

INCA CULTURE AT THE TIME OF THE SPANISH CONQUEST

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INTRODUCTION

This section of the Handbook deals with the culture of the Andean region between Ecuador and the northern border of *Aymara* territory as it was observed by the Spanish conquerors in the 16th century and recorded in surviving documents. This area includes the whole of the desert Coast of Perú and the broken valleys of the Peruvian Highlands, a region which was the home of many different tribes, nations, languages, and cultures before it was superficially unified by its incorporation into the *Inca*¹ Empire (map 1, No. 4). It would be obviously impossible to include a complete account of each tribe in the Handbook, even if the necessary information existed. With minor exceptions, however, the whole of the literature now available which deals with this part of the Andean area refers to *Inca* culture in the region around Cuzco, so that it is only for the *Inca* that a complete cultural description is possible. The account that follows, therefore, is specifically an ethnographical description of the *Inca* culture, although differences in other parts of the area are indicated when the limitations of the source material permit.

The area covered by this section lies only a small distance from the Equator, but cold ocean currents make the dry coast almost temperate, and most of the mountain valleys are at an elevation of 7,000 to 12,000 feet (2,000 to 4,000 m.) above sea level, where the elevation counteracts the effects of the low latitude. Throughout the area, the climate varies more with elevation than with distance from the Equator, so that hot low valleys are only a short journey from, cold plateau country where little can be grown except potatoes. As a result, it costs the inhabitants relatively little effort to vary their diet and dress with the products of another climate, and this incentive is as much of an encouragement to local travel as the broken mountain and desert barriers are a hindrance. Rainfall is light in the mountains and almost absent

¹*Inca* is used to denote the *Quechua*-speaking peoples around Cuzco, and, more generally, the Empire which they ruled. It seems better to avoid the use of "Inca" as a title for the Emperor or to refer specifically to the royal family, although such a practice is common and historically correct.

on the Coast, so that irrigation is generally necessary for successful cultivation. Before the introduction of the eucalyptus in the 19th century, trees were very scarce, and usually so gnarled and stunted as to be of little use except for firewood. Salt, copper, gold, and silver are common, and pottery clay and building stone are abundant.

POPULATION

The modern population of the whole Andean area, from the north of Ecuador to northern Argentina and Chile, is about 14 million. It is not dense in relation to the total area covered, but extremely so if only the sections useful for agriculture and grazing are considered, for much of it is too rocky, too steep, or too dry to be of much use to its inhabitants. The ancient population was almost certainly smaller than the modern, for there has been considerable urban growth and local industrialization in recent years, but it is very difficult to make an accurate estimate of the difference. The *Inca* kept accurate population statistics (Cieza, 1880, 2, ch. 19), but the figures were nearly all lost at the time of the Spanish Conquest, and the first Spanish figures available are derived from the census taken by Viceroy Toledo about 1571, when a total of 311,257 taxpayers, or 1½ million persons, was registered (Morales, 1866). The total of Toledo's census is, however, of little use in an attempt to estimate *Inca* population at about 1525, for in the 40 intervening years the Indian population was nearly destroyed by civil wars, epidemics, lawlessness, extortion, and cultural shock. These factors affected the provinces differently, and the amount of population loss varied correspondingly. The following sample figures will illustrate the variation:

TABLE 1.-*Estimated Inca population loss in the provinces of the Andean area from 1525 to 1671*

Province	1525	1571	Ratio
Rimac.....	160,006	9,000	16:1
Chincha.....	50,000	2,070	25:1
Yauyos.....	50,000	35,000	3:2
Huancas.....	135,000	36,000	3:1
Sores.....	20,000	15,159	4:3
Total.....	405,000	97,229	4:1

¹ Rimac: Cobo, 1890-95, 1: 7; Morales, 1866, p. 42. Chincha: Castro and Ortega Morejón, 1936, p. 240; Morales, 1886, p. 43. Yauyos: RGI, 1881-97, 1:62. Huancas: RGI, 1881-97, 1:31-32; Morales, 1866; Sores: RGI, 1881-97, 1:170; Morales, 1866, p. 44. The figures for Rimac, Chincha, and Yauyos are based on the stated number of honokoraka, or oh des of 10,000 taxpayers, maintained in each province by the *Inca* government. Totals of taxpayers are converted into total population at the rate of 1:6, by analogy with the 1571 figures for Sores and Rucanas (RG1, 1881-97, 1:170, 181, 199). Figures in round numbers and ratios are approximate. (See also Señores, 1904, p. 204.)

This table includes all the reliable estimates of *Inca* population that have been preserved for our area, and, as the tribes listed were selected by the historical accident of this preservation, the group can be fairly called a random sample. It is also a representative group, for it includes two of the provinces known to have suffered worst between

1525 and 1571 (Chincha and Rimac) and two that escaped relatively unharmed (Yauyos and Soras). Consequently, it is not unreasonable to apply the ratio of totals (4 : 1) to the population reported in 1571, and estimate the total population of the Andean area in 1525 at about 6 million.

TRIBES AND PROVINCES

At the time of the Inca conquest, the whole Andean area was divided into an almost unbelievable number of small political units, for many of which we do not have even the names. The linguistic diversity was nearly as bad, and the *Inca* found it necessary to impose their own language, usually called *Quechua*, as a common medium for government and inter-communication in the whole extent of their dominions. The Spaniards found *Quechua* such a convenient tool in their dealings with the natives that they never bothered to learn most of the local languages, dozens of which have perished without leaving a trace. This political and linguistic situation makes the composition of any list of tribes or their representation on a map extremely difficult. The *Inca* simplified the map of the Andean area rather arbitrarily, however, by dividing their Empire into provinces based on the old tribal and linguistic units, but with small tribes combined or added to neighboring large ones. Although our knowledge of the *Inca* provincial divisions is also incomplete, the provinces are still the most convenient units by which to describe the area, and the named areas on the accompanying map (map 3) correspond as nearly as possible to the *Inca* provinces.

All additional information available on synonymy, small groups included with the provincial boundaries, and bibliographical references of some ethnological or historical importance is presented in the following list of tribes. The list deals first with the Highlands, from north to south, and then with the Coast valleys in the same order. The divisions of the Coast used in the list and on the map are individual valleys. In most known cases, each valley was administered by the Inca as a separate province, but some of the small ones may have been combined.

In spelling, 16th-century Spanish followed no fixed rules, and even the simple conventions usually preferred by the printers of the day were seldom followed by scribes in America. Between this and the shortcomings of the 16th-century Spanish soldier as a phonetician, it is often extremely difficult to recognize native names of known pronunciation, and impossible to restore exactly those of doubtful pronunciation. The Spaniards frequently wrote voiced stops for unvoiced stops: *b* for *p* and *g* for *k*, as in "bamba" (from *Quechua* *PAMPA*) and *Ynga* (from *Quechua* "IÑKA"). *Y* was usually written instead of *i* at the beginning of a word. *X* and *ç*, both sibilant sounds which Spanish has since lost, were written for *Quechua* "s";

the first has become Spanish *j*, the second, Spanish *z* in modern spellings. *L* was often written for *Quechua* "r"; *gu* and *hu* before vowels usually stand for *Quechua* "w." Hence forms like Caxamalca and Cajamarca from Q'ASA-MARKA, Guamanga from WAMAÑQA. The worst confusion is in the spelling of Spanish *u* and *hu* and *Quechua* "o" and "w." *B* and *v* were used almost interchangeably for *u*; so, in Spanish words, the forms "vuo (hubo!)" and "cibdad (ciudad)" are not uncommon. *Quechua* WIL'KA-PAMPA becomes Vilcabamba, or even Bilcabamba. Initial *h* is added, or omitted capriciously ("horden" for "orden").

Quechua names are written phonemically in large and small capital letters in the following list and through the text where it is possible to reconstruct the pronunciation from the Hispanicized form used in the chronicles. Where the pronunciation has not been determined, the commonest Hispanicized form has been used and marked with an asterisk. The phonemic alphabet used for *Quechua* is modified slightly from current phonetic usage to avoid the use of symbols which cannot be printed in the Andean countries (Rowe and Escobar, 1943). To approximate the 16th-century pronunciation, read all letters as in English, with the following exceptions: *i* is a sound half-way between Spanish *i* and Spanish *e*; *o* is halfway between Spanish *o* and Spanish *u*. *C* is pronounced like *ch* in "church"; *l* is pronounced with the whole blade of the tongue touching the palate instead of just the tip; *n* represents the sound of *ng* in "sing"; *q* is back or velar *k*; *r* is like the Spanish *r* in "para." *Y* and *w* after consonants indicate palatalization and labialization, respectively; *h* indicates aspiration of the preceding consonant, and an apostrophe (except after *l*) indicates glottalization.

The forms of provincial names used on the map (map 3) and given first in the following list are the most common Spanish forms, except that I have written "pampa" instead of "bamba" and "tampo" instead of "tambo" and the singular form is used. Plural forms usually occur in the documents, being formed in Spanish with -s or -es. *Vilcas* is an exception in that the s is part of the native name and the word is singular as it stands.

Peruvian Highland divisions:

- (1) *Calva* (*Calua*). Province and tribe. (Cieza, 1554, bk. I, ch. 57.)
- (2.) *Ayavaca* (*Ayabaca*, *Ayauaca*); probably from *Quechua* AYAWAX'A, "shrine of the corpse"). Province and tribe. (Cieza, 1554, bk. 1, ch. 57.)
- (3.) Huancapampa (Huancabamba, Guancabamba; probably from *Quechua* WAÑKA-PAMPA, "valley of the field-guardian"). Its provincial capital was one of the most important *Inca* towns in northern Perú. The natives had their own language, but used *Quechua* also in 1550. They told Cieza that they had formerly eaten human flesh and fought continually among themselves (Cieza, 1554, bk. 1, ch. 57).
- (4.) *Huambo* (Guambo; probably from *Quechua* WAMPO, "boat"). The prov-

inca is also called *Cutervos* (*Cuteruos*, *Cuterbos*), and it is not clear whether the two names are synonymous, or whether the province included two different tribes. (Calancha, 1638, bk. 2, ch. 8.)

(5) Cajamarca (Caxamarca, Caxamalca, Cassamarca; probably from **Quechua Q'ASA-MARKA**, "town in a ravine"). Its provincial capital was a very important town, with elaborate ceremonial buildings; near it were hot baths. Before the Inca conquest, it was the capital of a powerful state allied to the **Chimu** Kingdom. (Cieza, 1554, bk. 1 ch. 77; Sarmiento, 1906, ohs. 38, 44.)

(6) **Chachapoya** (*Chacha*). Province and tribe. The province included also tribes called *Huanca* (Guanca), *Chillao*, and Casca-yunga. The **Chachapoya** were famous as vigorous warriors, and had unusually light skin. (Cieza, 1554, bk 1, ch. 78; Garcilaso, 1723, pt. 1, bk. 8, ohs. 1-3; Calancha, 1638, bk. 2, ch. 8; RGI, 4: ii-xix.)

(7) Moyopampo (Moyobamba, Muyupampa; probably from **Quechua MOYO-PAMPA**, "round valley"). An Inca province in a low extension of the Andes. (Garcilaso, 1723, pt. 1, bk. 8, oh. 2.)

(8) **Huamachuco**, (*Guamachuco*, *Huamachucu*). Inca province and road junction. The Indians spoke the same language as the people of Cajamarca. (Cieza, 1554, bk. 1, ch. 81; Calancha, 1638, bk. 2, chs. 8, 32; Garoilas, 1723, pt. 1, bk. 5, oh. 14.)

(9) **Huayla** (Guayla, *Huaylla*; probably from **Quechua WAYLYA**, "meadow"). The natives had a reputation for homosexuality. (Cieza, 1554, bk. 1, ch. 83; Garcilaso, 1723, pt. 1, bk. 5, ch. 11.)

(10) **Conchucu** (Conchucu). A sacred grove at Tauca in this province is mentioned by Calancha (1638, bk. 2, ch. 32; Cieza, 1554, bk. 1, ch. 82).

(II) Huacrachuco. Garcilaso is the only chronicler who mentions this part of the east bank of the **Marañón** River, so far as I am aware (Garcilaso, pt. 1, bk. 8, ch. 1). Huacrachuco (or Huacrachucu) is his name for this region, and it survives as the name of a modern town. (See also Markham, 1871, p. 315, and Tello, 1942, p. 651.)

(12) **Pinco**. This tribe is mentioned by Cieza (1554, bk. 1, ch. 82) approximately in the location marked.

(13) **Huamallí** (Guamall). The province is mentioned by Calancha (1638, bk. 2, ch. 32, and bk. 4, ch. 18). A modern Peruvian province still bears the same name.

(14) **Huánuco** (*Guánuco*, Hudnucu). The Inca town and provincial capital of this name stood on the left bank of the **Marañón** River, not on the Huallaga River where the modern city stands. Its extensive ruins are still called Huánuco Viejo. (Cieza, 1554, bk. 1, ch. 80.)

(15) **Ocro**. The *Ocro* and *Lampa* inhabited this area. (Calancha, 1638 bk. 2, ch. 8.)

(16) **Cajatambo** (Caxatambo; probably from Quechua **Q'ASATAMPO**, "lodge in the ravine"). This province may have included the *Ocro* and *Lampa* as well as the area indicated on the map. (Calancha, 1638, bk. 2, ch. 3.)

(17) Chinchaycocha (probably from Quechua **CINCAY-QOCA**, "lynx lake"). A province which included the Lake of Junfn. It is also called *Bombon*, *Pumpu*, and *Junín*. It was famous llama-breeding country, with a warlike population which stoutly defended its fortified islands in the lake against the Inca (Cieza, 1554, bk. 1, ch. 83). Huayna Capac had balsas brought from Tumbes to use in the lake. (Estete, 1918, p. 93.)

(18) **Tarma** (Tarama). Inca province. (Cieza, 1554, bk. 1, ch. 84.)

(19) **Atavillo**. (*Atauillo*, *Atabillo*). Tribe and province in the modern Province of **Canta**, Department of Lima. Francisco Pizarro is sometimes called "Marques de los Atavillos," although the title was never formally conferred on him. The *Atavillo* had their own language. (RGI, 1881-97, 1: 61.)

(20) *Yauyo*. The Inca province of Yauyos was divided into upper and lower moieties, and had about 10,000 taxpayers. The population included Yauyo, *Manco*, Larao, and Huaro (*Guaro*) of Huarochiri (Guarochiri Guarocheri), with a few colonists from Chocorro. At least one non-Quechua language was spoken in it, and it included the territory where *Cauki*, a language related to dynara, is said to be still spoken. (See *The Aymara*, pp. 501673.) Considerable information about the customs and religious beliefs of the Yauyo is given in RGI, 1881-97, 1: 61-78. (See also RGI, 1881-97, 1: 143; Avila, 1939; Arriaga, 1920; Romero, ed., 1919.)

(21) *Huanca* (*Guanca*; probably from Quechua *WARKA*, "field guardian"). The province *was* also called Jauja (*Xauxa, Sausa*) from the name of one of its sections and the provincial capital, *HATOÑ SAWSA*. It was divided into three sections (*SAYA*), upper and lower Huanca and Jauja, with a total population of about 25,000 taxpayers in Inca times. The population included Huanca, *Chongo*, and some colonists from Yauyo. Each section had its own language or dialect. They made small balsa rafts of four or five logs and, originally, built round houses. Several Huanca legends are given by Cieza. (RGI, 1881-97, 1: 79-95; Cieza, 1554, bk. 1, ch. 84; Romero, ed., 1923 a, 1923 b.)

(22) *Angará*. The *Angará* were a warlike people, and the Inca settled a large part of their province with colonists from Cajamarca, Chanca, *Huaro* from Huarochiri, and Quehuar from Cuzco. The *Angará* were divided into two sections called Astos and Chacas. (RGI, 1881-97, 1: 140-44, Cieza, 1554, bk. 1, ch. 85 [Aeos and Parcos]; Sarmiento, 1906, ch. 44.)

(23) *Choclococha*. The independent existence of a province of this name is doubtful, but I can find no authority for joining it to any of its neighbors. It was rechristened Castrovirreina in the 16th century. The Chanca believed that their ancestors had come from the lake for which it is named (Quechua, *Coqlyo-qoca*, "green-corn lake").

(24) *Chocoruo* (*Chocoruo, Chocorbo, Chucurpu*). The Inca province of this name included the *Chocorvo*, *Huacho* (*Guacho*), and *Huaytara*. The *Chocorvo* spoke their own language (RGI, 1881-97, 1: 61), and their traditions told of former conquests under a chief called *Asto Capac*. (Señores, 1904, p. 200.)

(25) *Vilcas* (*Villcas, Bilcas, Vilcashuaman, Vilcasguaman*). The Inca province was largely peopled by colonists, including *Anta* and other "big ears." The original inhabitants were called *Tanquihua*, and had their own language. Both Quechua and *Aymara* were in general use in the province. The capital, also called *Vilcas*, Tambo de Vilcas, or Vilcasguaman, was one of the largest Inca towns north of Cuzco, an important road junction, and reputed to be the center of the Empire. Huamanga (Guamanga, from *Quechua WAMAÑQA*; modern Ayacuoho) was founded at a place called Pocra (*Poqra*) in this province. (RGI, 1881-97, 1: 96-138, 145-168; Cieza, 1554, bk. 1, ch. 89; Garcilaso, 1723, pt. 1, bk. 5, ch. 24.)

(26) *Rucana* (*Lucana*; probably from *Quechua ROK'ANA*, "finger"). The province of Rucana was divided into three sections, upper and lower Rucana and *ANTA-MARKA* (Andamarcas). A number of local languages were spoken, and Quechua was used as a general language. The *Rucana* furnished litter bearers to the Emperor as their share of the labor service. (RGI, 1881-97, 1: 179-213.)

(27) *Sora*. This province was also divided into three sections: upper and lower *Sora* and *Chalco*. It had about 4,000 tribute payers in Inca times. The natives had their own language, but used both Quechua and Aymara also. (RGI, 1881-97, 1:169-177; Sarmiento, 1906, oh. 35.)

(28) *Chanca* (*Changa*). The Chanca province was also called Andahuayla (Andaguayla, Andauayla, Andabaila, Antahuaylla), from its capital. The Chanca believed that they had come originally from Choelococha on the other side of *Vilcas*. They embarked on a career of conquest about the same time that the

Inca did, and drove the original *Quechua* inhabitants out of Andahuaylas. At the end of Viracocha's reign, they nearly destroyed the *Inca* state. (Cieza, 1554, bk. 1, ch. 90; Sarmiento, 1906, oh. 26.)

(29) *Vilcapampa* (*Vilcabamba*; probably from Quechua **WIL'KA-PAMPA**, "valley of the narcotic berry"). A mountainous province northwest of Cuzco where the Inca dynasty took refuge after the Spanish Conquest and continued to keep up an independent state for nearly 40 years. (See this volume, pp. 343-345). Its capital was called Vitcos (Bitcos, Biticos, Pitcos). (See Cobo, 1890-95, bk. 12, ch. 12; *Calancha*, 1638, bk. 4, chs. 2-10; Bingham, 1912.)

(30) *Quechua* (*Quichua*, *Quichiu*). The *Quechua* lived around Abancay and Curahuasi in a region of semitropical climate. Their name (in *Quechua*, **QHICWA**) seems to have meant "warm valley [people]," and was probably applied to them by their Inca neighbors. About the beginning of the 15th century, the *Quechua* seem to have been one of the largest and most powerful tribes in their part of the Andes. Their territory included the province of **Chanca (Andahuayla)** on one side, and probably that of Cotapampa on the other, at a time when the *Inca* state was small and only just beginning to show strength. It was probably at this time that their name was applied to the language which the Inca later spread all over their Empire. Early in the 15th century, however, the *Chanca* attacked the *Quechua* from the west and drove them out of the province of *Andahuayla*. This defeat broke the *Quechua* power once and for all, and left the way open for the *Inca* to assume the leadership of the *Quechua*-speaking peoples. The *Inca* and *Quechua* seem to have had an alliance at the time of the first *Chanca* attack, which may have been one reason why the war between the Inca and Chanca culminated in an Inca victory in 1438. The *Quechua* were made "Incas by privilege" by Pachacuti. (Cieza, 1880, pt. 2, chs. 34, 37; Garcilaso, 1723, pt. 1, bk. 3, ch. 12; Poma, 1936, pp. 85, 337; Pachacuti, 1879, p. 318; Sarmiento, 1906, ch. 44.) *Quechua* first appears as the name of the *Inca* language in documents of 1560 (Santo Tomás, 1891, p. 1). The triple meaning of the word *Quechua* in the 16th century (a geographic region, a tribe, and a language) is a potential source of confusion which must be duly guarded against.

(31) *Yanahuara* (Yanaguara; probably from *Quechua* **YANAWARA**, "black breechclout"). The Yanaguara were "Incas by privilege." (Poma, 1936, pp. 85, 337. See also Garcilaso, 1723, pt. 1, bk. 3, ch. 10.)

(32) *Lare* (*Lari*). A tribe of "Incas by privilege" in the **Lares Valley**, north-east of Cuzco. (Poma, 1936, pp. 85, 337.)

(33) *Cusco* (Cuzco, Cozco; from Quechua **QOSQO**, no meaning). The area so marked on the map was probably neither a provincial nor a tribal unit. It is the area close to the capital where old tribal lines were so broken up by Pachacuti's resettlement program that it is not possible to distinguish the old groups. A number of tribal names are known for this area, but many of them may refer to the same tribe. The *Ayamarea* (Ayarmaca), *Huayllacan* (*Guayllacan*), *Hualla* (*Gualla*), *Inca* (Inga), *Quehuar* (*Quiguar*, *Queuar*), *Huaroc* (*Huaruc*, *Haroc*), and *Quispicanchi* probably all lived in and near the valley of **Cuzco**. The *Ania*, *Mayo*, *Tampo* (Tambo), *Sanco* (*Tanco*, *Canco*), *Quilliscachi*, and *Equeco* (*Equequo*) lived in and around the valley of Ants (also called *Zúrite*, *Jaqijahuana*, *Xaquixaquana*, *Sacsahuana*, etc.). *Mara*, *Poque*, and other tribes are also mentioned for this area. All these people seem to have spoken *Quechua*, and all were Inca, either by blood or by privilege. (Pachacuti, 1879, p. 318; Poma, 1936, pp. 84-85, 337, 347; Garcilaso, 1723, pt. 1, bk. 1, chs. 20, 23; Morales, 1866; Toledo, 1940; Sarmiento, 1906, chs. 13-35.)

(34) *Paucartambo* (*Paucartambo*, Paucartampu). Its existence as a separate province is doubtful, but I have found no grounds for attaching it to any of the neighboring units. It may have been inhabited by *Poque*. (Garcilaso, 1723, pt. 1,

(35) Cauina (Cauina, *Cabina, Caviña, Cauña, Cabiña*). A tribe in the Vilcanota Valley in the neighborhood of Quiquijana. They were "Inca by privilege" and believed in reincarnation. (Cieza, 1554, bk. 1, ch. 97; Sarmiento, 1906, ch. 23; Poma, 1936, pp. 85, 337, 347; Pachacuti, 1879, pp. 269, 279.)

(36) *Chilque* (*Chillque, Chilqui*). This area was a province under the colony, and may have had the same status in Inca times. It was the home of a number of small tribes in addition to the one for which it is named: *Masca, Aco, Papre* (*Papri, Pabre*), *Cuyo*, and probably others. Pacaritampo, where the Inca believed that their ancestors had emerged from the earth, was in this province, and the inhabitants spoke *Quechua*. They were "Inca by privilege." (Señores, 1904, p. 200; Poma, 1936, pp. 84, 85, 337; Pachacuti, 1879, p. 318.)

(37) Cotapampa (*Cotabamba*). A people named Cotanera are usually named with the *Cotapampa*, and may have lived in the same district. It is not certain what language the two tribes spoke; Garcilaso (1723, pt. 1, bk. 3, ch. 12) says they belonged to the Quechua nation, but the oota- element in their names looks like Aymara "qota," the equivalent of Quechua *Qoca*, "lake." (Calancha, 1638, bk. 2, ch. 8; Sarmiento, 1906, ch. 35.)

(38) Omasayo (Omasuyo, *Vmasuyu*). This tribe must be distinguished from the inhabitants of the Aymara Province of Omasuyo on the east shore of Lake Titicaca. The names are frequently indistinguishable in the chronicles. (Calancha, 1638, bk. 2, ch. 8; Garcilaso, 1723, pt. 1, bk. 3, ch. 11; Sarmiento, 1906, ch. 35.)

(39) *Aymará* (plural *Aymaraes, Aymarays*). One of the most exasperating questions in Andean historical geography is whether there is any connection between the tribe called *Aymará* and the *Aymara* language. Sir Clements Markham (1871, pp. 327-36) believed that the *Aymará* tribe spoke *Quechua*, and that their name was transferred to the Aymara language by the Jesuits of Juli late in the 16th century, because they failed to distinguish clearly between some *Aymara* colonists settled at Juli by the Inca and the local inhabitants. This theory is highly questionable, however, and there is no evidence that the *Aymará* tribe spoke *Quechua*. It is perfectly possible that they spoke an Aymara dialect in the 15th century. Unfortunately, none of the chroniclers describes the linguistic condition of this area, and the problem may never be definitely solved. (Calancha, 1638, bk. 2, ch. 8; bk. 3, ch. 37; Sarmiento, 1906, chs. 1, 35; Poma, 1936, p. 327; Pachacuti, 1879, p. 279; Garcilaso, 1723, pt. 1, bk. 3, ch. 10.)

(40) *Parinacocha* (Parihuancocha). This area includes the *Pomatambo* (*Pumapampu, Pomatambo*), and it is not certain whether they formed a separate province or not. The names are probably of Quechua derivation, from *PARIWANA-QOCA*, "flamingo lake," and *POMA-TAMBO*, "wild-cat lodge." (Garcilaso, 1723, pt. 1, bk. 3, oh. 9; Pachacuti, 1879, p. 279.)

(41) Contisuyo (*Condesuyo, Cuntisuyu, Condes*). This province included *Alca* (*Allca*), *Cotahuasi* (*Cotaguasi*), and *Aruni* (*Aroneas*). (Garcilaso, 1723, pt. 1, bk. 3, chs. 8-9; RGI, 1881-97, 2: 12-18.)

(42) *Chumpivilca* (*Chumbivilca*, Chumbivilca). The Chump *vilca* had their own language, and used Quechua and *Aymara* as general languages. They were famousdancers, and paid their labor tax by dancing for the court. (RG, 1881-97, 2: 21-36; Cobo, 1890-95, bk. 12, ch. 33.)

(43) Cavana (Cabana, Cauana). The Cavana must not be confused with the *Caviña*. Their province was often called Cavana Conde (i. e., Cavana of *Contisuyu*) to distinguish it from Cavana Colla (Cavana of Collasuyu), a settlement of Cavana colonists in the province of Collas, near modern Cavanillas. The Cauana Conde were included in a single province with the *Collagua* in Colonial times. They deformed their heads, and spoke a corrupt *Quechua*, but had several local languages of their own. (RG, 1881-97, 2: 38-49.)

(44) *Arequipa* (*Ariquepa, Ariquipay*). The usual derivations of its name are

completely fanciful. **ARI** is *Aymara*, and means "needle" or "peak" (i. e., Mount Misti); **QIPA** is a Quechua affix meaning "behind." The valley of Arequipa seems to have been nearly depopulated by a volcanic eruption when the *Inca* first entered it in the time of Pachacuti, and it was resettled with colonists from the Highland provinces, some of whom spoke *Quechua*, others *Aymara*. (Pachacuti, 1879, p. 279; Morúa, 1922-25, bk. 4, ch. 11.)

Coastal divisions. The best systematic description of the Coast valleys is given by Cieaa(1554, bk. 1, chs. 66-75). As very little de&aiced information is available for individual valleys, many of them are simply named in the following list:

(1) **Tumbez** (*Tumbes*, *Tumpiz*), the northernmost valley on the desert Coast.
(2) **Chira**. Its chief town was Sullana (Solana).

(3) **Piura**. (RGI, 1881-97, 2: 225-42.)

(4) **Olmos**. An oasis at the foot of the mountains.

(6) **Lambayeque**. A large multiple valley. It had a long dynasty of legendary local chiefs before it was conquered by the Chimu king about 1460. Its history, which is very important for chronology, is preserved by Cabello Balboa (ms. III, 17; and see Means, 1931, pp. 50-55). The language spoken was *Mochica* (Carrera, 1939).

(6) **Pacasmayo**. Another large valley which formed part of the *Chimu* Kingdom. Its customs are described in admirable detail by Calancha (1638, bk. 3, chs. f-4), and will be referred to below, pp. 000-000. The people spoke *Mochica*. The valley is also called Jequetepeque (Xequetepeque).

(7) **Chicama**. This valley is continuous with the valley of Chimu.

(8) **Chimu** (*Chimo*; also called Moche, Trujillo, or Santa Catalina). This was the home valley of the *Chimu* kings who built up a dominion reaching from Tumbes to Parmunca in the 15th century. Their capital was Chanchan, near modern Trujillo. They spoke Qingnam, a language probably related to Mochica. It survived in the valley until the 19th century (Squier, 1877, p. 169). (See *Calancha*, 1638, bk. 3, ch. 2; Sarmiento, 1906, ohs. 38, 46; Cieza, 1880, bk. 2, ch. 58.)

(9) **Virú**. Also called Guañape (Guanape, Huanapu).

(10) **Chao**. Also called Suo.

(11) **Chimbote**. Also called Santa (Saneta).

(12) **Nepeña**. Also called Guambahacho.

(13) **Casma**.

(14) **Huarmey** (*Guarmey*).

(16) **Parmunca** (*Paramonga*). Also called Fortaleza. In this valley stands a famous ruined fort, described frequently in the chronicles. (Cieza, 1554, bk. 1, oh. 70; Calancha, 1638, bk. 3, ch. 2; Garcilaso, 1723, pt. 1, bk. 6, ch. 33.) It is supposed to have marked the *Chimu* frontier. The valley of **Huaman** (*Guamán*; probably from *Quechua WAMAN*, "hawk"), also called **Barranca**, is so near Parmunca that it is not listed separately.

(16) **Huaura** (*Guaura*). Also called **Huacho** or **Supe**. Calancha (1638, bk. 3, ch. 18) gives information about religion.

(17) **Chancay**. Not to be confused with the Chancay River in Lambayeque Valley.

(18) **Lima** (*Rima*, *Rimac*; from *Quechua RIMAQ*, "speaker," "oracle"). This is a large double valley and had a population of about 150,000 in *Inca* times, to judge by the fact that it was divided into three **HONO** units. Two languages were spoken. (Cobo, 1935, bk. 1, ch. 7; Calancha, 1638, bk. 1, ch. 37.)

(19) **Lurin**. Pachacamac, the most famous shrine on the whole coast, stood here, and the *Inca* made it an important administrative center. It has quite an extensive bibliography. (See Cieza, 1554, bk. 1, oh. 72; Calancha, 1638, bk. 2, ch. 19; and the Conquest witnesses cited in Uhle, 1903.)

(20) *Chilca* (*Chilcca*). Below Lurin is a spot in the desert where the water table is so near the surface that crops can be grown if the sand is dug down a short distance. It is not really a valley, as no river flows through it. The ingenuity of its water supply greatly impressed the Spaniards. (See Cieza, 1554, bk. 1, ch. 73.)

(21) *Mala*.

(22) *Huasco* (Guarco), also called Runahuana (Lunahuana, Lunaguana, Runahuana) and *Cafiete*. A large and important valley which put up a stubborn resistance to the Inca. (See Cieza, 1554, bk. 1, chs. 73-74; 1880, bk. 2, ch. 59.)

(23) *Chincha*. Another large valley with a powerful chief. It had a population of about 50,000 in Inca times, for its chief was a **HONO KORAKA**. (Castro and Ortega Morejón, 1936; Cieza, 1880, bk. 2, ch. 59.)

(24) *Pisco*.

(25) *Ica*.

(26) *Nazca*.

(27) *Acarí*. Also called Lomas.

(28) *Yauca*.

(29) *Atico*.

(30) *Caraveli*.

(31) *Ocoña*.

(32) Camana. Part of this valley was inhabited by a people called Mage (*Maje*), for whom the river of Camana is named. Higher up are the *Cavana*. (Calancha, 1638, bk. 3, ch. 30.)

(33) *Quilca* (*Quillea*). The river divides into several branches: Sihuas (*Siguas*), Vitor, and Chili being the principal ones. *Sihua* may be a tribal name. Arequipa is on the upper Chili River.

(34) *Tambo* (*Tambo*).

(36) *Moquehua* (*Moquegua*).

(36) *Locumba*.

(37) *Sama*.

(38) *Arica*. There were some Aymara-speaking colonists in this valley. Beyond Arica is a long stretch of very dry coast which supported only scattered fishing villages until the nitrate boom in the 19th century. This region is generally called *Tarapaca* from a small oasis below Arica. (RGI, 1881-97, appendix 3, pp. xxv-xxvii.)

Bolivian Highland divisions. In addition to the tribes and valleys already listed, it will be well to list the provinces of the Bolivian Highlands where *Aymara* was not the native language. The *Aymara*-speaking provinces are listed under The *Aymara*, pp. 501673.

(1) Cochabamba (*Cochabamba, Cotabamba*).

(3) *Yampará* (*Yanpará*). These people occupied the valley in which Chuquisaca (Sucre, La Plata) stands. Many colonists were settled here by the Inca. (Calancha, 1638, bk. 2, ch. 40.)

(3) *Chicha*. The *Chicha* paid their labor tax by furnishing carved logs of red wood for sacrifice in Cusco. (Cobo, 1890-95, bk. 12, ch. 33; RGI, 1881-97, vol. 2, appendix 3, p. xliii.)

(4) *Lipe* (*Lipes, Lipez*). Some *Aymara* was spoken in this province. (RGI, 1881-97, vol. 2, appendix 3, pp. xxii-xxiii.)

PRINCIPAL SOURCES

All modern accounts of Inca culture either concern a limited part of the subject or are based on a very small part of the available source material. The best known to American readers are Murdock, 1934,

ch. 14; Thompson, 1936; Means, 1931; Mead, 1924; Prescott, 1908; Baudin, 1928; and Markham, 1910. Other modern writings on the *Inca* are numerous and can be conveniently found in the bibliographies of Means, 1931, and Baudin, 1928. A few are listed in the bibliography to this section.

Because of the limited usefulness of most secondary treatments, the reader desiring a comprehensive view or even searching for comparative material on some aspect of *Inca* life will find it necessary to consult the sources himself. The original documents are so numerous and so varying in reliability that the task of consulting them cannot be undertaken lightly.

There are two indispensable bibliographical handbooks which list the published editions of the sources on Andean history and culture. P. A. Means' "Biblioteca Andina," 1928, lists the principal chroniclers in alphabetical order. For each, he gives a short biographical notice, a list of works relating to Andean antiquity, the most important published editions of these works, and remarks on the material they cover and its quality. The Biblioteca Andina is now a little out of date, and the author's critical judgment of some writers must be accepted with some reservation. His classification of the chroniclers into a "Garcilassan School" and a "Toledan School" is without sufficient basis, and its implication that writers who were not personal sympathizers with the *Inca* system cannot be relied upon has led Means to accept the theories of some very dubious authors like Garcilaso, Valera, and Montesinos. The "Biblioteca Andina" remains the best thing of its kind in English, however.

Father Ruben Vargas Ugarte's "Historia del Perú: Fuentes," 1939, is an annotated bibliography of the whole history of Perú, with a few remarks about most of the authors, and very useful indices of Peruvian material in the general collections of documents. It has a good index of names. It is, however, so condensed that things are sometimes found with difficulty and its bibliographical citations are too brief, but it is a mine of information if properly used. Less accurate but extremely useful also is the critical list of sources in Chapter 1 of Baudin, 1928.

It should be borne in mind that for the pre-Spanish period, we have no first-hand account, except for the eyewitness descriptions of some aspects of *Inca* ceremonial left by a few of the Spanish soldiers who accompanied Pizarro. For other aspects of the culture, the Spanish sources are translations and modifications of the testimony of Indian witnesses whose veracity it is very difficult to judge at this distance. In addition, 16th- and 17th-century writers copied liberally from one another, often without giving credit, so that many works which are usually termed "sources" or "documents" are only third- or fourth-hand restatements of the original testimony, marred by

carelessness and by personal or political prejudice; It is most important to weigh the antecedents of all this old material and use it with discrimination.

Many of the more important Spanish chroniclers have been translated into English, mostly by Sir Clements Markham and P. A. Means (see references in Means, 1928), and so are available to persons who do not read Spanish. It is wisest, however, to consult the original text even when an English translation does exist, for much often depends on details of wording, and none of the translations is entirely accurate. Means' translations are generally reliable, but Markham's are so poor as to be nearly worthless for anything but a hasty impression of the author's meaning. The frequently cited translations into French by Henri Ternaux-Compans are even worse. (See remarks in Means, 1928, pp. 325, 409, and *passim*.)

Many of the chronicles remained in manuscript until modern times, and a few very important ones have not yet been printed in full. Modern editions from such manuscripts vary considerably in accuracy. The Spanish of the manuscripts is usually full of abbreviations and inconsistencies of spelling, and the frequent occurrence of *Quechua* words makes editing especially difficult. Only a few really good critical texts exist (Avila, 1939; Castro, 1936; Sarmiento, 1906; Estete, 1918), but the partially modernized versions of Márcos Jiménez de la Espada and a few other conscientious editors are adequate for most purposes. Cheaply printed editions have also been published in Lima by H. H. Urteaga and Carlos Romero.

Of all works, ancient or modern, the "Historia del Nuevo Mundo," by the Jesuit Father Bernabé Cobo, written about 1653 and published in 1890-95 in four volumes, is still the best and most complete description of *Inca* culture in existence. It is so clear in its phrasing and scientific in its approach that it is pleasant as well as profitable to work with. As Father Cobo explains, it is based in part on personal research in Cuzco about 1610 and at Juli, Lima, and other places, and on the manuscript works of Juan Polo de Ondegardo and Cristóbal de Molina of Cuzco, both painstaking investigators whose value can be checked from manuscripts surviving independently of Father Cobo's work. He also used the records of several government investigations of *Inca* customs, and the published works of such men as Cieza de León (Cieza, 1554, bk. 1), Garcilaso, Acosta, and others. Two whole volumes of Cobo's work are devoted to geography, ethnobotany, animals, rocks, fish, and similar material. The only serious fault in Cobo's account of the *Inca* is that he made the mistake of following Garcilaso in dating the *Chanca* war at the end of Yahuar Huacac's reign instead of at the end of Viracocha's, so that the central history of the Inca is somewhat distorted. Cobo also wrote a work

on Colonial Lima (*Historia de la Fundación de Lima*, 1882), which I have cited as Cobo, 1935.

The rest of the important chroniclers are best listed chronologically beginning with the earliest. Estete, 1918; Sancho, 1917 b; Xérez, 1917; and the Anonymous Conqueror, 1929, were all eyewitnesses of the Conquest who wrote down their impressions immediately. Their descriptions provide a valuable check on subsequent writers. Pedro Pizarro, 1844, and *Cristóbal de Molina* of Santiago, 1916, were other eyewitnesses who wrote somewhat later (1570 and about 1556, respectively). Their descriptions are more complete but seem somewhat less reliable than those of the earlier four.

The first great general work on Perú was written by Pedro de Cieza de León in 1551. Its author was a soldier who had traveled all over the Andean area, honest, conscientious, and thorough. The first two parts of his "*Cronica del Peru*," the geographical description, published first in 1553, and the history of the Inca, which remained in manuscript until 1880, are the most useful for our purposes. They are cited as Cieza, 1554, and Cieza, 1880, respectively. Cieza is very reliable, but tends to generalize instead of giving specific examples, which is a little annoying. He is our principal source for the outlying provinces of the *Inca* Empire. Contemporary with Cieza is Juan de Betanzos, part of whose "*Suma y Relación*" was published in 1880. It also was written about 1551. Betanzos married a daughter of Atahualpa and had exceptional opportunities for the investigation of Inca antiquities. He is especially useful for Inca legends.

Juan Polo de Ondegardo was a lawyer and government official at Cuzco who made exhaustive inquiries about Inca government and religion in the 1550's. He wrote a number of reports between 1561 and 1571, some of which have been found and published (Polo, 1916 a and b; 1917 a and b; 1940). He is generally reliable, but his style is very obscure and difficult. Both Acosta and Cobo used him very heavily.

A few writers who never went to Perú themselves deserve notice because of the care with which they collected and used the reports of others, the originals of which have since disappeared. The two most important are Oviedo, 1851-55, and Las Casas, 1892 and 1909. Both wrote in the first half of the 16th century. Las Casas' manuscript was heavily drawn upon by subsequent writers like Roman y Zamora, 1897.

Francisco de Toledo, Viceroy of Perú from 1569 to 1582, had careful inquiries made about Inca customs and history which are among the most valuable records we have. Toledo is a much-discussed figure, about whose character there is considerable disagreement. (Cf. Means, 1928, pp. 479-97; Levillier, 1935.) It seems not to have occurred to

his detractors, however, that a man can be narrow-minded and cruel in public life and still demand a high standard of honesty in official reports presented to him. The "Informaciones" prepared at his order (Toledo, 1940) and Pedro Sarmiento de Gamboa's "History of the Incas" (Sarmiento, 1906), also written for him, are both detailed and accurate, as a comparison of them with Cieza de León's earlier work will readily show.

