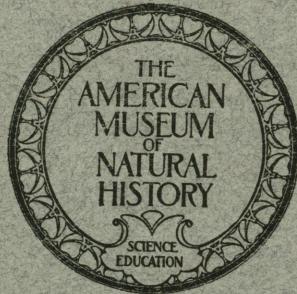


ANTHROPOLOGICAL PAPERS
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME XXXIV, PART III

EXCAVATIONS AT TIAHUANACO

BY W. C. BENNETT



BY ORDER OF THE TRUSTEES
OF
THE AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK CITY
1934

THE AMERICAN MUSEUM OF NATURAL HISTORY

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PREFACE

During the six months from March to September, 1932, Mr. John G. Phillips and I made a survey of the archaeological possibilities in the southern highlands of the Andes, namely on the altiplano of Bolivia and the southern region of Peru. This trip was made possible by the patronage of Mr. Frank Phillips. Our purpose was to continue the survey work started by Doctor Ronald L. Olson on the coast of Peru, and to retrace the steps of Adolph F. Bandelier to understand better his extensive notes and collections now in the American Museum of Natural History.

The first trip took us from La Paz, around the southeastern corner of Lake Titicaca, from Achacachi, Macalaya, Ancoraimes, Carabuco to Escoma, and inland over the Andean divide to Timusi, Chuma, Mocomoco, and Italaqui. On this trip we located, described, photographed, and prepared groundplans of over forty Inca type villages and fortifications. These were composed mainly of aggregations of houses and walls built of split, but not squared, mountain stone, piled without any cementing of adobe or mud. The houses had narrow doorways, niches and shelves, but no windows, and corbeled arch stone roofs. Both round and square houses were found. Forts were situated on prominent points. A typical fort consisted of a square patio surrounded by small houses with all the doorways facing inward. A series of three or more thick walls surrounded this unit in concentric circles. Many of these ruins contained crudely built towers, usually with several skeletons inside.

The second trip was to Cochabamba and the surrounding region. Here we visited mound sites which promised fruitful excavations. An Inca type village site at Illuri indicated stratification. We visited Inca-llacta, a famous late ruin which Nordenskiöld described many years before.

The Bolivian Government granted us permission to excavate ten test pits of not more than ten square meters in surface area each, at any spots about the ruins of Tiahuanaco which we chose, the depth of the pit to be determined by the thickness of the cultural strata. This excavation was carried on during the months of June and July of 1932. Since the Tiahuanaco site is without doubt the most important archaeological center in Bolivia, and since our work revealed ceramic stratigraphy of importance to the whole Andean problem, it is this section of our work which is the subject matter for the present paper.

After the Tiahuanaco work we visited the Islands of Titicaca and Coati, and the Peninsula of Copacabana, where we were, in truth, follow-

ing the trail made by Bandelier thirty-five years before. The islands proved interesting for their possible Tiahuanaco affiliations, as well as for their excellent examples of Inca architecture.

Leaving Bolivia, we proceeded to Cuzco and its environs. Cuzco is a famous archaeological center and contains, within the present town, almost a complete survey of the Inca culture. We visited Sacsahuaman, the fortress above Cuzco, Ollantaytambo, and Macchu Pichu, famed citadel of the Inca described by Hiram Bingham.

Again returning to the coast of Peru we spent some time at Lima, examining the ruins in the vicinity and the museum collections.

While it is not possible to mention the names of all the multitude of friends who assisted our work in Bolivia, we would like to extend our appreciation, together with that of the American Museum, to the Right Honorable Daniel Salamanca, President of the Republic of Bolivia, and to the late Honorable Sr. Alfredo Otero, Minister of Instruction, for their interest and coöperation in allowing us to excavate at Tiahuanaco; to the American Minister Edward F. Feeley, and to other members of the American diplomatic and consular service, Messrs. Robert Joyce, Paul Daniels, and Robert Fernald, for their kind assistance; to Sr. Juan Perou, for graciously providing us a home at his ranch while working at Tiahuanaco; to Professor Arthur Posnansky, Sr. Frederick Buch, Doctor Alberto Villegas, Sr. Luiz Hertzog, and Mr. Kenneth Manning, for their interest and actual assistance in our work.

The report which follows covers only the excavations at Tiahuanaco. The survey work will be continued in 1934.

WENDELL C. BENNETT.

November 18, 1933.

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INTRODUCTION

The Tiahuanaco ruins are situated on the high plateau of Bolivia, south of Lake Titicaca. The Tiahuanaco station on the Guaqui to La Paz railway is 21 kilometers from Guaqui. It is 3,825 meters above sea level. Posnansky¹ gives the exact location as 16° 33' 26" latitude south and 68° 48' 6" west of Greenwich. The principal ruins lie within an area about 1,000 meters from east to west by 450 meters from north to south.² Geographically, Tiahuanaco lies in a valley about 11 kilometers wide, between the ranges of Kimsa-chatta to the south, and Achuta to the north. Although Lake Titicaca probably covered this territory in past geological times, there is now a difference of 34.73 meters between the level of Tiahuanaco and the lake.

The ruins of Tiahuanaco have long been famous. The artificially fortified hill of Acapana, the megalithic enclosed structure of Calasasaya, the elaborately jointed stone architecture of Puma Puncu, and the artistically carved frieze of the Gateway of the Sun, are only a few of the wonders that have attracted the attention of traveler and archaeologist. From Cieza de León, who visited the site before 1550, to the present day, numerous writers have devoted chapters to impressions and descriptions of the ruins. Stübel and Uhle in their prodigious account of Tiahuanaco give an excellent survey of the principal bibliographic references to Tiahuanaco, in which they include direct quotation of the most pertinent passages.

In this century many writers have described Tiahuanaco with varying degrees of elaborateness, but comparatively little scientific work has been done. Stübel and Uhle include in their book the results of their rather limited excavating, as well as detailed descriptions and measurements of most of the important structures and stones exposed at the ruins in their time. For three months in 1903 Georges Courty carried on excavations in which he unearthed many new structures (e.g., the "monolithic" stairway; the small eastern temple; the "*cloaca maxima*" of Acapana; the "palacio"). Unfortunately, only a brief summary of his work was ever published.³ Arthur Posnansky has concentrated for the past thirty years on the problems of Tiahuanaco. His work is published in the volume, *Eine Præhistorische Metropole in Sudamerika*, as well as in many short papers. Several other local workers have made large collections at the ruins, but have not published accounts of their labors.

¹Posnansky, 1914, 78.

²As computed by Means, 1931, 123.

³Crequi-Montfort, 531-551.

Posnansky's plan of the ruins is admirable. Between Posnansky and Uhle and Stübel accurate pictures and descriptions are given of the existing structures. The principal lack in our knowledge of the ruins is a stratigraphical pottery series. It is generally conceded that at least two, if not three, periods or phases of culture are represented at Tiahuanaco. The distinction is based on stylistic rather than stratigraphic proof. All indications at Tiahuanaco point to the probability of good stratigraphy, not of buildings, but of potsherds. There are many evidences of a considerable population and an extended time period, both of which are conducive to stratification in a limited area.

EXCAVATIONS

The permit granted by the Bolivian government was for excavating pits with a surface area not over ten square meters. Sinking a pit directly into the ground is not the most ideal manner of excavating. The practical difficulties of handling dirt become enormous when any depth is attained. However, the method has some advantages in small scale excavating at Tiahuanaco, where the surface of the land about the ruins is comparatively level.

The pits were excavated one at a time in order that the work could be personally supervised. The arbitrary unit of one half meter was adopted for depth levels. While in some pits a smaller unit might have proved more desirable, the half meter measure was generally satisfactory. The material from each half meter depth was separated into boxes and classified as a unit. No selection was made at the time of excavating, and the workers were instructed to save every artifact, even to the last plain potsherd. Excavation was continued in each pit until undisturbed sand or clay was reached. In two pits (IV and VIII), water seepage prevented the completion of the work.

Obviously an arbitrary depth unit of one half meter does not often coincide exactly with a cultural depth division. The pit excavation method prevents the determination of any horizontal stratification until the work is completed, thus making it imperative to establish arbitrary units of some kind and coördinate them with the cross-section later.

The present chapter includes a field description of the pits in the order of their excavation. The plan included here shows the location of the pits (Fig. 1).

PIT I

This pit was located on the north side of the cut made by the Guaqui to La Paz railway, 420.3 meters west of Tiahuanaco station, and just south of the outer wall of a small church. The railroad line makes a cut about four meters deep through this section and evidence of two meter accumulation is everywhere visible. The soil from the railroad cut was not piled on the sides, but was used as a fill a little further to the west. The site is near the reported location of the old Tiahuanaco burial ground.

The pit was 5 by 2 meters, running parallel with the railroad and the church wall.

Level 1, 0-0.5 meters deep. The top soil was extremely hard and contained very little material. Beneath this the ground was soft and the

appearance of the soil suggested relatively recent disturbance. A fragment of glass and some pieces of modern pottery confirmed this opinion. Three shallow burials were encountered. They appeared modern. Very little pottery was found.

Level 2, 0.5–1.0 meters deep. The soft soil continued and the whole level was filled with modern burials, nine in total. Some were in extended position and others were scattered. Neither skull deformation nor other peculiarities gave any suggestion of antiquity to these burials. A few fragments of broken and cut animal bone and some pottery were the only artifacts discovered.

Although an old cemetery is located in the yard of the church next to this site, I could find no record of burial outside the church, although the custom is common enough. In order to subdue the excitement caused by the first unit of excavating, all of these bones were re-buried when the pit was filled in.

Level 3, 1.0–1.5 meters deep. The soil of this level was mostly sand and only slightly disturbed. In the center, however, was a bed of heavy black ash. This was oval in shape, about 1 by .75 meters and it extended from 1.0 to 1.4 meters deep. The collection for this level was separated into two divisions. Level 3 refers to all the material, exclusive of the ash bed, while the contents of the bed are designated Level 3a. Level 3, then, furnished some animal bones, an ordinary grindstone, and some plain pottery.

Level 3a, 1.0–1.4 meters deep, ash bed. The ash bed contained a considerable quantity of pottery as well as a partially complete kero and a small flaring bowl. The pottery was mostly cooking rather than mortuary ware, thus negating any possible connection with the burials above. Stratigraphically Levels 3 and 3a seem distinct from Levels 1 and 2.

Level 4, 1.5–2.0 meters deep. This level consisted of pure sand, apparently undisturbed, except for one section at the east end of the pit. No artifacts of any kind were found.

Level 5, 2.0–2.5 meters deep. The disturbed section at the east end of the pit at Level 4 continued to a depth of 2.3 meters where the powdery remains of a skeleton were found. As well as could be determined the burial was intrusive; it was extended from north to south, with the head at the north end. At the head end were a small flaring bowl (broken), a kero (broken), and a narrow neck vessel which had once had a spout (Cf. pp. 417, 418).

The analysis of the pit (Fig. 2) shows two levels. Levels 1 and 2 represent a modern stratum, while Levels 3 and 3a, and probably the

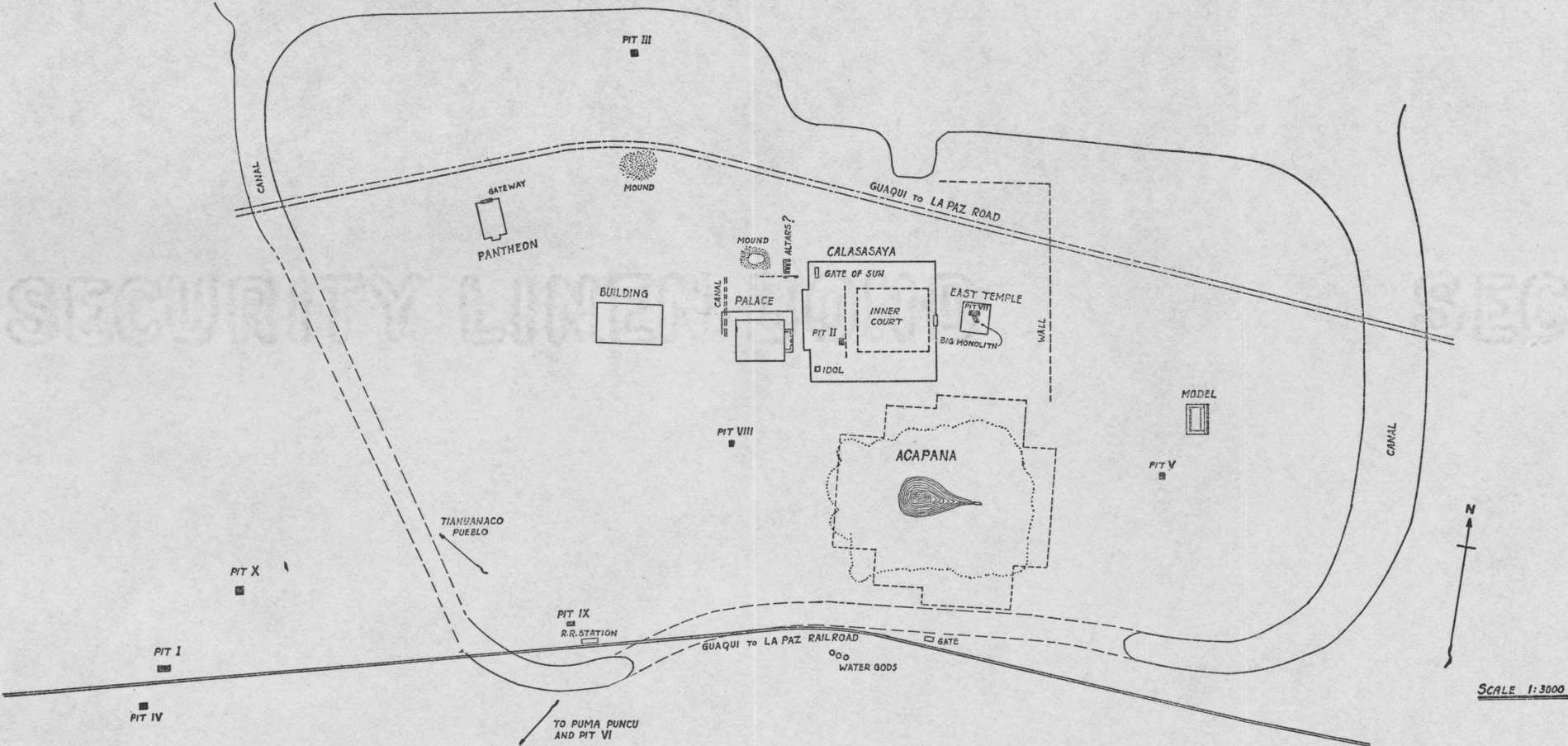


Fig. 1. Plan of the Ruins of Tiahuanaco (after Posnansky) showing the Location of the Pits excavated by the Expedition.

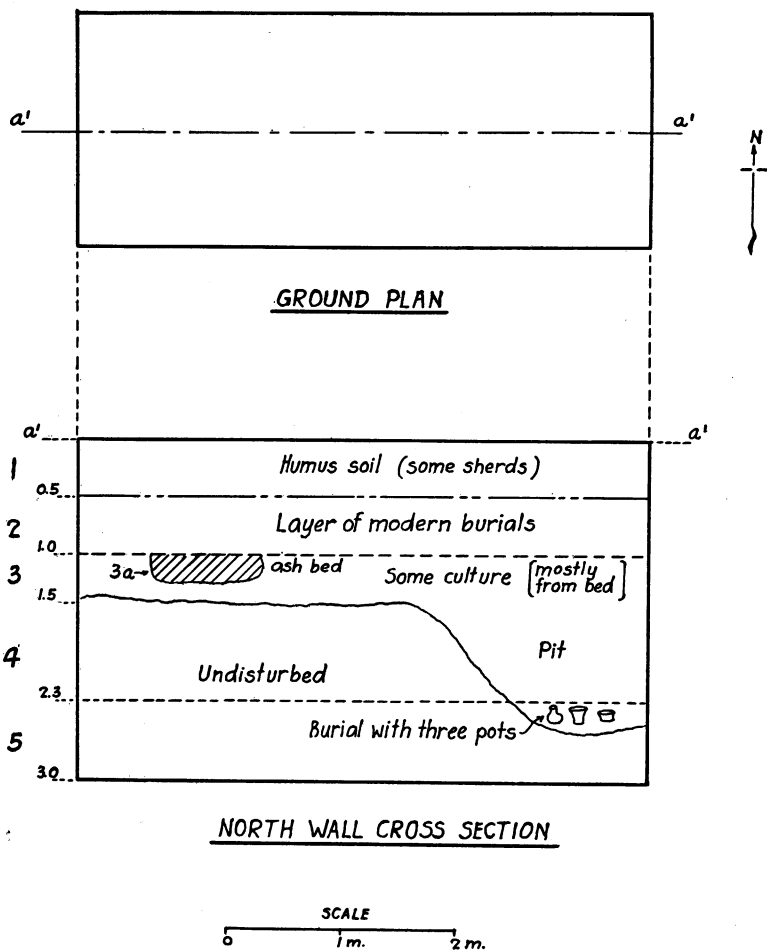


Fig. 2. Groundplan and Cross-section of Pit I. The relation of the intrusive burial to Level 3 is shown, while both levels are under the upper modern levels.

intrusive burial of Level 5, represent a cultural stratum of Tiahuanaco type unmixed with Inca ware. The analysis of style will be given in the subsequent chapters.

PIT II

This pit lies within the megalithic enclosure of Calasasaya, just a few meters out from the southwest corner of the inner temple. Measuring from the southern corner of the projecting west wall of Calasasaya, the pit lies 38 meters within the temple in an east by north direction.

There is some discrepancy in the historic accounts of the nature of the interior of Calasasaya. Although the inner temple is generally conceded to have been lower than the surrounding level, there is no such concordance on Squier's statement¹ that the outer temple was in the form of a "terre-plein" faced with the stone walls of which megalithic traces remain. Indeed most of the travelers compare Calasasaya with Stonehenge. Stübel and Uhle² discard speculation and insist on the present configuration which they consider as generally level as compared with the surrounding territory. Posnansky³ confirms the partial terre-plein idea which he computes at 2.30 meters high (measured by the height of the monolithic stairway—a factor which Uhle and Stübel did not take into consideration, because the stairway had not been discovered in their time). Along the north and east walls of the temple Posnansky even describes an outer supporting terrace which gave the stepped appearance typical of Tiahuanaco structures. None of the authors, scientific or otherwise, have published any cross-sections of the temple as it exists today. Posnansky's view seems the most rational. The temple was not built on an absolutely flat plain, and the interior floor was probably leveled at a height which reached its maximum at the lower east front where the monolithic stairway was located. Even today the temple is generally higher than the surrounding plains. Considerable dirt must have been washed away, as is evident in the fill of the inner temple and the small, semi-subterranean temple (more to the east). The wash was sufficient to cover the monolithic stairway and the large stone statue, of which more will be said later. Furthermore, agriculture which would assist the wearing down of the terre-plein, has been carried on within the temple enclosure up to very recent times.

Pit II measured 3.3 by 3 meters, with the long side parallel to the west wall of the temple.

¹Squier, 276-278.

²Part I, Tafel 2 and Part 2, 16.

³Posnansky, 1914, 108-109.

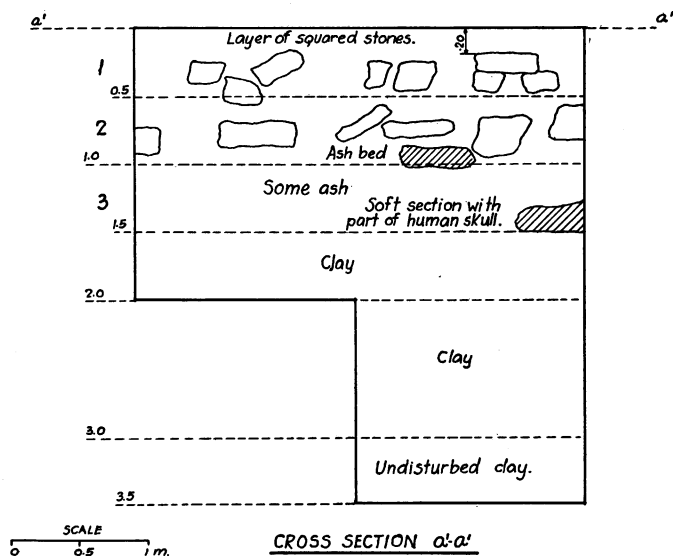
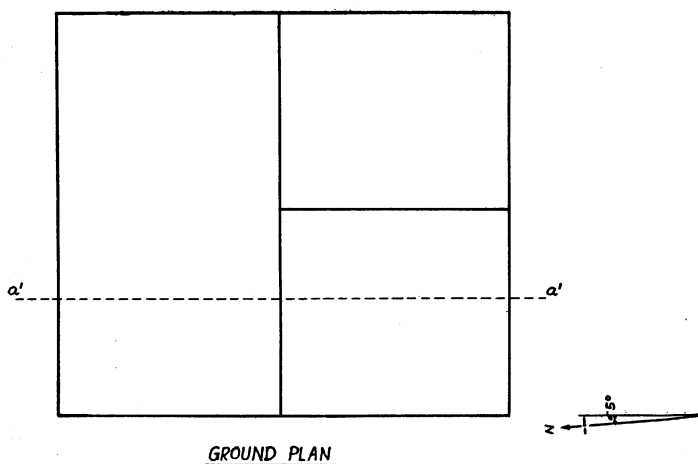


Fig. 3. Groundplan and Cross-section of Pit II. The confusion of the cut stone arrangement in the top two levels contrasts with the elaborate finish of a pavement discovered nearby during recent excavations by the Bolivian Government.

Level 1, 0-0.5 meters deep. The soil of this first level was very solid. Starting at a depth of 0.2 meters cut stones were encountered. Sixteen stones were found, ranging in size from 16 by 11 by 9 centimeters to 70 by 45 by 15 centimeters. These stones were rather evenly distributed throughout this level, but showed no signs of arrangement, as a paving, for example. Some were on edge, others flat, still others oblique. Most were of sandstone, a few of lava, and two of a fragile mudstone. All were cut square, but neither carved nor jointed. One had a groove around each end. Pottery, mostly plain ware, and bone fragments were scarce in this level.

Level 2, 0.5-1.0 meters deep. The dirt continued with about the same texture and solidity, though with some trace of ash. In the center of the south half was a small ash bed and in the southwest corner, a large one. Nineteen more cut and squared stones were found in this level, with the same scattered arrangement. One stone was grooved, but the others were plain building blocks. All of them might have served for wall fill (between megaliths) or pavement.

Level 3, 1.0-1.5 meters deep. A few scraps of bone and pottery fragments, as well as a little ash, indicated that this level was disturbed. The ground was softer than before. In the southwest corner a soft, slightly ashy bed, furnished part of the frontal bone of a human skull, though no trace of a burial was evident.

Level 4, 1.5-2.0 meters deep. The texture of the earth changed to clay. Pieces of broken bone and a little ash indicated slight disturbance.

For security, the southern half of this pit was excavated to three meters and the southwest corner to 3.5 meters in depth, but without further indication of disturbance in the very solid clay.

No evidence of cultural stratification is furnished by the cross-section of this pit (Fig. 3). Levels 1 and 2 seem contemporaneous with the cut stone blocks and Level 3 is too skimpy for separate consideration. Since the pit was excavated well within the temple it seems unlikely that the cut stones were from the outer wall, but would more probably have been part of the paving or of some inner wall construction. Since for several centuries surface stone of tractable size has been consistently removed from the ruins for local building, it can safely be assumed that the stones of Levels 1 and 2 have long been buried. Furthermore, on the basis of this assumption, all three levels, as a unit, might be considered as contemporaneous with the *ex-terre-plein* and thus the temple itself.

PIT III

According to Posnansky's survey (Fig. 1) the principal ruins of Tiahuanaco were surrounded by an artificial moat or canal. The northwest corner of the area thus surrounded is comparatively free from surface temple remains and thus seemed a likely place for dwelling site material. Accordingly, Pit III was excavated in this section, about 245 meters northwest of Calasasaya. The pit was 3 by 3.3 meters in size.

Level 1, 0-0.5 meters deep. The soil was soft and mixed with considerable ash. Fragments of bone and potsherds were abundant.

Level 2, 0.5-1.0 meters deep. In the southeast corner a large fire bed was found. More bone and potsherds were encountered. Before the meter was completed, solid clay which showed no trace of disturbance, was encountered. Tests to a depth of 2 meters verified its undisturbed nature.

The potsherds were overwhelmingly plain, the first level contained only 0.34 per cent painted ware and the second level 100 per cent plain ware. Analysis is difficult in this situation.

PIT IV

The section on the south side of the railroad cut, diagonally opposite (west) of Pit I, was said by all my Indian workers to be the richest site around Tiahuanaco. The section along the railroad indicated much greater richness of material than Pit I had furnished, and so I was not averse to excavating again in this locality. Pit IV was 26 meters farther west along the railroad track, and 15 meters to the south of it. The pit was 3 by 3.3 meters, with the long side parallel to the track.

Level 1, 0-1 meter deep. The first half meter was badly mixed with dirt piled up by the railroad workers. Unfortunately, this material got mixed with the artifacts from the second half meter and so the whole had to be treated as one level. In the second half meter, near one meter depth, was a heavy ash bed in the east side of the pit. Here were found innumerable broken bones and potsherds of both Inca and Tiahuanaco type. In general the Inca sherds were stratigraphically higher. The ash bed was about 30 centimeters thick.

Level 2, 1.0-1.5 meters deep. Just below one meter depth a row of flat stones (two stones wide) ran diagonally across the pit. This was definitely a path and so marked an old ground surface. The ash bed, mentioned in Level 1, confirms the idea of an old ground surface at this depth. Beneath this path, near the center of the south side of the excavation, the soft texture of the soil indicated a pit. This pit, a little

over one meter in diameter, continued to 3.5 meters depth. Since it formed a distinct unit in the excavation it has been treated separately in the analysis. Consequently Level 2 refers to the material from 1.0 to 1.5 meters deep, exclusive of the contents of the pit. Inca sherds, most of them from the upper part, were found in this level. Since the indication of an old ground surface divided this level from Level 1, I am inclined to class the Inca ware as intrusive, that is, belonging to Level 1 rather than Level 2.

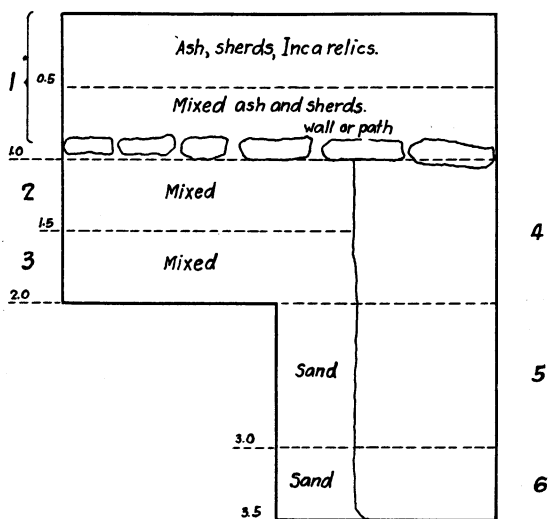
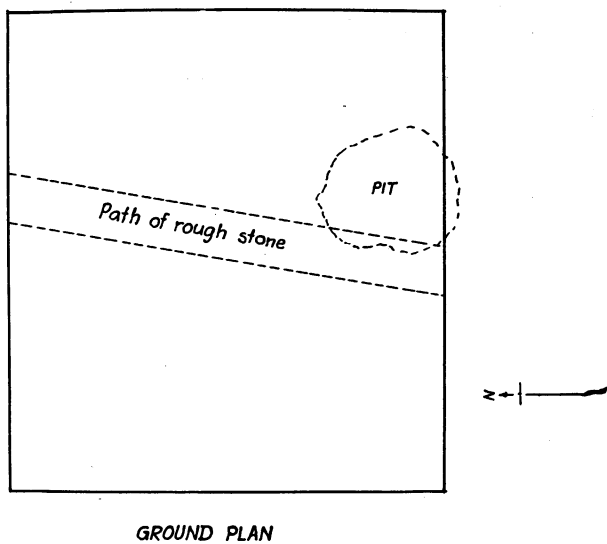
Level 3, 1.5-2.0 meters deep. Like Level 2 this section also excludes the pit material. Before two meters depth was reached undisturbed sand has been found in all parts, except the pit before mentioned. No Inca ware was found in this level, nor was there any demarcation between Levels 2 and 3.

Level 4, 1.0-2.0 meters deep (pit). The first meter of this pit was stone-lined on the outside. This lining did not continue to the bottom of the pit. No Inca ware was found.

Level 5, 2.0-3.0 meters deep (pit). Many potsherds mixed with dirt and ash were found, but no trace of burial. The pit extended into the undisturbed sand which lined it on all sides. It was clearly demarked by the soft texture and dark color in contrast to the yellow undisturbed sand.

Level 6, 3.0-3.5 meters deep (pit). Considerable water seeped into the pit at this depth. Consequently, any burial in it would probably have disintegrated. However, the conglomerate fill of the pit did not suggest burial, but more refuse. A complete jar was found (broken) at this level. Half of one potsherd was found in the upper part of the pit (Level 4) and the other half in Level 6, indicating that the whole pit is but a single cultural unit.

A summary of the cross-sectional stratigraphy represented by Pit IV (Fig. 4) shows first a mixed layer, one meter thick, containing a good number of Inca as well as Tiahuanaco ware fragments. This mixed layer is definitely divided from the others by an old ground surface, as indicated by the stone path and the ash bed. The pit, Levels 4-6, starts just below this walk, which is actually over it, suggesting that the pit is older than the walk and therefore older than Level 1. Since the pit starts at this point and shows no inner stratigraphy, it must be considered as one cultural unit. No Inca pottery occurs in the pit. Levels 2 and 3 lie stratigraphically below Level 1. Since there is no demarcation between them, they may be considered as a single cultural unit, older than Level 1. This conclusion neglects the presence of Inca



SCALE
0 0.5 1m.

Fig. 4. Groundplan showing Position of Path and Pit, and Cross-section of Pit IV. A surface line, indicated by the path, separates the upper level from the lower two and the pit.

ware in the Level 2 collection. However, this may be accounted for by the fact that the old surface lay slightly below one meter depth, while Level 2 (in accordance with the arbitrary division of half meters) started at one meter. That the Inca ware is intrusive is confirmed by the pit which starts at the old surface level and contains no Inca ware. Since the pit (Levels 4-6) cuts through Levels 2 and 3 and starts at the top of Level 2 it is probably of later date than those levels. Thus in Pit IV there are three cultural divisions: Level 1; Levels 4-6 (pit); Levels 2-3.

PIT V

To the east of the fortified hill, Acapana, are the remains of a temple, now barely discernible. The site is marked by a few dressed stones and a low hill, or rise. Between this ruin and Acapana is a flat stretch of ground about 150 meters wide. Pit V was made in this section, 126 meters to the east of Acapana. The pit was 3.3 by 3 meters with the long side running east to west.

Level 1, 0-0.5 meters deep. A layer of humus, clay, and some ash formed the first half meter. Many potsherds and broken bone fragments were found. In the southwest corner, at 40 centimeters depth was an extended (east-west) burial with a llama skeleton beside it. To uncover this it was necessary to extend the pit somewhat to the southwest. To the north of this burial was another extending into the west bank.

Level 2, 0.5-1.0 meters deep. In this layer the pottery fragments and llama bone continued, though no more burials were found. At 65 centimeters depth a line of ash mixed with bone fragments and other material stretched across the pit.

At one meter depth, in the southwest corner, a solid clay bed formed a floor, the limits of which could not be fully determined. However, in the southeast corner, several unworked stones were roughly grouped at this same level.

Level 3, 1.0-1.5 meters deep. Against the south wall of the pit, west of the center, two cut stones formed a platform resting on two smaller stones. Perhaps this was an accidental arrangement, but the tops of the stone were on the same level, one meter deep, as the clay floor mentioned in Level 2. Another ash line, varying in thickness, extended across the pit at a depth of 1.10 meters, dipping to 1.25 in the southeast corner.

Level 4, 1.5-2.0 meters deep. The most interesting find in this half meter was a canal in the north wall of the pit, running parallel to the wall and clear across the pit. It dipped slightly to the east, away from

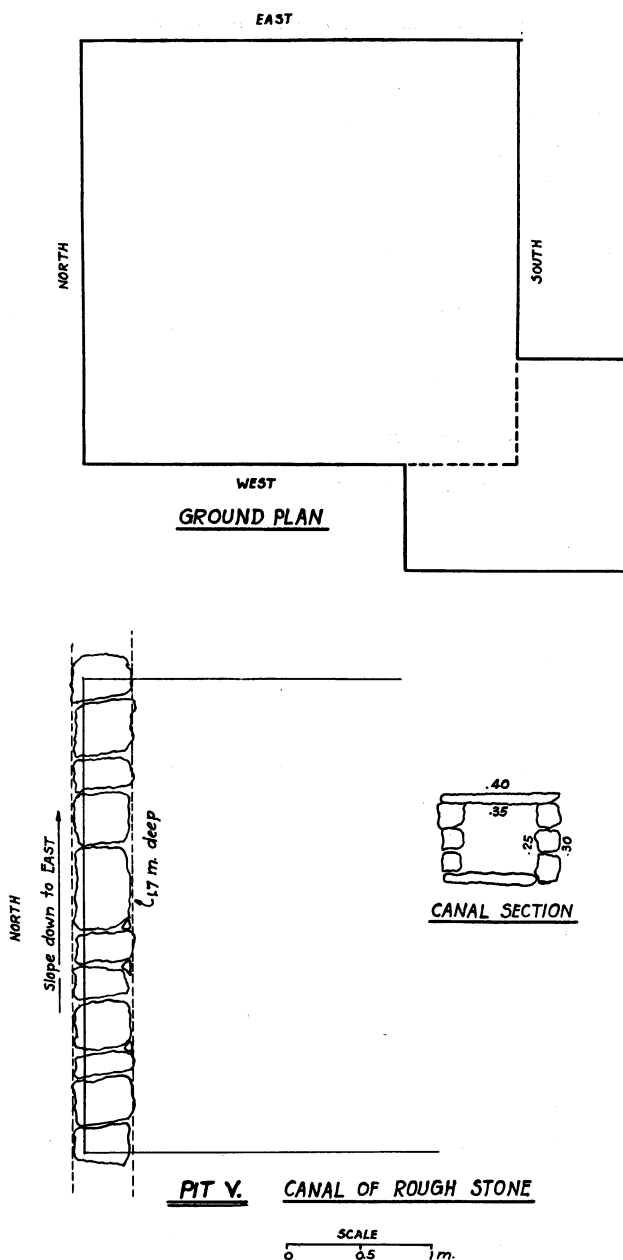
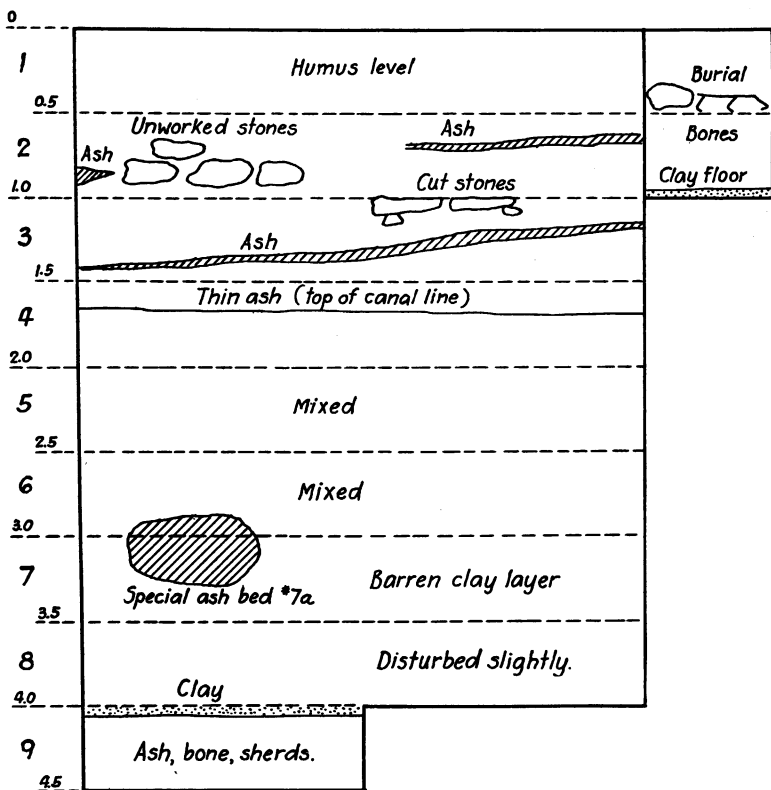


Fig. 5. Groundplan of Pit V, indicating Platform cut out of Corner to facilitate Deep Digging, also the Position of the Covered Stone Canal, 1.70-2.0 M. Deep in Relation to the Pit, and a Cross-section of the Canal.

