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SOME RESULTS OF RECENT
ANTHROPOLOGICAL EXPLORATION
IN PERU

WITH FOUR PLATES

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SOME RESULTS OF RECENT ANTHROPOLOGICAL EXPLORATION IN PERU¹

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(WITH FOUR PLATES)

Peru may well be regarded, even in its present territorial restriction, as the main key to the anthropology of South America. Due to the numbers of its ancient inhabitants, and to their far reaching social differentiations, indicating long occupancy, a good knowledge of the people of Peru from the earliest times is very desirable, and would constitute a solid basis from which it should be relatively easy to extend anthropological comparison to all the rest of the native peoples of the Southern Continent.

We know already, in a general way, that Peru, shortly before the conquest, was peopled by three or four larger "races" or strains of Indians: The Aymara (d'Orbigny) and the Quechua, in the central and southern highlands; the Huancas (Tschudi), in the north, and the Yungas (Calancha) or Chinchas (Tschudi), along the coast.² Besides this, a considerable number of unclassified tribes existed in the northeastern and northern regions of the great territory. These various peoples are known to have spoken a number of different

¹ Paper read before the Seventeenth International Congress of Americanists, City of Mexico, September, 1910, by Dr. Aleš Hrdlička, representative of Smithsonian Institution at Congress of Americanists at Buenos Aires, May 16 to 21, 1910, and at City of Mexico, September 7 to 14, 1910.

² Calancha, A. de. *Chronica moralizada del Orden de San Augustin en el Peru*, etc. 2 vols. Barcelona, 1639-1653.

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languages and dialects and to have differed from each other in other respects, but their exact classification has not yet been determined, and from the standpoint of physical anthropology most of the groups are still enveloped in a haze of uncertainty.¹ Even ethnic units of such importance as the Quechua and Aymara are so little known physically that from the literature on the subject alone it would be impossible to form a clear notion as to their main characteristics.

The dearth of knowledge concerning the somatology of the peoples of Peru is due, on the one hand, to an almost complete lack of anthropological observations on the living, and, on the other hand, to the nature of the skeletal material which has thus far been collected. Not that the material is wanting, for there are many hundreds of Peruvian skulls scattered in our collections; but a very large majority of these skulls are more or less deformed, either artificially or accidentally, which renders them unsuitable for anthropological determinations, and other parts of the skeleton have been neglected. As to the skulls, there is no equally extensive territory in the world where cranial deformations, both intentional and unintentional, are as numerous as in Peru. Skulls of normal form from that country have actually thus far been rarities.

The accessions of Bolivian and Peruvian skeletal material in the principal American museums during the past few years have begun to shed more light on the physical characteristics of at least the Aymara and on a portion of the middle coast population of Peru. In consequence, it may be said to-day with comparative certainty that these two groups differ radically, at least so far as the cranial type is concerned; one (the Aymara) representing dolichocephalic, the other (middle coast) brachycephalic stock. Furthermore, we know to-day (due principally to Bandelier's collections) that the Aymara were in the main a people of relatively small stature, of only moderate muscular development, and often of rather small cranial capacity. The coast people from Ancon, Pachacamac, and one or two other localities, were also of rather low stature, but of somewhat stronger build, and had seemingly on the average a perceptibly larger skull. In both groups there was a relatively frequent occurrence of decidedly short and small-headed individuals. Beyond these few facts, however, things were problematical.

It was under these conditions that an opportunity, regrettably a

¹For literature on the physical anthropology of Peru, see the end of this paper.

limited one, presented itself to the writer during the summer of 1910, to visit the Peruvian coast, and as the time at his disposal could not be extended, it was decided to visit the two most important districts on the coast, namely, Pachacamac, and Chan-chan or Gran Chimu. Due to exceptional circumstances, and to kind friends, especially Dr. Max Uhle, the Director of the Museo Nacional, at Lima, and Sr. D. Victor Larco Herrera of the valley of Chicama, and also to the courtesy of the Peruvian Government, it was not merely possible to make these visits with despatch, but with unlooked for results. The writer was enabled to examine over thirty separate cemeteries, and to gather upwards of 3400 crania, with a large quantity of other skeletal parts. And more fortunately still, a large percentage of the gathered skulls, particularly from the Chimu district, are free from artificial deformation, so that they will show clearly the cranial type of the people occupying and congregating in these regions.

With this material, and the available collections from Ancon and other localities of the Peruvian littoral, it will now be possible to learn definitely the physical characteristics of the population of the Peruvian coast for a distance of over 400 miles, and establish a firm foundation for anthropological comparisons for the rest of the country.

This report, preliminary to a detailed study of the collections, will give only the general results of the writer's observations.

