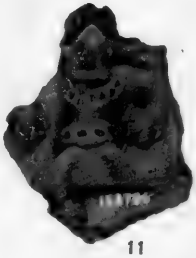
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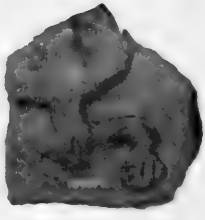
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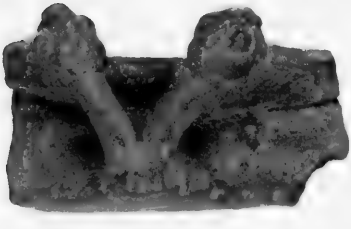
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15

FRAGMENTS OF RED VESSELS WITH ANIMAL RELIEF

ng # 85958 (5×7) al #72

FRAGMENTS OF RED VESSELS WITH RELIEF REPRESENTING PENDENT ORNAMENTS AND OTHER OBJECTS

FRAGMENTS OF RED VESSELS WITH HUMAN LOW RELIEF
Museum of the American Indian, Heye Foundation

FRAGMENTS OF RED VESSELS WITH HUMAN RELIEF
American Museum of Natural History

FRAGMENTS OF RED OR BLACK VESSELS WITH HUMAN RELIEF

University Museum

Figs. 2, 6, 8, 10, 11. Red ware. Others black ware

al#72

RED AND BLACK RELIEF, SPOUT, AND PESTLE

Carnegie Museum

Fig. 1. Bat head from black vessel. Figs. 2, 3. Spout and relief from same black vessel. Fig. 4. Pestle. Figs. 5, 7–9. Human red relief. Fig. 6. Handle of ladle

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4

BLACK OLLAS WITH FLYING-BIRD LOW RELIEF AND INCISED DECORATION

Height of Fig. 3, 18 cm.

BLACK OLLAS WITH ANIMAL RELIEF AND INCISED DECORATION

Height of Fig. 3, 19 cm.

BLACK VESSELS WITH HUMAN OR ANIMAL RELIEF

Figs. 1, 3, 5. Black vessels with human low relief. Fig. 2. Small effigy vessel of fine carved ware. Fig. 4. Black effigy vessel with tubular spouts, 24 cm. high

BLACK OLLAS WITH HUMAN HIGH RELIEF

Left, Museum of the American Indian, Heye Foundation; height, 34 cm. Right, Peabody Museum, Harvard University; height, 20 cm.

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4

5

BLACK RING-BASE OLLAS

Height of Fig. 5, 14 cm.

BLACK RING-BASE OLLAS AND BOWLS

Height of Fig. 5, 15 cm.

SMALL BLACK RING-BASE BOWLS, AND NECKS OF RED BURIAL URNS OF TYPE B

Height of Fig. 2, 9.5 cm.; urn necks are much larger

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4

BLACK RING-BASE BOWLS AND CUPS

Fig. 1. Bowl with broad orifice and constricting ring base, 9.8 cm. high

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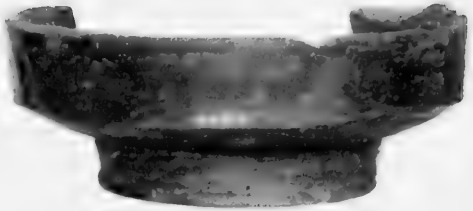

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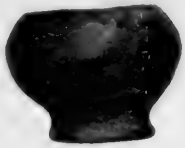
BLACK RING-BASE BOWLS

Height of Fig. 5, 11.5 cm.

ng # 85969 (4½ x 8) al #72



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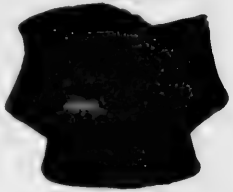

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153859

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154543

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153880

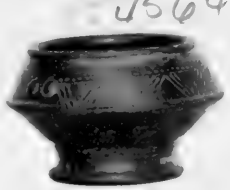
8

SMALL BLACK RING-BASE BOWLS AND CUPS, AND KYLICES

Figs. 2 and 3. Kylix-base bowls with broken bases, 13 cm. wide

BLACK RING-BASE BOWLS

Height of Fig. 4, 15 cm.



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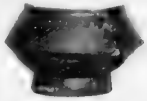

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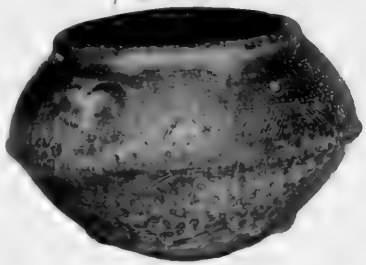

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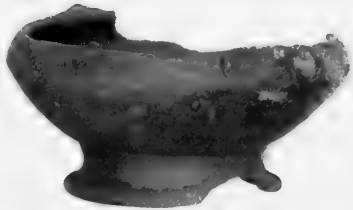
BLACK RING-BASE BOWLS

Height of Fig. 6, 14 cm.

1



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BLACK RING-BASE BOWLS

Width of Fig. 4, 18 cm.

VARIOUS BLACK RING-BASE VESSELS

Figs. 1, 3. Grater bowls. Fig. 2. Double-orifice, oval-base vessel. Fig. 4. Unusual large olla. Fig. 5. Unique large bowl. Height of Fig. 4, 29 cm.

neg # 85956
(5x6)
alt 12

BLACK ROUND-BASE VESSELS
Height of largest, 17 cm.

BLACK TETRAPOD BOWLS AND EFFIGIES

Fig. 5. Small effigy vessel of fine carved ware. Height of Fig. 4, 16 cm.