Acapana (Fig. 5). It was made of rough unworked stones. The inside measurements were 25 by 35 centimeters and the outside were 40 centimeters wide and 30 centimeters deep. The canal was from 1.70 to 2.0



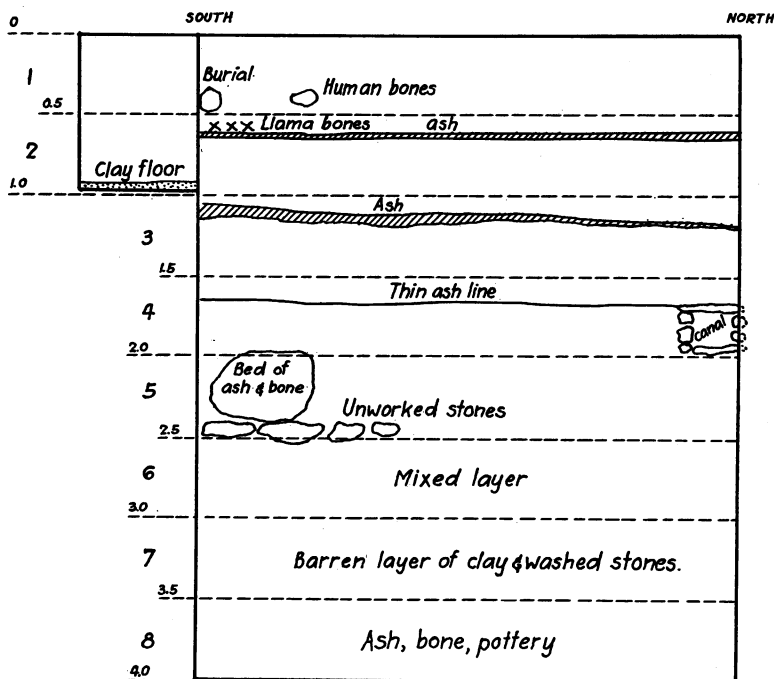
CROSS SECTION OF SOUTH CUT

SCALE
0 0.5 1.0 m.

Fig. 6. Cross-section of South Wall of Pit V indicating the Stratification Lines of Stone, Ash Beds, and Clay.

meters deep. The top and bottom, as well as the two sides were lined with stone, thus indicating that it was intended for use underground, quite likely for drainage. A thin ash line at the level of the top of the canal extended as a shallow layer throughout the pit.

While the canal seemed intended for use underground there was no evidence of intrusion which would suggest its depth at the time of construction. As the cross-section indicates, two layers of ash extend in unbroken beds above it at 0.65 and 1.25 meters depth, respectively. Thin though it is, the ash bed extends across the pit at the level of the



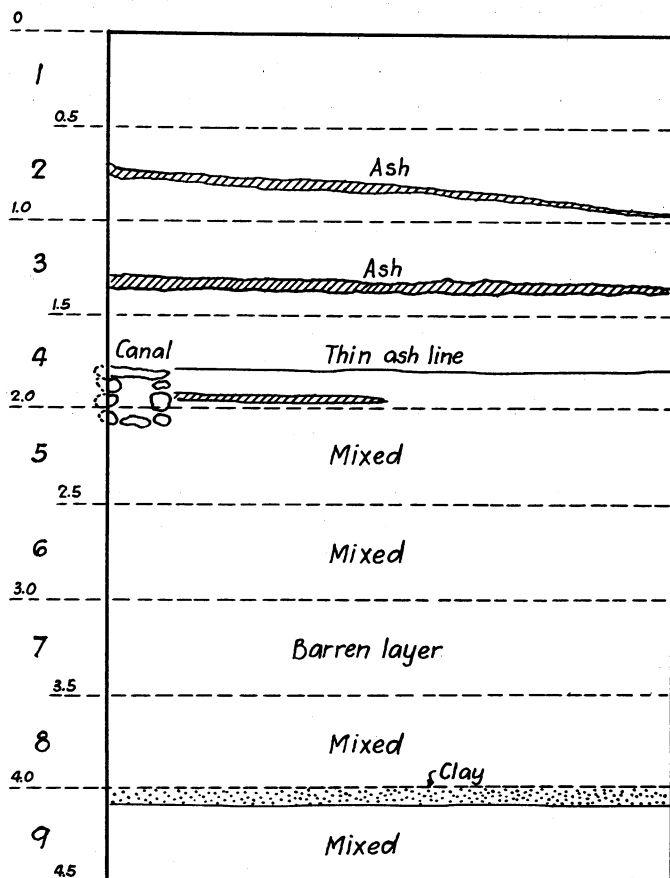
CROSS SECTION of WEST WALL

SCALE
0 0.5 1.0 m.

Fig. 7. Cross-section of West Wall of Pit V. In the first level is a burial with llama bones. The ash beds, a clay floor, the canal, and unworked stone layer are the significant stratification indicators.

top of the canal, suggesting that there was an old surface level at one time, though the proof is by no means convincing.

Level 5, 2.0-2.5 meters deep. Below the canal at 2.20 meters depth is an ash bed. In the southwest corner at 2.40 meters depth was a bed of flat unworked stones. Above this was a bed of ash and bone which



CROSS SECTION OF EAST CUT

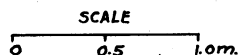


Fig. 8. Cross-section of East Wall of Pit V, confirming the Analysis of the Previous Sections.

extended into the west wall. Pottery and bone fragments were found throughout the pit. Worked stone, bone and copper fragments were also found.

Level 6, 2.5-3.0 meters deep. A layer with considerable clay mixed with dirt and ash. More bone and pottery fragments were found. Some worked bone tools, part of a stone dish and a pottery disc (whorl?) were also found.

Level 7, 3.0-3.5 meters deep. Except for an ash bed (cf. Level 7a) in the southern part of this level the clay content, while slightly disturbed, was practically barren. A few potsherds and fabricated pieces were found in the upper part of the layer.

Level 7a, 2.70 to 3.30 meters deep (ash bed). This fire pit was 70 centimeters wide and penetrated one meter into the southern wall of the excavation. It contained considerable ash, bone, potsherds, stone, and some copper. The material was classified separately.

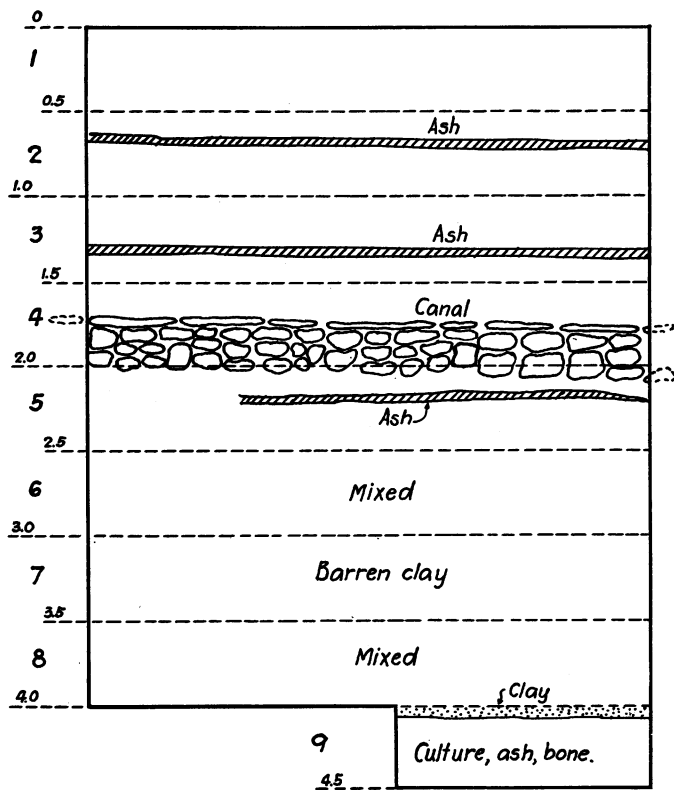
Level 8, 3.5-4.0 meters deep. Under a 15 centimeter bed of apparently undisturbed clay and stone a bed of ashes about 0.5 meters thick was found along the east wall. Scant traces of disturbance were observable throughout the whole pit at this level. The ash was heavy and wet through ground water seepage.

Level 9, 4.0-4.60 meters deep. At 4.60 meters depth undisturbed clay was encountered. In the center of the southern part of the pit was found a thick ash bed containing pottery, bone, stone, copper ore, and other artifacts.

This was certainly the most significant pit in all the excavations. It showed the best really stratified deposits. As the cross-sectional drawings (Figs. 6-9) indicate, the depth was not attained by artificial pits (as in Pit IV), but by an accumulation of dwelling refuse and wash. While no definite remains of houses were found, the heavy ash beds certainly suggest dwelling, and the pottery is mostly of the ordinary kitchen variety.

Analysis of the stratification results in the following array. First, Level 1 contained deformed skull burials and llama skeletons and was separated from Level 2 by an ash bed or layer. (This division is slightly below the half meter line.) Then Level 2 was based by a clay floor in the southwest corner, unworked stones in the southeast corner, and dressed stones in the southern center. This line definitely separates Level 2 from Level 3 in the southern half of the pit. In other parts of the pit, Levels 2 and 3 are separated by an ash layer, not completely horizontal in its distribution. The cut stones already mentioned may be

associated with Level 3, though the lower part of the same level is more closely associated with Level 4. In fact, nothing divides the lower part of Level 3 from Level 4. Level 5 forms a distinct stratum, being



CROSS SECTION OF NORTH CUT

SCALE
0 0.5 1.0 m.

Fig. 9. Cross-section of North Wall of Pit V, showing the Position of the Canal. The depth and slight slant of this canal suggest that it was used as part of a drainage system.

separated from Level 6 by a line of unworked stones along the western part of the pit. The demarcation between Level 4 and Level 5 is not so clear, though Level 5 seems to be distinct from the canal level on the northern part of the pit. Level 6 is separated from Level 5 in part of

the pit. There is no distinction between Level 6 and the scanty mixed section of Level 7. The ash bed of Level 7a starts in Level 6 and continues into Level 7, the lower part of which is a barren layer of clay and washed stones. Thus Levels 8 and 9 are distinctly set off from Level 7. A thin layer of clay divides Levels 8 and 9, though it does not seem very significant. In résumé, then, the divisions are as follows:—

Level 1

Level 2, including the upper part of Level 3

Level 3, lower part, and part if not all of Level 4

Level 5

Level 6, Level 7, Level 7a

Level 8, Level 9

PIT VI

Puma Puncu forms a distinct unit southwest of the main ruins of Tiahuanaco. Pit VI was excavated in the field in front (to the east) of this ruin. The results of the excavation were disappointing. A handful of plain sherds was found in the first meter. Then undisturbed sand was struck. To the west of the hill of the Puma Puncu ruins is a flat section which Posnansky has designated "docks." A test pit in this section encountered undisturbed sand at one half meter depth. The poverty of these pits contrasts markedly with the richness of the others.

PIT VII

To the east of the monolithic stairway of Calasasaya is a small temple 21 by 22 meters in size. This has been designated by Posnansky as the "First Period Temple." It was a semi-subterranean structure about 1.80 meters below the surface of the base of the monolithic stairway.¹ The temple was completely covered up to the first of this century. Squier,² writing in 1877, does not mention the temple although his map shows an angular wall in front of the sun temple which might doubtfully represent it. It was in the excavations of Georges Courty that the structure was first revealed in a three meter depth of débris and wash.³

Pit VII was made within the northern half of the temple. It was 4 by 2.5 meters, parallel to the northern wall of the structure. At a depth of one half meter the head of a large monolithic statue was encountered in the southern central portion of the pit. To uncover this it was necessary to extend the excavation 6 meters to the south at a 3.5 meter width

¹Posnansky, 1914, 81-83.

²Squier, 276.

³Courty, 534-538.

(Fig. 18). Unfortunately, the change in excavation technique made it impossible to preserve stratified levels. However, relatively few potsherds were found. Furthermore, excavation could not be continued to undisturbed ground because of the interference of the statue.

The statue is described in detail in another section (p. 429). It extended with the head to the north and the base to the south, with a slant of 20 degrees to the west of north. The headband was encountered at a depth of 0.5 meters and the base at 1.80 meters. The figure lay on its back and the assumption is that it faced south when erected, though there is the possibility of a quarter twist in the fall from a position facing east.

The statue was 7.30 meters long, including a base of 1.80 meters. At the feet of the monolith (top of the base), on the west side at 2.10 meters depth, a circular blue stone was found (cf. p. 444), and under this at 2.30 meters depth a typical stone head¹ was encountered. Near this were some blue, lapis lazuli, beads. To the east of the feet of the monolith and parallel to it was a smaller statue, 2.55 meters long. Its head was at a depth of 1.90 meters and the feet were at 2.60 meters. Beside the small statue, still farther to the east were two stones, one carved with a crude face, the other unworked. Above these at 1.30 meters depth was another of the stone heads with a double face. Many squared and dressed stones were found in all parts of the pit, though in disturbed positions.

An analysis of this temple is inserted here although the argument anticipates the classifications of pottery and stone working which follow in later sections. The temple, as described by Posnansky and Courty, was semi-subterranean, with the sides faced with stone applied in the technique of upright slabs set at intervals and filled in between with smaller stones. Set into these facing walls were blocks which had carved stone heads projecting from them.

An attempt to determine the chronological significance of this temple involves the consideration of several points. The facing wall fill is no longer visible, but to judge from Posnansky's statement and photographs it was composed of a conglomeration of well-finished and crude blocks. From the photographs, some of the blocks appear to have been drilled, although this is not certain. The general appearance is that of a wall composed of stones collected from different places, and neither cut nor placed in accordance with any preconceived plan. The stone heads are stuck into the wall in irregular positions. A classification of the

¹Cf. Posnansky classification, 1914, 83-84.

stone heads, found within this temple, divides them into four subtypes (see Stone Sculpture, Type 6): first, a group of heads, with headbands, and faces of the general classic Tiahuanaco type, projected from rectangular blocks; second, a group of flat stones with faces crudely chipped on one side; third, a group of rounded boulders with faces on one side; and finally, two fairly realistically carved heads with cylindrical projections for wall mounting. The heads too give the idea of collected material.

A further analysis of the stone sculptures found shows a large, Classic monolithic statue, decorated in the "Gateway of the Sun" style, side by side with an angular, unincised, bearded statue. Whether this smaller statue is considered earlier or later than the large one, it is without question not contemporaneous in style. When the circular blue stone, the crudely carved uprights, and the sculptured stone heads are added to the variety it is obvious that the conglomeration is not stylistically contemporaneous. Here again the best explanation is that of a late temple in which material was brought together from all parts of the ruins.

Courty found some of the heads with paint still preserved on them. Finally, it is possible that the large statue was one of the two described by Cieza de León as he stood and looked "*mas adelante*" (ahead) from Acapana, in which case it was still standing in the early sixteenth century.¹

The pottery analysis shows mainly Decadent and Inca sherds with none of the early Tiahuanaco types established by stratigraphy in the other pits.

The total effect of this analysis indicates that this small, semi-subterranean temple was late Tiahuanaco at best. Since the temple had been filled in by wash, and since the excavations did not penetrate its floor because of the interference of the large statue, the material from the Pit VII is considered as representing a single, late period. Unfortunately, this analysis sheds no light on the chronology of the sculpturing styles represented in the temple.

PIT VIII

This pit was excavated on the flat plane to the west of the fortress, Acapana. This location is within the canal-enclosed temple area, but not particularly close to any of the known ruins. It lies 112.7 meters southwest of the southern corner of the projecting west wall of Calasasaya

¹See Uhle and Stübel, part II, 33, for an argument that Cieza was looking eastward from Acapana. The head of a large statue, now in Pa Paz, was also found to the east of Acapana.

and due south of the "Palacio" temple. The pit measured 3 by 3.30 meters.

Level 1, 0-0.5 meters deep. Clay soil and a considerable quantity of potsherds characterized the first half meter, but it was not notably distinguished.

Level 2, 0.5-0.75 meters deep. The ordinary half meter unit was discontinued in this instance because of the quantity of sherds. At 50

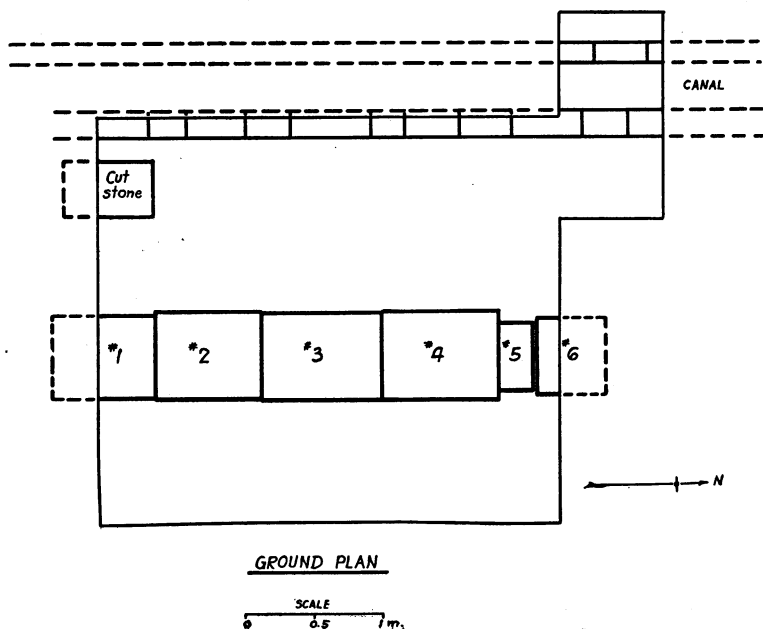


Fig. 10. Groundplan of Pit VIII. A path of six dressed slabs laid end to end runs north to south through the center of the pits and continues on both sides. Some of these slabs are drilled for use in some previous construction. A loose stone slab stands by itself at the same level. At the west edge of the pit is a canal, composed of two walls, without covering.

centimeters below the surface a canal was found which was made of cut stones (Fig. 10). It extended north and south and was constructed with a parallel double row of dressed stones, but without stone base or covering. It was evidently intended as a surface canal. Each side wall was composed of a double layer of finished stones, carefully fitted. The base was apparently a mixture of clay and small stone. The canal measured 50 centimeters in outside height, 70 centimeters in outside width, 50 centimeters in inside depth, 30 centimeters in inside width.

At 70 centimeters depth a stone path crossed the pit from north to south. This was composed of a single row of flat dressed stones laid end to end. The stones were taken from some previous building as some of them were bored with construction drill holes. The stones measured as follows:—

- 2 58 by 78 by 10 centimeters with two holes drilled in sides at the center

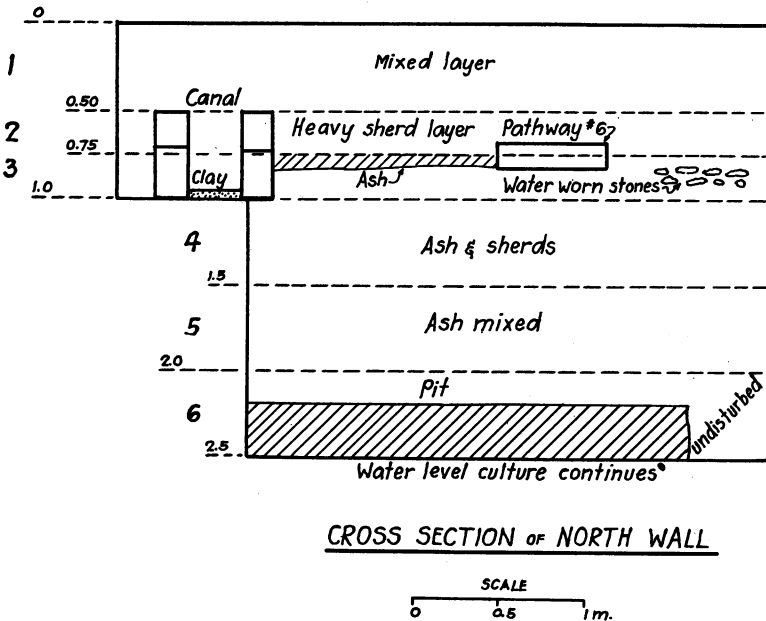


Fig. 11. Cross-section of North Wall of Pit VIII. The relation of the pathway to the canal is shown. Also the nature of the open canal of cut stone blocks is more evident, without covering but with clay base. Above the path to the edge of the canal is a heavy sherd layer. Below, the levels continue, without marked stratigraphy, to the pit which was never completed because of underground water seepage.

- 3 57 by 87 by 15 centimeters with slanting holes drilled in the four corners
- 4 58 by 83 by 14 centimeters with no holes
- 5 40 by 28 by 12 centimeters

On the same level with this row was a single stone in the southwest corner, which measured 45 by 65 by 12 centimeters.

This whole quarter meter contained a high ash content.

Level 3, 0.75–1.0 meters deep. The base of the canal was part of this layer. To the east of the stone path was a bed of water-worn stones and next to this was a heavy ash bed.

Level 4, 1.0–1.5 meters deep. A half meter of ash, clay, and débris with no distinguishing stratigraphic characteristics.

Level 5, 1.5–2.0 meters deep. The ash and disturbed clay continued throughout the entire half meter, though the dirt was gradually getting damper.

Level 6, 2.0–2.5 meters deep. At 2.20 meters depth a pit started surrounded by undisturbed clay. The pit was about as big as the surface area of the excavation, but the undisturbed clay was easily distinguishable. Water seepage continued, and the dirt and pottery had a greenish tint from vegetable mold. At 2.50 meters depth the water became so deep that work had to be discontinued, although the undisturbed ground had not been reached.

Level 1 is not clearly separated from Level 2, except that Level 2 contains a concentration of potsherds in an almost solid mass (1878 in a quarter meter) (Fig. 11). The division is roughly confirmed by the line of the top of the canal, although it is not clear just how the canal functioned. Level 2 is, however, definitely separated from Level 3. The stone path, the single stone, the concentration of potsherds, and the water-worn stones all confirm an old surface level. The stone path is in itself a secondary form of stratification as the stones are utilized from some previous building. Below Level 3 there are no sharp divisions. Levels 4, 5, and 6 follow in sequence and must be grouped or separated on the basis of the collection analysis.

PIT IX

This pit was excavated in the yard behind the house of Señor Rodríguez. It is only a short distance back of the railway station, to the northwest. Its position corresponds to that of Pit III on the north.

Level 1, 0–0.5 meters deep. Considerable quantity of heavy crude pottery. Two extended burials in fragmentary condition.

Levels 2, 3, 4, 0.5–2.0 meters deep. Nothing distinguished one layer from another in the actual excavation, except perhaps the concentration of the heavy pottery in the upper layer. At 1.90 meters deep undisturbed sand was encountered in most of the pit.

Level 5, 2.0–2.70 meters deep. Two side pits continued below the general level of the undisturbed ground, and the material from these pits has been classed together as Level 5.

PIT X

This pit was dug in the old cemetery with the intention of finding some good, high grade pottery samples. It proved satisfactory in this respect, though disappointing stratigraphically. The material was divided into two levels. Since the pit was started on a slight slope, Level 1 represents a depth of 40 centimeters at the south and 70 centimeters at the north, and Level 2 was 90 centimeters at the south, 1.20 meters at the north. Except for a few side pits to 1.40 meters, no greater depth was attained. Although nineteen complete or partially complete clay vessels were found in this pit, there were many indications of previous disturbance. One beautiful kero-shaped vessel had pieces missing which the most diligent search did not reveal.

In this section the analysis has been limited to the actual excavations. Later, this analysis will be extended to include the classification of the collections and the cultural implications revealed.

THE COLLECTION

The classification of the Tiahuanaco excavation materials is made on the basis of pits and levels. Whole and almost complete pots are treated separately from potsherds. While this division is not maintained, in the final analysis of the collection into its possible cultural significance, it was thought best to limit the percentage tables strictly to the sherds. In this section the collection is described and classified in its totality. Some notes are made as to the possible stratigraphic significance of some of the types, but the bulk of this latter task is left for the next section.

POTSHERDS

The sherds from each level of each pit were first divided into two groups: plain and painted. The plain sherds were further classified according to color of ware, and the painted sherds according to the number of colors used. Further subdivisions were based on designs and forms. The basic tables summarize these classifications for each pit and each level.

By far the greater number of sherds are of plain ware. The classification of over 14,500 sherds results in the following percentages:—

Plain sherds	69.78
Painted sherds	22.24
Miscellaneous	7.98
	<hr/>
	100.00

When viewed as a characteristic of individual levels in a pit, the relation of plain to painted ware takes on some significance (cf. Table 1). For example, in Pit VIII the analysis reveals a change of proportion of plain ware from about 55 per cent and painted about 35 per cent in the first three levels, to about 93 per cent of plain and about 3 per cent of painted ware in the second three levels. This seems indicative of cultural change.

Plain Wares. Most of the plain ware comes from cooking vessels. The commonest shape is the olla with flat bottom, wide open mouth, flaring rim, and two flat loop rim or side handles. The larger part of the ware is between .4 and 1.5 centimeters thick, seemingly well fired, and rather fine in texture. The temper is of sand, often mixed with mica. The handles, although varying in detail, are essentially uniform. They are flat loops, ranging in width from 1 to 3 plus centimeters, and are invariably vertical, whether attached to body or rim. Some of the wider handles are slightly concave rather than flat, though the difference is not significant. A few rounded handles are exceptions to the general class.

TABLE 1
PERCENTAGE DISTRIBUTION OF WARES ACCORDING TO PITS AND LEVELS

		Level	Plain Total	Painted Total	Polished	One-Color	Two-Color	Three-Color	Four-Five Color	Thick Polish	Painted Line on Plain	Miscellaneous Total	Inca	Hollow Base	Incense	Incised	Horizontal Handle	Special Paint	Extra Thick	Discs-Lugs	Modeled Heads	Per Cent Total	Total Pieces
Pit I	1	61.85	21.63	4.12	8.24	6.18	3.09			13.40		3.09			2.06					1.03		99.97	97
	2	67.34	30.60	20.40	10.20							2.04								2.04		99.98	49
	3	29.16	70.82	16.16	33.33	20.83																99.98	24
	3a	81.06	17.41	8.33	2.27	3.78	3.03					1.51		1.51								99.98	132
Pit II	1	83.60	14.74	6.55	5.73	.82	.82	.82				1.64		.82							.82	99.98	122
	2	59.70	35.81	11.94	14.92	1.49	1.49	5.97				4.47		1.49					1.49	1.49		99.98	67
	3	76.00	24.00	16.00	4.00	4.00															100.00	25	
Pit III	1	86.11	.34	.34						13.19		.34		.34								99.98	288
	2	100.00																				100.00	193
Pit IV	1	63.55	29.84	7.89	10.97	6.69	4.29			3.86		2.93	1.54	.77	.17				.08		.17	99.98	1166
	2	52.39	44.26	12.42	15.25	8.61	7.25	.73	.49			2.81	1.35	1.10	.24					.12		99.95	813
	3	46.77	40.75	2.57	5.15	11.58	19.74	1.71	9.01			3.43		2.57	.43				.43			99.96	233
	4	60.73	37.88	14.15	5.02	12.78	5.02	.91				1.35		.45	.45						.45	99.96	219
	5	38.74	53.44	11.71	9.01	16.81	14.41	1.50	4.20			3.60		2.40	.30	.30				.60		99.98	333
	6	45.57	46.79	8.85	3.79	17.71	15.18	1.26				7.57		3.79	1.26		1.26				1.26	99.93	79
Pit V	1	62.69	30.84	7.96	15.42	5.97	1.49			2.98		3.48		.99					2.49			99.99	201
	2	53.62	31.72	9.83	15.86	5.86	.17			11.55		3.09		1.21	.17	1.03			.34	.34		99.98	580
	3	51.51	28.28	14.14	13.13	1.01				18.18		2.02		1.01	1.01							99.99	99
	4	68.98	18.05	5.09	9.72	1.39	1.39	.46	11.11		1.85		1.39	.46								99.99	216
	5	80.50	13.31	5.28	5.28	2.52	.23		5.50		.69		.23	.23						.23		100.01	436
	6	89.93	2.88	2.16		.72			5.03		2.16				.72					1.44		100.00	139
	7	93.44	6.56	4.92	1.64																	100.00	61
	8	91.46	6.10	6.10							2.44		2.44									100.00	64
	9	95.69	.86	.86							3.44			.86			.86	1.72				99.99	116
	7a	93.75									6.25						2.50	3.75				100.00	80
Pit VI	1	83.79	8.82		7.35	1.47				5.88				1.47								99.96	68
Pit VII	1	68.06	22.58	10.32	7.74	3.55	.97				7.09			.32		.64			.97	.32		99.98	310
Pit VIII	1	50.56	39.58	6.06	15.91	12.50	4.92	.19			8.71	1.14		.95				.19				99.99	528
	2	57.88	27.84	7.61	7.88	7.45	4.53	.37	.53		12.30	1.44		1.12				.11			.21	99.99	1878
	3	59.65	32.90	16.67	7.02	5.70	3.51				4.82	2.64	2.44	.44		.44			1.32			100.01	228
	4	91.56	5.53	2.30	2.15	.77	.31					2.91		.46	.31		.61	1.53				100.00	652
	5	94.79	.74		.37		.37					4.47		1.49		.37	1.49			1.12		99.98	269
	6	95.81	2.79	.28	2.51							1.40		1.12						.28		100.00	358
Pit IX	1	83.42	9.60	3.14	2.62	2.79	1.05				5.93	1.04		.87							.17	99.99	573
	2	84.54	10.52	4.38	3.57	1.69	.69	.19			4.19	.74		.12	.06	.44		.12			.17	99.99	1598
	3	70.99	12.79	4.44	3.41	3.75	1.19			14.67	1.36	.17										99.98	586
	4	82.57	4.23	1.25	2.98					13.19												99.99	637
	5	76.00	5.11	3.20	2.40	2.40	.80			15.20												100.00	125
Pit X	1	52.89	42.38	9.85	5.32	13.29	13.14	.78			2.50	2.20	.31	.63	.16			.16	.47	.47		99.97	639
	2	76.37	23.08	9.07	6.04	3.57	2.75	1.65				.55				.55						100.00	364

Classified roughly according to the color of the ware, or in some cases the slip, the following percentages prevail:—

	Per Cent
Orange	40.40
Brown	23.61
Black	17.34
Yellow	6.62
Red-Brown	2.34
Brown-Black	4.50
Scraped	1.29
Miscellaneous	3.90
	<hr/> 100.00

Orange ware, the commonest found in all pits, is generally covered with a thin slip. Some of this ware is over 1.5 centimeters thick, and some is exceptionally thin. It is not notably distinct from the other wares, and cannot be considered a type, other than a plain ware.

Brown plain ware is generally thin, though, like the orange, all thicknesses occur. Both light and dark browns can be distinguished. Most of the brown ware is dark in clay color as well as slip. The black plain ware is easily confused with a burnt-black orange and a burnt dark brown. However, black finished (though unburnished) ware is found. This ware is generally thin. A thin, deep black, unpolished, mica-tempered variety of the plain black ware is found in Pits II, VIII, and V, at the lowest levels. In general, the dark browns and black wares are more frequent in the lower levels, while the orange dominates the surface and upper levels, though this distinction is not sharp enough to direct conclusions.

Yellow ware is thick and well fired. The slip is a dull yellow. Its distribution throughout the pits is sporadic. Included under the miscellaneous total are red, cream, cream gray, and colorless wares which occur infrequently. Some of the combined colors, such as reddish-brown, brownish-black, although necessary in the preliminary arrangement, are not of great significance in the final classification.

Another group of plain ware is called "scraped." This ware is moderately thin, finished in orange, brown, and black. The whole surface has been scraped with a flat instrument (perhaps a piece of gourd), and the scraping lines, roughly parallel, are clearly discernible. This ware at first appeared distinct, but later it was seen to be a common process, ordinarily not left in such an obvious stage of incompleteness, but more smoothly finished. This scraping treatment is even found on some of the early painted ware, over color and all.

Extra Thick Ware. Pieces of an extra thick ware, ranging from 1.5 to 2.5 centimeters, occur in various parts of the pits, though mostly in the upper levels. The fragments are all from large vessels. Both grit and mica-tempered sherds are found. Some are crude, unfinished segments, though always durable. Others are well finished on the outside, almost polished, and painted red. One piece had a thin black painted line. One crude thick piece, part of the base of a bowl, had a thick projecting ridge on which the bowl rested, much after the style of the "hollow-base" bowls. The diameter of this base was estimated from the arc segment as 34 centimeters. Another fragment of a base of equal diameter was well finished, quite flat, and had no suggestion of the projecting ridge. The rim pieces in this ware are of straight-sided, plain-edged, large bowls with the actual border slightly thicker than the bowl sides. There is no flare of any kind, but the edge is squared off. One heavy loop vertical handle started from the rim. Another of the same type started from the body, near the base. These fragments suggest a large, flat-bottomed, open, straight-sided, tub-shaped bowl with a plain rim. Complete bowls of this type are actually found in the collection of the Cochabamba Museum. Somewhat similarly shaped thick bowls are found on the coast of Peru with Tiahuanaco derived designs painted on them.

Thick Polished Ware. A distinctive plain ware is a thick, well-fired, sand-tempered clay with a burnished finish, on the outside only, in red, orange or brown. The thickness averages around .8 centimeters. Most of the pieces are fragments from large vessels. One rim type, without flare, has the cross-section of an inverted equilateral triangle with the base up. Thus from a 1.5 centimeter rim edge width it narrows rapidly to the regular .8 centimeters thickness. This rim type suggests that the vessel was a large open bowl. This ware is not continuously distributed throughout the excavations, but it appears and disappears with varying degrees of frequency at some level in almost every pit. The significance of this distribution will be discussed in the next section.