THE PACHACAMAC REGION

The great ruins of the temples and city of Pachacamac are situated at the lower end of the valley of Lurin, about 18 miles south of Lima, whence they are reached part of the way by trolley and part horseback. The location is an exceptionally favored one scenically. It comprises a cluster of moderate barren elevations, in proximity to the ocean and its rocky islands toward the west, the highly picturesque, green, narrowing mountainous valley on the south and east, and the desert plain and elevations to the north. The ruins themselves are extensive, as well as impressive in character. They comprise not only remnants of two of the most important of the pre-Columbian Peruvian temples and those of an interesting "Inca" convent, but also an extensive, somewhat fortress-like central structure, and several complexes of habitations spreading over the hill and slopes toward the west and northwest of the principal portion of the ruins.

For a detailed history and description of Pachacamac, the writer must refer to the work of Dr. Uhle.¹ Pachacamac was a famous religious center, comparable to the Egyptian Thebes or the Mohammedan Mecca. It originally contained a shrine of the "creator" god, Pachacamac, to which flocked "pilgrims coming from all parts of Peru, three hundred leagues or more" (Estete), and later, after conquest of the place by the Peruvians of the highlands, it also had a famous Temple of the Sun. It was at the same time a political center, the seat of a chief who ruled over the populous valleys of Lurin, Rimac, Chancay, Huacho, Supe, and Huanan (Garcilasso). Its decline dates from the year of the entrance of the Spaniards (1533) and the destruction by them of the venerated statue of the principal deity of the place (Pachacamac). In the early fifties of the sixteenth century the Augustinian monks transferred the town to the valley, and in the first part of the seventeenth century it was already a desolate pile of ruins (Calancha).

The inhabitants and the pilgrims of Pachacamac disappeared, leaving scarcely a trace in history, but they left behind a vast number of graves. Uhle estimates the total number of burials that existed within and about the ruins at between 60,000 and 80,000. There are six or more aggregations of the graves which may be regarded as distinct cemeteries, but burials, often two deep, existed apparently in every available part of the ground, within the temples, and even about and within the dwellings. The middle part of the region, bounded by the principal ruins, and especially the front of the Temple of Pachacamac, look like one vast burial place.

These cemeteries, with the exception of a smaller one, heretofore unknown, found by the writer on the south side, have been for many years, in common with the majority of other burial places in Peru, the prey of the peons, engaged in searching for pottery and precious metals, which are carried to Lima for sale. Considerable and scientifically conducted work has been done here by Uhle, particularly in the neighborhood of the temples, but the area of depredations is much greater. The result of the peons' work is the destruction of thousands of mummy bundles, and often of the mummies themselves, scattering of the bones, damage to the walls and foundations, and destruction or abandonment of everything that cannot be sold with profit. The skulls, bones, wrappings, damaged fabrics, broken jars, etc., are left to litter the surface of

¹ Uhle, M. Pachacamac. University of Pennsylvania Publications, Folio, Philadelphia, 1903.

the sands or are but partly buried by the earth thrown out from the excavations. On the writer's arrival, the place looked like a veritable Golgotha, or some great barbaric battlefield, with skulls and bones whitening the ground and ruins in every direction.

In one sense, of course, these conditions, however they may be regretted, proved of great service, giving an invaluable opportunity for investigation and collection of skeletal material. It made possible the examination on the spot of several thousands of individual skulls, a good proportion of which, however, were not removed because of damage done by the shovel or the elements.

As to collecting the skeletal remains, the writer at first hesitated, because the place was the focus of pilgrimages from a large part of ancient Peru and doubtless the last resting place of numerous visitors from distant sections. But examination of the material soon revealed such a degree of anthropological uniformity, that it was decided to make as extensive a gathering as possible. In consequence, all the well-preserved crania and a large part of the long bones, besides other skeletal parts, were gradually transported to Lima and there packed, with Doctor Uhle's kind help and supervision, to be eventually shipped to Washington. The total collection from this locality (now safely housed in the U. S. National Museum) numbers over 2200 crania, and several thousands of other bones that are of special value for anthropological determinations.

It is not as yet possible to speak of the full scientific value of the collection, but it is not readily overestimated. A number of the more important points which presented themselves during the preliminary work in the cemeteries, are as follows:

It was seen first of all that the remains were derived partly from mummies, which were especially numerous in the neighborhood of the Temple of Pachacamac, and in part from simple burials; also, that in rare instances cremation had been practiced.

The mummies were not only artificial as to their exterior, but there appeared evidence that the bodies themselves, or at least some of their parts, had been specially treated; thus a number of skulls, for the most part such as were damaged by wounds, were found filled with cotton.