Cristóbal de Molina of Cuzco wrote a very valuable account of Inca religion about 1579 (Molina of Cuzco, 1913). In 1586, Father Miguel Cabello de Balboa finished his "Miscelbnea Antártica," still in manuscript, which contains one of the best accounts of *Inca* history we have, and some interesting information on the north coast. Cabello used Sarmiento's manuscript, (Cabello, ms; and a bad French abridgement, 3 840). José de Acosta wrote his "Historia Natural y Moral de las Indias" in 1590; it contains some important chapters on the *Inca*, based largely on Polo de Ondegardo's work (Acosta, 1940).

The 17th-century chroniclers are in general much less reliable than the 16th-century ones, with the exception of Father Cobo. The difference is especially marked in the field of *Inca* history. Martin de Morúa wrote a history between 1590 and about 1605 which is rambling and confused but contains valuable information on Inca customs. He also preserves some important *Quechua* texts (Morúa, 1922-25). "Fray Antonio," a priest who wrote in 1608, has been given far more credit than he deserves. He is extremely unreliable. (Antonio, 1920; cf. Means, 1928, pp. 328-30; Levillier, 1942.)

Garcilaso de la Vega (1723) was the son of a Spanish soldier and an Inca princess. He left Perú in 1560 and spent the rest of his life in Europe, writing his "Royal Commentaries" in his old age. He has long enjoyed an undeserved position of authority in matters relating to the *Inca* (Means, 1928, pp. 367-81; Levillier, 1942; Rowe, 1945). He is useful for those aspects of Inca life which survived into the Colonial Period and which he saw with his own eyes, but his accounts of Inca history and religion are entirely fanciful. The best parts of the book are the descriptions of plants and animals and of the Inca and Colonial monuments of the city of Cuzco. One of Garcilaso's most important sources was a Jesuit named Blas Valera, whose veracity has been widely accepted because of the praise Garcilaso bestowed on him. (See Means, 1928, pp. 497-507.) Valera's claims will not stand criticism, however. I have cited one of his reports, written about 1590, in the section on religion (Valera, 1879).

Juan de Santacruz Pachacuti (1879) wrote early in the 17th century. He was an Indian from Canas, and wrote abominable Spanish much mixed with *Quechua* phrases. Although his "Relación" is confused and difficult to use, it contains valuable material on Inca history and religion, and some important *Quechua* texts. Another In-

dian writer of about the same date and of similar usefulness is Felipe Guaman Poma de Ayala (Poma, 1936). His monumental work of over 1,000 pages is illustrated with full-page pen and ink drawings which provide some of our best illustrations of Inca life. The illustrations are much more reliable than the text, which is even more confused than that of Pachacuti. Poma is very unreliable on history, better on administration, and perhaps best on religion and daily life.

Alonso Ramos Gavilán wrote a history of Copacabana in 1621 which contains important material on Inca history and religion. He is verbose but reliable. Juan Anello Oliva wrote a work on *Inca* history in 1631 which was not published until 1895. It is largely based on Garcilaso, but contains a little original material, especially legends. Antonio de la Calancha, 1638, is very important for tribal distributions, legends and religious customs of the Coast, ethnography of Pacasmayo, and the history of the Inca in the Colonial Period.

Fernando Montesinos, who wrote about 1642 (Montesinos, 1882), pretends to give a long list of pre-Inca kings, which has been accepted at face value by a number of historians of the Inca. Whatever the value of this list may be for the study of Indian legends, it is worthless as history, and I am inclined to be suspicious of his incidental remarks on Indian customs.

In the century after the Conquest, the Catholic missionaries in Perú made a determined effort to stamp out the extensive survivals of the ancient religion which lingered very late in the country districts, and we have many useful reports growing out of this campaign. Most of them deal with native religion on the Coast and in central and northern Perú. (Arriaga, 1920; Avila, 1939; Religiosos Agustinos, 1865.)

For all areas outside of Cuzco, our best sources are the descriptions of individual provinces made at various times for the information of the Spanish King, and published in four volumes by Marcos Jiménez de la Espada under the title of "Relaciones Geográficas de Indias" (1881-97). In order to simplify reference, documents in this collection are not cited separately, and the abbreviation RG-I is used to refer to the collection.

In addition to the sources listed in this section, a great many documents useful for limited aspects of the subject are cited throughout the text, and they will be found listed in the general bibliography. Where possible, I have cited the chroniclers by book and chapter instead of by volume and page, so that readers using different editions of the texts can locate the references with equal facility. Where a page number is used in a citation it is preceded by the abbreviation p. or pp., or if following a volume, book, or chapter number, by a colon.

INCA CULTURE AT THE TIME OF THE SPANISH CONQUEST

By JOHN HOWLAND ROWE

INTRODUCTION

This section of the Handbook deals with the culture of the Andean region between Ecuador and the northern border of *Aymara* territory as it was observed by the Spanish conquerors in the 16th century and recorded in surviving documents. This area includes the whole of the desert Coast of Perú and the broken valleys of the Peruvian Highlands, a region which was the home of many different tribes, nations, languages, and cultures before it was superficially unified by its incorporation into the Inca¹ Empire (map 1, No. 4). It would be obviously impossible to include a complete account of each tribe in the Handbook, even if the necessary information existed. With minor exceptions, however, the whole of the literature now available which deals with this part of the Andean area refers to *Inca* culture in the region around Cuzco, so that it is only for the Inca that a complete cultural description is possible. The account that follows, therefore, is specifically an ethnographical description of the *Inca* culture, although differences in other parts of the area are indicated when the limitations of the source material permit.

The area covered by this section lies only a small distance from the Equator, but cold ocean currents make the dry coast almost temperate, and most of the mountain valleys are at an elevation of 7,000 to 12,000 feet (2,000 to 4,000 m.) above sea level, where the elevation counteracts the effects of the low latitude. Throughout the area, the climate varies more with elevation than with distance from the Equator, so that hot low valleys are only a short journey from, cold plateau country where little can be grown except potatoes. As a result, it costs the inhabitants relatively little effort to vary their diet and dress with the products of another climate, and this incentive is as much of an encouragement to local travel as the broken mountain and desert barriers are a hindrance. Rainfall is light in the mountains and almost absent

¹ *Inca* is used to denote the *Quechua*-speaking peoples around Cuzco, and, more generally, the Empire which they ruled. It seems better to avoid the use of "Inca" as a title for the Emperor or to refer specifically to the royal family, although such a practice is common and historically correct.

on the Coast, so that irrigation is generally necessary for successful cultivation. Before the introduction of the eucalyptus in the 19th century, trees were very scarce, and usually so gnarled and stunted as to be of little use except for firewood. Salt, copper, gold, and silver are common, and pottery clay and building stone are abundant.

POPULATION

The modern population of the whole Andean area, from the north of Ecuador to northern Argentina and Chile, is about 14 million. It is not dense in relation to the total area covered, but extremely so if only the sections useful for agriculture and grazing are considered, for much of it is too rocky, too steep, or too dry to be of much use to its inhabitants. The ancient population was almost certainly smaller than the modern, for there has been considerable urban growth and local industrialization in recent years, but it is very difficult to make an accurate estimate of the difference. The *Inca* kept accurate population statistics (Cieza, 1880, 2, ch. 19), but the figures were nearly all lost at the time of the Spanish Conquest, and the first Spanish figures available are derived from the census taken by Viceroy Toledo about 1571, when a total of 311,257 taxpayers, or 1½ million persons, was registered (Morales, 1866). The total of Toledo's census is, however, of little use in an attempt to estimate *Inca* population at about 1525, for in the 40 intervening years the Indian population was nearly destroyed by civil wars, epidemics, lawlessness, extortion, and cultural shock. These factors affected the provinces differently, and the amount of population loss varied correspondingly. The following sample figures will illustrate the variation:

TABLE 1.-*Estimated Inca population loss in the provinces of the Andean area from 1525 to 1671*

Province	1525	1571	Ratio
Rimac.....	160,006	9,000	16:1
Chincha.....	50,000	2,070	25:1
Yauyos.....	50,000	35,000	3:2
Huancas.....	135,000	36,000	3:1
Sores.....	20,000	15,159	4:3
Total.....	405,000	97,229	4:1

¹ Rimac: Cobo, 1890-95, 1: 7; Morales, 1866, p. 42. Chincha: Castro and Ortega Morejón, 1936, p. 240; Morales, 1886, p. 43. Yauyos: RGI, 1881-97, 1:62. Huancas: RGI, 1881-97, 1:31-32; Morales, 1866; Sores: RGI, 1881-97, 1:170; Morales, 1866, p. 44. The figures for Rimac, Chincha, and Yauyos are based on the stated number of honokoraka, or oh des of 10,000 taxpayers, maintained in each province by the *Inca* government. Totals of taxpayers are converted into total population at the rate of 1:6, by analogy with the 1571 figures for Sores and Rucanas (RG1, 1881-97, 1:170, 181, 199). Figures in round numbers and ratios are approximate. (See also Señores, 1904, p. 204.)

This table includes all the reliable estimates of *Inca* population that have been preserved for our area, and, as the tribes listed were selected by the historical accident of this preservation, the group can be fairly called a random sample. It is also a representative group, for it includes two of the provinces known to have suffered worst between

1525 and 1571 (Chincha and Rimac) and two that escaped relatively unharmed (Yauyos and Soras). Consequently, it is not unreasonable to apply the ratio of totals (4 : 1) to the population reported in 1571, and estimate the total population of the Andean area in 1525 at about 6 million.

TRIBES AND PROVINCES

At the time of the Inca conquest, the whole Andean area was divided into an almost unbelievable number of small political units, for many of which we do not have even the names. The linguistic diversity was nearly as bad, and the *Inca* found it necessary to impose their own language, usually called *Quechua*, as a common medium for government and inter-communication in the whole extent of their dominions. The Spaniards found *Quechua* such a convenient tool in their dealings with the natives that they never bothered to learn most of the local languages, dozens of which have perished without leaving a trace. This political and linguistic situation makes the composition of any list of tribes or their representation on a map extremely difficult. The *Inca* simplified the map of the Andean area rather arbitrarily, however, by dividing their Empire into provinces based on the old tribal and linguistic units, but with small tribes combined or added to neighboring large ones. Although our knowledge of the *Inca* provincial divisions is also incomplete, the provinces are still the most convenient units by which to describe the area, and the named areas on the accompanying map (map 3) correspond as nearly as possible to the *Inca* provinces.

All additional information available on synonymy, small groups included with the provincial boundaries, and bibliographical references of some ethnological or historical importance is presented in the following list of tribes. The list deals first with the Highlands, from north to south, and then with the Coast valleys in the same order. The divisions of the Coast used in the list and on the map are individual valleys. In most known cases, each valley was administered by the Inca as a separate province, but some of the small ones may have been combined.

In spelling, 16th-century Spanish followed no fixed rules, and even the simple conventions usually preferred by the printers of the day were seldom followed by scribes in America. Between this and the shortcomings of the 16th-century Spanish soldier as a phonetician, it is often extremely difficult to recognize native names of known pronunciation, and impossible to restore exactly those of doubtful pronunciation. The Spaniards frequently wrote voiced stops for unvoiced stops: *b* for *p* and *g* for *k*, as in "bamba" (from *Quechua* *PAMPA*) and *Ynga* (from *Quechua* "IÑKA"). *Y* was usually written instead of *i* at the beginning of a word. *X* and *ç*, both sibilant sounds which Spanish has since lost, were written for *Quechua* "s";

the first has become Spanish *j*, the second, Spanish *z* in modern spellings. *L* was often written for *Quechua* "r"; *gu* and *hu* before vowels usually stand for *Quechua* "w." Hence forms like Caxamalca and Cajamarca from Q'ASA-MARKA, Guamanga from WAMAÑQA. The worst confusion is in the spelling of Spanish *u* and *hu* and *Quechua* "o" and "w." *B* and *v* were used almost interchangeably for *u*; so, in Spanish words, the forms "vuo (hubo!)" and "cibdad (ciudad)" are not uncommon. *Quechua* WIL'KA-PAMPA becomes Vilcabamba, or even Bilcabamba. Initial *h* is added, or omitted capriciously ("horden" for "orden").

Quechua names are written phonemically in large and small capital letters in the following list and through the text where it is possible to reconstruct the pronunciation from the Hispanicized form used in the chronicles. Where the pronunciation has not been determined, the commonest Hispanicized form has been used and marked with an asterisk. The phonemic alphabet used for *Quechua* is modified slightly from current phonetic usage to avoid the use of symbols which cannot be printed in the Andean countries (Rowe and Escobar, 1943). To approximate the 16th-century pronunciation, read all letters as in English, with the following exceptions: *i* is a sound half-way between Spanish *i* and Spanish *e*; *o* is halfway between Spanish *o* and Spanish *u*. *C* is pronounced like *ch* in "church"; *l* is pronounced with the whole blade of the tongue touching the palate instead of just the tip; *n* represents the sound of *ng* in "sing"; *q* is back or velar *k*; *r* is like the Spanish *r* in "para." *Y* and *w* after consonants indicate palatalization and labialization, respectively; *h* indicates aspiration of the preceding consonant, and an apostrophe (except after *l*) indicates glottalization.

The forms of provincial names used on the map (map 3) and given first in the following list are the most common Spanish forms, except that I have written "pampa" instead of "bamba" and "tampo" instead of "tambo" and the singular form is used. Plural forms usually occur in the documents, being formed in Spanish with -s or -es. *Vilcas* is an exception in that the s is part of the native name and the word is singular as it stands.

Peruvian Highland divisions:

- (1) *Calva* (*Calua*). Province and tribe. (Cieza, 1554, bk. I, ch. 57.)
- (2.) *Ayavaca* (*Ayabaca*, *Ayauaca*); probably from *Quechua* AYAWAX'A, "shrine of the corpse"). Province and tribe. (Cieza, 1554, bk. 1, ch. 57.)
- (3.) Huancapampa (Huancabamba, Guancabamba; probably from *Quechua* WAÑKA-PAMPA, "valley of the field-guardian"). Its provincial capital was one of the most important *Inca* towns in northern Perú. The natives had their own language, but used *Quechua* also in 1550. They told Cieza that they had formerly eaten human flesh and fought continually among themselves (Cieza, 1554, bk. 1, ch. 57).
- (4.) *Huambo* (Guambo; probably from *Quechua* WAMPO, "boat"). The prov-

inca is also called *Cutervos* (*Cuteruos*, *Cuterbos*), and it is not clear whether the two names are synonymous, or whether the province included two different tribes. (Calancha, 1638, bk. 2, ch. 8.)

(5) Cajamarca (Caxamarca, Caxamalca, Cassamarca; probably from **Quechua Q'ASA-MARKA**, "town in a ravine"). Its provincial capital was a very important town, with elaborate ceremonial buildings; near it were hot baths. Before the Inca conquest, it was the capital of a powerful state allied to the **Chimu** Kingdom. (Cieza, 1554, bk. 1 ch. 77; Sarmiento, 1906, ohs. 38, 44.)

(6) **Chachapoya** (*Chacha*). Province and tribe. The province included also tribes called *Huanca* (Guanca), *Chillao*, and Casca-yunga. The **Chachapoya** were famous as vigorous warriors, and had unusually light skin. (Cieza, 1554, bk 1, ch. 78; Garcilaso, 1723, pt. 1, bk. 8, ohs. 1-3; Calancha, 1638, bk. 2, ch. 8; RGI, 4: ii-xix.)

(7) Moyopampo (Moyobamba, Muyupampa; probably from **Quechua MOYO-PAMPA**, "round valley"). An Inca province in a low extension of the Andes. (Garcilaso, 1723, pt. 1, bk. 8, oh. 2.)

(8) **Huamachuco**, (*Guamachuco*, *Huamachucu*). Inca province and road junction. The Indians spoke the same language as the people of Cajamarca. (Cieza, 1554, bk. 1, ch. 81; Calancha, 1638, bk. 2, chs. 8, 32; Garoilas, 1723, pt. 1, bk. 5, oh. 14.)

(9) **Huayla** (Guayla, *Huaylla*; probably from **Quechua WAYLYA**, "meadow"). The natives had a reputation for homosexuality. (Cieza, 1554, bk. 1, ch. 83; Garcilaso, 1723, pt. 1, bk. 5, ch. 11.)

(10) **Conchucu** (Conchucu). A sacred grove at Tauca in this province is mentioned by Calancha (1638, bk. 2, ch. 32; Cieza, 1554, bk. 1, ch. 82).

(II) Huacrachuco. Garcilaso is the only chronicler who mentions this part of the east bank of the **Marañón** River, so far as I am aware (Garcilaso, pt. 1, bk. 8, ch. 1). Huacrachuco (or Huacrachucu) is his name for this region, and it survives as the name of a modern town. (See also Markham, 1871, p. 315, and Tello, 1942, p. 651.)

(12) **Pinco**. This tribe is mentioned by Cieza (1554, bk. 1, ch. 82) approximately in the location marked.

(13) **Huamallí** (Guamall). The province is mentioned by Calancha (1638, bk. 2, ch. 32, and bk. 4, ch. 18). A modern Peruvian province still bears the same name.

(14) **Huánuco** (*Guánuco*, Hudnucu). The Inca town and provincial capital of this name stood on the left bank of the **Marañón** River, not on the Huallaga River where the modern city stands. Its extensive ruins are still called Huánuco Viejo. (Cieza, 1554, bk. 1, ch. 80.)

(15) **Ocro**. The *Ocro* and *Lampa* inhabited this area. (Calancha, 1638 bk. 2, ch. 8.)

(16) **Cajatambo** (Caxatambo; probably from Quechua **Q'ASATAMPO**, "lodge in the ravine"). This province may have included the *Ocro* and *Lampa* as well as the area indicated on the map. (Calancha, 1638, bk. 2, ch. 3.)

(17) Chinchaycocha (probably from Quechua **CINCAY-QOCA**, "lynx lake"). A province which included the Lake of Junfn. It is also called *Bombon*, *Pumpu*, and *Junín*. It was famous llama-breeding country, with a warlike population which stoutly defended its fortified islands in the lake against the Inca (Cieza, 1554, bk. 1, ch. 83). Huayna Capac had balsas brought from Tumbes to use in the lake. (Estete, 1918, p. 93.)

(18) **Tarma** (Tarama). Inca province. (Cieza, 1554, bk. 1, ch. 84.)

(19) **Atavillo**. (*Atauillo*, *Atabillo*). Tribe and province in the modern Province of **Canta**, Department of Lima. Francisco Pizarro is sometimes called "Marques de los Atavillos," although the title was never formally conferred on him. The *Atavillo* had their own language. (RGI, 1881-97, 1: 61.)

(20) *Yauyo*. The Inca province of Yauyos was divided into upper and lower moieties, and had about 10,000 taxpayers. The population included Yauyo, *Manco*, Larao, and Huaro (*Guaro*) of Huarochiri (Guarochiri Guarocheri), with a few colonists from *Chocorvo*. At least one non-Quechua language was spoken in it, and it included the territory where *Cauki*, a language related to dynara, is said to be still spoken. (See *The Aymara*, pp. 501673.) Considerable information about the customs and religious beliefs of the Yauyo is given in RGI, 1881-97, 1: 61-78. (See also RGI, 1881-97, 1: 143; Avila, 1939; Arriaga, 1920; Romero, ed., 1919.)

(21) *Huanca* (*Guanca*; probably from *Quechua* *WAÑKA*, "field guardian"). The province was also called Jauja (*Xauxa*, *Sausa*) from the name of one of its sections and the provincial capital, *HATOÑ SAWSA*. It was divided into three sections (*SAYA*), upper and lower Huanca and Jauja, with a total population of about 25,000 taxpayers in Inca times. The population included Huanca, *Chongo*, and some colonists from Yauyo. Each section had its own language or dialect. They made small balsa rafts of four or five logs and, originally, built round houses. Several *Huanca* legends are given by Cieza. (RGI, 1881-97, 1: 79-95; Cieza, 1554, bk. 1, ch. 84; Romero, ed., 1923 a, 1923 b.)

(22) *Angará*. The *Angará* were a warlike people, and the Inca settled a large part of their province with colonists from Cajamarca, Chanca, *Huaro* from Huarochiri, and Quehuar from Cuzco. The *Angará* were divided into two sections called Astos and Chacas. (RGI, 1881-97, 1: 140-44, Cieza, 1554, bk. 1, ch. 85 [Aeos and Parcos]; Sarmiento, 1906, ch. 44.)

(23) *Choclococha*. The independent existence of a province of this name is doubtful, but I can find no authority for joining it to any of its neighbors. It was rechristened Castrovirreina in the 16th century. The Chanca believed that their ancestors had come from the lake for which it is named (*Quechua*, *Coqlyo-qoca*, "green-corn lake").

(24) *Chocorvo* (*Chocoruo*, *Chocorro*, *Chucurpu*). The Inca province of this name included the *Chocorvo*, *Huacho* (Guacho), and *Huaytara*. The *Chocorvo* spoke their own language (RGI, 1881-97, 1: 61), and their traditions told of former conquests under a chief called *Asto Capac*. (Señores, 1904, p. 200.)

(25) *Vilcas* (*Villcas*, *Bilcas*, *Vilcashuaman*, Vilcasguaman). The Inca province was largely peopled by colonists, including *Anta* and other "big ears." The original inhabitants were called *Tanquihua*, and had their own language. Both Quechua and *Aymara* were in general use in the province. The capital, also called *Vilcas*, Tambo de Vilcas, or Vilcasguaman, was one of the largest Inca towns north of Cuzco, an important road junction, and reputed to be the center of the Empire. Huamanga (Guamanga, from *Quechua* *WAMAÑQA*; modern Ayacuoho) was founded at a place called Pocra (*Poqra*) in this province. (RGI, 1881-97, 1: 96-138, 145-168; Cieza, 1554, bk. 1, ch. 89; Garcilaso, 1723, pt. 1, bk. 5, ch. 24.)

(26) *Rucana* (Lucana; probably from *Quechua* *ROK'ANA*, "finger"). The province of Rucana was divided into three sections, upper and lower Rucana and *ANTA-MARKA* (Andamarcas). A number of local languages were spoken, and Quechua was used as a general language. The *Rucana* furnished litter bearers to the Emperor as their share of the labor service. (RGI, 1881-97, 1: 179-213.)

(27) *Sora*. This province was also divided into three sections: upper and lower *Sora* and Chalco. It had about 4,000 tribute payers in Inca times. The natives had their own language, but used both Quechua and Aymara also. (RGI, 1881-97, 1:169-177; Sarmiento, 1906, oh. 35.)

(28) *Chanca* (Changa). The Chanca province was also called Andahuayla (Andaguayla, Andauayla, Andabaila, Antahuaylla), from its capital. The Chanca believed that they had come originally from Choelococha on the other side of Vilcas. They embarked on a career of conquest about the same time that the

Inca did, and drove the original *Quechua* inhabitants out of Andahuaylas. At the end of Viracocha's reign, they nearly destroyed the *Inca* state. (Cieza, 1554, bk. 1, ch. 90; Sarmiento, 1906, oh. 26.)

(29) *Vilcapampa* (*Vilcabamba*; probably from Quechua **WIL'KA-PAMPA**, "valley of the narcotic berry"). A mountainous province northwest of Cuzco where the Inca dynasty took refuge after the Spanish Conquest and continued to keep up an independent state for nearly 40 years. (See this volume, pp. 343-345). Its capital was called Vitcos (Bitcos, Biticos, Pitcos). (See Cobo, 1890-95, bk. 12, ch. 12; Calanoha, 1638, bk. 4, chs. 2-10; Bingham, 1912.)

(30) *Quechua* (*Quichua*, *Quichua*). The *Quechua* lived around Abancay and Curahuasi in a region of semitropical climate. Their name (in *Quechua*, **QHICWA**) seems to have meant "warm valley [people]," and was probably applied to them by their Inca neighbors. About the beginning of the 15th century, the *Quechua* seem to have been one of the largest and most powerful tribes in their part of the Andes. Their territory included the province of *Chanca* (*Andahuayla*) on one side, and probably that of Cotapampa on the other, at a time when the *Inca* state was small and only just beginning to show strength. It was probably at this time that their name was applied to the language which the Inca later spread all over their Empire. Early in the 15th century, however, the *Chanca* attacked the *Quechua* from the west and drove them out of the province of *Andahuayla*. This defeat broke the *Quechua* power once and for all, and left the way open for the *Inca* to assume the leadership of the *Quechua*-speaking peoples. The *Inca* and *Quechua* seem to have had an alliance at the time of the first *Chanca* attack, which may have been one reason why the war between the Inca and Chanca culminated in an Inca victory in 1438. The *Quechua* were made "Incas by privilege" by Pachacuti. (Cieza, 1880, pt. 2, chs. 34, 37; Garcilaso, 1723, pt. 1, bk. 3, ch. 12; Poma, 1936, pp. 85, 337; Pachacuti, 1879, p. 318; Sarmiento, 1906, ch. 44.) *Quechua* first appears as the name of the *Inca* language in documents of 1560 (Santo Tomás, 1891, p. 1). The triple meaning of the word *Quechua* in the 16th century (a geographic region, a tribe, and a language) is a potential source of confusion which must be duly guarded against.

(31) *Yanahuara* (Yanaguara; probably from *Quechua* **YANAWARA**, "black breechclout"). The Yanaguara were "Incas by privilege." (Poma, 1936, pp. 85, 337. See also Garcilaso, 1723, pt. 1, bk. 3, ch. 10.)

(32) *Lare* (*Lari*). A tribe of "Incas by privilege" in the *Lares* Valley, northeast of Cuzco. (Poma, 1936, pp. 85, 337.)

(33) *Cusco* (Cuzco, *Cozco*; from Quechua **QOSQO**, no meaning). The area so marked on the map was probably neither a provincial nor a tribal unit. It is the area close to the capital where old tribal lines were so broken up by Pachacuti's resettlement program that it is not possible to distinguish the old groups. A number of tribal names are known for this area, but many of them may refer to the same tribe. The *Ayamarea* (Ayarmaca), *Huayllacan* (*Guayllacan*), *Hualla* (*Gualla*), *Inca* (*Inga*), *Quehuar* (Quiguar, Queuar), *Huaroc* (*Huaruc*, *Haroc*), and *Quispicanchi* probably all lived in and near the valley of *Cuzco*. The *Anita*, *Mayo*, *Tampo* (Tambo), *Sanco* (*Tanco*, *Canco*), *Quilliscachi*, and *Equeco* (*Equequo*) lived in and around the valley of Ants (also called Zúrite, Jaquijahuana, Xaquix aquana, Sacsahuana, etc.). *Mara*, *Poque*, and other tribes are also mentioned for this area. All these people seem to have spoken *Quechua*, and all were Inca, either by blood or by privilege. (Pachacuti, 1879, p. 318; Poma, 1936, pp. 84-85, 337, 347; Garcilaso, 1723, pt. 1, bk. 1. chs. 20, 23; Morales, 1866; Toledo, 1940; Sarmiento, 1906, chs. 13-35.)

(34) *Paucartampo* (*Paucartambo*, *Paucartampu*). Its existence as a separate province is doubtful, but I have found no grounds for attaching it to any of the neighboring units. It may have been inhabited by *Poque*. (Garcilaso, 1723, pt. 1,

(35) Cauina (Cauina, *Cabina, Caviña, Cauña, Cabiña*). A tribe in the Vilcanota Valley in the neighborhood of Quiquijana. They were "Inca by privilege" and believed in reincarnation. (Cieza, 1554, bk. 1, ch. 97; Sarmiento, 1906, ch. 23; Poma, 1936, pp. 85, 337, 347; Pachacuti, 1879, pp. 269, 279.)

(36) Chilque (*Chillque, Chilqui*). This area was 5 province under the colony, and may have had the same status in Inca times. It was the home of a number of small tribes in addition to the one for which it is named: *Masca, Aco, Papre (Papri, Pabre), Cuyo*, and probably others. Pacaritampo, where the Inca believed that their ancestors had emerged from the earth, was in this province, and the inhabitants spoke *Quechua*. They were "Inca by privilege." (Señores, 1904, p. 200; Poma, 1936, pp. 84, 35, 337; Pachacuti, 1879, p. 318.)

(37) Cotapampa (*Cotabamba*). A people named Cotanera are usually named with the Colapampa, and may have lived in the same district. It is not certain what language the two tribes spoke; Garcilaso (1723, pt. 1, bk. 3, ch. 12) says they belonged to the Quechua nation, but the oota- element in their names looks like Aymara "qota," the equivalent of *Quechua* QOCA, "lake." (Calancha, 1638, bk. 2, ch. 8; Sarmiento, 1906, ch. 35.)

(38) Omasayo (*Omasuyo, Vinasuyu*). This tribe must be distinguished from the inhabitant8 of the Aymara Province of Omasuyo on the east shore of Lake Titicaca. The names are frequently indistinguishable in the chronicles. (Calancha, 1638, bk. 2, ch. 8; Garcilaso, 1723, pt. 1, bk. 3, ch. 11; Sarmiento, 1906, ch. 35.)

(39) *Aymará* (plural *Aymaraes, Aymarays*). One of the most exasperating questions in Andean historical geography is whether there is any connection between the tribe called *Aymará* and the *Aymara* language. Sir Clements Markham (1871, pp. 327-36) believed that the *Aymará* tribe spoke *Quechua*, and that their name was transferred to the Aymara language by the Jesuits of Juli late in the 16th century, because they failed to distinguish clearly between some *Aymata* colonists settled at Juli by the Inca and the local inhabitants. This theory is highly questionable, however, and there is no evidence that the *Aymará* tribe spoke Quechua. It is perfectly possible that they spoke an Aymara dialect in the 15th century. Unfortunately, none of the chroniclers describes the linguistic condition of this area, and the problem may never be definitely solved. (Calancha, 1638, bk. 2, ch. 8; bk. 3, ch. 37; Sarmiento, 1906, chs. 1, 35; Poma, 1936, p. 327; Pachacuti, 1879, p. 279; Garcilaso, 1723, pt. 1, bk. 3, ch. 10.)

(40) *Parinacocha (Parihuana-cocha)*. This area includes the *Pomatambo* (*Pumapampu, Pomatambo*), and it is not certain whether they formed a separate province or not. The names are probably of Quechua derivation, from **PARIWANA-QOCA**, "flamingo lake," and **POMA-TAMBO**, "wild-cat lodge." (Garcilaso, 1723, pt. 1, bk. 3, oh. 9; Pachacuti, 1879, p. 279.)

(41) *Contisuyo* (Condesuyo, Cuntisuyu, *Condes*). This province included *Alca* (*Allca*), *Cotahuasi (Cotaguasi)*, and *Aruni (Arones)*. (Garcilaso, 1723, pt. 1, bk. 3, chs. 3-9; RGI, 1881-97, 2: 12-18.)

(42) *Chumpivilca (Chumbivilca, Chumbivilca)*. The Chump *vilca* had their own language, and used Quechua and *Aymara*'s general languages. They were famousdancers, and paid their labor tax by dancing for the court. (RG, 1881-97, 2: 21-36; Cobo, 1890-95, bk. 12, ch. 33.)

(43) Cavana (Cabana, *Cauana*). The Cavana must not be confused with the *Caviña*. Their province was often called Cavana Conde (i. e., Cavana of *Contisuyo*) to distinguish it from Cavana Colla (Cavana of Collasuyu), a settlement of Cavana colonists in the province of Collas, near modern Cavanillas. The Cauana Conde were included in a single province with the *Collagua* in Colonial times. They deformed their heads, and spoke a corrupt *Quechua*, but had several local languages of their own. (RG, 1881-97, 2: 33-49.)

(44) *Arequipa (Ariquepa, Ariquipay)*. The usual derivations of its name are

completely fanciful. **ARI** is **Aymara**, and means "needle" or "peak" (i. e., Mount Misti); **QIPA** is a Quechua affix meaning "behind." The valley of Arequipa seems to have been nearly depopulated by a volcanic eruption when the *Inca* first entered it in the time of Pachacuti, and it was resettled with colonists from the Highland provinces, some of whom spoke Quechua, others Aymara. (Pachacuti, 1879, p. 279; Morda, 1922-25, bk. 4, ch. 11.)

Coastal divisions. The best systematic description of the Coast valleys is given by Cieaa(1554, bk. 1, chs. 66-75). As very little de&aiced information is available for individual valleys, many of them are simply named in the following list:

(1) **Tumbez** (*Tumbes*, *Tumpiz*), the northernmost valley on the desert Coast.
(2) **Chira**. Its chief town was Sullana (Solana).

(3) **Piura**. (RGI, 1881-97, 2: 225-42.)

(4) Olmos. An oasis at the foot of the mountains.

(6) **Lambayeque**. A large multiple valley. It had a long dynasty of legendary local chiefs before it was conquered by the Chimu king about 1460. Its history, which is very important for chronology, is preserved by Cabello Balboa (ms. III, 17; and see Means, 1931, pp. 50-55). The language spoken was Mochica (Carrera, 1939).

(6) Pacasmayo. Another large valley which formed part of the Chimu Kingdom. Its customs are described in admirable detail by Calancha (1638, bk. 3, chs. f-4), and will be referred to below, pp. 000-000. The people spoke Mochica. The valley is also called Jequetepeque (Xequetepeque).

(7) **Chicama**. This valley is continuous with the valley of Chimu.

(8) **Chimu** (**Chimo**; also called Moche, Trujillo, or Santa Catalina). This was the home valley of the **Chimu** kings who built up a dominion reaching from Tumbes to Parmunca in the 15th century. Their capital was Chanchan, near modern Trujillo. They spoke Qingnam, a language probably related to Mochica. It survived in the valley until the 19th century (Squier, 1877, p. 169). (See Calancha, 1638, bk. 3, ch. 2; Sarmiento, 1906, ohs. 38, 46; Cieza, 1880, bk. 2, ch. 58.)

(9) **Virú**. Also called Guañape (Guanape, Huanapu).

(10) **Chao**. Also called Suo.

(11) **Chimbote**. Also called Santa (Saneta).

(12) **Nepeña**. Also called Guambacho.

(13) Casma.

(14) **Huarmey** (*Guarmey*).

(16) **Parmunca** (Paramonga). Also called Fortaleza. In this valley stands a famous ruined fort, described frequently in the chronicles. (Cieza, 1554, bk. 1, oh. 70; Calancha, 1638, bk. 3, ch. 2; Garcilaso, 1723, pt. 1, bk. 6, ch. 33.) It is supposed to have marked the **Chimu** frontier. The valley of Huaman (Guamán; probably from *Quechua WAMAN*, "hawk"), also called Barranca, is so near Parmunca that it is not listed separately.

(16) **Huaura** (*Guaura*). Also called Huacho or Supe. Calancha (1638, bk. 3, ch. 18) gives information about religion.

(17) **Chancay**. Not to be confused with the Chancay River in Lambayeque Valley.

(18) **Lima** (*Rima*, *Rimac*; from *Quechua RIMAQ*, "speaker," "oracle"). This is a large double valley and had a population of about 150,000 in *Inca* times, to judge by the fact that it was divided into three **hono** units. Two languages were spoken. (Cobo, 1935, bk. 1, ch. 7; Calancha, 1638, bk. 1, ch. 37.)

(19) Lurin. Pachacamac, the most famous shrine on the whole coast, stood here, and the *Inca* made it an important administrative center. It has quite an extensive bibliography. (See Cieza, 1554, bk. 1, oh. 72; Calancha, 1638, bk. 2, ch. 19; and the Conquest witnesses cited in Uhle, 1903.)

(20) *Chilca* (*Chilca*). Below Lurin is a spot in the desert where the water table is so near the surface that crops can be grown if the sand is dug down a short distance. It is not really a valley, as no river flows through it. The ingenuity of its water supply greatly impressed the Spaniards. (See Cieza, 1554, bk. 1, ch. 73.)

(21) *Mala*.

(22) *Huasco* (Guarco), also called Runahuana (Lunahuana, Lunaguana, Runahuanc) and *Cafiete*. A large and important valley which put up a stubborn resistance to the Inca. (See Cieza, 1554, bk. 1, chs. 73-74; 1880, bk. 2, ch. 59.)

(23) *Chincha*. Another large valley with a powerful chief. It had a population of about 50,000 in *Inca* times, for its chief was a **HONO** KORAKA. (Castro and Ortega Morejón, 1936; Cieza, 1880, bk. 2, ch. 59.)

(24) *Pisco*.

(25) *Zca*.

(26) *Nazca*.

(27) *Acarí*. Also called Lomas.

(28) *Yauca*.

(29) *Atico*.

(30) *Caraveli*.

(31) *Ocoña*.

(32) Camana. Part of this valley was inhabited by a people called Mage (*Maje*), for whom the river of Camana is named. Higher up are the *Cavana*. (Calancha, 1638, bk. 3, ch. 30.)

(33) *Quilca* (*Quilcea*). The river divides into several branches: Sihuas (*Siguas*), Vitor, and Chili being the principal ones. Shua may be a tribal name. Arequipa is on the upper Chili River.

(34) *Tambo* (*Tambo*).

(36) *Moquehua* (*Moquegua*).

(36) *Locumba*.

(37) *Sama*.

(38) *Arica*. There were some Aymara-speaking colonists in this valley. Beyond Arica is a long stretch of very dry coast which supported only scattered fishing villages until the nitrate boom in the 19th century. This region is generally called Tarapaca from a small oasis below Arica. (RGI, 1881-97, appendix 3, pp. xxv-xxvii.)

Bolivian Highland divisions. In addition to the tribes and valleys already listed, it will be well to list the provinces of the Bolivian Highlands where *Aymara* was not the native language. The *Aymara*-speaking provinces are listed under The *Aymara*, pp. 501673.

(1) Cochabamba (*Cochabamba, Cotabamba*).

(2) Yampará (*Yanpará*). These people occupied the valley in which Chuquisaca (Sucre, La Plata) stands. Many colonists were settled here by the Inca. (Calancha, 1638, bk. 2, ch. 40.)

(3) Chicha. The *Chicha* paid their labor tax by furnishing carved logs of red wood for sacrifice in Cuzco. (Cobo, 1890-95, bk. 12, ch. 33; RGI, 1881-97, vol. 2, appendix 3, p. xlivi.)

(4) Lipe (*Lipes, Lipez*). Some *Aymara* was spoken in this province. (RGI, 1881-97, vol. 2, appendix 3, pp. xxii-xxiii.)

PRINCIPAL SOURCES

All modern accounts of Inca culture either concern a limited part of the subject or are based on a very small part of the available source material. The best known to American readers are Murdock, 1934,

ch. 14; Thompson, 1936; Means, 1931; Mead, 1924; Prescott, 1908; Baudin, 1928; and Markham, 1910. Other modern writings on the *Inca* are numerous and can be conveniently found in the bibliographies of Means, 1931, and Baudin, 1928. A few are listed in the bibliography to this section.

Because of the limited usefulness of most secondary treatments, the reader desiring a comprehensive view or even searching for comparative material on some aspect of *Inca* life will find it necessary to consult the sources himself. The original documents are so numerous and so varying in reliability that the task of consulting them cannot be undertaken lightly.

There are two indispensable bibliographical handbooks which list the published editions of the sources on Andean history and culture. P. A. Means' "Biblioteca Andina," 1928, lists the principal chroniclers in alphabetical order. For each, he gives a short biographical notice, a list of works relating to Andean antiquity, the most important published editions of these works, and remarks on the material they cover and its quality. The Biblioteca Andina is now a little out of date, and the author's critical judgment of some writers must be accepted with some reservation. His classification of the chroniclers into a "Garcilassan School" and a "Toledan School" is without sufficient basis, and its implication that writers who were not personal sympathizers with the *Inca* system cannot be relied upon has led Means to accept the theories of some very dubious authors like Garcilaso, Valera, and Montesinos. The "Biblioteca Andina" remains the best thing of its kind in English, however.

Father Ruben Vargas Ugarte's "Historia del Perú: Fuentes," 1939, is an annotated bibliography of the whole history of Perú, with a few remarks about most of the authors, and very useful indices of Peruvian material in the general collections of documents. It has a good index of names. It is, however, so condensed that things are sometimes found with difficulty and its bibliographical citations are too brief, but it is a mine of information if properly used. Less accurate but extremely useful also is the critical list of sources in Chapter 1 of Baudin, 1928.

It should be borne in mind that for the pre-Spanish period, we have no first-hand account, except for the eyewitness descriptions of some aspects of *Inca* ceremonial left by a few of the Spanish soldiers who accompanied Pizarro. For other aspects of the culture, the Spanish sources are translations and modifications of the testimony of Indian witnesses whose veracity it is very difficult to judge at this distance. In addition, 16th- and 17th-century writers copied liberally from one another, often without giving credit, so that many works which are usually termed "sources" or "documents" are only third- or fourth-hand restatements of the original testimony, marred by

carelessness and by personal or political prejudice; It is most important to weigh the antecedents of all this old material and use it with discrimination.

Many of the more important Spanish chroniclers have been translated into English, mostly by Sir Clements Markham and P. A. Means (see references in Means, 1928), and so are available to persons who do not read Spanish. It is wisest, however, to consult the original text even when an English translation does exist, for much often depends on details of wording, and none of the translations is entirely accurate. Means' translations are generally reliable, but Markham's are so poor as to be nearly worthless for anything but a hasty impression of the author's meaning. The frequently cited translations into French by Henri Ternaux-Compans are even worse. (See remarks in Means, 1928, pp. 325, 409, and *passim*.)