Painted Line on Plain Ware. Although logically this ware belongs with the painted group, it is described with the plain wares because the clay, tempering, shape, and finish of the vessels are much more like the plain than the painted pottery. It has the appearance of a plain unslipped ware with lines painted on it. This class includes several varieties. First, is an orange ware with rough engraving, that is, incised lines are rudely sketched, without creating any definite design. A wide dull black line is also applied on an orange ware without any definite design.

Some orange ware combines the black and the incised line. There is also an orange ware with both black and white lines. The black line alone is found on yellow and brown ware. Finally, black and white lines, and black, white, and brown lines rarely occur on a plain red slip ware. This latter ware has step designs, curves, and more definite patterns. In summary, these variations occur as follows:—

	Per Cent
Orange with incisions	9.20
Orange with black line	68.96
Orange with incision and line	12.87
Orange with black and white line	3.45
Yellow with black line	4.14
All others	1.38

100.00 (435 pieces)

The ware is comparatively thick, varying around 1 centimeter. It is well-fired, sand-tempered, and has the feel and ring of modern building tile. The vessels are all large. One typical shape is a large urn-like vessel with a straight collar, topped with a sharply flaring rim, the edge of which is at right angles to the perpendicular collar. From the flat bases and the collars which remain it appears that the shape of the whole vessel must, in some examples at least, have been a somewhat truncated heart-shaped bowl about 70 centimeters high and wide. On the basis of shape and general texture much of the plain thick orange and yellow ware might be included in this class.

Painted Ware. The proportion (22.24 per cent) of the total sherds classified as "painted" obviously includes a variety of wares. However, one of the impressive facts about Tiahuanaco painted pottery is its consistency in color, design, and form which can be observed throughout the collections. Thus the references which are constantly made in the literature to "Tiahuanaco style" are not at all meaningless, but are directed to those qualities which distinguish the wares of the Tiahuanaco site as a whole from other Andean types. It is my purpose in this discussion, first, to describe Tiahuanaco ware as a cultural unit, and secondly, to attempt to distinguish phases within the Tiahuanaco unit. It is from this first point of view that the painted ware is here described, reserving the more subtle problem for the following section.

Painted ware includes, in this analysis, the following subdivisions:—

	Per Cent
Polished ware	28.84
One-color ware	30.14
Two-color ware	23.03
Three-color ware	16.65
Four-color ware	1.34

100.00 (3291 pieces)

Polished Ware. This group includes all painted ware which shows polish, but no design. While most of these pieces are parts of vessels which quite probably had painted designs, there are also some complete vessels of one color which show no painting other than this basic slip color. Divided on the basis of slip color, the polished ware may be summarized thus:—

	Per Cent
Red polished	51.74
Orange polished	25.92
Brown polished	11.06
Black polished	8.01
Miscellaneous	3.27

100.00 (949 pieces)

The red polished ware dominates because a red slip is the basic color for most of the painted ware and consequently would occur with more frequency when the pottery is broken into sherds. Black polished includes both plain and incised ware. It is a distinct ware, as black is not a base color in painted ware. Most of the black ware sherds are from kero-shaped cups. The incisions are fine and sharp. The polish is usually brilliant. Out of seventy-six black polished sherds only fourteen are incised. To these must be added two partially complete kero-shaped cups of black incised ware. Although the black polished ware is rather generally scattered throughout the levels of the pits, the incised ware is limited to Pit I, 2 and 3a; Pit IV, 1-5; and Pit V, 2. From the distribution, the incised black ware seems more recent than the plain polished black.

Some parts of polished, plain rimmed, curved base, open bowls seem to form a unit distinct from the rest of the polished sherds. One group includes fragments of this type bowl in a poorly finished, though thin, red colored ware, which has the appearance of being scraped both inside and out. Six fragments occur in Pit VIII, 5, and seven fragments in Level 6 of the same pit. Another group in this same class bowl is of a dark polished brownish-red ware. This series is well finished, without

the scraped appearance. One piece occurs in Pit V, 9, one in Pit VIII, 6, and five fragments (including four parts of one bowl as one piece) in Pit VIII, 4. The isolation of these polished bowls, which are not typically Tiahuanaco in shape, in the lowest levels of Pits V and VIII suggests that they may form a special group.

One-Color Ware. The term "one color" is used here to refer to a design of one color applied over a basic slip color. Since the base is often a painted color, the pottery might well be referred to as having two colors. However, for the purpose of simplification, the use of one-color design over a basic color will be called "one color" ware. The following table shows the emphasis on two combinations:—

	Per Cent
Black-on-red	41.94
Black-on-orange	36.90
Black-on-brown	6.75
Black-on-yellow	3.02
White-on-red	3.83
Yellow-on-red	1.71
Miscellaneous	5.85
<hr/>	
100.00 (992 pieces)	

Even these one-color pieces are sometimes nothing but parts of more complex polychrome vessels. However, complete pots with only one-color designs are common enough in the collections.

The miscellaneous group includes quite a variety of combinations which from the fragments cannot be identified with whole pots. These combinations are listed with the number of examples of each:—

Black-on-cream	6	Brown-on-brown	4
Black-on-gray	2	Brown-on-yellow	6
Black-on-light brown	3	Orange-on-red	1
Yellow-on-brown	6	Orange-on-brown	1
White-on-orange	3	Red-on-orange	5
White-on-brown	10	Red-on-yellow	7
Brown-on-orange	3	Red-on-glaze white	1

The black-on-orange and black-on-red wares are rather uniformly distributed throughout the pits, with the black-on-red dominating slightly in the lower levels. Black-on-brown, however, is practically limited to the uppermost levels (Pit I, 2; Pit II, 1; Pit IV, 1, 2; Pit V, 1, 2; Pit VI and VII; Pit VIII, 1; Pit IX, 1 and 2).

Two-Color Ware. This classification includes all fragments which have two design colors on a single color background. Classed according to color combinations, the alignment is as follows:—

	Per Cent
Black and white-on-red	48.42
Black and yellow-on-red	22.03
Black and white-on-orange	12.53
White and yellow-on-red	4.09
Black and white-on-brown	2.64
Black and yellow-on-brown	2.64
Brown and white-on-brown	2.11
Miscellaneous	5.54

100.00 (758 pieces)

Although the one-color grouping showed a fairly equal use of orange or red as a background color, in the two-color group red is more frequently the base. Likewise the brown is less frequent.

The less frequent color combinations, classed as miscellaneous, include the following variety:—

Black, white-on-yellow	2	Brown, white-on-orange	3
Black, white-on-gray-brown	1	Brown, yellow-on-red	2
Black, yellow-on-orange	5	Red-brown, white-on-brown	1
Black, orange-on-red	1	White, yellow-on-orange	1
Black, orange-on-orange	4	White, yellow-on-brown	3
Black, red-on-orange	4	White, red-on-orange	4
Black, gray-on-orange	2	Yellow, red-on-brown	2
Black, gray-on-red	1	Black, brown-on-orange	5
Black, red brown-on-yellow	1		

Three-Color Ware. Pottery with three design colors on a background is here grouped together. Black, white, yellow-on-red is the dominating combination, to the exclusion of most others, as the following table of percentages shows:—

	Per Cent
Black, white, yellow-on-red	80.61
Black, white, yellow-on-orange	4.24
Black, white, yellow-on-brown	3.43
Black, white, gray-on-red	2.83
Black, white, red-on-orange	2.42
Brown, white, yellow-on-orange	2.83
Miscellaneous	3.64

100.00 (548 pieces, which include 53
Inca and specials not used
in above percentages)

The miscellaneous group includes the following variety of combinations:—

Black, white, gray-on-orange	1
Black, white, gray-on-brown	5
Black, white, red-on-red	2
Black, white, brown-on-orange	1
Black, yellow, brown-on-brown	5
Black, yellow, brown-on-red	1
Brown, white, yellow-on-light brown	1
Brown, white, light brown-on-red	2

Four-Color Ware. Four design colors on a background are the criteria for this class. In the excavations relatively few of these pieces were encountered, though four and even five-color ware is not infrequent in the collections of mortuary pottery. The majority of the ware falls into one color combination as shown below:—

	Per Cent
Black, white, yellow, gray-on-red	86.36
Miscellaneous	13.64
	<hr/>
	100.00 (44 pieces)
Black, white, yellow, gray-on-brown	1
Black, white, yellow, red-on-orange	2
Black, white, yellow, brown-on-red	1
Black, white, gray, red-on-orange	1
Black, yellow, brown, orange-on-orange	1

Special Painting. In the lower levels of two pits (V and VIII), a special painted ware was found which differed from the typical Tiahuanaco ware. This was a thin ware, mica-tempered, and soft-fired, characterized by buff-colored, slipped and plain clay. Two varieties are found, red-on-buff and polychrome-on-buff. The first set consists of plain rim pieces from small open curved base bowls, with a red band design usually along the border, but in some pieces on the body too. The second set consists of a variety of colors, black, white, red, brown, and orange, on a buff slip, used in combinations of two or three. They are burnished colors which produce a glossy effect not noticeable in other Tiahuanaco pottery. The designs are more varied than in the red-on-buff class, though still simple stripes (vertical) and angles. The small, open, plain rim bowl is not the only shape suggested by the sherds. Two pieces are sectional parts of "hollow base" bowls; two others suggest kero-shaped vessels; another piece is one of the rim-loops of a scalloped edge incense bowl.

Isolated Fragments. Certain pieces present peculiarities which fail to assimilate with any of the group classifications. Although these are not definitely foreign wares, it is more convenient to describe them separately, rather than force their classification.

Two fragments of small, open, bevel rim bowls were found in Pit VIII, 2. These are thin, well-fired pieces, with polished colors. The rims are painted red, which is apparently the basic paint. Over this is a black paint which almost covers the body solidly, although one piece shows a small square of white paint.

One sherd from Pit V, 9 is a thin fragment, with red and deep brown burnished colors. The step design is used and the outline between blocks of color is deeply incised. This incision on a painted pattern is decidedly non-Tiahuanaco in style.

Two pieces are painted in white, yellow, red, and brown, apparently on a black background paint. One fragment is a part of the rim of an incense bowl, painted on the inside. The design suggests a fish head, and it is executed without outline, in non-characteristic fashion. These pieces are both from Pit VIII, 4. Whole vessels in collections have similar colors, designs, and technique. The shape is like a spittoon (See discussion and drawing, pp. 411, 451).

In Pit VIII, 5 was a thick piece of mica-tempered pottery with part of a complex design in black, white, yellow-on-red. The design, rather than the colors, gives the impression of an exceptional piece.

POTTERY DESIGN

Decorative design cannot be perfectly determined on the basis of potsherds. In this report most sherd designs are classified according to their identification with those on complete pots. A great many sherds, however, are so small that it is impossible to determine the exact nature of the completed design, and these are classified by some arbitrarily selected measure. On this basis the potsherds from the various pits have been classified according to design type and pit level. The numerical results are summarized in Table 2.

A complete classification of Tiahuanaco designs, based on museum specimens and all branches of decorative art, is beyond the scope of this publication. Something of this sort has been attempted by Posnansky,¹ though not as completely as in the unpublished second volume of the same work. In the present paper the description of design elements is limited to the actual collections obtained by my excavation. Thus the study is by no means exhaustive.

Again, the consistency of Tiahuanaco subject matter and style is impressive, despite the quantity of variation in detail. 81.99 per cent of the decoration of the potsherds is geometric, while only 18.01 per cent

¹Posnansky, 1914.

TABLE 2
FREQUENCY DISTRIBUTION OF DESIGN TYPES IN PITS AND LEVELS

	Levels	Linear	Band	Wavy	Broken Wavy	Step	Curve	Angular	Circle	Scroll	Angular Scroll	Double S	Interlocking	Miscellaneous Geometric	Complex Designs	Condor	Puma	Human	Snake	Bird	Animal (unclassified)	Totals
Pit I	1 2 3 3a	7 3 7 4	4 2	 3						1				1	1	2	1	1			1	15 5 13 5
Pit II	1 2 3	2 7	6												1		1 1 1	1			1	4 15 2
Pit III	1 2																					0 0
Pit IV	1 2 3 4 5 6	170 117 39 44 50 19	22	6 21 2	5	13 22 10	1	2	7 7 1 4	2 1	3 4	1		4 5 2 1	3 32 12 1	2 9 1 8 2	2 3 3 1	1 6 7 1 9		1	3 6 3 1 3	234 239 82 52 137 30
Pit V	1 2 3 4 5 6 7 8 9 7a	32 66 7 19 29 1	1 4	15 1 1	3	7 10 1	5 16 2 1	2	2	1 2 1 5?	6		1	2 1 1	1				2 1	2	1	46 127 14 28 35 1 1 0 0 0
Pit VI	1	4		1										1								6
Pit VII	1	21	3	2		5	2		1	1					1	1					1	38
Pit VIII	1 2 3 4 5 6	112 228 22 17 (5)	2 3 2 1 (4)	3 1 1	1 4	17 24 2 3	10 29 1	2	2				1 2	13 1 (2)	2 3 3 (2)	45 3 (1)	3 9 1	11 31 1	2		1 1	177 382 37 28 2 9
Pit IX	1 2 3 4 5	28 43 32 2	9	1 7		2 6 5 3	11 2	1 1	2 1	3				1	2 5 1	3 7	1 1	2 1	2 1		3 1	37 98 49 3 5
Pit X	1 2	83 27	8	3		9 4	6 3	1	1 2	7 2		9	2	2 1	22 3	34 8	11	3			3	203 51
Total		1247	75	94	15	156	89	13	30	26	7	16	6	38	119	126	38	75	8	3	29	2210

is zoomorphic. This difference in proportion is perhaps augmented by the size of the sherds, which tends to emphasize the geometric nature of the design; that is, complete pots contain both zoomorphic and geometric designs in the composition, and a small sherd may not tell the whole story.

All sherds with designs in single straight lines were classed as linear. This linear group dominates the whole design classification including 56.42 per cent of the total decorated sherds. Since many types of design can be broken up into linear segments, the classification is not absolutely a true one. When the lines were wide, rather than thin, the sherd was classed as a "band" design. Bands of color do occur on most complete pots, sometimes as part of a composition, and sometimes as the only design element.

Wavy designs refer to the perpendicular wavy lines, so commonly found in decorating open flaring bowls. Generally the wavy lines alternate in two or three colors. Often the wavy line section is just a fill between two areas of more complex design. A broken wavy line also occurs. Here the rows of wavy segments generally encircle the vessel.

A curved line on a sherd is so classified. Circles also form an obvious descriptive group. The circles are usually in rows and are composed of an outline with a dot in the middle. This design element is seldom used alone. A double circle is composed of two solid discs joined by a short bar.

Lines are commonly combined with other elements. Thus the subdivisions of the linear designs are: Line and circle, line and curve, line and wavy line, line and square, line and band, line and diamond, and line and angle. When the design is more elaborate than a simple line pattern or a simple combination it is classed as a "complex linear."

Step designs are typical of Tiahuanaco ware. The step pattern, although relatively obvious and simple, has considerable variation. Posnansky¹ gives the types in his Plate XLVI, including the design elements which are here called zigzag, angular, angular scroll, and cross. An angular design consists of a V-shaped figure, often repeated, one within the other. When two rows of such figures, one upright, one inverted, are placed side by side, the effect is that of parallel rows of zigzags.

The scrolls are simple and occur in connected series around a vessel. When the turns are formed by angles instead of curves this design is called "angular scroll." The double S is somewhat like a scroll on end. The two separate S's are placed one above the other, and in this arrangement used in parallel vertical rows for the design.

¹Posnansky, 1914.

An interlocking design is difficult to describe, but is relatively simple as the drawing (Fig. 17b) shows. It is really mis-named, but perhaps the term will suffice. A continuous zigzag wide line has the intervening V-shaped spaces filled with L-shaped lines which project alternately from the ascending and descending line of the zigzag. Small circles almost always accompany this design.

The miscellaneous geometric classification includes such obvious figures as: squares, crosses, triangles, zigzags, and stars. Obviously any of these design elements can be and often are combined; the classification is based on the dominating element. Some designs are frequently associated with certain vessel shapes, as will be shown in the section on shapes (p. 406).

The 18.01 per cent of zoomorphic designs fall into a few classes, thus:—

	Per Cent
Parts of complex designs	29.90
Condor designs	31.66
Puma designs	9.55
Human representations	18.84
Snake designs	2.01
Bird designs	.75
Unidentified animal parts	7.29
	<hr/>
	100.00 (398 pieces)

The first group, parts of complex designs, includes the sherd designs which were obviously part of a complex figure, but which were too fragmentary to be identified with one of the known types. Condor, puma, human, and snake designs are (with the possible exception of the snake) the most typical Tiahuanaco design elements, and as such will be discussed at greater length. Bird designs are rare, and relatively late, as the same type is found in the late Chullpa ware throughout Bolivia. Finally, the group of unidentified animal parts includes a number of sherds which, with slightly more evidence, might be included with the puma group. As a matter of fact, the combination of this group with the pumas would give a total percentage of 16.84 which is more nearly the correct ratio of the prominence of puma designs.

The relation of design group to color division is shown in this table:—

Ware	Zoomorphic Per Cent	Geometric Per Cent	Total Pieces
One-color	2.03	97.97	938
Two-color	15.37	84.63	735
Three-color	48.31	51.69	474
Four-color	82.22	17.78	45

The high correlation between complexity of design and multiplicity of color is an obvious characteristic of Tiahuanaco ware.

With the tabular and descriptive discussion of subject-matter in design presented above, the more difficult subject of style of design is now broached with some caution. If design is treated without regard for stratigraphic position of sherds, two styles, which might be called "classic" and "decadent" are immediately evident. Like the colors, the design elements are essentially uniform throughout Tiahuanaco ware. However, in the colors, a division in brilliance is noted, and in the designs a division in style is noted. The distinction in style and color is readily observed, but the establishment of chronological distinction will be left for the section on cultural stratification.

Classic and Decadent Style. It is not possible to present a thorough analysis of Tiahuanaco style at this time. Moreover, such an analysis has never been satisfactorily made, although Posnansky¹ does list many of the elements found. However, the detailed study must be reserved for the future. A brief review of some of the salient features of Tiahuanaco style may serve to distinguish two periods, Classic and Decadent. A division of color treatment into a rich, varied group and a drab, restricted group has already indicated the Classic-Decadent distinction. Subject-matter, on the other hand, was shown to remain consistent throughout, though a more detailed study would reveal the introduction of new design elements and the elimination of old motives in the Decadent phase. It is the style of decoration which most clearly marks the division.

Since this account is based on the collection actually excavated, supplemented, to be sure, by notes on museum and private collections, the style elements referred to are from pottery samples instead of stone. This separation of ceramic and stone design is not completely artificial. The winged and tailed king condor, the profile head, full front body warrior, and even the elaborate curled tail puma so commonly found on ceramics are rarely, if ever, portrayed in stone. On the other hand, the elaborately crowned, staff-holding, straight front view Viracocha god, the running condor and human figures (of the Gateway of the Sun and statues), the sun god heads (of the base frieze of the Gateway of the Sun), are not, within my observation, found on Tiahuanaco ceramics. Distinctions of this kind can be further elaborated. Thus fish heads, caracoles, the "female sex" (?) sign, and other details common in stone design are rarely found on ceramics. From our limited knowledge of

¹Posnansky, 1914.

Tiahuanaco textiles it may be said that textile and stone designs form a group as opposed to ceramic designs. Furthermore, this distinction between stone carving designs and ceramic designs is applicable only to the Tiahuanaco site, and certainly does not apply to the Epigonal or derived Tiahuanaco style of the central and southern Peruvian coast. In these last-mentioned regions the design elements are frequently taken directly from the Gateway of the Sun and other stone carving.

Aside from the subject-matter which is a distinguishing characteristic of Classic Tiahuanaco design, a group of traits can be given which together typify this Classic Tiahuanaco style, although taken individually a trait may not be unique.

With the exception of the wide, open, flaring rim bowls, where the exterior is left unadorned and the design is confined to the flaring rim, the designs are regularly restricted to the outside of the vessel. A scallop or a wavy line may adorn the inner rim of a vessel, but the principal design area is on the outside. All of the outside surface is treated equally, that is, the design is not restricted to one half or one section of the vessel.

Drawings, particularly zoomorphic ones, are regularly outlined with a heavy dark line, and then filled in with varying colors¹ and detail. The figures are drawn in profile, both head and body, except in human figures on which only the head is in profile. There are no attempts to vary this rule in the typical Classic work. No pumas are found with four legs or three-quarter front heads. However, the figures are generally right side up and in natural positions. The proportions are fairly true. Spots on the pumas, crowns and feathers on the condors are attempts at realism. Such a restricted and conventionalized style may be called pictorial only in its emphasis on the identification of the subject-matter as opposed to an emphasis of decorative design. However, little attempt at scenic composition is made. Figures or units are regularly repeated around the vessel, two, three, or four times. Ordinarily no variation, except for colors, occurs in the repetition of the units. Nor is more than one zoomorphic figure often used. Combinations of man and puma or condor are exceptional.

Restrictions and qualitative distinctions of color and shapes which serve to distinguish the Classic from the Decadent periods are mentioned in other sections. The combination of all factors makes the mass

¹In the illustrations of pottery designs in this paper the accompanying color key has been employed.



distinction of truly Decadent wares and truly Classic a fairly obvious one. However, detailed analysis proves embarrassing, because of the absence of sharp distinctions at any given point. If the degenerate style represents a true cultural decay, rather than a sharp overthrow, or cultural change, the change of style would be gradual and at the same time irregular in respect to its component elements.

The design in the Decadent style continues to be located principally on the outside of all vessels, but there is often a restriction in the actual area covered. A band around the top of a kero-shaped cup will compose the only decorated area, for example, but on the whole, the Tiahuanaco penchant for well-distributed design is unviolated.

Outline is still the most common figure treatment technique, but solidly filled black figures are not infrequent. Also the fill and the detail show much less variety in the Decadent than in the Classic style. A general simplification of technique, color, shape, design, and subject-matter (especially figure treatment) is perhaps one of the most characteristic distinctions for the Decadent epoch.

The attempt to identify the subject-matter of the drawing (which was called pictorial in order to avoid the term realistic) has become subordinate to pure design. Details of Classic animal drawings are used as design elements in the Decadent style. First heads are used without bodies, then eyes without heads. No longer is it important to have the figure in a semi-realistic position. The repetition, especially of heads, quite often fills out the pattern by alternating one upright head with one upside down. Front views are fairly common, especially for human heads. There is a general confusion of elements and combinations which would have been sacrilegious to the Classic designers. Puma heads are attached to bodies with wings and tail feathers, and condor heads have feline paws. A puma head, a snake body, and a condor tail are a common combination. Perhaps the easiest method of describing the Decadent type is by specific figures.

The elaborate and dignified king condor figure of the Classic epoch becomes depleted in the Decadent. The feet, tail, or wing are often omitted. The body may be reduced to a curved solid band with a wing attached. Heads are commonly used alone. Tail feathers are regularly used alone as a design unit. Another common depiction of the condor is that of an elongated band representing the body (without feet or legs), but with an upturned head at one end, a tail at the other end, also upturned, and a wing in the middle.

The Classic human figure has rather realistic features, curved profile, rounded or winged eyes, and an elaborated headdress. The body is

presented in front view and the hands clasp objects, such as axes, trophy heads, copper pins, and so forth. In the Decadent style the design is often reduced to the heads alone. Also its depiction may involve an elongation, in which the profile and the back of the head are separated from the eye by an abnormally long distance. The eye in turn may be more conventionalized and often becomes the whole design element. Furthermore, the heads may be turned upside down or they may face each other so that one nose serves for two profiles.

There is little doubt that a detailed study of design would reveal definite stages in the Decadent styles, leading eventually to the so-called "Chullpa" style of the region. However, it is doubtful whether excavation will ever confirm such minute divisions stratigraphically, although their existence cannot be denied.

POTTERY SHAPES

It is difficult to determine the shape of a vessel accurately from a small fragment. Consequently, this discussion of Tiahuanaco shapes draws upon the whole vessels, as well as sherds, and upon supplementary material from the Tiahuanaco collections in museums. However, the discussion is by no means exhaustive.

Just as in other ceramic traits a few were found which were dominantly Tiahuanaco, so five shapes typify the collections. Thus the identifiable sherds and the complete vessels give the following frequencies:—

Shape A, kero-shaped cup	196
Shape B, hollow base incense	129
Shape C, wide flaring bowl	37
Shape D, vase	13
Shape E, flaring cup	88
All others, shapes <i>a-t</i>	93
Total	556

Table 3 shows the relation between shapes and depth of occurrence in the various pits. This evidence will be used in describing the characteristics of each shape, as well as in the later section on cultural sequences. The relation of shape to design is summarized in Table 4. First the various shapes will be discussed. Fig. 12 is a key chart to these shapes.

Shape A, Kero-Shaped Cup. The kero-shaped cup is the most typical shape of all Tiahuanaco ware (Fig. 12A). It is represented in the typical stone-carved god figures, usually as held in the left hand. It occurs in all, save perhaps the earliest, Tiahuanaco periods. Some form of this kero-

TABLE 3
FREQUENCY DISTRIBUTION OF VESSEL SHAPES IN PITS AND LEVELS

Shapes	Levels	A	Plain B	Painted B	Incense B	C	D	E	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
Pit I	1	2			2																					2	
	2																										
	3	2																									
	3a	3		2				1																			
	5	1						1																1			
Pit II	1	4	1												1												
	2			1																							
	3															1											
Pit III	1		1						2																		
	2								1																		
Pit IV	1	40	4	5	2	1		1							2	1											
	2	29	4	5	2	10		1					1							1							
	3	12	1	5	1	1		4											1	1							
	4	5		1	1	1		4						3	1				1	1							
	5	16	3	5	1	3	1	14				1							1	1	1						
	6	3	3	1	1	2		4							1					1	1						
Pit V	1	2	1	1		1		2			1								1	1						2	
	2	18	5	2	1	1	1	9													1						
	3	1	1		1																						
	4	1	2	1	1		1	1																1			
	5			1	1	1					1																
	6	1?			1																						
	7				1																						
	8																1										
	9		4																								
	7a				1				1	1																	
Pit VI	1		1																								
Pit VII	1	1	1					1									1										
Pit VIII	1	10	3	2				10						2	4	1	1										
	2	13		21		1	1	2			1			1		1	1										
	3	2		1				3										1	2	1							
	4	2	3		1				5	3	2																
	5		4						5	1																	
	6		4						1	3																	
Pit IX	1	3	2	3		1	1	1							1												
	2	14		2	1	2	1	11				1	1				1	1	1								
	3	2				1		2							1				2		1						
	4	2																									
	5																										
Pit X	1	4	2	2	1	5	4	8						1				2									
	2	3				6	3	8										2	1			1		1			
Totals		196	50	60	19	37	13	88	17	8	5	1	3	7	11	4	4	8	6	6	3	1	1	1	2	1	4

TABLE 4
FREQUENCY RELATIONSHIP OF SHAPE TO DESIGN

	Linear	Band	Wavy	Broken Wavy	Step	Curve	Angular	Circle	Scroll	Angular Scroll	Double S	Interlocking	Miscellaneous Geometric	Complex Designs (Feather)	Classic Conv.	Puma	Human	Snake	Bird	Animal (unclassified)	Totals
Shape A Bolivia Museum	68 3	7 3			3 11	1	2	3				1	1	1		7 8/6	10 3/5	2	1	3	104 45
B Bolivia Museum	15	1	1		1	1	1	8 1					2 2	4 5	6	/1				1 1	32 19
C Bolivia Museum	9				2 1			1	1						8 4/	5 1/	1		1+	7	34 7
D Bolivia Museum	1		2	1	3								2	1	/2 /4	1/ 1/3		2			12 11
E Bolivia Museum	14 6	2 1	26 25		8 53		2 5		2 4		2 6				/2 /3	/2 /3	/1 /3			Llama 3 Llama 1	64 121
<i>d</i> Bolivia Museum					1								1					1			1 2
<i>f</i> Bolivia Museum	2																1				3
<i>j</i> Bolivia Museum					Circle 4		1	1 1				5				/1	/2				8 7
<i>l</i> Bolivia Museum		1			1				2 4						/1						2 7
<i>m</i> Bolivia Museum	1			1	2										1						2 3
<i>p, q, r</i> Bolivia Museum							2			1			1		/1		1 /2	1			1 8

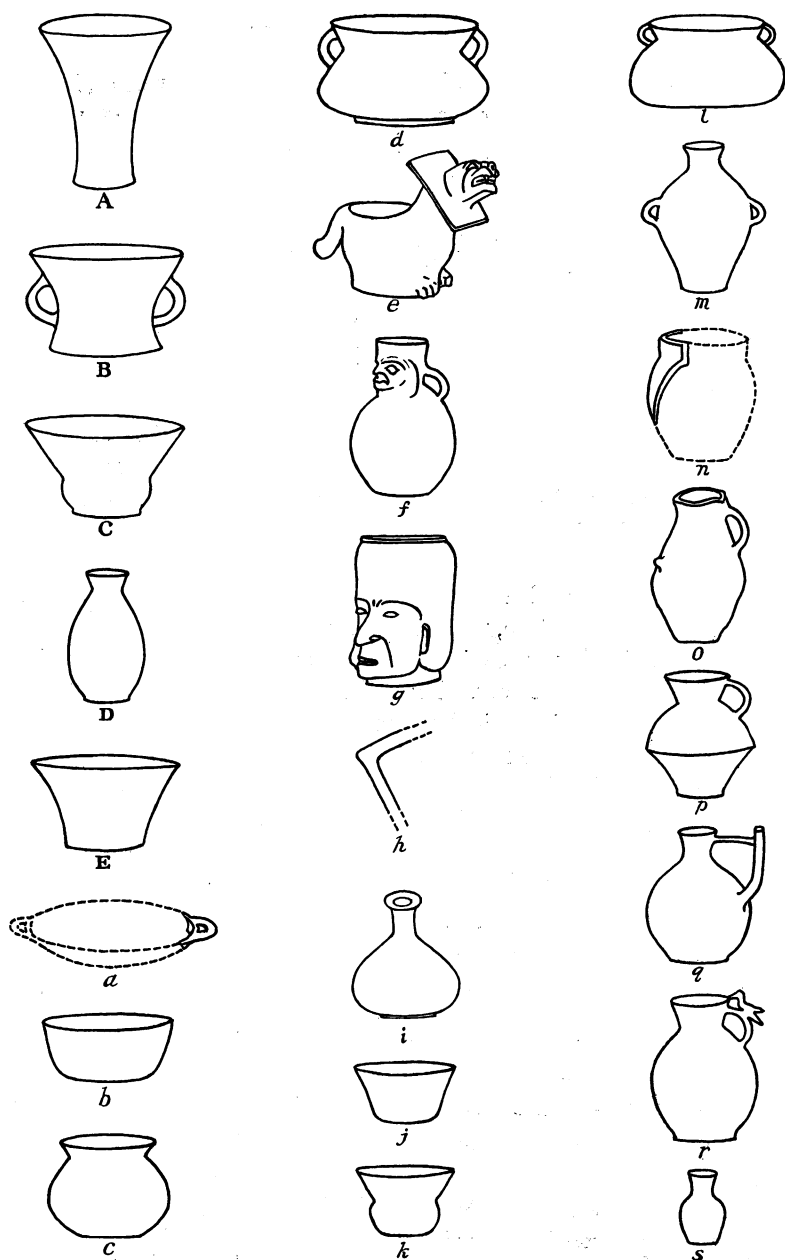


Fig. 12. Key to the Pottery Shapes Described. A-E, the major shapes encountered both in excavation and in collections; a-s, less frequent shapes contained in the Expedition collection.

shaped vessel is represented in Epigonal and other cultures derived from Tiahuanaco influences. It even extends into the Inca period, where the true *kero* made of wood, supplants it, although a black ware cup is still found in abundance. The typical plain *kero* is about 6 to 8 centimeters high. The sides are perpendicular from the round base to about the middle of the vessel from which point they flare out until the diameter at the rim is over twice that of the base. Aside from this gradual flare the rim is quite plain. The commonest variant of the plain form is the *kero* with a horizontal ridge around the body. A groove on the inside of the cup marks the position of the ridge on the outside. Most ridges are narrow, but one variant has a raised band about 1.5 centimeters wide. The ridge may be located around the upper half of the cup, the middle, the lower half, both around the upper and lower sections; and, finally, it may be double around the middle. A *kero* with a head modeled slightly in relief at its base is another variant. The head may represent a bird, a puma, or a human being. A related shape, typical of Cochabamba, is a vessel with a very constricted base, from which the sides spread out, in funnel style, to a rim diameter four times that of the base. The straight-sided, non-flaring, *kero*-shaped vessel, rather typical of Coastal Tiahuanaco style, was not found in my excavating, nor is it common in the existing Highland collections.

Shape A vessels are found in almost every pit and, with the exception of the lowest levels, at most depths. They are particularly abundant in Pit IV where the percentage of painted sherds runs high. Many varieties of design are found on vessels of this shape. However, the wavy lines, scrolls, and complex angular designs so typical of some other vessels (Shape E, for example) are not found, and there is considerable evidence that these designs are comparatively late. Both Classic and conventional or Decadent zoomorphic designs are found on the keros, indicating that the shape persisted, though the design changed.

Shape B, Hollow Base Libation Bowls. This libation bowl is another of the most typical shapes found at Tiahuanaco (Fig. 12B). Its distribution throughout the levels of each pit is even more complete than for the *kero*-shaped cup. However, it is apparently limited to the Tiahuanaco site and immediately adjoining regions, such as the Island of Titicaca. In general, these vessels may be described as squat, open bowls with two handles, in which the base is inserted like a partition about 2 centimeters from the bottom of the vessel. This gives rise to the descriptive term "hollow base." The sides are concave in profile, the rim being half again as great as the base in diameter. Otherwise the rims

are plain or undulated. Careful examination of the collections, both museum and excavation, allows the libation bowls to be subdivided as follows:—

a. A flat bottom (not “hollow”) perpendicular-sided, cup-shaped bowl, with from four to six rim undulations. These bowls are decorated either by dull-point engraved lines filled with red, yellow, and white paint, or by plain painting in the shiny colors typical of the “special paint” ware already mentioned. Designs consist of steps and angular scrolls, and some un-outlined birds or animals. A small modeled animal head is found on the rim of some of these as a variation. Because of the undulations, animal heads, and general shape, these vessels have been classed as a subtype of Shape B. Means¹ illustrates one of these cups as probably representing the Tiahuanaco I period. This deduction is borne out in general by my excavation, but, unfortunately, I did not find enough of this type to check it absolutely.

b. Bowls of plain, unadorned, brown ware with the base indented less than one centimeter (average 0.6 centimeter), with sides without extreme flare and without handles, form a rather definite group which is further identified by its distribution in Pits III, 2; V, 8; VIII, 4, 5, 6. Its significance is emphasized when compared with the “special” painted ware and the horizontal handle (Shape *a*), also limited to the lower levels of Pits V and VIII.

c. A group of plain orange ware has the bottom partition indented 2 to 3 centimeters. The ware is well fired and of medium thickness. The bowls are of average size, about 12 centimeters high, 12 centimeters in base diameter, and 15 centimeters in rim diameter. Six fragments have stubs of vertical handles. Most of this orange ware has no further decoration, but on some a trace of white or red paint is still evident. Vessels of this type occur in Pit IV, all levels, and others are found in Pits II, 1; V, 2; IX, 1; X, 1.

d. This group differs from the preceding (*c*), only in being painted. Design is confined to the outside, although the inside is usually painted some plain color, commonly red. These are two-handled bowls, with the rim plain and slightly wider in diameter than the base, and the base raised from 1.5 to 4 centimeters. The handles start below the partition and extend to a point below the rim. They are all set vertically, although one exceptional bowl with a horizontal handle is represented in the Museo Nacional de Bolivia. The typical specimen has a design composed of a row of circles around the base. The upper body designs

¹Means, 1931, 107, Fig. 5.