Ng # 85943
(4½ × 7) alt. 12

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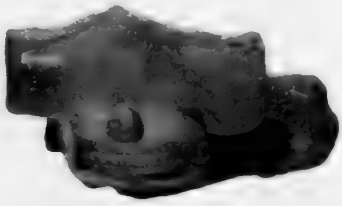
FRAGMENTS OF BLACK BASKET-HANDLES WITH BAT RELIEF

Probably from tetrapod bowls like Fig. 1 in Plate CCII

1



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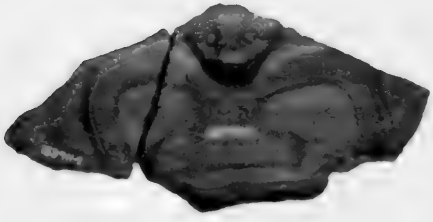

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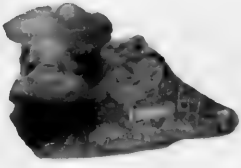

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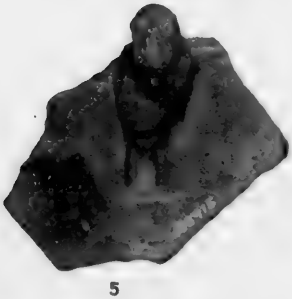

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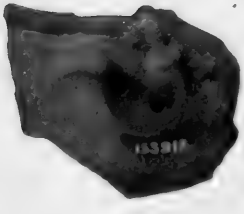

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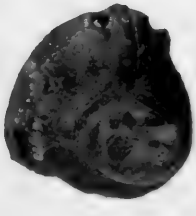

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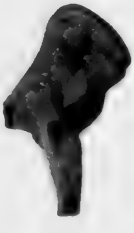

9

ANIMAL RELIEF FROM BLACK VESSELS

Mainly of bats. Fig. 1. Snake. Fig. 9. Bird

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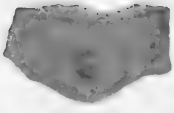

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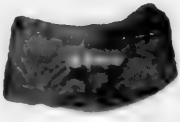

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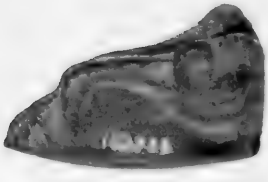

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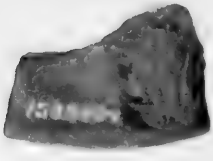

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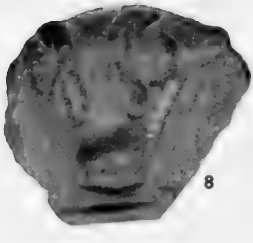

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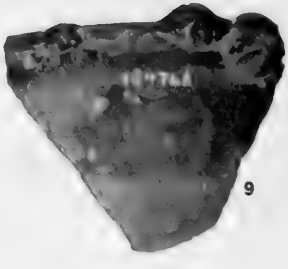


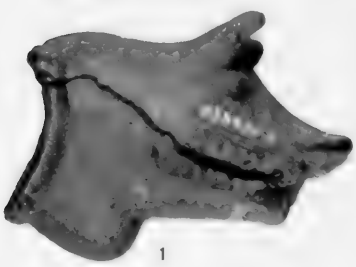
9

ANIMAL RELIEF FROM BLACK VESSELS

Figs. 1, 3. Curassow. Figs. 2, 7. Reptile. Figs. 5, 6, 9. Bat

ANIMAL RELIEF FROM BLACK VESSELS

Fig. 1. Bat. Fig. 3. Reptile. Figs. 4, 6. Iguana. Fig. 7. Monkey. Fig. 8. Porpoise(?). Fig. 10. Bird. Fig. 11. King vulture. Fig. 12. Parroquet. Fig. 13. Eagle or hawk



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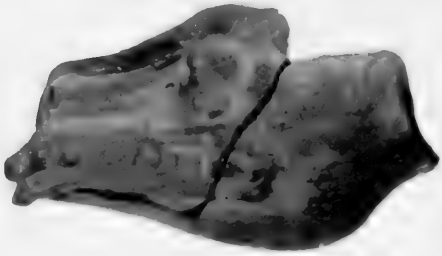

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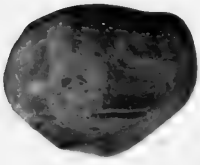

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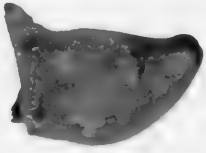

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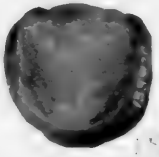

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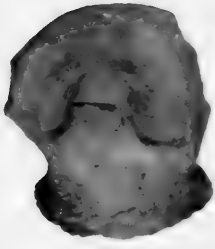

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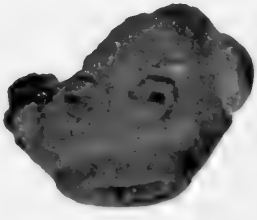

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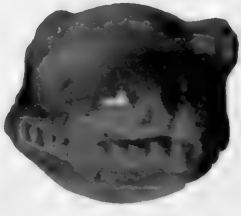

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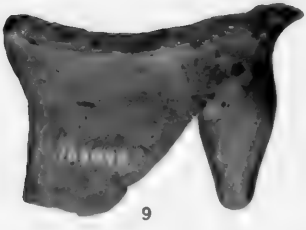

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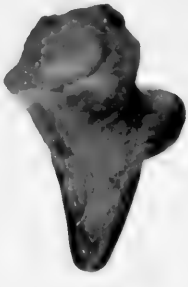

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11

ANIMAL RELIEF FROM BLACK VESSELS

Figs. 1, 5, 6, 8. Bat. Fig. 2. Skull of armadillo(?); probably a spout. Fig. 3. Lizard or iguana. Fig. 4. Manati. Fig. 7. Monkey(?)