Many of the chronicles remained in manuscript until modern times, and a few very important ones have not yet been printed in full. Modern editions from such manuscripts vary considerably in accuracy. The Spanish of the manuscripts is usually full of abbreviations and inconsistencies of spelling, and the frequent occurrence of *Quechua* words makes editing especially difficult. Only a few really good critical texts exist (Avila, 1939; Castro, 1936; Sarmiento, 1906; Estete, 1918), but the partially modernized versions of Márcos Jiménez de la Espada and a few other conscientious editors are adequate for most purposes. Cheaply printed editions have also been published in Lima by H. H. Urteaga and Carlos Romero.

Of all works, ancient or modern, the "Historia del Nuevo Mundo," by the Jesuit Father Bernabé Cobo, written about 1653 and published in 1890-95 in four volumes, is still the best and most complete description of *Inca* culture in existence. It is so clear in its phrasing and scientific in its approach that it is pleasant as well as profitable to work with. As Father Cobo explains, it is based in part on personal research in Cuzco about 1610 and at Juli, Lima, and other places, and on the manuscript works of Juan Polo de Ondegardo and Cristóbal de Molina of Cuzco, both painstaking investigators whose value can be checked from manuscripts surviving independently of Father Cobo's work. He also used the records of several government investigations of *Inca* customs, and the published works of such men as Cieza de León (Cieza, 1554, bk. 1), Garcilaso, Acosta, and others. Two whole volumes of Cobo's work are devoted to geography, ethnobotany, animals, rocks, fish, and similar material. The only serious fault in Cobo's account of the *Inca* is that he made the mistake of following Garcilaso in dating the *Chanca* war at the end of Yahuar Huacac's reign instead of at the end of Viracocha's, so that the central history of the Inca is somewhat distorted. Cobo also wrote a work

on Colonial Lima (*Historia de la Fundación de Lima*, 1882), which I have cited as Cobo, 1935.

The rest of the important chroniclers are best listed chronologically beginning with the earliest. Estete, 1918; Sancho, 1917 b; Xérez, 1917; and the Anonymous Conqueror, 1929, were all eyewitnesses of the Conquest who wrote down their impressions immediately. Their descriptions provide a valuable check on subsequent writers. Pedro Pizarro, 1844, and *Cristóbal de Molina* of Santiago, 1916, were other eyewitnesses who wrote somewhat later (1570 and about 1556, respectively). Their descriptions are more complete but seem somewhat less reliable than those of the earlier four.

The first great general work on Perú was written by Pedro de Cieza de León in 1551. Its author was a soldier who had traveled all over the Andean area, honest, conscientious, and thorough. The first two parts of his "*Cronica del Perú*," the geographical description, published first in 1553, and the history of the Inca, which remained in manuscript until 1880, are the most useful for our purposes. They are cited as Cieza, 1554, and Cieza, 1880, respectively. Cieza is very reliable, but tends to generalize instead of giving specific examples, which is a little annoying. He is our principal source for the outlying provinces of the *Inca* Empire. Contemporary with Cieza is Juan de Betanzos, part of whose "*Suma y Relación*" was published in 1880. It also was written about 1551. Betanzos married a daughter of Atahualpa and had exceptional opportunities for the investigation of Inca antiquities. He is especially useful for Inca legends.

Juan Polo de Ondegardo was a lawyer and government official at Cuzco who made exhaustive inquiries about Inca government and religion in the 1550's. He wrote a number of reports between 1561 and 1571, some of which have been found and published (Polo, 1916 a and b; 1917 a and b; 1940). He is generally reliable, but his style is very obscure and difficult. Both Acosta and Cobo used him very heavily.

A few writers who never went to Perú themselves deserve notice because of the care with which they collected and used the reports of others, the originals of which have since disappeared. The two most important are Oviedo, 1851-55, and Las Casas, 1892 and 1909. Both wrote in the first half of the 16th century. Las Casas' manuscript was heavily drawn upon by subsequent writers like Roman y Zamora, 1897.

Francisco de Toledo, Viceroy of Perú from 1569 to 1582, had careful inquiries made about Inca customs and history which are among the most valuable records we have. Toledo is a much-discussed figure, about whose character there is considerable disagreement. (Cf. Means, 1928, pp. 479-97; Levillier, 1935.) It seems not to have occurred to

his detractors, however, that a man can be narrow-minded and cruel in public life and still demand a high standard of honesty in official reports presented to him. The "Informaciones" prepared at his order (Toledo, 1940) and Pedro Sarmiento de Gamboa's "History of the Incas" (Sarmiento, 1906), also written for him, are both detailed and accurate, as a comparison of them with Cieza de León's earlier work will readily show.

Cristóbal de Molina of Cuzco wrote a very valuable account of Inca religion about 1579 (Molina of Cuzco, 1913). In 1586, Father Miguel Cabello de Balboa finished his "Miscelbnea Antártica," still in manuscript, which contains one of the best accounts of *Inca* history we have, and some interesting information on the north coast. Cabello used Sarmiento's manuscript, (Cabello, ms; and a bad French abridgement, 3 840). José de Acosta wrote his "Historia Natural y Moral de las Indias" in 1590; it contains some important chapters on the *Inca*, based largely on Polo de Ondegardo's work (Acosta, 1940).

The 17th-century chroniclers are in general much less reliable than the 16th-century ones, with the exception of Father Cobo. The difference is especially marked in the field of *Inca* history. Martin de Morúa wrote a history between 1590 and about 1605 which is rambling and confused but contains valuable information on Inca customs. He also preserves some important *Quechua* texts (Morúa, 1922-25). "Fray Antonio," a priest who wrote in 1608, has been given far more credit than he deserves. He is extremely unreliable. (Antonio, 1920; cf. Means, 1928, pp. 328-30; Levillier, 1942.)

Garcilaso de la Vega (1723) was the son of a Spanish soldier and an *Inca* princess. He left Perú in 1560 and spent the rest of his life in Europe, writing his "Royal Commentaries" in his old age. He has long enjoyed an undeserved position of authority in matters relating to the *Inca* (Means, 1928, pp. 367-81; Levillier, 1942; Rowe, 1945). He is useful for those aspects of Inca life which survived into the Colonial Period and which he saw with his own eyes, but his accounts of Inca history and religion are entirely fanciful. The best parts of the book are the descriptions of plants and animals and of the Inca and Colonial monuments of the city of Cuzco. One of Garcilaso's most important sources was a Jesuit named Blas Valera, whose veracity has been widely accepted because of the praise Garcilaso bestowed on him. (See Means, 1928, pp. 497-507.) Valera's claims will not stand criticism, however. I have cited one of his reports, written about 1590, in the section on religion (Valera, 1879).

Juan de Santacruz Pachacuti (1879) wrote early in the 17th century. He was an Indian from Canas, and wrote abominable Spanish much mixed with *Quechua* phrases. Although his "Relación" is confused and difficult to use, it contains valuable material on Inca history and religion, and some important *Quechua* texts. Another In-

INCA CULTURE AT THE TIME OF THE SPANISH CONQUEST

By JOHN HOWLAND ROWE

INTRODUCTION

This section of the Handbook deals with the culture of the Andean region between Ecuador and the northern border of *Aymara* territory as it was observed by the Spanish conquerors in the 16th century and recorded in surviving documents. This area includes the whole of the desert Coast of Perú and the broken valleys of the Peruvian Highlands, a region which was the home of many different tribes, nations, languages, and cultures before it was superficially unified by its incorporation into the Inca¹ Empire (map 1, No. 4). It would be obviously impossible to include a complete account of each tribe in the Handbook, even if the necessary information existed. With minor exceptions, however, the whole of the literature now available which deals with this part of the Andean area refers to *Inca* culture in the region around Cuzco, so that it is only for the Inca that a complete cultural description is possible. The account that follows, therefore, is specifically an ethnographical description of the *Inca* culture, although differences in other parts of the area are indicated when the limitations of the source material permit.

The area covered by this section lies only a small distance from the Equator, but cold ocean currents make the dry coast almost temperate, and most of the mountain valleys are at an elevation of 7,000 to 12,000 feet (2,000 to 4,000 m.) above sea level, where the elevation counteracts the effects of the low latitude. Throughout the area, the climate varies more with elevation than with distance from the Equator, so that hot low valleys are only a short journey from, cold plateau country where little can be grown except potatoes. As a result, it costs the inhabitants relatively little effort to vary their diet and dress with the products of another climate, and this incentive is as much of an encouragement to local travel as the broken mountain and desert barriers are a hindrance. Rainfall is light in the mountains and almost absent

¹ *Inca* is used to denote the *Quechua*-speaking peoples around Cuzco, and, more generally, the Empire which they ruled. It seems better to avoid the use of "Inca" as a title for the Emperor or to refer specifically to the royal family, although such a practice is common and historically correct.

on the Coast, so that irrigation is generally necessary for successful cultivation. Before the introduction of the eucalyptus in the 19th century, trees were very scarce, and usually so gnarled and stunted as to be of little use except for firewood. Salt, copper, gold, and silver are common, and pottery clay and building stone are abundant.

POPULATION

The modern population of the whole Andean area, from the north of Ecuador to northern Argentina and Chile, is about 14 million. It is not dense in relation to the total area covered, but extremely so if only the sections useful for agriculture and grazing are considered, for much of it is too rocky, too steep, or too dry to be of much use to its inhabitants. The ancient population was almost certainly smaller than the modern, for there has been considerable urban growth and local industrialization in recent years, but it is very difficult to make an accurate estimate of the difference. The *Inca* kept accurate population statistics (Cieza, 1880, 2, ch. 19), but the figures were nearly all lost at the time of the Spanish Conquest, and the first Spanish figures available are derived from the census taken by Viceroy Toledo about 1571, when a total of 311,257 taxpayers, or 1½ million persons, was registered (Morales, 1866). The total of Toledo's census is, however, of little use in an attempt to estimate *Inca* population at about 1525, for in the 40 intervening years the Indian population was nearly destroyed by civil wars, epidemics, lawlessness, extortion, and cultural shock. These factors affected the provinces differently, and the amount of population loss varied correspondingly. The following sample figures will illustrate the variation:

TABLE 1.-*Estimated Inca population loss in the provinces of the Andean area from 1525 to 1671*

Province	1525	1571	Ratio
Rimac.....	160,006	9,000	16:1
Chincha.....	50,000	2,070	25:1
Yauyos.....	50,000	35,000	3:2
Huancas.....	135,000	36,000	3:1
Sores.....	20,000	15,159	4:3
Total.....	405,000	97,229	4:1

¹ Rimac: Cobo, 1890-95, 1: 7; Morales, 1866, p. 42. Chincha: Castro and Ortega Morejón, 1936, p. 240; Morales, 1886, p. 43. Yauyos: RGI, 1881-97, 1:62. Huancas: RGI, 1881-97, 1:31-32; Morales, 1866; Sores: RGI, 1881-97, 1:170; Morales, 1866, p. 44. The figures for Rimac, Chincha, and Yauyos are based on the stated number of honokoraka, or oh des of 10,000 taxpayers, maintained in each province by the *Inca* government. Totals of taxpayers are converted into total population at the rate of 1:6, by analogy with the 1571 figures for Sores and Rucanas (RG1, 1881-97, 1:170, 181, 199). Figures in round numbers and ratios are approximate. (See also Señores, 1904, p. 204.)

This table includes all the reliable estimates of *Inca* population that have been preserved for our area, and, as the tribes listed were selected by the historical accident of this preservation, the group can be fairly called a random sample. It is also a representative group, for it includes two of the provinces known to have suffered worst between

1525 and 1571 (Chincha and Rimac) and two that escaped relatively unharmed (Yauyos and Soras). Consequently, it is not unreasonable to apply the ratio of totals (4 : 1) to the population reported in 1571, and estimate the total population of the Andean area in 1525 at about 6 million.

TRIBES AND PROVINCES

At the time of the Inca conquest, the whole Andean area was divided into an almost unbelievable number of small political units, for many of which we do not have even the names. The linguistic diversity was nearly as bad, and the *Inca* found it necessary to impose their own language, usually called *Quechua*, as a common medium for government and inter-communication in the whole extent of their dominions. The Spaniards found *Quechua* such a convenient tool in their dealings with the natives that they never bothered to learn most of the local languages, dozens of which have perished without leaving a trace. This political and linguistic situation makes the composition of any list of tribes or their representation on a map extremely difficult. The *Inca* simplified the map of the Andean area rather arbitrarily, however, by dividing their Empire into provinces based on the old tribal and linguistic units, but with small tribes combined or added to neighboring large ones. Although our knowledge of the *Inca* provincial divisions is also incomplete, the provinces are still the most convenient units by which to describe the area, and the named areas on the accompanying map (map 3) correspond as nearly as possible to the *Inca* provinces.

All additional information available on synonymy, small groups included with the provincial boundaries, and bibliographical references of some ethnological or historical importance is presented in the following list of tribes. The list deals first with the Highlands, from north to south, and then with the Coast valleys in the same order. The divisions of the Coast used in the list and on the map are individual valleys. In most known cases, each valley was administered by the Inca as a separate province, but some of the small ones may have been combined.

In spelling, 16th-century Spanish followed no fixed rules, and even the simple conventions usually preferred by the printers of the day were seldom followed by scribes in America. Between this and the shortcomings of the 16th-century Spanish soldier as a phonetician, it is often extremely difficult to recognize native names of known pronunciation, and impossible to restore exactly those of doubtful pronunciation. The Spaniards frequently wrote voiced stops for unvoiced stops: *b* for *p* and *g* for *k*, as in "bamba" (from *Quechua* *PAMPA*) and *Ynga* (from *Quechua* "IÑKA"). *Y* was usually written instead of *i* at the beginning of a word. *X* and *ç*, both sibilant sounds which Spanish has since lost, were written for *Quechua* "s";

the first has become Spanish *j*, the second, Spanish *z* in modern spellings. *L* was often written for *Quechua* "r"; *gu* and *hu* before vowels usually stand for *Quechua* "w." Hence forms like Caxamalca and Cajamarca from Q'ASA-MARKA, Guamanga from WAMAÑQA. The worst confusion is in the spelling of Spanish *u* and *hu* and *Quechua* "o" and "w." *B* and *v* were used almost interchangeably for *u*; so, in Spanish words, the forms "vuo (hubo!)" and "cibdad (ciudad)" are not uncommon. *Quechua* WIL'KA-PAMPA becomes Vilcabamba, or even Bilcabamba. Initial *h* is added, or omitted capriciously ("horden" for "orden").

Quechua names are written phonemically in large and small capital letters in the following list and through the text where it is possible to reconstruct the pronunciation from the Hispanicized form used in the chronicles. Where the pronunciation has not been determined, the commonest Hispanicized form has been used and marked with an asterisk. The phonemic alphabet used for *Quechua* is modified slightly from current phonetic usage to avoid the use of symbols which cannot be printed in the Andean countries (Rowe and Escobar, 1943). To approximate the 16th-century pronunciation, read all letters as in English, with the following exceptions: *i* is a sound half-way between Spanish *i* and Spanish *e*; *o* is halfway between Spanish *o* and Spanish *u*. *C* is pronounced like *ch* in "church"; *l* is pronounced with the whole blade of the tongue touching the palate instead of just the tip; *n* represents the sound of *ng* in "sing"; *q* is back or velar *k*; *r* is like the Spanish *r* in "para." *Y* and *w* after consonants indicate palatalization and labialization, respectively; *h* indicates aspiration of the preceding consonant, and an apostrophe (except after *l*) indicates glottalization.

The forms of provincial names used on the map (map 3) and given first in the following list are the most common Spanish forms, except that I have written "pampa" instead of "bamba" and "tampo" instead of "tambo" and the singular form is used. Plural forms usually occur in the documents, being formed in Spanish with -s or -es. *Vilcas* is an exception in that the s is part of the native name and the word is singular as it stands.

Peruvian Highland divisions:

- (1) *Calva* (*Calua*). Province and tribe. (Cieza, 1554, bk. I, ch. 57.)
- (2.) *Ayavaca* (*Ayabaca*, *Ayauaca*); probably from Quechua AYAWAX'A, "shrine of the corpse"). Province and tribe. (Cieza, 1554, bk. 1, ch. 57.)
- (3.) Huancapampa (Huancabamba, Guancabamba; probably from *Quechua* WAÑKA-PAMPA, "valley of the field-guardian"). Its provincial capital was one of the most important Inca towns in northern Perú. The natives had their own language, but used *Quechua* also in 1550. They told Cieza that they had formerly eaten human flesh and fought continually among themselves (Cieza, 1554, bk. 1, ch. 57).
- (4.) *Huambo* (Guambo: probably from *Quechua* WAMPO, "boat"). The prov-

inca is also called *Cutervos* (*Cuteruos*, *Cuterbos*), and it is not clear whether the two names are synonymous, or whether the province included two different tribes. (Calancha, 1638, bk. 2, ch. 8.)

(5) Cajamarca (Caxamarca, Caxamalca, Cassamarca; probably from **Quechua Q'ASA-MARKA**, "town in a ravine"). Its provincial capital was a very important town, with elaborate ceremonial buildings; near it were hot baths. Before the Inca conquest, it was the capital of a powerful state allied to the **Chimu** Kingdom. (Cieza, 1554, bk. 1 ch. 77; Sarmiento, 1906, ohs. 38, 44.)

(6) **Chachapoya** (*Chacha*). Province and tribe. The province included also tribes called *Huanca* (Guanca), *Chillao*, and Casca-yunga. The **Chachapoya** were famous as vigorous warriors, and had unusually light skin. (Cieza, 1554, bk 1, ch. 78; Garcilaso, 1723, pt. 1, bk. 8, ohs. 1-3; Calancha, 1638, bk. 2, ch. 8; RGI, 4: ii-xix.)

(7) Moyopampo (Moyobamba, Muyupampa; probably from **Quechua MOYO-PAMPA**, "round valley"). An Inca province in a low extension of the Andes. (Garcilaso, 1723, pt. 1, bk. 8, oh. 2.)

(8) **Huamachuco**, (*Guamachuco*, *Huamachucu*). Inca province and road junction. The Indians spoke the same language as the people of Cajamarca. (Cieza, 1554, bk. 1, ch. 81; Calancha, 1638, bk. 2, chs. 8, 32; Garoиласо, 1723, pt. 1, bk. 5, oh. 14.)

(9) **Huayla** (Guayla, *Huaylla*; probably from **Quechua WAYLYA**, "meadow"). The natives had a reputation for homosexuality. (Cieza, 1554, bk. 1, ch. 83; Garcilaso, 1723, pt. 1, bk. 5, ch. 11.)

(10) **Conchucu** (Conchucu). A sacred grove at Tauca in this province is mentioned by Calancha (1638, bk. 2, ch. 32; Cieza, 1554, bk. 1, ch. 82).

(II) Huacrachuco. Garcilaso is the only chronicler who mentions this part of the east bank of the **Marañón** River, so far as I am aware (Garcilaso, pt. 1, bk. 8, ch. 1). Huacrachuco (or Huacrachucu) is his name for this region, and it survives as the name of a modern town. (See also Markham, 1871, p. 315, and Tello, 1942, p. 651.)

(12) **Pinco**. This tribe is mentioned by Cieza (1554, bk. 1, ch. 82) approximately in the location marked.

(13) **Huamallí** (Guamall). The province is mentioned by Calancha (1638, bk. 2, ch. 32, and bk. 4, ch. 18). A modern Peruvian province still bears the same name.

(14) **Huánuco** (*Guánuco*, Hudnucu). The Inca town and provincial capital of this name stood on the left bank of the **Marañón** River, not on the Huallaga River where the modern city stands. Its extensive ruins are still called Huánuco Viejo. (Cieza, 1554, bk. 1, ch. 80.)

(15) **Ocro**. The *Ocro* and *Lampa* inhabited this area. (Calancha, 1638 bk. 2, ch. 8.)

(16) **Cajatambo** (Caxatambo; probably from Quechua **Q'ASATAMPO**, "lodge in the ravine"). This province may have included the *Ocro* and *Lampa* as well as the area indicated on the map. (Calancha, 1638, bk. 2, ch. 3.)

(17) Chinchaycocha (probably from Quechua **CINCAY-QOCA**, "lynx lake"). A province which included the Lake of Junfn. It is also called *Bombon*, *Pumpu*, and *Junín*. It was famous llama-breeding country, with a warlike population which stoutly defended its fortified islands in the lake against the Inca (Cieza, 1554, bk. 1, ch. 83). Huayna Capac had balsas brought from Tumbes to use in the lake. (Estete, 1918, p. 93.)

(18) **Tarma** (Tarama). Inca province. (Cieza, 1554, bk. 1, ch. 84.)

(19) **Atavillo**. (*Atauillo*, *Atabillo*). Tribe and province in the modern Province of **Canta**, Department of Lima. Francisco Pizarro is sometimes called "Marques de los Atavillos," although the title was never formally conferred on him. The *Atavillo* had their own language. (RGI, 1881-97, 1: 61.)

(20) *Yauyo*. The Inca province of Yauyos was divided into upper and lower moieties, and had about 10,000 taxpayers. The population included Yauyo, *Manco*, Larao, and Huaro (*Guaro*) of Huarochiri (Guarochiri Guarocheri), with a few colonists from *Chocorvo*. At least one non-Quechua language was spoken in it, and it included the territory where *Cauki*, a language related to dynara, is said to be still spoken. (See *The Aymara*, pp. 501673.) Considerable information about the customs and religious beliefs of the Yauyo is given in RGI, 1881-97, 1: 61-78. (See also RGI, 1881-97, 1: 143; Avila, 1939; Arriaga, 1920; Romero, ed., 1919.)

(21) *Huanca* (*Guanca*; probably from *Quechua* *WAÑKA*, "field guardian"). The province was also called Jauja (*Xauxa*, *Sausa*) from the name of one of its sections and the provincial capital, *HATOÑ SAWSA*. It was divided into three sections (*SAYA*), upper and lower Huanca and Jauja, with a total population of about 25,000 taxpayers in Inca times. The population included Huanca, *Chongo*, and some colonists from Yauyo. Each section had its own language or dialect. They made small balsa rafts of four or five logs and, originally, built round houses. Several *Huanca* legends are given by Cieza. (RGI, 1881-97, 1: 79-95; Cieza, 1554, bk. 1, ch. 84; Romero, ed., 1923 a, 1923 b.)

(22) *Angará*. The *Angará* were a warlike people, and the Inca settled a large part of their province with colonists from Cajamarca, Chanca, *Huaro* from Huarochiri, and Quehuar from Cuzco. The *Angará* were divided into two sections called Astos and Chacas. (RGI, 1881-97, 1: 140-44, Cieza, 1554, bk. 1, ch. 85 [Aeos and Parcos]; Sarmiento, 1906, ch. 44.)

(23) *Choclococha*. The independent existence of a province of this name is doubtful, but I can find no authority for joining it to any of its neighbors. It was rechristened Castrovirreina in the 16th century. The Chanca believed that their ancestors had come from the lake for which it is named (*Quechua*, *Coqlyo-qoca*, "green-corn lake").

(24) *Chocorvo* (*Chocoruo*, *Chocorro*, *Chucurpu*). The Inca province of this name included the *Chocorvo*, *Huacho* (Guacho), and *Huaytara*. The *Chocorvo* spoke their own language (RGI, 1881-97, 1: 61), and their traditions told of former conquests under a chief called *Asto Capac*. (Señores, 1904, p. 200.)

(25) *Vilcas* (*Villcas*, *Bilcas*, *Vilcashuaman*, Vilcasguaman). The Inca province was largely peopled by colonists, including *Anta* and other "big ears." The original inhabitants were called *Tanquihua*, and had their own language. Both Quechua and *Aymara* were in general use in the province. The capital, also called *Vilcas*, Tambo de Vilcas, or Vilcasguaman, was one of the largest Inca towns north of Cuzco, an important road junction, and reputed to be the center of the Empire. Huamanga (Guamanga, from *Quechua* *WAMAÑQA*; modern Ayacuoho) was founded at a place called Pocra (*Poqra*) in this province. (RGI, 1881-97, 1: 96-138, 145-168; Cieza, 1554, bk. 1, ch. 89; Garcilaso, 1723, pt. 1, bk. 5, ch. 24.)

(26) *Rucana* (Lucana; probably from *Quechua* *ROK'ANA*, "finger"). The province of Rucana was divided into three sections, upper and lower Rucana and *ANTA-MARKA* (Andamarcas). A number of local languages were spoken, and Quechua was used as a general language. The *Rucana* furnished litter bearers to the Emperor as their share of the labor service. (RGI, 1881-97, 1: 179-213.)

(27) *Sora*. This province was also divided into three sections: upper and lower *Sora* and Chalco. It had about 4,000 tribute payers in Inca times. The natives had their own language, but used both Quechua and Aymara also. (RGI, 1881-97, 1:169-177; Sarmiento, 1906, oh. 35.)

(28) *Chanca* (Changa). The Chanca province was also called Andahuayla (Andaguayla, Andauayla, Andabaila, Antahuaylla), from its capital. The Chanca believed that they had come originally from Choelococha on the other side of Vilcas. They embarked on a career of conquest about the same time that the

Inca did, and drove the original *Quechua* inhabitants out of Andahuaylas. At the end of Viracocha's reign, they nearly destroyed the *Inca* state. (Cieza, 1554, bk. 1, ch. 90; Sarmiento, 1906, oh. 26.)

(29) *Vilcapampa* (*Vilcabamba*; probably from Quechua **WIL'KA-PAMPA**, "valley of the narcotic berry"). A mountainous province northwest of Cuzco where the Inca dynasty took refuge after the Spanish Conquest and continued to keep up an independent state for nearly 40 years. (See this volume, pp. 343-345). Its capital was called Vitcos (Bitcos, Biticos, Pitcos). (See Cobo, 1890-95, bk. 12, ch. 12; Calanoha, 1638, bk. 4, chs. 2-10; Bingham, 1912.)

(30) *Quechua* (*Quichua*, *Quichua*). The *Quechua* lived around Abancay and Curahuasi in a region of semitropical climate. Their name (in *Quechua*, **QHICWA**) seems to have meant "warm valley [people]," and was probably applied to them by their Inca neighbors. About the beginning of the 15th century, the *Quechua* seem to have been one of the largest and most powerful tribes in their part of the Andes. Their territory included the province of *Chanca* (*Andahuayla*) on one side, and probably that of Cotapampa on the other, at a time when the *Inca* state was small and only just beginning to show strength. It was probably at this time that their name was applied to the language which the Inca later spread all over their Empire. Early in the 15th century, however, the *Chanca* attacked the *Quechua* from the west and drove them out of the province of *Andahuayla*. This defeat broke the *Quechua* power once and for all, and left the way open for the *Inca* to assume the leadership of the *Quechua*-speaking peoples. The *Inca* and *Quechua* seem to have had an alliance at the time of the first *Chanca* attack, which may have been one reason why the war between the Inca and Chanca culminated in an Inca victory in 1438. The *Quechua* were made "Incas by privilege" by Pachacuti. (Cieza, 1880, pt. 2, chs. 34, 37; Garcilaso, 1723, pt. 1, bk. 3, ch. 12; Poma, 1936, pp. 85, 337; Pachacuti, 1879, p. 318; Sarmiento, 1906, ch. 44.) *Quechua* first appears as the name of the *Inca* language in documents of 1560 (Santo Tomás, 1891, p. 1). The triple meaning of the word *Quechua* in the 16th century (a geographic region, a tribe, and a language) is a potential source of confusion which must be duly guarded against.

(31) *Yanahuara* (Yanaguara; probably from *Quechua* **YANAWARA**, "black breechclout"). The Yanaguara were "Incas by privilege." (Poma, 1936, pp. 85, 337. See also Garcilaso, 1723, pt. 1, bk. 3, ch. 10.)

(32) *Lare* (*Lari*). A tribe of "Incas by privilege" in the *Lares* Valley, northeast of Cuzco. (Poma, 1936, pp. 85, 337.)

(33) *Cusco* (Cuzco, *Cozco*; from Quechua **QOSQO**, no meaning). The area so marked on the map was probably neither a provincial nor a tribal unit. It is the area close to the capital where old tribal lines were so broken up by Pachacuti's resettlement program that it is not possible to distinguish the old groups. A number of tribal names are known for this area, but many of them may refer to the same tribe. The *Ayamarea* (Ayarmaca), *Huayllacan* (*Guayllacan*), *Hualla* (*Gualla*), *Inca* (*Inga*), *Quehuar* (Quiguar, Queuar), *Huaroc* (*Huaruc*, *Haroc*), and *Quispicanchi* probably all lived in and near the valley of *Cuzco*. The *Anita*, *Mayo*, *Tampo* (Tambo), *Sanco* (*Tanco*, *Canco*), *Quilliscachi*, and *Equeco* (*Equequo*) lived in and around the valley of Ants (also called Zúrite, Jaquijahuana, Xaquix aquana, Sacsahuana, etc.). *Mara*, *Poque*, and other tribes are also mentioned for this area. All these people seem to have spoken *Quechua*, and all were Inca, either by blood or by privilege. (Pachacuti, 1879, p. 318; Poma, 1936, pp. 84-85, 337, 347; Garcilaso, 1723, pt. 1, bk. 1. chs. 20, 23; Morales, 1866; Toledo, 1940; Sarmiento, 1906, chs. 13-35.)

(34) *Paucartampo* (*Paucartambo*, *Paucartampu*). Its existence as a separate province is doubtful, but I have found no grounds for attaching it to any of the neighboring units. It may have been inhabited by *Poque*. (Garcilaso, 1723, pt. 1,

(35) Cauina (Cauina, *Cabina, Caviña, Cauña, Cabiña*). A tribe in the Vilcanota Valley in the neighborhood of Quiquijana. They were "Inca by privilege" and believed in reincarnation. (Cieza, 1554, bk. 1, ch. 97; Sarmiento, 1906, ch. 23; Poma, 1936, pp. 85, 337, 347; Pachacuti, 1879, pp. 269, 279.)

(36) Chilque (*Chillque, Chilqui*). This area was 5 province under the colony, and may have had the same status in Inca times. It was the home of a number of small tribes in addition to the one for which it is named: *Masca, Aco, Papre (Papri, Pabre), Cuyo*, and probably others. Pacaritampo, where the Inca believed that their ancestors had emerged from the earth, was in this province, and the inhabitants spoke *Quechua*. They were "Inca by privilege." (Señores, 1904, p. 200; Poma, 1936, pp. 84, 35, 337; Pachacuti, 1879, p. 318.)

(37) Cotapampa (*Cotabamba*). A people named Cotanera are usually named with the Colapampa, and may have lived in the same district. It is not certain what language the two tribes spoke; Garcilaso (1723, pt. 1, bk. 3, ch. 12) says they belonged to the Quechua nation, but the oota- element in their names looks like Aymara "qota," the equivalent of *Quechua* QOCA, "lake." (Calancha, 1638, bk. 2, ch. 8; Sarmiento, 1906, ch. 35.)

(38) Omasayo (*Omasuyo, Vinasuyu*). This tribe must be distinguished from the inhabitant8 of the Aymara Province of Omasuyo on the east shore of Lake Titicaca. The names are frequently indistinguishable in the chronicles. (Calancha, 1638, bk. 2, ch. 8; Garcilaso, 1723, pt. 1, bk. 3, ch. 11; Sarmiento, 1906, ch. 35.)

(39) *Aymará* (plural *Aymaraes, Aymarays*). One of the most exasperating questions in Andean historical geography is whether there is any connection between the tribe called *Aymará* and the *Aymara* language. Sir Clements Markham (1871, pp. 327-36) believed that the *Aymará* tribe spoke *Quechua*, and that their name was transferred to the Aymara language by the Jesuits of Juli late in the 16th century, because they failed to distinguish clearly between some *Aymata* colonists settled at Juli by the Inca and the local inhabitants. This theory is highly questionable, however, and there is no evidence that the *Aymará* tribe spoke Quechua. It is perfectly possible that they spoke an Aymara dialect in the 15th century. Unfortunately, none of the chroniclers describes the linguistic condition of this area, and the problem may never be definitely solved. (Calancha, 1638, bk. 2, ch. 8; bk. 3, ch. 37; Sarmiento, 1906, chs. 1, 35; Poma, 1936, p. 327; Pachacuti, 1879, p. 279; Garcilaso, 1723, pt. 1, bk. 3, ch. 10.)

(40) *Parinacocha (Parihuana-cocha)*. This area includes the *Pomatambo* (*Pumapampu, Pomatambo*), and it is not certain whether they formed a separate province or not. The names are probably of Quechua derivation, from **PARIWANA-QOCA**, "flamingo lake," and **POMA-TAMBO**, "wild-cat lodge." (Garcilaso, 1723, pt. 1, bk. 3, oh. 9; Pachacuti, 1879, p. 279.)

(41) *Contisuyo* (Condesuyo, Cuntisuyu, *Condes*). This province included *Alca* (*Allca*), *Cotahuasi (Cotaguasi)*, and *Aruni (Arones)*. (Garcilaso, 1723, pt. 1, bk. 3, chs. 3-9; RGI, 1881-97, 2: 12-18.)

(42) *Chumpivilca (Chumbivilca, Chumbivilca)*. The Chump *vilca* had their own language, and used Quechua and *Aymara*'s general languages. They were famousdancers, and paid their labor tax by dancing for the court. (RG, 1881-97, 2: 21-36; Cobo, 1890-95, bk. 12, ch. 33.)

(43) Cavana (Cabana, *Cauana*). The Cavana must not be confused with the *Caviña*. Their province was often called Cavana Conde (i. e., Cavana of *Contisuyo*) to distinguish it from Cavana Colla (Cavana of Collasuyu), a settlement of Cavana colonists in the province of Collas, near modern Cavanillas. The Cauana Conde were included in a single province with the *Collagua* in Colonial times. They deformed their heads, and spoke a corrupt *Quechua*, but had several local languages of their own. (RG, 1881-97, 2: 33-49.)

(44) *Arequipa (Ariquepa, Ariquipay)*. The usual derivations of its name are

completely fanciful. **ARI** is **Aymara**, and means "needle" or "peak" (i. e., Mount Misti); **QIPA** is a Quechua affix meaning "behind." The valley of Arequipa seems to have been nearly depopulated by a volcanic eruption when the *Inca* first entered it in the time of Pachacuti, and it was resettled with colonists from the Highland provinces, some of whom spoke Quechua, others Aymara. (Pachacuti, 1879, p. 279; Morda, 1922-25, bk. 4, ch. 11.)

Coastal divisions. The best systematic description of the Coast valleys is given by Cieaa(1554, bk. 1, chs. 66-75). As very little de&aiced information is available for individual valleys, many of them are simply named in the following list:

(1) **Tumbez** (*Tumbes*, *Tumpiz*), the northernmost valley on the desert Coast.
(2) **Chira**. Its chief town was Sullana (Solana).

(3) **Piura**. (RGI, 1881-97, 2: 225-42.)

(4) Olmos. An oasis at the foot of the mountains.

(6) **Lambayeque**. A large multiple valley. It had a long dynasty of legendary local chiefs before it was conquered by the Chimu king about 1460. Its history, which is very important for chronology, is preserved by Cabello Balboa (ms. III, 17; and see Means, 1931, pp. 50-55). The language spoken was Mochica (Carrera, 1939).

(6) Pacasmayo. Another large valley which formed part of the Chimu Kingdom. Its customs are described in admirable detail by Calancha (1638, bk. 3, chs. f-4), and will be referred to below, pp. 000-000. The people spoke Mochica. The valley is also called Jequetepeque (Xequetepeque).

(7) **Chicama**. This valley is continuous with the valley of Chimu.

(8) **Chimu** (**Chimo**; also called Moche, Trujillo, or Santa Catalina). This was the home valley of the **Chimu** kings who built up a dominion reaching from Tumbes to Parmunca in the 15th century. Their capital was Chanchan, near modern Trujillo. They spoke Qingnam, a language probably related to Mochica. It survived in the valley until the 19th century (Squier, 1877, p. 169). (See Calancha, 1638, bk. 3, ch. 2; Sarmiento, 1906, ohs. 38, 46; Cieza, 1880, bk. 2, ch. 58.)

(9) **Virú**. Also called Guañape (Guanape, Huanapu).

(10) **Chao**. Also called Suo.

(11) **Chimbote**. Also called Santa (Saneta).

(12) **Nepeña**. Also called Guambacho.

(13) Casma.

(14) **Huarmey** (*Guarmey*).

(16) **Parmunca** (Paramonga). Also called Fortaleza. In this valley stands a famous ruined fort, described frequently in the chronicles. (Cieza, 1554, bk. 1, oh. 70; Calancha, 1638, bk. 3, ch. 2; Garcilaso, 1723, pt. 1, bk. 6, ch. 33.) It is supposed to have marked the **Chimu** frontier. The valley of Huaman (Guamán; probably from *Quechua WAMAN*, "hawk"), also called Barranca, is so near Parmunca that it is not listed separately.

(16) **Huaura** (*Guaura*). Also called Huacho or Supe. Calancha (1638, bk. 3, ch. 18) gives information about religion.

(17) **Chancay**. Not to be confused with the Chancay River in Lambayeque Valley.

(18) **Lima** (*Rima*, *Rimac*; from *Quechua RIMAQ*, "speaker," "oracle"). This is a large double valley and had a population of about 150,000 in *Inca* times, to judge by the fact that it was divided into three **hono** units. Two languages were spoken. (Cobo, 1935, bk. 1, ch. 7; Calancha, 1638, bk. 1, ch. 37.)

(19) Lurin. Pachacamac, the most famous shrine on the whole coast, stood here, and the *Inca* made it an important administrative center. It has quite an extensive bibliography. (See Cieza, 1554, bk. 1, oh. 72; Calancha, 1638, bk. 2, ch. 19; and the Conquest witnesses cited in Uhle, 1903.)

(20) *Chilca* (*Chilcca*). Below Lurin is a spot in the desert where the water table is so near the surface that crops can be grown if the sand is dug down a short distance. It is not really a valley, as no river flows through it. The ingenuity of its water supply greatly impressed the Spaniards. (See Cieza, 1554, bk. 1, ch. 73.)

(21) *Mala*.

(22) *Huasco* (Guarco), also called Runahuana (Lunahuana, Lunaguana, Runahuanc) and *Cafiete*. A large and important valley which put up a stubborn resistance to the Inca. (See Cieza, 1554, bk. 1, chs. 73-74; 1880, bk. 2, ch. 59.)

(23) *Chincha*. Another large valley with a powerful chief. It had a population of about 50,000 in *Inca* times, for its chief was a **HONO** KORAKA. (Castro and Ortega Morejón, 1936; Cieza, 1880, bk. 2, ch. 59.)

(24) *Pisco*.

(25) *Zca*.

(26) *Nazca*.

(27) *Acarí*. Also called Lomas.

(28) *Yauca*.

(29) *Atico*.

(30) *Caraveli*.

(31) *Ocoña*.

(32) Camana. Part of this valley was inhabited by a people called Mage (*Maje*), for whom the river of Camana is named. Higher up are the *Cavana*. (Calancha, 1638, bk. 3, ch. 30.)

(33) *Quilca* (*Quilleo*). The river divides into several branches: Sihuas (*Siguas*), Vitor, and Chili being the principal ones. Shua may be a tribal name. Arequipa is on the upper Chili River.

(34) *Tambo* (*Tambo*).

(36) *Moquehua* (*Moquegua*).

(36) *Locumba*.

(37) *Sama*.

(38) *Arica*. There were some Aymara-speaking colonists in this valley. Beyond Arica is a long stretch of very dry coast which supported only scattered fishing villages until the nitrate boom in the 19th century. This region is generally called Tarapaca from a small oasis below Arica. (RGI, 1881-97, appendix 3, pp. xxv-xxvii.)

Bolivian Highland divisions. In addition to the tribes and valleys already listed, it will be well to list the provinces of the Bolivian Highlands where *Aymara* was not the native language. The *Aymara*-speaking provinces are listed under The *Aymara*, pp. 501673.

(1) Cochabamba (*Cochabamba, Cotabamba*).

(2) Yampará (*Yanpará*). These people occupied the valley in which Chuquisaca (Sucre, La Plata) stands. Many colonists were settled here by the Inca. (Calancha, 1638, bk. 2, ch. 40.)

(3) Chicha. The *Chicha* paid their labor tax by furnishing carved logs of red wood for sacrifice in Cuzco. (Cobo, 1890-95, bk. 12, ch. 33; RGI, 1881-97, vol. 2, appendix 3, p. xlivi.)

(4) Lipe (*Lipes, Lipez*). Some *Aymara* was spoken in this province. (RGI, 1881-97, vol. 2, appendix 3, pp. xxii-xxiii.)

PRINCIPAL SOURCES

All modern accounts of Inca culture either concern a limited part of the subject or are based on a very small part of the available source material. The best known to American readers are Murdock, 1934,

ch. 14; Thompson, 1936; Means, 1931; Mead, 1924; Prescott, 1908; Baudin, 1928; and Markham, 1910. Other modern writings on the *Inca* are numerous and can be conveniently found in the bibliographies of Means, 1931, and Baudin, 1928. A few are listed in the bibliography to this section.

Because of the limited usefulness of most secondary treatments, the reader desiring a comprehensive view or even searching for comparative material on some aspect of *Inca* life will find it necessary to consult the sources himself. The original documents are so numerous and so varying in reliability that the task of consulting them cannot be undertaken lightly.