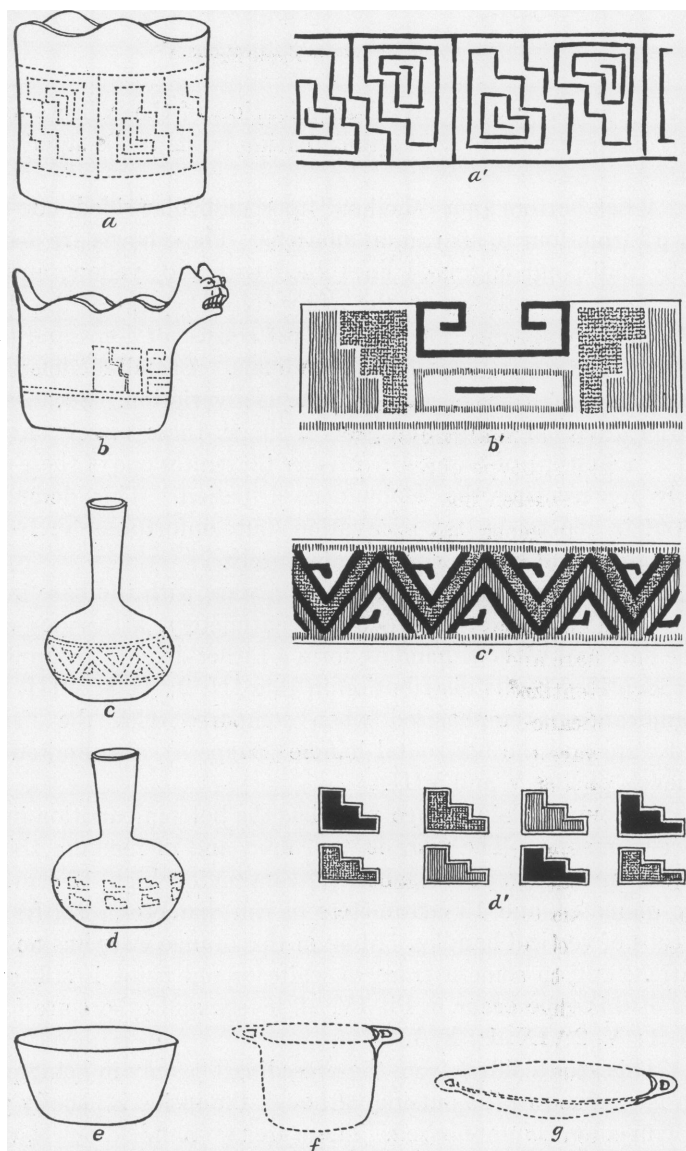


Fig. 13. Shapes and Designs on Early Type Tiahuanaco Pottery. *a-a'*, incised design filled with colors (in incisions) on a flat bottomed, wavy rim libation cup (Museo Nacional de Bolivia); *b-b'*, the puma head type flat bottom cup with painted design (Museum für Völkerkunde, Munich); *c-c'*, long-necked decanter shape with the typical angular design in several glaze colors (Museo Nacional de Bolivia), the most typical design of all ware of this period; *d-d'*, a variation of design on the same type bowl as shown in *c-c'* (Museo Nacional de Bolivia); *e, f, g*, plain ware shapes of this period encountered in the excavations.

vary somewhat, although a trident feather design is very common. Condor designs occur, but other zoomorphic figures are rare. As in the kero-shaped cups, the "late designs" (wavy lines, double S, scroll, complex angle) are not found with any frequency. Many colors are

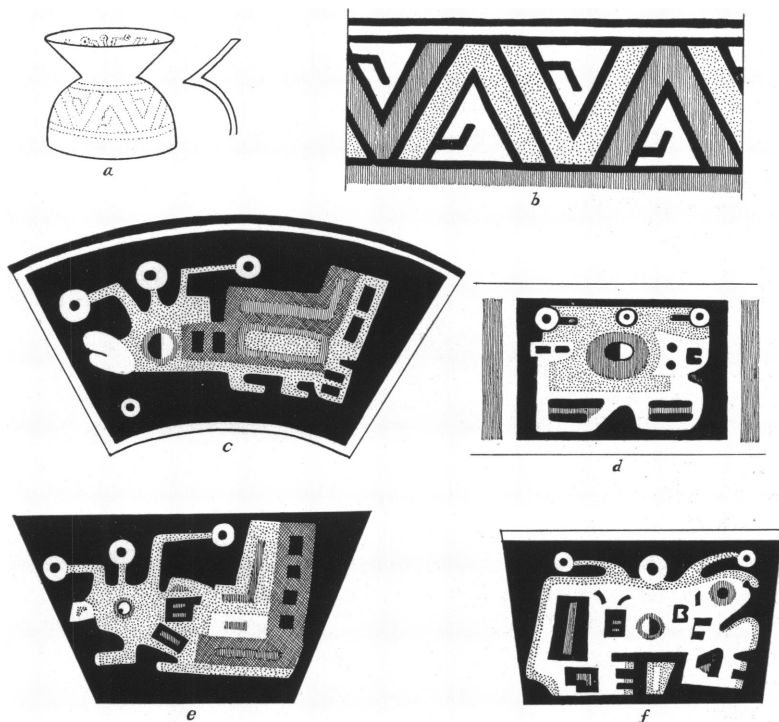


Fig. 14. A Typical Early Tiahuanaco Bowl Shape with Four Examples of the Type of Inner Rim Design. The spitoon shape shown in *a-b* illustrates the characteristic Early design which occurs around the outside of most of these bowls. *c*, zoomorphic figure on bowl (Musée d'Ethnographie, Paris); *d*, zoomorphic figure on bowl (Museum für Völkerkunde, Munich); *e*, zoomorphic figure on bowl (Musée d'Ethnographie, Paris); *f*, zoomorphic figure on bowl (Museum für Völkerkunde, Berlin). *c-f* are painted in glaze colors on a black background section, a technique which Means calls "rimming."

commonly employed in the designs, polychromes of four and five colors are typical.

e. Except in Subtype *a* all the bowls mentioned so far have had plain rims. Another set of hollow base bowls has an undulating rim. These undulations may be regular loops, angular lugs, or pierced pro-

jections resembling one type of horizontal handle. Fragments of this type are not frequent in my own collection, but complete, undulating rim bowls are common enough in the Tiahuanaco collections.

f. Bowls with modeled animal heads as rim projections form a final subgroup. The combination of modeled animal heads and rim undulations (Subtype *e*) is common. Modeled heads are also found on plain rim vessels (like Subtypes *c* and *d*) in which case the bowls have only one handle.

Modeled heads include puma, condor, one monkey (Pit V, 9), and a llama form. My collection includes only the puma, condor, and monkey. One form of solid puma head is modeled directly on the rim edge, with or without small differentiated ears. The head faces out on an upward incline. The modeling is simple and only slightly augmented by incised grooves. Three of these were found (Pit II, 2; Pit V, 6 and 8). They form a distinct class in contrast to the other types found. Another modeled puma head is hollow and much larger. The modeling is in greater prominence. The head is not directly attached to the rim, but connected by means of a long, hollow neck. The head has either two large flat ears or a thin, flat, square collar which separates it from the neck. Rarely are both ears and collar employed. The condor heads are mostly of this collared type. The monkey head has a neck, but no collar, and is hollowed out with the mouth as a spout. One fragment of the collar from Pit IV, 5 is notable for its coloring. One side is covered with a thin red slip, while the other has an indistinct design in black, white, *green*, and red chalky colors. Other heads are either plain or colored with a single slip.

Seventy-five typical fragments of hollow base bowls of my collection are distributed throughout the types as follows:—

Subtype <i>a</i>	1
<i>b</i>	12
<i>c</i>	18
<i>d</i>	32
<i>e</i>	3
<i>f</i>	9

Incised design on libation bowls is found in several of the Bolivian collections, although unfortunately I did not find any fragments. There is again some indication that the incised type is older than the plain or painted.

Shape C. The wide open, flaring rim bowl is characteristically Tiahuanaco (Fig. 12C). Rising from a slightly projected base the short sides

are convex and terminate in a broad, flat rim which angles outward and upward. All decoration is on the inner side of this rim. The designs on these vessels are typical of the Classic style, while truly Decadent designs are not found. Condor and puma and, rarely, human designs are most frequent. A typical bowl of this shape measures 12 centimeters high, 12 centimeters in base diameter, and 24 centimeters in rim diameter, while the width of the rim is 7 centimeters.

Shape D, Vase. A lozenge-shaped vase with a high flaring rim is fairly typical of Tiahuanaco, although not as frequently found as other shapes (Fig. 12D). Zoomorphic designs are the most common type of decoration on these vases, and although both Classic and Decadent styles are included, the Classic is dominant. Even the geometric designs favor the typical step and linear patterns rather than the late wavy line and scroll types. These vases are handleless. The design is located around the body of the bowl between a band around the neck and a band a few centimeters above the base.

Shape E, Small Flaring-Sided Bowl. A small bowl (Fig. 12E) has a circular flat base about 8.5 centimeters in diameter, from which the sides flare out gradually to a diameter slightly more than one and one half times the base, or about 14 centimeters. The height of these bowls is about 8 centimeters. The rims are plain. There are no handles. In some ways this shape resembles an unelongated kero-shaped cup (Fig. 12, Shape A), although there is no evidence for its being a derived form. These bowls are the typical medium for the Decadent style design. Zoomorphic forms of design are in the minority and those found, with few exceptions, are Decadent in style. The geometric designs are predominantly wavy lines, steps, complex angles, scrolls, and double S's which practically never appear as independent designs on vessels of Shapes A, B, C, and D. The colors of the bowls are not the rich, deep colors of the Classic Tiahuanaco, but rather the flat, opaque tones of the Decadent style. The shape is numerous in the collections, and although generally confined to the upper levels of the pits, has a disturbing distribution. A straight-sided (instead of concave) variant has a wide distribution in connection with the spread of Tiahuanaco influence. It is interesting to note that Tiahuanaco style on the coast of Peru has both this shape and the kero-shaped cups in straight-sided variants.

This shape is preserved in the Inca ware of the Bolivian Highlands. It is also one of the most characteristic shapes of the so-called Chullpa ware, widely distributed throughout the Bolivian plateau and Lake Titicaca region.

Shapes A-E, described above might be called the primary Tiahuanaco types, judged on a quantitative basis. Sparsely represented in the excavations are numerous other shapes which deserve mention. They are briefly described below as "secondary" types. It does not follow that other excavations might not materially increase the importance of some of them.

Shape a, Horizontal Handled Dishes. Horizontal handles are rare in Tiahuanaco pottery. They appear occasionally as variations of vertical body handles. The group included here is composed of horizontal rim handles. All but two are plain ware. All come from three pits: Pits V, 7a and 9; VIII, 4, 5, 6; III, 1, 2. It has already been mentioned that pierced rim undulations of Shape B libation bowls have the appearance, when broken off, of horizontal rim handles. However, only one specimen seems to be of this type. The other sixteen are divided into two groups. Nine are loop handles which project at only a slight angle from the vertical extension of the rim. The fragments of the dishes are too small to determine the shape accurately, but the suggestion is of a shallow platter shape (Fig. 12a). Seven are loop handles which project almost at right angles to the rim, and are apparently parts of deeper, more bowl-shaped dishes. I have not seen any complete Tiahuanaco specimen of this type either in the literature or in the existing collections, but Bingham illustrates a similar type of shallow dish as rare at Machu Picchu.¹

Shape b, Shallow, Plain Rim Bowl. This shape has already been mentioned in the discussion of the special group of red and brownish-black polished ware. It is a simple, convex-sided open bowl, with a plain rim (Fig. 12b). The sides curve to a flat base. Fragments of this type were found only in Pit V, 9, and Pit VIII, 4, 5, 6.

Shape c, Small, Flaring Rim Bowl. The simple bowl (Fig. 12c) is of relatively little importance, except that in Pit VIII, 4 it occurs with the special, shiny paint which distinguishes the lower levels of Pits V and VIII from the general run of Tiahuanaco ware.

Shape d, Narrow Rim, Wide Open Bowl. This bowl is somewhat like Shape C, except that the rim is narrower and less flaring, and the decoration is on the outside (Fig. 12d). Two vertical handles extend from just below the rim edge to the curved body. A projecting ridge encircles the flat base. The design, a scrolled snake body with human face and feet, is in rich Classic colors (Fig. 17d) and, though rare, seems typically Tiahuanacoan.

¹Bingham, 267, Fig. 12a.

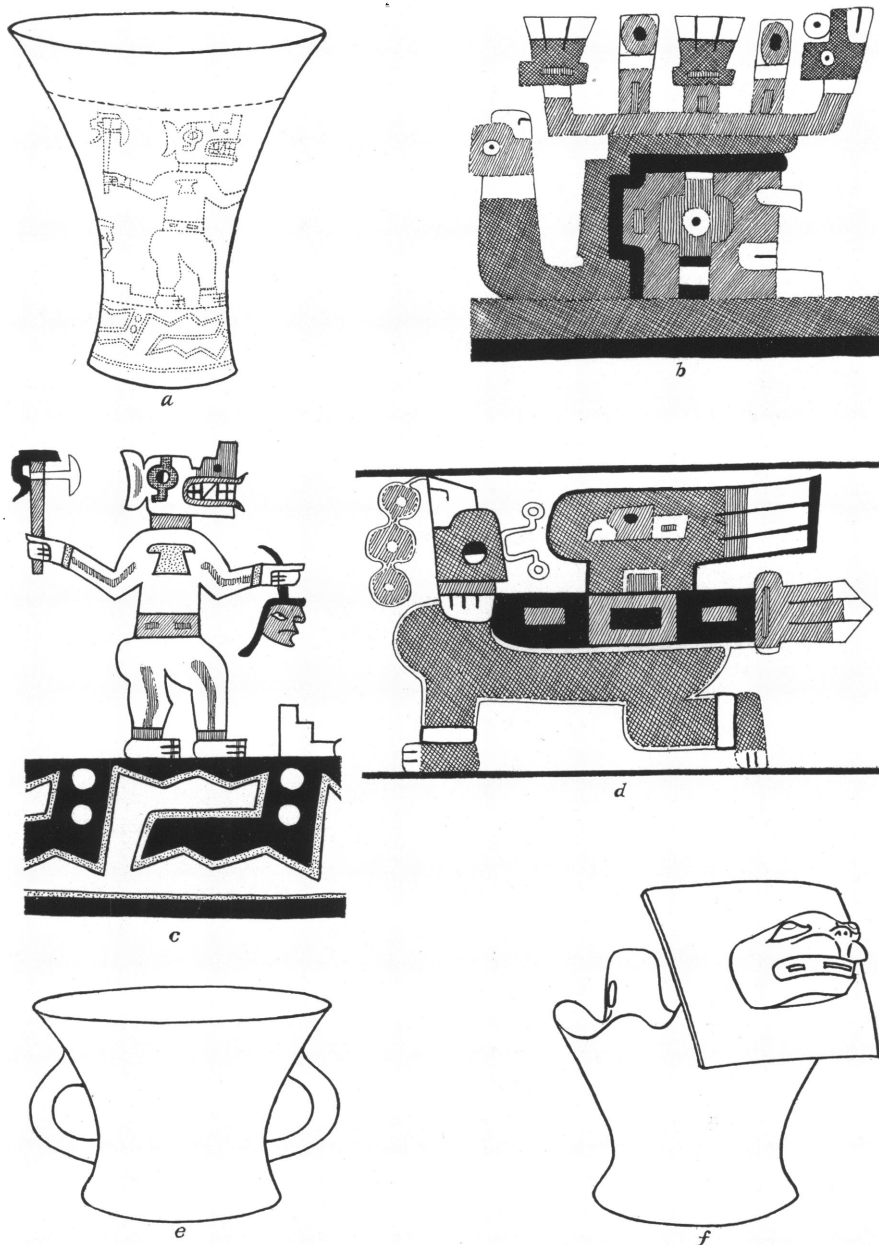


Fig. 15. Shapes and Designs of Classic Tiahuanaco Types. *a*, the kero-shaped goblet (A) is one of the most typical shapes. *b*, *c*, *d*, designs copied from goblets of the same shape; *b*, head from a goblet (Museum für Völkerkunde, Munich), more elaborate than most Classic style human heads, but still represents the type; *c*, masked warrior figure with the battle ax and trophy head was found by the expedition; *d*, Classic condor figure (Museum für Völkerkunde, Munich); *e*-*f*, two-handled and collar-puma head varieties of the "hollow base" libation bowls, *f*, after Schmidt, p. 537, Fig. 1.

Shape e, Modeled Puma Bowl. An effigy bowl in puma shape (Fig. 12e) is found in some of the collections of Tiahuanaco ware. The body is formed by the elongated bowl. Four feet are attached; a large modeled head projects in front, and an upright hollow tail in back. Only fragments of this type of bowl are in my collection. Two ears and part of the body come from Pit IV, 5. The body is decorated with the double circle connected with a bar, so typical of puma designs. Ears of modeled pumas, perhaps of this type bowl, come from Pit V, 2 and 3. Pit IX, 2 furnished a hollow tail. In function it might be classed with the incense or libation bowls of Type B (Fig. 12B).

Shape f, Goblet. This goblet-shaped drinking vessel (Fig. 12f) may be a special variant of the Shape A kero. The straight-sided circular lower half bulges in the upper half in a prominent convex arc. The plain rim is somewhat restricted and has none of the flare of the typical keros. The design is typical of Classic Tiahuanaco style. However, there is a variety in polished black ware which suggests Inca influence.

Shape g, Modeled Heads. If modeled heads on vessels are considered only as part of the decoration, then there is no justification for this class (Fig. 12g). However, the number of pieces with modeled human heads is so small that it is easier to describe them as a group.

One group, similar to Shape f, is perhaps another variant of Shape A keros. However, the modeled human head at the base of the goblet gives it a distinctive appearance. The vessels with the modeled head bases are not as high as the typical kero-shaped cup, and the sides curve inward rather than outward. Heads of this type are found in plain, unfinished ware, in polished and painted red ware, and in polished black ware.

Another group is composed of rim pieces, possibly of kero or Sub-type f vessels. In the complete vessel the head would be upside down, because the chin is modeled close to the rim, and the eyes modeled and painted in below.

A final group, a large bowl with restricted mouth and with a high collar, is modeled in the shape of a human head. A single handle extends from collar to body opposite the modeled face. This type is probably Inca, as almost the same style of vessels is found at Cuzco.

Shape h, Angular Rim Bowl. A few fragments of bowls with 2 centimeter wide rims which extend at right angles from the body were found in the excavation, but no pieces were uncovered which would correctly indicate the complete bowl shape.

Shape i, Narrow Neck Globular Bowls. A medium-sized bowl with a constricted neck and high straight collar (Fig. 12i) is sparsely represented

in the collection. One complete vessel with a projecting spout has a snake body design with a puma head. Others of this shape are represented by collar fragments from which little of the design can be told.

Shape j, Round Bottom Bowls. An open, recurved-sided, plain-rimmed bowl (Fig. 12j) is rather frequently found. It is somewhat the same as the Shape E open bowl (Fig. 12E), but differs from it in its round bottom. However, that one feature is sufficient to place this bowl in a class by itself. The bottom is not completely round, but the junction of the sides and the base, instead of being characteristically angular, is a bulging curve which extends well under the vessel.

Typical of this form is a zigzag line design called "interlocking." This is combined with circles. Almost every example of this design is in yellow lines and white circles on a red background. Other designs found are in Decadent style, but it is not possible to say that the shape too is Decadent.

Shape k, Small Open Wide Rim Bowl. This is a small edition of Shape C (Figs. 12C, k). It is not classified with the large ones, because of the great discrepancy in size. Polished red vessels of this kind are most typical, while painted ones are rare. These bowls are 10 centimeters in rim diameter and 6 centimeters high, as contrasted to 24 and 12 centimeter measurements of the large size.

Shape l, Round Base Open Bowl. The round base open bowl again exhibits a curving contact of base with convex sides (Fig. 12l). The bowl is wide, but the rim diameter is less than the body width. There is an angular flaring rim of medium width. A scroll design on the body of these vessels is typical, and is executed in black-on-red. In fact, it is rare to find one of these bowls without a scroll design. Since other occurrences of scroll designs have been noted on Decadent vessels it might be assumed that this too is a late type.

Shape m, Large, High Shouldered Jug. This group consists of large jugs with constricted necks and high collars (Fig. 12m). The rim may be plain or flaring. The base is flat and the sides diverge in a straight line up to the curved, high shoulders. Some have two loop handles set low on the body.

The design, of step or condor, together with triangles, is in dark brown-on-yellow. In design, general treatment, and form they resemble, or at least suggest, the Atacameño typical shape described by Uhle for northern Chile.¹

¹Uhle, 1919, Pls. XVII, XIX.

Shape n, High Shouldered Vase. A shape which resembles *m* is a high shouldered vessel which substitutes a wide mouth without collared neck for the high collar of the jug (Fig. 12*n*).

Shape o, One-Handled Pitcher. One-handed pitchers (Fig. 12*o*) are mostly in plain ware, or, if painted, are ornamented with simple geometric designs. They have a wide distribution in the Bolivian Highlands, in association with the "Chullpa" sites. They are undoubtedly a late form in Tiahuanaco.

Shape p, Angular Body Bowl. A deep, wide-mouthed, flaring rim, one-handed bowl has as its distinctive feature a body which is sharply angular at about the center (Fig. 12*p*).

Shape q, Spouted Bowl. Bowls with spouts are rare in the typically Tiahuanaco culture. One has already been mentioned as a variant of Shape *i*. While my own excavation uncovered only the one mentioned, and the spout of another, they are found in other collections, and distributed throughout the "Chullpa" culture of Bolivia. The usual style is an extended body spout which is joined to the body by a bar, thus forming a spout handle (Fig. 12*q*). This spout handle is found on bowls of several shapes, including the angular variety, Shape *p*.

Shape r, Animal Effigy Handle. Some rims have handles extending to the body which are slightly shaped to resemble animals (Fig. 12*r*). While some of these bowls are globular, others are angular bodied. The Cochabamba collections of Tiahuanaco Decadent style abound in this type of handle.

In general it may be said that Shapes *p*, *q*, *r* form a group of late styles. Design and distribution confirm this statement.

Shape s, Small Modern Vases. Scarcely deserving mention are small, crudely made vases of modern ware, found in the pits in association with modern burials (Fig. 12*s*).

On the basis of color, design, and distribution the shapes may be temporarily subdivided as follows (distribution refers to pit levels, and also to non-Tiahuanaco sites like the Island of Titicaca and Cochabamba):—

Specials	Classic	Both Classic and Decadent	Decadent
Early?			
Ba, b	Bd, e, f	B c	f k l
a	C	A D E	m n o
b	d	e i j	p q r
c	g		A (Cochabamba constricted base)
	h		

COMPLETE AND PARTIALLY COMPLETE BOWLS

Since most of the Tables, with the exception of those for the pottery shapes, have been made up on the basis of sherds, exclusive of complete vessels, it is necessary to give a brief descriptive account of the complete and partially complete bowls. The more important of these bowls have been illustrated in the drawings for the section on Cultural Stratigraphy. The complete bowls can best be described in a catalogue list, arranged according to pit, shape, style, colors, and design.

The ten pits yielded only forty-eight bowls sufficiently complete to permit reconstruction. Most of the pits were made in the dwelling or temple areas of the ruins and not in the cemetery. Pit X, the only one really in the old cemetery section, yielded nineteen restorable vessels, and it was a previously disturbed site.

1. Pit I, 3a; Shape A, ridge in center; Decadent style; black, white-on-red; design of bands and irregular, rounded point cross.
2. Pit I, 5; Shape A, angular ridge in center; Decadent style; black, white, yellow-on-red; design of front view faces, two upright, two inverted, around base.
3. Pit IV, 1; Shape A, plain; Decadent style; black, white, brown-on-red brown; design of two Decadent heads around top of vessel (Fig. 17f).
4. Pit IV, 5; Shape A, band around top; Decadent style; black ware; incised lines around band.
5. Pit IX, 3; Shape A, plain; Decadent style; black, white, yellow-on-dull red; design of band, bird, and large S-shape around top.
6. Pit X, 2; Shape A, plain; Classic style; black, white, yellow, gray-on-red; design of four warrior figures with puma masks, carrying trophy head in left hand and battle ax in right (Fig. 15a, c).
7. Pit X, 2; Shape A, plain; Classic style; black, white, gray-on-red; design of two curled tail pumas with back legs bent.
8. Pit IX, 2; Shape C; Classic style; black, white, yellow, gray-on-red; design in two rows around inside rim, at top a row of step, curve, and bird designs; below a row of step and scroll.
9. Pit X, 2; Shape C; Classic style; black, white, yellow, gray-on-red; design of three, curled tail pumas, separated by double S; around inside rim (Fig. 16 b, b').
10. Pit X, 2; Shape D; Classic style; black, white, yellow, gray-on-red; design of two rows of steps (Fig. 16a, a').
11. Pit X, 2; Shape D; semi-Classic style; black, white-on-red-brown; design of two condors with double band bodies, wings, and no feet.
12. Pit I, 3a; Shape E; Decadent style; black-on-orange; design of step and perpendicular wavy lines.
13. Pit I, 5; Shape E; Decadent style; black, yellow-on-red; design of perpendicular wavy lines on outside, scallops around inner edge.
14. Pit IV, 5; Shape E; Decadent style; black, white, yellow-on-brown; design of two Decadent heads around outside (Fig. 17e'').

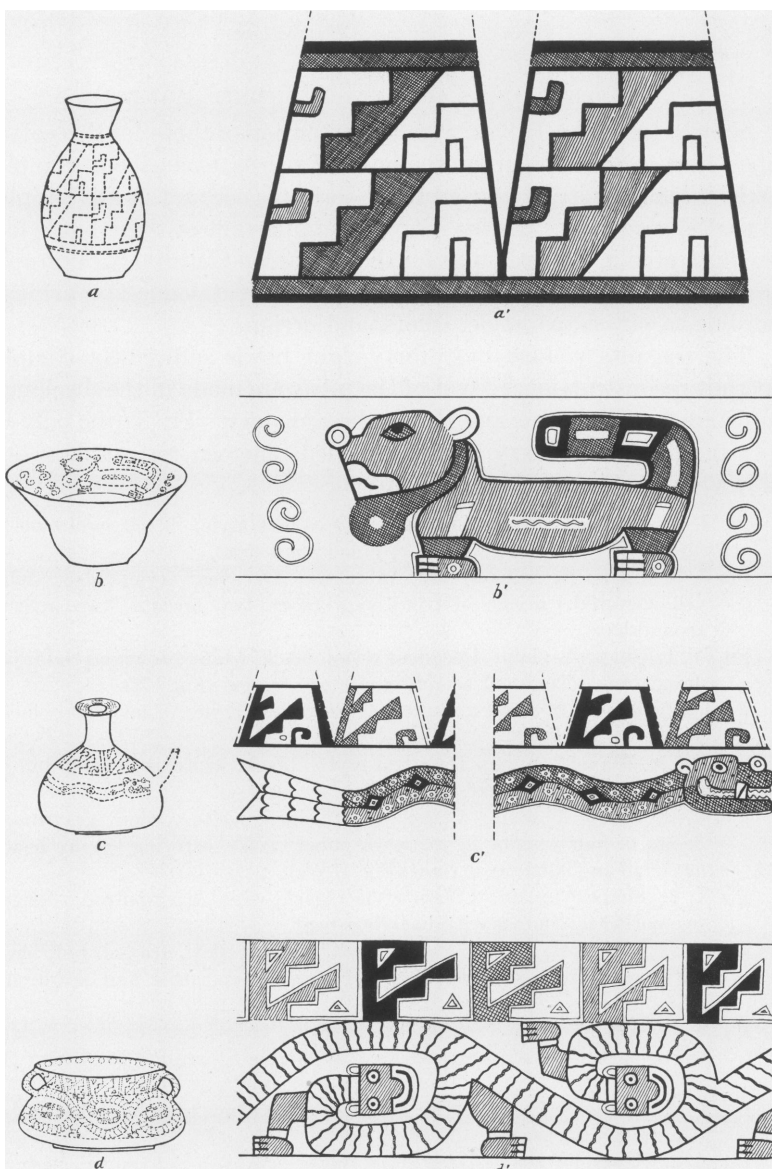


Fig. 16. Classic Tiahuanaco Shapes and Designs, all copied from Bowls found by the Expedition. *a-a'*, vase shape (D) with typical step design; *b-b'*, open bowl shape (C) with design on inner rim, of Classic pumas; *c-c'*, constricted neck bowl (with spout, *z*) with serpent design, in Classic technique, but not so typical as other designs; *d-d'*, this bowl and design are both unusual Classic style, but none the less incorporate. The shape is classified as (*d*) in the list. The design is self explanatory.

15. Pit IV, 5; Shape E; Decadent style; black-on-orange; design of scallop around inner edge.
16. Pit IV, 6; Shape E; Decadent style; black-on-red; top half of outside is black, the rest of the bowl red.
17. Pit IX, 2; Shape E; Decadent style; black, white, yellow-on-red; design of two llamas, circles and S around outside.
18. Pit IX, 2; Shape E; Classic style; black, white, yellow, gray-on-red; design of three rows of steps around the outside.
19. Pit IX, 4; Shape E; Decadent style; black, white, yellow-on-red; design of crude puma with condor wing and band body.
20. Pit X, 1; Shape E; Decadent style; black-on-red; design of line and scroll.
21. Pit X, 2; Shape E; Decadent style; black, white-on-red; design of line and circle chain.
22. Pit X, 2; Shape E; semi-Classic style; black, white, orange-on-red; design of two full, crowned condors, with winged animal body with two feet; design in colors with black as a background, not an outline.
23. Pit X, 2; Shape E; semi-Classic style; black, white, yellow-on-red; design of two pumas with tails that stick straight up.
24. Pit X, 2; Shape E; Decadent style; black, white-on-brown; design of a row of steps and curves above a row of perpendicular wavy lines.
25. Pit X, 2; Shape E; Decadent style; black, white, yellow-on-red; design of two upright and two inverted figures with condor tails and puma-like heads (Fig. 17e, e').
26. Pit X, 2; Shape E; style uncertain; yellow, black-on-red; design of three llamas with packs and leader, in yellow on black background; bowl small and red inside; polished.
27. Pit X, 2; Shape E; style uncertain; yellow, white, black-on-red; design like 26, in yellow and white on black background; small bowl, red inside; not as well polished as 26.
28. Pit VIII, 4; Shape b; Early style; plain, polished, reddish-brown.
29. Pit IV, 6; Shape like c; Decadent or Inca style; plain orange with horizontal side handle.
30. Pit X, 2; Shape d; Classic style; black, white, yellow, gray-on-red; design of scroll-like body with projecting legs and front view faces; circles around inner rim; step design around outer rim (Fig. 17a, a').
31. Pit IX, 3; Shape g; style uncertain; plain, unslipped brown modeled head with coca wad in cheek.
32. Pit I, 5; Shape i; with spout (broken); Classic style; black, white, yellow, gray-on-red; design of snake body with puma head, step design around base of collar, broken wavy lines around rim (Fig. 16c, c').
33. Pit IX, 2; Shape j; Decadent style; black, white, yellow-on-red; design of Decadent heads around side.
34. Pit X, 2; Shape j; Decadent or semi-Classic style; yellow, white-on-red; interlocking design with circles around outside (Fig. 16d, d').
35. Pit IV, 5; Shape k; Decadent style; plain red.
36. Pit V, 2; Shape k; Decadent style; plain red.
37. Pit IX, 3; Shape k; Decadent style; black-on-red; crude step on inner rim.
38. Pit X, 2; Shape k; Decadent style; plain red.
39. Pit X, 2; Shape k; Decadent style; plain red.

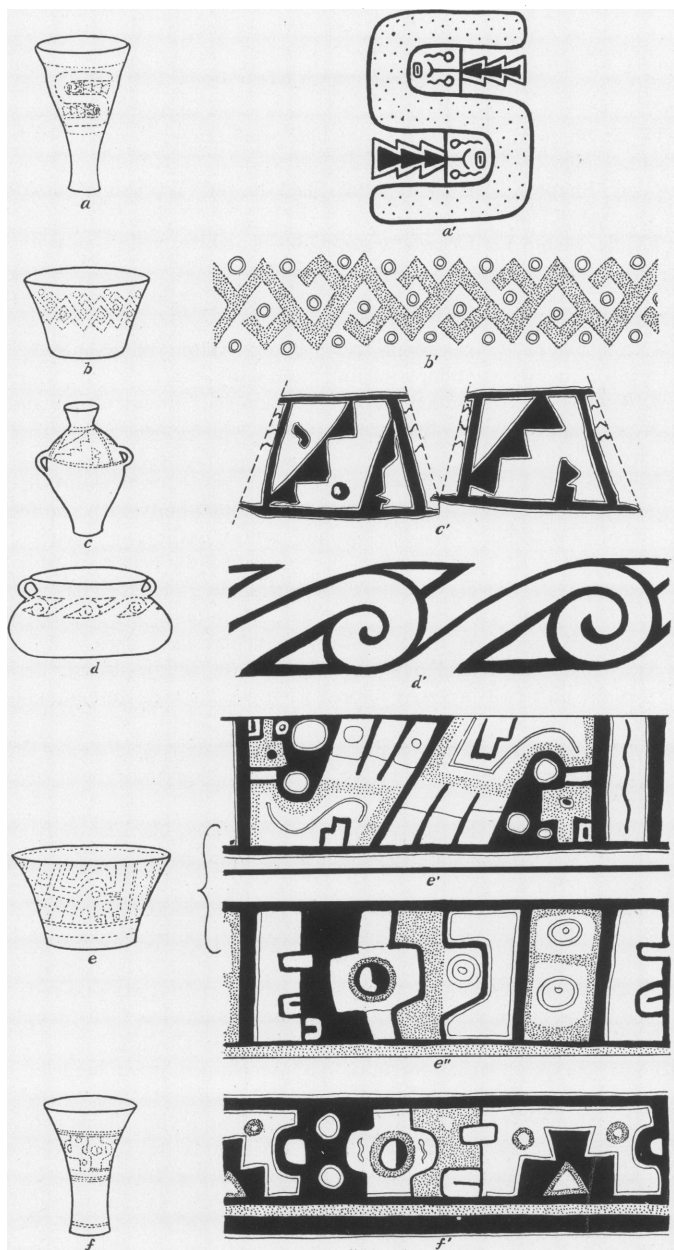


Fig. 17. Shapes and Designs of Decadent Tiahuanaco Style. *a-a'*, Cochabamba style kero-shape with line and dot design (collection of Frederick Buch, La Paz); *b-b'*, rounded base cup (*j*) with interlocking design with circles, this design in yellow with white circles is characteristically associated with this shape; *c-c'*, two-handled jug (*m*) with step design, design and shape are not unlike the typical Atacameño jug; *d-d'*, open, rounded base bowl (*l*) with black-on-red scroll design, a frequent combination; *e-e'-e''*, shape E bowl, characteristic of Decadent phase with two samples of design, one a depleted condor-puma combination, the other an elongated human face in profile; *f*, kero-shape goblet (*A*) with Decadent human face design.