ANIMAL RELIEF FROM BLACK VESSELS
Museum of the American Indian, Heye Foundation
Mainly bats

ANIMAL RELIEF FROM BLACK VESSELS

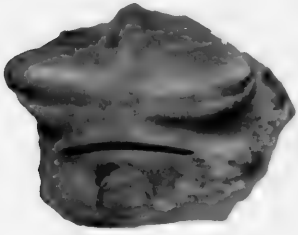
University Museum

Mainly bats

BIOMORPHIC RELIEF FROM BLACK VESSELS

American Museum of Natural History

Fig. 4. Probably head of red ladle handle. Fig. 6. Spout



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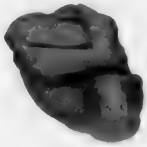

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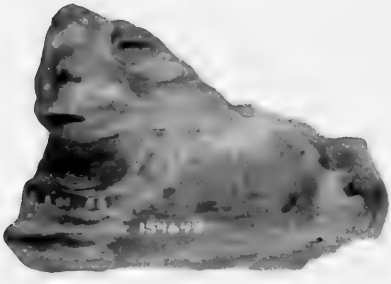

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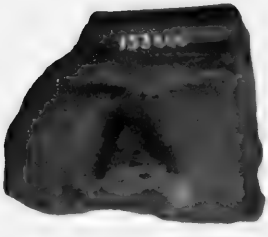

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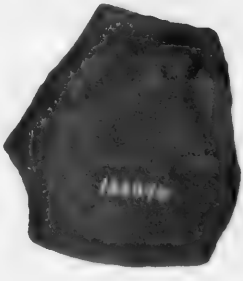

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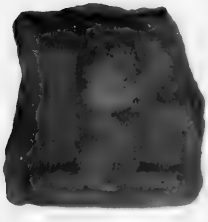

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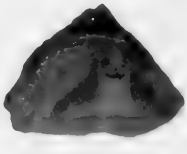


8

BIOMORPHIC RELIEF FROM BLACK VESSELS

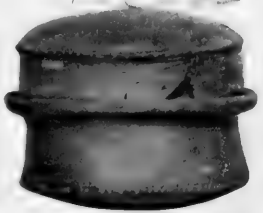
Human, some with nose ornaments and labrets; and birds

neg # 85931 (4½ x 7) 20#72

HUMAN OR ANTHROPOMORPHIC ARMS AND LEGS

Relief from black vessels or whistles

1



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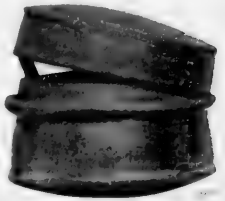

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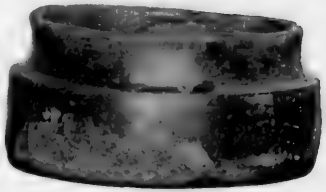
TREASURE JARS OF USUAL TYPE

Figs. 1–3. Black ware, with covers. Figs. 4, 5. Red ware. Height of Fig. 4, 31 cm.



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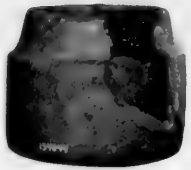

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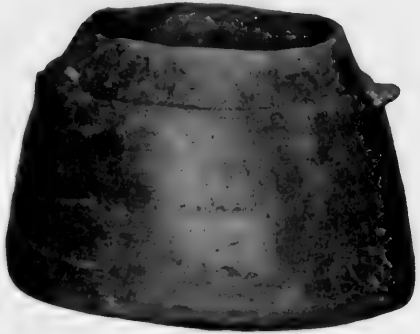

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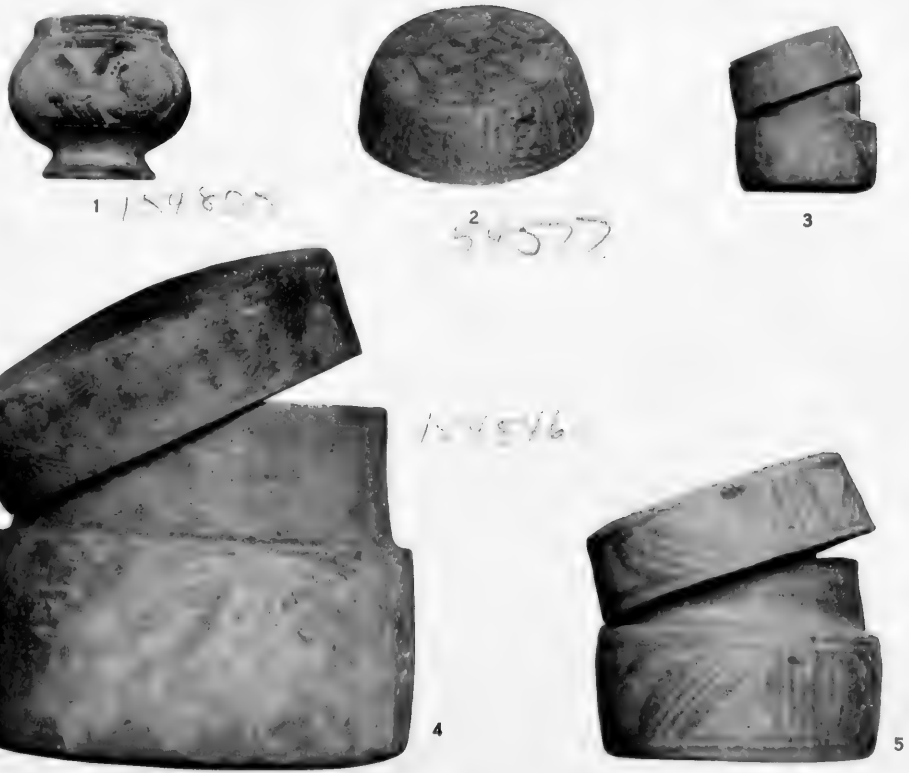
TREASURE JARS OF NAHUANGE TYPE

Height of Fig. 4, 13.5 cm.



PAINTED WARE

Mainly treasure jars and covers; the large cover is of incised black ware and originally belonged to the large jar in Plate CCXVII, Fig. 5. Height of Fig. 4, 25 cm.

VARIOUS VESSELS

Museum of the American Indian, Heye Foundation

Fig. 1. Black ring-base bowl. Fig. 2. Black ring-base olla. Fig. 3. Black tetrapod bowl (largely restored). Fig. 4. Red treasure jar. Fig. 5. Red round-bottom jar. Height of Fig. 2, 15 cm.