All the larger cemeteries contained burials of males, females, and even children, but the last were nowhere very numerous and were in a decided minority near the temples. Males and also a few adult and elderly females were collected from about the Temple of the Sun. On the southeast terrace of this temple, Uhle reports¹ finding

¹ Pachacamac, p. 84.

a burial place containing some 90 graves. Forty-six skulls were actually discovered. Objects unearthed with the burials showed pure Cuzco forms of culture. All persons interred in this cemetery were women, and none of these had died a natural death, but were victims of strangulation. All were adults; one of the skulls showed gray hair. It is probable that the victims were strangled as sacrifices to the deity of the temple.

The people buried at Pachacamac were in general of moderate stature and physical development, with shorter and weaker individuals not infrequent.

The crania belong very largely to the brachycephalic type. An unusually high percentage, for Peru, of the crania are free from deformation and show their type perfectly.

The majority of the skulls present either simple occipital, or a fronto-occipital artificial compression, either of which, however, was seldom extreme and such as to prevent the recognition of the real type of the skull. Deformed crania were particularly frequent in the large burial ground in front, that is north, of the old temple (that of Pachacamac).

Besides the more rounded skulls there were found, particularly in front of the old temple, some crania purely dolichocephalic. These were plainly strangers to the original population, visitors or invaders, in all probability part of the Inca Peruvians. The majority of these narrower skulls were without any deformation, while a few showed some occipital compression of accidental or cradle-board origin.

Absolutely no specimen was seen which presented the Aymara type of deformation, which shows that these highland people did not visit the Pachacamac temples, and were not among the conquerors of the place.

A number of submicrocephalic and even microcephalic but otherwise normal crania were found. They have nothing in common with the small skulls of our idiots.

Finally, the long and other bones were found to offer many features of interest, some of which will be touched upon before the conclusion of this paper.

CHAN-CHAN¹ (GRAND CHIMU)

The second region visited by the writer exceeds probably in importance even that of Pachacamac. This was the district of Tru-

¹ Term used among the local natives and probably more correct than "Chimu."

jillo, with the ruins and cemeteries of Moche, Chan-chan or Gran Chimu, and the extensive, shallow valley of the Chicama.

This region was the main seat of the powerful Chimu people and abounds in their remains, ruins, huacas,¹ and cemeteries. The cemeteries are particularly numerous in the valley of the Chicama, and it was there, at the Estancia Roma, with Señor Victor Larco, the owner of a large part of the valley and one of the most enlightened Peruvians, that the writer made his headquarters.

The valley of Chicama is a large plain, but little elevated above the sea level, traversed by a small river, the Chicama, and bounded on all sides except the west and the northwest, in an irregular and broken way, by hills and mountains. It is incompletely separated from the Chan-chan plain by a mass of hills known as Cerro de Cabra. Over its surface are several isolated rocky elevations, and toward the northwestward it connects with sandy flats which extend along the coast in the direction of Pacasmayo.

The valley shows only a limited number of ruins which, however, include an interesting and relatively well-preserved fortress. These are a short distance south of Chiquitoi, one of the haciendas belonging to Señor Larco. Besides this, however, numerous old huacas are situated southeast, west, and northwest of Chiquitoi, and, lining the bases of the hills within the valley or projecting into the same, as well as in the sands of the sea-shore, there are many cemeteries of the former native population.

The Chicama cemeteries, like those of Pachacamac, have fallen a prey to the greed of the peon, and of the collectors who incite and profit by the peon, with the result that a large portion of the burials, in some places even all, have been destroyed. And, as at Pachacamac so here, the skulls and bones, and such objects as could not well be sold, were left everywhere strewn over the surface of the ground.

In this region the writer was able to remain for nearly two weeks and through the generous aid of Señor Larco, who provided him freely with men, animals, and even the use of his local railroads, he was able to visit over 30 of the cemeteries, to make examination of their skeletal contents and to gather much of the better preserved material. The bones that passed through his hands in this valley amounted to many thousands of specimens, and the collections comprise over 1100 crania, all the skeletal parts from two of the largest cemeteries, and many additional specimens, particularly long bones, from other burials.

¹ Mounds, constructed in the main of sun-dried bricks.

Among the cemeteries seen were some quite extensive ones including hundreds of graves, while others were small, with only a few score of burials. In a few cases the cemeteries were confluent, but for the most part they were separated, though the distance between them in some instances was no more than a few yards.

The examination of the skeletal material and other objects made it evident that some of the cemeteries in this valley were more modern than others; that different cemeteries served for the burial places of different groups, clans, or tribes of people; and that in numerous instances late and even recent intrusive burials in small number have taken place in the old cemeteries.