40. Pit IV, 3; Shape *l*; Decadent style; black-on-red; scroll design around outside (Fig. 17d, d').
41. Pit IV, 6; Shape *m*; Decadent style; black, white-on-plain orange; irregular step and horizontal wavy line design on outside (Fig. 17c, c').
42. Pit IX, 3; Shape *o*; Chullpa style; plain orange and with two side handles.
43. Pit IX, 3; Shape *o*; Chullpa style; plain red and small.
44. Pit X, 2; Shape *o*; Chullpa style; plain dark brown and with one handle and lug on front side.
45. Pit I, 1; Shape *s*; modern style; plain orange with one handle and modeled face.
46. Pit V, 1; Shape *s*; Chullpa style; black-on-orange; small cross design.
47. Pit V, 1; Shape *s*; Chullpa style; plain orange.
48. Pit X, 2; Shape *s*; Chullpa style; plain orange.

In the complete vessels the style is easier to determine than in the sherds. To be sure there are intermediate types which cannot definitely be assigned to one style, but this is only a confirmation of the theory that Tiahuanaco culture represents a continuous change. The distribution of complete bowls according to style and shape is as follows:—

Style	Shapes	Totals
Early	<i>b</i>	1
Classic	2A, 2C, D, E, <i>d</i> , <i>i</i>	8
Semi-Classic	D, 2E, <i>j</i>	4
Decadent	5A, 11E, <i>j</i> , 5k, <i>l</i> , <i>m</i> , <i>c</i> -like	25
Chullpa (Post)	3o, 4s	7
Uncertain	2E, <i>g</i>	3
		—
		48

This is the same general alignment as that given at the end of the section on shapes. Since the distribution of complete bowls according to Pit and Level also confirms the sherd analysis it is summarized here without further comment:—

Pit	Shape	Style	Pit Totals
I, 1	<i>s</i>	Modern	
3a	A	Decadent	
	E	Decadent	
5	A	Decadent	
	E	Decadent	
	<i>i</i>	Classic	6
IV, 1	A	Decadent	
3	<i>l</i>	Decadent	
5	A	Decadent	
	2E	Decadent	
	<i>k</i>	Decadent	
6	E	Decadent	
	<i>m</i>	Decadent	
	<i>c</i> -like	Post, or Decadent	9

Pit	Shape	Style	Pit Totals
		<i>Carried Forward</i>	15
V, 1	2s	Chullpa	
2	k	Decadent	3
VIII, 4	b	Early	1
IX, 2	C	Classic	
	E	Classic	
	E	Decadent	
	j	Decadent	
3	A	Decadent	
	g	Uncertain	
	k	Decadent	
	2o	Chullpa	
4	E	Decadent	10
X, 1	E	Decadent	
2	2A	Classic	
	C	Classic	
	D	Classic	
	D	Semi-Classic	
	2E	Semi-Classic	
	3E	Decadent	
	2E	Uncertain	
	d	Classic	
	j	Semi-Classic	
	2k	Decadent	
	o	Chullpa	
	s	Chullpa	19
Total Bowls			48

The complete bowls are included with the sherd classifications in the analysis of Cultural Stratigraphy. The collection of complete bowls is not altogether typical of the Tiahuanaco site. The really fine mortuary pottery is only sparsely represented. Some of the pits, like IV, contained a fair percentage of Classic sherds, but the complete bowls are, without exception, Decadent. Perhaps this is really the true picture, and it does, indeed, confirm the analysis given of this pit in the section on Excavations.

ARTIFACTS

Artifacts are not abundant in the collection. Potsherds outweigh all others, and other fabricated pieces are disproportionately scarce. Thus I describe the artifacts which occur in the collection for the sake of completeness, and not with any implication that a typical or significant array for Tiahuanaco is portrayed. The excavation evidence,

when combined with notes on distribution throughout the area, suggests that a careful study of the artifacts would produce significant results.

Clay. Pierced discs of clay, probably made from potsherds, are the only suggestion of spindle whorls found. They are about 4 centimeters in diameter and .5 centimeter thick. One in Pit V, 6 has an elongated oval shape, 4 by 3 centimeters and .6 centimeters thick. A triangular notch is cut from each of the four sides.

Unpierced clay discs from 2 to 6 centimeters in diameter are found throughout the excavations. They are likewise abundant in Bandelier's collections from "Chullpa" sites in the Bolivian Highlands. They were possibly used as gaming pieces.

Fragments of pottery with holes, perhaps to facilitate mending, are frequently encountered. This is another trait found in the Chullpa sites.

An earplug was found in Pit I, 3a. It is of brown finished clay and made in modern spool shape. The diameter at each end is 3.2 centimeters and the total length, 2.2 centimeters. A hole 1 centimeter in diameter pierces the spool. The groove around the center is 1.2 centimeters wide and .4 centimeter deep.

Most interesting of the clay artifacts is a set of hemispherical buttons. The flat surface has a hollowed-out depression in the center. From this depression two small holes extend to the sides of the button, running parallel to the flat surface. The average flat surface diameter of the nine buttons found is 2.1 centimeters and the average thickness is 1.5 centimeters. There is very little deviation from these averages. Only one button is decorated with parallel grooves across the rounded surface. The buttons were found only in one pit. Four are from Pit VIII, 4, and five from VIII, 5. In Pit X, 1 a stone of the same general shape was found, but it was neither hollowed nor pierced. Bandelier found similar buttons on the Island of Titicaca in sites which had no Inca pottery.

Stone. Although rather well carved stone bowls are found in Tiahuanaco collections my excavations only uncovered four fragments. In Pit III, 1, was a fragment of a deep granite bowl of fairly well finished workmanship. The stone is finished on both sides. Across the outside is a raised band, 3.8 centimeters wide and .4 centimeter high. In Pit IV, 2, was a section of a well-polished tripod bowl of black, fine-grained stone. The bowl section is 5.5 centimeters high and 11 centimeters in diameter. The thickness varies from 1.5 centimeters at the base to .8 centimeter at the rim edge. Only the base of one tripod leg remains, and this measures 4 by 1.1 centimeters. Presumably there were two

more such flattened projections for legs. The bowl looks suspiciously Incan. A small, red sandstone, rounded mortar, finished inside and out, was found in Pit V, 9. It is 3 centimeters high, 7.5 centimeters in diameter, and .7 centimeter thick at the base. The base is rounded, the sides convex, and the rim plain. The fourth fragment is really part of a granite mortar, finished on the outside and rough on the inside. It was found in Pit IX, 1. It is 7.5 centimeters high, 17 centimeters in diameter, and 1.5 to 3 centimeters thick. It is a circular, flat base, straight-sided, bowl-shaped mortar.

Hammerstones are of granite, cylindrical, with rounded edges, and straight sides. A typical hammer measures 4.5 centimeters in length and 3.5 centimeters in diameter. One from Pit VIII, 1 is slightly grooved in the center.

Plain stones are utilized as polishers, but are otherwise unfabricated. They are of miscellaneous shapes and sizes, and most are of sandstone. There is one muller-shaped grinder or polisher from Pit IV, 5 with a base 8 by 6 centimeters, a top 5 by 4 centimeters, and 8 centimeters in height.

In Pit X, 1 was found a granite ball 3.5 centimeters in diameter. All the abrasive stone work is typical of both Chullpa and Tiahuanaco work in Bolivia.

Pieces of chalk which were used as polishing stones were found in several places. When the chalk piece has been squared off on four sides of a broken fragment it looks like part of a chalk bowl. However, the inside is rough and has the appearance of some type of plaster, although that it is cannot be substantiated fully.

In Pit V, 9 a T-shaped polished blue basalt ax was found. It measures 5.8 centimeters across the top, or butt end, 7.5 centimeters in length and 1.8 centimeters in maximum thickness. Posnansky found five axes of this type, all at considerable depth. The only other ax shape is a polished green celt butt found in Pit IV, 5. The tang measures 2.5 centimeters in width and length and 1.2 to 2 centimeters in thickness. Where the tang meets the body of the celt the width is 4 centimeters. The fragment is 5.3 centimeters long to the break, where it measures 4.5 centimeters in width and 2.5 in thickness.

Flakes of flint, slate, quartz, mica, lapis-lazuli, and obsidian are found in most of the pits. Small lapis-lazuli beads are also found (Pit V, 9 and VII). Most of the flakes are unworked, but one piece of obsidian from Pit V, 6, roughly triangular in shape, had one edge retouched. In Pit VIII, 3 a piece of red flint was roughly shaped into a triangular arrow point.

Stone "tops" are rather numerous. Typical specimens measure about 4.5 centimeters in length and 3 centimeters in butt-end diameter, tapering from the flat end to a dull point. Most of them are made of red sandstone, though a few are of granite. They vary from elongated to squat shapes, but the general aspect is always the same. The shape is pecked out, and never polished. Tops occur in most levels of the Tiahuanaco excavations, as well as in the Chullpa sites of Bolivia.

Although both modeled and carved stones are found in other collections, only two examples of modeling, one doubtful, are in my collection. Statues are excluded from this analysis. In Pit VIII, 2 was found a small red sandstone animal, roughly resembling a bear (?). The fore feet are stubby, but distinct, while the hind feet are merged into one. The head is roughly shaped, but no features are shown. A similar specimen was seen in the Cochabamba collections from a non-Tiahuanaco site. Another from Pit IV, 4 is of a fine-grained black stone which has a projection in the shape of an ear. The fragment is too small to judge its exact nature.

Miscellaneous stone fragments include the following:—

Pit V, 3 and V, 5	Sections of polished slate
Pit V, 6	Small piece of granite, squared on four sides
Pit X, 1	Piece of red sandstone, polished on one side
Pit III, 1	Polished piece, possibly bowl rim
Pit IV, 6	Triangular piece of sandstone

Copper. Small pieces of copper sulphate and other copper ores were found throughout the excavations, but actual artifacts of copper were exceedingly rare. Poor preservation accounts for the lack. A thin copper piece with one edge straight and the others slightly curved was found in Pit VIII, 4. It measures 4.8 by 3.5 centimeters. A small hole is pierced in the center, which suggests that it may have been sewn on cloth. Also in Pit VIII, 4 was a small bar of copper 4.2 centimeters long. From one rounded end .6 centimeters in diameter it tapers to .3 centimeters in diameter. A plain headed *topo* or pin was found in Pit IX, 3. It is 10 centimeters long and .4 centimeters in diameter at the rounded head, from which it gradually tapers to a point.

Bone. Bone artifacts also are not abundant. Two plain needles were found in Pit VIII, 2 and 4, respectively. The first is 13 centimeters long and .4 in diameter, while the second is 8.5 centimeters long and .35 in diameter. Both are round in cross-section, squared at one end, pointed at the other. Other bones are pointed for some type of tool, although not as completely finished as the needles. In Pit X, 1 was a polished and

pointed bone 14 centimeters long. It is flat in cross-section, 1 by 3 centimeters. Broken pieces of the same type were found in Pit VIII, 2 and 5. Also in Pit VIII, 2 was a short pointed bone, 5.8 centimeters long and 1.7 wide, unshaped except for a short, wedge-like point. In Pit VIII, 3 was a long fragment of bone with a dull point at one end; and a similar one was found in Pit X, 2. In Pit V, 2 was an antler tip, apparently not artificially retouched.

A fragment of a llama metatarsal came from Pit VIII, 3. It is notched with a series of cross grooves and is similar to the rasping sticks of Mexico. It is 13 centimeters long.

The best of the bone artifacts is a well-finished spatula from Pit V, 6. It is 10.5 centimeters long, with the blade 4.5 centimeters in length and 1.5 wide. The handle is .75 centimeter wide, narrow at the butt end, and pierced. The blade is thin, longitudinally hollow on one side, well polished, and sharpened on the front edge.

Two polished rib fragments from Pits VII and V, 9 may have served as scrapers. In Pit V, 6 was a piece of bone cut in semicircular fashion (3.5 by 3.2 centimeters). In Pit V, 5 was a section of a bisected ball socket, 3 centimeters in diameter and 1 centimeter thick, with a hole hollowed out of the center.

One piece of a long, hollow bone bead, 2.7 centimeters long and 1.1 centimeters in diameter, was found in Pit VIII, 2. In Pit V, 4 a tibia of a bird was cut off close to the joint, perhaps in the manufacture of beads.

A pierced bone disc 3.8 centimeters in diameter and .1 centimeter thick was found in Pit X, 1. A fragment of a warped piece of cut bone still showed a hole, shaped like a cross (half broken away). It came from Pit V, 5.

Shell. Only two pieces of shell artifacts were found, both in Pit X, 2. One is a thin pierced disc 1.5 centimeters in diameter. The other is a thin elongated disc, pierced in the center. The edge is undulating. It measures 1.8 by 1.2 centimeters.

STONE SCULPTURE

The excavation of Pit VII furnished the only sculptured stone material. The array of statues and other objects has already been discussed (cf. p. 386 and Fig. 18), but the description of the material has been reserved for this section. The one significant conclusion gained from the excavation of Pit VII is that all the heterogeneous styles of stone work encountered are stratigraphically contemporaneous. Since the styles represented in this pit are widely divergent, the stratigraphic

contemporaneity does not imply simultaneous manufacture. Indeed, if the small temple (within which Pit VII was located) is considered as of late origin it is quite possible that statues and stone work were brought in from other parts of the ruins of Tiahuanaco and incorporated in the building. This practice of utilizing statuary and building material in constructing a new temple on the ruins of the old is not uncommon in archaeological America.

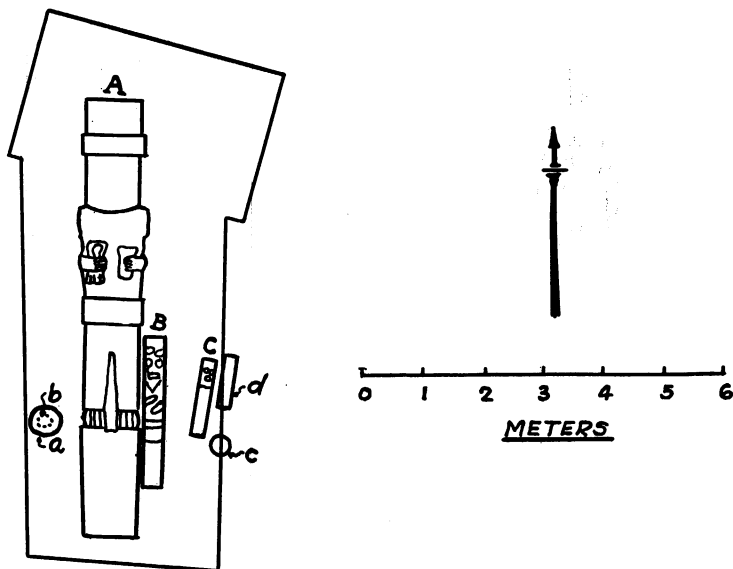
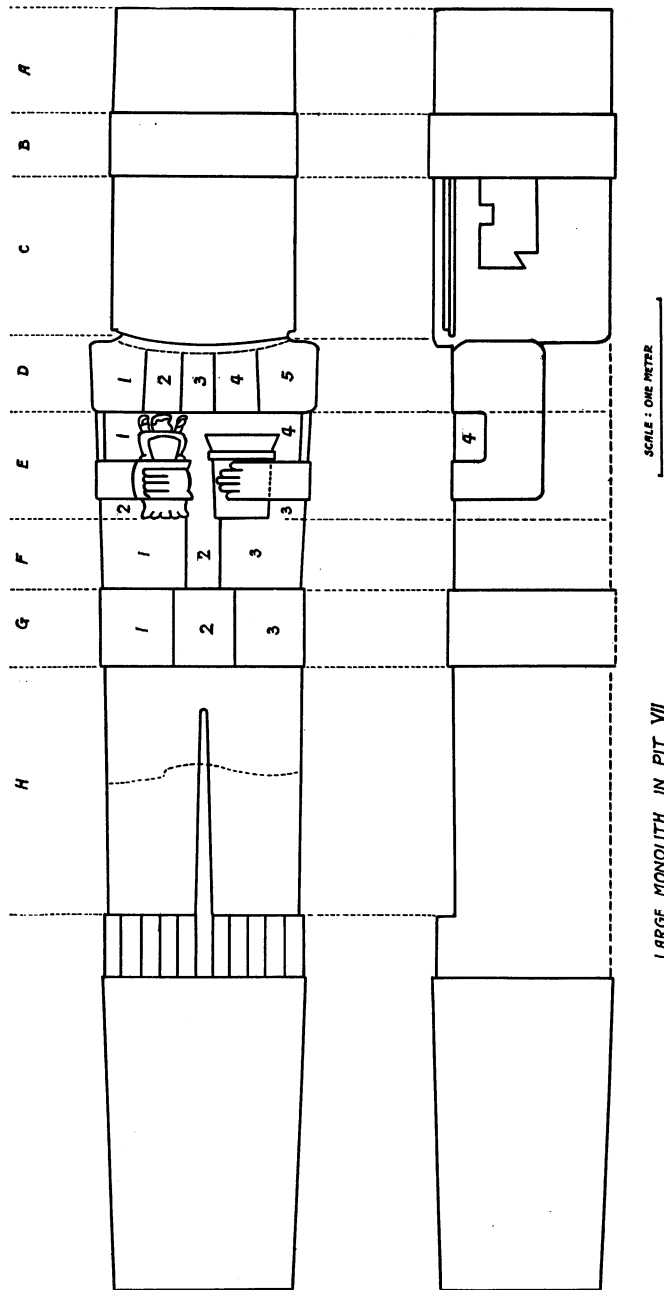


Fig. 18. Pit VII showing Arrangement of Sculptured Stone. A, large monolithic statue, the head is partly in the original pit, which was extended, on an angle, to uncover the body; B, smaller bearded statue, with its plain base aligned with that of the big statue; C, slightly sculptured stone; a, ceremonial, carved, grindstone (now in Museo Nacional de Bolivia); b, rounded boulder stone head, found at 2.10 m. (now in Museo Nacional de Bolivia); c, Two-faced, crudely carved stone head (now in Museo Nacional de Bolivia); d, long stone slab, uncarved.

Without further discussion of the theoretical significance of this pit, the sculptured objects will be described and compared with others from Tiahuanaco and elsewhere.

The Large Monolith. To facilitate the description of this statue a drawing (Fig. 19) is included here which shows the principal design areas. It is cut from a single block of red sandstone. For convenience, the summary of the principal measurements follows:—



LARGE MONOLITH IN PIT VII
WITH PRINCIPAL DESIGN SECTIONS

Fig. 19. Drawing of Large Monolith in Pit VII, indicating Principal Design Areas which are described in the Text.

	Meters
Total length of statue	7.30
Length of plain base	1.80
Length of figure	5.50
Length of head	1.90
Width at headband	1.05
Thickness at headband	1.05
Width at shoulders	1.27
Width at waistband	1.15
Width at top of base	1.15

The total effect of the statue is that of a monolithic pillar (Fig. 20). In gross size it is the largest statue yet found at Tiahuanaco, but in style and design it is quite typical. The features, the shape of the head, the arms, legs, and feet are modeled in the round, but not with sufficient realism or emphasis to destroy its columnar effect. The characteristic Tiahuanaco angularity and straight line is preserved in the carving. Delicate designs are incised on the headband, chest, waist, and other parts. These designs are completely obscured in the mass effect of the large statue. When upright it must have been very difficult to distinguish the designs around the headband, for example.

The top of the head is flat. Above the headband (Fig. 19A) are parallel grooves, now worn but once sharp-edged, which probably represented a feather headdress. These are 60 centimeters in length. There are five grooves along the front, and they continue on both sides. The headband itself (Fig. 19B) is 35 centimeters wide and slightly raised. In front it is too worn to distinguish any design, but on the left side it is more clearly seen, and probably continued in the same style in the front. Fig. 21 shows the headband design which consists of a running figure with a scepter in his five-fingered hand. The scepter is double above and single below, all ends terminating in fish heads. The feet have three toes each, and the back foot has a condor head extended from it. The legs are decorated with fish head designs. The features are unfortunately obscured, but the peculiar, turned-up, ringed nose suggests that the figure is either zoomorphic or masked. This idea is amplified by a curled-tail design and a wing decorated with condor heads. The figure has a headdress composed of three projected fish heads and an abbreviated tail-feather (trident) design.

The face of the large monolithic statue is again typically Tiahuanaco. A double ledge crosses the forehead below the headband, and continues down both sides, leaving a flat face with rounded cheeks, approximately 95 centimeters long and wide. The nose is badly broken, but projected



Fig. 20. Large Monolith lying on its Back in Pit VII, now mounted on the Prado in La Paz. The smaller bearded statue is set up against the side of the pit and the serpent design on its side can be seen. The two other slabs, one slightly carved (Fig. 18, C, d) are in the right foreground.

at one time. The mouth is also worn away, although it was probably rectangular in shape with rounded corners. Whether teeth in two rows were represented, as in other statues, is impossible to state. The eyes are formed of two concentric ovals below which are two tears, and possibly a third, although the lower one may be the eye of a condor head. On the outer side of each eye is a wing ending in a condor head on the lower curved cheek. On the upper part of this wing is incised another condor head with an extended neck. On the side of the head, the two ledges mentioned above form a series of three steps, and the lower ends of the ledges end in condor heads. The ear starts at the lower edge of the head-

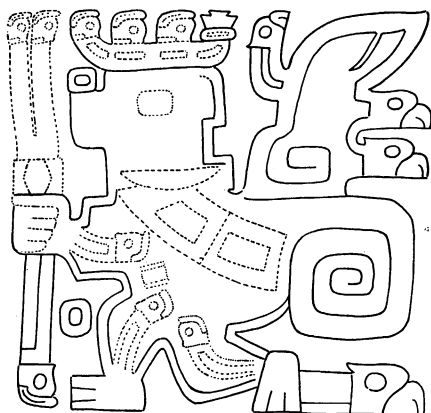


Fig. 21

Fig. 21. Design on the Side of the Headband of the Large Monolithic Statue, depicting a Running Figure, Masked (?), with Curled Tail.

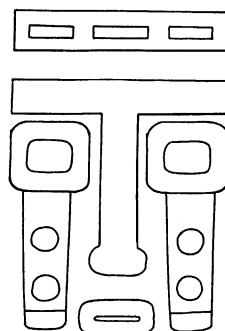


Fig. 22

Fig. 22. Design on Side of Head of Large Monolithic Statue.

band. It is rectangular in shape, with a square notch cut out of the edge on the front side, and a triangular notch at the lower back corner. Behind the ear is an incised face (Fig. 22) with a headband, T-shaped nose, two tear eyes, and a small mouth.

The section (Fig. 19D) across the chest of the monolith is elaborately designed. A collar composed of a chain of stylized condor heads is just below the chin. On the right shoulder (Fig. 19D, 1) is a running human figure which can be described simply by referring to the top and bottom row of almost identical running figures on the Gateway of the Sun. In the middle of the chest (Fig. 19, D3) is the design shown in Fig. 23. It is an elaborate design. The top part is a front view face with a concave-

sided T-shaped nose, a small oval mouth, and two rounded eyes each with a bar ending in an oval projected below (a variant of the tear design). Above the head, perhaps as a band, are three double rectangles, each with a double oval above it. On each side of the face is an irregular band ending in condor heads. The central part of the design is composed of three connected ovals, one below the other. These are outlined with broken bands. On each side of this oval series is a design like a stylized

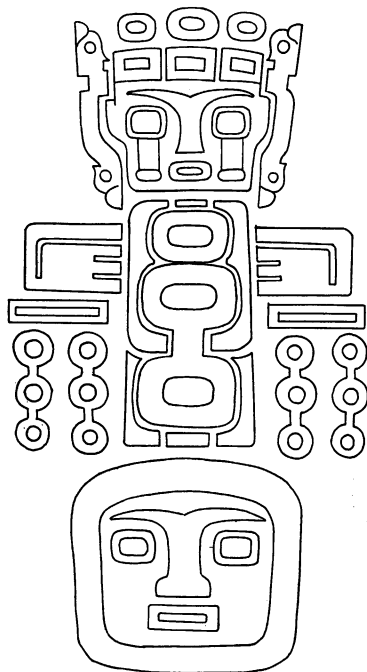


Fig. 23. Elaborate Design from Center of Chest of Large Monolithic Statue.

three-finger hand and thumb, below which is a horizontal bar, and, still farther below, two series of three connected circles. The lowest part of the design is another face, completely outlined with a broad band, with two oval-rectangle eyes, a concave-sided T-shaped nose, and a rectangular mouth. Figs. 19 D, 4 and D, 5 represent the running condor and human figures of the Gateway of the Sun, repeated as before.

The next design section (Fig. 19E) includes the two hands of the monolith. The left hand (Fig. 24) holds a kero-shaped cup. The hand is outspread showing five fingers in correct proportion, each with the nails depicted. The cup has a narrow band around the upper part (above the hand), decorated with a four segment design which ends in fish (?) heads. The base of the cup is decorated with a step figure, each end decorated with a condor head. Above the cup are six fish with angular bodies.

The right hand is in a closed (grasping) position, so distorted that the thumb is on top pointing towards the center of the body, and the four fingers, fully exposed, point outward (Cf. Fig. 25). The object held in this closed right hand is hard to identify. Below the hand are five projections, the central one terminating in an oval, and the outer two on each side ending in fish heads. Above the hand is a horseshoe-shaped band with a fish head at each end. Above the band project two small and one large fish head, and within the band is a "female sex" sign surmounted by two or four projecting fish heads.

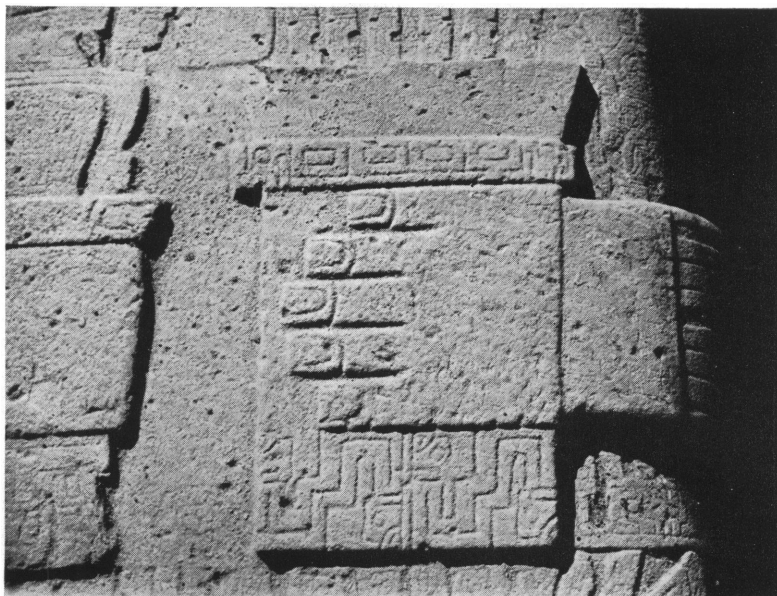


Fig. 24. Left Hand of Large Monolithic Statue, showing the Five Proportioned Fingers. This hand holds a kero-shaped cup with a band above and a decorated base.



Fig. 25. Right Hand of Large Monolithic Statue, illustrating the Distorted Position of the Thumb and Four Fingers. The object grasped in the hand is hard to distinguish as the incision is badly faded on the statue at this point.

Above both arms, on the body (Fig. 19E, 1 and E, 4) are running condor figures of the Gateway of the Sun style. Below each forearm is the design shown in Fig. 26. It is composed of a double "female sex" design between two horizontal bars, above which are four condor heads, and projecting from each end of which is another condor head.

On the arm on the side of the statue appears the elaborate figure shown in Fig. 27. It is difficult to describe this. The upper part represents an animal head with a headdress and a disc suspended from the neck in typical puma style. Posnansky¹ also calls this a variant of the

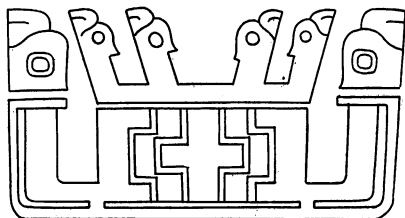


Fig. 26. Design below the Forearm of the Large Monolithic Statue.

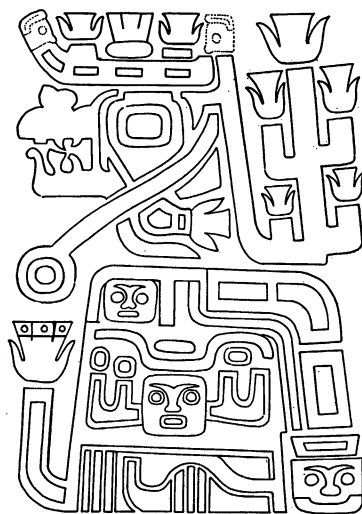


Fig. 27. Elaborate Design on the Side Arm of the Monolithic Statue.

puma, but, in all, the teeth and nose suggest the llama. The headdress is composed of a bar which curves up in front and terminates in a fish head. In the center above this bar is a tail feather design and on each side a three-leaved plant. According to Mrs. Bandelier this is the *Inga Pulgerima*, "flor del Inca," one variety of which is known in the highlands, but the tufted plant represented in the drawing is found only in the low country. On the back of the headdress is a clearer representation of the same plant. The central stalk has two sets of side branches, each ending in the flower. The lower part of the design is confused. The plant appears again on a single stalk. Amidst an array of bars and lines appear three front view faces of animals, each of a different type.

¹Posnansky, 1914, Pl. XXXXVIII, 3, 6.

Around the waist (Fig. 19 F) of the monolith, on the front side, are three designs. Two (Fig. 19 F, 1; F, 3) are the running human figure from the Gateway of the Sun (Fig. 28). The center design (Fig. 19 F, 2) is shown in Fig. 29. The upper part is a simple face with a segmented band at the top and ending at the sides in condor heads. A middle rectangular section has a condor head projected from each side.

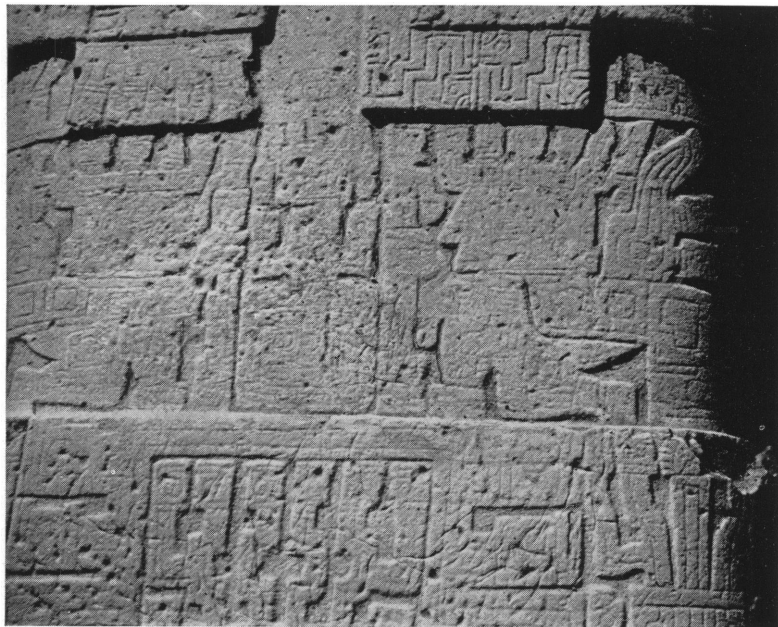


Fig. 28. Waist Design of the Monolithic Statue showing the Running Human Figure, almost Identical with those on the Gateway of the Sun.

The lowest part is a rectangle outlined with a broken band, with three bars inside, roughly suggesting two eyes and a nose.

The waistband is elaborately decorated (Fig. 19 G). On each side (Figs. 19 G, 1 and G, 3) is a design which Posnansky¹ has temporarily called "female sex" designation. This is surrounded by branches ending in condor heads, two from the base and four from the top. From the center part of the top, between the two sets of condor heads, is another projecting bar. The central figure of the waistband design (Fig. 19 G, 2) is possibly a sun face (although this is obscure) surrounded by ten

¹Posnansky, 1914, Fig. 63, 7, 8.

branches ending in fish heads (six from the top and two from each side). On each side of this design are four fish heads connected with each other with a continuous bar. The waistband is 45 centimeters wide.

The legs (Fig. 19 H) are 1.40 meters long and each one is 50 centimeters wide at the top. A wide groove separates one leg from the other. The feet are squared, but five toes are indicated. From the knees down the decoration is worn off, but from the waistband to the knees it is still clear. On each leg, in front, are horizontal rows of four large, high relief circles with a smaller circle incised within each one. This decoration also continues on the side of the legs. It quite possibly represents embroidered medallions on a gauze base cloth.

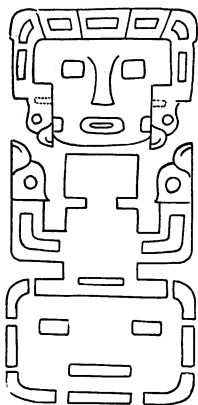


Fig. 29. Design on the Center of the Waist of the Monolithic Statue between the Two Running Human Figures.

The sides and back of the large statue are almost solidly designed. The side of the headband has the human figure with curled tail already described. The side shoulder has the Gateway of the Sun running human figure and the running condor figure is on the side upper arm. Two running human figures are below the arm on the side. The side waistband has the same figure as the front with some slight variation.

The back side of the headband has two running condor figures back to back, thus differing from the curled tail figure on the side. Below the headband nine braids are designed down the back of the neck, separated with grooves, designed with a series of inverted V grooves, and ending on the shoulders in condor heads. On the back of each shoulder is a sun face, as on the frieze of the Gateway of the Sun. Each face has two winged eyes with two tears. The faces are surrounded by a crown of projecting heads and designs. Thus across the top the projections run: condor head, disc, disc, tri-feather, disc, disc, condor head. Down each side the series is the same, except that a condor head is used in place of the tri-feather. Below each of these faces is a stepped base with projecting discs and condor heads.