VARIOUS VESSELS

Museum of the American Indian, Heye Foundation

Fig. 1. Red treasure jar. Fig. 2. Black ring-base jar. Fig. 3. Red ring-base jar. Fig. 4. Black ring-base jar with animal relief. Fig. 5. Black treasure jar of Nahuange type with incised decorations; its cover is shown in Plate CCXV, Fig. 4. Fig. 6. Black ring-base cup. Height of Fig. 5, 25 cm.

VARIOUS VESSELS OF POLISHED BLACK WARE

Göteborgs Etnografiska Museum

Figs. 1, 3. Ring-base ollas. Figs. 2, 4, 5. Round-bottom ollas. Figs. 6, 8. Kylix-base bowls. Fig. 7. Grater-bowl of grayish yellow ware. Figs. 9–11. Tetrapod effigy vessels. Height of Fig. 1, 19 cm.

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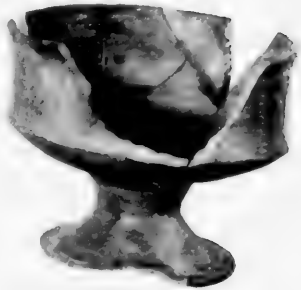

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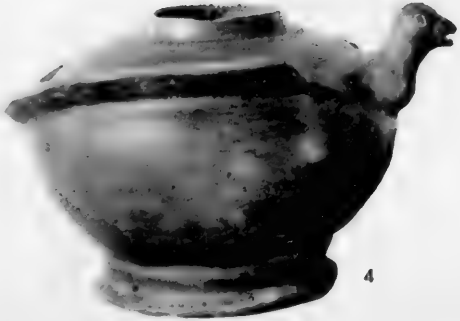

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VARIOUS BLACK VESSELS

University Museum

Figs. 1, 3. Kylix-base bowls. Fig. 2. Neck of ring-base olla. Fig. 4. Bird effigy vessel. Fig. 5. Human effigy vessel. Fig. 6. Round-base vessel. Height of Fig. 4, 18 cm.

1

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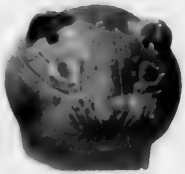

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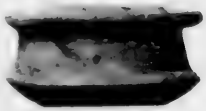

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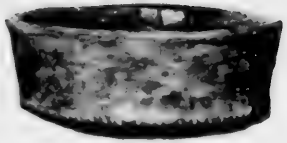

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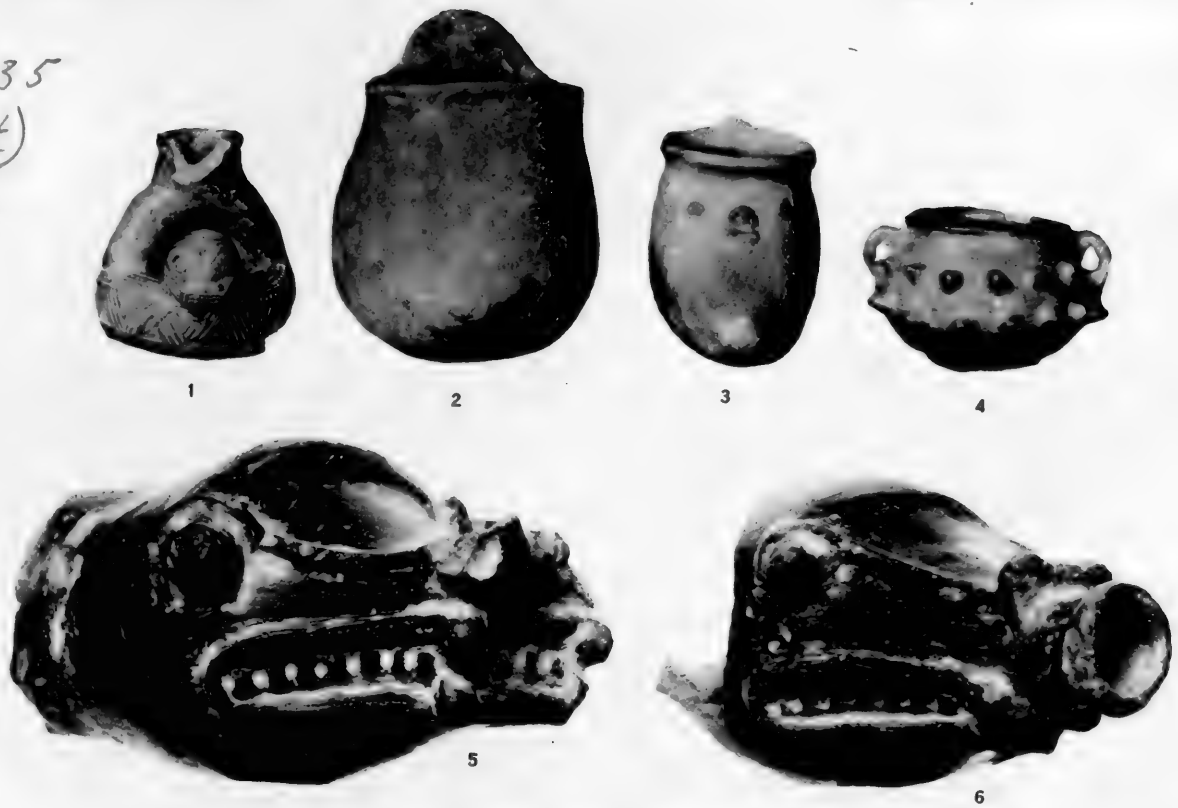
VARIOUS VESSELS AND OBJECTS

Museum für Völkerkunde, Berlin

Fig. 1. Small effigy vessel or figure (possibly of a variant culture). Figs. 2, 7. Ring-base bowl and cup. Figs. 3, 6. Heads of jaguars(?); probably relief from vessels. Fig. 4. Very small treasure jar. Fig. 5. Ring-base olla. Fig. 8. Cover of treasure jar. Height of Fig. 2, 10.5 cm.