It was possible further to determine that the huacas which dot the lower part of the valley were nothing but construction-cemeteries of the old coast inhabitants. They are burial mounds built of sun-dried brick and earth, instead of earth alone as usually.

Furthermore, higher in the valley, the cemeteries were evidently those of the agricultural populations of the region, while along the coast they were those of fishermen.

The burials were for the most part simple, the body being laid in the ground wrapped in a blanket. More elaborate mummy-bundles, however, were occasionally encountered, but nothing was seen or learned that would point to intentional mummification of the body or any of its parts, as at Pachacamac. In rare instances, also, there was cremation.

As at Pachacamac, so here, too, burials in the contracted position were the rule.

An indisputable fact, applicable to all the Chicama cemeteries, is the relative scarcity of the remains of children. This is not due to the earlier decay of children's bones, for where such were found they were in just as good condition as those of the adults. It indicates either a general scarcity of children, separated interments, or a low infant mortality.

Besides the Chicama valley cemeteries, there were examined that of the Cerro de Virgen, near Chan-chan, as well as that about the Huaca of the Moon near Moche; and skeletal material was seen and in a small part collected from Chan-chan (Gran Chimú) itself.

The large cemetery about the Cerro de Virgen, was found to be a general burial ground for men and women, but there were seen no bones of children. The Huaca of the Moon appears to be mainly, if not entirely, an immense and archeologically important burial mound, built from sun-dried brick.

From the standpoint of physical anthropology, the examination of the skeletal material from the cemeteries in the district of Chiquitoi, and in the rest of the valley of Chicama, proved exceedingly interesting, for the majority of the people were found to have been of exactly the same type as those of the region of Pachacamac, that is, moderate in stature and brachycephalic.

However, it also became evident that the valley of Chicama was peopled, in the course of time, by more than one tribe of natives, though all or nearly all such tribes belonged probably to the same original stock. In some of the cemeteries were found only the undeformed and brachycephalic skulls, with those showing the accidental occipital flattening. In others there were a great preponderance of crania with highly developed occipital flattening and, mixed with these, were individuals with the fronto-occipital, or "flathead," intentional deformation. Finally, besides all these, and as at Pachacamac, there were encountered now and then individuals, or little groups of burials, with the dolichocephalic cranial type. The skulls of these were undeformed, or merely accidentally flattened in the occiput.

The more modern nature of some of the cemeteries and burials was shown especially by the pottery. In two examples in particular a vessel was seen which represented clearly conditions known only after the Spanish invasion.

There was again not a single skull which presented the Aymara type of deformation. It is certain that the Aymara proper did not reach either this valley or Pachacamac, either as pilgrims or as settlers after the conquering Incas. Squier mentions¹ having seen some skulls with the Aymara deformation, possibly the remains of soldiers, about the "Castillo" at Chan-chan, but the many ordinary cemeteries examined by the writer failed to show any such instances.

One or two facts were learned of special interest to archeology. Although only very limited excavations were undertaken, it was nevertheless possible to observe an association of certain types of pottery with definite types of people; and there is also a strong probability that differences in pottery existed at different periods of occupation of the valley. In general, the huacas and cemeteries near the sea and belonging to the original people of the valley, the old coast brachycephals, show pottery of simpler forms and more sombre colors than that found in some of the more inland burial

¹ Squier, E. G. Peru. 8°. New York, 1877, p. 123.

grounds. The ware also reminds one of some of the more northern types (pls. 1, 3, and 4).

In several of the more inland cemeteries, on the other hand, the differentiation of form in pottery and also its fineness have reached a high level. Finally, graves which appear to be more modern yield especially vessels with large, flaring borders characteristically decorated in red with various figures, some of which represent natural objects, as animals, warriors, etc., while others are apparently of complex symbolic meaning. Two graves, which yielded undeformed dolichocephalic skulls, contained highly ornamented pottery which probably belongs to the last mentioned period (pl. 2).