In the middle of the back, above the waistband, is the design of a front view human figure, like the Viracocha of the Gateway of the Sun. This figure has the same front view face with winged eyes. The head is surrounded by a crown composed of seventeen projected faces. The arms project on each side, with elbows bent. Each hand has three

fingers and thumb, which hold some object (not a scepter) which has two projecting branches ending in puma heads. The body of the figure has a waistband and some design. The spread out feet have projections on each side which end in a flower design. The whole figure rests on a stepped base as on the Gateway of the Sun. On each side of this figure is a design in three parts. At the top, just under the shoulder sun face, is a "female sex" design, with four projecting condor heads, two from the base and two from the top. Below this is a simple face with three plain projections from each side and three projections from the top which end



Fig. 30. Waistband Design on the Monolithic Statue. The polka-dot design may be seen below the waistband.

in tri-feathers. At the bottom is a "male sex" design, the four fish heads projected from above.

The waistband in the back has the same design as in the front. The polka-dot pants also continue, but it is quite clear that they never extended to the ankles, but stop about the middle of the leg.

The base is plain and was inserted in the ground to maintain the statue in its upright position. The statue has been moved to the east end of the Prado in La Paz.

The Small Monolithic Statue. Immediately to the east of the large monolithic statue, adjacent and parallel to it, a smaller monolith was

found. The base of this smaller statue was so closely aligned with that of the large one that one assumed the two had stood side by side and that they had fallen, or been pushed over, at approximately the same



Fig. 31. The Smaller Bearded Statue beside the Large Monolith in Pit VII.

time. This assumption of contemporaneity emphasizes the contrast in styles. The following summary of measurements shows the contrast in size:—

	Meters
Total length of monolith	2.55
Length from head to waist	1.60
Length of head	.87
Width of head	.45
Thickness of head	.32
Width at waist	.45
Thickness at waist	.32

This statue is also made of red sandstone. The columnar effect obscures the modeling, but the designs are cut in much higher relief (Figs. 31-32) comparatively speaking, than on the large statue. The technique of workmanship is noticeably more crude. Two lightning rays meet in triangular points on the forehead of the statue and continue down the sides of the head, joining the bar of the T-shaped nose, and running into the beard which surrounds the mouth. This beard, in high relief,

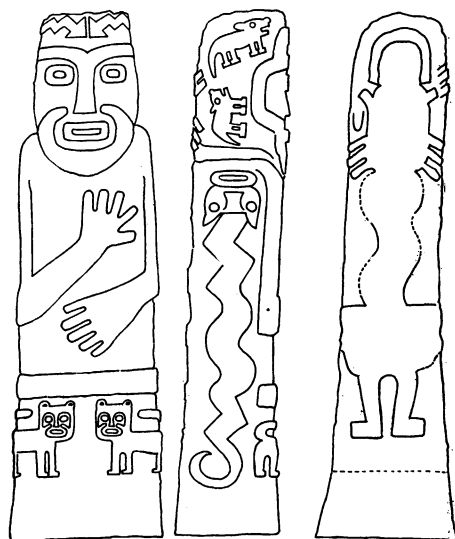


Fig. 32. Front, Side, and Back View of Smaller Bearded Statue of Pit VII. The front view shows the curled up beard and the lightning rays on the forehead, both of which are connected by a raised band on the side. The shoulders do not project as prominently as the front view drawing suggests. The puma and serpent designs are typical. The back view is not certainly correct, but the erosion was bad, and now (1934) nothing can be seen.

curls up on each side of the mouth and forms a point on the chin. The mouth itself is a small oblong, as are the two eyes. In place of ears on the side of the head are two pumas in relief. Although they are carved in profile, four feet are depicted. They have ring noses, small round eyes, rounded ears, and tails that curve downward (Fig. 32).

The arms of the statue do not meet on the chest in the typical style, but are arranged with the left hand on the stomach and the right hand on the chest. Both hands have five fingers spread out (Fig. 32).

Below the arms is a narrow, undecorated waistband. Under this are two pumas in low relief, depicted with four-legged, side view bodies, and front view heads. The hind legs and the base of the tail which curves over the animals' backs are carved on the side, rather than on the front of the statue (Fig. 32), although the figure is unbroken. The faces have two loop ears, and regular round eyes, oval mouth, plain nose features.



Fig. 33. Slightly Carved Stone of Pit VII, with Nose, Eyes, Mouth, and Groove separating Head. This is now (1934) completely weathered away.

On the sides of the statue is a serpent-like figure, with the head at its shoulders and the body down the sides in five angular zigzags to the curled-up tail at the base. The head has an oblong mouth, a blunt nose, two round eyes, and two backward pointing ears.

On the back of the statue is the suggestion of some figure carving, although it is badly worn away.

No delicate incised ornamentation is found on this statue. The decoration is all in relief. The positions, designs, type figures, and technique all differ markedly from that of the large monolithic statue.

A Slightly Carved Stone. Still further to the east of the large monolith were two stones of about the same size, one plain, and the other with



Fig. 34. Edge of Ceremonial Grindstone found in Pit VII. This design is continuous around the edge.
a face faintly depicted (Fig. 33). This latter stone measured as follows:—

	Meters
Total length of stone	1.50
Length of head	.55
Width of stone	.40
Thickness of stone	.33

The head was delineated by a shallow groove encircling the stone. A T-nose, rectangular mouth, and square eyes, all slightly carved, com-

pleted the front facial features, and the sides contained a small notched rectangular ear.

Stone Heads. Two stone heads were found, one at 2.30 and the other at 1.30 meters depth. The first one is a rounded boulder with round eyes, rounded nose, and oval mouth all depicted in relief. The other head is an irregular rough stone, with two sets of eyes and mouths hollowed out, as if representing a double face. The work is very crude.

Circular Grindstone (?). At 2.10 meters depth to the west of the feet of the large statue was a circular, fine-grained, blue stone. It measured 63 centimeters in diameter and 16 centimeters in thickness. One side was flat, but the other was indented about 5 centimeters, with a drain cut through one part of the resulting rim. Around the edge was a continuous wavy band, with the edges sharply delineated. A circle was cut in each loop of this wavy band. The only use suggested for this odd piece was as a grinding stone. To say the least it is not typical of other Tiahuanaco specimens (Fig. 34).

CULTURAL STRATIGRAPHY

Throughout the preceding description of the Tiahuanaco pottery collection distinctions in shapes, colors, and designs have been made. In the section on excavations actual distinctions between levels in the pits were described. The next step is the correlation of these two sets of evidence. This has been arranged according to the excavated pits in the graphic form of a diagram (Fig. 35). A few words about the set up of each pit may clarify the analysis of the four cultural phases which follows. On the basis of the collection, four major divisions are distinguishable: A, Early Tiahuanaco, or perhaps pre-Tiahuanaco; B, Classic Tiahuanaco; C, Decadent Tiahuanaco; D, Post Tiahuanaco and Inca.

In my first classifications I tried to subdivide these four phases of culture. Both deductively and inductively there is evidence to support such further subdivision. However, at present it seems more practical to establish definitely the four phases which are demonstrably present, and leave the more subtle division for further research.

Referring to Fig. 35, I shall comment briefly on each pit. In Pit I only two cultural phases are represented. Levels 1 and 2 were associated with recent burials and modern pottery. The Tiahuanaco sherds present are almost exclusively of the Decadent type. Pit I, 3, 3a and the intrusive burial, Pit I, 5 represent a single cultural unit of Decadent type. This section is stratigraphically distinct from the top levels, Pit I, 1 and Pit I, 2. Although one bowl in Pit I, 5 is of late Classic type, the others associated with it are undeniably Decadent. The bowl mentioned had the spout missing, broken off with an old break, which might indicate that it had been preserved from the previous cultural epoch.

Pit II, being definitely a part of the old terre-plein of the Sun Temple, is probably contemporaneous with it, and therefore belongs to the Classic phase. The artifact analysis confirms this. No distinctions between layers were evident and so the whole is treated as a Classic unit.

Pit III is not seriously considered in the analysis because of the shallow depth (1 meter). The high percentage of plain over painted ware, and the presence of three horizontal handle fragments, suggests that it might be an Early Tiahuanaco site. However, none of the special painted wares were found.

Pit IV is an annoying puzzle. Inca pottery fragments in Levels 1 and 2 indicate either a late position, or disturbance. Levels 2 and 3

CHART OF PITS AND LEVELS ARRANGED ACCORDING TO PERIODS

PITS	I	II	III	IV	V	VII	VIII	IX	X
INCA AND POST-TIAHUANACO	1 2			1 2 4	1 2 3 4 5 6			1 2 3 4 5 ?	1
DECADENT TIAHUANACO	3 3 ^a 5	1		2 3 4 5 6	1 2 3 4 5 6	1	1	1 2 3 4 5 ?	2
CLASSIC TIAHUANACO		2 3							
EARLY TIAHUANACO			1 2 ?		7 7 ^a 8 9		4 5 6		

Fig. 35. Chart of Pits and Levels arranged according to Periods. The vertical columns represent pits and the horizontal columns the four periods. The heavy black lines represent the surface and undisturbed base level of the pits. Where one level does not coincide exactly with the cultural division, the line is slanted across. Lines represent stratigraphic divisions; double lines represent old surface levels, or very marked divisions; dotted lines are divisions based on collection analysis.

form a unit, separated stratigraphically from Level 1 by an old surface level, and the collection indicates the Decadent chronological phase. The greatest problem is presented by Levels 4, 5, and 6, successive depths in a pit which starts at the old surface level between Levels 1 and 2, and continues to a depth of 3.5 meters. While the stratigraphy would indicate that Levels 4, 5, and 6 were more recent than Levels 2 and 3, the actual collection analysis indicates a greater percentage of Classic ware. The complete bowls from this section are, on the contrary, all Decadent. This apparently mixed stratification can only be accounted for by speculation: consequently, I will leave the decision for future evidence, being satisfied at the moment with description alone. Because of this discrepancy I do not include Levels 4, 5, and 6 in the final analysis.

Pit V presents the best stratigraphic set-up. Unfortunately, the selection of arbitrary half-meter levels does not make the level divisions coincide with the cultural divisions, but in spite of this defect the stratification is evident. Level 1 is dominantly Decadent in materials. The surface stratum contains some "Chullpa" or Post-Tiahuanaco material also. Level 2 is about half Decadent and half Classic, due to the failure of my arbitrary level to coincide exactly, and also the actual existing historical condition which did not break sharply from Classic to Decadent phases. However, a clay floor, an ash bed, and a row of bones all indicate a stratigraphic division between Level 2 and Level 3. Thus, in this pit Levels 1 and 2 which are predominantly Decadent in style are distinct from Levels 3, 4, and 5 which are predominantly Classic in style. Another alignment of water-worn stones, and semi-barren clay divides Levels 3, 4, and 5 from Levels 6-9 below. Furthermore, Levels 6-9 represent the Early Tiahuanaco style. Thus in Pit V, Early, Classic, and Decadent Tiahuanaco are stratigraphically distinct, with the possible addition of Post Tiahuanaco as upper surface material.

Pit VI is not considered at all. Pit VII, not completed because of the monolith uncovered, was shown in the excavation analysis to be composed of the fill of a sunken temple. A mixture of Classic, Decadent, and Inca material is the logical result of a washed-in fill. By deduction, Pit VII would be a rather later site, especially if my analysis of this temple as a late rather than an early structure is correct (cf. p. 386).

Pit VIII is another well-stratified site, confirming the analysis of Pit V. Level 1 is predominantly Decadent in style. Level 2 is not so distinctly Decadent, but is a mixture of Classic and Decadent. Between Level 2 and 3 a stone pathway, a bed of water-worn stones, and an ash bed

indicate an old surface level division. Level 3 is predominantly Classic in style. Below this level, Levels 4, 5, and 6 are segregated only by greater depth. However, Levels 5 and 6 contain the same Early Tiahuanaco material already mentioned for Pit V, 6-9, while Level 4 contains both Classic and Early material.

Pit IX is too disturbed to serve in any final analysis. As part of an old burial ground it presents a conglomeration of Classic ware mixed with Decadent in unstratified confusion. The surface material, and Level 1 in general, is perhaps most recent, as the presence of some Inca ware indicates. On the basis of the distribution of thick orange ware with crude decoration of black, or black and white lines, Levels 1 and 2 may be distinguished from Levels 3, 4, and 5. The thick polished ware dominates in the lower three levels. The stratification is, however, far from satisfactory.

Pit X, while disturbed by excavation in recent years, and possibly by intrusive burials at all times, is predominantly Classic in type. It is located in the center of the old burial ground, from which the finest Classic pottery is extracted. Out of nineteen restorable vessels found in this pit, eleven are of general Classic type, six Decadent, and two Chullpa. In the excavation no intact burials were found, and many of the bowls were only partially complete, all of which indicates disturbance.

From this array, certain levels have been selected as most representative of the cultural phases. These are as follows:—

Early Tiahuanaco: Pit V, 6-9; VIII, 4-6

Classic Tiahuanaco: Pit II, 1-3; V, 3-5; VIII, 3; X, 1-2

Decadent Tiahuanaco: Pit I, 3-3a, 5; IV, 2-3; V, 1; VIII, 1

Post or Inca: Pit I, 1-2; IV, 1

The tables included in this section are arranged according to this grouping. In a grouping such as Pit V, 3, 4, 5, the percentage is calculated for the group as a unit.

With this preliminary discussion as a basis the four phases of Tiahuanaco will now be considered.

EARLY TIAHUANACO

The position of this Early phase is established by its stratigraphic depth in Pits V and VIII. In Pit V it runs from 2.5 to 4.5 meters, and in Pit VIII, from about 1.25 to 2.80 meters. In both pits two other cultural phases are superimposed above it, and in Pit V a definite line of demarcation isolates it. No buildings can be associated with this Early Tiahuanaco phase, although this is due mainly to lack of sufficient evidence. Ash beds and fire pits are associated.

TABLE 5
PERCENTAGE DISTRIBUTION OF WARES IN TIAHUANACO PERIODS

Wares	Early		Classic				Decadent				Post and Inca	
	V 6-9	VIII 4-6	II 1-3	V 3-5	VIII 3	X 1-2	I 3-3a	IV 2-3	V 1	VIII 1	I 1-2	IV 1
Plain (Total)	92.49	93.47	75.23	73.37	59.64	61.42	73.07	51.15	62.69	50.56	63.70	63.55
Painted (Total)	3.39	3.72	22.43	16.64	32.90	35.39	25.63	43.50	30.84	39.58	24.65	29.84
Polished	3.03	1.23	9.35	6.39	16.67	9.57	9.61	10.23	7.96	6.06	9.59	7.89
One-Color	.18	1.87	8.42	7.59	7.02	5.58	7.05	13.00	15.42	15.91	8.90	10.97
Two-Color	.18	.38	1.40	2.00	5.70	9.77	6.41	9.27	5.97	12.50	4.11	6.69
Three-Color		.23	.93	.53	3.51	9.37	2.56	10.04	1.49	4.92	2.05	4.29
Four-Five Color			2.33	.13		1.10		.96		.19		
Thick Polish	1.25			8.79				2.39	2.98		8.90	3.86
Painted Line on Plain					4.82	1.59				8.71		
Miscellaneous (Total)	2.86	2.81	2.33	1.20	2.64	1.59	1.28	2.96	3.48	1.14	2.74	2.73
Total Per Cent	99.99	100	99.99	100	100	99.99	99.98	100	99.99	99.99	99.99	99.98

Although most of the pits show a predominance of plain sherds, the levels of this Early phase are over 90 per cent plain (Table 5). More distinctive is the corresponding small percentage of painted sherds, less than 5 per cent. Plain sherds are mostly of brown or black, unslipped clay, in contrast to the orange clay of the later phases.

Special wares, which are found almost exclusively in the lowest levels of Pits V and VIII, have already been described (cf. p. 399). A specially scraped and polished reddish-orange and reddish-brown ware, a red-on-buff and a polychrome-on-buff are the characteristic painted wares of this section. The paint has a glossy tone distinct from the Classic colors. The designs are mostly linear or angular. Zoomorphic designs represent unidentified animals in colors on a black background, thus omitting the black outline which is characteristic of most Tiahuanaco art.

Several vessel shapes occur exclusively in this Early phase. Thus the horizontal, rim handle dishes and bowls (Shape *a*) described on p. 409, are only found in the lower levels of Pits V and VIII, and in Pit III. Likewise the shallow open bowl and the small, flaring rim olla (Shapes *b* and *c*) were only found in this cultural stratum. Hollow base libation bowls (Shape B) were divided into six subtypes in the description on p. 408 *et seq.* Subtypes *a* and *b* are associated with this earliest phase (Fig. 13). Subtype *a*, a flat base bowl with undulating rim and small upturned puma head on the rim, is not as clearly associated as is Subtype *b*, a plain brown open libation bowl with slightly (.6 centimeter) indented base. These latter are found in Pits III; V, 8; VIII, 4, 5, 6. They are undecorated. One sherd with deeply incised decoration may indicate the antiquity of incised incense bowls at Tiahuanaco, although the suggestion was not further substantiated. The modeled puma heads of this Early phase are of the solid variety, with small ears, and slightly modeled and incised features. They are attached almost directly to the rims of the vessels, without long necks, and with the heads facing slightly upward. None of the collared, hollow variety of modeled heads is found in these levels.

Further elaboration of the Early period styles can be made from an examination of the Tiahuanaco collections. The collection of Frederick Buch and the Museo Nacional in La Paz, of Georges Courty in the Trocadero Musée d'Ethnographie of Paris, the Posnansky collection in the Museum für Völkerkunde in Munich and the Berlin Museum für Völkerkunde, all contain a small number of vessels which can be identified with the Early Tiahuanaco period. The identification is based on the com-

parison of sherds found in the Tiahuanaco excavations with the specimens in these collections. The chief criteria are the colors, polychrome black, white, red, orange and brown-on-buff colored clay, the shiny quality of the paint, the linear and angular designs, the treatment of zoomorphic design, and the shapes.

The collections present one new group of vessel shapes, all variations on a long-necked decanter (Fig. 13c-d). The typical decoration of these decanters is an angular design around the body, and perhaps a stripe or two of color around the neck. There is some minor variation in both shape and design. The collections also suggest that the wavy rim cup (Fig. 13a-b) with a flat base and a deeply incised design, with the lines filled with color, is closely akin to the wavy rim cup with puma head (Shape B, Subtype *a*), and thus belong to the Early period. Finally, a flaring rim bowl type is identified with the Early period by the angular design around the outside, and the zoomorphic designs around the inner rim (of which two fragments were found in Pit VIII), as well as by the colors of the paint and the treatment. These zoomorphic designs are quite distinct from the Classic Tiahuanaco (Fig. 14). The subjects cannot be positively identified. The three-ring crown suggests the male condor treatment, but other features do not confirm this. Even the shape of the bowl is unique. It is a bowl with a wide flat base and evenly convex sides that meet a wide flaring rim. The rim extends inward as well as outward and leaves a very constricted mouth opening. This shape is like the typical American spittoon.

The presence in the collections of complete specimens from this Early period suggests that there is some site or cemetery more accessible than my 1.5 to 4.5 meters depth. Unfortunately, none of the collections examined have specific information about the precise location of these pieces in the ruins. Further examination of the Tiahuanaco ruins should reveal some locality in which this type of material can be more completely studied.

Small clay buttons (cf. p. 425) are a distinctive trait of the Early phase of Pit VIII. Nine of these were found in this one pit. The Early levels had a considerable quantity of small stone artifacts. Hammerstones, polishers, chalk, slate, obsidian, quartz, flint flakes, all were of ordinary types, but a T-shaped ax was more distinctive. Bone spatulas and needles, as well as pointed and notched bones, were found. Copper fragments and a piece of a pin, *topo*, indicated a knowledge of metals.

Thus far the Early phase has been characterized by positive traits. Considering the typical Tiahuanaco elements which are absent in the

TABLE 6
PERCENTAGE DISTRIBUTION OF DESIGN STYLES IN TIAHUANACO PERIODS

Design Style	Early		Classic				Decadent				Post and Inca	
	V 6-9	VIII 4-6	II 1-3	V 3-5	VIII 3	X 1-2	I 3-3a	IV 2-3	V 1	VIII 1	I 1-2	IV 1
Classic	23.08	63.79	77.78	70.00	82.50	72.14	22.58	28.72	35.19	51.69	4.35	10.78
Decadent		6.90	22.22	23.33	17.50	27.14	77.42	67.38	64.81	48.31	91.30	83.33
Special	76.92	29.31		6.67		.71		3.90			4.35	5.89
Inca												
Total Per Cent	100	100	100	100	100	99.99	100	100	100	100	100	100

Early levels, the phase has even more definite isolation. In Table 6 the high percentage of Classic style pottery in Pit VIII, 4-6 all comes from Pit VIII, 4 which, as described, is half Classic, half Early.

The only evidence which I have found from other localities which might check the identification of the Early Tiahuanaco ware is the material from Bandelier's collections at Kea Kollu Chico on the Island of Titicaca, where small bowls with deeply incised linear designs, small puma head bowls, a fragment with angular design in glaze colors, and small clay buttons are found in non-Inca association. Although Bandelier called this site "Chullpa" the plain material is not precisely typical of other Chullpa sites around Bolivia.

CLASSIC TIAHUANACO

Throughout the description of the Tiahuanaco collections in this report the distinction has been made between the Classic and Decadent styles in colors, design, treatment and subject-matter, and shapes of pottery. Thus in this section only a summary of these differences will be given. Fortunately, the distinction is substantiated by stratigraphic proof.

Classic levels are stratigraphically lower than Decadent, higher than Early. Thus the Classic stratum of Pit II extends from .20 to 1.5 meters deep; Pit V, from .75 to 2.5 meters deep; Pit VIII from .75 to 1.25 plus meters deep. Classic is separated from Early by a definite striated division of Pit V (between Levels 5 and 6). It is separated from Decadent by definite divisions in Pit V (between Levels 2 and 3), and in Pit VIII (between Levels 2 and 3). The Classic of Pit II is probably associated with the *ex-terre-plein* of Calasasaya temple. At least Levels 1 and 2 of this pit were filled with squared and dressed stones. In Pit V, two dressed stones were associated with Level 3. In Pit VIII the well-finished stone-faced canal might be associated with the Classic layer, number 3, although it is impossible to establish the relationship definitely.

Classic sherds have a higher percentage of painted wares than the Early phase, but this does not distinguish them from the Decadent (cf. Table 5). The standard color combinations are black and white-on-red; black, white, yellow-on-red; black, white, yellow and gray-on-red. There is a higher percentage of four color wares than in any other group. The colors are rich in tone and skilfully applied. Usually the whole vessel is polished. The basic paint, or slip, is red, rather than the orange of the Decadent. The designs are limited in variety, being principally a

TABLE 7
PERCENTAGE DISTRIBUTION OF DESIGN SUBJECTS IN TIAHUANACO PERIODS

Design Subject	Early		Classic				Decadent				Post and Inca	
	V 6-9	VIII 4-6	II 1-3	V 3-5	VIII 3	X 1-2	I 3-3a	IV 2-3	V 1	VIII 1	I 1-2	IV 1
Linear	50.00	69.23	71.43	77.92	64.86	46.46	72.22	48.60	69.57	64.41	70.00	82.05
Curved	50.00			12.99	5.41	12.99	16.66	12.15	13.04	9.04	5.00	5.55
Geometric		17.95		3.90	10.81	7.48	5.56	14.02	17.39	16.95	5.00	8.55
Anthropomorphic		12.82	28.57	5.19	18.92	33.07	5.56	25.23		9.60	20.00	3.85
Total Per Cent	100	100	100	100	100	100	100	100	100	100	100	100
Total Pieces	2	39	21	77	37	254	18	321	46	177	20	234

complete puma figure; an elaborate condor; and a human figure. Geometric designs are predominantly step pattern. The designs of figures are usually profile views (two legged puma; profile human head with front view body). All figures are outlined in black, while the other colors are used as design fill. Usually, a single unit design is repeated around the vessel, with regular color changes.

The percentage of sherds of the Classic treatment far exceeds those with Decadent treatment in the Classic levels, as Table 6 shows. The ratio is 75 per cent Classic to 25 per cent Decadent. Also the Classic levels contain a higher percentage of zoomorphic designs than do any of the others (cf. Table 7).

The shapes have already been classified into Classic and Decadent types. This division is not absolutely borne out by the stratigraphic evidence. Unfortunately, the pits which showed the best stratification produced no complete vessels, so that determination of shapes is based on an often dubious sherd reconstruction, and on the existing collections. However some facts seem reasonably established. Thus the kero-shape cup (A) appears first in Classic levels. It continues throughout the Decadent. I have no doubt that several modifications in style of keros accompany this change, but I have insufficient evidence to determine all of them. Hollow base libation bowls (B) are common, especially the painted, well finished variety (Subtype *d*) and the undulating rim and puma head types (Subtypes *e* and *f*: cf. Fig. 15f). The puma heads are hollow, with well modeled features, long necks, and square collars. The wide rimmed open bowl (Shape C; cf. Fig. 16b) is almost invariably associated with the typical Classic designs. The Shape D vase is a constant Classic type. Shape E, the small concave-sided open bowl, has its origin in the Classic, but the development and extensive use is in the Decadent. The minor shapes are too sparsely represented to permit of more speculation than has already been employed, although two with Classic designs are illustrated in Fig. 16.

Stone work is still extensive in the Classic period. There are hammers, plain and one grooved, polishers, bowls, and many fragments of flint, slate, chalk, mica, quartz, and a green stone. One piece of copper was found. Bone needles and discs, as well as many fragments of cut bone, are found. Two shell discs, pierced, were found in Pit X. ■

Considering the culture of Tiahuanaco as a whole, including building and stone carving, it seems probable that the Classic phase will eventually be subdivided. The change from sandstone to lava building materials without a shift out of the Classic design style is evidence of this. However, more extensive excavation must first be made.

In Bolivia the Classic style is, so far as is now known, almost limited to the actual ruin of Tiahuanaco. Even the relatively nearby Island of Titicaca presents no material of true Classic style. The Decadent style, on the other hand, has a wide geographical distribution.

DECADENT TIAHUANACO

Most surface and first and second level material is of the Decadent Tiahuanaco type. The division between Classic and Decadent levels has already been mentioned. Decadent is likewise distinguished from the Post Tiahuanaco phase in Pit I (between Levels 2 and 3) and in Pit IV (between Levels 1 and 2). However, I believe that the Decadent phase represents the last actively functioning Tiahuanaco culture. In Pit VIII, 2, a stone path is associated with the Decadent level. Significantly, this path is composed of stones obviously extracted from some building or ruin, as they are bored for copper clamps.

The Decadent phase contains a relatively high percentage of painted pottery fragments. However, these are mostly of one and two-color ware, and practically lacking in four-color ware (cf. Table 5). The colors, as previously mentioned, are dull, and the pottery itself lacks the fine polish of the Classic ware. Orange, rather than red, is the commonest basic color. Brown is also used as a base.

There is a high percentage of plain thick orange ware. An orange ware with a poorly painted black or black and white design is common. Extra thick ware (cf. p. 394) is found. Black polished ware is typical of all phases of Tiahuanaco, but the addition of incised design is a Decadent trait.

Designs are composed of the same basic elements as in the Classic, with a few additions, but there is a greater emphasis on the geometric patterns and a lessening of the percentage of zoomorphic figures. Step pattern, perpendicular wavy lines, double S, horizontal wavy, scroll, and angular patterns are used as complete design elements, whereas their appearance in Classic decoration is as secondary fill. This tendency to elaborate parts of design figures is demonstrated in a breakdown of Classic design. Thus the full puma and king condor and human figure drawings are reduced to puma heads, eye designs, etc. The treatment on the whole is much cruder in technique (cf. Fig. 17 for typical shapes and designs). The outline method is still used. Front views of heads are used. White, yellow, and orange colors are used as independent design elements, and not just as fills.

Generally the proportion of Decadent to Classic ware in the upper pit levels is approximately 28 per cent Classic to 70 per cent Decadent (cf. Table 7).

TABLE 8
DISTRIBUTION OF VESSEL SHAPES IN TIAHUANACO PERIODS
(From Sherds and Whole Vessels)

	Early		Classic				Decadent				Post and Inca	
	V 6-9	VIII 4-6	II 1-3	V 3-5	VIII 3	X 1-2	I 3-3a	IV 2-3	V 1	VIII 1	I 1-2	IV 1
Vessel Shapes												
Shape A	1	2	4	2	2	7	5	41	2	10	2	40
Shape B, plain	4	11	1	3		2		5	1	3		4
Shape B, painted			1	2	1	2	2	10	1	2		5
Shape B, incense		1		3		1		3	1		2	2
Shape C				1		11		11	1			1
Shape D				1		7						
Shape E				1	3	16	2	5	2	10		1
Shape a	3	11										
Shape b	1	7		1					1			
Shape c		2										
Shape e												
Shape f						1				2		2
Shape g			1							4		1
Shape h			1							1		
Shape i												
Shape j	1				2	4						
Shape k						2			1			
Shape l					1				1			
Shape o						1						
Shape q							1					
Shape r											2	
Shape s				1					2			

A reiteration of the analysis of shapes emphasizes the following major differences. Kero (Shape A) still continues, but with ridges more common and a special constricted base variety (cf. Fig. 17a). The hollow base bowl is found (Shape B), mostly in the plain orange, plain rim, two handle variety with deep base indentation (Subtype c). Shape E is most prominent. Many new shapes are introduced, although these are better confirmed from other collections than from my own.

Stone work in artifacts is much rarer in the Decadent levels than in the Classic. However, hammers and polishers are found. Stone tops are most prominent in the Decadent, although they occur sporadically in the two preceding phases. Worked bone is conspicuously absent. A piece of a copper topo represents the metallurgy (cf. Table 9).

Logically, a distinction like this one between Classic and Decadent styles, no matter how clearly separated the two types are in their extremes, is bound to include transitional types. This is certainly true in the actual classification. Many pieces might be either Classic or Decadent, or neither one nor the other. These subtleties of change will eventually be worked out. Distributions confirm both the independence of the Decadent phase and the necessity of determining further subdivisions in it. Cochabamba, for example, is a site with purely Decadent style pottery. The Island of Titicaca, Pelechuco, Charasani, and many other sites in the Bolivian Highlands, present Decadent style decoration. The contrast in the distribution of the Classic and the Decadent in the Bolivian highlands is inexplicable.

POST TIAHUANACO AND INCA

Inca sherds are found on the surface around the Tiahuanaco ruins. The sherds are of typical Cuzco pattern, mostly from aryballoid jars, animal-handled shallow plates, and straight-sided open bowls. The decoration, colors, and texture present a decided contrast to all Tiahuanaco ware.

The levels at the Tiahuanaco excavations which are classed as Post Tiahuanaco, still contain a high percentage of Decadent Tiahuanaco types. This is due partly to the fact that true segregation of the Post Tiahuanaco from the Decadent is not possible in the frequently disturbed upper pit level. It is also due to the lack of sharp distinction between the two periods. Inca ware is distinct, but other Post Tiahuanaco material is still influenced by Tiahuanaco design, colors, and shapes. The so-called "Chullpa" ware is a name loosely applied to this Post Tiahuanaco material. Unfortunately, "Chullpa" has been applied to

TABLE 9

DISTRIBUTION OF ARTIFACTS IN TIAHUANACO PERIODS

(Also Miscellaneous Pottery Types)

Artifacts	Early		Classic				Decadent				Post and Inca	
	V 6-9	VIII 4-6	II 1-3	V 3-5	VIII 3	X 1-2	I 3-3a	IV 2-3	V 1	VIII 1	I 1-2	IV 1
Clay Buttons		9										
Clay Whorls				1								
Worked Bone	x		x	x	x							
Bone Spoon	1											
Bone Needles		1				2						
Bone Points		1										
Bone Discs				1		2						
Shell Discs						2						
Grindstone							1					
Stone Tops		1			1	1	2	3				
Hammers (cylindrical)						3	1	1				
Hammers (grooved)			1							1		
T-Shaped Ax	1											
Polishers	1				1			1				
Bowls	1							1				
Beads	1											
Chalk	2					x						
Flint	2				x							
Slate	2	x				x						
Mica			x									
Obsidian	3											
Quartz	1	x		x		x		x				
Lapis-Lazuli	1											
Green-stone			x									
Copper Ore	x	x						x				
Copper Artifact		1	1							1		
<i>Pottery Types</i>												
Extra Thick			1			3		1	5			1
Black (polished)	5	3		3	3	3	4	8		1	2	9
Black (incised)							6	4			1	1
Raised Collar					1	1						
Incised Design		1				2						x

almost all plain wares of the Highland, and thus it has lost any specific meaning. However, the "Chullpa" sites of Bolivia present an interesting problem in themselves. The coarse pottery shows decoration influence from both Tiahuanaco and Inca. It is not possible to say that all "Chullpa" ware is chronologically post-Inca, or post-Spanish, but undoubtedly most of it is. Indeed, the pottery made today by the Aymara Indians is distinctly of the Chullpa type.

There is no evidence at Tiahuanaco that the Inca ware bears any direct relationship to the previous cultures at the ruins. Stratigraphically it is superimposed on Tiahuanaco, but no pottery designs or shapes suggest an amalgamation of styles which might further imply cultural contemporaneity.

TIAHUANACO STONE SCULPTURE

The early descriptive accounts of Tiahuanaco contain many casual references to stone statues or idols. Most noteworthy is the narrative of Cieza de León written in the middle of the sixteenth century. Standing on the fortified hill, Acapana, he saw two stone statues in the form of human figures "farther on" (*mas adelante deste cerro*). They were so large that they appeared like small giants. They wore long clothing different from that of the natives and seemed to have some ornament on their head. Father Diego de Alcobasa¹ writes:—

There are also many other stones carved into the shape of men and women so naturally that they appear to be alive, some drinking with cups in their hands, others sitting, others standing, and others walking in the stream which flows by the walls. There are also statues of women with their infants in their laps, others with them on their backs, and in a thousand other postures . . .

Although these accounts suggest considerable variety of stone work, they are not sufficiently detailed to justify any classification. The later workers, such as d'Orbigny and Squier give both descriptions and drawings, but despite these their omissions make accurate classification difficult. The work of Uhle and Stübel,² Courty, Posnansky, and others among the latest workers give photographs and descriptions in adequate detail. These materials, supplemented by my own notes and photographs, furnish the basis for the following descriptive classification of Tiahuanaco stone carving.

Stone Sculpture at Tiahuanaco

1. Statue now called "El Fraile" (the Friar) (Uhle: No. 2)
Southwest corner of Calasasaya. Found by Uhle, 1877, *in situ*.
Uhle und Stübel: Tafel 31, 1
Posnansky: 1914, frontispiece
Posnansky: 1912, Fig. 16
Means: 1931, Fig. 69
Schmidt: 570, 1
Bennett photograph
2. Large statue found in Pit VII of Bennett excavations, *in situ*.
Small temple to east of monolithic stairway (Calasasaya); now in La Paz
Photographs and drawings, cf. pp. 429-439.
3. Head of large statue. Found by d'Orbigny, 1833. (Uhle: No. 1)
Found east of Acapana, but is now in Museo Nacional in La Paz
Uhle und Stübel: Tafel 35 (collection of early drawings)
Lehmann und Doering: Pl. 19
Posnansky photographs

¹As recorded by Garcilaso de la Vega, cf. Means, 1931, 121, and from Cieza de León, as quoted in the original by Uhle und Stübel, Part II, 1.

²Part II, 31-32.