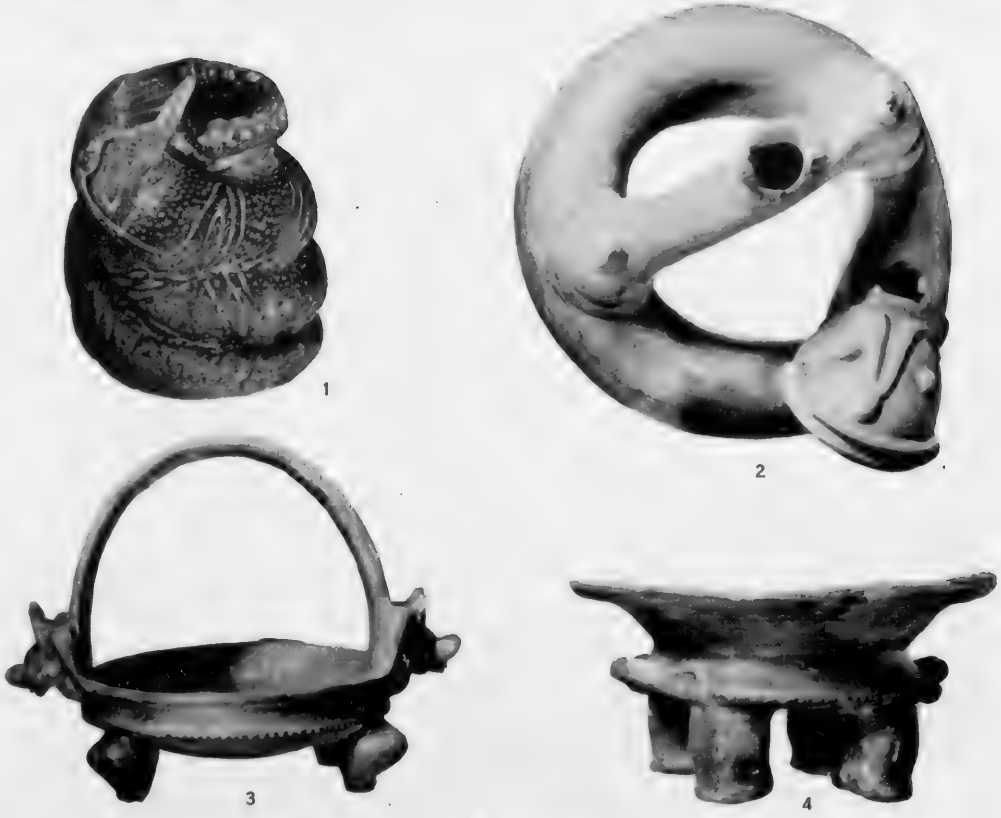
VARIOUS VESSELS

Figs. 1–3. Black ring-base ollas, Museum für Völkerkunde, Berlin; 16, 20 and 19 cm. high. Fig. 4. Red round-bottom olla, Museum für Völkerkunde, Berlin; 15 cm. high. Fig. 5. Tetrapod effigy with stirrup spout; British Museum, 23(?) cm. high. Fig. 6. Vessel with tubular spout, Göteborgs Etnografiska Museum; 14.5 cm. high



VARIOUS SMALL VESSELS, AND BLACK RELIEF AND SPOUT

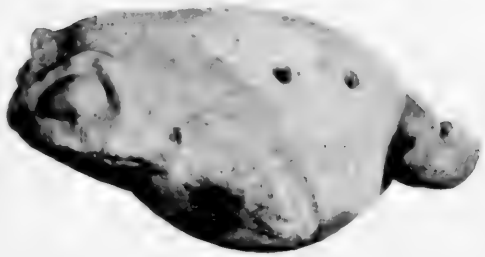
Figs. 1–4. American Museum of Natural History. Figs. 5, 6. Museum für Völkerkunde, Berlin. Fig. 1. Small effigy vessel of fine carved ware in form of snake, with stirrup spout, 9 cm. high. Figs. 2, 3. Shoe-shaped vessels, 12 and 9 cm. high. Fig. 4. Small brown knobbed ring-base bowl, 6.5 cm. high, uncharacteristic and possibly exotic. Fig. 5. Animal head relief, 10 cm. long. Fig. 6. Spout in form of animal head, 10.5 cm. long



UNUSUAL VESSELS

Fig. 1. Small effigy vessel of fine carved ware in form of coiled snake; ca. 10 cm. high. Collection of Mr. W. R. Angell.
Fig. 2. Vessel in form of coiled snake(?) with stirrup spout, Carnegie Museum; 15 cm. diameter. Figs. 3, 4. Tetrapod bowls, Carnegie Museum; 12 and 7.5 cm. high

1



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RELIEF, OCARINA AND OLLAS

Fig. 1. Part of vessel with animal head relief; Museum für Völkerkunde, Berlin. Fig. 2. Ocarina in form of toad, 14 cm. long; Carnegie Museum. Fig. 3. Black round-base olla, 9 cm. high; Carnegie Museum. Fig. 4. Black ring-base olla, 11.5 cm. high; Carnegie Museum

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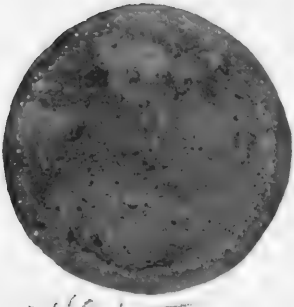

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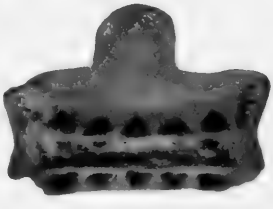

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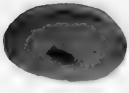

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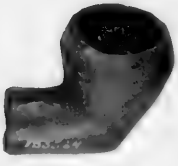

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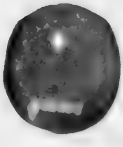

9

STAMPS, DISKS, AND TOBACCO PIPE

Figs. 1–3. Cylindrical stamps. Figs. 4, 5. Small disks. Fig. 6. Flat stamp. Figs. 7, 9. Bead and pendant. Fig. 8. Tobacco pipe. Length of Fig. 3, 8 cm.