There are two indispensable bibliographical handbooks which list the published editions of the sources on Andean history and culture. P. A. Means' "Biblioteca Andina," 1928, lists the principal chroniclers in alphabetical order. For each, he gives a short biographical notice, a list of works relating to Andean antiquity, the most important published editions of these works, and remarks on the material they cover and its quality. The Biblioteca Andina is now a little out of date, and the author's critical judgment of some writers must be accepted with some reservation. His classification of the chroniclers into a "Garcilassan School" and a "Toledan School" is without sufficient basis, and its implication that writers who were not personal sympathizers with the *Inca* system cannot be relied upon has led Means to accept the theories of some very dubious authors like Garcilaso, Valera, and Montesinos. The "Biblioteca Andina" remains the best thing of its kind in English, however.

Father Ruben Vargas Ugarte's "Historia del Perú: Fuentes," 1939, is an annotated bibliography of the whole history of Perú, with a few remarks about most of the authors, and very useful indices of Peruvian material in the general collections of documents. It has a good index of names. It is, however, so condensed that things are sometimes found with difficulty and its bibliographical citations are too brief, but it is a mine of information if properly used. Less accurate but extremely useful also is the critical list of sources in Chapter 1 of Baudin, 1928.

It should be borne in mind that for the pre-Spanish period, we have no first-hand account, except for the eyewitness descriptions of some aspects of *Inca* ceremonial left by a few of the Spanish soldiers who accompanied Pizarro. For other aspects of the culture, the Spanish sources are translations and modifications of the testimony of Indian witnesses whose veracity it is very difficult to judge at this distance. In addition, 16th- and 17th-century writers copied liberally from one another, often without giving credit, so that many works which are usually termed "sources" or "documents" are only third- or fourth-hand restatements of the original testimony, marred by

carelessness and by personal or political prejudice; It is most important to weigh the antecedents of all this old material and use it with discrimination.

Many of the more important Spanish chroniclers have been translated into English, mostly by Sir Clements Markham and P. A. Means (see references in Means, 1928), and so are available to persons who do not read Spanish. It is wisest, however, to consult the original text even when an English translation does exist, for much often depends on details of wording, and none of the translations is entirely accurate. Means' translations are generally reliable, but Markham's are so poor as to be nearly worthless for anything but a hasty impression of the author's meaning. The frequently cited translations into French by Henri Ternaux-Compans are even worse. (See remarks in Means, 1928, pp. 325, 409, and *passim*.)

Many of the chronicles remained in manuscript until modern times, and a few very important ones have not yet been printed in full. Modern editions from such manuscripts vary considerably in accuracy. The Spanish of the manuscripts is usually full of abbreviations and inconsistencies of spelling, and the frequent occurrence of *Quechua* words makes editing especially difficult. Only a few really good critical texts exist (Avila, 1939; Castro, 1936; Sarmiento, 1906; Estete, 1918), but the partially modernized versions of Márcos Jiménez de la Espada and a few other conscientious editors are adequate for most purposes. Cheaply printed editions have also been published in Lima by H. H. Urteaga and Carlos Romero.

Of all works, ancient or modern, the "Historia del Nuevo Mundo," by the Jesuit Father Bernabé Cobo, written about 1653 and published in 1890-95 in four volumes, is still the best and most complete description of *Inca* culture in existence. It is so clear in its phrasing and scientific in its approach that it is pleasant as well as profitable to work with. As Father Cobo explains, it is based in part on personal research in Cuzco about 1610 and at Juli, Lima, and other places, and on the manuscript works of Juan Polo de Ondegardo and Cristóbal de Molina of Cuzco, both painstaking investigators whose value can be checked from manuscripts surviving independently of Father Cobo's work. He also used the records of several government investigations of *Inca* customs, and the published works of such men as Cieza de León (Cieza, 1554, bk. 1), Garcilaso, Acosta, and others. Two whole volumes of Cobo's work are devoted to geography, ethnobotany, animals, rocks, fish, and similar material. The only serious fault in Cobo's account of the *Inca* is that he made the mistake of following Garcilaso in dating the *Chanca* war at the end of Yahuar Huacac's reign instead of at the end of Viracocha's, so that the central history of the Inca is somewhat distorted. Cobo also wrote a work

on Colonial Lima (*Historia de la Fundación de Lima*, 1882), which I have cited as Cobo, 1935.

The rest of the important chroniclers are best listed chronologically beginning with the earliest. Estete, 1918; Sancho, 1917 b; Xérez, 1917; and the Anonymous Conqueror, 1929, were all eyewitnesses of the Conquest who wrote down their impressions immediately. Their descriptions provide a valuable check on subsequent writers. Pedro Pizarro, 1844, and *Cristóbal de Molina* of Santiago, 1916, were other eyewitnesses who wrote somewhat later (1570 and about 1556, respectively). Their descriptions are more complete but seem somewhat less reliable than those of the earlier four.

The first great general work on Perú was written by Pedro de Cieza de León in 1551. Its author was a soldier who had traveled all over the Andean area, honest, conscientious, and thorough. The first two parts of his "*Cronica del Perú*," the geographical description, published first in 1553, and the history of the Inca, which remained in manuscript until 1880, are the most useful for our purposes. They are cited as Cieza, 1554, and Cieza, 1880, respectively. Cieza is very reliable, but tends to generalize instead of giving specific examples, which is a little annoying. He is our principal source for the outlying provinces of the *Inca* Empire. Contemporary with Cieza is Juan de Betanzos, part of whose "*Suma y Relación*" was published in 1880. It also was written about 1551. Betanzos married a daughter of Atahualpa and had exceptional opportunities for the investigation of Inca antiquities. He is especially useful for Inca legends.

Juan Polo de Ondegardo was a lawyer and government official at Cuzco who made exhaustive inquiries about Inca government and religion in the 1550's. He wrote a number of reports between 1561 and 1571, some of which have been found and published (Polo, 1916 a and b; 1917 a and b; 1940). He is generally reliable, but his style is very obscure and difficult. Both Acosta and Cobo used him very heavily.

A few writers who never went to Perú themselves deserve notice because of the care with which they collected and used the reports of others, the originals of which have since disappeared. The two most important are Oviedo, 1851-55, and Las Casas, 1892 and 1909. Both wrote in the first half of the 16th century. Las Casas' manuscript was heavily drawn upon by subsequent writers like Roman y Zamora, 1897.

Francisco de Toledo, Viceroy of Perú from 1569 to 1582, had careful inquiries made about Inca customs and history which are among the most valuable records we have. Toledo is a much-discussed figure, about whose character there is considerable disagreement. (Cf. Means, 1928, pp. 479-97; Levillier, 1935.) It seems not to have occurred to

his detractors, however, that a man can be narrow-minded and cruel in public life and still demand a high standard of honesty in official reports presented to him. The "Informaciones" prepared at his order (Toledo, 1940) and Pedro Sarmiento de Gamboa's "History of the Incas" (Sarmiento, 1906), also written for him, are both detailed and accurate, as a comparison of them with Cieza de León's earlier work will readily show.

Cristóbal de Molina of Cuzco wrote a very valuable account of Inca religion about 1579 (Molina of Cuzco, 1913). In 1586, Father Miguel Cabello de Balboa finished his "Miscelbnea Antártica," still in manuscript, which contains one of the best accounts of *Inca* history we have, and some interesting information on the north coast. Cabello used Sarmiento's manuscript, (Cabello, ms; and a bad French abridgement, 3 840). José de Acosta wrote his "Historia Natural y Moral de las Indias" in 1590; it contains some important chapters on the *Inca*, based largely on Polo de Ondegardo's work (Acosta, 1940).

The 17th-century chroniclers are in general much less reliable than the 16th-century ones, with the exception of Father Cobo. The difference is especially marked in the field of *Inca* history. Martin de Morúa wrote a history between 1590 and about 1605 which is rambling and confused but contains valuable information on Inca customs. He also preserves some important *Quechua* texts (Morúa, 1922-25). "Fray Antonio," a priest who wrote in 1608, has been given far more credit than he deserves. He is extremely unreliable. (Antonio, 1920; cf. Means, 1928, pp. 328-30; Levillier, 1942.)

Garcilaso de la Vega (1723) was the son of a Spanish soldier and an *Inca* princess. He left Perú in 1560 and spent the rest of his life in Europe, writing his "Royal Commentaries" in his old age. He has long enjoyed an undeserved position of authority in matters relating to the *Inca* (Means, 1928, pp. 367-81; Levillier, 1942; Rowe, 1945). He is useful for those aspects of Inca life which survived into the Colonial Period and which he saw with his own eyes, but his accounts of Inca history and religion are entirely fanciful. The best parts of the book are the descriptions of plants and animals and of the Inca and Colonial monuments of the city of Cuzco. One of Garcilaso's most important sources was a Jesuit named Blas Valera, whose veracity has been widely accepted because of the praise Garcilaso bestowed on him. (See Means, 1928, pp. 497-507.) Valera's claims will not stand criticism, however. I have cited one of his reports, written about 1590, in the section on religion (Valera, 1879).

Juan de Santacruz Pachacuti (1879) wrote early in the 17th century. He was an Indian from Canas, and wrote abominable Spanish much mixed with *Quechua* phrases. Although his "Relación" is confused and difficult to use, it contains valuable material on Inca history and religion, and some important *Quechua* texts. Another In-

dian writer of about the same date and of similar usefulness is Felipe Guaman Poma de Ayala (Poma, 1936). His monumental work of over 1,000 pages is illustrated with full-page pen and ink drawings which provide some of our best illustrations of Inca life. The illustrations are much more reliable than the text, which is even more confused than that of Pachacuti. Poma is very unreliable on history, better on administration, and perhaps best on religion and daily life.

Alonso Ramos Gavilán wrote a history of Copacabana in 1621 which contains important material on Inca history and religion. He is verbose but reliable. Juan Anello Oliva wrote a work on *Inca* history in 1631 which was not published until 1895. It is largely based on Garcilaso, but contains a little original material, especially legends. Antonio de la Calancha, 1638, is very important for tribal distributions, legends and religious customs of the Coast, ethnography of Pacasmayo, and the history of the Inca in the Colonial Period.

Fernando Montesinos, who wrote about 1642 (Montesinos, 1882), pretends to give a long list of pre-Inca kings, which has been accepted at face value by a number of historians of the Inca. Whatever the value of this list may be for the study of Indian legends, it is worthless as history, and I am inclined to be suspicious of his incidental remarks on Indian customs.

In the century after the Conquest, the Catholic missionaries in Perú made a determined effort to stamp out the extensive survivals of the ancient religion which lingered very late in the country districts, and we have many useful reports growing out of this campaign. Most of them deal with native religion on the Coast and in central and northern Perú. (Arriaga, 1920; Avila, 1939; Religiosos Agustinos, 1865.)

For all areas outside of Cuzco, our best sources are the descriptions of individual provinces made at various times for the information of the Spanish King, and published in four volumes by Marcos Jiménez de la Espada under the title of "Relaciones Geográficas de Indias" (1881-97). In order to simplify reference, documents in this collection are not cited separately, and the abbreviation RG-I is used to refer to the collection.

In addition to the sources listed in this section, a great many documents useful for limited aspects of the subject are cited throughout the text, and they will be found listed in the general bibliography. Where possible, I have cited the chroniclers by book and chapter instead of by volume and page, so that readers using different editions of the texts can locate the references with equal facility. Where a page number is used in a citation it is preceded by the abbreviation p. or pp., or if following a volume, book, or chapter number, by a colon.

ARCHEOLOGY

Cuzco archeology is at present in that tantalizing state where its chronology has been pretty satisfactorily determined in outline, but we know very little about the material culture of most of the periods. Enough has been done, however, to show that Inca civilization was the product of a long development in the valley of Cuzco itself, and that consequently it is unnecessary to look farther afield for that civilization's cultural origins.

The last two periods now distinguishable at Cuzco cover the more or less historic time when *Cuzco was* under the *Inca* dynasty, from about A. D. 1200 to the coming of the Spaniards about 1532. Between the earlier of these Inca Periods and the pre-Inca culture of the area is a gap in our chronology of unknown length, during which important changes in art and technology must have taken place. The pre-Inca culture is also isolated at the other end, as we know nothing of its cultural antecedents. No reliable evidence bearing on the question of the antiquity of man or the origin of agriculture has yet been reported from any part of the area dealt with in this section.

Chanapata Period.—The *pre-Inca* culture known from the valley of Cuzco is called Chanapata (see Bennett, this volume, p. 143), after the site on the northwestern edge of the city of Cuzco, where it was first identified. It is a habitation site covered with 3 to 6 feet (1 to 2 m.) of stratified rubbish and unaccompanied seated, flexed burials. Although four other sites of the same culture are known, extending its area to Maras, some 20 miles (30 km.) north of Cuzco, and Ayavire, perhaps 200 miles (300 km.) south, the only excavations made to date consist of a single test-trench in the type-site of Chanapata, so that no really adequate description is possible.

The locations of the known sites near good agricultural land where game is not particularly plentiful suggest that the people of Chanapata practiced agriculture, and great quantities of llama bones show that they kept large numbers of domestic animals. Pottery is well made and abundant, and a high percentage of decorated ware is found in the refuse, but so far no metal. It is possible that the Chanapata people were ignorant of metal; at most, it had little importance for anything but ornament, for a large quantity of bone tools, chipped obsidian points, and a few ground-stone objects pretty well cover the cutting needs for which metal tools were made in later times. The bonework includes a number of spear-thrower hooks.

Very few remains of buildings have been identified as belonging to the Chanapata culture, and they are all parts of retaining walls of small field stones laid in mud. The retaining walls seem not to have held up simple agricultural terraces, but rather raised substructures and the sides of sunken courts. No worked building stones have been

found as yet, and no sculpture in stone above the size of a figurine. The typical decorated pottery is a polished black ware with applied relief ornaments and simple geometric or animal designs incised on the outer surface. There is also some red ware with simple geometric designs in white on a red background. The cooking ware has a brushed surface and punctate ornament with occasional bits of modeling. Flat plates and straight-sided bowls are the most common decorated shapes, and are notable for their heavily thickened rims. A few very well-made solid human figurines and large modeled ornaments were also made from pottery. The closest relations of the Chanapata style seem to be with Chiripa in Bolivia (Bennett, 1936, figs. 27-29, and this volume, p. 118); next, with the Chavín style of northern Perú (Tello, 1943); very distantly with Pucara, its nearest neighbor; and not at all to Tiahuanaco. No trade sherds of any of these styles were found (Rowe, 1944).

Early Inca period.—The Early Inca archeological material probably corresponds to the historical period of about 1200 to c. 1438, which saw the gradual establishment of *Inca* hegemony in the region of Cuzco. Many of the sites occupied in this period continued in use right down to the Spanish Conquest, and some good stratigraphic work should be possible at such places as QINCA-QINCA in the Cuzco Valley near San Gerónimo. Three sites have been listed where the Early *Inca* material is found pure; one of them is a small area within the Late *Inca* fortress of Sacsahuaman, obviously unconnected, with the better-known later fortifications, and here the only excavations in Early *Inca* rubbish have been made. Metal is rare, and bone tools common; wall foundations are of uncut field stones; burial was generally in small beehive-shaped masonry tombs built in cracks in the sandstone cliffs and roofed with crude corbel vaults. The bodies were wrapped in cloth and matting to hold them in the seated flexed position used in all periods at Cuzco. An important diagnostic trait of this period is a stubby ground-slate knife with a straight cutting edge, a curved back, and one end notched for lashing to a wooden handle.

Early *Inca* pottery is classified as the Killke Series, from a site near Cuzco where I first noted its separate character. It is a carelessly executed ware, with a well-smoothed surface for the decoration, painted in black, red and black, or red, black, and white on the natural buff color of the clay, or in black or red and black on a white background. The designs are linear and entirely geometric; they display some relationship to the presumably contemporary Collao black-on-red, common in the Department of Puno, and to some of the characteristic motives used by Late Inca potters. It seems probable that a complete transition from Early to Late *Inca* types will someday be traced, and such a transition would be entirely natural. The cooking

ware is very rough, decorated only with occasional round punch marks on the handles of deep plates. The shapes of the pottery in this period resemble those common in the next period, but the plates are deeper (Rowe, 1944, addenda).

Late Inca period.—The Late *Inca* Period lasted from c. 1438 to the arrival of the Spaniards and perhaps even later in some areas. During this time, the *Inca* spread their culture by conquest throughout the greater part of the Andean area, and Late *Inca* material is abundant at many sites far removed from Cuzco: Cbile, Ecuador, and the Peruvian Coast. Because of its imposing quality and wide distribution, the Late *Inca* style was one of the first to be identified in Peruvian archeology, and Late Inca material is fairly common in collections all over the world.

Architecture of this period is famous for the fine stone cutting employed and the close fitting of very large irregularly polygonal blocks. Agricultural terraces, temples, forts, government buildings, storehouses, roads, and carefully laid out towns are common in the neighborhood of Cuzco, and have been well and frequently illustrated. (See Bingham, 1913, 1916, 1930; Fejos, 1944; Rowe, 1944.) No Late *Inca* burials from near Cuzco have been scientifically excavated, but the Bingham expedition dug a number of tombs of this period near Machu Picchu, in which the bodies were placed under overhanging rocks in a seated, flexed position, and surrounded with pottery, stone, and copper objects (Eaton, 1916).

The individual objects and techniques of Late *Inca* material culture will be described under the proper headings below. In the textile art and metallurgy, the *Inca* craftsmen surpassed all peoples in native America. Late *Inca* pottery is classified as the Cuzco Series, and its forms and decorations derive from the preceding-period. It has a hard, almost metallic paste, thicker than earlier styles, but of better finish, with designs in black, white, and red. Occasionally, the red is used for a background. On the great majority of Late Inca pieces, the same geometric designs are repeated mechanically, with very little variation, but occasional pieces have stylized plant or human figures as well. Most museum collections have been selected for variety, and contain mostly these rare "naturalistic" patterns or other unique pieces, so that it is very easy for anyone who does not handle *Inca* sherds to get a completely false impression of the pottery style. (See Rowe, 1944, for analysis and bibliography.)

Pottery from Cuzco seems to have been widely used throughout the *Inca* Empire, but it never entirely displaced local styles, and generally only served as a convenient source for borrowed motives. In the Department of Puno, for instance, the *Colla* and *Lupaca* continued to make their own distinctive wares, and only an occasional piece betrays its date by a motif obviously copied from the Cuzco Series.

The same is true in the *Chimu* Kingdom' on the North Coast. The Inca were sufficiently impressed by the *Chimu* potters to bring a group of them to work in Cuzco, and we have a number of their products (see Eaton, 1916, pl. 14), but the foreign styles seem to have influenced the native craftsmen very little.

The sequence of cultures described for Cuzco rests on quite convincing archeological evidence. At Chanapata, pure Chanapata type refuse was covered by a disturbed layer including a mixture of Early and Late *Inca* and Colonial pottery, indicating definitely that the Chanapata material was the oldest. The Late *Inca* material is definitely the latest, for it is found in regions which were only conquered by the *Inca* toward the end of their expansion, such as Highland Ecuador and Chile; and, around Cuzco, it is associated with buildings which are known from historical evidence to have been built by the last *Inca* Emperors. The Early and Late *Inca* materials are closely related stylistically, and the known associations in the ground (three pure Early Inca sites, one rubbish pit with a mixture of Early and Late *Inca* rubbish, and several sites with surface indications of both styles) bear out the assumed chronological position of the styles. The evidence is reviewed in more detail elsewhere (Rowe, 1944).

HISTORY OF THE ANDEAN AREA TO 1532

Archeological discoveries of the past 50 years have made it plain that civilization is very old in the Andean area and that the cultures which the Spanish conquerors found and described were the end product of long local development. Unfortunately, the Andean Indians had no writing and little interest in the past, so that most' of the history of Andean culture will always have to be restored from archeological evidence. There is no doubt, however, that far more historical information was available to the Spanish writers of the 16th century than has come down to us, and it is to their eternal discredit that more of it was not committed to paper before it was destroyed or forgotten;

Historical records among the Indians generally took the form of genealogical traditions, narrative poems, and statistics preserved by the quipu (*Quechua*, *Khipo*), or knot-record. They were explained and transmitted from father to son by trained historians who had memorized them. The, obvious possibilities of this method of preserving history and the success with which the *Inca* used it, entitle its results to receive at least as much consideration from the historian as the much' more uncritical and meager. chronicles which are all we have from some of the greatest Old World users-of writing, such as the Chinese and the Hindus. (Cieza, 1880, bk. 2, chs: 11-12; Sarmiento, 1906, ch. 9; Morúa, 1922-25, bk. 2, ch. 15.)

Almost everywhere in the Andean area, comparatively reliable history begins with the *Inca* conquest in the second half of the 15th century. Here and there, as among the Lupaca of Lake Titicaca; historical traditions going back of the Conquest a little have been preserved. The most important of these traditions comes from the valley of Lambayeque *in* the *Chimu* Kingdom, where some very long genealogies were collected by Father Cabello de Balboa (ms., bk. 3, ch. 17; see also Means, 1931, pp. 50-55). It is quite likely that the *Inca* owed their interest in the preservation of history to the Coast people, from whom they also borrowed certain features of political organization.

Along with their soberer history, the *Inca* handed down many legends of gods and heroes, quite similar to those with which the Romans of the time of Augustus filled out the blanks in the early history of their city. Most of these legends deal with the origins of men and customs and the adventures of their more remote ancestors. It is not always easy to draw a rigid line between legend and history, but for the purposes of this summary, the historical period can be said to begin early in the 15th century.

The *Inca* royal family was divided into lineages, each of which included the descendants of a past ruler. As the members of these royal lineages enjoyed an especially privileged position in *Inca* society, they had good reason to keep careful track of the list of rulers, and, with a few qualifications noted below, we are probably safe in accepting the traditional list of rulers as accurate. The list, with the *Quechua* names phonetically written in parentheses, is as follows:

- (1) Manco Capac (*MAÑKO QHAPAQ*); also called Mango Capa, Ayar Mango, etc.
- (2) Sinchi Roca (*SINCI ROQ'A*); Cinche Roca, Sinchi Rocca, etc.
- (3) Lloque Yupanqui (*LYOQ'I YOPARKI*); Lloque Yupangue, etc.
- (4) Mayta Capac (*MAYTA QHAPAQ*); Maita Caps, etc.
- (5) Capac Yupanqui (*QHAPAQ YOPAÑKI*); Capa Yupangue, etc.
- (6) Inca Roca (*INKA ROQ'A*); Inga Roca, Inga Roca Inga, etc.
- (7) Yahuar Huacac (*YAWAR WAQQAQ*); Yaguar Guaca, Inga Yupangue, etc.
- (8) Viracocha Inca (*WIRAOQCA INKA*); Biracocha, Uiracocha.
- (9) Pachacuti Inca Yupanqui (*PACAKOTI INKA YOPARKI*); Pachacuteec, Inga Yupangue, etc.
- (10) Topa Inca Yupanqui (*THOPA INKA YOPAÑKI*); Tupac Inca, Topa Inga Yupangue.
- (11) Huayna Capac (*WAYNA QHAPAQ*); Guaina Capa, Guayna Cava, Cuzco Viejo, etc.
- (12) Huascar (*WASKHAR*); Guascar.
- (13) Atahualpa (*ATAWAL'PA*); Atahualpa, Atabalipa, Atagualpa, Atavalpa, etc.

Manco Capac was a demigod who had turned to stone, and the stone was one of the Inca's most sacred objects. Bodies purporting to be those of all the other rulers were preserved. The lineages descended, from the, first five rulers belonged to the Lower Cuzco moiety; the rest to the Upper Cuzco moiety. Huascar's lineage had

only one member, and he was not a descendant, while Atahuallpa's descendants were grouped with Huayna Capac's lineage or entirely excluded, so that for all practical purposes, there were only six Upper Cuzco lineages of royal blood (Sarmiento, 1906, ch. 14, and *passim*). Between Viracocha and Pachacuti, a half-brother of Pachacuti named Inca Urcon (*INCA ORQOÑ*) ruled for a short time, but his name was removed from the official list by Pachacuti. (Sarmiento, 1906, chs. 24-33; Cieza, 1880, bk. 2, chs. 40, 43-46; Pachacuti, 1879, p. 269.)

The beginning of the Inca dynasty can be dated about 1200, if the list of *Inca* rulers is accepted in this form. The succeeding rulers are shadowy until the Inca began their great expansion under Pachacuti, the ninth Emperor. The following approximate dates¹ are sufficiently exact to be useful:

- 1438, Pachacuti crowned. ----- -> *East exp*
 1463, Topa Inca takes command of army.
 1471, Topa Inca succeeds Pachacuti.
 1493, Huayna Capac succeeds Topa Inca.
 1527, Death of Huayna Capac; Huascar succeeds him.
 1532, Huascar killed by Atahuallpa after a long civil war.

Coming of the Spaniards.

In early times, neither the *Inca* nor any of their neighbors thought of organizing their conquests as a permanent domain. A defeated village was looted, and perhaps a tribute was imposed on it, but otherwise it was left alone until it recovered sufficient strength to be a menace again. Down to the reign of Pachacuti, towns very near to Cuzco preserved complete freedom of action and raided one another's territory whenever there seemed to be a good opportunity for plunder (Sarmiento, 1906, ch. 24). Yahuar Huacac and Viracocha, Pachacuti's immediate predecessors, enjoyed the services of two very able generals, Vicaquirao and Apo Mayta, cousins and Incas by blood. They were probably responsible for the first attempts to organize conquered territory, at least around the capital itself, and their successful campaigns gave the *Inca* state a political importance it had entirely lacked in earlier times. Other powerful raiding states were growing up in the Titicaca Basin and to the northwest of Cuzco, and the rise of Inca power between these areas made a contest for supremacy almost inevitable (Sarmiento, 1906, chs. 23-24).

In the Titicaca Basin, the *Lupaca* and the *Colla* were great rivals, and each hoped to get the *Inca*'s aid against the other. Emperor Viracocha, only too glad to fish in troubled waters, negotiated an alliance with the Cari of the Lupaca. The *Colla* realized their danger, and determined to attack the Lupaca before they could receive *Inca* aid. The *Lupaca* won a great battle near Paucarcolla, however, and

¹ These dates are given by *Cabello de Balboa*, ms., bk. 3, chs., 9-21, a work written in 1530. They are the most plausible set, ancient or modern, which has yet been proposed. On the subject of dates and Inca chronology in general, see Rowe, ms.

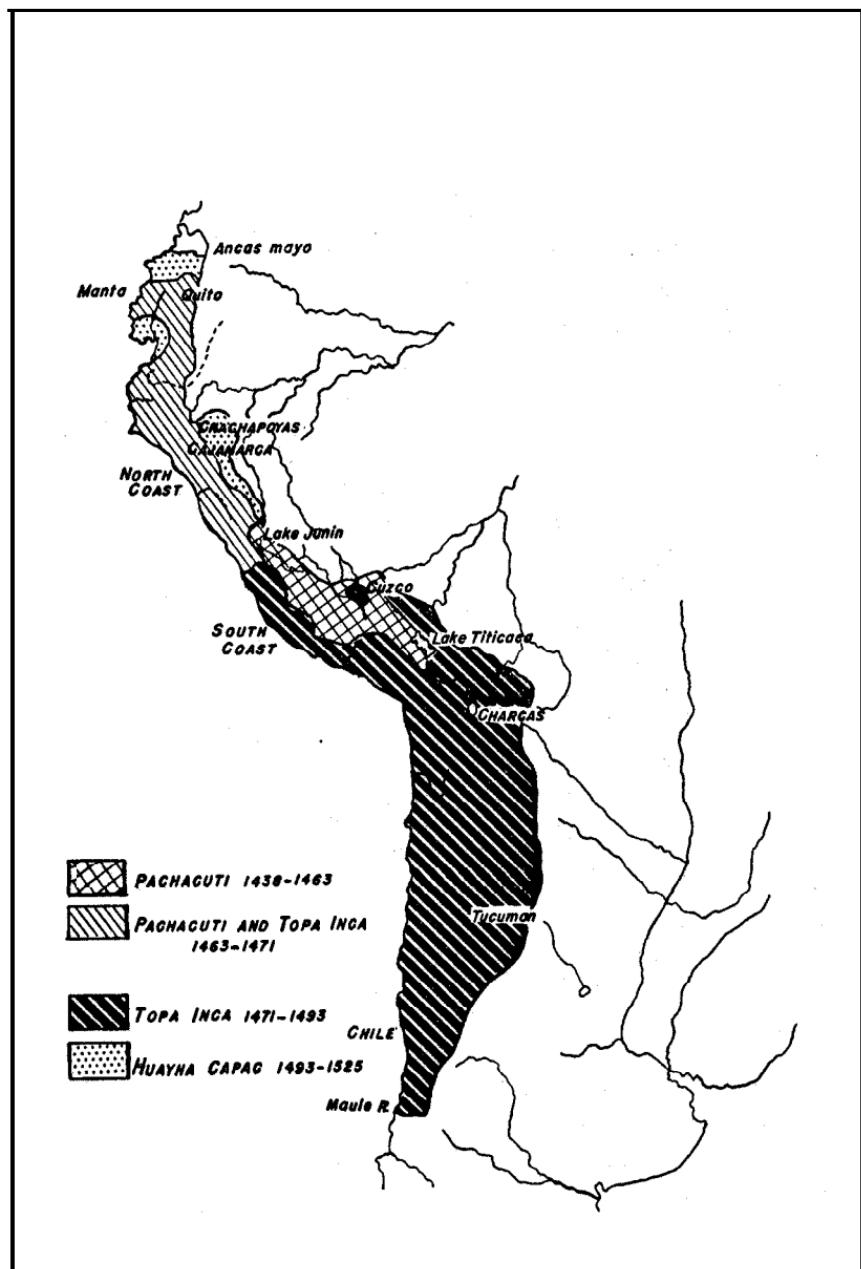
so settled the affairs of the district before the Inca could interfere (Cieza, 1880, bk. 2, chs. 41-43).

To the northwest, the *Quechua* formed a powerful state on friendly terms with its Inca neighbors. *Quechua* power was a convenient protection against attack from that side, and *Quechua* territory then extended from Cotapampas to the border of Vilcas. Beyond the *Quechua* were the *Chanca*, who, about the beginning of Viracocha's reign, broke the *Quechua* power in a great battle near the border of the Province of Aymaraes and settled in the former *Quechua* Province of Andabuaylas (Cieza, 1880, bk. 2, ch. 27). The buffer was gone, and Viracocha immediately took steps to strengthen that side of the *Inca* territory by marrying the daughter of the chief of Anta, most important town on the Plain of Anta, and renewing his friendship with the *Quechua* (Sarmiento, 1906, ch. 24).

The *Chanca* attack was delayed until Viracocha was an old man, perhaps with the deliberate intention of striking the *Inca* when their leadership was weak. When it came, the threat was so serious that many *Inca*, including Inca Urcon, the announced heir to the crown, believed resistance was impossible. Viracocha was persuaded that the cause was hopeless and took refuge with Inca Urcon in Caquia-Xaquixahuana, a fort above Calca, which they felt was more defensible than the open valley site of Cuzco. The old generals Apo Mayta and Vicaquirao and a group of important nobles including two of Viracocha's sons, Roca and Yupanqui, refused to leave Cuzco, however, and organized a desperate defense. Yupanqui assumed command and used every inducement to secure allies, even to bribing the *Cana* and *Canchi* to send contingents (Polo, 1917 a, p. 46). Two *Chanca* invested the city and tried to take it by storm, but the *Inca* resisted heroically, and, at the critical moment, Yupanqui cried out that the very stones were turning to men to help them. The attack was repulsed, and Inca Yupanqui had the stones from the battlefield collected and placed in the city's shrines. They were called the PORORAWQA (Polo, 1917 a, p. 46; Cobo, 1890-95, bk. 12, ch. 10; Pachacuti, 1879, p. 271). In subsequent battles, the *Chanca* were soundly defeated, and the *Inca* suddenly became the most powerful people in the Andes. Inca Yupanqui had himself crowned in place of his brother, Urcon, and assumed the title of Pachacuti (PACAKOTI, literally, "cataclysm"), by which he is generally known to history. (Cieza, 1880, bk. 2, chs. 4447; Sarmiento, 1906, chs. 26-29; Cabello, ms., bk. 3, ch. 14; Pachacuti, 1879, pp. 269-72; Betanzos, 1880, chs. 6-10; Las Casas, 1892, ch. 16.)

Pachacuti, a great conqueror and a great organizer, had a son, Topa Inca, as able as himself (map 4). In sweeping campaigns, the father and son extended the Inca domain to Quito on the north and Chile on the south, improvising and introducing the elaborate

Inca administrative system as they went. Nowhere did they find another state capable of meeting them on equal terms, for by the time they came into conflict with the *Chimu* Kingdom on the north coast, the Inca were already too powerful for the *Chimu*. The



MAP 4.-The expansion of the Inca Empire between 1438 and 1525. (Compiled by John H. Rowe.)

conquests were not easy, however, and many tribes put up a stubborn and effective resistance. Huarco, Chimu, Angaraes, Chinchaycocha, and Chachapoyas were provinces where the resistance was particularly stiff.

The *Inca* conquests started with a campaign in the lower Urubamba Valley and in Vilcapampa which Pachacuti undertook immediately after his victory over the *Chanca* (Cobo, 1890-95, bk. 12, ch. 12; Sarmiento, 1906, chs. 33-35). Having consolidated his power at home, he turned west through the *Quechua* and *Chanca* country, and conquered Soras and Vilcas. From Soras he sent General Capac Yupanqui to reconnoiter the south coast, and then occupied Aymaraes, Omasayos, Cotapampas, and Chilques. The exact order of the conquest of the other mountain provinces in this vicinity is not recorded, as some submitted without resistance, and the occupation of others was overshadowed by more important events. To avoid difficulties with his late enemies, the *Chanca*, Pachacuti persuaded them to undertake the subjugation of the *Colla*. (Cieza, 1880, bk. 2, chs. 47-48; Sarmiento, 1906, chs. 35, 37; Pachacuti, 1879, p. 273; Cabello, ms.)

General Capac Yupanqui was then entrusted with a large expedition to extend the *Inca* dominions on the north. He received strict orders not to go beyond a designated point, and was given a contingent of *Chanca* under a *Chanca* leader named Ancoallo to accompany the expedition. They conquered *Angará*, *Huanca*, and *Tarma*, and raided even farther north, well beyond the limit fixed by Pachacuti. The Chanca contingent got along very badly with the rest of the army, and deserted during the campaign, escaping to the eastern forests below Huánuco. Capac Yupanqui was executed on his return to Cuzco for disobeying orders and for letting the *Chanca* escape.²

Unrest in the Titicaca Basin then caused Pachacuti to undertake a campaign there in person. The reason for this campaign seems to have been a revolt of Ayaviri and some neighboring towns encouraged by the Lupaca, who were supposed to be allies of the *Inca*, but were probably worried by the new power which the *Inca* were acquiring. The revolt of Ayaviri was bloodily crushed, and Pachacuti went on to conquer the Lupaca and raid around the south and east shores of the lake. (Cieza, 1880, bk. 2, ch. 52; Cobo, 1890-95, bk. 12, ch. 13; Sarmiento, 1906, chs. 40, 41; Cabello, ms.)

Soon Pachacuti began to leave military affairs more and more to

²Sarmiento, 1900, oh. 38; Cabello, me.; Cieza, 1880, bk. 2, chs. 49, 50, 56; Polo, 1917 b, p. 115; Toledo, 1940, pp. 19, 24, 32, 40, 44. There are at least three divergent accounts of this campaign which are very difficult to reconcile. According to Sarmiento and Cabello, Capac Yupanqui was not supposed to pass a river near Huaylas, but he went on raiding to Cajamarca. Cieza says that he was supposed to stop at Huancas but went on to Chinchaycocha. Polo and Toledo's witnesses agree that he was not supposed to go beyond Vilcas but went to Huancas. The Indians seem to have been more interested in the dramatic value of the story than in geographical precision. For the chronology of Inca conquests, it does not matter which account is correct, as another expedition soon subjugated the whole area.

his son Topa Inca, and devote more of his own time to organization and to the elaborate program for rebuilding Cuzco which he had undertaken. While Topa Inca was occupied in other regions, however, Pachacuti undertook one more small expedition to the *Chumpivilca* and neighboring tribes, rounding out the highland part of the Empire on the southwest (Cieza, 1880, bk. 2, ch. 53).

Topa Inca's first campaigns were in the north. He put in order the provinces conquered by his father and Capac Yupanqui, and marched up the Highlands as far as Quito. In the course of the fighting in Quito, Topa Inca pushed his way down to the Ecuadorean Coast in the neighborhood of Manta, and Sarmiento tells a very interesting story about a voyage of exploration which Topa Inca undertook in the Pacific. Then he invaded the Coast from the north, taking the *Chimu* king on the flank where he was least prepared, and occupied the whole *Chimu* Kingdom and the Central Coast valleys as far as Lurín. (Cieza, 1880, bk. 2, chs. 56-58; Cobo, 1890-95, bk. 12, chs. 13, 14; Pachacuti, 1879, pp. 281-84; Sarmiento, 1906, chs. 44-46; Cabello, ms., bk. 3, chs. 15-17.)

After his return to Cuzco, Topa Inca, in a new campaign on the South Coast, subdued the valleys from Nasca to Mala. The most serious resistance he encountered was at Huarco (Cieza, 1880, bk. 2, ch. 59). Pachacuti, now very old, resigned the Empire to Topa Inca about 1471 after a reign of 33 years. Topa Inca's first expedition after the installation ceremonies was an invasion of the eastern forests of the upper Madre de Dios, through Paucartambo and the country now occupied by the *Wachipeiri* and *Masco*. This campaign was interrupted by a great uprising in the Titicaca Basin touched off by a Colla who deserted from Topa Inca's army, and reported that the *Inca* had been heavily defeated by the forest Indians. Topa Inca turned back immediately to deal with this new danger. (Cieza, 1880, bk. 2, chs. 53-54; Cobo, 1890-95, bk. 12, ch. 14; Sarmiento, 1906, chs. 49-50; Cabello, ms., bk. 3, ch. 18.)

The Titicaca Basin revolt *was* led by the Colla and *Lupaca*, but the *Omasuyu* and *Pacasa*, who were not yet *Inca* subjects, participated. It was far from being a national movement of the *Aymara* tribes, for the *Cana* and *Chanchi* remained loyal, and the southern and western *Aymara* do not seem to have taken an active part. The *Inca* threat still seemed remote to the *Caranga* and *Charca*. Nevertheless, the revolt was a serious threat to the very existence of the *Inca* Empire, and Topa Inca took prompt and energetic measures against it. The rebels had fortified the *peñón* (butte) of Pucara, and a number of neighboring hills, and they put up a very stubborn resistance. Topa Inca finally took the forts, however, and occupied the whole *Colla* province. The *Lupaca* and *Pacasa* made another stand at the Desaguadero River, but were decisively beaten, and the rebel-

lion collapsed. (Cieza, 1880, bk. 2, ch. 54-55; Sarmiento, 1906, ch. 50; Pachacuti, 1879, pp. 287-89; Cobo, 1890-95; Cabello, ms.)

Topa Inca next invaded modern Bolivia. Cobo says that the great conqueror had a vision of himself as master of the whole civilized (Andean) world, and vowed not to stop before reaching the uttermost sea (*tiqsi-qoca*) 1890-95, bk. 12, ch. 14). He conquered the whole of Highland Bolivia, and invaded Chile through Lipes and Atacama. In Chile, he penetrated as far as the Maule River at the modern town of Constitución, where he set up the boundary markers of his Empire. The *Araucanians* who lived beyond were enemios too formidable to be successfully attacked at that distance from the **Inca** capital, and their wooded country was probably not attractive to the mountain Indians in any case. Tucumán and most of the Highlands of Northwest Argentina also submitted to **Topa Inca**. (Cieza, 1880, bk. 2, ch. 60; Sarmiento, 1906, ch. 50; Polo, 1917 b, p. 116; Cabello, ms.; Pachacuti, 1879, p. 292.)

Topa Inca made one more expedition to the eastern forests, and then devoted the rest of his reign to organization. It is not certain which aspects of the **Inca** administration were his father's ideas and which **Topa Inca**'s, but **Topa Inca** had the job of applying **Inca** policies to the largest area ever united under one government in aboriginal America. He died about 1493 after a successful reign of 22 years, and was succeeded by his son Huayna Capac.

Huayna Capac continued his father's work of organization, put down a number of revolts, and widened the frontiers of the Empire in the north. He enlarged the Inca province of Chachapoyas and added Moyopampa. North of Quito, he defeated the *Cayambi* in bitter fighting, and set up his boundary markers on the Ancasmayo River, at the modern border between Ecuador and Colombia. He also conquered the hot Coast around the Gulf of Guayaquil and the large Island of Puná. During his reign, the *Chiriguano* attacked the Empire from the east (see Volume 3) and were beaten off but never subjugated. They brought with them Alejo Garcia, an adventurous Spaniard from the coast of Brazil, who was the first European to visit the Inca Empire (Means, 1935, p. 41). The year that Huayna Capac died (1527) word was brought to him that Pizarro's preliminary exploring expedition had touched at Tumbez. (Cieza, 1880, bk. 2, chs. 62-68; Cobo, 1890-95, bk. 12, ch. 16; Sarmiento, 1906, chs. 58-62; Cabello, ms.; Polo, 1917 b, p. 114; Pachacuti, 1879, pp. 300-307.)