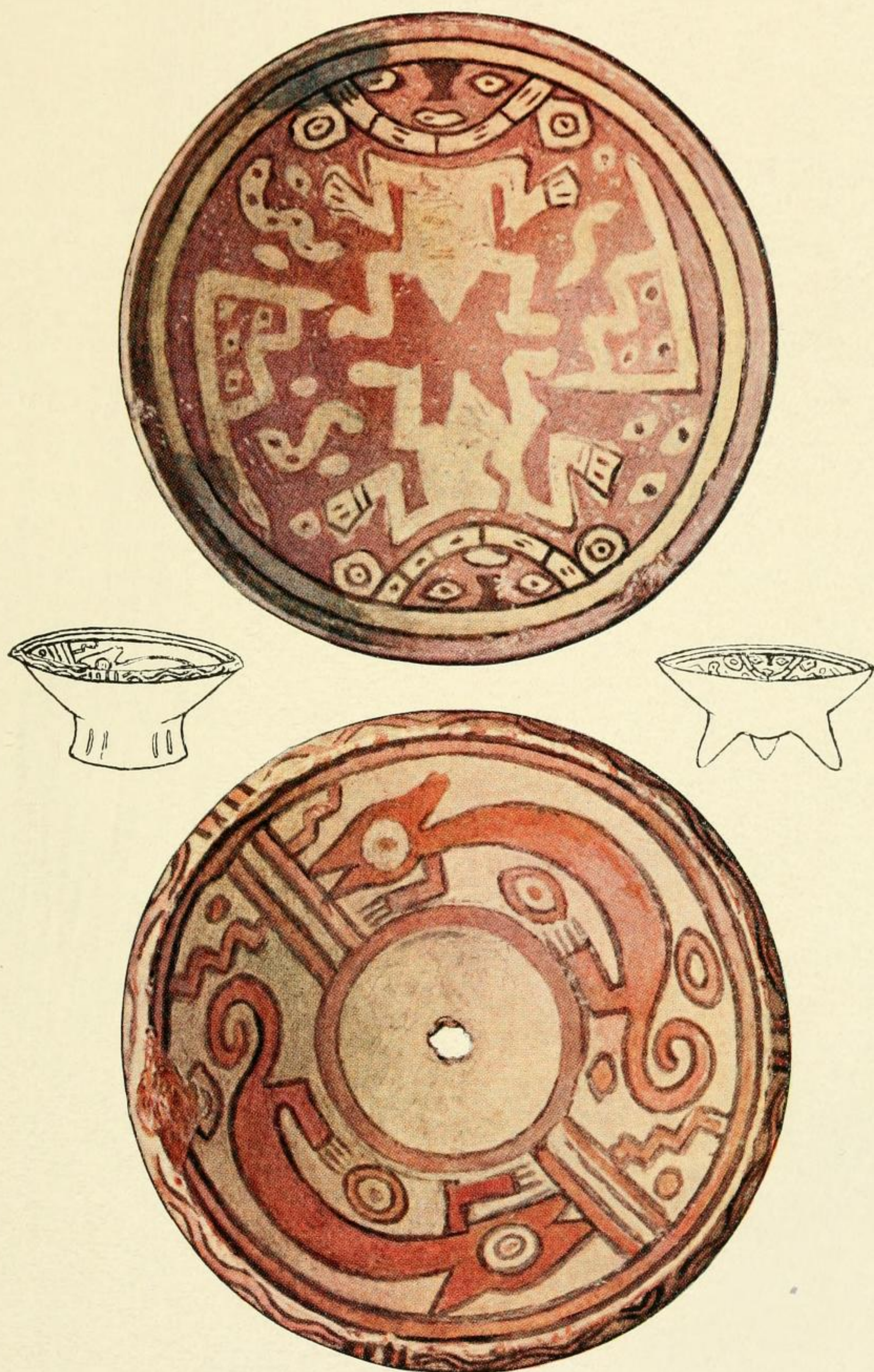
CONCLUSIONS

Although the detailed study of the large series of specimens collected about Pachacamac and in the district of Trujillo will undoubtedly bring out numerous points which can scarcely as yet be foreseen, it is nevertheless possible from the preliminary examination of the material to state certain important facts bearing on the anthropology of the people represented by the collections.

In the first place, it can now be positively stated that the whole coast of Peru, at least from Pisco, well south of Pachacamac, to Pacasmayo, north of the valley of Chicama, was peopled by one and the same type of natives, the brachycephalic Indian of moderate stature. This bears out to a large extent the statement of Calancha (Vol. 2, chap. 29), that "the people of the coast, the Yungas, the dwellers of the plain and of the sandy desert, extended over all the district from Piura to Arica, 300 leagues in length and from 12 to 15 in breadth, according to the width of the coast land."

Chronologically, the earliest people in these regions were evidently those whose remains are found in the huacas and in some of the cemeteries where the pottery is of simpler, though often interesting forms. In these cemeteries metal is scarce and is principally gold.