SMALL OBJECTS AND FRAGMENTS

University Museum

Figs. 1–3. Small discoidal and rectangular cut sherds. Figs. 4, 8, 9. Human legs from vessel relief or ocarinas. Fig. 5. Head of figurine. Fig. 6. Spout of vessel of brown ware in form of animal head. Fig. 7. Ladle handle or torso of figurine of red ware. Fig. 10. Relief from effigy vessel of brown ware, bat wing(?). Fig. 11. Cylindrical stamp. Length of Fig. 10, 15 cm.

al#72

RATTLE, STAMP AND RELIEF FRAGMENTS

Museum of the American Indian, Heye Foundation

Figs. 1–5, 7. Animal heads; probably all from ocarinas. Fig. 6. Part of cylindrical stamp. Fig. 8. Rattle in form of animal. Figs. 9–11. Relief, possibly handles, from red vessels. Fig. 12. Relief from black vessel. Figs. 13–15. Human arms and legs from black effigy vessels. Length of Fig. 8, 19 cm.

PESTLES, STAMPS, AND OTHER OBJECTS

American Museum of Natural History

Figs. 1, 5. Pestles. Figs. 2, 4. Cylindrical and flat stamps. Fig. 3. Possibly spout. Fig. 6. Pestle, possibly salt shaker. Fig. 7. Handle of ladle. Height of Fig. 1, 10 cm.

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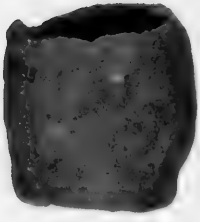

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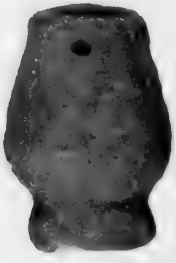

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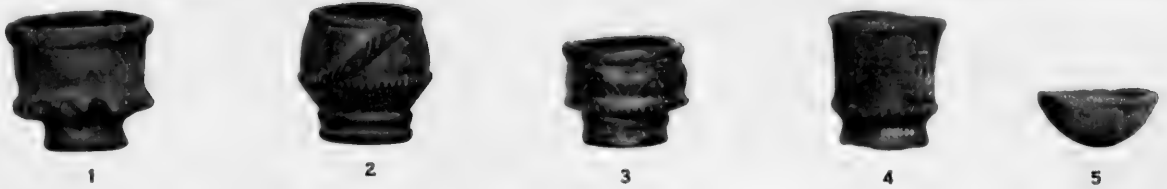
RUDE MINIATURE VESSELS
Height of Fig. 1, 3 cm.



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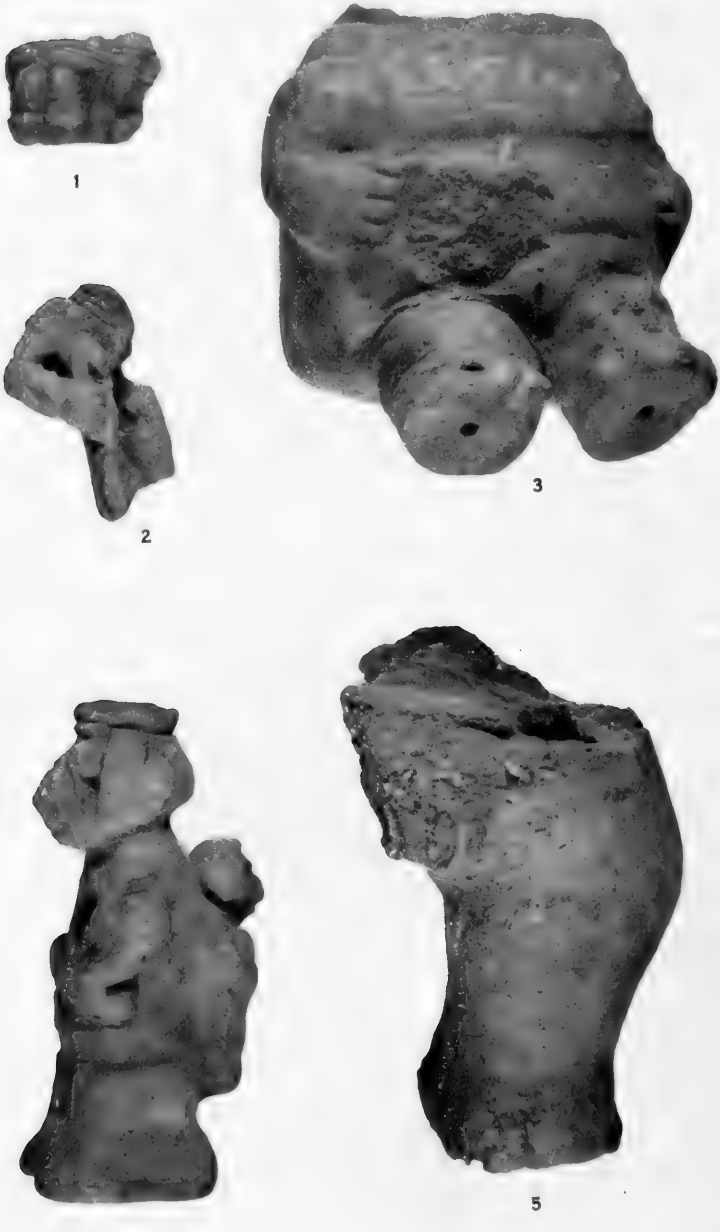
WELL-MADE MINIATURE VESSELS

Figs. 1–4, 9. Black ware. Figs. 5–8. Red ware. Height of Fig. 2, 5 cm.



POSSIBLE FIGURINES

Figs. 1, 2. Fragments of small hollow figurines or ocarinas. Fig. 3. Part of large hollow figurine or ocarina. Fig. 4. Solid figurine of yellowish ware. Fig. 5. Massive, hollow human leg from figurine; ocarina or effigy vessel. Height of Fig. 4, 8.5 cm.