In the 5 years between Huayna Capac's death and Pizarro's invasion of the Empire, the Inca state was wracked by civil war. Huayna Capac died at Quito of a sudden pestilence without having announced his successor. Huascar, the obvious candidate, was at Cuzco, where he was crowned by the High Priest. Atahuallpa, another son of

Huayna Capac, assumed the governorship of Quito and, feeling ill-treated by Huascar, revolted. Huascar asserted that he was the legal heir and that Atahualpa's position was entirely assumed. Atahualpa's claims grew with success. He seems to have originally claimed only the governorship of Quito in Huascar's name, but later he asserted that Huayna Capac had divided the Empire and left him as independent sovereign of the northern part. The rivalry was decided by force of arms, with Atahualpa completely victorious.

When hostilities opened, Huascar possessed the Empire north to the province of the *Cañari*, where he had a general named Atoc (ATOQ, "fox") with a small force. Atahualpa controlled only the northern half of modern Ecuador, but had most of Huayna Capac's seasoned army, which had remained at Quito, and the two best generals in the Empire, Quisquis and Chalchuchima. The fighting was precipitated by the intrigues of the chief of the *Cañari*, and Atahualpa ravaged that unhappy province to punish him for his double dealings.

It is a mistake to think of Atahualpa's revolt as a national movement on the part of the Quito or of any combination of Ecuadorean tribes, although the natives undoubtedly hoped to profit from Atahualpa's victory. The strength of Atahualpa's cause lay in the Inca colonists of Quito and in the superb army which Huayna Capac's sudden death had left under his command. As the Empire had grown very large, and perhaps unwieldy, an argument could certainly have been made for dividing it, but Huayna Capac's reign of 34 years had shown that it was not impossible to administer such a wide territory from a single capital. The imperial succession had occasioned revolts before, and Atahualpa's was not very different. As soon as he saw some prospect of success, he set out to make himself Emperor of the whole Inca territory and dropped all thought of a separate monarchy in Quito. If Pizarro had arrived a year later, he would have found Atahualpa in full possession of all of Huayna Capac's power, Huascar's cause forgotten, and a political situation much less favorable to outside interference than he found in 1532.

The war was decided in a series of battles beginning near Quito and ending with a great encounter near the Apurimac River on the approaches to Cuzco from the north. Quisquis and Chalchuchima were consistently victorious, and gathered strength as they went. In the final battle, Huascar was captured, and the two generals destroyed all the leaders of his party that they could find in Cuzco. The news of this victory reached Atahualpa in Cajamarca about the same time that Pizarro did.³

³ Cieza, 1880, bk. 2; Sarmiento, 1906; Cabello, ms.; Pachacuti, 1879; Las Casas, 1892; Cobo, 1890-95; and Toledo, 1940, are some of the most important sources on the civil war. The bibliography on the subject is enormous, and full of contradictions. The later accounts should be checked by the chroniclers of the Conquest: Xerez, Estete, Anonymous Conqueror, and others. Sarmiento's account of the war appears to be based on a Quechua narrative poem, and is probably close to one of the Indian versions. Cabello's account is especially important, as he collected independent testimony in Quito and on the coast.

CULTURE

SUBSISTENCE ACTIVITIES

Agriculture.-The Andean area is one of the world's great centers of plant domestication, and, for many centuries before the Spanish Conquest, its inhabitants had lived chiefly by their agricultural labors. The Spaniards brought draft animals and new food plants, but introduced few changes in Indian methods of cultivation, so that modern Andean agriculture is much like that of the Inca. (See Mishkin, *The Modern Quechua*, pp. 411-470, and Tschopik, *The Aymara*, pp. 501-573 in this volume.)

A complete list of the plants cultivated in the Andes probably would exceed 40 species, most of them domesticated in the area, but it would be difficult to find a valley where they were all grown. The potentialities of the valleys varied according to altitude; over 12,000 feet (3,660 m.), only 6 or 8 species could be raised, but in the warm irrigated valleys of the coast as many as 20 different plants might be cultivated. In the highest valleys, the potato (*PAPA*) was the staple crop, and several varieties were cultivated. Quinoa (*KINOWA*) furnished the most important grain, and leaves which were boiled like spinach. Oca (*OQA*), ulluco (*OLYOKO*), and añu (*ANYO*) were common crops, and another grain, cañigua (*KANYIWA*), related to quinoa, could also be raised. At lower altitudes, the staple was maize (*SARA*), but the plants of the highest valleys were also cultivated. In addition, a grain (*TARWI*), molle (*MOLVI*), a tree producing red berries, one of the varieties of chili pepper (*ROQOTO*), and squash (*SAPALYO*) could be grown. The valley of Cuzco is a little too high for *ROQOTO* and squash, but all the other plants listed can be grown there.

The *Inca* imported a number of plant products from the lower and hotter valleys, especially chili pepper or ají (*OCO*), a sweet edible root (*ACIRA*), cotton (*OTKO*), gourds (*PORO*), and coca (*KOKA*). Peanuts, beans, lima beans, yuca (sweet manioc), tomatoes, avocados, sweet potatoes, and some 12 other plants were also important staples in the lower valleys, to name only the most important. Most of them have *Quechua* names.'

Andean valleys are characteristically deep and narrow, so that the amount of flat and irrigable bottom land is severely limited, and, in the rainy season, the run-off from the steep slopes is so great as to be a serious danger to the fields and settlements in the valley. The Inca solved both problems by terracing the sides of the valleys, sometimes so extensively that the whole valley for miles was reshaped and regraded, as at Yucay and Ollantaytambo. Early Inca terraces were small and irregular, and probably the work of individual family

* The literature on Peruvian domestic plants is very extensive. See especially Yacovleff and Herrera, 1934-35; Cook, 1937; Mangelsdorf and Reeves, 1939; Herrera, 1923; and Sauer, *Handbook*, vol. 5.

groups, but, in Late Inca times, the whole resources of the MTRA labor service were turned to the problem, and the terraces were large and elaborate. Late *Inca* terraces are faced with dry-masonry walls, sometimes of cut stone, and are filled in behind with layers of stones, gravel, and earth to provide proper drainage (pl. 83, *top, right*). They are furnished with elaborate stone water channels to distribute irrigation water, and with jutting stones on the terrace faces which serve as stairs. (See Cook, 1916.)

The long dry season and the rapidity of surface run-off make irrigation necessary nearly everywhere in the Andes, although some quick-growing crops can be grown on the unirrigable slopes during the rainy season. Irrigation ditches were generally mere trenches dug into the hillsides and supported when necessary by a dry stone wall (Cobo, 1890-95, bk. 14, ch. S), but, where irrigation was combined with terracing, carefully cut stone channels were built. The *Inca* Emperors constructed some very elaborate irrigation works, and brought water for many miles in nicely graded channels to some of their projects. The Inca government marked the boundaries of all fields with monuments, called *SAYWA*, probably piles of stones. As the whole system of taxation depended somewhat on the stability of these markers, it was considered a serious crime to move them. The first offense was punished with *HIWAYA* (p. 271), the second with death. (Cobo, 1890-95, bk. 12, ch. 26; Gonzalez, 1608; Poma, 1936, p. 353.)

Farming implements were as elaborate as is desirable for a people who lack draft animals. The two most important ones were the foot-plow (*TAKLYA*) and the hoe (*LAMPA* or *QORANA*). The foot-plow consisted of a pole about 6 feet (1.8 m.) long with a point of hard wood or bronze, a footrest near the point, and a handle on the upper end, but it probably varied locally in the shape and dimensions. (See Poma, 1936, pp. 1147, 1153, and Means, 1931, figs. 222-23.) It was used with both hands and one foot, being lifted some 12 inches (30 cm.) above the ground and jabbed into the earth with the user's full force. It was essentially a man's tool, used for breaking up the ground, digging holes for planting, and harvesting potatoes. The hoe had a wide, chisel-shaped, bronze blade with a short haft usually made from a tree crotch, so that it resembled an old fashioned adze more than a modern hoe (Poma, 1936, pp. 250, 1134, 1147). It was used by both men and women for breaking up clods, weeding, and general cultivation. Of more limited use was the clod-breaker (*WINI* or *WIPO*), a doughnut-shaped stone with a long wooden handle used to break up earth loosened by plowing (González, 1608, pp. 201, 354; Poma, 1936, p. 1165). Poma illustrates a boat-shaped board used for scraping the earth over planted seeds and for general digging. (Poma, 1936, pp. 1156, 1162; see Descriptions in Cobo, 1890-95, bk. 14, ch. 8.)

The farmer's year in the Andes is divided into a dry season, April to November (winter), and a rainy season, December to March (summer). The *Inca* subdivided these seasons with descriptive names such as "growing time," "season of flowers," "time of heat," etc. The time for sowing was regulated by solar observation. (See Lore and Learning, Astronomy, pp. 327-327.)

Plowing began in August with an assembly to plow the fields assigned to government and religion. This occasioned a great festival (fig. 23, a). The plowmen formed a line across the field, each taxpayer in his assigned strip, and worked backward. Each man's wife faced him with a hoe to break the clods. The work was done in time to a chant (*HAYLYI*), which was also used to celebrate military victories. (Garcilaso, 1723, pt. 1, bk. 5, ch. 2; Poma, 1936, pp. 250-51; Cobo, 1890-95, bk. 14, ch. 8.) Chicha was provided the workers. After fulfilling their tax obligations, the householders tilled their own fields in the same way, helping each other according to the work exchange obligations (*AYNI*).

Early maize to be harvested in January was planted in August, but the bulk of the maize was sown in September (fig. 24, a). The farmer made a hole, and his wife threw in a handful of grains. Potatoes were planted similarly at the beginning of the rainy season. The priests of the Sun fasted from sowing time until the maize plants were a centimeter high, and, in Cuzco, a public ceremony was held with sacrifices of llamas, dances, and ceremonial drinking (fig. 25, b).

The most critical time of year was October and November, when the fields were driest and the rains had not started. If the rains were late; special ceremonies (fig. 24, b) were held to appeal to the sympathies of the Thunder God (*ILYAP'A*). Processions of people dressed in mourning and holding banners went through the streets wailing. Black llamas or dogs were tied to stakes in open places and left to cry from hunger until the Thunder God took pity on them and on the people and sent rain. Chicha was sprinkled around them.

During the rainy months, the chief agricultural work was weeding and driving away birds (fig. 24, c), deer, foxes, skunks, and other animals dangerous to the crops. A small hut was built beside the field for a caretaker if the crop was too far away to be watched from the house. The farmer went out by day to protect the crop with a fox skin over his head, a staff with rattles and tassels, and a sling; in such a costume, he was called "guardian of the fields" (*ARARIWA*). If necessary; a woman with a small drum watched at night. The chief danger from human thieves was in April, when the maize was ripe but not quite ready for harvest.

Men and *omen worked together to harvest the maize. The grain was removed from the-ears and stored in the house. A public festival (*AYMORAY*) was celebrated with songs and dances as the grain



a



b



c



d

FIGURE 23.—Scenes of Inca life. a, Plowing festival; b, the coronation of the Emperor, Inca Manco, showing Inca throne and insignia; c, attacking a fort with the Inca soldier carrying a "huaca" and the leader wearing a metal pendant, shield, and halberd; d, war litter of Huayna Capac (note sling). (After Guaman Poma. 1936, pp. 1153, 398, 155, 333.)

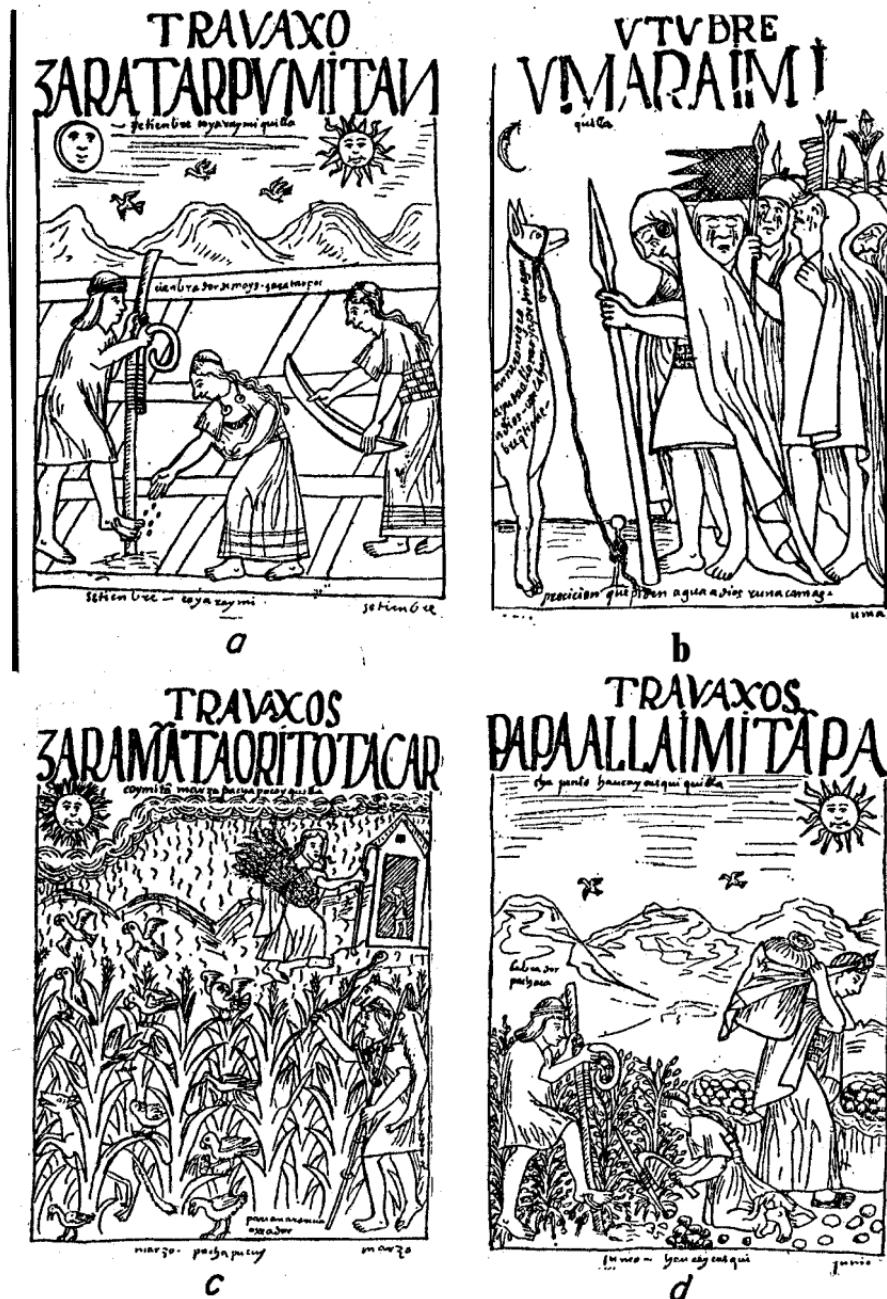


FIGURE 24.—Inca agriculture. **a**, Planting maize; **b**, ceremony for rain; **c**, watching the maize crop; **d**, harvesting potatoes. (After Guaman Poma, 1936, pp. 1156, 254, 1138, 1147.)



FIGURE 25.—Scenes of Inca life. **a**, Masked dancers of the Contisuyo; **b**, ceremonial drinking; **c**, man slaughtering a llama in the ancient fashion, tearing out the heart while an attendant stands ready with ceremonial bowl to receive it; **d**, Inca accountant with abacus and quipu. (After Guaman Poma, 1936, pp. 326, 246, 880, 360.)

was brought in. The most unusual ears of maize (called *SARA-MAMA*, "maize mother") were put in a miniature storage bin made of corn stalks. The bin was watched for 3 nights, and then the farmer sacrificed to it, and a diviner determined whether the bin had "strength" enough to last another year. If it did not, it was ceremonially burned and a new one made. Potatoes were harvested in June (fig. 24, d). (Cobo, 1890-95, bk. 14, ch. 8; Poma, 1936, pp. 1131-1167; Molina of Cuzco, 1913, pp. 131-75; Molina of Santiago, 1916, pp. 160-62; Garcilaso, 1723, pt. 1, bk. 5, ch. 2; Polo, 1916 a, pp. 20-21.)

Little is said by the chroniclers about crop rotation. Fertilizer was used all through the Andean area, although the source varied. In the high country where llamas were bred, llama dung was the favorite. In the lower mountain valleys, human manure was about the only fertilizer obtainable. The Coastal peoples used bird guano from the Guano Islands or the heads of small fish (Garcilaso, 1723, pt. 1, bk. 5, ch. 3; Molina of Santiago, 1916, p. 127).

The Indians had such a passion for agriculture that they would leave more profitable activities at planting and harvest time to go off and tend their fields. This attitude had a serious effect on *Inca* history, notably in hastening the collapse of the Siege of Cuzco in 1537 (Cobo, 1890-95, bk. 14, ch. 8).

Gathering wild foods.-The gathering of wild plants, minerals, eggs, and insects was comparatively unimportant in Inca economy. Foods collected included fruits of two kinds of tuna cactus and of a bush called *AWAYMANTO*, which were considered delicacies. The leaves of the *HAT'AQO* and *PISQOQ CAKİÑ* ("bird's foot") were eaten raw or cooked, and the leaves of another plant (*OQA-OQA*) were chewed for thirst. All wild plants of which the leaves were boiled and eaten were called generically *yoyo*, and there were several kinds besides those mentioned (RGI, 1881-97, 2: 208, 214). Infusions were made from the leaves of a few wild plants, mostly for medicine.

The most useful nonfood plant was the Andean bunch grass (*ICHU*), which was gathered on the hillsides for thatch roofs, brooms, and braided rope as well as for certain ceremonial uses. The fibers of the Andean century plant (*ACOPA*) were used for cordage. Many wild plants were collected for dyes, medicines, poisons, or charms.

Fuel was a serious problem in most valleys because of the scarcity of trees. Bushes and scrub from the hillsides were burned, and dried llama dung was a supplementary fuel. Dried llama dung burns like coal with little smoke or odor. Under the Inca, wood-cutting areas were strictly controlled to prevent stripping. Wood for roof timbers was imported from the tropical valleys when possible, or improvised from the twisted branches of the *QISWAR* tree (RGI, 1881-97, 2: 213, etc.). Short sections of various other mountain trees could be utilized for tools, carved objects, and construction.

Tinamov and dove eggs were used in witchcraft, but were not important as food. One insect was eaten in the larval stage (*WAYT'-AMPO*). It is found under the bark of the chachacomo tree, and was roasted as a delicacy (Yacovleff and Herrera, 193435, p. 36).

Salt is abundant in the neighborhood of Cuzco, and was recovered by evaporation from saline rivers. A number of edible clays were collected and traded rather widely in the southern Highlands.⁵

Hunting.-Hunting *was* of minor importance. In *Inca* times, it was strictly regulated. Two kinds of deer (*LOYCO* and *TAROKA*) and the guanaco were taken for their meat. The viscacha, a large rodent, provided meat and hair, which was mixed with other fibers in textiles (Garcilaso, 1723, pt. 1, bk. 8, ch. 17). Vicuñas were always taken alive and shorn, as they were more valuable for their fine fleece than as meat. Foxes (*ATOQ*), pumas, and bears were killed as nuisances. Birds were taken chiefly for their feathers, and were used in the war sacrifice. (See Warfare, p. 280.)

The chief hunting weapons were slings (*WARAK'A*), small bolas (*RIWI* or *AVLYO*; Poma, 1936, p. 205) (fig. 26, b), a rectangular net on two poles (fig. 26, a), used for catching birds (Poma, 1936, p. 204; Garcilaso, 1723, pt. 1, bk. 8, ch. 13), snares and nooses (Gonzalez, 1608, under **ppita* and **toklla*; Poma, 1936, p. 207), and clubs, which were used in killing animals brought to bay by the surround. Dogs were not used for hunting (Cobo, 1890-95, bk. 14, ch. 16).

Under the Inca Empire, all game was preserved, and the wild country where hunting was good was closed to the Emperor's subjects except on special occasions. Periodically, the Emperor or his governor staged a great public hunt (*CAKO*) to thin out the game in the preserve, make sport for the nobility, amuse the people, and increase the meat supply. One of the last imperial hunts was held by Manco Inca near the valley of Jauja in Francisco Pizarro's honor, before 1536, and the numerous descriptions of the hunt found in the chroniclers are probably based on what the Spaniards saw on that occasion. Some 10,000 Indians formed a ring around a space some 30 to 60 miles (50 to 100 km.) in circumference, with a space between the beaters. They closed toward the center, forming several concentric rings as their circle grew smaller, and drove all the animals in the area before them. When the circle was small enough, designated hunters entered it and killed as many animals as was desired; in this case over 11,000. The rest were set free. The meat taken was sun-dried to preserve it. (Cobo, 1890-95, bk. 14, ch. 16; Cieza, 1880, bk. 2, ch. 16; Garcilaso, 1723, pt. 1, bk. 6, ch. 6.) Another technique (**caycu*) was used to surround vicuñas and guanacos: fences were so built that the animals could be driven into a narrow gorge (Cobo, 1890-95, bk. 14, ch. 16).

⁵ Except as otherwise indicated, this section is a reconstruction based on present practices, the pre-Columbian antiquity of which is almost certain, in spite of the silence of the chroniclers. The modern customs were recorded by me from informants in Cuzco in August and September 1943.

CESTO CALLE
MACTA.



rejadas de descarros

en el re

a

SETIMO CALLE

TOCIT AGNOVAMRA



rejadas de nubes apes

en el re

b

LAPRIMERA HISTORIA DEL REINADO
MAMAVACOCOLA



rejadas de miro

c

ABRIL

CAMAÍ-II INCAPAIMI



fiesta del yunga

yunga

d

FIGURE 26.—Inca boys hunting birds and Inca dress. a, b, Boy hunting with bird net and with bolas; c, care of the hair and use of bronze mirror; d, most elaborate form of Inca dress. (After Guaman Poma, 1936, pp. 204, 206, 120, 242.)

Domesticated animals.—The Inca possessed the greatest variety of domesticated animals of any people in ancient America. They raised llamas (*LYAMA*), alpacas (*PAQO*), dogs (*ALQO*), guinea pigs (*QOWI*), and ducks (*NYONYOMA*) and depended heavily on them for food, clothing, transportation, and sacrifice.

The raising and use of llamas and alpacas among the modern *Aymara* are described by Tschopik in this volume (p. 521). The chroniclers give a few particulars, which confirm the antiquity of modern practices. Llamas were raised for their wool, used in coarse clothing, for their flesh, and for packing light loads, but alpacas were raised only for their wool, which is finer and better than that of the llama. Alpacas were shorn frequently, but llamas only when they died or were killed. Llamas were used in very large pack trains in ancient times, and the Indians calculated that eight drivers were needed for every 100 animals. The llamas were considered useful pack animals from 3 to 10 or 12 years old. They will travel only 3 to 4 leagues (15 to 20 km.) a day on a long journey, but over short distances they can keep up with a mule. They were not often ridden in ancient times, as they tire quickly under the weight of a man (Cobo, 1890-93, bk. 9, ch. 57). Under the *Inca* Empire most llamas and alpacas were owned by the government. (See Political Organization, p. 267.).

The *Inca* dog was of medium size with a pointed face, short legs, thick body, a long tail curling tightly over the back, and generally short hair (Poma, 1936, p. 225; amulets in University Museum, Cuzco). Its descendants are still numerous in *Cuzco*. The *Inca* kept dogs only as pets and scavengers, and used them rarely in religious ceremonies (see Religion, pp. 305-308), but the *Huanca* of Jauja sacrificed dogs instead of llamas, and ate the sacrificed meat. The Inca had much the same prejudice we have against dog meat, and contemptuously called the *Huanca* *ALQO-MIKHOQ*, "dog-eaters" (Poma, 1936, p. 267).

Almost the only regular meat supply available to the Indians was provided by the swarms of guinea pigs that bred in Indian kitchens; the situation has not changed much in the last 400 years. The guinea pigs eat food scraps, and the Indians feed them green plants to fatten them. They are inoffensive and cleanly, and are almost as valuable as scavengers as they are for their meat. The flesh is tender with a pleasant flavor and there is a lot of fat along the backbone (Cobo, 1890-95, bk. 9, ch. 46).

The domesticated duck was a large variety about which little is known except that it was used for food (Garcilaso, 1723, pt. 1, bk. 8, ch. 19).

Fishing.—In the neighborhood of Cuzco, lakes are few and small and rivers are shallow and swift, so that fish are neither very numerous nor very large. Consequently, fishing was less important than among the *Aymara* of Lake Titicaca, and it was largely ignored by the chroniclers of Cuzco. Modern fishing practices are probably so similar to the ancient ones, however, that a few remarks on present-day fishing may be of interest.

The rivers around Cuzco support three or four kinds of small fish, all under a foot (0.3 m.) long. The largest (*wita*) is taken with a thorn-pronged fish spear, with a large dip net improvised of a coarse clothlike burlap (called *bayeta*), or with the bare hands. In the Lake of Piuray, small fish are taken in a great *bayeta* net, some 65 by 130 feet (20 by 40 m.). It is placed on the bottom by swimmers and then drawn in. At Izcuchaca, on the Plain of Anta, fish in the small streams are taken by damming the stream so as to strand the fish below the dam.

Cobo mentions copper fishhooks, and describes a two-man net of cotton used on the Coast for small fish. It was drawn up between two balsas. The Coast fishermen also made low weirs along the beaches; fish which came in at high tide were caught as the tide went out. The use of barbasco, a vegetable fish drug of the eastern forests, is also noted, but without specific geographical location (Cobo, 1890-95, bk. 14, ch. 16).

Food preparation.—In ancient times, cooking meant boiling or roasting, as the Indians had no suitable utensils for frying. The most common dishes were soups and stews, flavored with chili pepper and herbs. Cobo lists several dishes of this kind: maize cooked with herbs and chili pepper until the maize splits open (**motepatasca*); a stew of meat or fish, potatoes, *chuñu*, vegetables, and chili pepper (**locro*); and a soup thickened with quinoa (**pisqui*). Maize-flour dumplings were made also. The *Inca* made a kind of maize bread in small cakes, which may have been steamed or baked in the ashes. Maize toasted in open dishes was a ration for journeys. Popcorn was considered to be a great delicacy (Cobo, 1890-95, bk. 14, ch. 5).

The Indians ate twice a day, at 8 or 9 in the morning and at 4 or 5 in the afternoon. The dishes of food were laid out on the ground or on a cloth, and the eaters sat on the ground. The women sat back to back with the men, facing the cooking pots from which they served their husbands. At public banquets, the sections sat in two long lines in the town square or in the governor's courtyard, with the governor seated at the head on his stool. Each family brought its own food. A standard form was followed in drinking toasts: a man got up and took two cups of chicha over to the man he wished to toast, gave him one cup, and the two drank together (Cobo, 1890-95, bk. 14, ch. 5.)

To dry meat for preservation, it *was* cut into thin slices, exposed to the sun and frost, and pounded between two stones to make it thinner. Dried meat was called *charqui, whence our name "jerked" beef. Fish were also dried. Potatoes and ocas were preserved by a similar process. (See *The Aymara*, p. 527.) Dried potatoes were called *chuño, and dried ocas also had a special name (*Cobo*, 1890-95, bk. 14, ch. 5.)

Food was stored in large jars in the house or in special bins and granaries. A bin (*PIRWA*) made of cornstalks plastered with mud was apparently inside the house; the adobe granary (*QOLQA*) was probably outdoors. The attics of thatched roof houses (*TAQI*) were also used for storage, and pits were dug in the floor and plastered with mud for the same purpose (*Cobo*, 1890-95, bk. 14, ch. 4; *González*, 1608, p. 285).

The Inca used a special type of mill which is still in general use in the Andean area. (See *The Aymara*, p. 527.) It consists of a flat stone base and a rocker, which is a flat slab some $1\frac{1}{2}$ inches (4 cm.) thick with a straight top sometimes provided at the corners with small ears for hand grips, and curved lower edge. It varies from 1 to $2\frac{1}{2}$ feet (30 to 80 cm.) in length and 8 inches to $1\frac{1}{2}$ feet (20 to 40 cm.) in height. The housewife kneels *in* front of the base, which is level and usually about 8 inches (20 cm.) above the ground, pours grain on the stone, and rocks the upper stone from side to side over it. The weight of the rocker obviates the need of pressure, and operation of the mill is so simple that most Indian households leave grinding to the girls 8 or 10 years old. In terms of the human effort involved in its use, the Andean mill is far superior to the Mexican metate. (*Cobo*, 1890-95, bk. 14, ch. 4; *Garcilaso*, 1723, pt. 1, bk. 8, ch. 9; *Bingham*, 1930, fig. 193.) In modern times, a type of metate is also used occasionally. A long mano or upper stone, square in cross section, is pushed and pulled up and down a slab of stone tilted *away* from the user (reported for Pucara in Puno by Julian Huaracallo). It is not known whether this was used in ancient times.

'Mortars, for grinding spices or condiments, were usually water-worn stones with one side hollowed out; the pestles were elongated pebbles with one end shaped to fit the mortar. (*Cobo*, 1890-95, bk. 14, ch. 4; *Bingham*, 1930, figs. 186, 188, 189, 192, 194-96.)

Cooking utensils were confined to a few simple shapes of pottery. *Inca* cooking pots usually had covers and pedestal or tripod bases, so that a fire could be built around them. Large cooking jars usually had pointed bases. The Indians ate from flat plates and drank from tumbler-shaped cups of wood (*QIRO*), pottery, or metal. The nobles used gold or silver dishes made in the same shapes as the pottery ones.

For the manufacture of chicha, see page 292.

HOUSES AND ARCHITECTURE

Domestic architecture.-Ordinary **Inca** houses seem to have been quite similar to those used by the modern *Quechua* and *Aymara*, but study of **Inca** domestic architecture has been rather neglected in favor of the more impressive public buildings, so that construction details are little known.

The majority of the houses around Cuzco were built either of field stones laid in mud or of adobe, and were rectangular in plan, with a gabled or hip roof of thatch on a framework of poles. Cobo describes the construction of such houses. The walls, about the height of a man, were thin and weak. The roof was supported by a framework of branches and cane, and thatched with *ICHU* grass (Cobo, 1890-95, bk. 14, ch. 3). Houses of this type are abundant at Machu Picchu, where the special conditions of the site impose certain peculiarities. Machu Picchu (pls. 81, 82) was evidently planned and built as a unit, probably by *MÍTA* labor working under professional architects, so that the walls were stouter and better built than in most Highland houses. Moreover, stone is abundant at Machu Picchu, while good clay is not, so that more care was taken to fit the stones tightly. As thatch has to be very steeply pitched in order to keep out driving rain, the Machu Picchu houses have much higher gables than buildings in the drier Cuzco region (Bingham, 1913, pp. 438, 452, 468, 478, etc.). These Machu Picchu houses and better-class houses all over the Highlands in ancient times were almost certainly entirely plastered with fine mud which concealed the wall construction. Traces of plaster remain in many Inca ruins: Chachabamba, near Machu Picchu; Ollantaytambo; the Amarucancha at Cuzco; and the Temple of Viracocha at Cacha, where fine masonry was partly covered. Remains of common houses are abundant near Cuzco, but are easily overlooked. A few were partially excavated in Sacsahuaman in 1934, but were not entered on the plan; others can be seen at Muyucocha and Catacasallacta. (See Rowe, 1944.)

Adobe houses are so often mentioned for Inca Cuzco that a large proportion of the houses must have been built wholly or partially of that material (Sancho, 1917, ch. 17; Morúa, 1922-25, bk. 4, ch. 2). Adobe ruins are still fairly common in the Cuzco region, but, easily damaged by the rains, few remain in good condition. As most of the surviving adobe buildings are the more solidly built government constructions, Inca use of adobe will be discussed below with other forms of public architecture.

Although rectangular houses were typical of the Cuzco region, round houses are found in late archeological sites in *Quechua* territory in the Department of Apurimac (reported by Oscar Núñez del Prado), and are mentioned for the *Huanca* (RGI, 1881-97, 1: 89). Cobo

describes round houses he saw in *Aymara* territory (1890-95, bk. 14, ch. 3), where they are still built. A round building, not a private house, is illustrated by Squier from the Cuzco area. It stands on the Hacienda Urco, near Calca, and apparently forms part of an ancient shrine (Squier, 1877, pp. 517-519). Garcilaso mentions a round "tower" in the Great Square at Cuzco (1723, pt. 1, bk. 7, ch. 10), and one of the structures inside the Fortress of Sacsahuaman has a circular plan.

Inca houses were usually built in groups, each group surrounded by a wall with only one entrance. The enclosures are usually rectangular were the topography permits, but were carefully accommodated to the available space in hillside settlements like Machu Picchu or *Sayaq Marka* (Bingham, 1930; Fejos, 1944). The ideal plan is probably that of the *Inca* village at Ollantaytambo (Squier, 1877, p. 504). Up to six rectangular houses were arranged around the sides of the enclosure facing an open court in the center; the corners were often utilized for storage or cooking, and probably were roofed in some cases (*Phuyupata Marka*, for instance; see Fejos, 1944). This type of house enclosure or compound (*KANCA*) was probably inhabited by an extended family. (See Social Organization, p. 249, and, The Aymara, p. 543.) The individual houses were called *WASI*.

The enclosure walls of *Inca* house compounds were often of field stone or adobe, but in the valley bottoms the most common wall and fence material is sod blocks. The sod is cut into square blocks, perhaps 16 inches (40 cm.) across, and laid in rows with the roots up. It weathers in such a way as to resemble stone blocks from a little distance. The use of sod in walls is certainly ancient.

In addition to permanent houses, the *Inca* built small pole and grass shelters, especially as guard houses in the fields. Such small huts, still built by the *Quechua*, are supported by a steep tripod frame of poles; they are very carelessly constructed. Tents were used by the *Inca* armies, but we have no details as to their appearance. The Inca may have learned their use from the Indians of the Coast. (Xérez, 1917, p. 53; Anonymous Conqueror, 1929, f. 3; González, 1608, under *carppa.)

Highland houses generally had one low doorway, which was closed only by a drape held in place with a stone when the owner was absent. Windows were rare and small, and no chimneys or smoke holes were provided, so that house interiors were dark and smoky. As the Indians spent most of their waking hours outdoors, however, they had little interest in making their houses more comfortable (Cobo, 1890-95, bk. 14, ch. 3).

Household furniture.-Furniture was likewise scanty. The stove was a low clay affair, with two or three holes in the top where the pots could be set, and a small stoking hole in the front. To econo-

mize firewood, which was scarce and difficult to collect, a very small fire was used, and the pots were crowded together. Kitchen utensils consisted of a variety of clay pots, dishes, and pitchers, a copper or bronze semilunar knife (*tomi*), wooden ladles, and bone skewers. Food and spare clothing were stored in large jars, and there were usually a few irregular niches in the walls to do duty for shelves (Cobo, 1890-95, bk. 14, ch. 4).

Many Indians slept on the dirt floor in a long blanket folded at the feet so that half was under the sleeper, half over him. The whole family usually shared one bed. Nobles put a layer of straw or matting under the blanket for greater comfort. Everyone slept in his clothes (Cobo, 1890-95, bk. 14, ch. 4). In some districts, modern Indian houses have a raised platform (*PONYONA-PATA*, "sleeping platform") at one end where the family sleeps. A few houses at Machu Picchu have a dividing line of stones which may have supported a platform bed. Another modern *Quechua* type of bed is a pole frame on legs (*KAWITTO*). Although it would be natural to suspect that this was copied from the Spaniards, the name is listed by Gonzalez in 1608 with its present meaning; if burrowing took place, it must have been very early. This type of bed appears to be aboriginal. All three types are at present used in different houses in the village of Yucay near Cuzco (information from Gabriel Escobar).

A few houses had stone or adobe benches along one wall, though the Indians generally squatted on their haunches, pulling their tunics down over their bent knees so that the cloth helped to hold their legs in place. The only kind of chair (*TIYANA*, "seat") was restricted to high officials to whom the privilege had been granted by the Emperor. Cobo describes it as a low seat, about two palms long and one palm high, with a slightly concave top. It was carved out of a single piece of wood, in the shape of an animal with short legs, lowered head, and raised tail. (Cobo 1890-95, bk. 14, ch. 4; Estete, 1924, p. 27; Morúa, 1922-25, bk. 1, oh. 17.)⁶

Public architecture.—All the best-known monuments of *Inca* architecture were constructed not by individual owners but by the government, according to careful plans and with labor provided by the *MIT'A*. The architects and master masons were professionals, exempt from ordinary taxation, and occupied full time on public works. They were government officials, supported out of government revenues (Cobo, 1890-95, bk. 14, ch. 12; Poma, 1936, pp. 352-357). Lacking paper, the *Inca* relied on clay models for designing buildings and laying out roads, terraces, waterworks, and towns (Garcilaso, 1723, pt. 1, bk. 2, ch. 16; Betanzos, 1880, ch. 16). A number of models of buildings and relief plans in stone have been preserved, and give a fair idea of the aids with which *Inca* architects worked (Pardo, 1936).

⁶ The Spaniards borrowed the West Indian word *duho* to designate this type of seat. A number of chroniclers, including Cobo, unaware of the origin of the word, attributed it to *Quechua*.

We know nothing about the instruments used for measurement, but it is reasonable to suppose that the *Inca* used a sliding rule more often than a fixed one with arbitrary units of measurement. The sliding rule consists of two sticks which are slid along one another until their combined lengths exactly cover the space to be measured. Father Cobo to the contrary, the Inca knew and used the plumb-bob, for which there is a *Quechua* name (*WIPAYCI*) in Gonzalez's dictionary of 1608. Two specimens are illustrated by Bingham (1930, fig. 178), and I picked up a small stone one in the ruins at Ollantaytambo.⁷

The tools used were few and simple. Bronze and wooden crow-bars and levers were used for moving stone; the former are numerous in archeological collections. (A specimen from Machu Picchu was illustrated by Bingham, 1915 b, p. 182, No. 3.) Bronze chisels of several different shapes have also been found, and were probably used for drilling holes in stone and for woodworking (University Museum, Cuzco; and see Mead, 1915, fig. 3, e). Stone and bronze axes were probably used chiefly as weapons, but could have served also for woodworking. (See Bingham, 1915 b, p. 183.)⁸

Stones were generally worked with stone hammers, preferably of hematite or other heavy ores (Cobo, 1890-95, bk. 14, oh. 12; specimens). The hammer marks can still be seen on the Yucay limestone blocks of which the fortifications at Sacsahuaman are built. The process of working stones with stone hammers is not as slow and laborious as many people who have never tried it are inclined to believe. Sand and water were probably used for polishing when a smooth surface was desired.

The best-known Inca buildings were constructed wholly or partly of stone (Sancho, 1917 b, ch. 17), and all stone buildings between Pucara in Puno and Ayaoucho, of which any illustrations have so far been published (with the exception of constructions at Chanapata and possibly also at Pikillacta and Huata) are of Late *Inca* style. These include Machu Picchu, Sacsahuaman, Ollantaytambo, and all remains in the city of Cuzco proper. It is necessary to stress this point because there is a widespread belief that some or all of these ruins are "pre-Inca." (See Rowe, 1944.)

Late Inca stonework shows considerable variation in the size and shape of the blocks and the regularity with which they were laid up (pl. 83, top, *left*). A number of attempts to make chronological deductions from such differences have been made. (Cf. Jijón y Caamaño, 1934.) The whole city of Cuzco was rebuilt by Paohaouti some time after 1440, and there is good reason to suppose that the existing

⁷ A serviceable level can be made by banging a plumb-bob from the apex of an equilateral triangle and marking the center of the hypotenuse, but the *Inca* use of such an instrument has not been reported.

⁸ At Ollantaytambo, there is a block of stone with an unfinished saw-cut on one side, which poses an interesting problem. The Indians knew a reed called *sicq-siq*, "yerba cortadera," which deposits silica on its leaves and can be used to saw wood, but I do not know whether it could be used to cut stone, even by making only a few strokes with each leaf (part credit to Harry Tschopik, Jr.).

ruins all represent the styles of the next 90 years, so that the differences in ages of the buildings in Cuzco are probably not very great. (See Rowe, 1944.) Differences in construction, however, show high correlations with the kind of stone and the purpose of the wall. Three kinds of stone were used in Cuzco: (1) Yucay limestone, a hard gray stone always cut into polygonal blocks by the *Inca* masons. It was used for the great fortifications of Sacsahuaman, but elsewhere chiefly for foundations or the less important parts of enclosure walls and terraces. (2) Sacsahuaman diorite porphyry, a green stone used in large polygonal blocks for enclosure walls where unusual solidity was desired (Hatinrumiyoc, where the outer enclosure is also a retaining wall) and the famous corners of Ahuacpinta and Cabracancha, where only the corner is diorite. (3) A black andesite, which weathers to a chocolate-brown color. The nearest outcrops of this stone are at Huaccoto, some 9 miles (15 km.) from Cuzco, and at Rumicolca, about 21 miles (35 km.) away. It was usually cut into rectangular blocks, sometimes set in regular courses, and sometimes laid up irregularly, and was used for the finest *Inca* construction (the Temple of the Sun and most Inca palaces).⁹

Stones too big to be carried were moved on rollers with the aid of wooden pry bars and large crews of men pulling with ropes.¹⁰ The blocks were raised into position by building a ramp of earth and stones up to the height of the wall and running the blocks up on their rollers. Cobo saw this technique used by Indian workmen employed on the construction of the Cuzco cathedral (1890-95, bk. 14, ch. 12), and a half-finished chullpa at Sillustani in Puno has such a ramp still in place. Although built in *Aymara* territory, the style of the masonry of the chullpa is *Inca*. Protuberances were often left on the blocks of stone to provide a purchase for the pry bars, and, in many walls, the protuberances were never removed. They were probably considered decorative, as similar ones were in Greece in the 4th century B. C. The protuberances are usually near the bases of the blocks. (See, for instance, Bingham, 1913, p. 530.) Many stones at Sacsahuaman have indentations instead of protuberances at the base, no doubt for the same purpose. (See Bingham, 1916, p. 436.)