These people were followed by others of the same fundamental physical type, but of modified habits, shown in part by the pronounced occipital head flattenings, which indicates the use of cradleboards to which the infant was tied for a prolonged period, and especially in the frequent practice of the intentional fronto-occipital skull deformation. These deformations represent apparently a change of habits with the times, or the immigration of people with such customs, rather than a manifestation of caste, though this may not have been without influence. Belonging to this period are large



TWO BOWLS FROM AN ANCIENT HUACA, NEAR THE HACIENDA CHIQUITOY, IN THE VALLEY OF CHICAMA. THE HUACA YIELDED ONLY BRACHYCEPHALIC SKULLS OF THE ORIGINAL CHIMU POPULATION (GREATEST BREADTH OF RIM, UPPER VESSEL 17.6 CM., LOWER 18.8 CM.)

cemeteries, in which the graves yield copper or bronze, with some gold, besides the before mentioned interesting pottery.

At about the time of the greatest prevalence of the deformed crania, there appear individual elements of the dolichocephalic type of the Indian. These are not local developments, for intermediary cranial forms, which in that case would be numerous, are lacking. Nor are they the Aymara who, though dolichocephalic, have since early Tiahuanaco times practiced the peculiar circular head deformation which now bears their name. It seems most probable that these dolichocephals came with or after the invading forces of the central or highland Peruvians and represent some of the more eastern or northern tribes of Peru. It was from the graves of such individuals that the writer obtained the ornamented pottery, shown in pl. 2, which is very distinct from any that occur in the old huacas and the coast burials.

The brachycephalic people seem to have been the first inhabitants of the coast, for there was absolutely no trace of any previous occupants; and the peopling of the coast by the brachycephals, judging from the nature and extent of the cemeteries, could not have been of any very great duration, not over some centuries before the arrival of the whites.

This old type of the coast people is fundamentally the same as a large portion of the inhabitants of Ecuador, Colombia, Panama, Central America, and Yucatan. The present native population was seen by the writer to show this type as far as the southern confines of the Peru of to-day. Farther southward, however, at Arica and along the Chilean coast, there is found an increasingly large proportion of dolichocephalic natives, and from the northern extremity of the central part of the Chilean coast southward this latter type is the only one encountered.

The preliminary examination of the skeletal material at Pachacamac and in the valley of Chicama has brought forth also some interesting evidence of medical nature.

There was not a single instance of rachitis.¹ In only one case (Chicama) was there seen a vertebra that may have been tuberculous, but the evidence was not entirely conclusive and the age of the grave was unknown. Only two burials were encountered in which the bones were surely syphilitic; but both of these graves were among the more recent, in all probability post-Columbian. Besides

¹ For comparison, see the writer's *Physiological and Medical Observations*, Bulletin 34, Bureau of American Ethnology, Washington, 1908.

these, there were collected about thirty long bones with more or less marked inflammatory alterations, which may be syphilitic, but the diagnosis cannot be made with certainty. A very large majority of the many thousands of long bones collected or examined showed no lesions whatever. With two uncertain exceptions no single skull out of the 3400 brought away, and the many additional ones that were looked over, presented a case of ulceration or a lesion which could be with confidence attributed to syphilis.

In the Chicama cemeteries, and to some lesser extent in those of Pachacamac, there was a marked rarity of fractures of the bones. The setting of the fractures was generally defective, indicating little if any surgical knowledge of these conditions. On the other hand, wounds of the skull, especially at Pachacamac, were very numerous.

Of trephining no positive example was discovered in the valley of Chicama and but one at Pachacamac; but there are several skulls in which it is impossible to say whether they present a partially healed wound from a club or a scar from trephining. It may also be that some specimens of trephining have been taken by the peons and brought to the local collectors; but numerous cemeteries were examined to which this could not apply.

From an archeological point of view the exploration brought out with special force the fact that the scientific value of such Peruvian collections of pottery and other antiquities as have been or are being made by the untrained local collectors, is very small. It was seen throughout that the peons gather indiscriminately what is salable and dispose of it now to this buyer and now to another according to the amount offered. These buyers make the collections for profit and though some of them are of fair and even professional education, they possess and care for no real archeological knowledge, and generally do not attempt in the least any type or even locality identification. In consequence, every large collection that has been sold from Peru by such collectors, represents a heterogeneous mass of articles proceeding from different epochs and even different peoples, and what it can amount to scientifically, under such circumstances, can easily be imagined. If ancient Peru is to be known properly, it will be necessary, as in Egypt, to re-dig the plundered cemeteries, establish the relations between the articles buried and the type and period of the people, and to collect and note every object the graves offer, not merely such as have commercial value. Perhaps on the basis of such work it will then become possible to properly classify the existing Peruvian archeological collections in our institutions.