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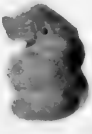

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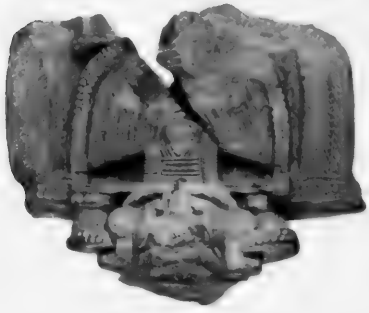
OCARINAS AND OTHER FINE SMALL OBJECTS

Fig. 1. Field Museum. Figs. 2–5. University Museum. Fig. 6. Property of Mr. William M. Sutherland. Figs. 1, 3. Ocarinas of finest carved type. Fig. 2. Small ocarina. Fig. 4. Small whistle in form of coiled snake. Fig. 5. Small effigy vessel of fine carved ware. Fig. 6. Support for figure. Height of Fig. 1, 9 cm. Height of Fig. 3, 8.5 cm.



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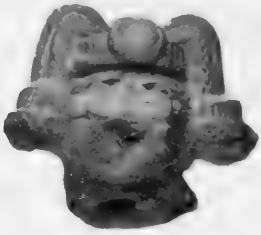

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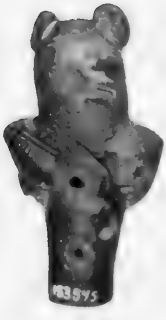

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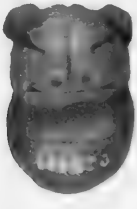

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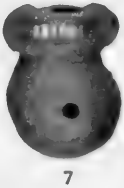

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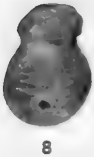

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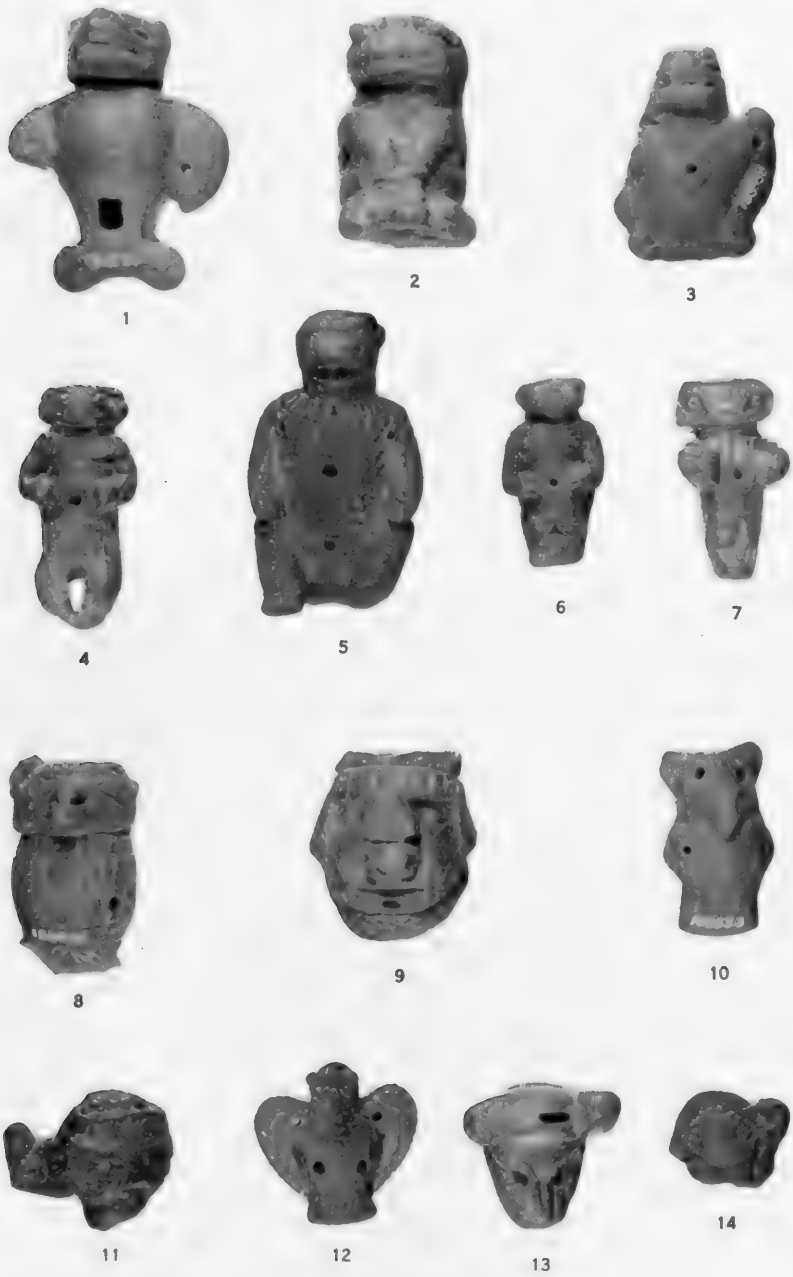
OCARINAS AND FRAGMENTS

Width of Fig. 1, 7.5 cm.



OCARINAS IN ANIMAL FORM

Possible identifications: Figs. 1, 3, 11, 13. Bats. Fig. 2. Jaguar. Figs. 4, 6. Monkeys or humans. Fig. 5. Bear. Figs. 8, 12. Birds. Fig. 10. Owl. Fig. 14. Parrot. Height of Fig. 1, 6.2 cm.

OCARINAS, WHISTLES, AND FRAGMENTS IN ANIMAL FORM

Possible identifications: Fig. 1. Tapir or other quadruped. Figs. 2, 5. Toads or frogs. Fig. 4. Owl. Figs. 7, 8. Bats. Fig. 9. Birds. Height of Fig. 1, 8.5 cm.

THREE UNUSUAL OCARINAS

Museum of the American Indian, Heye Foundation

Length of central ocarina, 11.5 cm.