One of the most striking characteristics of Incamasonry is that the edges of the blocks are bevelled back so that the joints are emphasized, as in rusticated construction (pl. 83, *top, left*). It has no structural purpose and is purely decorative convention, the effect being to break up the surfaces of the walls into patterns of light and shade. The depth of the bevel at the cracks is roughly proportionate to the size of the blocks of stone. The joints themselves are often so tight and true

⁹ See Gregory, 1916. Garcilaso's statement that stone for the fortress of Sacsahuaman was brought a long distance should be taken to refer to the andesite blocks used for buildings within the fortifications. The great limestone blocks were cut in situ or very nearby (Garcilaso, 1723, pt. 1, bk. 7, oh. 27).

¹⁰ Sr. Luis Llanos informs me that a treasure hunter at Ollantaytambo dug under a large *Inca* block abandoned between the quarry and the site and found remains of wooden rollers.

that it would be difficult to insert even a pin into the crack. No mortar was used, and the edges of the blocks touch at the wall face; in the interior of the wall, however, the stones are seldom perfectly fitted, and the cracks are filled with mud. (Cf. Cobo, 1890-95, bk. 14, ch. 12.)

A very large proportion of the public buildings in and near Cuzco were built wholly or partly of adobe. The Amarucancha, behind the Jesuit church in Cuzco, has an *Inca* stone wall about 6 feet (2 m.) high. About 10 years ago, when an adobe wall on top of the stone was torn down, a few courses of *Inca* adobes were found in place on top of the highest course of stones. Some of the adobes are preserved in the University Museum at Cuzco; they are roughly square in cross section, perhaps 8 inches (20 cm.) across, and very long, perhaps 32 inches (80 cm.). The proportion of straw to mud is very high. The great median wall of the Temple of Viracocha at Cacha is built of adobe on a stone foundation (Bingham, 1916, p. 450; Means, 1931, fig. 170). So is the most elaborate adobe ruin in the Highlands, the "House of the Inca" at Yucay, and various storehouses in the valleys of Cuzco and Chita. About half of the buildings at Pisac are either wholly or partly of adobe. Adobes in a number of these sites vary greatly in size even in the same wall, suggesting hand rather than mold construction. Usually they are flatter and shorter than the ones from Amarucancha.

Doors and niches in Inca adobe buildings usually had lintels made by wrapping two or three wooden poles with grass rope, so that they could be plastered over. Corners were usually strengthened by sticks running across the inside corners of the building. The walls originally were covered by a uniform coat of mud plaster which might be painted.

Roofs were made of thatch, but might be extremely elaborate. The frame of poles might be covered with straw or reed mats, woven into patterns, and the bundles of straw tied onto the mats as thatching were laid in rows like shingles with their edges carefully trimmed. Cobo mentions having seen *Inca* roofs about 3 feet (1 m.) thick (1890-95, bk. 14, ch. 3), and Markham and Squier describe one in Azángaro which was still standing after more than 300 years (Markham, 1862, pp. 193-194; Squier, 1877, pp. 392-395).

The Inca built a great variety of palaces, temples, storehouses, forts, baths, agricultural terraces, and tombs, some with plans derived from the compound of domestic architecture, and others adapted to particular uses. The reader interested in the plans of Inca buildings should consult Bandelier (1910); Squier (1877); Rowe (1944); Fejos, (1944); and the various reports of the Bingham Expedition.

Late *Inca* buildings have certain striking characteristics. Sunken joints, protuberances, battered walls, trapezoidal niches and doors, regular rows of niches, projecting stone pegs on the outside of the gables or inside over the niches are typical of Late *Inca* work.¹¹

¹¹ At Yucay, in 1943, a ruin with Late Inca architectural traits was found by the University of Cuzco expedition to contain Cuzco polychrome (Late Inca) sherds in the mud between the stones.

Although most *Inca* buildings consisted of a single lower story with storage space under the roof, two-story buildings are not uncommon (Ollantaytambo; Wiñay Wayna), and three-story buildings are known (Cacha). These have one story directly over another, and are not terraced as in the Southwest (U. S.) and in the *Maya* area. The column occurs in a number of different forms. There is a monolithic pillar at Machu Picchu (Bingham, 1913, pp. 498, 512), a square stone and mud pillar at Chachabamba (pl. 83, bottom); a large round column with a stone foundation and adobe top at Cacha (Squier, 1877, p. 407); and round adobe ones of Inca date at Pachacamac on the Central Coast ("Temple of Pachacamac"). The corbel vault was known but used only in roofing small chambers (Smith, 1940). Architectural sculpture was used occasionally, usually in the form of snakes or pumas on the doorjambs or lintels. Saw-tooth or zigzag walls in fortifications were not common, but occur at Sacsahuaman and a few other sites. The corners of *Inca* walls are always carefully bonded, and long vertical joints were avoided. In adobe construction, alternate rows of headers and stretchers were used ("English bond"). Technically, Inca construction is far superior to the best Maya or Mexican work.

Towns and town planning.—Most Indian towns grew up without benefit of architect, and the houses were consequently scattered in a haphazard manner along the paths already in use. (Cf. Shippee, 1934, p. 119.) Cobo remarks that such towns had no regular streets or squares, and the houses were quite widely separated. They were built on slopes and rocky places when possible so as not to occupy land that could be cultivated. Most of these towns contained less than a hundred families (Cobo, 1890-95, bk. 14, ch. 3; see also Estete, 1924, p. 49). Towns were never fortified, the inhabitants maintaining instead a fort or "city of refuge" on some peak near their peacetime settlement. The fort usually consisted of two or three concentric walls surrounding the peak, with houses inside that could be occupied in case of attack. Forts were called *POKARA*, unfortified towns, *LYAQTA*.

The *Inca* initiated a policy of urbanization to relocate the Indian towns where they would have easier access to their fields and be further removed from their old forts (Polo, 1940, p. 133). The new sites were laid out by imperial architects, and the various public buildings were built in *Inca* style by *MIT'A* labor. Some towns, especially administrative or political centers, were entirely built by the government. The ideal town seems to have been laid out in square blocks, each containing one, two, or four *KANCA* type enclosures, but this was modified in practice to fit the topography. The best example of *Inca* town planning is the valley town of Ollantaytambo, where the house blocks are fitted into a trapezoidal space with two large

squares on the edge of the house area. (Squier, 1877, p. 492. The plan is exceedingly inaccurate.)

Inca towns were not much bigger than the unplanned towns of earlier periods, and the *Inca* seem not to have practiced urban concentration in the European sense. Cuzco, for instance, consisted of a central ceremonial area, inhabited only by nobles, priests, government officials, and their servants, and a ring of small villages, separated from the center and from each other by open fields. The latter were settled with colonists from all over the Empire, who formed the bulk of the population of the capital (Garcilaso, 1723, pt. 1, bk. 7, ch. 8; Sancho, 1917 b, ch. 17). The ceremonial center was laid out in roughly square blocks, separated by narrow straight streets, and with five or six large squares. In Colonial times, the spaces between the surrounding villages and the center were built up, but the old divisions are still preserved in the parishes whose boundaries date back to the middle of the 16th century. The most important villages around the capital were Santa Ana (*QARMIRQA*), Belen (**Cayau-cache*), San Blas (**Tococache*), and San Cristbal (*QOLQAMPATA*). Sancho estimates the population of the whole valley of Cuzco as over 100,000 families (1917 b, ch. 17).

Coast architecture contrasted to that in the mountains in being adapted to the need for shade and shelter from the wind rather than shelter from the rain and cold. Houses usually consisted of a pole framework supporting wattle-and-daub walls and a flat roof: more elaborate construction was usually of adobe or poured mud blocks (*tapia*) (Cobo, 1890-95, bk. 7, ch. 3). It is possible that the Inca borrowed the idea of the square-block town plan from the *Chimu* Kingdom, where a very impressive variant of it exists at Chanchan near Trujillo. Coast architecture has been studied even less than Highland architecture, and is an equally rich field.

ENGINEERING WORKS

Roads.-One of the first *Inca* achievements noted and admired by the Spanish conquerors was the superb system of roads which linked up all parts of the Empire. It was this which made possible the administration of such a vast area from a single capital, and, with the Spanish Conquest, it remained for many years a bond holding together the unwieldy viceroyalty of Lima. The general course of the *Inca* roads is pretty well known, as we have several detailed descriptions of journeys made along them and lists of post houses. (See Cieza, 1554, bk. 1; Vaca de Castro, 1909; Poma, 1936, pp. 1082-1093; Regal, 1936.)

Two main roads ran the length of the Empire, one along the Coast and the other in the Highlands, while transverse roads connected all important towns with these roads and with one another. The great

Coast road started at Tumbez, where a lateral branch connected it with the Highland road. It followed the Coast, passing through the valleys at least as far south as Arequipa. Some sources say it went on to Chile, but, if so, the Arequipa-Coquimbo section was very little used. The Highland road began at the Ancasmayo River on the present border between Colombia and Ecuador, ran south through Quito, Huancapampa, Cajamarca, Jauja, Vilcas, and Cuzco to Ayavire, where it split to go around Lake Titicaca. In Bolivia, it went to Chuquisaca and then down through Tupiza to Tucumán. One branch ran out to the coast at Coquimbo and followed the shore down to the region of Santiago, while another went down through Argentina to the neighborhood of Mendoza before crossing the Andes. Branch roads connected Cuzco and Nazca, Cuzco and Arequipa, Chucuito and Arequipa, Jauja and Pachacamac, Chanchan and Cajamarca, and ran eastward to the provinces of Chachapoyas in the north and Paucartambo in the south. A great network of lesser roads linked every town in the Empire.

The Coast road was 12 to 15 feet (4 to 5 m.) wide and, where it passed through irrigated valleys, it was lined with molded mud walls, which were sometimes painted with figures of animals and other designs (Estete, 1924, p. 49). A channel of water ran along its side, and, in places, fruit trees overhung the walls for shade (Xérez, 1917, pp. 32, 37; Molina of Santiago, 1916, p. 128). Where it crossed sandy deserts, however, the road was a mere track in the sand marked at intervals with posts. When it crossed steep hills or rocky headlands, it narrowed to about 3 feet (1 m.), and was cut out of the rock or supported by a retaining wall. If falling earth threatened from above, another wall was built on the inside to hold it back (Cobo, 1890-95, bk. 12, ch. 31).

The Highland road was narrower and unwalled, but the broken country demanded even greater engineering skill. On steep slopes, it zigzagged to reduce the grade, and was provided with stone steps where necessary (Sancho, 1917 b, ch. 7). In marshy places or in areas subject to inundation, it ran on a causeway built up of sod blocks. The causeways wore 15 to 22 feet (5 to 7 m.) wide, and 3 to 6 feet (1 to 2 m.) high. They were sometimes paved with flat stones, and at intervals had culverts roofed with stone slabs (Cobo, 1890-95, bk. 12, ch. 31). The road from Phuyupata Marka to Sayaq Marka, cleared by the Wenner-Gren Scientific Expedition in the region of Machu Picchu, is about 3 feet (1 m.) wide, paved throughout with flat stones, and supported by retaining walls 9 to 12 feet (3 to 4 m.) high on steep slopes. It goes over a small causeway of the sort described by Cobo and, rounding a cliff, passes through a tunnel about 15 feet (5 m.) long, made by enlarging a small natural crevice, so that a man can walk through it erect. The tunnel floor is cut into low steps. (See

also Fcjos, 1944.) Remains of Inca roads are numerous throughout the Andes. As the Inca had no wheeled vehicles, these roads were designed for men on foot and for llama trains. (See also Xérez, 1917, pp. 22, 32; Molina of Santiago, 1916, pp. 128-130; Cieza, 1880, bk. 2, ch. 15.)

At intervals along the roads, the Inca built groups of storehouses and shelters, called TAMPO in *Quechua*, tambo in Spanish.¹² The largest and best furnished tambos were in the towns through which the roads passed, and these were called "royal tambos" by the chroniclers. Lesser ones were built at intervals of a convenient day's

The roads and tambos were kept in repair by the Indians living along them as part of their regular MIT'A tax. (Molina of Santiago, 1916, p. 129; Xérez, 1917, p. 32; Cobo, 1890-93, bk. 12, ch. 31.)

The Inca measured road distances with units called TOPO, equivalent to one and a half Spanish leagues, or about 4½ miles (7 km.) (see p. 324). On some roads, especially south of Cuzco, markers like milestones were set up at every topo and perhaps every half-topo besides (Cieza, 1880, bk. 2, ch. 15; Molina of Santiago, 1916, p. 129).

Post service.—The Inca maintained a post service along the main roads to relay messages back and forth to the capital. Every quarter of a league (Polo, 1940, says half league) along the main roads was a pair of huts, one on each side of the road, each hut sheltering two runners (CASKI). The huts were apparently not very large or very well built, as they were called C'OKLYA, "shelter hut," instead of WASI, "house"; Cobo describes those in *Aymara* territory as about the size of a Spanish oven, and built of dry stone. One Indian from each hut was always on the watch for messages, presumably watching in opposite directions. When a messenger arrived, the waiting runner, ran beside him to receive the dispatch, usually a short verbal message perhaps accompanied by a quipu or other object, and carried it to the next post. In this way, a very high average speed could be kept up. The runners were provided by the towns along the road as their share of the MIT'A tax. The men served 15-day shifts. The runners were trained from boyhood, and were subject to very severe punishment for failure to deliver missages. (Cobo, 1890-95, bk. 12, ch. 32; Morúa, 1922-25, bk. 3, ch. 24, 29; Polo, 1940, p. 140; Cieza, 1880, bk. 2, ch. 21.)

The average speed of the runners was about 50 leagues a day (probably 150 miles or 240 km.), a figure based according to Cobo, on runs made between Lima and Cuzco during the civil wars which followed the Spanish Conquest. Cobo states that Lima to Cuzco, 140 leagues of bad road, required 3 days. In the middle of the 17th century; the

¹² There is no good English translation for tambo, because the buildings were designed not for inns but for the use of government officials traveling on business, but tambo is sufficiently well known in anthropological literature to justify its use in English.

Spanish mail did the same distance by horse in 12 to 13 days (Cobo, 1890-95, bk. 12, ch. 32).¹³ In addition to using the post for urgent government messages, the Emperor had fresh fish brought to him from the Coast in 2 days (Cobo, 1890-95). Beacon fires were used to send a message with unusual speed (Garcilaso, 1723, pt. 1, bk. 6, ch. 6; Pachacuti, 1879, p. 319).

Bridges.—The Inca had a number of different ways of crossing rivers. Most Andean rivers are small, and can be easily forded, except in the rainy season. A few of the larger rivers were sufficiently placid to be crossed by balsas; a balsa ferry was operated across the Santa River on the North Coast in Inca times (Cieza 1554, bk. 1, ch. 70; Cobo, 1890-95, ch. 14), and another is still in use on the Azángaro River in Puno. For the most part, however, the mountain rivers are so swift that if the water is even knee deep, some sort of bridge is necessary.

Across a narrow river, the Inca laid long beams and covered them with cross bars and branches. The Huatanay River in Cuzco was bridged on the same principle, but with great slabs of stone 9 to 12 feet (3 to 4 m.) long, many of which were still in place until recently when the river was newly canalized.

Wide rivers were spanned by suspension bridges, which were very skillfully constructed. The bridges were hung from four masonry pillars or towers, two on each side of the river, into which were set the beams from which the cables of the bridges were hung. Five cables, each some 16 inches (40 cm.) in diameter and made of supple twigs twisted or braided together, were required for each bridge. The cables were wound around the beams in the supporting towers as tightly as possible, and fastened securely. Three formed the floor of the bridge; two, the guard rails. For the floor, small cross poles were fastened to the cables, and covered with smaller sticks and brush. The guard rails were formed by weaving a vine or rope back and forth between the floor and the guard-rail cables, and served mostly to give the traveler a sense of security. The middle of such a bridge sagged considerably from its own weight. The Inca apparently never thought of hanging the floor below the cables and adjusting the vertical ropes which supported it so that the floor was level. No guy ropes were used, and the bridges swayed in the slightest wind. Nevertheless, the construction and maintenance of a suspension bridge 200 feet (about 65 m.) long, such as Father Cobo crossed at Vilcas and at the Apurimac River, was no small feat. The bridges were cared for by nearby villages as part of their mit'a tax, and had to be rebuilt every year. (Cobo, 1890-95, bk. 14, ch. 13; Estete, 1917, p. 81; 1924, p. 37; Sancho, 1917 b, chs. 6, 13; Xérez, 1917, p. 32; Morúa, 1922-25, bk. 3, chs. 18, 27; Poma, 1936, pp. 356-357.)

¹³ Means gives an interesting table of the speed of the runners according to the different chroniclers (1931, p. au).

The *Inca* maintained a pontoon bridge across the Desaguadero River near Lake Titicaca. It consisted of a row of balsas with a road built across them on poles. This floating bridge was in use until modern times (Cieza, 1554, bk. 1, ch. 91; Squier, 1877, p. 309).}

Where the traffic did not justify a bridge, the *Inca* built a contrivance (*OROYA*) similar to our breeches buoy for transporting passengers and goods. A large basket with a loop handle hung from a single straw cable stretched between two masonry pillars on opposite sides of the river. The basket slid along the cable and could be drawn to either bank of the river by means of additional ropes tied to it. Sometimes, the load was merely tied up with ropes and hung from a wooden hook which passed over the main cable (Cobo, 1899-95, bk. 14, ch. 13).

Guards stationed at the bridges prevented the unauthorized movement of gold and silver and made minor repairs when necessary (Sancho, 1917, ch. 6). Xérez and Estete both speak of a bridge toll paid in kind by travelers, and Xérez says that the guards were supposed to see to it that more goods were not removed from a province than entered it (Xérez, 1917, p. 32; Estete, 1917, p. 99). Presumably, the guards controlled only private traffic, and the regulations were probably intended to discourage travel and limit private commerce rather than to raise revenue.

Waterworks.—The *Inca* expended much skill on irrigation works and water-control projects, extensive remains of which survive to the present day. Irrigation ditches often ran for miles along the side of a valley to irrigate a comparatively small terraced area. Running water was provided in many Inca sites by covered stone channels running under ground for long distances. The most elaborate piping systems of this kind are in Sacsahuaman at Cuzco. Garcilaso describes a fountain in the Temple of the Sun at Cuzco which was supplied by a pipe which ran under the Huatanay River, and climbed the steep hill to the Temple (Garcilaso, 1723, pt. 1, bk. 3, ch. 23; see also Squier, 1877, p. 442). The source of the water for this fountain must have been at some altitude to provide sufficient pressure.

Many Highland rivers were canalized and their courses straightened. *Inca* retaining walls are still visible at many places along the Urubamba River, notably just above Ollantaytambo. Bingham illustrates a section of the Pampacahuana River, the channel of which is lined with *Inca* walls (Bingham, 1916, p. 484). The Huatanay and Tullumayo Rivers in Cuzco were canalized, and the bed of the former was completely paved where it flowed through the city (Sancho, 1917, ch. 17; Estete, 1924, p. 45).

DRESS AND ORNAMENTS

Inca clothing (fig. 26, *d*) was originally made entirely of wool, but with improved communications cotton from the Coast became avail-

able for garments in the Highlands. Tailored clothing was unknown, and, the only fastenings used, aside from the straight seams which joined the edges of woven rectangles, were straight metal pins.

Men's garments.—The ordinary man's dress consisted of a breechclout and a sleeveless tunic, with a large cloak for cold weather and dress occasions. The breechclout was a strip of cloth about 6 inches (15 cm.) wide which passed between the legs and over a narrow belt in front and back, with the ends hanging part way down the thighs. It was a symbol of manhood, put on at the age of about 14 as part of a maturity rite (*WARACIKOY*, "putting on the breechclout". See p. 283.). The sleeveless tunic (*oñko*) consisted of a long piece of cloth with a slit in the middle for the head (pl. 80, top). It was doubled over, saoklike, and the sides sewn up leaving spaces at the top for the arms. It reached nearly to the knees. In certain ceremonial costumes, a longer ankle-length tunic was worn. Fine tunics might be decorated all over, but the usual design was an inverted triangle at the neck and a broad band around the waist and the lower edge. The band at the waist often consisted of rows of small squares, each containing a geometric design of the sort used on war shields, which probably had heraldic significance. (For illustrations, see Bandelier, 1910, pls. 62 and 69; Montell, 1929, figs. 87, 88, and references, pp. X94-5).

Over the tunic, men wore a large cloak about 6 by 5 feet (190 by 150 cm.) in size. It was made of two strips of cloth sewn together up the middle like the mantles worn by present-day Indian women. It was either thrown over the shoulders with two corners tied over the chest or tied over one shoulder to leave an arm free. The cloak was removed during violent exercise.

Under the cloak but over the tunic, men carried a small coca bag about 8 inches (20 cm.) square, hung over the left shoulder and under the right arm. It held amulets, small tools, and anything the wearer wanted to carry, as well as his coca. (For illustrations of men's dress, see Poma, 1936, especially pp. 115, 145, 159.)

The *Inca* ordinarily wore sandals of untanned leather with elaborate woolen fastenings. Guaman Poma illustrates sandals with one cord crossing the top of the toes and another running from the top of the foot, through a loop in the side of the sole, passing around the heel and through another loop on the other side to the top of the foot, where the cord ends were elaborately fastened (Poma, 1936, pp. 145, 161, 362). The cords were of braided wool with a pile surface for softness. The soles were made of llama-neck hide and were cut a little shorter than the foot. Because the leather was untanned, the sandals had to be removed in wet weather, as the sole softened in water. Sandal tops were sometimes decorated with gold masks.

In some parts of the southern Highlands, moccasins were some-

times worn instead of sandals, but little is known about their shape or manufacture. Poma illustrates a pair on the feet of a chief from Collasuyo (1936, p. 169), and occasional specimens have been found in graves on the Coast. Moccasins are still made and worn in the Province of Chumpivilcas and elsewhere, and would make an interesting study. (See also Montell, 1929, pp. 209-211.) The Inca wore fringed leg bands below the knees and at the ankles, but no other leg covering (Poma, 1936, pp. 110, 157).

Knitted caps were worn in ancient times only by the *Aymara*. Most other Highland Indians bound their hair either with a specially woven band or braid (*LYAWT'*o) or with a sling. The Emperor's band, about $\frac{1}{6}$ inch (5 mm.) thick and $\frac{1}{2}$ to 1 inch (1 to 2 cm.) wide, was wrapped many times around the head, forming a sort of head band or turban about 2 inches (5 or 6 cm.) wide. The curious gold crown represented in certain late "portraits of the Incas" derives from a misunderstanding of earlier representations of a yellow *LYAWT'*o. The *LYAWT'*o was not an insignia of royalty, but a headdress commonly worn by the men of many tribes in Peru. Neither was it a fringe. The symbols of royalty wore ornaments added to the *LYAWT'*o and supported by it: a fringe or series of tassels worn in the center of the forehead, and a pompom on a small stick worn above it. (See Political Organization, p. 258.) Confusion of the *LYAWT'*o with the fringe is common in modern literature.

Women's garments.—*Inca* women wore a long dress, bound at the waist by a wide sash, and a mantle similar to that worn by the men. The dress was a rectangular piece of cloth wound around the body under the arms with the edges overlapping on one side, and the top edges were pulled up and fastened with straight pins over the shoulders. The skirt came down to the ankles. The sash was often decorated with square heraldic patterns like those on men's tunics: A large mantle, worn over the dress, was thrown over the shoulders and fastened on the chest with a large decorative metal pin (*TUPU*) (pl. 79, a, b); it hung down behind to about the middle of the calf. The pin was of gold, silver, or copper, with the head beaten out flat and perforated for small bells or colored threads. The round or semi-circular head had edges sharp enough to be used as a household knife. These pins, made in a variety of sizes, are very common in archeological collections.

Women's sandals were like men's.

Women bound their hair with a woven band similar to the *LYAWT'*o but passing around the head only once. In addition, they covered their hair with a square of fine cloth folded lengthwise three or four times and laid on the head so that one end came above the forehead and the other hung down the back. (For illustrations of women's dress, see Poma, 1936, pp. 126, 136, 338, etc.)

Ornaments.-Both sexes wore jewelry of several kinds. All men of royal lineage and "Inca by privilege" wore large cylindrical earplugs of gold, wood, or other materials which had a large round head on one end about 2 inches (5 cm.) in diameter. These were worn through the ear lobes with the head facing forward. Boys' ears were pierced for these plugs when they put on their breechclouts, about the age of 14. Many other Andean peoples used similar earplugs, distinguished in material or design from those of the Inca, which were insignia of rank.

Men wore also wide gold or silver bracelets, and metal disks hung around their necks or on their heads. The latter were state awards for bravery in war. Miniature gold masks were also worn occasionally on the sandals, the shoulder, or at the knees. [Soldiers wore necklaces of human teeth taken by themselves or their ancestors from slain enemies. In some festivals, they wore feather crowns or collars.

Women did not pierce their ears or wear any kind of earrings. Their only jewelry was their pins (*TUPU*) and necklaces of shell or bone beads. Noble women are often represented on lacquered wooden cups with flowers in their hands.¹⁴

Hair styles.—*Inca* men cut their hair, probably with obsidian knives. They wore bangs over the forehead and a long bob behind which covered the ears. Women wore their hair long (fig. 26, c), parted in the middle and falling straight down the back. (Cobo, 1890-95, bk. 1.4, ch. 2; Poma, 1936, pp. 120, 136; Garcilaso, 1723, pt. 1, bk. 8, ch. 13.) Hair styles apparently varied markedly from one province to another. Poma shows *Rucana* and *Colla* men with long hair (1936, pp. 169, 331). In some areas the women wore two big braids or a large number of small ones. The latter style was particularly common among the Aymara, and is attested for the *Cana* by hair from a tomb with Collao black-on-red pottery at Tinajani near *Ayaviri*, now in the Sección Arqueológica, University of Cuzco. Both sexes used combs made of a row of thorns tied between two slivers of wood (University Museum, Cuzco; see Poma, 1936, p. 140). Women cut their hair only as a sign of mourning or disgrace (Cobo, 1890-95, bk. 14, chs. 2, 19). Garcilaso mentions hair dyeing (1723, pt. 1, bk. 8, ch. 13).

Deformation.—Head deformation, though not universal in the *Inca* Empire, was widely practiced by both Coastal and Highland people. The Aymara produced long heads by binding the heads of babies with cloths; this shape (called *Q'AYTO-OMA*, "string head")

¹⁴ The above description of *Inca Costume* is taken from Cobo, 1890-95, bk. 14, ch. 2, with additional details from Guaman Poma's illustrations. Further references and illustrative material may be found in Monteill (1929). The *coca* bag and *sandals* are the only elements of ancient costume still generally used by Indian men, although the *tunics* are occasionally worn for festivals in some towns. Women still use variations on the mantle, head cloth, and *tupu*.

was practiced as well by many peoples who did not speak *Aymara*. Deformation by tying a board onto the forehead (*P'ALTA-OMA*, "flat head") was also widespread. The Cavana were its best known users. (Mortia, 1922-25, bk. 3, ch. 52; RGI, 1881-97, 2: 41; Cobo, 1890-95, bk. 14, ch. 6.) Head deformation is not specifically ascribed to the Inca proper, but deformed skulls have been found in the Urubamba Valley.

According to Mortia, thick thigh and shin flesh was considered a mark of beauty in *Inca* women, who tied strings above and below the knee to produce it (1922-25, bk. 1, ch. 17).

Paint.-The *Inca* used face paint in war, in mourning, and probably in ceremonies, but our information on the subject is scanty. Face paint in war is mentioned by Las Casas (1892, ch. 6; achioite); Cobo (1890-95, bk. 14, ch. 9; many colors); Cabello de Balboa (1840, p. 285; many colors); and Acosta (1940, bk. 4, ch. 11; *cinnebar*). Black paint was used in mourning (Pachacuti, 1879, p. 275, women; Cieza, 1554, bk. 1, ch. 83, province of Tarma). The commonest colors seem to have been vermillion from *cinnebar* and reddish purple from achioite or genipa (*Bixa orellana*). At llama sacrifices, the priests drew lines on the faces of the persons making the offering with the animal's blood (Cobo, 1890-95, bk. 13, ch. 25). See also the discussion of "body" painting in Montell, 1929, pp. 219-222.

Tattooing was practiced on the coast but apparently not in the Highlands (Montell, 1929, pp. 148-151).

TRANSPORTATION.

Human.-All transportation on land was on the backs of men or llamas or by litter. The standard method was to load heavy objects in the center of the cloak or mantle, fold two opposite corners over the load, grasp the other two corners, swing the cloth onto the back, and knot the corners on the chest. This method was used in ancient times by both men and women (fig. 27, a) (Poma, 1936, pp. 196, 225, 356, 531, etc.; Cobo, 1890-95, bk. 14, ch. 6). Pottery jars full of liquid were carried on the back with a rope. Inca jars had a projecting knob, on the shoulder, and two vertical strap handles near the bottom. The carrying rope passed through one handle, up over the nob, and down through the other handle. It could also be wound around the neck (Poma, 1936, p. 246). Other heavy objects were probably carried similarly with a rope.

The use of a tump line (a band passing over the forehead) to support loads carried on the back is depicted by Poma (1936, pp. 229, 1147, 1150) but is not mentioned in other sources. The tump line may have been used in Rucanas, where Guamán Poma came from, or in neighboring regions which he visited.

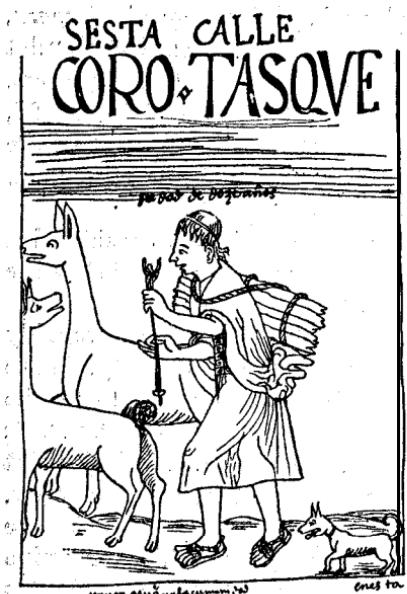


FIGURE 27.—Inca transportation and weaving. **a**, Girl carrying a load of wood. **b**, The Emperor, Topa Inca, and his queen riding in a litter with *Callahuaya* bearers; **c**, vertical loom for weaving tapestry cloth; **d**, Mochica type loom for weaving warp-face cloth. (After Guaman Poma, 1936, pp. 225, 331, 647, 115.)

Animal.-Llamas, extensively used to transport light loads, can carry up to about 100 pounds if the weight can be equally distributed on both sides of the animal's back, preferably in woolen saddle bags. The llama was ridden occasionally in ancient times, but it tires so easily under even a small man as to be worthless as a mount. It has great endurance and can find its own feed along the road, but must travel very slowly and be relieved frequently. The lead llama in a pack train was and is decorated with ear tassels and bells, and the other animals seem to recognize his leadership.

Litters.-Litters in the *Inca* Empire were restricted to the highest nobility. They consisted of two long poles resting on the bearers' shoulders with a passenger seat built on a floor across the middle. Security was provided by boxing in the sides and ends of the seating platform. In the most elaborate litters, the seats were protected from the sun by a roof or canopy of feather cloth. The seats were the usual low carved stools covered with fine cushions. Litters were built to seat one person or two people sitting face to face. The ends of the carrying poles were sheathed in silver or other metal, often in the shape of an animal's head, and the whole litter was lavishly decorated. Four Indians, picked for their smooth pace, carried the poles and were relieved at frequent intervals. This type litter was used by the Emperor and members of his immediate family (fig. 27, b). When Atahuallpa entered Cajamarca, the Spaniards estimated that he had 80 litter bearers in blue livery with him. (Poma, 1936, pp. 331, 333; Xérez, 1917, p. 58; Estete, 1924, p. 30; González, 1608; Cieza, 1880, bk. 2, ch. 20.) The *Rucana* were the most famous litter bearers, but Guamán Poma mentions *Callahuaya* bearers (1936, p. 331). Huascar's litter bearers in his final defeat were *Rucana* and *Camanata*, i. e., Indians of Camana Valley (Pachacuti, 1879, p. 322).

Gonzalez mentions another type of litter, which he compares to a barbacoa (elevated frame or platform), and a frame for carrying beams. Xérez mentions two carrying hammocks in Atahuallpa's train, but gives no details (Xérez, 1917, p. 58). For litters on the Coast, see Carrión (1940).

Boats.-Andean boats and navigation have aroused wide interest in modern times, and at least two good studies of the subject exist in English (Lothrop, 1932; Means, 1942). For navigation on Lake Titicaca, see this volume, page 533.

In the immediate neighborhood of Cuzco, there was little reason to make boats, for the lakes are very small and the rivers swift. If Aymara-type totora-reed balsas were made, they did not attract the Spaniards' attention.

On the Coast, small fishing balsas were made like the *Aymara* balsas but had long tapering prows and square-cut sterns (Bingham, 1913,

p. 389). They generally supported only one fisherman, and were light enough to be carried by one man. They had to be taken apart and dried out every night, or they became waterlogged and useless. The Indians of the Coast ventured as far as six leagues (about 18 miles) out to sea in these craft, going usually in groups. They were propelled by a split cane used as a double-bladed paddle (Cobo, 1890-95, bk. 14, ch. 14).

At Arica and Tarapaca, the Indians made balsas of two inflated seal skins lashed together. These craft also supported only one Indian each, and were very light but demanded more care than the reed balsas of the North and Central Coast, as the air leaked out in use. The fishermen carried tubes with which they could blow into the skins and reinflate them when necessary (Cobo, 1899-95, bk. 14, ch. 14).

At the ford of the Santa River on the North Coast, floats were made of large number of gourds put into a net, on top of which rode the passengers or cargo. The floats were propelled by swimmers. Cobo saw rough cane rafts used on the Apurimac River as emergency ferries when the bridge broke in 1616 (1890-95, bk. 14, ch. 14. See also RGI, 1881-97, 1: 86).

The real limitation to Peruvian navigation was not lack of ingenuity but lack of convenient supplies of suitable lumber. From Payta in northern Perú to Manta in Ecuador, the Indians built large seagoing balsa-wood rafts, which were among the most seaworthy craft in all South America. They laid out seven to nine balsa-wood logs of graded lengths, so as to make a pointed prow and square stern, and lashed them together with lianas and cords. A platform was built on top to keep the cargo dry, and a mast was stepped in the middle log. These rafts had sails and oars, and were large enough to carry 50 men (Cobo, 1890-95, bk. 14, ch. 14; Estete, 1924, p. 18 and note 25, p. 61). Topa Inca was supposed to have made his voyage of exploration in the Pacific in this type of boat (Sarmiento, 1906, ch. 46). Huayna Capac had balsa-wood logs brought to the two largest Highland lakes to build large rafts there. The Spaniards found them in Lake Junín (Xérez, 1917, p. 93), and in Lake Titicaca (Valverde, 1879).

MANUFACTURES

Weaving.-Highland cloth was made chiefly of wool, which was warmer and held its colors better than cotton. Cotton, however, was also available, being traded from the lower eastern valleys and the Coast. Alpaca wool was preferred for clothing, but llama wool was used also, especially for very coarse cloth. The finest material was vicuña wool, to which the Indians occasionally added viscacha and bat wool. Vicuña wool is soft, silky, and admirably suited to luxury weaving. The Spaniards compared it favorably with silk.

(Cobo, 1890-95, bk. 14, ch. 11). Bat wool is very short staple to be successfully woven.

Wool was used both in its natural colors and dyed with vegetable dyes, an enormous variety of which were used by the Highland Indians. The wool was always dyed before spinning according to Cobo (1890-95, bk. 14, ch. 11). Plants for dyes were gathered by girls, 9 to 12 years old, too young to do full adult work (Poma, 1936, p. 228).

Spinning.-Spinning **was** done mostly by the women, who amused themselves with it when out walking as well as in the intervals of other housework. The wool to be spun was wound on the wrist or held on a distaff, which consisted of a stick perhaps 8 inches (20 cm.) long with two horns on the top in the shape of two-thirds of a ring. The spindle was a straight stick a little longer than the distaff with a wooden or pottery whorl. The distaff was held in the left hand and the thread pulled out and formed with the right hand, the spindle hanging free in the air or with one end resting in a pottery plate. The thread was usually spun clockwise, except in manufacturing articles to be used in sorcery. The spun thread was doubled and twisted counter clockwise to prepare it for weaving. Men, especially old men, often helped the women twist the thread. (Cobo, 1890-95, bk. 12, ch. 11; Garcilasso, 1723, pt. 1, bk. 4, ch. 13; Poma, 1936, p. 298; archeological specimens in Cuzco collections.)

Looms.-Three kinds of looms were used. The first or belt loom appeared earliest in the Mochica culture of the North Coast (Montell, 1929, p. 111; Means, 1931, fig. 2). It consisted of two parallel rods which supported the warp, one of which was fastened to a tree or post while the other was furnished with a belt which passed around the waist of the weaver, who sat or knelt in front of his (or her) work and varied the tension on the warp by shifting his own weight (fig. 27, d). This type of loom is illustrated by Poma for the Highland Indians in general and the **Rucana** in particular (1936, pp. 215, 217, **564, 645**).

The second or horizontal loom is used principally by the **Aymara**, in modern times. The two horizontal rods which supported the warp were fastened some 16 inches (40 cm.) above the ground to stakes. The face of the cloth was horizontal and the weaver had to lean over it. Both of these types of looms were equipped with a heddle consisting of a light rod with loops which passed over alternate warp threads, a variety of weave swords for beating down the finished work, pointed bone picks, and bobbins.

The third type of loom was a vertical frame of four poles, built against a wall, on which **QOMPI** was woven (fig. 27, c). The weaver worked standing. (Cobo, 1890-95, bk. 14, ch. 11; Garcilaso, 1723, pt. 1, bk. 5, ch. 6; Poma, 1936, p. 647.)

Cloth.-Three grades of cloth were made, each distinguished by a Quechua name. The coarsest (*cosí*), which had weft threads as much as $\frac{1}{8}$ inch (1 cm.) in diameter, was used only for blankets. The cloth used for ordinary clothing was called *AWASQA*, "woven material". The finest cloth (*QOMPI*) was finished on both sides and woven in many colors with a large number of small bobbins (Cobo, 1890-95, bk. 14, ch. 11). A comparison of these data from the chroniclers with the few known examples of Highland weaving of Inca date suggests certain interesting correlations. The ordinary cloth found in ancient graves in the Cuzco region is almost all warp-face plain cloth, usually without design, but sometimes decorated with warp stripes or with geometric patterns made by adding threads of different colors to the warp and inserting the weft in such a way that the extra warp threads come to the surface only where their colors are needed in the pattern (Early and Late Inca textiles from Ausangate and Yucay in the University Museum, Cuzco). Most other known *Inca* pieces are done in a fine tapestry weave, using more colors than the ordinary pieces, and finished on both sides. Most of the fine Colonial pieces showing a mixture of Inca and Spanish styles are also tapestry weave, sometimes with added embroidery. (University Museum collection, Cuzco; Bandelier, 1910, pls. 62, 69; Means, 1917, pls. 36, 17; Crawford, 1916, figs. 8, 9, and pp. 121-122.) The conclusion is almost unavoidable that the cloth called *AWASQA* by the Inca was warp-face plain cloth with pattern in the warp, and that *QOMPI* was tapestry-weave material. (See also Means, 1931, p. 478.)

Tapestry weaving was done well into the 17th century, and perhaps later, but then began to decline, and seems not to be practiced by hand-loom weavers in southern Perú today. On the other hand, the warp-faced, warp-pattern technique is now universal, and the modern pieces are very much more elaborate than the old ones. As in most other aspects of Indian culture, the Spaniards suppressed the luxury arts and the civilization of the nobility, but the folk arts remained vigorous and have preserved their old traditions down to the present. As the technique of weaving *QOMPI* fell into disuse, the special vertical frame on which it was woven disappeared. Modern looms are of the belt and horizontal types or are of European origin.

The Inca made two other varieties of cloth by adding feathers and metals superficially to the woven material. The feather cloth was particularly fine. Cobo emphasizes the small size of the feathers inserted in the weft while weaving *QOMPI*. No feather pieces of positive Inca date are known to exist, but beautiful examples of the technique have been found in Coastal graves (Means, 1931, frontispiece). Ornamentation with figures cut from paper-thin sheets of hammered gold and silver sewn on the cloth in patterns (*chaquira) was

widely used (pl. 79, c). All known specimens of this are also of Coastal origin, but round gold bangles with a hole in the edge, which were probably sewn on cloth, have been found in several excavations. (Bandelier, 1910, pls. 66, 78; Bingham, 1930, fig. 158; Cobo, 1890-95, bk. 14, ch. 11.) More archeological studies of *Inca* Period textiles are urgently needed.