A JAR, 16 CM. HIGH BY 23.5 CM. BROAD, FROM ONE OF THE LESS ANCIENT GRAVES IN THE VALLEY OF CHICAMA, PERU. ONE OF THESE VESSELS OF SAME TYPE, RECOVERED FROM TWO NEIGHBORING GRAVES OF MEN. THE SKULLS OF BOTH WERE DOLICHOCEPHALIC AND FREE FROM ANY DEFORMATION.

One word more as to the skeletal material collected. The quantity of this material, which exceeds that from any other limited region in America or elsewhere, presents a reference series of the highest value, which will be freely open to scientific investigators who may wish to consult it.

To the above brief report, the writer has added a bibliography, which will enable the reader to appreciate what has hitherto been done in Peruvian anthropology. Many of the specimens mentioned separately, however, have been reported upon by two or even more writers, so that the total number of described crania is much smaller than would appear. Moreover, a great majority of the enumerated skulls were deformed; and the measurements or observations in many cases are very inadequate. Contributions of a more general nature, or such as apply to special features (trephining, etc.) are not included.¹

The four plates of illustrations accompanying this paper show a number of the more interesting specimens from the small archeological collection made by the writer in the valley of Chicama while gathering the skeletal remains.

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Brief report on 43 skulls from Ancon, 60 from Pasmayo and 46 from Cañete valley.

¹ Historical, ethnographical and other works on Peru are given, to a large extent, but with numerous errors, in Dorsey (Geo. A.): "A Bibliography of the Anthropology of Peru," Field Columbian Museum Publication No. 23, Chicago, 1898.