4. Statue near Puma Puncu (Uhle: No. 3)
Once between Puma Puncu and Tiahuanaco village; now west of Puma Puncu.
Uhle und Stübel: Tafel 31, 2 and 2a.
Posnansky photographs
Bennett photographs
5. Middle "Water God." Found by Courty, 1903, *in situ*.
Middle of three statues along railroad east of Tiahuanaco station
Courty: 533-534, Fig. 3
Posnansky, 1912, Fig. 25
Posnansky photographs
Bennett photographs
6. West "Water God." Found by Courty, 1903, *in situ*.
Courty: 533-534
Bennett photograph
West of three statues along railroad east of Tiahuanaco station
7. East "Water God"
East of three statues along railroad east of Tiahuanaco station
Bennett photographs
8. Central figure on "Gateway of the Sun"
Monolithic gateway now in northwest corner of Calasasaya
Illustrated in many places, with photographs and drawings, principally:—
Posnansky: 1914
Posnansky: 1912
Schmidt: 565, 1
Lehmann und Doering: Pl. 2
Means, 1931, Figs. 70-71
9. Angular, headless statue
Museo Nacional de Bolivia, La Paz
Posnansky photograph
10. Parts of monolithic statue
Near Gateway of the Sun, Calasasaya
Bennett photograph
11. Statue in five pieces
Center of Calasasaya
Bennett photograph
12. Double statue
Posnansky: 1912, 23, Fig. 27
13. Double statue
Posnansky: 1912, Fig. 26
14. Double statue
Posnansky: 1912, Fig. 26
15. Double statue (Uhle: Nos. 12 and 13)
Schmidt: 450, illustrates one of these
16. Feet of monolithic statue
West center of Calasasaya
Bennett photograph

17. Head of statue (or perhaps bust) (Uhle: No. 19)
In court of church at Tiahuanaco Pueblo
Uhle und Stübel: Tafel 32, 5 and 5a
18. Well modeled torso of statue (Uhle: No. 6)
Found east of Acapana, near Nos. 3 and 36 by d'Orbigny, 1833
d'Orbigny: 343, and Atlas, Pl. 7, bottom
19. Sculptured plaque. Found by Courty, 1903, *in situ*.
East part of Calasasaya, near stairway
Courty: Fig. 10
Posnansky photograph
20. Sculptured plaque
Musée d'Ethnographie, Trocadero (78-8-69)
Bennett drawing
21. A "typical" statue (Uhle: No. 4)
La Paz
Uhle und Stübel: Part II, 31. Uhle says this is mentioned by Squier: 297,
and Mitre: 12 and 40
22. Pillar-like, blue stone statue (Uhle, No. 10?)
Calasasaya, southeast of Gateway of Sun
Bennett photograph
Uhle und Stübel: Tafel 32, 6 and 6a
(This may be another statue, but the appearance is very similar. Seen in
Tiahuanaco pueblo on the west side of the plaza, as a house bench)
23. Simple statue with phallic emblem (Uhle: No. 9)
In a valley flat, south of Acapana, along railroad line (?)
Uhle und Stübel: Tafel 32, 3
24. Small, bearded statue. Bennett excavation, Pit VII, *in situ*.
Small temple east of monolithic stairway (Calasasaya)
Photographs and drawings, cf. pp. 439-442
25. Unfinished, pillar-like statue. Found by d'Orbigny, 1833, *in situ*. (Uhle: No. 5)
East of Acapana, near Nos. 3 and 36
d'Orbigny: 342-343, Atlas, Pl. 7, middle
26. Kneeling animal figure. (Uhle: No. 16)
Pueblo of Tiahuanaco, in small side street, northwest of Plaza
Uhle und Stübel: Tafel 32, 2 and 2a
Posnansky photograph (?)
27. Kneeling zoomorphic figure (Uhle: No. 17)
Left of entrance of Tiahuanaco churchyard
Uhle und Stübel: Tafel 32, 1 and 1a
28. Kneeling animal figure with head missing
Puma Puncu
Bennett photograph
29. Kneeling animal figure (Uhle: No. 18 ???)
Region of Copacabana (Now in Museum für Volkerkunde, Berlin)
Schmidt: 451
30. Seated statue with turban (Uhle: No. 14)
South side of Tiahuanaco churchyard entrance
Uhle und Stübel: Tafel 33, 1 and 1a

- Posnansky: 1914, Figs. 30-32
Bennett photograph
31. Seated statue with turban (Uhle: No. 15)
North side of Tiahuanaco churchyard entrance
Uhle und Stübel: Tafel 33, 2 and 2a
Posnansky: 1914, Fig. 29
Posnansky photographs
Bennett photograph
32. Stone heads
Small temple east of monolithic stairway (Calasasaya)
Posnansky: 1914, Tafel XXXVI, Figs. 14-16
Posnansky: 1912, Figs. 2-4
Courty: Part 2, Fig. 5
Posnansky and Bennett photographs
- 32a. Heads with headband
- 32b. Flat face heads
- 32c. Rounded boulder heads
- 32d. Modeled face heads
33. Carved lizard or toad. Found by Courty, 1903, *in situ*.
Small temple east of monolithic stairway (Calasasaya)
Posnansky: 1914, Pl. XXXXI, Fig. 33
34. Carved toad (Uhle: No. 21)
Between Tiahuanaco pueblo and Calasasaya
T. von Tschudi: 294
35. Carved stone corner. Found by Courty, 1903, *in situ*.
Four of these as entrances to "altars" just outside the northwest corner of Calasasaya
Courty: Part 2, 541, Fig. 12
Posnansky photograph
36. "Sphinx-like" statue (Uhle: No. 18 ???)
d'Orbigny: 341, Pl. 7 top
37. Monolith with carved "paddle" (Uhle: No. 11)
East of Acapana, near No. 3
Uhle und Stübel: Tafel 32, 7
38. Roughly carved stone with face. Bennett excavation, Pit VII, *in situ*.
Small temple east of monolithic stairway (Calasasaya)
Photograph cf. Fig. 33
39. Part of stone head carved in relief
Posnansky photograph
40. Flat stone carved in low relief, in zigzags and curves
Posnansky photograph. (There are two photographs which may represent two such stones, or the two sides of this one)
41. Conventionalized condor head, angular carving
Buch collection, La Paz
Means: 1931, 132, Fig. 72. (Also Means: 1931, Figs. 73-75 of specimens of similar type, reported as from Peru, in Trocadero Museum, Paris)
42. Non-Tiahuanaco style statue
Near the village
d'Orbigny: 347 (description)

STYLE 1, THE CLASSIC MONOLITHIC STATUE

One group of the largest statues forms a compact stylistic unit. The individual pieces vary only slightly from the "type" pattern, as is shown in Table 10. Statues 1 to 7, 10 and 21 all fall into this group. A description of the type has already been given in some detail with reference to the large statue in Pit VII (No. 2), but a summary is given here.

The statues are large. The height of the figures, exclusive of the bases, ranges from 2.05 to 5.50 meters: the widths from .40 to 1.05 meters. The height of the head is from 28 to 40 per cent of the total figure height. All are made of reddish sandstone, with the exception of the large head, No. 3, which is of trachyte.

Except for Nos. 1 and 10 these statues have a vertically grooved headdress, probably representing feathers. All in this group, without exception, have wide, raised, decorated headbands. The bands are flat, and the decoration incised, or in low relief. The faces are either square or slightly rectangular; across the forehead and down both sides is a double step ridge. The back of the head is flat (again excepting Nos. 1 and 10 with rounded heads), and tresses are indicated in some by vertical rows of rectangles. The nose is straight-sided and projected. The mouth is a raised, round cornered rectangle, with a groove inside, although two statues, Nos. 3 and 4, have a double row of teeth indicated. The cheeks are rounded. The eyes are round-cornered squares. All statues with details still preserved have wings on the eyes, as well as a tear band with three round (or rounded-square) tears flowing from the eyes. The chins are projected from the chest and slightly modeled. Two statues, Nos. 1 and 3, have condor heads incised on the chins. The ears are variations of the rectangle with a notch in the front side and another in the lower back corner. The variations consist of other notches cut from the back side and from the upper back corner.

The shoulders are rounded, and some slant forward somewhat. They project back from the head slightly. The chest is flat and, almost without exception, a decorated area. On statues Nos. 1, 2, 4, 5 the arms are placed so that the hands meet on the chest; but on Nos. 6 and 7 the arms and hands extend straight downward at the sides, the hands covering the waistband. The left hand is depicted as open, with five fingers which, in Statues 1 and 2 are correctly proportioned as to length. When the left hand is at the chest position it holds a kero-shaped cup with a raised, decorated band around the upper part. In the statues with the hands on the chest the right hand is depicted as closed, and as

TABLE 10
COMPARISON OF LARGE STONE STATUES

	El Fraile No. 1	Large Statue of Pit VII No. 2	Head of Large Statue in La Paz No. 3	Back of Puma Puncu No. 4	Middle Water God No. 5	West Water God No. 6	East Water God No. 7	Central Figure, Gateway of the Sun No. 8	Headless Statue in La Paz No. 9	Parts of Statue in Calasasaya No. 10	5 parts of Statue in Calasasaya No. 11	4 Double Statues (collected) Nos. 12-15)
Material Total Length Figure Length Figure Width Figure Thickness	Red sandstone ca. 3 m. ca. 2.30 ca. .60 ca. .60	Red sandstone 7.30 5.50 1.05 1.05	Trachyte (4.70) computed (3.50) computed (head) .70	Red sandstone 2.70 2.20	Red sandstone 5.72 3.82	Red sandstone 2.35 head .45 head .30	Gray sandstone 2.05 head .40 head .35	Lava	Lava (?)	Red sandstone (prob.)	Lava	Lava
Head Length Crest Headband	.65 plain wide: decorated	1.90 grooved plumes wide, incised decoration	1.20 grooved plumes, incised wide, decorated with round figures; fish and puma	grooved plumes wide; once decorated?	grooved plumes wide; decorated; fish and “running figure”	head .85 ? wide (decorated)	head .85 grooved plumes decorated	elaborate crown with pro- jecting puma heads, etc. around head		plain wide band with triangular design	plain decorated	grooved plumes plain but with diadem in center
Face Shape Forehead and side steps Back of head Tresses	square double step rounded ?	square double step flat vertical grooves	slightly oblong double step flat rectangles in rows	square double step flat yes	elongated rectangle double step flat rows of rectangles	elongated rectangle double step	rectangle double step	square single step		square no steps? rounded plain ?	square double step rounded none	square single step 2 on side of face
Nose Mouth Cheeks Ear	projected rounded rectangle, projected rounded none	projected rounded rectangle, projected slightly rounded notched rectangle	projected rounded rectangle with 8 teeth rounded notched rectangle	projected rounded rectangle, 2 rows of teeth rounded notched rectangle	? ? rounded notched rectangle	rounded? notched rectangle	projected rounded rectangle, projected rounded notched rectangle	projecting concave sided rounded rectangle rounded none		projected rounded rectangle rounded ?	projected ? rounded ?	concave sided rounded rectangle rounded none
Eye Wings Tears	rounded square yes—end in fish 3 square tears	rounded square end in condor 3 tears (3rd a condor head eye)	rounded square end in fish 3 rounded squares	rounded square ? 3 rounded	? ? ?		rounded square ? three lines in band	indented and round plain wing 3 round (3rd a puma eye)		rounded square none none	rounded square ? ?	indented and round plain wing 3 (third is fish head)
Chin	projected; 4 heads incised	projected; ?	projected; 6 condor heads	projected	projected	projected	projected	projected		slightly projected	?	projected
Shoulders Chest Arms	rounded and project back flat delineated, with hands meeting on chest	rounded, project back flat, decorated position with hands on chest	rounded; ?	slant forward, project back flat (decorated ?) position with hands on chest	modeled; decorated with fish flat (decorated) position with hands on chest	modeled (decorated) flat position with hands at side	slant forward position with hands at side	straight flat-decorated projected on each side			?	straight mantel line across chest projected on each side
Left Hand Fingers Object held	open five, proportioned decorated cup with band	open five, proportioned cup, decorated and with band		open 5 cup with band	open 5 cup with band, decorated	open 5 (thumb short) over waistband	open 5? over waistband	closed 4 (3 fingers and opposed thumb) scepter, segmented, double at top, condor head bottom	open five (thumb short) none			closed 3 fingers and thumb bar or scepter
Right Hand Fingers Object held	closed five, distorted scepter ending in bird head	closed five, distorted scepter?; fish heads be- low, and above		closed (?) (prob.) 5 distorted scepter	? 5 scepter	open 5 over waistband	open 5? over waistband	closed 4 (3 fingers and opposed thumb) scepter, single at top, condor at bottom	open five(thumb short) none		open 5, square, proportioned over waist band	closed 3 fingers and thumb scepter
Waistband Pants or Skirt Legs	decorated with “crusta- cea” pants with raised decora- tions groove separated	decorated pants with raised medal- lions groove separated		once decorated ? skirt to below knees separated	decorated; fish and “female sex” skirt to knees (fish design) separated by groove	once decorated not distinguished	decorated ? short skirt separated by groove	narrow, segmented short skirt divided	wide, decorated, “sex” and condor designs pants ? fish design separated by groove	skirt to base with deep incised scallop design not indicated	narrow, plain pants with medallions distinct, round	none skirt to ankles; plain divided
Feet Toes Ankleband	projected forward 5 on each foot ankleband of joined squares	projected forward 5 on each foot none		rounded ? plain	projected 5 each none		rounded five each none	projected ? ? (none)		none none	round none plain band	projected none
Stomach	plain	decorated, “running figure”		plain now	decorated; fish and “female sex”			cf. chest decoration				plain
Condor heads on each side of nose Base	yes plain	plain	yes probably	no plain	? plain	plain		no stepped pedestal		plain	plain	no rectangular base
Collar, chain		condor heads	of heads?								collar of fish heads	collar of fish heads

open in those statues with the hands at the sides. Again, five fingers are indicated. The closed right hand is distorted as shown in Fig. 25, and holds a scepter-like object.

All the statues have a wide, flat, waistband, decorated in low relief or by incision. Nos. 1 and 2 have pants decorated with raised decoration, and Nos. 4, 5, 7, 10 have a skirt that extends below the knees. The legs, below the garments, are usually distinguished by a groove which separates them. The feet are modeled and have five toes each, except for Nos. 4 and 7 which have rounded feet. Only No. 1 has a jointed ankle-band. All the statues have plain bases which project into the ground.

Statues 11, 16, and 18 might well be classed as a minor variation of the preceding group. They are really not sufficiently distinct to warrant a separate division. No. 11 is in five parts today. It is of a fine-grained andesitic rock, and well carved, though more in the round than the preceding group. It has the wide decorated headband, the square-shaped face with the double-step side ridges, the projecting nose, and the rounded square eyes. The chest is rounded and decorated. The arms hang down at the side; the hands placed over the flat waistband have five, proportioned, square-tipped fingers. Medallion decorated pants extend down to the ankles. The legs are rounded and completely separated. A raised band encircles the ankles. The feet are rounded. All the statues stand on a plain base. No. 16 consists only of a pair of feet, of the type just described. No. 18, as drawn by d'Orbigny, might well be the same as No. 11, except that it is described as without head and feet.

The headless statue in La Paz, No. 9, is difficult to classify. The sides are straight, the angles sharp. The block effect too is more apparent than in the others previously described. It is made of lava rock. The arms are placed so that the left hand rests on the stomach and the right on the chest. Both hands are open with five fingers, only the thumb being proportionately shorter. No objects are held in the hand. The waistband is raised and decorated with the male and female sex (?) designs with projecting condor heads, so typical of other statues and the Gateway of the Sun. A large fish head is designed on each leg, as on statue No. 5. The legs are separated by a groove. While the designs connect this statue with the first style, the general technique is more like that of Style 3. The position of the hands certainly suggests the small monolithic statue of Pit VII (No. 24, cf. p. 440).

All of the statues thus far described are monolithic. The total effect is that of an upright pillar, modified into a semblance of the

human form. The carving is well done, the conventions skilfully executed, the designs delicately incised.

STYLE 2, VIRACocha, GATEWAY OF THE SUN FIGURE

The type for this group is the central figure on the Gateway of the Sun. Others of the same type are the "double" statues, which consist of a single squared pillar with two figures projected from one side in high relief, one right side up, the other upside down, and above it, the heads close, but not actually connected. Posnansky illustrates three of these, Uhle refers to two figures, and Schmidt illustrates one such double statue (probably one of Uhle's). Following my numbering, this group includes Statues 8, 12, 13, 14, 15.

These are not really statues, but rather figures carved in high relief on one side of a block. The material is andesitic. The figures are short, about .50 centimeters high. The double statues are essentially identical with the central figure of the Gateway of the Sun, but are simpler. The few differences are noted in the description.

The Viracocha figure has an elaborate crown extending around the head and consisting of projected puma heads, discs, etc. The double statues have the flat headband, embellished with a projected diadem, and mounted above with the vertical groove feather decoration. All have square faces, with a single stepped ridge across the forehead and down the sides. One double statue has two tresses on each side of the face as well. The noses have concave sides. The mouths are round cornered rectangles. The cheeks are rounded and no ears are represented. The eyes are indented and round, elaborated with plain wings, and three round tears.¹ The chins are slightly projected. The shoulders are straight. The chests are flat; that on the Viracocha figure is decorated; those on the double statues are plain, except for a raised ridge which extends horizontally across the chest. The arms are projected, one on each side. Each hand has three fingers and an opposed thumb and holds a scepter. The Viracocha figure has a narrow segmented waistband with straps running over the shoulders. All figures have skirts which extend to the ankles. The legs below are separated. The feet project forward, without toe distinctions. The Viracocha figure stands on an elaborately decorated, stepped base, and the double statues stand on a plain stepped base.

One cannot fail to notice the strong resemblances in style between this group and the first one, in spite of the differences in application.

¹Not all the double statues preserve all the details. However, since they are all essentially similar, the comparison is based on a summary of the traits of all of them.

The double statues have the headband with vertical grooves above. The treatment of the face is practically identical in the two groups, particularly in regard to the winged, three-teared eyes. Table 10 shows many other detail comparisons. When the design elements are compared the resemblance between the two groups is even more striking. The running human and condor figures of the Gateway of the Sun are also found on the headband of No. 5 and on the chest and waist decorations of No. 2. The puma, condor, and fish head designs are common elements of both the Gateway and the monolithic statues, except for the crowned condor design which I have not seen on the statues, and the curled tail puma which is not on the Gateway. The male and female sex (?) signs with projecting condor (and fish) heads occur on the Gateway and as common elements of decoration on Statues 2, 3, 5, 9. The puma head on a fish body which forms the center of the pedestal of the Viracocha figure on the Gateway is also used on the headband of Statue 3. The rectangular segment bar is a design in common. Simplified suggestions of the sun faces from the frieze of the Gateway are found on Statues 2, 11, and possibly 4. A Viracocha figure is found on the back of Statue 2.

The net result of this comparison leads to the conclusion that Styles 1 and 2 are manifestations of the same cultural phase. On the basis of comparative design and technique, the sculptured plaques Nos. 19 and 20 may be included in this double group. No. 19 has four curled-tail pumas carved along one edge, very similar to those on the headband of No. 3. No. 20 has the heads of two human figures holding scepters in much the same style as the running human figures on the Gateway of the Sun. There are several indications that the second style may be a slightly later phase than the first. The stone is volcanic rather than sandstone; the Gateway seems slightly more formalized; the Viracocha figure has only four digits instead of five. However, there is no indication of any great difference in time between the two styles.

STYLE 3, SQUARED PILLAR TYPE STATUES

This group of statues (Nos. 22, 23, 25, and possibly 24) look like decadent forms of Style 1. Simplicity, angularity, and mediocrity characterize them. The statues included in Style 3 do not form a compact, easily distinguished stylistic unit, but are the odd monolithic statues which do not fit into the other styles. They are from 1.5 to 2.5 meters high and are all over .40 meters wide.

No. 22 of a bluish volcanic rock has a square face projected from a square background, with a square ear on one side, simple facial features,

and roughly worn back head. The shoulders are square and hardly distinguishable from the head block. The squared arms continue from the sides so that the five-fingered, squared hands almost meet in a band across the front. The waistband is narrow and decorated with triangular grooves. A phallus projects above the waistband in the center. The legs are separated by a groove, and the feet, slightly projected, have five toes.

No. 23 is quite plain. The head is distinguished from the body and topped with a band or disc-like crown. No features are marked. Short, plain arms hang at the sides. There is a narrow waistband. No legs or feet are distinguished. At the base is a well-modeled phallus with testicles. No. 25, as drawn by d'Orbigny, is of this same type. The headband is more distinct and a nose is projected from the flat face. Flat arms without details hang at the sides, covering the narrow, plain waistband. The legs are divided by a groove. There is no phallus.

No. 24, the small monolith of Pit VII, has already been thoroughly described (cf. p. 441). It is clearly different from the other statues in this style, except for the pillar-like effect of the whole. The lightning rays, highly projected features, the beard, the puma-design ears, the snake design on the sides, the pumas on the skirt, and the position of the five-fingered hands on the chest and stomach really place this statue in a distinct class.

STYLE 4, ANIMAL HEAD FIGURES IN SITTING POSITION

This group forms a compact, definite stylistic unit. There are four statues of this type, Nos. 26, 27, 28, 29. The figure is in sitting or kneeling position, with both legs doubled under it. The head is clearly animal. The jaw is wide open, the ears back on the rounded head are small and rounded. The eyes, when represented, are projected and circular. Short arms hang over the waistband on each side. The upper part of the arm, including the shoulder, is shaped into semi-realistic form. The left arm has a simple face instead of a hand at its extremity. The right hand holds a hammer-shaped object like a stone-headed club. A narrow waistband has a wedge-shaped piece in the back. The bent knees are distinguished by a groove, and the edge of a skirt is delineated on one of the figures. All are lava figures. No. 29 is from Copacabana, but is clearly of the same style.

STYLE 5, KNEELING HUMAN STATUES

The two statues that flank the entrance of the church patio in Tiahuanaco village (Nos. 30 and 31) have frequently been described as a distinct type. There is plenty of evidence for this distinction. They are

of red sandstone and far more naturalistic in general treatment than other Tiahuanaco sculpturing. The position of the statues, apparently kneeling, is in itself distinctive. The use of curves, instead of angles, the natural position of the head and arms, the realism of the features, all set them in a separate class. The headbands are wide and decorated with a scroll groove which gives the whole band the appearance of a twisted turban. The headband of No. 31 has a coiled diadem in front which may terminate in a human face, and in back there is a definite face with small round eyes, modeled base nose, and open mouth with two rows of teeth. Above the headbands the head is modeled slightly, perhaps to represent a cap or head cloth. A ridge which crosses the forehead, under the headband, and down the sides of the head, represents either hair, or the head cloth just mentioned. The hair along the back of the neck is indicated. A curved ear is projected on the side of the head. The profile of the face is convex, in contrast to the straight faces of the other statues. The forehead is wide. The oval eyes are inset. There are neither wings nor tears. The nose is projected. Cheek bones are prominent and enhance the "modeled" effect of the face. The mouth is projected and curved upward at the ends.

In No. 30 the right knee is bent and the right arm clasps it, though there is some suggestion that the right arm is holding some object. The left hand is at the side. The hands have four and possibly five fingers.

No. 31 appears to be kneeling on both knees. The left hand is clearly placed on the left knee, with five fingers and finger nails depicted. The right hand is crossed on the chest. According to Uhle¹ und Stübel the seamed edge of a cloth garment is depicted, as well as a collar piece.

These two figures certainly represent a style quite distinct from the others at Tiahuanaco.

STYLE 6, STONE HEADS

Since almost all the stone heads from Tiahuanaco have been found in the small temple east of the monolithic stairway of Calasasaya they have formerly been classed together as contemporaneous, not, however, without notations on the variations in style represented. The interpretation of this temple as chronologically recent (cf. p. 387) allows for stone heads to have been collected from all parts of the ruins to be placed in this temple. With this interpretation the various styles of stone heads are not necessarily contemporaneous. There are five general styles represented in the carving of the stone heads. These are described in the following pages.

¹Text to Tafel 33.

Substyle 6a, Headband Type. These stone heads are really faces projected from squared stone blocks evidently intended as units in wall construction. All have plain wide, flat, headbands around the forehead. The headdress above the band is also plain. The faces are square, although some are slightly rounded at the chin. A single stepped ledge runs across the forehead and down the sides of the face. In some the side ledge is accentuated, as if representing side whiskers. The ears are rectangular, the nose wedge-shaped, and projected. The eyes are round, some projected and some sunken. Details of wings and tears do not appear. The mouth is a hollowed oblong surrounded by protruding lips. Some possibly have files of teeth. In some the cheek bones are prominent.

Courty,¹ who discovered many stone heads, says that a red ocher (and sometimes an ultramarine blue) could be seen in the slits of the eyes, ears, nose, and mouths when the heads were first unearthed. He also says that the material is a metamorphosed trachyte with a white fracture.

Posnansky² says that the majority of the stone heads are of this type. The general impression is certainly suggestive of the Style 1 monolithic statues. All the details are not exact parallels, but there are numerous comparable points. The resemblance is more noticeable when this type of head is contrasted with the others described below.

My present belief is that these stone heads are contemporaneous with the monolithic statues of Style 1 and were used as wall decoration in the buildings of that period. Later, they were collected from the ruins and re-used in this late temple to the east of the monolithic stairway of Calasasaya. It is the only way of accounting for the discrepancy between these well-squared and comparatively well-sculptured building block units, and the crude, half cut, half rough stone walls of the semi-subterranean temple.

Puma heads are also projected from stone blocks in this same style. They are classic representations of the puma in stone. They tend to confirm the connection between Style 1 and Style 6a.

Substyle 6b, Flat Stones with Faces. This group, also fairly numerous, consists of flat, thin, irregular or roughly squared stones with simple features, depicting a face on one surface. They are made of a chalk-like stone. The nose is a vertical raised bar. There are some with slight brow delineations, but no suggestion of the T-shaped nose. The eyes are

¹Courty, Part 2, 536.

²Posnansky, 1914, 83.

round, small, and projected. One head in the Munich collection has a circular protrusion on each cheek, below the eyes, perhaps representing a single tear. The mouth is generally represented by a horizontal groove, though some of the mouths are slightly elaborated with protruding lips.

The contrast between Substyles 6a and 6b is so obvious that it hardly needs elaboration. The first set is fairly finished in technique and stylization and the second group is crude, simple, and classed as sculpture only by the grace of an inclusive definition.

Substyle 6c, Rounded Boulder Heads. These heads are made from slightly modified, round, sandstone boulders, with one side flattened and carved with simple features. The nose is raised, with concave sides and slight bulge at the base. (One has a plain straight nose). The eyes are round and raised and one head in Munich has a single tear on the cheek. The mouth is a hollow with a raised lip outline, in round cornered rectangle shape, sometimes turned slightly up or down at the corners.

This substyle is very similar to the preceding one (6b), but the workmanship is slightly better. Substyles 6b and 6c form a group for which there are no other parallels in Tiahuanaco sculpturing. The type is certainly not characteristic of the ruins. There are some indications that it may be a post-Tiahuanaco phase.

Substyle 6d, Modeled Face Heads. Two stone heads form a separate group which Posnansky has called "portrait" types.¹ They are flat, but realistically shaped modeled faces. Behind the head is a cylindrical projection for wall-mounting. The foreheads are round. The noses are rounded on top and modeled to shape at the base. Hair is depicted on one head. The lids are portrayed on the modeled eyes. The cheeks are rounded. The mouths, one horizontal and one turned up at the edge, have realistically shaped lips. Two rows of teeth are visible. The chins are modeled.

The naturalism of these faces suggests the two statues of Style 5. Unfortunately, there is no other evidence to associate the two styles. The dowel-like projections on the back of these heads for wall attachment are not typically Tiahuanaco.

Substyle 6e, Cornerstone Faces. Four small square cornerstones (No. 35) were found by Courty² at the entrance to the "altars" just outside the northwest corner of Calasasaya. The four are identically alike. The face is on two sides of the block, the edge of the block neatly bisecting the nose and the mouth. The carving is in high relief, with sharp

¹Posnansky, 1914, 83-84, also Tafel XXXVI, Figs. 15, 16.

²Courty, Part 2, 541.

edges. The nose has straight sides, but widens out in a flare at the base. The mouth is oval. The eyes are round, and a large question-mark shape surrounds each. The ears are rectangular.

Another piece in the same general style, although zoomorphic instead of human, is No. 41. It is a conventionalized head, perhaps of a condor, in high relief on a stone block. A raised disc serves as an eye and similar discs ornament the space above and behind the head. Means writes that this

represents the second phase of culture there, (but) does not resemble the carving of the (Gateway) frieze at all save for the fact that they have the same square-edged cutting. It seems to me on aesthetic grounds that it represents a later Period, one in which, because of excessive conventionalizing tendencies, designs had lost much of their coherence.¹

Possible Additions to Style 6. The roughly carved stone of Pit VII (No. 38) which is described on p. 443 is little more than a face roughly and simply delineated at the top of a large rectangular stone. The simplicity is suggestive of Substyles 6b and 6c, and this upright might well be a variation in the same style.

d'Orbigny² illustrates a figure (No. 36) of which he says:—

“ . . . un sphinx informe qui représente une tête humaine et derrière des espèces d'ailes; . . . ”

From his drawing this “sphinx” looks like a variation of Substyle 6a, with headband and all. The drawings in d'Orbigny's Atlas are not noted for their accuracy, in any case.

STYLE 7, CARVED LIZARD, SALAMANDER, OR TOAD

According to Uhle und Stübel,³ T. von Tschudi found a great stone with a crude animal figure which he called a toad, but with a wide, three piece tail (No. 34). Courty found a similar, though much smaller stone (No. 33), in the small temple east of the monolithic stairway of Calasasaya. Posnansky⁴ calls this animal a *sapo con cola de pez* (toad with a fish-tail). It has four legs, a small flat head, and a large, spreading, flat tail. It is carved in high relief on a rough stone.

The style of workmanship is crude and does not differ greatly from the technique of Substyles 6b and 6c. I have designated it as a distinct style only because of the animal represented. I think that the distribution of carved lizard-like animals will be different from that of flat or boulder stone heads.

¹Means, 1931, 132.

²d'Orbigny, 341; also Atlas, Pl. 7 top.

³Uhle und Stübel, Part 2, 32.

⁴Posnansky, 1914, Tafel XXXXI, Fig. 33.

STYLE 8, GEOMETRIC PATTERNS

No. 40 represents another distinct style found at Tiahuanaco. This stone is part of a wide slab which probably stood upright as a monolith. It is completely carved on the flat surfaces. The design is characterized by its symmetry and by the employment of such geometric patterns as squares, crosses, zigzags, triangles, circles, and scrolls. The center of the slab has a toad-figure outlined by a diamond shape. Surrounding this is a complex scroll pattern, symmetrical on all sides. The lower half of the slab is decorated with zigzag and cross designs.

MISCELLANEOUS PIECES

Uhle und Stübel¹ describe and illustrate a monolithic, green schist upright, 1.80 meters high (No. 37). This is decorated on one side by raised designs. At the top are two triangles, then a kero-cup shape, a horizontal bar, and, at the bottom, a paddle shape with two grooves across the blade. This monolith is called "El Fraile" by the authors, while the statue (No. 1) which is now known by that name locally, is merely referred to as a large statue. This upright does not fit into any of the classifications, though its closest parallel is with Style 3.

No. 39 is the broken top part of a monolithic statue. The top is smooth. Then comes a wide raised band which surrounds the stone. This headband is designed with a figure with a snake-like body with large spots. The head is elongated, and two appendages branch out from the chin like feelers (?). The mouth is small and oval. The nose has straight sides and a widened base. The eyes are square. Two small ears project back from the flat head. Below the band, discs on the end of stepped bars are the only visible decoration. The style of the decoration and carving is Classic Tiahuanaco, though the figure represented is not; that is to say, I have not found it on other stone carved specimens. However, a Tiahuanaco-style poncho in the Metropolitan Museum of Art has a tapestry representation of this identical figure.

Further grouping and chronological implication of the eight stone sculpturing styles listed here is, as yet, without foundation in actual concrete data. However, a few tentative suggestions of possible groupings and possible chronology can be made on the basis of subjective evidence. Certain similarities between styles have been mentioned throughout this classification and a short summary grouping might assist in clarifying the problem. Proceeding on this basis, the eight styles and substyles might be reduced to four groups:—

¹Uhle und Stübel, *Tafel 32, 7*.

Group I, Realistic Stone Carving (Styles 5, 6d, and possibly the Puma Heads of 6a). The two kneeling statues in front of the church and the two modeled type stone heads certainly form a group which is more realistic in style than the other Tiahuanaco stone sculpturing. These may well be older than the other material, as Posnansky and others believe. On stylistic grounds it would be difficult to derive these realistic statues from the highly conventionalized Classic monoliths. They were probably found near the pueblo church where they now stand and thus are not part of the main group of ruins. Realistic carving, generally considered as early, has a wide highland distribution, even up to Huaraz in Northern Peru, as will be shown in the concluding chapter. The sculptured puma heads, with projections for wall insets, might be included in this group, not so much for their realism as for their distribution which parallels that of the realistic statue. However, at Tiahuanaco they are more closely related to the stone head group.

Group II, Conventionalized Classic Figure and Head (Styles 1, 2, 4, 6a). The large monolithic statues and the high relief figure treatment of the Gateway of the Sun and the double statues form one fairly compact stylistic group, although the individual pieces may vary considerably. The stone heads with headbands are similar in general treatment. If the puma head variety of the stone heads is included there is a logical connection with the animal head figures in sitting position (Style 4). This group includes sculpturing in both sandstone and lava. The suggestion has already been made that the lava group may be somewhat later than the sandstone group. However, the whole of Group II is solidified when contrasted with Groups I or III. Furthermore, the known distribution of Group II style is fairly limited to Tiahuanaco. Group II represents Tiahuanaco stone sculpturing at the height of its development.

Group III, Technically Decadent Pillar-like Statues and Heads (Styles 3, 6b, 6c, 7). The residue of statues and sculpturing not definitely assignable to any particular style is gathered here in a group which has, as mentioned previously, the common characteristics of simplicity, angularity, and mediocrity. Some of the statues still retain a few characteristics of the Classic style, but, on the whole, they appear to be Decadent forms. However, some new stylistic elements appear which keep the group from being purely a degeneration of the Classic.

The inclusion of the carved lizards or toads, the boulder heads, and the flat stone heads in this group is purely arbitrary. Simplicity of treatment is about the only common factor. However, chronologically,

these heads, like the statues, seem more recent than the Classic Tiahuanaco. Both styles are found in the small temple to the east of Calasasaya (Pit VII). The final identification of Group III as a contemporaneous stylistic unit definitely later than Group II awaits objective confirmation.

Group IV, Geometric Style Carving (Styles 6e, 8). One slab is elaborately carved with geometric designs. Four cornerstone heads have a geometric stylization of treatment. Since the slab has a toad figure in the center, the carved lizard-toad group (Style 7), might also be included here. This is further confirmed by the slabs with lizard and geometric patterns found by Squier¹ at Hatuncolla.