Basketry, cordage, and matting.-Abundant material for study exists in tombs near Cuzco, a little of which has found its way into museums, but none of which has been studied. From superficial observation, it seems that the *Inca* made technically excellent baskets and mats, but took little trouble to decorate them, reserving their best efforts for textiles, pottery, metalwork, and wood.

Skin preparation.-The *Inca* had little use for skins. Llama neck skin was used for sandal soles, and braided rawhide thongs were used as alternatives to wool to make bolas and slings. Drumheads were made of skin. Bodies were sometimes sewn in hide for burial. In certain ceremonies, jaguar, puma, or deer skins were used for dance costumes. Tanning was not practiced, so that skin objects had to be protected from water. Skins were probably prepared in the manner still in use among the *Aymara* (p. 535). (See also Cobo, 1890-95, bk. 14, ch. 2; Garcilaso, 1723, pt. 1, bk. 8, ch. 16.)

Pottery.-The chroniclers say little about Inca pottery, and most of their observations can be readily verified on archeological specimens. (Cf. Cobo, 1890-95, bk. 14, ch. 4.)

Late Inca (Cuzco Series) pottery is a beautifully made ware, fine-grained and of almost metallic hardness. It is generally thicker than earlier wares, and has a highly polished surface. The paste often shows a gradation of color from firing, the surfaces being brick red or orange, while the center is gray. The sherds show no tendency to split, however. Large pieces are frequently fire-clouded. The most common colors used for painting were white and lustrous reds and blacks, all mineral pigments.

Of a wide variety of shapes, the two most common are a shallow plate (pl. 77, b) with one or two handles and a jar (aryballos) with a pointed foot, two low-set vertical handles, and a long neck (pl. 77, a). The latter is for the storage and transportation of liquids. The most common shapes of Late *Inca* pottery have been illustrated a number of times (Bingham, 1930, figs. 70-72; Rowe, 1944). Late Inca ware (fig. 28) is characterized in general by a high degree of technical excellence and the constant repetition of simple geometric patterns in the decoration. (See p. 287.)

Potter's clay is abundant in the neighborhood of Cuzco. The most famous pottery works in ancient times were those at San Sebastian (SANYO), about 3 miles (5 km.) from Cuzco, the name of which

became a general name for pottery *in Quechua*, much as "china" is used in English. *Quechua* has a wide variety of terms for pottery shapes.

Certain peculiar features of Inca vessels deserve special notice. Annular bases were unknown in the Cuzco region before the Spanish Conquest, but cooking pots had a stem and foot, like a goblet, or else three solid cylindrical feet (pl. 77, *f*). Flat or concave covers with loop handles were also used. Rims were usually flaring or else a flat lip was added, but thickening was not used. Modeled ornament includes puma-head knobs on liquid jars, plate handles in the shape of bird heads, eyes and noses added to jar necks, and simple modeled

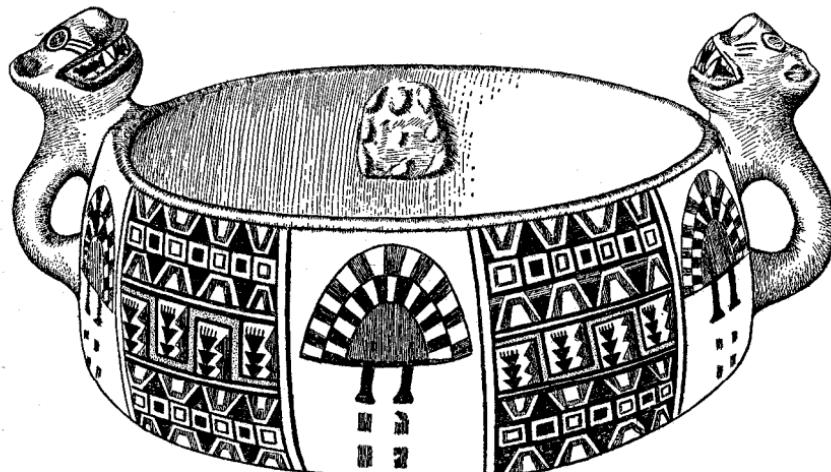


FIGURE 28.—Late Inca polychrome bowl. (Redrawn from Bandelier, 1910, pl. 76.)

snakes or buttons on cooking pots. Other forms are very rare. Incised and stamped decoration was not ordinarily used. Braziers and small stoves were made out of pottery (pl. 77, *g*). (See Bingham, 1915 b, p. 206; 1930, figs. 125-126.) Pottery was also used for dice (Bingham, 1915, p. 176; 1930, fig. 172, *b-h*), spindle whorls (Bingham, 1915 b, p. 208; 1930, figs. 182-183), and ladles (Pardo, 1939, pl. 2, *g, h, i*).

Settlers from all parts of the Empire came to Cuzco after it was rebuilt by Pachacuti, and brought their own local pottery. North Coast (Late Chimu black ware), South Coast (Ica style black ware), and Colla and Lupaca Provinces (Chucuito polychrome and Sillustani polychrome) wares have been identified in excavations in Cueco. Many other pieces will probably turn out to be styles of distant origin when more is known.

Woodworking.—The Inca made wooden cups, spoons, and stools, and used wood in roofing houses, making looms, and building litters.

The most important of these articles was the wooden cup or kero (*QIRO*), so that professional woodworkers were called *QIRO-KAMAYOQ*, "cup specialists" (RGI, 1881-97, 1: 97; Falcón, 1918, pp. 149-151).

Cups.-Wooden cups held $\frac{1}{4}$ to 2 quarts and were shaped like our tumblers, somewhat wider at the mouth than at the base; some had slightly concave profiles (pl. 80, *bottom, left*). The sides were about $\frac{1}{2}$ to 1 inch (1 to 2 cm.) thick; the largest, nearly 16 inches (40 cm.) high. Some are carved in the shape of a puma or jaguar's head (pl. 80, *bottom, right*), and others in the shape of a man's. Rare specimens have carved handles or elaborate bases, but the majority have simple tumbler shapes. Some have geometric patterns of lines cut into the wood, usually arranged in zones; others have lead inlay made by pricking a pattern of small holes and filling them with lead. The majority are inlaid with true lacquer, which Nordenskiöld first identified (1931 a, pp. 95-100). The designs were cut into the surface in low intaglio, and the hollows filled with several colors of lacquer fastened in by a vegetable gum. The technique seems to have been borrowed by the *Inca* from the South Coast, where it was used to decorate wooden "paddles." Nordenskiöld illustrates a lacquerer's kit of colors from a Coast grave.

Inca style wooden cups continued to be made until well along in the Colonial Period, probably sometime in the 18th century, and the later ones have representations of Europeans and Indians in Hispanicized dress. The designs on the cups are superb, showing battle scenes, hunting, expeditions to the eastern forests, dances and festivals, plants, animals, heraldic motives, historical scenes, *Inca* and Colonial costume, and nearly every aspect of Indian life. The drawing is lively and competent, the colors vivid. No greater service could be done to the study of *Inca* and Colonial life than to publish an illustrated study of the lacquered cups now in museums and private collections. The designs are among the finest products of *Inca* art, and are worthy of comparison with the best work of the Mexican codices. (See Cobo, 1890-95, bk. 14, ch. 4; Gonzalez, 1608, p. 304; Musée d'Ethnographie du Trocadéro, 1933, pls. I-5.)

Spoons. -*Inca* spoons were made of wood and occasionally of bone or copper. They had a shallow bowl and a perfectly straight handle. Although not common collection pieces, quite a variety exist. The University Museum at Cuzco has a good collection (Valcárcel, 1935 b, p. 191). For stools, see page 224.

Gourds.-Gourds were used to a limited extent for measures of volume and as substitutes for pottery. The *Inca* got them by trade from warmer regions, and they were often brightly painted (Cobo, 1890-95, bk. 14, chs. 4, 15).

Mining and metallurgy.—Spanish ideas influenced Indian mining practice probably sooner than any other part of native culture be-

cause of the Spanish preoccupation with precious metals. Only a very early description of Indian mining could be expected to represent aboriginal conditions. Fortunately, we have an account of 1534, based on the first Spanish visits to the region around La Paz in Bolivia. Although the account refers specifically to gold mining in *Aymara* territory, it may be assumed to apply to the *Inca* as well, except that mining was much less important in the Cuzco region than south of Lake Titicaca.

The technique of mining will be described in the Handbook, Volume 5, under Metallurgy.

The mines were worked only 4 months a year, from noon to sunset each day, so as not to overtax the miners and to take advantage of the warmest weather. All the gold was taken by the government, which kept inspectors at the entrance to the mining area to see that none was stolen. The miners were furnished by the neighboring provinces in groups of 20 to 50 men, obviously ^{MIT'A} labor service (Sancho, 1917 b, ch. 18).

The *Inca* mined a great variety of metals. Copper was the most important, and the only metal in general use among the taxpayers. Gold and silver were reserved for the use of the Emperor, and of nobles to whom the privilege was expressly granted. Tin was mined to be mixed with copper in the making of bronze. Platinum was used in parts of Ecuador which lay within the Empire, but never elsewhere in the Andean region. There is a *Quechua* word for iron (*quellay), but it probably refers to meteoric iron or to heavy metallic ores like hematite, for there is no evidence that the Inca knew how to smelt iron and it does not occur pure in the ground. Lead was used to inlay wood.

The hills where ore deposits were found and the mines themselves were both regarded as huacas (shrines), and the Indians prayed to them to give up their metal. Festivals were held in their honor at which the miners danced and drank chicha all night. (Cobo, 1890-95, bk. 13, ch. 11.)

More different technical processes for treating metal were used in the Andean region than in any other part of America, and most of them were known at Cuzco. The processes represented by objects from Late Inca sites or done in obviously *Inca* style include: Smelting, alloying, casting, hammering, repoussé, incrustation, inlay, soldering, riveting, and cloisonné. At least one alloy, bronze, was known. It contained varying percentages of tin.

The technology of metallurgy is fully discussed in the Handbook, Volume 5,

The *Inca* hammered and annealed the cutting edges of knives, axes, and chisels in order to secure maximum hardness. (Mathewson, 1915; Mead, 1915; Nordenskiöld, 1921.) Gold and silver were

hammered into thin sheets, and the decoration added by hammering the back of the sheet to leave a relief design on the face (*repoussé*).

Casting was very skillfully done. Nearly all *Inca* cast objects are of bronze, for silver and gold were usually treated only by hammering, except when used as inlays. Bronze bolas weights from Machu Picchu have a hemispherical depression in the top with a pin across it, all cast in one piece. The decorative heads for *tomi* knives were cast to leave a considerable extension of unshaped metal from which the blade of the knife was afterward formed by hammering and cutting (Mathewson, 1915).

The appearance of solidity was produced by making a hollow shell of sheet gold or silver hammered in the desired shape, perhaps a human figure or a model llama. Nevertheless, the chroniclers refer occasionally to objects of "solid gold," and perhaps the lack of cast objects in our collections is the result of historical selection.

Riveting was skillfully done in building up objects of sheet metal, and edges were soldered with the same metal being joined. Small holes were drilled, but larger holes in solid objects were usually cast in the piece, to save trouble (Mathewson, 1915). The Inca seem not to have plated but the practice was known on the North Coast (Lothrop, 1938, pp. 17-19).

Both incrustation of other materials in metal and inlay of one metal in another were practiced by the *Inca*. A fine silver plate in Cuzco is incrusted with different-colored bits of shell (University Museum; Valcárcel, 1935 b, pp. 180-181), and a silver llama figurine in the American Museum of Natural History is incrusted with areas of lacquer separated by gold wires (*cloisonné*). An Inca ax in Madrid is of bronze inlaid with silver, and two bronze *tomi* knives in Paris have similar inlay in the handles (Lothrop, 1938, pp. 14-15; Musée d'Ethnographie du Trocadéro, 1933, Nos. 354, 355).

Copper and bronze tools were replaced by Spanish iron ones soon after the Conquest, and, by the time the chroniclers described native techniques of metalworking, processes like casting, which were applied primarily to bronze, had gone out of use. Cobo, for example says that the native smiths used only hammering in their gold and silver work, and got the false impression that the same had been true in ancient times (1890-95, bk. 14, ch. 15). The data from the chroniclers on metalworking have been admirably summarized by Lothrop (1938, pp. 11-17, using Cobo, Garcilaso, 1723, pt. 1, bk. 2, ch. 28, and Benzoni).

Gold and silver were used almost entirely for luxury articles and ceremonial objects. Bangles and sequins to be sewn onto clothing, *tupu* (*topo*) pins for fastening women's garments, plates to be hung around the neck, and figurines representing men, women, llamas, and alpacas were found at the Inca shrine of Titicaca on the island

of that name (Bandelier, 1910, pls. 57, 58, 78). Cups shaped like the wooden ones (*qiro*), earplugs, larger statues, and a variety of ornaments for litters and costume are mentioned by the chroniclers. Certain walls of the Temple of the Sun in Cuzco had gold bands across them (Rowe, 1944 and references). Lists of gold and silver objects taken by the Spaniards at the time of the Conquest give an excellent idea of the variety of objects made and the ingenuity of the *Inca* craftsmen (Lothrop, 1938).

Copper and bronze were used occasionally for the same purposes; figurines, pins, and cups of these metals are not uncommon. (See Bandelier, 1910, pls. 32, 66.) More commonly, however, they were used for tools (pl. 78): axes, chisels, knives, crowbars, bolas weights, war-club heads, mirrors, tweezers, needles, and bells. A great variety of these implements were found at Machu Picchu (Bingham, 1930, figs. 137-169). The axes are flat with two ears on the base for fastening the head to the handle. Knives are usually of the type called *tomi*, with a handle perpendicular to the blade like the metal part of one of our chopping knives.

Stoneworking.-*Inca* methods for working and handling building stone have been described (p. 222 under Architecture). The same processes (hammering with stone hammers and polishing with sand and water) were used to produce a variety of smaller objects: axes, war-club heads, bolas stones, clod crushers, mortars and pestles, mills, ceremonial dishes, figurines, and amulets. The stone axes and war-club heads are shaped as nearly like the metal ones as the material permitted, and it is difficult to tell which was the prototype of the other. Most of the figurines represent llamas or alpacas, and have a cup-shaped hollow in the back that could be filled with llama fat or coca when used as an offering. These figurines are usually of stones selected for their fine texture, grain, and color, and the workmanship and artistic feeling is very fine. The University Museum, Cuzco, has a large collection. (Valcárce, 1935 c, pp. 26-27; see also Musée d'Ethnographie du Trocadéro, 1933, pl. 15, 16.)

The *Inca* made a variety of round and rectangular stone dishes, (pl. 79, g), some beautifully finished and decorated with designs in relief (Bingham, 1930, figs. 187, 197-199). These were probably used in sacrifices, perhaps to catch the blood of the sacrificed animal. (Cf. Mortá, 1922-25, bk. 4, ch. 2; Poma, 1936, p. 880.) Stone was also used for milling stones and for mortars and pestles (p. 221).

Stone chipping was not extensively practiced, as the *Inca* used copper and bronze for most cutting tools. Two stone blades, apparently without secondary flaking, were, however, found at Machu Picchu (Bingham, 1930, figs. 206, 211), and Cobo mentions obsidian knives (1890-95, bk. 3, ch. 33). Ground-slate knives with a straight cutting edge and a curved back are common on 'Early Inca sites

around Cuzco, and one was found at Machu Picchu (Bingham, 1930, fig. 205).

Bone and shell.—Bone was used for needles, spoons, weaving picks, spindle whorls, flutes, and beads and other ornamental purposes. Llama bones were probably the principal material. (Bingham, 1930, figs. 184, 185, and University Museum collection, Cuzco; Valcárcel, 1935 b, pp. 190-91.) A very elaborate human figurine made by gluing small pieces of bone together was found in the 1934 excavations at Sacsahuaman (University Museum, Cuzco).

Shell was used for beads and was cut into small human and animal figurines, either for jewelry or as offerings. A silver dish in Cuzco shows skillful shell inlay.

Fire making.—Fire was made by rubbing two sticks together (Calancha, 1638, bk. 4, ch. 13). The sticks were called *uyaca^{14a} (Gonzalez, 1608, p. 361). No details are given about the kind of wood used, the tinder, or the manner of holding the apparatus. Garcilaso says that fire for sacrifices was always made new. The priest wore a bracelet with a concave gold plate attached to it with which he concentrated the rays of the sun on a tuft of cotton (Garcilaso, 1723, pt. 1, bk. 6, ch. 22). Cobo says, however, that fire for sacrifice had to be taken from a brazier kept always burning near the Temple of the Sun (1890-95, bk. 13, ch. 22). Garcilaso's story is suspect, being entirely without historical or archeological support, but is not impossible.

Weapons.—See pages 274-278.

SOCIAL AND POLITICAL ORGANIZATION

Kinship system.—The chroniclers were far more interested in *Inca* administration work than in details of family and village organization, so that this section is based on much less definite evidence than some of the others. Nevertheless, careful comparison of a small number of scattered references to the subject permits reconstruction of the broad principles on which *Inca* society was based. The best point of departure is the *Inca* kinship system and the incest restrictions placed on marriage, the two aspects of the question treated most fully in the sources.

The kinship system is fully described in the great *Quechua* grammar of Diego González Holguín (González, 1607, ff. 96-99); it is logical and not remarkably complicated. There are separate words for father and for mother; a father distinguished his son and daughter, but a woman used a single term for her children, regardless of sex. The terms for brother and for sister vary according to the sex of the speaker, but there are no special terms for older and younger siblings. First cousins are called "brother" and "sister." Both paternal and

^{14a} An asterisk indicates the commonest Hispanicized form of the word it marks. (See p. 185.)

maternal grandparents are called "grandfather" and "grandmother," and there is only one term for grandchild. The father's brother is called "father," and father's sister "aunt." Similarly, mother's sister is called "mother," mother's brother "uncle." The classificatory parents use the same terms for man's brother's children and woman's sister's children as the real parents, while the classificatory uncles and aunts call these children "nephew" and "niece." None of these terms is reciprocal.

The conjugal relations are somewhat more complicated. A man uses the same term for his father-in-law and his brother-in-law, and the same term for his mother-in-law and her mother. He calls his sisters-in-law by the same term that his own parents and siblings use for his wife and her sisters. His parents call his father-in-law by the same term he does, and they call his mother-in-law "aunt"; both these terms are reciprocal. The terms used by a woman for her relatives by marriage do not correspond exactly to those used by the men. A woman uses the same term for her father-in-law and his father, and the same term for her mother-in-law and mother-in-law's mother. She calls her sister-in-law "aunt," or may use the same term a man uses to his mother-in-law. She uses the same term to the brother-in-law that her own parents and siblings use toward her husband and his brothers. There is a special word for "husband," but the only word for wife is "woman."

It will be readily noted that the primary basis of classification is sex, either of the speaker (as is the case of the brother class and conjugal relations) or of the person addressed. There is a clear emphasis on generations in the reckoning of descent, but the distinction is not important in naming conjugal relatives. The distinctions by the sex of the speaker or of the person addressed are so symmetrical that it would be difficult to imagine the system functioning in a society with rigid clan exogamy and descent in a single line, for there would be no way of distinguishing clan relatives and nonclan relatives. Cross-cousins are not distinguished from parallel-cousins by their own generation, but are carefully distinguished by the previous generation, and it should be noted that all cousins call each other brother and sister. The terms for brother-in-law and sister-in-law do not imply that their users practiced the levirate, but they would not be incompatible with such a practice.

Quechua Kinship Terms (González, 1607, pp. 96-98)

(1) Parent class:

YAYA—father, father's brother.

MAMA—mother, mother's sister.

CORI—father's son or father's brother's nephew.

OSOSI—father's daughter or father's brother's niece.

WAWA—mother's child or mother's sister's child.

(2) Brother class:

WAWQI—man's brother or male cousin.
 PANA—man's sister or female cousin.
 NYANYA—woman's sister or female cousin,
 TORA—woman's brother or male cousin.

(3) Grandfather class:

MACO—grandfather.
 PAYA—grandmother.
 HAWAY—grandchild.
 WIL'KA—great grandchild.
 C'OPOLYO—great great grandchild.

(4) Uncle class:

*Caca—mother's brother or cousin (uncle).
 IPA—father's sister or cousin (aunt).
 *Concha—nephew (of mother's brothers and cousins).
 MOLYA—niece (of father's sisters and cousins).

(5) Conjugal terms:

*Caca-(uncle) used by son-in-law and his brothers and cousins to address his father-in-law, and his father-in-law's father. Also used between the father-in-law and the man's father, and reciprocally among all the brothers-in-law.
 IPA—(aunt) used between the mother-in-law and the man's mother, and by the wife addressing her sisters-in-law.
 *Aque—used by the son-in-law and his brothers and cousins to address his mother-in-law or her mother. Also used by the wife as an alternative to "IPA" in addressing her sisters-in-law. It may be used also by her own sisters and cousins, and is reciprocal.
 *Quihuachi—used by the daughter-in-law and her sisters and cousins to address her father-in-law and his father.
 *Quihuach—used by the daughter-in-law and her sisters and cousins to address her mother-in-law and mother-in-law's mother.
 *Catay—used by the parents-in-law and their children and nephews to address the son-in-law. Used also by the wife and her brothers to address her husband's brothers and their parents.
 *Khachun—used by parents-in-law and brothers and sisters-in-law to address the wife.

(6) Husband and wife:

QOSA—husband (QHARI—man, as apposed to woman).
 WARMI—wife ("woman").

Compound terms have been omitted from this table. Gonzalez gives compound forms by which any possible degree of blood relationship can be distinguished. Many of the terms in this list are no longer used in *Quechua*, so that the modern kinship system is considerably simpler.

Marriage restrictions.—The marriage restrictions fit in well with the kinship system. They can be divided into prohibitions of marriage within certain grades of blood relationship and broader restrictions limiting the choice of husband or wife to certain social groups. Marriage was prohibited with all direct ancestors and direct descendants, uncles and aunts, and real brothers and sisters. Marriage with a first cousin was sanctioned if she were to become the principal wife,

on the grounds that the cult of the common grandfather would be strengthened thereby. The nobles were allowed to marry their half-sisters. This exception to the general rule is not easy to explain. The chroniclers link it with the later emperors' custom of making one of their full sisters their principal wife, and assume that just as the Emperor was set above all human law, so his nobles were distinguished somewhat from their fellow men. This explanation may be the correct one. (Cobo, 1890-95, bk. 14, ch. 7; Acosta, 1940, bk. 6, ch. 18; Poma, 1936, p. 190.)

The social group which restricted marriage on a broader basis was the ayllu (*AYLYO*), a kinship group discussed below. Garcilaso says specifically that marriage outside the ayllu (*parentela*) was forbidden (1723, pt. 1, bk. 4, ch. 8), and Cobo lists a law which permits a man to elope with a girl without her father's consent, and suffer no penalty provided the girl went willingly and both parties belonged to the same village (1890-95, bk. 12, ch. 26).

In the Inca Empire, the number of a man's wives was an index of his wealth and prestige, and, because the women shared the agricultural work, extra wives also made life easier for the whole family. The ordinary taxpayer, however, was monogamous from necessity. The first wife became the principal one, with precedence over all subsequent ones; if she died, none of the secondary wives could take her place, although the husband was free to marry another principal wife. The *Inca* explained this as a means of preventing intrigue among the secondary wives. A widow could not remarry unless she were inherited by her husband's brother (the levirate). A son inherited his father's secondary wives who had not borne children. A man might also receive wives by gift from the Emperor or by capturing them in war. A man's foster-mother became his secondary wife when he married and remained so until he had paid off his obligation to her for rearing him (Cobo, 1890-95, bk. 14, ch. 7).

With marriage, a man acquired the status of a full adult and moved into his own house. The ties of ancestor worship kept married sons near their father, however, forming small extended family groups similar to those of the modern *Aymara*. The nobility worshiped several generations of dead ancestors, but the common people usually did not remember generations more remote than the dead grandfather, whom they worshiped (Cobo, 1890-95, bk. 13, ch. 10). The possession of the dried and wrapped body of the worshiped ancestor was the important link; so much so that if an unfriendly neighbor got possession of the body, the descendants were forced to obey his orders in order to keep up their worship (Anonymous Letter of 1571 (1848), p. 448). Extended families seem to have lived by preference in a common enclosure (*KANCA*) containing three to six houses, if we may

judge from the plans of such *Inca* sites as Machu Picchu and Ollantaytambo (see p. 000).

The Ayllu.—In modern Indian society, a number of unrelated extended families living together in a restricted area and following certain common rules of crop rotation under more or less informal leaders is called an ayllu (AYLYO) or community. (See pp. 441, 483, and 539.) There is no doubt that some sort of social group corresponding to the modern ayllu existed in ancient times also, but its nature is not easy to establish. The earliest modern writers who dealt with Inca society (e. g., Bandelier, 1910) assumed that the ayllu was a clan, and attributed to it all the classical clan characteristics: matrilineal descent, exogamy, totemism, etc. Their conclusions have never been seriously questioned, and the modern summaries of Means (1925), Baudin (1928), Olson (1933), and Murdock (1934) repeat the old assumption without attempting to prove it. It is timely to reexamine the question in the light of the historical and ethnological evidence.

The original assumption that the ayllu was a regular clan goes back to the immediate followers of Lewis Morgan, who were eager to find clans in the history of all human societies as part of their hypothesis of social evolution, and who were compelled to rely on very fragmentary descriptions for the Andean area. At first, it was not even considered necessary to prove the point by references to the chroniclers, for it was universally believed, in the absence of village studies, that the modern ayllu was a clan, and that Andean Indian society had not changed greatly since the Spanish Conquest. The fallacy respecting the modern ayllu is amply demonstrated by the articles on the Modern *Quechua* and *Aymara* (this volume, pp. 441, 539) and did not entirely escape the notice of Bandelier, who made superficial studies of the *Aymara* in the 90's. Instead of questioning the whole clan theory, however, Bandelier concluded that the modern ayllu had merely lost the clan character which it had at an earlier stage in its history. In 1910, he said he had found proof for this belief, but the citations from the chroniclers produced to substantiate it are all capable of other interpretations (1910, pp. 84, 146).

Any attempt to establish the nature of the ancient ayllu by study of the chroniclers faces a serious difficulty in the looseness of *Quechua* terminology. The word ayllu is used in Spanish with several very different meanings: (1) The lineages of the Inca royal class, each composed of the direct descendants of an Emperor in the male line; (2) the social unit of several extended families with which we are now concerned; (3) occasionally, the moiety! The word ayllu seems to have been a general word for "kin-group" in *Quechua*, and its specific meaning was probably made clear by the context. It is quite impor-

tan t to sort out those references to the ayllu which specifically concern tha social unit under consideration.

We shall examine in turn each of the aspects of the ayllu by which we desire to classify it: whether it was a kin or a local group; its functions in restricting marriage; the line of descent followed; and the presence or absence of totemic elements.

There is little doubt that the ayllu was, at least in theory, a kin group. Dictionary definitions and chroniclers' statements all indicate that, in all its uses, the word ayllu implied some sort of relationship which, though very remote or even mythical, must have been an important social bond. (See González, 1608; Toledo, 1940, pp. 158-192.) As to its functions in restricting marriage, we have already noted that the ayllu was theoretically endogamous. The only evidence cited to indicate ayllu exogamy is Viceroy Toledo's decree regulating the ayllu affiliation of children of inter-ayllu marriages (Bandelier, 1910, pp. 84, 146). The decree states that disputes had arisen when the father's ayllu refused to let the children go back to the mother's ayllu after the death of the father, and orders that the mother be allowed to take her children with her. Far from demonstrating ayllu exogamy as the standard practice, this decree indicates that, as late as 1570, marriage outside the ayllu was still so rare that no tradition was recognized to govern the affiliation of the children, and that the resulting disputes had reached Spanish courts.

The evidence for descent in the male line is overwhelming (RGI, 1881-97, 1:100-101, 188-9; Falcón, 1918, p. 147; Las Casas, 1892, p. 21; Fernández, 1876, pt. 2, bk. 3, ch. 13 ; etc.) These citations all refer to the inheritance of public office, for, if marriages were arranged within the ayllu, it would obviously make no difference in which line ayllu affiliation was traced, and no rule was necessary. Rulers, however, married women from other communities for political reasons, and, in such cases, the children belonged to the father's family (Sarmiento, 1906, on the early Inca).

In order to classify the ayllu as a totemic group, it would be necessary to show that the ayllus had animal (or plant) names, or that the ayllu members had animal names; that they traced their descent from these animals and had some sort of ceremonial attitude toward them, such as not eating them or performing certain rites for their increase; that the animal was used as a symbol of the ayllu; or some combination of a substantial number of such traits.

Ayllus were ordinarily named for a place or a person, if we may judge from the small proportion of preserved ayllu names which are translatable; none seem to have been named after an animal. Individuals frequently bore animal names, but were just as often named or abstract qualities or given traditional names the meaning of which had been lost (like *MAÑKO*). Some Inca names are given below

(p. 284). Although there seems to have been some tendency to use names of prominent ancestors, the Inca had no system of family names, and no rigid rules for naming their children. Aylus traced their origins to mythical ancestors-animals, persons, or natural objects-which were worshiped, but there is no evidence that the individual ancestor was identified with an animal species. For example, if an aylu claimed descent from a parrot, it accorded parrots in general no special reverence. The meat of animals of the same species as the mythical ancestor was not taboo, and no rites were performed for its increase. That persons and natural objects as well as animals might be mythical ancestors suggests that animals played no predominant part in mythology (Molina of Cuzco, 1913, p. 119). An interesting example of the use of animals as symbols is that the Inca Emperors kept a sacred white llama (**NAPA**), which was in a sense a dynastic symbol. (See Religion, Ceremonial Calendar.) Two explanations were given of its origin: First, that it represented the first llama seen on the earth after the flood (Cobo, 1890-95, bk. 13, ch. 27), and second, that it was brought from the **cave** where the Inca originated by the mythical ancestor who was a person (Sarmiento, 1906). Neither explanation identifies the llama with the ancestor, and the Inca had no taboo whatever against eating llama meat.

To summarize, the Inca aylu was a kin group with theoretical endogamy, with descent in the male line, and without totemism. It was, therefore, not a clan in the classical sense at all. There is no historical or ethnological evidence to support the theory that the social group from which the aylu developed was, in some pre-historic era, a true clan.

The aylu owned a definite territory, and each married couple cultivated as much of it as they needed for their support. Under the Inca, the family lots were redistributed every year to ensure equality of opportunity and a proper rotation of the crops, but it is not certain whether this practice existed before the Inca conquest (Acosta, 1940, bk. 6, ch. 15). Before the Inca conquest, the other aylu members cultivated their chief's fields and probably also cultivated plots for the support of their local shrines. The Inca systematized this division of land by setting aside certain fields in each community for the support of the government and of the shrines (below, p. 265). In modern Indian society, certain relatives regularly exchange labor on a man for man, day by day, basis, a custom called **AYNI** in both *Quechua* and *Aymara* (see pp. 419, 543). The practice is mentioned by Garcilaso (1723, pt. 1, bk. 5, chs. 2 and 11), and Gonzalez Holguín (1608, under *aynillamanta llamcapuni), so we may assume it is ancient, but neither writer gives details.

The ayllus of each province were grouped by the Inca Emperors into two or three sections (**SAYA**). In theory, the grouping was a

dual one, and the two moieties were called "upper" and "lower." However, the fact that Inca practice did not wholly correspond to theory makes the use of the term "moiety" difficult, and the word is only used in this article when two sections are referred to. The dual division was certainly ancient in some parts of the Andean area. It is specifically mentioned for the *Chanca*, for instance (Sarmiento, 1906, ch. 26). As all our information about the moiety division concerns the form of it used in Inca administration, however, it is best described in the next section.

Age grades.—*Inca* society was also divided by age groups. *Quechua* contains a variety of descriptive words corresponding to our "baby," "child," "youth," "adult," and so forth, which are used today, and most of which are ancient. For purposes of census and tax assessment, the *Inca* made 12 standard age divisions which are variously named. Transition from one grade to another came not at a certain age, for the Indians kept no exact reckoning of their age, but with obvious changes in physical condition and usefulness. The most important age grade was that of able-bodied adults, which was entered at marriage and lasted as long as both parties could do a full day's work. The adult man was called ~~HATON RONA, PORIQ, OR AWQA~~ (warrior). Under the Empire, a man's age-grade classification was checked regularly by the census taker.¹⁵

Leadership patterns.—Before the *Inca* conquest, political units in the Andes were very small and varied greatly in character and organization. United tribes such as the *Chanca* controlled a wide area with many subject groups. Around Cuzco, individual ayllus acted independently, and the whole area was in a state of chronic war.¹⁶

There were two common leadership patterns, one based on personal prestige, the other on inheritance. Many communities recognized no leader except in time of emergency, when the warriors followed the man who had proved himself outstanding in earlier campaigns. Such prestige leaders were called ~~SINCI.I.~~ The *Inca* are the best example of the other pattern: hereditary chiefs who enjoyed as much power as they could exercise without being deposed by their subjects. To exalt the hereditary principle as a symbol of civilized government, and to identify it with their own dynasty, the *Inca* claimed that it had not existed before their time, and many chroniclers repeated this claim. Actually, even quite close to Cuzco, the *Inca* had to fight a number of

¹⁵ The different lists of age grades can be found in full in Santillan (1879, pp. 19-21), Castro (1936, p. 238), Señores (1994, p. 202), and Poma (1936, pp. 193-234). Menus' translations (1935, p. 456) are based on bad textual reconstructions by Jiménez de la Espada, and should be used with caution.

¹⁶ Although military alliances were a common expedient in the Andean area (the alliance between the *Chimu* king and Cajamarca is a good example), there is no evidence of formal confederations. The *Chimu* Kingdom was a feudal state; the valley of Chincha was ruled by hereditary chiefs; and the *Chanca* seem to have had prestige chiefs only. Neither the *Chincha* nor the *Chanca* had any political pattern which could fairly be called a "confederacy." (Cieza, 1654, bk. 1, ch. 74; Castro, 1936; Betanzos, 1880, ch. 6; Sarmiento, 1906, ch. 26; and compare Means, 1931, p. 237.)

well-established dynasties, such as that of the *Ayamarca*, whose ruler was called Tocay Capac. (Levillier (1940, pp. 207-220) is a convenient collection of references.)

POLITICAL ORGANIZATION

There is no strict division between this and the preceding section. As the *Inca* rule was based on the monarchial principle, it is proper to start with a discussion of the imperial office.

The Emperor.—The Inca Emperors were absolute rulers with power checked only by the influence of ancient custom and the fear of revolt. They not only ruled by divine right, but claimed lineal descent from the Sun and were worshiped as divine during their lifetimes. While the Emperor and his government were merciless toward their enemies and demanded an obedience which amounted to virtual slavery from their subjects, they were in theory obliged to care for their people in every sort of need and keep them comfortable and happy. This obligation is reflected in many of their laws and illustrated by a number of anecdotes. The unquestionable success of the system is due chiefly to a sincere effort by the Imperial to live up to its theoretical obligation. (See Cobo, 1890-95, bk. 12, ch. 26; Garcilaso, 1723, pt. 1, bk. 5, ch. 2; Cieza, 1880, bk. 2, ch. 65.)

Each Emperor kept a large harem of secondary wives in addition to the principal wife (*qoya*), who was in earlier times the daughter of some neighboring ruler, but, from the reign of Topa Inca, was always the Emperor's full sister. Consequently, each ruler had a very large number of offspring, all of whom enjoyed positions of respect and privilege. The descendants in the male line of each Emperor formed a royal ayllu, and were responsible for the upkeep of their royal ancestor's palace and the support of his cult. At the time of the Spanish Conquest, there were 11 royal ayllus in Cuzco, 6 in the Upper Moiety and 5 in the Lower. At the time of the Conquest, the "descendants of Manco Capac" in the male line must have numbered about 500. There were some 567 living descendants in 1603, after the massacres of the civil wars and the bad time in the early Colony (Garcilaso, 1723, pt. 1, bk. 9, ch. 40). The members of the Emperor's family formed a useful court circle of educated men trained in the imperial ideology, and interested in its perpetuation. The emperors chose their top administrators from this group when possible.

There was no detailed rule of succession to the Imperial stool which would function impersonally and predictably to designate the heir in any eventuality, and this lack was a great weakness to the Empire at the time of the Spanish invasion. Customarily, the Emperor chose the most competent of his sons by his principal wife and trained him for the inheritance. The weakness of this system became apparent with the death of Huayna Capac, who caught a sudden fever before he

had publicly announced his heir, and named Huascar only on his deathbed under rather curious circumstances (Sarmiento, 1906, ch. 62). Atahuallpa, Huascar's half-brother, was able to claim that their father had divided his Empire between them, and, as no heir had been publicly designated in the old Emperor's lifetime, no one could be sure of the rights of the case.

The Emperor dressed much the same as his subjects, but his clothing was of especially fine quality, made for his use by the MAMA-KONA (see p. 269), and he wore certain symbols of his office. His hair was cut short, and he wore very large earplugs. His simple headdress, the focus of as much reverent attention as any crown in Europe, consisted of a many-colored braid (*LYAWT'Q*) which was wound four or five times around his head and supported elaborate forehead ornaments, the most important of which was a fringe, some 4 inches (10 cm.) wide, of red tassels hanging from little gold tubes. The fringe was sometimes crowned by a stick about 6 inches (15 cm.) long with a tassel pompon on the end, and three feathers rising from the pompon. A similar but larger ornament was carried on a lance. Members of the privileged class of "big ears" (*PAKOVQQ*, orejones) were permitted to wear head bands and fringes similar to the Emperor's, but distinguished by their color. (Cobo, 1890-95, bk. 12, ch. 36; Garcilaso, 1723, pt. 1, bk. 1, chs. 22, 23; Poma, 1936, pp. 108, 242, 318; Gonzalez, 1608; Xérez, 1917, p. 51; Estete, 1924, p. 27.)

The Emperor carried a mace, with a golden star-head and a handle about 23 inches (60 cm.) long; attendants carried two similar maces with long pole handles, as a color-guard for the royal standard. (Cobo, 1890-95, bk. 12, ch. 36; Toledo, 1940, p. 113; Sarmiento, 1906, ch. 42.) The royal standard was a small square cotton or wool pennant, probably not more than 16 inches (40 cm.) square. It was painted so as to stand out stiffly from its staff, and bore the arms of the reigning emperor. The ruler sat on a low stool, not over 8 inches (20 cm.) high, carved of red wood and covered with a fine cloth. Placed on a raised platform to form an elaborate judgment seat, the whole thing was called *osno*, "throne." (Cobo, 1890-95, bk. 12, ch. 36; Poma, 1936, pp. 14, 369, 398; Gonzalez Holguín, 1608.)

The Emperor enjoyed a variety of honorific titles: *SAPA IÑKA*, "Unique Inca"; *QHAPAQ APO*, "Emperor"; *INTIP CORI*, "Son of the Sun"; and *WAKCA KBOYAQ*, "Lover of the Poor," being the chief ones (Garcilaso, 1723, pt. 1, bk. 1, chs. 24, 26). His principal wife was known as *QOYA*, "Empress," or *MAMANCIK*, "Our Mother." Young male members of the royal ayllus were called *AWKI*, "Prince"; adult ones, *IÑKA*; unmarried women, *NYOST'A*, "Princess"; and married women, *PALYA*, "Lady" (Garcilaso, 1723, pt. 1, bk. 1, ch. 26; Sarmiento, 1906, ch. 29).

The Imperial office was attended by elaborate custom and ritual. The Emperor ate sitting on a stool, with the food in fine gold, silver,

or pottery plates, set on a layer of small rushes on the floor in front of him. Serving women brought the plates and held them while he ate. All leftovers were saved and stored along with his used clothing to be burned ceremonially once a year by a special official. The royal bed consisted of a large cotton quilt spread on the ground and covered with woolen blankets. The Emperor traveled in a litter with a large following, and his dignity required him to travel as slowly as possible, preferably not more than 12 miles a day. His litter bearers came from the Province of Rucanas, and two or three hundred additional *Rucana* preceded the litter to clear the road and relieve the litter bearers. These men wore a special livery. Each Emperor built and furnished a new palace in Cuzco, for the palace of his-predecessor became a shrine to the memory of its builder. (Cobo, 1890-95, bk. 12, ch. 36; Xérez, 1917, p. 56; Sancho, 1917 b, ch. 18; Estete, 1924, pp. 29-30; Cieza, 1880, bk. 2, ch. 20.)

Anyone seeking audience with the Emperor, no matter what his rank, had to remove his sandals and place a token burden on his back before entering the room where the Emperor was. The Emperor usually sat behind a screen, and only received visitors face to face as a token of great honor. We have a number of eye-witness descriptions of this ceremonial, (Estete, 1918, p. 102; 1924, p. 41; Pizarro, 1844, p. 302; Cieza, 1880, bk. 2, ch. 13; Polo, 1940, p. 146; Morúa, 1922-25, bk. 2, ch. 16; bk. 3, ch. 7.)