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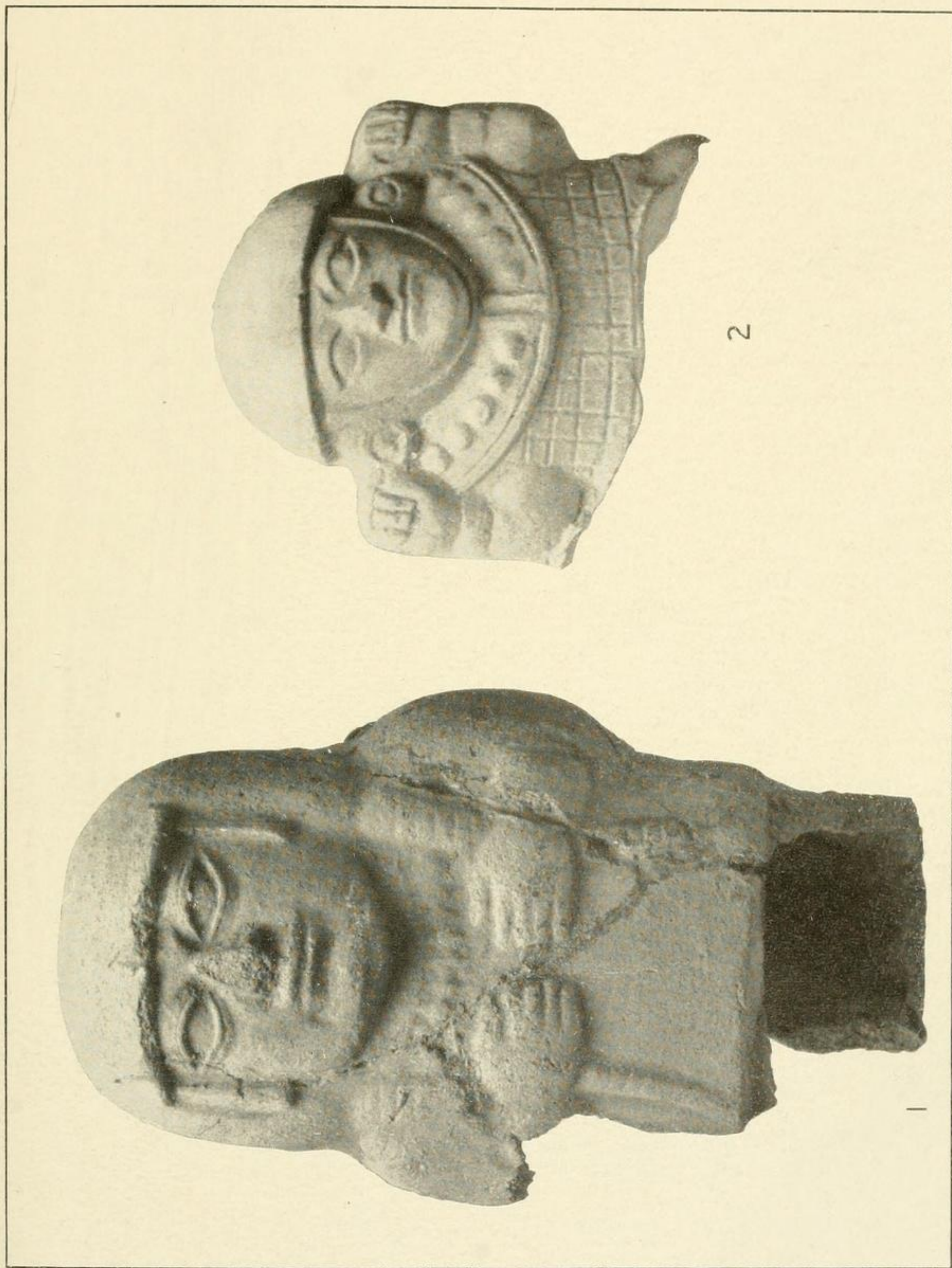
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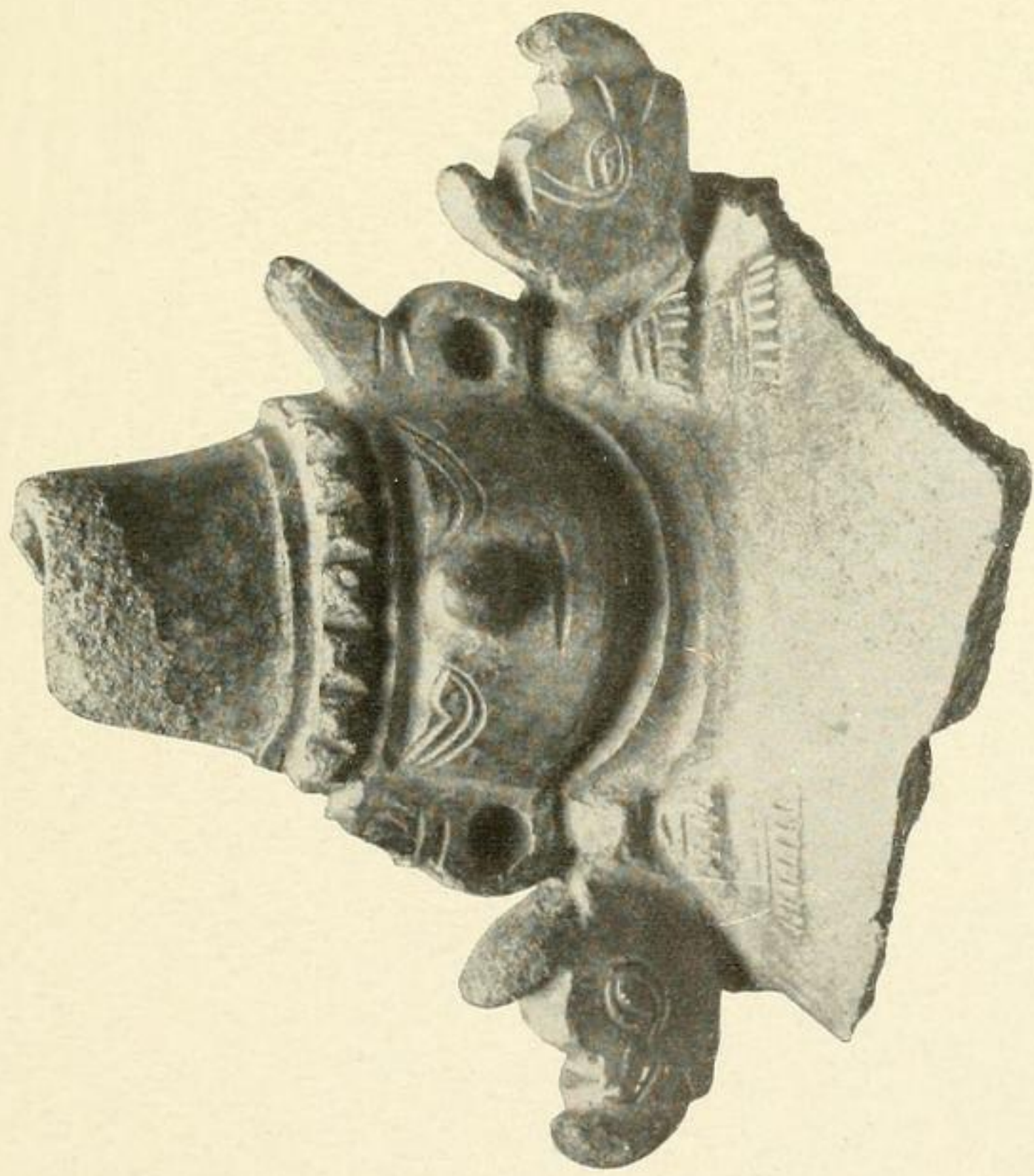
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2

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