The chronological stylistic sequence of Groups I, II, III is postulated tentatively. Group IV is difficult to place. It is later than Group II, but whether contemporaneous, earlier, or later than Group III, cannot be determined. However, the whole chronological sequence awaits further study for confirmation.

¹Squier, 385-386.

CONCLUSIONS

At the present writing the Tiahuanaco problem can be conveniently divided into three parts: the local phases and correlations at the Tiahuanaco site itself; the position of Tiahuanaco in Bolivian archaeology; the distribution of Tiahuanaco materials and influence throughout the Andean area.

This paper has dealt only with the local problem of Tiahuanaco, and furthermore, principally with one section of that problem, namely, ceramic stratigraphy. In summary, four ceramic phases are represented: Early Tiahuanaco; Classic Tiahuanaco; Decadent Tiahuanaco; Post Tiahuanaco and Inca.

The Early Tiahuanaco levels contain over 95 per cent plain sherds. A straight rim, rounded bottom, open bowl; a flaring rim, globular bowl; and a shallow, horizontal-handled dish are the typical, unpainted shapes. The painted ware shapes are principally variations on a long constricted neck, globular base decanter; a flat bottom, wide flat flaring rim, spittoon-shaped bowl; and a flat bottom, fretted rim incense bowl, with or without a modeled puma head on the rim. The designs are zig-zag linear with alternating colors, or zoomorphic with peculiar animals, not outlined in black, but painted in colors on a black background. Black, white, red, orange, and brown shiny colors are applied directly to an unslipped, buff-colored clay. Design areas are limited. Some of the decoration made by filling incised lines with colors probably belongs in this group. Small clay buttons and a T-shaped stone ax are distinctive artifacts of these levels.

The Classic Tiahuanaco levels contain over 50 per cent painted ware. The most typical ceramic shapes are the flaring sided, kero-shape goblets; the hollow base, two-handled and collared puma head types of incense bowl; a flat base, wide rim, open bowl; and a flaring rim base. Designs are painted in black, white, yellow, and sometimes gray and brown on a red slip. Linear outline in black is typical. Design areas repeat around the vessels. The most frequent designs are a curled-tail puma in profile, a condor with wings and tail feathers, a complete human figure with profile head, and geometric units based principally on the step-fret pattern. The colors are rich, the designs well finished, and the vessels are technically well made and polished.

The Decadent Tiahuanaco style is a degeneration of the Classic, combined with some new elements. Variations of the kero-shape goblet and the hollow base incense bowl are still found, but the most typical shape is a flat bottom, flaring sided cup. New shapes are angular bodied,

one-handled pitchers; two-handled, high shouldered jugs; and open, curved flaring rim, round bottom, two-handled bowls. Black and white applied over an orange slip is the typical color combination. There is a greater emphasis on geometric design, the scroll, double S, zigzag, and step becoming prominent elements. Zoomorphic design represents a break-down of the Classic condor, puma, and human figure, into crude imitations, or designs based on a condor wing, a puma head, a human eye, etc. Together with this break-down in completeness of design occurs a general decadence in finish, application, texture, and polish of the ware.

The Inca and Post Tiahuanaco ware is stratigraphically in the top half meter or on the surface. The Inca designs are typical of the geometric patterns of Cuzco pottery; the shapes are principally aryballoids and animal-handled shallow plates. There is nothing that suggests the derivation of Inca forms from Tiahuanaco types. In other words, the Inca material is superimposed on Tiahuanaco, but with no implications of historic connection. The Post-Tiahuanaco, like "Chullpa" is a common Bolivian type discussed later in this section.

Although this stratigraphic set-up is the result of my excavation of ten pits at Tiahuanaco, it is not conclusively proved. Only two pits showed the complete series. Since whole vessels of the Early Tiahuanaco type are found in collections it is probable that it occurs in positions more favorable for preservation than the two to four meter depths of my excavations. Undoubtedly some grave material is of this type, and future excavations must determine whether the grave material is isolated or associated with other wares. Pit X, of the present excavations, was a fairly pure Classic site, suggesting tentatively that the Classic phase can be isolated by burials. The Decadent phase is perhaps the most definitely established, by grave isolation, stratigraphy, and distribution.

It is generally agreed that there were at least two phases of Tiahuanaco culture. Most writers either follow Posnansky's designation of periods, based on material and building technique, or draw their conclusions from speculation. Means¹ does state that Tiahuanaco I pottery is distinct and within that group "there is a contrast between extremely coarse incised vessels and almost equally coarse, but painted, vessels." Courty alone actually mentions stratified ceramic sites²:—

Stratigraphically, under the Aymara cemeteries with common red pottery, I have found the beautiful polished vases on which are painted the subjects which are easily reëncountered in the sculptures of the great monuments of Tiahuanaco, on the idols and on the gateway named 'of the Sun'.

¹Means, 1931, 112.

²In Crequi-Montfort, 66.

However, the major distinctions in Posnanksy's Tiahuanaco I and Tiahuanaco II have not been based on ceramics. The distinctions are based primarily on building materials. Sandstone and lava rock are the principal materials used. Some buildings are constructed entirely of sandstone, others entirely of lava, and still others with both stones. Furthermore, there is a contrast in architectural style between buildings with walls constructed with a series of upright megalithic pillars filled in between with smaller stones, and buildings constructed with notched and jointed blocks. In the all-sandstone buildings the megalithic upright technique is employed and in the all-lava buildings the notched and jointed blocks are used. In all probability, the sandstone megalithic style precedes the lava jointed-block style, although absolute proof is lacking. Furthermore, there is no evidence of any great chronological or cultural discrepancy between the two styles. On the contrary, the fact that Calasasaya, Acapana, and Puma Puncu were started with one material and finished, or continued, with another, without any radical changes in building plan, indicates a rather close connection between the two styles.

It is not possible at this time to associate ceramic periods with the building periods. The Classic levels had cut stones in association in three pits, but this is not sufficient to identify a building style. Pit II was in the terre-plein of Calasasaya temple and the Classic material is quite possibly contemporaneous with the building. Unfortunately, however, both sandstone and lava materials have been used in the construction of Calasasaya. Neither the Early nor Decadent Tiahuanaco levels could be associated with definite buildings, although dressed and drilled stones, used secondarily as paths in the Decadent level, might indicate a post-building phase. Pits excavated with this association problem in mind might well reveal some connections.

An examination of the existing and illustrated stone sculpture found at Tiahuanaco resulted in a descriptive classification of eight styles. A tentative, subjective analysis of these eight styles arranged them in four stylistic groups with a possible chronological succession as follows:—

- Group I. Realistic stone carving (kneeling figures; modeled heads). An Early Tiahuanaco phase.
- Group II. Conventionalized, classic figures and heads (the large monoliths; Gateway of the Sun type high relief; stone heads with headbands). The Classic Tiahuanaco.
- Group III. Technically Decadent pillar-like statues and heads (including a variety of mediocre, simple, statues; boulder and flat carved stone heads). A Decadent Tiahuanaco phase.
- Group IV. Geometric style carving (slabs with geometric design; angular corner-stone carved heads). Uncertain position.

The analogy between the style groups for stone sculpturing and the ceramic periods must not be forced. The zoomorphic designs of the Early Tiahuanaco, while not in the same conventions as the later periods, are not completely realistic. There is little doubt that the Classic Tiahuanaco ceramics are contemporaneous with at least part of the Group II sculptures. Still, as mentioned in the design style discussion (p. 403), there is a distinction between the design subject of stone carving and pottery painting. Decadent Tiahuanaco has no demonstrable relationship with Group III sculptures. Until more concrete evidence is presented for actual connections between styles, the analogies must be treated with caution.

Group II style sculpturing is again the only one that can be associated with building techniques. The same designs which occur on some of the statues are found on the Gateway of the Sun, the Gateway of the Pantheon, and on individual stone building slabs. The analysis of stone sculpture showed a possible slight time variation between the sandstone and lava statues in Group II. This compares favorably with the difference of sandstone and lava materials in building technique which likewise suggests some, but no great chronological discrepancy.

Future excavations at Tiahuanaco have then several concrete problems: a further checking of ceramic stratigraphy and the correlation of stylistic differences in building, materials, and stone sculpture with the ceramic periods, as well as with each other.

The position of Tiahuanaco in general Bolivian archaeology is the second division of the problem. Reconnaissance archaeological work has been rather extensively carried out in Bolivia, principally by Adolph F. Bandelier¹ who worked for several years in the highlands and whose diary and Bolivian manuscript are now at the American Museum. Others, namely Nordenskiöld, Posnansky, Uhle, Squier, have also explored Bolivia. Considerable work has been done by local enthusiasts. Part of my own work of last year was devoted to a survey around Titicaca Lake. An examination of the present status of Bolivian archaeology emphasizes the fact that there is only one Tiahuanaco ruin. Posnansky,² who has traveled about the altiplano for years searching for Tiahuanaco remains, writes:—

The only monuments around Lake Titicaca which we believe could belong to the Tiahuanaco epoch would be, according to their style, the ruins of Sillustani . . . Max Uhle considers the massive stone terrace at Llojepaya on the south shore of Copacabana as of Tiahuanaco type, as well as the ruins of

¹*The Islands of Titicaca and Koati.*

²Posnansky, 1913, 11.

Taaq'ani on the western end of Cumana Island, and Luquimata on the peninsula of Taraca.¹ Several cut stones on the Island of Titicaca might be considered Tiahuanaco in style. Cut stone seats and benches are common around the peninsula of Copacabana, although not definitely assignable to Tiahuanaco. The ruins on the Islands of Titicaca and Coati, on the Peninsula of Huata, around the northern shore of Lake Titicaca from Achacachi to Escoma and back into the mountains along this same stretch, around La Paz and down the plateau to Patacamaya, Sicasica, and the whole region around Illimani glacier, are decidedly not of typical Tiahuanaco style. Those around the lake are fortified Inca type villages of piled, undressed stone with narrow doorways, corbelled arch roofs, niches and shelves, but no windows. Those around Sicasica are adobe towers used both for dwelling and burial, and commonly called "Chullpas." To the southeast, in Santa Cruz, Bolivia, at Samaipata cut stone has been found.²

In general, it can be said that up to the present time no ruin has been found in Bolivia of typical Tiahuanaco cut stone, upright or jointed technique, yielding equally typical Tiahuanaco ceramics and artifacts.³ However, Tiahuanaco is distinctly a ceremonial site, composed of an aggregation of temples. It is not, therefore, particularly surprising that the distribution of Tiahuanaco culture throughout Bolivia must be sought by habitation rather than temple sites.

Tiahuanaco ceramics, as contrasted to buildings, have a wide, but by no means regular, distribution in Bolivia. Early Tiahuanaco style is found, according to my present knowledge, on the Islands of Titicaca and Coati and at a site called Teiripa on the lake shore north of Guaqui. Bandelier's collection from Kea Kollu Chico on the Island of Titicaca contains Early Tiahuanaco fragments associated with a high proportion of plain ware, which he designated "Chullpa," but, significantly, without any Inca sherds. This site was badly jumbled with skeletons and refuse and was associated with no buildings. Of the pottery he writes⁴:—

The pottery was mostly of the coarser type, but we obtained several gaudily painted specimens with plastic decoration recalling some previously secured at Tiahuanaco.

¹Cf. Means, 1931, 172, note 28.

²Means, 1917, 325.

³The 1934 Expedition has discovered two Tiahuanaco type ruins. One at Pajehiri on Cumana Island with cut sandstone steps and upright blocks, and another at Lucurmata on the shore of Titicaca between Guaqui and Chililaya. The latter promises to be a Classic Tiahuanaco lava megalithic enclosure with all ramifications. Also at Teiripa, on the lake shore, Decadent Tiahuanaco has been associated with an upright facing slab building technique.

⁴Bandelier, 1910, 173.

This pottery has the shiny red, black, yellow, and orange colors on a plain, unslipped background. The zigzag design is common. Zoomorphic figures identical with the Tiahuanaco specimens are painted in colors on a black background. The flat and hollow-base incense bowls with both plain and fretted rims are typical shapes, and some have the modeled puma heads on the rims. An incised incense bowl occurs, and one with the frets pierced, as in one form of Early horizontal handle. Globular shapes, one with a tripod knob base, are found, but not the long neck decanter shape. The horizontal handled dish and the spittoon-shaped bowl are likewise missing. The typical clay buttons are found, however. The "Chullpa" ware associated with this Early Tiahuanaco style is composed largely of one- and two-handled plain pitchers and shallow, flat-bottomed dishes with straight sides and one or two flat grooved rim lugs. This type is not the common Chullpa ware found all over highland Bolivia. No further information as to the associations of the Early Tiahuanaco ware found on Coati and at Tciripa is as yet available.

The Classic Tiahuanaco ware, according to present information, is limited in distribution to the immediate vicinity of the ruins. Even the nearby Islands of Titicaca and Coati do not have pure Classic Tiahuanaco pottery shapes and design. The collections of Bandelier from many sites in highland Bolivia contain no Classic Tiahuanaco material. It is possible that future work will reveal more sites.¹

The Decadent Tiahuanaco ware is found in pure and derived forms throughout much of Bolivia. Some of the sites around the lake are the Islands of Titicaca, Coati, and Cumana, the Peninsulas of Huata and Copacabana, Tciripa, Chililaya, Pucarani, Pelechuco, Charasani, and Sillustani. Around La Paz are several sites, such as Llogheta, Hanco-Hanco, Poto-Poto. The Cochabamba region, Mojos, and northeast Bolivia also furnish ware of Decadent Tiahuanaco style. On the Island of Titicaca the Decadent Tiahuanaco style was found in a site which contained neither Inca nor Early Tiahuanaco styles. Likewise, at Charasani certain cists contained Decadent Tiahuanaco ware mixed with a plain ware, but no Inca ware. Other cists contained a plain ware with neither Decadent Tiahuanaco nor Inca. In other words, the Decadent Tiahuanaco is fairly well isolated as a distinct style in sites other than Tiahuanaco itself, where it is a continuation of Classic. The Cochabamba style, while containing Decadent Tiahuanaco elements, has a freshness of treatment, and a variety of design style, which suggests a secondary center or other influences. The Mojos and Northeast

¹In 1934 Classic ceramics have been seen at Tciripa and on the Island of Pariti.

Bolivia style, as described by Nordenskiöld¹ and Posnansky² is a derived rather than a Decadent Tiahuanaco style, and, while the kero-shaped goblet and the small, flaring-sided bowl (Tiahuanaco Shapes A and E) are found, a great many new shapes are incorporated, including such non-Tiahuanaco forms as solid and hollow tripod leg bowls. Indeed the Cochabamba style may turn out to be a link between Tiahuanaco and Mojos, with influences from both sides. The possibility of subdividing the Decadent Tiahuanaco into phases was previously mentioned. The distributional evidence and the differences presented by Tiahuanaco-like materials from Bolivia give still further bases for future subdivisions.

Unfortunately, the distribution of stone sculpture is very poorly known. The style Group I has an interesting Andean distribution which will be mentioned in the next section. A well modeled head with snake headband in the Berlin Museum für Völkerkunde came from Puno, Peru, and is probably of Group I style. Group II, the Classic monolithic statue, has only been found at the Tiahuanaco site. Bandelier found crude carved uprights on the Peninsula of Huata, and a boulder-stone head on the Island of Coati. From his description I judge these carvings correspond to the crude simplicity of Group III.³ The slabs found by Squier at Hatuncolla correspond in part to the geometric designs of Group IV. It is interesting to note that he reports a belief that these were used in an Inca structure.⁴ Schmidt⁵ illustrated stone heads from Ancoraimes, Titicachi, and Sampaya.

In spite of the limitation of knowledge of these distributions, it is interesting to note that the Classic style of building, stone sculpture, and ceramic shapes and designs are concentrated at the actual Tiahuanaco site.

In Bolivia, in the highlands, both Inca and Chullpa sites are quite distinct, both from each other and from Tiahuanaco. The term "Chullpa" has been loosely applied to all plain, unidentified pottery. It has already been shown that the ware called "Chullpa" by Bandelier from the Island of Titicaca, can be divided into that associated with Early Tiahuanaco and that without association. While much of the "Chullpa" ware may be post-Inca, there is no logical reason why some of it could not be much older. The ware found by Bandelier around Illimani, in such sites as Chichillani, Kokani, etc., is quite distinctive.

¹Nordenskiöld, 1924: 1917, 17-18, etc.

²Posnansky, 1922, 195.

³The Argentine Mission to Bolivia in 1933 found two statues at Mocachi, Copacabana, one of early style (Group I) seated figures and another almost identical to the small bearded statue of Pit VII (No. 24), with beard, spread hands, and serpent figure on the sides.

⁴Squier, 385-386.

⁵Schmidt, 453, Figs. 1, 2, 3.

The commonest shape is a shallow open bowl with a constricted flat base and diverging straight sides with plain rims. A duck-shaped vessel, a large olla, and a globular, high collar bowl with two side handles and a truncated base (like an imitation aryballoid) are other typical forms. Bowls are either plain or simply decorated with black line design. The decorated areas are commonly on the inside of the open bowls and consist of simple elements repeated several times. This ware is much more closely related to Inca than to Tiahuanaco types and probably is the creation of local Indians under Inca political control. Still it might possibly be the incipient Inca style. Future study will reveal the Chullpa divisions and their chronological relations.

The distribution of Tiahuanaco culture and influence throughout the Andean Area is a complex problem, restricted on all sides by lack of definite information. Means¹ gives a good summary of the present status of the problem, and Uhle, Tello, and Kroeber have contributed much detailed information. The purpose of this section is to sum up the problem as seen from Tiahuanaco itself. A detailed and thorough study of Tiahuanaco distributions is outside the scope of this paper.

At Tiahuanaco the archaeological evidence consists of building techniques, stone sculpture, ceramics (with their shapes, designs, and colors), textiles (by indirect evidence), metal working, and small artifacts. All of these sub-sections have not as yet been thoroughly integrated, but all are included in the general term "Tiahuanaco style." Tiahuanaco style is distinct, particularly when contrasted with the coastal styles of Nazca, Lima, and Chimú, and the late style of the Inca. The distribution of the Tiahuanaco style can be traced, regardless of the medium of expression. However, within the style classification, stone working, including building and sculpturing, and perhaps metal working has, in general, highland distributions, while ceramics and textiles have mostly coast affiliations. This division can be partly explained by the distribution and preservation of materials—stone is more available in the highlands, pottery and textiles are preserved better on the coast.

Information is particularly lacking on the distribution of Tiahuanaco building technique. As Means² has stated, the northern wall of Sacsahuaman, and some walls of Ollantaytambo, near Cuzco, are probably pre-Inca and of Tiahuanaco type. The pyramid at Vilcashuamán is likewise probably related.³ Tello⁴ describes terraced, truncated

¹Means, 1931, Chapter IV.

²Means, 1931, 137.

³Means, 1931, 109.

⁴Tello, 1928, 272.

pyramids in the Huaraz region of northern Peru, and also sacred corrals of which he writes:—

. . . they are formed of great stones, planted vertically and arranged in rows in the same style as the enclosure of Kalasasaya in Tiahuanaco.¹

If building technique were analyzed into such elements as stepped pyramids, sunken courts, megalithic upright enclosures, subterranean rooms, jointed blocks, association of statues with buildings, carved stones used in building, etc., a great many parallels could be drawn between the Chavín-Huaraz section of northern Peru and Tiahuanaco. Furthermore, some of the adobe structures on the coast may eventually be associated with Tiahuanaco style, and Means² says that the Tiahuanaco II period modified clay-ball architecture of the Coast into various size bricks.

Stone sculpture was highly developed both in the northern Andean highlands, around Chavín and Huaraz, and in the southern highlands at Tiahuanaco. Numerous resemblances between the two regions have long been noted. The work of Julio C. Tello in the northern section has furnished material for even more detailed studies. A common type of seated male and female statue found in Aija, Huaraz is described by Tello.³ The fairly realistic heads with rounded cheeks, projected chins, modeled lips, oval or round eyes, crescent ears, simple headbands with decoration, and the designated hair down the back, all resemble the statues of Group I (Style 5) at Tiahuanaco. The Huaraz group is more ornate, with decorated shields, representation of textile patterns, trophy heads, etc., and is, as a whole, more formalized than the Tiahuanaco correspondents.

Sculptured puma heads with block attachments for insertion in walls are also found in both regions. Concerning the distribution of these Tello writes:—

Heads of cats . . . are found in abundance in nearly all the North Andean ruins; and in Tiawanako, Cuzco, Huanaco Viego and other archaeological centers of the highlands.⁴

Of all of these the Tiahuanaco forms are the simplest, the Chavín the most ornate.

Door lintels with relief designs are common in the Huaraz region. As described by Tello⁵ the design is generally composed of a seated human figure with a cat on each side. The cats have front-view faces

¹Tello, 1928, 279.

²Means, 1917, 328.

³Tello, 1923, 237-241; and 1928, 279-281.

⁴Tello, 1923, 257.

⁵Tello, 1923, 231.

with loop ears and profile bodies with curled tails. At Tiahuanaco the two cats in relief on the base of the small statue found in Pit VII are almost identical with the northern type, having front-view faces with loop ears and profile bodies with curled tails. Other squared stones with relief carving of profile pumas at Tiahuanaco might well have served as lintels.

The elaborately carved Chavín obelisks and monoliths are described in detail by Tello.¹ Markham² made a comparison between the Tiahuanaco and Chavín monoliths and the idea that both types are elaborations of a basic, widespread culture has been confirmed many times since. As Means³ expresses the relationship, both sets of sculpturing are "derived from the same fundamental concept." The similarity lies in the style of cutting and treatment rather than in design details. The problem then arises as to whether Chavín is, historically speaking, influenced by Tiahuanaco culture or whether the reverse is true. Tello thinks that the Chavín culture is more basic. Means believes that the Chavín style is more mature, conventionalized rather than realistic, and composed of elements which could only be assembled by a combination of traits from Tiahuanaco culture with those from the coast cultures of Chimu and Nazca. The time required for such a spread accounts for the greater maturity of style at Chavín, as contrasted with the Tiahuanaco prototype.⁴

Not only in the monoliths, but also in the other sculpturing styles mentioned above, the Chavín forms are more elaborate than the Tiahuanaco. On purely stylistic grounds Means' analysis seems sound. His theory also accounts for the notable gap between the two regions, namely in the central highlands around Cuzco. Furthermore, the spread of Tiahuanaco culture is well established by the ceramics and textiles of the coast, while Chavín style, although it has influenced some of the northern coast, has certainly not had the same wide distribution. Unfortunately, until more work is done to establish direct or implied stratification of materials, and until more is known about distributions, the stylistic analysis must stand on its own merits.

Ceramics and textiles furnish little evidence of Tiahuanaco influence in the highland regions. A vessel in the Berlin museum,⁵ said to come from Cuzco, is in the Tiahuanaco style. Means⁶ also states that Tello

¹Tello, 1923.

²Markham, 1910, 389.

³Means, 1931, 138.

⁴Means, 1931, 143-144.

⁵Cf. Means 1931, 137.

⁶Means, 1931, 145.

found painted cloth with Tiahuanaco influence in Huancabamba, in northern Peru. On the whole, however, the coast is a much more fertile field for the tracing of Tiahuanaco style in ceramics and textiles.

The distribution of Tiahuanaco style and the Decadent or derived Tiahuanaco style (called Epigonal) on the Peruvian coast can best be summarized by Kroeber's¹ statement:—

Tiahuanaco and Tiahuanacoid (Epigonal) era. Probably to be included are: Tiahuanaco (at that site); Chullpa ware of the Titicaca region; sporadic occurrences from the Nazca area; Ica Epigonal; Pachacamac Tiahuanaco and Epigonal; Proto-Lima from Nievería-Cajamarquilla; Middle Ancon I; and Epigonal ware at Chancay and Supe; part or all of the site A ware at Moche.

Tiahuanaco style has had the strongest influence at Pachacamac and the Central Coast sites, where it is the earliest culture found (with the possible exceptions of the shell mound material from Ancon and Puerto de Supe). Uhle, in his work at Pachacamac² established the stratigraphic position of the Tiahuanaco style and also divided the material into a Tiahuanaco and derived, or Epigonal style. Unfortunately, both styles were found in the same graves. This division of the Tiahuanaco style, always in grave association, has been found at most of the sites of the Central Coast (such as Supe, Ancon, Nievería), at Moche in the Trujillo region, and as far south as Nazca. Olson in his field notes of the Myron I. Granger Peruvian expedition of the Museum reports the finding of a "pure" Tiahuanaco style in the valley of Nazca. The Tiahuanaco style is not found in abundance and never isolated from the Epigonal. The Epigonal style is, on the contrary, well represented in the collections. In its northern distribution it divides (or incorporates) into a red-white-black geometric, a pressed relief ware, and a tripod, cursive style; while in the southern distribution it includes a red-white-black textile pattern ware. North of the Trujillo region, according to Kroeber³ "indirect Tiahuanacoid and Central Peruvian influence was carried to the northern-most area of Piura by Late Chimú."

The Tiahuanaco style textiles have the same distribution and the same dual division into pure and Epigonal as the pottery. To quote O'Neale and Kroeber:⁴—

. . . Tiahuanacoid Chimú and Early (Middle) Lima can be equated roughly with Epigonal Nazca-Ica in time; and like it they show a preponderance of tapestries, the decay of embroidery, a persistence of knitting, and flat braid.

The Tiahuanaco style ware on the coast is well finished, with five or six color designs. The colors are black, white, yellow, gray-on-red as in

¹Kroeber, 1925a, 232.

²Uhle, 1903, Chapter X.

³Kroeber, 1925a, 229.

⁴1930, 35.

the Classic Tiahuanaco highland style. Condor, puma, and human designs are used. Innumerable design details are exact parallels of the highland prototype. In the textiles the designs are even closer to those found on the Tiahuanaco highland stone carving. Textiles such as those illustrated by Uhle¹ and Reiss and Stübel² have designs closely similar to the running figures on the Gateway of the Sun. On the coast textiles the filling of squares with figures is also like the Gateway of the Sun treatment. The figure hands have the Viracocha-like three fingers and thumb. Many other parallel details could be shown. The cloth utilizes tans, browns, red, orange, and some blue. All these resemblances allowed Uhle³ to refer to this material as definitely derived from the great Tiahuanaco, including recognizable designs, although already decadent. However, particularly in reference to the ceramics, Uhle himself was not quite convinced of the absolute identifications of the coast style with highland Tiahuanaco. After listing a number of differences between the two regions he writes:—

All these details taken together help to prove that, in addition to the district of Lake Titicaca, there must have been another important locality to which this style was peculiar. The specimens from Pachacamac seem to come mainly from the latter, as they were not produced at Pachacamac and only a few of them might possibly have been brought from the shores of the Titicaca.⁴

Kroeber too cautions the hasty identification of coast style and highland Tiahuanaco:—

. . . it is well to remember that in spite of its resemblances to the non-Inca ware from the Titicaca region, it differs from this. It has for instance, forms apparently never reported from the Titicaca area—the double spout, bird and spout, jar with tapering face spout—besides numerous differences in designs.⁵

From the point of view of highland Tiahuanaco the divergence of the coast ceramics is even more marked. None of the Classic Tiahuanaco shapes are found on the coast except straight-sided varieties of the kero-shaped goblet and the flat-bottomed, shallow open bowl, varieties furthermore, which do not occur at Tiahuanaco itself where both shapes have flaring sides. The curled tail puma, the Classic crowned condor, the typical form of the step design, the human warrior figure, and other typical Classic designs do not occur on coast pottery. Unfortunately, textiles are not preserved at Tiahuanaco. It has been already suggested, however, that the design work on the monolithic statues and perhaps even on the Gateway of the Sun are derivations of textile designs.

¹Uhle, 1903, Chapter X and plates.

²Vol. II, Pl. 49.

³Uhle, 1912, 323.

⁴Uhle, 1903, 22.

⁵Kroeber, 1926a, 273.

Furthermore, it has been shown that a general division can be made between the stone carving designs (including by implication the textiles) and ceramic designs. Since the coast textiles show very close Tiahuanaco affinities, it is possible to suggest that the Tiahuanaco style was largely carried to the coast through the medium of textiles, the designs of which were utilized for decorative elements on the existing coastal pottery shapes. That textile designs were applied to ceramics is clearly demonstrated by the Kroeber and Strong¹ red-white-black textile pattern ware at Ica. As an example of such a transfer I cite the following comparison. The Viracocha figure of the Gateway of the Sun is found on a textile from Pachacamac.² The Viracocha figure does not occur as a typical pottery design at Tiahuanaco. However, several large U-shaped bowls from Pacheco on the coast of Peru have this same figure,³ and simplifications of this figure are typical decorations in the Epigonal period. Other illustrations could be given, but at this time I merely wish to point out this possible explanation of some of the ceramic differences between Tiahuanaco highland and coastal style, without suggesting that the explanation is the final or exclusive one.

The Epigonal style of the coast is generally inferior to the coast Tiahuanaco. Fewer colors are used, the surface is soft and has little polish, the designs become stiff, and tend towards the geometric and curvilinear. Design subject becomes broken into elements, although the human face and front-view figure with projecting trident feathers are typical. At Supe, Kroeber⁴ lists the typical shapes as goblets, double spouts, low-plate bowls, skull, and cat-head jars. Local styles, such as the pressed relief decorated ware of the northern coast, and the red-white-black textile pattern of the southern coast, originate in various regions. In textiles, too, geometric designs and stylized heads are found in elaborate tapestries. The colors are more or less the same.

Epigonal and Tiahuanaco style are stratigraphically contemporaneous on the coast. The Tiahuanaco has been considered the older on stylistic grounds alone. That this might not be the true picture was suggested by Kroeber and Strong at Ica⁵ who considered the Middle Ica I style, chronologically determined as later than Epigonal, to present more similarities to Tiahuanaco style. They suggest that at Ica:—

. . . Epigonal came first of the three, and that Tiahuanaco and Middle Ica represented local developments—perhaps synchronous ones—out of the wide-spread and

¹Kroeber and Strong, 1924, 113–115.

²See Uhle, 1903, Pl. 4.

³See Yacovleff, 77.

⁴Kroeber, 1925b, 241.

⁵Kroeber and Strong, 1924, 118 and 120.

simple Epigonal style in an era of upward swing of culture. In this case Ica Epigonal would still be truly epigonal; but to Proto-Nazca and other pre-Tiahuanaco cultures instead of to Tiahuanaco.¹

However, the textile sequence for the same region established by O'Neale and Kroeber² shows that Nazca-Ica Epigonal ties up with general Epigonal, while Middle Ica is a more formalized trend towards Late Ica.

Epigonal, while probably still influenced by highland Tiahuanaco as Uhle suggests,³ represents a local coastal decadence as well. There are many differences between Decadent Tiahuanaco of the highlands and the Epigonal. It is quite possible that some of the new forms which appear in the Decadent Tiahuanaco represent a back-wash from the coast, as Kroeber has suggested in correspondence. In general analysis the deterioration follows more or less parallel lines in both highland and coast cultures. There is the same reduction in technical skill, number of colors, polish of ware. Realistic figures are reduced to parts. Geometric tendencies prevail in design application. However, more detailed comparisons are necessary before the inter-relationships can be determined.

In Chile two Tiahuanaco-influenced styles are also found. The northern coast and the interior is more directly influenced by highland Tiahuanaco. The earliest pottery found is in the Tiahuanaco style, although this chronology is not based on any stratigraphy. The pottery is decorated largely with geometrical designs, according to Latham,⁴ with none of the anthropomorphic and animal figures of the Gateway of the Sun. These latter are found on cloth and wood carving, however. Latham⁵ considers the Tiahuanaco influence as derived from the Decadent phase. The Epigonal in the southern part, as described by Uhle⁶ is characterized by the suppression of original figurative elements and the reduction of these to geometric elements, among which the step design dominates. The step or row of triangles as a design is characteristic of Atacameño style, and Uhle⁷ thinks that it has influenced the later Tiahuanaco style. At least the most typical shape of the Atacameño painted ware—a high collar, bulging-sided, two-side handled jug, which narrows to a flat base—as well as its step pattern decoration is one of the new shapes found in the Decadent Tiahuanaco highland period. Future

¹Kroeber and Strong, 1924, 118.

²1930, 42.

³Uhle, 1912, 323.

⁴Latham, 1928, 67.

⁵Latham, 1928, 69.

⁶Uhle, 1919, 25.

⁷Uhle, 1919, 24.

work may reveal some connection between the Epigonal of the Peruvian and Chilean coasts. Uhle¹ found a Tiahuanaco and a Decadent style at Arequipa, Peru, which suggests that the highland influence spread all along the coast.

In Ecuador, to summarize Means², Tiahuanaco style can be seen in the carving on the edges of the stone seats and carved slabs of Manabi, and on a puma-urn found at Caragues by Saville. Their carving is like the style of Hatuncolla, as described by Squier, or Group IV of the Tiahuanaco stone sculpture classification. On the coast of Ecuador a ceramic period (perhaps the Caras) which grades from archaic to Tiahuanaco II is recognized. This sequence is repeated in the highland. Gold objects from Patecte, Sigsig, and Chordeleg (after Saville) show traces of Tiahuanaco II style.

Uhle³ arranged the Argentine archaeology into four periods. The first is a primitive or archaic period. The second is called "Draconian" and is characterized by an engraved and painted ware. The incising on black ware is much like Tiahuanaco in style and details. The third period is designated "Pre-Inca Calchaqui" and has painted wares like Decadent Tiahuanaco. Wooden tablets compare with stone tablets of Tiahuanaco. The final period is Incaic. A more detailed study will reveal many parallels between Tiahuanaco and Argentine archaeology.

The Tiahuanaco site seems to me to be the center, perhaps chiefly a ceremonial center, of a higher culture which developed out of the general Andean culture. At the Tiahuanaco site certain techniques of building, stone carving, and pottery manufacture were developed locally. Some of the techniques spread, but, more definitely, the Tiahuanaco style spread throughout much of Bolivia, Peru, Chile, and Argentina. On this point Kroeber writes:—

In short, except perhaps in its presumptive immediate homeland on the Bolivian plateau, the Tiahuanaco style nowhere appears alone but is regularly associated with the supposedly derivative Epigonal or with local styles or with both. On the other hand, it is the one style other than the Inca which is found over almost all Peru.⁴ Tiahuanaco should be considered as one manifestation of a general highland culture. The Chavín style might be considered another manifestation of that highland culture, perhaps counter-influenced by Tiahuanaco, which may have reached its specialized development at an earlier stage. But Chavín cannot be accounted for completely as an offshoot of Tiahuanaco. Kroeber, in reference to the middle periods of north Peru, writes:—

¹Uhle, 1912, 324.

²Means, 1931, 164-168.

³Uhle, 1910, 518.

⁴Kroeber, 1925a, 212.

There can be little doubt that the bulk of the stylistic elements is of highland rather than coastal origin, but highland from Ecuador to Bolivia rather than of one Peruvian district; the Classic Tiahuanaco manner is represented only in a small minority of pieces.

Styles are often localized in the Andean region, but the problems of Peru cannot be solved from one locality. The earliest periods on the coast used wool in textiles, which means that highland coastal contacts were already established, because the llamas live only in the highlands. Studies must therefore allow for considerable interplay of cultures. One hopes that the days of treasure hunting and wild subjective speculation on history have passed.

¹Kroeber, 1926b, 111.

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