OCARINAS AND SMALL EFFIGY VESSEL

Museum of the American Indian, Heye Foundation

Figs. 1, 2. Figurine ocarina, 8 cm. long. Figs. 3–5. Small ocarinas. Fig. 6. Head of ocarina. Fig. 7. Small carved effigy vessel. Fig. 8. Triple figurine ocarina. Height of Fig. 8, 9 cm.; Figs. 3–7 in proportion

OCARINAS AND FIGURINE

American Museum of Natural History

Figs. 1, 3–7. Ocarinas. Fig. 2. Figurine; height, 11 cm.

FRAGMENTARY OCARINAS OR WHISTLES
American Museum of Natural History
Height of Fig. 4, 6.5 cm.

Neg # 87234
(5×6 ½)
alt #72

OCARINAS AND WHISTLES
University Museum
Height of Fig. 1, 6.5 cm.

OCARINAS AND RELIEF HEAD

Carnegie Museum

Fig. 1. Reptile-head relief from vessel. Figs. 2–6. Ocarinas and fragments. Width of Fig. 5, 7 cm.

OCARINAS AND FRAGMENTS OF RELIEF

Carnegie Museum

Figs. 1, 5, 9. Large animal-relief heads from red vessels. Figs. 2, 4, 6, 7, 10, 11. Ocarinas and whistles. Figs. 3, 8. Relief heads from black vessels. Height of Fig. 6, 10 cm.

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OCARINAS AND FIGURINE

Figs. 1, 2. Ocarina, 7 cm. high; Peabody Museum, Harvard University. Fig. 3. Figurine, probably not of Tairona culture, 26 cm. high; Berlin Museum für Völkerkunde. Fig. 4. Ocarina, 6.5 cm. high; Berlin Museum für Völkerkunde

OCARINAS AND OTHER SMALL OBJECTS AND FRAGMENTS

Museum für Völkerkunde, Berlin

Figs. 1, 2, 13, 15, 17. Ocarinas and fragments. Figs. 3, 6, 8–10. Relief fragments from Chorrera Cordoncito, probably outside of Tairona culture. Fig. 11. Probably leg of tetrapod vessel. Figs. 12, 14. Probably spouts. Fig. 16. Stirrup handle-spout from Chorrera Cordoncito. Height of Fig. 17, 11 cm.

HEADS OF WHISTLES AND RELIEF HEADS

Göteborgs Etnografiska Museum

Figs. 1, 2, 5, 6. Solid animal-relief heads. Figs. 3, 4, 7. Heads of ocarinas.
Width of Fig. 7, 4.5 cm.

SMALL CARVED EFFIGY VESSELS AND OTHER OBJECTS

Peabody Museum, Harvard University

Fig. 1. Ocarina. Fig. 2. Black ring-base olla, 10 cm. high. Fig. 3. Small carved effigy vessel, same proportion. Figs. 4–7. Small carved effigy vessels. Height of Fig. 4, 6.5 cm.

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FIGURINE, RELIEF FRAGMENT, AND SMALL CARVED EFFIGY VESSEL

Figs. 1, 3. Seated figurine, possibly non-Tairona, described as small carved effigy vessel, front and rear views, 14.5 cm. high; Göteborgs Etnografiska Museum. Figs. 2, 4. Human arm and leg; two views, probably from large effigy vessel, same proportion; Göteborgs Etnografiska Museum. Figs. 5, 6. Small carved effigy vessel, front and side views, 17.5 cm. high; Peabody Museum, Harvard University

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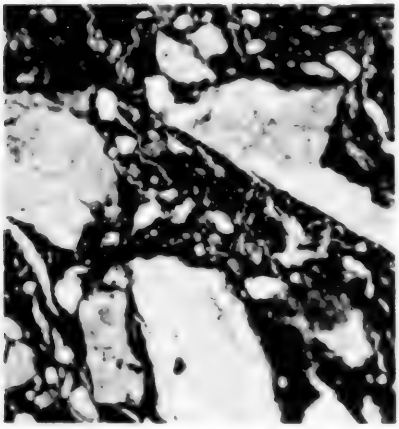

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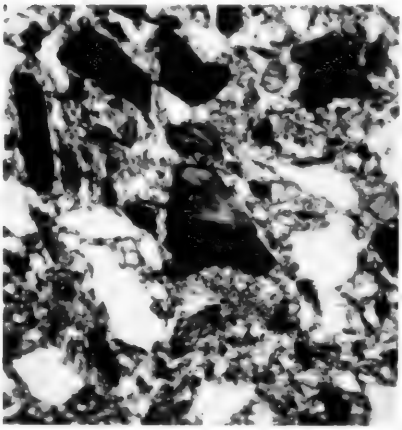

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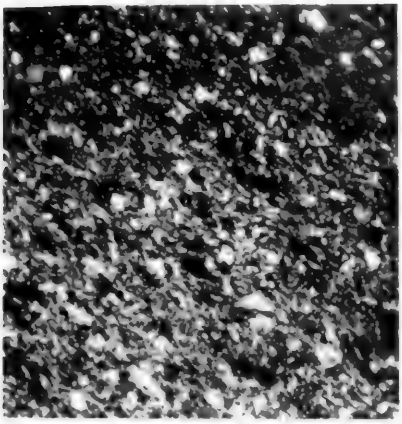

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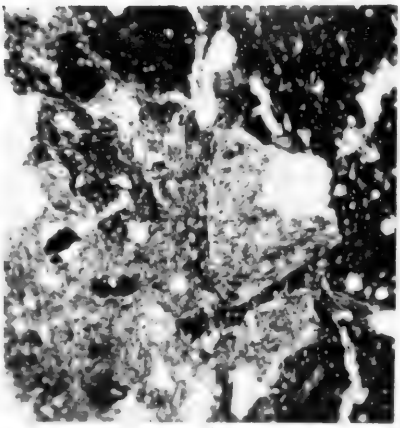

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PHOTOMICROGRAPHS OF FOUR SHERDS

Fig. 1. Type 1, coarse feldspathic (× 50, ordinary light). Fig. 2. Type 2, medium hornblendic (× 50, ordinary light). Fig. 3. Type 3, fine micaceous (× 50, crossed nicols). Fig. 4. Sherd-tempered, exotic Goajira ware (× 50, ordinary light)