When a new Emperor was installed (fig. 23, b), the future ruler secluded himself in a house constructed especially for the occasion, and fasted after the *Inca* fashion for 3 days. At the end of the fast, he was crowned with the fringe (*mascapaycha) in a public ceremony, and each noble swore allegiance by making a gesture of obeisance to him with a light-colored feather. After this, a public feast lasted for several days. (Cobo, 1890-95, bk. 12, ch. 36; bk. 13, ch. 32; Sancho, 1917 b, bk. 2, ch. 12; Acosta, 1940, bk. 6, ch. 12; Xeréz, 1917, p. 112; Cieza, 1880, bk. 2, ch. 36; Morúa, 1922-25, bk. 2, ch. 16.)

When the Emperor died his ayllu arranged elaborate mourning and funeral rites, in which the whole Empire participated. The dead man's entrails were removed and placed in a special receptacle, and the body was carefully preserved, probably by drying with herbs. His favorite women and most necessary servants were expected to volunteer to accompany him, and were made drunk during a great public dance and strangled. There were special mourning songs and pilgrimages to the places he had frequented (Cobo, 1890-95, bk. 14, ch. 19; Cieza, 1880, bk. 2, chs. 32, 60). The carefully wrapped body was deposited in the deceased's palace under the care of his descendants, and was brought out into the sacred square during public ceremonials. In the palace, the dead Emperor was waited on as in life, even to the extent of having women with fans standing on both

sides of the bundle to shoo off the flies (Anonymous Conqueror, 1929, f. 5b). The bodies of the Inca Emperors wore all found by Polo de Ondegardo in 1559 during his campaign to stamp out *Inca* religion (Acosta, 1940, bk. 6, ch. 21; Sarmiento, 1906, chs. 14, 15-62).

Nobility.—In theory, the execution of the Emperor's will was entrusted [to members of a hereditary aristocracy which was still in the process of formation at the time of the Spanish Conquest. The *Inca* Empire expanded in one short generation from a small, compact and relatively homogeneous state to a size and diversity never equaled in aboriginal America. It included many areas which had never had an organized government within the memory of local tradition, and consequently were not "prepared to furnish trained officials even for their own government. The problem of finding men to fill the thousands of new administrative posts created in the conquered territories was colossal, and Pachacuti and Topa Inca had to comb the country for talent." It was an unprecedented moment, when suddenly any man, no matter how humble his origin, who showed the slightest spark of administrative ability, might find himself set down in a strange village miles from his home, and told to enforce the Emperor's law there, with the certainty of rapid promotion if he succeeded. Many such men testified in their old age in the great inquiry into *Inca* customs made in 1571-72, and their brief autobiographies throw more light on the workings of *Inca* administration than volumes of general commentary (Toledo, 1940).

However, the Emperors seem to have had no intention of filling their administrative posts only on the basis of ability. Their political models were the rigidly aristocratic Coastal states, of which the *Chimú* Kingdom was the most imposing, where the hereditary difference between nobles and commons was so wide that the two classes were believed to have resulted from separate creations (Calancha, 1638, bk. 3, ch. 2, p. 554). Consequently, the Inca rulers tried to make their own administrative posts hereditary as soon as possible, and eventually surrounded themselves with a permanent aristocracy of the *Chimú* type. Where they found a responsible local ruler in power, they confirmed his position, taking his children to Cuzco to be brought up in the *Inca* idea and sent back to succeed him. When one of their own appointees died, his oldest son by his principal wife, or another son if the eldest were incompetent, was appointed in his place, so that the office might become hereditary in the family. The system was still in a transitional stage when the Spaniards arrived. (Cobo, 1890-95, bk. 12, ch. 25; Falcón, 1918, p. 147; Garcilaso, 1723, pt. 1, bk. 4, ch. 10.)

The new *Inca* aristocracy consisted of two classes, usually called "Inca class" and "curaca class" by the chroniclers. The Inca class consisted of the members of the 11 royal ayllus, who were Incas by

blood, and a larger group of Incas by privilege formed by Pachacuti. This great organizer found the small group of Incas by blood insufficient as an instrument of administration, and he extended Inca privileges to all the inhabitants of the Empire who spoke Quechua as their native language and so would be useful in his program for the linguistic unification of his dominions. The Incas by privilege included all the tribes from Quiquijana in the Vilcanota Valley (the *Caviña*) to Abancay beyond the Apurimac (the *Quechua*): *Anta*, *Tampo*, *Quehuar*, *Huaroc*, *Quilliscache*, *Lare*, *Masca*, *Aco*, *Chillque*, Yanahuara, *Mayo*, *Sanco*, *Equeco*, and probably others. (Poma, 1936, p. 337; Garcilaso, 1723, pt. 1, bk. 1, ch. 23; Pachacuti, 1879, p. 318.) Many of them were settled in distant parts of the Empire as colonists, and they are generally called simply "Incas" by the chroniclers. Those who remained near Cuzco were organized into 10 ayllus, few of whose names correspond to those of the tribes (the list of ayllus is given in Sarmiento, 1906, ch. 11). Five of these ayllus belonged to the Upper Cuzco moiety and five to the Lower. All members of the Inca class were entitled to wear variants of the head band and braid and very large earplugs, which gave them the nickname of *PAKOYOQ* (literally, "earplug man"), or "orejones" (big ears). They formed the highest nobility and filled the most responsible positions in the Empire.

The curaca class, or lower nobility, included all administrative official down to rulers of hundreds, with their descendants. Formerly, independent rulers who had been conquered by the Inca were admitted to this class. Their title was *KORAKA*, "official," often rendered "cacique" in Spanish. Both classes of nobles were exempt from taxation and were supported by the income from the government fields. They were expected to make presents to the Emperor when visiting him, and were rewarded for outstanding service by special gifts, such as: Secondary wives picked from among the Chosen Women; luxury objects, such as fine cloth, featherwork, or gold and silver vessels, of the sort generally reserved for the Inca's use; YANA-KONA Service (see p. 268); the privilege of using a litter or parasol or otherwise imitating the Emperor; llamas; or land. In accordance with the Inca principle that land belonged to a kin-group rather than to an individual, these special land grants did not imply proprietorship in the modern sense, but the right to the products of the land. The recipient could not dispose of the land, and, after his death, it remained the inalienable joint property of his descendants, and those of them who so desired worked it and divided the products. (Cobo, 1890-95, bk. 12, chs. 25, 27; Acosta, 1940, bk. 6, ch. 15; Anonymous Discurso, 1906, pp. 1534; Falcón, 1918, pp. 146-7; RGI, 1881-97, 1: 98-9; Garcilaso, 1723, pt. 1, bk. 5, chs. 6, 15.)

Territorial divisions.—The two classes of the nobility were broken down into an elaborate administrative bureaucracy, the various ranks being classified according to the size and population of the territorial unit controlled. The whole Empire was divided administratively into four great quarters, each named after one of the provinces included in it. The dividing lines between the quarters ran approximately north-south and east-west, meeting in the city of Cuzco, the Imperial capital. The northwestern division was called Chinchasuyu (*CINCA-SOYO*), and included most of central and northern Perú and Ecuador. The southwest quarter was Cuntisuyu (*KONTJ-SOYO*), and its boundaries cut the Coast roughly at Ica and Moquehua. On the slopes of the eastern forest was *ANTI-SOYO*, stretching an undetermined distance to the northwest and southeast. The largest quarter of all was Collasuyu (*QOLYA-SOYO*), including the Titicaca Basin, most of Bolivia, Highland Argentina, and the northern half of Chile. The whole Empire was called the Land of the Four Quarters (*TAWANTIRÑ-SOYO*). The division into quarters seems to have been made by Pachacuti about 1460, when the Empire was not as long and narrow as it later became, so that the areas of the quarters were originally equal.

Each quarter was subdivided into provinces (*WAMAÑ* OR *WAMANI*) (RGI, 1881-97, 1: 80, 105; Señores, 1904, pp. 201-2; Santillán, 1879, p. 17), many of them corresponding to the native states and tribal groups which the *Inca* found when they conquered the area. Where the original units were too small, the Inca grouped several into a single province, or added some small residual groups to larger neighboring nations. The provinces varied considerably in size and population. A capital city was established in each province to serve as the administrative and religious center. In it most of the Government buildings were constructed. Names of provincial capitals were formed with *HATOÑ*, "great": *HATOÑ SORA*, the provincial capital of the *Sora*; *HATOÑ QOLYA*, the provincial capital of the *Colla*, and so forth. The inhabitants of each province wore a distinctive headdress, usually a cord binding the hair or a woolen cap. (Cobo, 1890-95, bk. 12, ch. 24; Cieza, 1880, bk. 2, ch. 23; Las Casas, 1892, ch. 20.)

Each province was divided into two or three parts (*SAYA*). The ideal pattern was undoubtedly the dual (moiety) division found among the *Inca* themselves, and the divisions were known as Upper and Lower (*HANAÑ-SAYA* and *HORIÑ-SAYA*) (Cobo, 1890-95, bk. 12, ch. 24). The province of Yauyos we know was divided into two moieties only (RGI, 1881-97, 1: 66). However, in very populous provinces where a dual division would result in moieties containing more than 10,000 taxpayers each, three divisions were organized. For instance, Huanca province was divided into *HANAÑ WAÑKA*, *HORIÑ WARKA*, and *SAWSA*, and Rucanas was divided into Upper and Lower

Rucana and *ANTAMARKA* (RGI, 1881-97, 1: 79-82, 179-80, 197-213). The Upper Moiety had precedence over the Lower in public ceremonies. Representatives of the Upper Moiety sat in a long line on the right side, while the men of the Lower Moiety formed a line opposite them. ~~The chief of the Lower Moiety was subordinate to that of the upper one.~~ These divisions were also rivals in war and religion (Cobo, 1890-95, bk. 14, ch. 5; Matienzo, 1910, ch. 6).

The moieties and sections in turn wore subdivided into ayllus of varying number and size. The *Rucana* section of *ANTAMARKA* contained 4 ayllus (RGI, 1881-97, 1: 198); the Upper and Lower Moieties of Cuzco contained 11 and 10 respectively. While most administrative ayllus were probably merely the old kin groups given an official place in the state structure, there is no doubt that the *Inca* regrouped the ayllus and even created new ones when the native divisions were too small or otherwise not adapted to the purposes of *Inca* administration. The transformation of the ayllu from a kinship group to a village group of independent families linked more by common residence than by descent already had a good start under the Inca. In this case, as in so much else, the Spaniards simply carried out *Inca* policies. (RGI, 1881-97, 1: 198; Toledo, 1940, pp. 185, 187).

Administrative officers. Each territorial unit was ruled by a special official. The prefects of the four quarters were called *APO*, a term also used for army commanders. They lived in Cuzco, and formed a council of state with a secretary whose duty it was to report their deliberations to the Emperor and convey his wishes to the council. The councilors were chosen from the highest nobility, and wore usually near relatives of the Emperor. Their posts were not hereditary. Each province was under an imperial governor (*T'OKRIKOQ*), usually an Inca noble, who had wide judicial powers as well as administrative responsibility. The officials under him were curacas, classified according to the number of taxpayers for whom they were responsible: *HONO KORAKA*, Chief of 10,000; *PICQA-WARAÑQA KORAKA*, Chief of 5,000; *WARAÑQA*, Chief of 1,000; *PICQA-PACAKA KORAKA*, Chief of 500; and *PACAKA KORAKA*, Chief of 100. These offices were hereditary, subject to the Emperor's approval. Below them wore two ranks of foremen: *PICQA-COÑKA KAMAYOQ* and *COÑKA KAMAYOQ*, responsible for 50 and 10 taxpayers respectively. These foremen were appointed by their curacas, and the offices were not hereditary. (Cobo, 1890-95, bk. 12, ch. 25; Acosta, 1940, bk. 6, ch. 13; RGI, 1881-97, 1: 98-100; Falcón, 1918, pp. 146-7; Señores, 1904, pp. 200-202; Castro, 1936, p. 237; Santillán, 1879, pp. 17-18; Cieza, 1880, bks. 2, chs. 20, 23; Sarmiento, 1906, ch. 50, etc.)

These decimally organized ranks provided a scale against which to measure the relative importance of the curacas, irrespective of whether

they ruled a section, an ayllu, or some subdivision of these groups. For instance, the ruler of the section of HANAÑ WAÑKA was classified as a HONO, because his section contained some 9,000 taxpayers. The designation of HONO does not imply that he ruled exactly 10,000 men; it is an approximation for purposes of classification (Toledo, 1940, p. 96; RGI, 1881-97, 1: 81-82). The rank of an ayllu head probably varied according to the size of his ayllu. It seems probable, for instance, that the curacas in charge of the four ayllus of the ANTAMARKA section of Rucanas held the rank of WARARQA KORAKA, or Chief of 1,000 (RG, 1881-97, 1: 199). In other cases, the rank of an ayllu chief may have been higher or lower.¹⁷

The decimal classification of curacas and foremen was based on an exact head-count constantly corrected by the local officials and recorded in Cuzco for the information of the Imperial Government. It served also as the basis of taxation and service in the army, and must have been a powerful aid to Government efficiency. The system of 12 age grades mentioned in the previous section (p. 256) was used to break down the head-count in such a way that the Government had an exact report on the human resources of any province. The foremen recorded all births, deaths, and changes of age grade within their jurisdiction to their superiors, and the totals were sent up to the Governor of the province, who embodied them in an annual report presented in Cuzco at the festival of RAYMI (December). The numbers were recorded by knots on colored strings, quipus (quipos) (p. 325).¹⁸

In addition to the regular administrative bureaucracy, there were officials for special activities. It seems likely that the Emperor sent out special inspectors, called TOKYRIKOQ (literally, "he who sees all"), to check up on the regular governors and curacas, either openly or secretly. Unfortunately, the chroniclers and their modern editors seriously confused the *Quechua* words for governor and inspector¹⁹ and their respective functions, but there seems to be little doubt that two different officials existed.²⁰

¹⁷ I have been unable to find any reference in the chroniclers to support Means's statement (1926, p. 141; cf. Murdock, 1934, p. 416) that the Inca "standardized" the ayllu into a PACAKA (100 men), and the available evidence is clearly against it.

¹⁸ Along with almost all Inca learning, which must have been considerable, the census totals are lost because no one committed them to paper after the Spanish Conquest. Approximate figures have been preserved for a few provinces (e.g., Yauyos, Huancas, Vilcas, and Soras; RQI, 1881-97, 1: 62, 81-2, 110, 170). The Indians in the Province of Rucanas said that the population had been greatest under Topa Inca, and had fallen off under Huayna Capac (RG, 1881-97, 1: 181, 199). The preserved figures all refer to the number of able-bodied adult men; the ratio of adult men to the total population seems to have been about 1:6, if we may fudge by the comparative figures available in 1586. (RG, 1881-97, 1: 170, 181, 199. See also Cieza, 1880, bk. 2, ch. 19.)

¹⁹ Governor, T'OQRICOQ, is from a verb, T'OQRIV, "to govern," and inspector, TOKY-RIKOQ from TOKY, "all," and RIKOY, "look at." The derivation of either title from the other is impossible under the known rules of *Quechua* word formation.

²⁰ (See González Holguín, 1808, under *ttocricuc; Cobo, X390-95, bk. 12, ch. 25; Sarmiento, 1906, chs. 35, 52; Señores, 1904, p. 202; Falcón, 1918, p. 147; Matienzo, 1910, ch. 14; RG, 1881-97, 1: 99-100; Santillán, 1879, p. 17; Cieza, 1880, bk. 2, ch. 18; Morúa, 1922-26, bk. 3, ch. 18.)

Agricultural taxation.—In the Inca Empire, all taxes were paid in labor; money was unknown, and no payments to the government were made in kind. The taxpayers were required to cultivate certain fields, the produce of which supported the Government and the Inca religion, and, in addition, to give a varying amount of time to service in the army: on public works, or in personal service to the Emperor and the nobility. The last obligation was called the *MIT'A*, or labor service. The cultivation of the reserved fields has been well described by Father Bernabé Cobo, the greatest man who has ever written about *Inca* customs (writing about 1653):

When the Inca settled a town, or reduced one to obedience, he set up markers on its boundaries and divided the fields and arable land within its territory into three parts, in the following way. One part he assigned to Religion and the cult of his false gods, another he took for himself, and the third he left for the common use of the people. It has not been possible to determine whether these parts were equal in any town and province, but it is known that in many places the division was not equal, but depended on the quantity of available land and the density of the population. In some provinces, the part assigned to religion was greater; in others, that belonging to the Inca; and, in some regions, there were entire towns which, with their territory and all that it produced, belonged to the Sun and the other gods, like Arapa [in the Department of Puno] and others; in other provinces (and this was more usual), the king's share was the largest. In the lands assigned to Religion and to the Crown, the Inca kept overseers and administrators who took great care in supervising their cultivation, harvesting the products and putting them in the storehouses. The labor of sowing and cultivating these lands and harvesting their products formed a large part of the tribute which the taxpayer paid to the king. The boundaries of the lands and fields of each one of the divisions were so exact, and the care of the markers of the fields of the Inca and of religion, the responsibility of cultivating them first and at the proper season, and their protection against damage or loss so impressed upon the Indians that it was one of the most important religious duties that they had; so much so that no one dared to cross these fields without indicating his respect with special reverent phrases reserved for the purpose.

The lands dedicated to the gods were divided among the Sun, Lightning, and the other idols, shrines, and *guacas* [*WAK'A*] of general worship or restricted to the province or town; the amount belonging to each god and *guaca* was specified, and these fields were cultivated before the others that belonged to the Inca and the community. The people assembled to cultivate them in the following way. If the Inca himself, or his governor, or some high official happened to be present, he started the work with a golden *taclla* [*TAKLYA*] or plow, which they brought to the Inca, and, following his example, all the other officials and nobles who accompanied him did the same. However, the Inca soon stopped working, and after him the other officials and nobles stopped also, and sat down with the king to their banquets and festivals which were especially notable on such days.

The common people remained at work, and with them only the *curacas-pachacas* [*PACAKA-KORAKA*], who worked a while longer than the nobles; thereafter they supervised the work, giving *any* orders that were necessary. The *Hilacatas* [*HILAQATA*, an *Aymara* name now applied to the head of an *ayllu*; here indicating probably *some lower* rank] and decurions *in charge of ten* subjects worked all day as did the ordinary Indians who had no official position. These divided the work they had to do by *lines*, each section being called a *suyu* [*soro*], division of *any*

kind], and, after the division, each man put into his section his children and wives and all the people of his house to help him. In this way, the man who had the most workers finished his suyu first, and he was considered a rich man; the poor man was he who had no one to help him in his work, and had to work that much longer. Each official or *curaca* followed the same system in his district; the most important man starting the work and soon leaving it, and the nobles following him according to their rank.

When the *chacaras [CAKRA, Yield"]* of Religion were finished, the fields of the Inca were immediately sown, and, in their cultivation and harvest, the same order was followed. All members of the community who were present assembled, and with them the officials up to the most important chiefs and governors, dressed in their best and singing appropriate songs. When they cultivated the fields of Religion, their songs were in praise of their gods, and, when they cultivated the king's fields, in his praise.

The third division of the land according to the partition described above was assigned to the people in the nature of commons, it being understood that the land was the property of the Inca, and the community only had the usufruct. It cannot be determined whether this share was equal to the others or greater, but it is certain that sufficient lands were given to each province and town to support its population, and these lands were distributed each year among the subjects by the chief, not in equal parts, but proportionate to the number of children and relatives that each man had; and, as the family grew or decreased, its share was enlarged or restricted. No one was granted more than just enough to support him, be he noble or citizen, even though a great deal of land was left over to lie fallow and uncultivated, and this annual division is practiced to this day in the province of the *Collao* and elsewhere, and I have been present when it was done in the Province of Chucuito [see *The Aymara*, pp. 514, 546 in this volume].

When it was time to sow or cultivate the fields, all other tasks stopped, so that all the taxpayers might assemble to take part, and, if it was necessary for someone to do something else in an emergency, like war or some other urgent matter, the other Indians of the community worked the fields of the absent man without asking or receiving any compensation beyond their food, and, this done, each cultivated his own fields. This assistance which the community rendered to its absent members caused each man to return home willingly when he had finished his job, for he might find on his return after long absence that a harvest which he had neither sown nor reaped was gathered into his house. [Cobo, 1899-95, bk. 12, ch. 28; see also *Falcón*, 1918, p. 152; Garcilaso, 1723, pt. 1, bk. 5, ch. 15.]

There is little to be added to Father Cobo's account. The share of land assigned to the community was divided into lots called *TOPO*, each sufficient to support a taxpayer and his wife. Additional grants were made for the children (Garcilaso, 1723, pt. 1, bk. 5, ch. 3; Sarmiento, 1906, ch. 52). Although the chroniclers do not say so, it is very possible that the yearly distribution of land was to enforce the proper rotation of crops. This seems to have been the case in the Province of *Lupaca*.

The Government maintained two sets of storehouses in each district, one for the products of its own fields and the other for those of religion. Another set of storehouses was built at the provincial capital and there were more at Cuzco in which the products of the provinces could be concentrated. The storehouses, built on dry hillsides, con-

sisted of rows of small square buildings with thatched roofs, separated from each other by 6 to 9 feet (2 to 3 m.) as protection against fire (Cobo, 1890-95, bk. 12, ch. 30). The stores were drawn upon as needed, those of religion being used for sacrifices, ceremonies, and the support of the numerous priesthood, and those of the Government for the army, the nobility, men working in the labor service, and all persons who did not pay taxes—the aged and infirm, widows, special craftsmen, and Government servants. The curacas were authorized to draw upon the Government stores in case of famine or disaster, and distribute whatever was needed to the people, so that the surplus provided a sort of Government insurance against crop failure. In addition, whenever the stocks were sufficiently large, the Emperor ordered a general distribution from the Government storehouses, usually sending the products of one province to another which, because of climatic differences, did not produce them. This distribution had nothing to do with need, and simply served to gratify the people and make more room in the storehouses. (Cobo, 1890-95, bk. 12, ch. 30; Falcón, 1918, p. 153; Cieza, 1880, bk. 2, ch. 12.)

Exactly parallel to the system of tax collection in agriculture was that applied to the llama and alpaca breeding districts." The pasture land was divided into three parts. The herds were also divided, those of Government and religion being much larger than those belonging to the communities, probably because the animals were used chiefly for sacrifices and for wool destined for general distribution, both public functions. The ordinary taxpayer was allowed up to 10 animals, and nobles received proportionately more as gifts of the Emperor. Privately owned animals were never requisitioned or taxed. The wool -from Government animals was stored and distributed to the taxpayers of the whole Empire in equal allotments, each sufficient to provide the family with clothing. No account was taken of individual need, and a man whose own llamas provided him sufficient wool received an allotment just the same (Cobo, X390-95, bk. 12, ch. 29).

The mit'a.—The Inca taxpayer's second labor obligation was the mit'a, or labor service. The Government required each taxpayer to perform a certain amount of work annually. The amount was limited only by the will of the Emperor. To keep the system running smoothly, however, sufficient men had to be left at home at all times to tend the fields and flocks. Labor levies were made through the decimal classification of officials. If a thousand men were needed from the territory of a hono, each chief of 10 was required to furnish one to his chief of 50; the chief of 50 passed them up to the chief of 100, and so on. A burden of any size could be equitably and quickly distributed over a district by this method. The labor service supplied recruits to the army, post service on the Imperial roads, per-

sonal service for the nobles (usually at the rate of one servant for every 10 men ruled), and labor for the mines and public works. Thirty thousand men at a time are said to have worked in the construction of the Sacsahuaman fortress, which was probably the greatest single construction job undertaken by the *Inca*. The Government's metal needs were not very great, and mine labor was limited to short terms; some accounts say 1 month. There was sufficient labor available to permit frequent relief. Certain provinces with special labor obligations were exempt from the general *MIT'A*: The Rucana were trained litter-bearers; the *Chumpivilca* furnished dancers for the court; and the *Chicha* manufactured specially carved firewood logs of resinous wood and brought them to Cuzco to be used for sacrifices. One of the greatest tributes to the efficiency of the system is that the Emperors had to make unnecessary work in order to keep the *YIR'A* levies busy. Huayna Capac is said to have ordered a hill moved from one place to another merely for want of a more useful project. Whether the story is true or not, the Indians who remembered *Inca* times evidently regarded it as perfectly plausible (Cieza, 1880, bk. 2, ch. 64; Morúa, 1922-25, bk. 3, ch. 18). The Emperors knew that people with excess leisure had too much time to criticize the Government, and they had trouble enough with revolts even when the people were busy (Cobo, 1890-95, bk. 12, chs. 33-35; Garcilaso, 1723, pt. 1, bk. 5, chs. 11, 16).

Tax-exempt classes. -The *MIT'A* provided the necessary labor for most Government jobs not filled by the nobility, but a few jobs requiring special training and continuity could not be filled from the *MIT'A*: accounting, metalworking, tapestry production, and other luxury handicrafts. Such positions were filled by a class of hereditary Government servants who were exempt from ordinary tribute and supported out of the Government storehouses. Government officials picked boys who showed special ability from among the sons of tribute payers, and the work was honorable and not excessively burdensome. Some of the Government servants were called *YANA-KONA* ("servants"), and in Colonial times the name was employed for all Indians who were not taxpayers (see p. 377). The original *YANA-KONA* are said to have been created by Topa Inca to punish the natives of a rebellious province (Sarmiento, 1906, ch. 51). The chroniclers' use of the words seems to imply that the *YANA-KONA* proper performed only the less-skilled jobs, and that the craftsmen were known by their professional titles: accountant (*KHIPO-KAMAYOQ*); silversmith (*QOLQI-KAMAYOQ*); tapestry weaver (*QOMPI-KAMAYOQ*); etc. The craftsmen manufactured only for the Emperor who distributed the surplus as gifts to the nobility. All taxpayers made their own clothing and tools at home with locally gathered materials or wool distributed by the Government. (Cobo, 1890-95, bk. 14,

ch. 15; Falcon, 1918, pp. 149-151; Poma, 1936, p. 191; Señores, 1904, p. 203; Castro, 1936, pp. 239, 245; Cieza, 1880, bk. 2, ch. 18.)

The Inca Government controlled its women subjects as arbitrarily as its men. An Imperial official called *apopanaca visited each village and classified all girls at about the age of 10. Girls selected for outstanding beauty and physical perfection (**AKLYA-KONA**, "chosen women") were educated by the Government. Those rejected (**HAWASIPAS-KONA**, "left-out girls") remained in the villages to marry the sons of the taxpayers. Village betrothals were publicly solemnized by the curaca; the marriageable boys and girls were assembled in the square in two lines, and the curaca gave a girl to each boy in the name of the Emperor. (See Life Cycle.)

The Chosen Women were organized in convents in the provincial capitals, and newly chosen girls spent about 4 years in one of these convents learning spinning and weaving, cooking, the manufacture of chicha, and other household occupations. Then they were reclassified; some as **MAMA-KONA** ("mothers"), and some to be given as principal or secondary wives to deserving nobles or warriors. Some **MAMA-KONA** were dedicated to the service of the Sun and the shrines in perpetual chastity (whence their popular title in modern literature, "Virgins of the Sun"); these prepared special foods and chicha for sacrifice and use in festivals, and tended the shrines. Others were concubines of the Emperor, and prepared his food and made his clothing.

When the Chosen Women were first designated at the age of about 10, some were set aside to be sacrificed on special occasions; they were considered especially fortunate, as they were assured of a life of ease and happiness in the other world. (Cobo, 1890-95, bk. 12, ch. 34; Señores, 1904, pp. 203, 206; Anonymous Discurso, 1906, p. 153; RGI, 1881-97, 1: 100, 681, 189; Garcilaso, 1723, pt. 1, bk. 4, chs. 1-8; Valera, 1879, pp. 178-189.)

Colonization.—One of the most famous of *Inca* administrative policies was the resettlement or colonization program. The principle behind it was that by reshuffling the population older political units would be broken and it would be more difficult for the inhabitants of a province to plot revolt. When a new province was conquered, settlers were brought into it from some province which had been under *Inca* government long enough to know the system, and their place was filled with the most recalcitrant elements of the new province. These settlers were called mitimaes (**MTIMA-KONA**, usually Hispanicized as mitimaes; singular, mitima. See Acosta, 1940, bk. 6, ch. 12). The new colonists were under the authority of the officials of the province to which they moved, although they kept their own customs and distinctive headdress and were never really united with the old population. Loyal settlers sent to colonize a newly conquered

province were charged with setting an example to the original inhabitants, spreading the use of *Quechua*, and acting as an Inca garrison; in return, they received women and honors as special signs of Imperial favor.

Similar in some ways to the imperial colonies were the *Aymara* settlements in the Coast valleys and on the eastern mountain slopes. The Emperor assigned certain fields in the lower, warmer country to each province of the Titicaca Basin and the Bolivian altiplano, so that the mountaineers could have their own source of the subtropical fruits. The *Aymara* sent colonists to care for these lowland fields. These colonists did not pass under the jurisdiction of the local officials, but remained subject to the Highland governors. (Cobo 1890-95, bk. 12, ch. 23; Seiiores, 1904, p. 203; Garcilaso, 1723, pt. 1, bk. 7, ch. 1; Cieza, 1880, bk. 2, chs. 17, 22; Sarmiento, 1906, ch. 39.)

The scale and the effect of the *Inca* colonization program have not been fully recognized. In many provinces, the colonists outnumbered the natives at the time of the Spanish Conquest (RGI, 1881-97, 1: 96). In Angaraes, 13½ of 22 towns established by Viceroy Toledo were inhabited by native *Angará*; the rest included *Chanca*, settlers from Cajamarca, *Quihuar* from Cuzco, and *Huaro* from Huarochiri in Yauyos (RGI, 1881-97, 1: 142-144). Yamparaes had three towns of natives and five of colonists, including *Inca*, *Yanahuara*, *Canchi*, *Colla*, *Chicha*, and *Cañari*, the last from Ecuador (Calancha, 1638, bk. 2, ch. 40). These examples could be multiplied. The *Inca* around Cuzco furnished an unusual number of colonists, and were replaced by Indians from nearly every province in the Empire. (See especially the lists of witnesses in Toledo, 1940.)

Shuffling populations on this gigantic scale made the Inca Empire a regular melting pot, and there is no doubt that, even if the convulsions which the Spanish Conquest brought had not speeded up the process, the old tribal divisions would have entirely lost their significance in a couple of generations, and the heterogeneous population of the Empire would have become a single nation. The unification was speeded by the introduction of *Quechua* as the language for all official business. *Quechua* was already rapidly superseding the local languages when Spanish missionaries assured its future by adopting it as the official medium of evangelization.

Trade and travel.—Trade in the *Inca* Empire was purely local, and commerce a Government monopoly. The taxpayers of each district held small fairs to exchange their surplus products and unneeded objects received in Government distributions. No form of money was used in such exchanges. As the Government levied no property taxes, but required only labor, a thrifty and industrious family could accumulate considerable movable property, and diversify it through trade. The reservation of all precious metals and luxury objects to

the use of the Emperor or to nobles designated by him prevented a wealthy family of taxpayers from using these prestige symbols.

Travel was restricted to Government business to keep the taxpayers on their land and to keep the roads free for official use. Through the ~~Mr'a~~, the Emperor moved building stone, balsa wood, tropical products, and luxuries throughout the Empire as needed.

Crime and punishment.—*Inca* law severely penalized crimes which we would consider minor, on the principle that the act of breaking any law was disobedience to the Emperor, and hence to be classed with treason and sacrilege. The usual punishments were public rebuke, the *HIWAYA*, exile to the coca plantations, loss of office, torture, and death. The *HIWAYA* consisted in dropping a stone on a man's back from a height of nearly 3 feet, often killing him. Death was inflicted by stoning, hanging by the feet, throwing from a cliff, or simply beating the head in with a club. Imprisonment, really a specialized form of execution, was inflicted only for the worst forms of treason. The prisoner was committed to a subterranean dungeon in Cuzco filled, with carnivorous animals and snakes, where he had small chance of surviving. Accused persons awaiting trial were held under guard. Inca law distinguished crimes involving nobles from those concerning the common people. It held that public ridicule and loss of office hurt a noble as much as exile or torture would a poor man, and that the prestige of the nobles as a class must be upheld. The latter principle might impose a more severe penalty on a noble: adultery among common people, for instance, was punished with torture, but if the woman were a noble, both parties were executed.

In judging a crime, all the attendant circumstances were taken into account. For instance, the punishment for murder was death, except when it was committed in self-defense or against an adulterous wife. If a man stole food, he might be banished, but if he were in want, he was simply rebuked for laziness. Punishment for causing injuries was much lighter if the injury were proved unintentional. Crimes against the Government were punished with special severity. Stealing from the Imperial fields, burning bridges, and breaking into convents were all punishable by death. Curacas who put to death any of their subjects without official permission, regardless of the cause, received the *HIWAYA* penalty for the first offense and death for the second. In general, the laws were severe but reasonable, and rigid enforcement combined with the virtual absence of want made crimes extremely rare.

The inspectors, whose chief task was to bring dishonest officials to justice, were the only special judicial officers. Enforcement, trial, and punishment were carried out by the regular administrative officials who judged cases of an importance relative to the number of subjects they ruled. The death penalty was supposed to be imposed only by the Governor or the Emperor himself, so all serious cases were taken

to them. No appeal was permitted. Trials were conducted in the presence of all the witnesses, each of whom gave his account of the affair, and the accused was given an opportunity to defend himself. Judgment was pronounced immediately.*

Organization of conquered territory.—The steps taken to organize newly conquered territory reveal how the *Inca* administration functioned. When the generals had overcome armed resistance, a district was first surveyed and a census taken. It was then started in the construction of a series of relief models in clay, showing mountains and valleys, water supply villages, and location of features. The census was a head-count of the whole population by age grades, recorded on the quipu. Models and census totals accompanied the general's report to Cuzco and were studied by the Emperor and his advisers, who then ordered a reorganization of the population. The native ayllus were moved down from the hilltop fortresses and settled in the plains near their fields, while very small ayllus and scattered families were concentrated in new villages. A provincial capital was chosen, usually the town which had been most important before the Inca conquest, and the necessary administrative and ceremonial buildings were erected. Then the most irreconcilable elements of the population were removed bodily to some distant province as mitimaes, while a corresponding number of natives was brought from the other province and settled in the new one. Often several small population exchanges were arranged with different provinces. The old chiefs of the new district were kept on in office and incorporated into the curaca class ~~VI nobility according to their importance~~. The Emperor made them presents and showed them as much favor as necessary to restore their prestige with their people. Their sons were taken as hostages to Cuzco to be taught the *Inca* system. An *Inca* governor was appointed, and vacancies in the administration filled with local people or specialists brought in from older provinces. The lands and flocks were divided and marked, storehouses were built, and the labor taxes introduced. If the province had suffered heavily during the conquest and the people had insufficient food and clothing, the Government distributed these things from its surplus in other provinces until the losses could be made up.

All Government persons were ordered to learn *Quechua*, and *Inca* prestige was so great that a fair proportion of the inhabitants eventually acquired it as a second language. *Inca* dress was introduced where it was not used, but the natives were ordered to continue to wear their local headdresses as a badge of tribal affiliation. The

* The three most detailed accounts of *Inca* Justice are found in Cobo (1890-95, bk. 12, oh. 26); Poma (1936, pp. 182-193, 301-314); and Valera (1879, pp. 198-205). Where there is any disagreement, I have followed Cobo. All three authors give extensive lists of *Inca* laws and the punishments they carried. See also Garcilaso, 1723, pt. 1, bk. 2, ch. 13, and bk. 4, chs. 11-15; Cieza, 1880, bk. 2, ohs. 13.23; RQI, 1881-97, I:101-102; Pachacuti, 1879, p. 267.

Aymara-speaking Indians wore knitted woolen caps; elsewhere, a sling wound around the head or some equally simple ornament was the rule. The most sacred huacas (*wak'a*, "shrine") of the tribe were taken to Cuzco, and set up under the care of priests sent to the capital for the purpose; they were worshiped when a provincial delegation visited the capital for any reason. The huacas served as additional hostages, and also gave the people a feeling that Cuzco was their capital and not just an *Inca* city. At the same time, the worship of Viracocha (*wiraqoc'a*), the Sun, the Thunder, and other Inca divinities was introduced into the new province.

Inca policy thus not only brought efficient administration and material well-being to the provinces, but unified the whole Empire. The unification was so carefully done that local nationalistic feelings were not aroused, and when a revolt did take place, the tribes were so scattered that it could hardly acquire the force of a national movement. One short century of *Inca* rule completely altered the course of Andean culture history. To this day, *Inca* provincial boundaries and names are widely used, and the Inca language flourishes, while even the memory of the older states and languages has vanished. (Cobo, 1890-95, bk. 12, chs. 23-24; Cieza, 1850, bk. 2, ch. 24; Garcilaso, 1723, pt. 1, bk. 2, ch. 26; Polo, 1916 b, pp. 52-71.)

Nature of the Inca Government.—The *Inca* Government was an unqualified despotism deriving its power in theory from the supernatural beings that watched over the Emperor, and in fact from the military force which he controlled. Its paternalistic concern for the material well-being of its subjects was admitted by the rulers themselves to be nothing but enlightened self-interest, for they realized that a healthy, happy people work better and produce more than one suffering from want and injustice. A number of the chroniclers have emphasized the contrast between *Inca* policy and Spanish Colonial policy, as to both theory and practice. The Spaniards pointed out that their rule brought the Indians a personal freedom in determination of residence, choice of wives, control of their children, and acquisition of goods which they had never had under the *Inca*. Actually, the Indians found that they had only exchanged a despotism of predictable demands and justice for another of limitless demands and justice reserved to their oppressors.

Whether or not the *Inca* system should be labeled as socialism depends entirely on the definition of socialism. Land was owned by the state, and its use granted to families, to kinship groups, and occasionally to individuals. Houses and movable property were individually owned, subject to no Government levy, and could be accumulated without other theoretical limitation than a prohibition against the use of luxury goods. The Government insured the individual against every sort of want, and, in return, demanded heavy tribute

in labor, a very small part of which directly benefited the people who paid it.²²

WARFARE

Before the rise of *Inca* power, when many Andean districts were split up into hostile villages, warfare was merely the expression of individual and group rivalries over good land, water rights, and flocks, or consisted of raids to plunder, avenge, or take women. War parties seemingly were informal groups led by interested persons or by warriors of proven ability. No doubt the larger, more settled states, especially on the Coast, had formally organized armies before the *Inca* conquest, but their existence can be inferred only from *Inca* military practice.

Motives for war.—It is difficult to determine the precise causes of the *Inca* wars and the exact motives for their tremendous expansion. Although the nobility gained more revenues and service from a successful conquest, it was already so well off that the economic motive cannot have been strong, and many of the conquered provinces were so poor—that at first they were economic liabilities rather than assets. A much more powerful inducement was probably glory and personal advancement. War and religion were the two fields in which to gratify one's ambitions, and generations of raiding and feuds had left the Andean Indians with the feeling that fighting was the natural and proper occupation of any able-bodied man. A number of the *Inca* conquests, such as that of the Pacasa, seemingly were intended to stop outsiders from stirring up revolts, while others were planned principally to keep the *Inca* army occupied and prevent the generals from plotting against the succession. A large-scale campaign against the *Pasto* or *Chiriguano*, launched at the crucial moment after Huayna Capac's death, might have prevented the civil war between Huascar and Atahuallpa which left the Empire at the mercy of the Spaniards in 1532. (Compare Bram, 1941.)

Equipment.—By European standards, the *Inca* army was lightly armed, but it must have seemed formidable to most of the small Andean states. Its greatest weaknesses were lack of cavalry and siege engines and loose discipline on the battle field. Its strength lay in its numbers, superb supply system, and effective close and long range weapons. Prisoners were not essential sacrificial victims, so that there was no special incentive to take the enemy alive. Military efficiency increased with the expansion of the Empire and might have improved further but for the Spanish Conquest.

For body armor, the soldiers wore quilted cotton tunics, or wound layers of cloth around their bodies. Most of the Spanish soldiers

²² Readers interested in theories of socialism should consult Baudin (1928 and 1942). The former includes a superb bibliography and can be used profitably as a guide to the mass of modern writings in French, German, and Spanish which treat the question of Inca "socialism."

adopted quilt armor from the *Aztec* and *Inca*, regarding it as superior to European steel breastplates, at least against Indian weapons. *Inca* soldiers hung round shields of hard chonta-palm slats and cotton on their backs. Their heads were protected by quilted or wooden helmets or by caps of plaited cane (illustrated in Montell, 1929, fig. 21). They carried square or round shields (*WAL'KAÑQA* or *POL'KARQA*) on their arms, sometimes with a cloth apron hanging from the lower edge. The shields were made of narrow boards sheathed with deerskin with a decorative cloth or feather-cloth cover bearing the soldier's device in colors. Most of the devices were simple geometric patterns, without any known symbolic meaning. Instead of a shield, soldiers sometimes wrapped a long shawl once around the left arm to pad it against club blows; two long tails from it entangled the opponent's weapon. In attacking fortified positions, they used a great sheet of tough cloth which would cover about a hundred men as a protection against slingstones. (Cobo, 1890-95, bk. 14, ch. 9; Xérez, 1917, pp. 63-64; Poma, 1936, pp. 155, 161, 169, 171; Morúa, 1922-25, bk. 2, chs. 7, 10.)

Long-range weapons varied locally, but the *Inca* armies regularly used all of them. The mountain Indians used slings of plaited wool, rawhide, or vegetable fiber, about 7 to 24 inches (18 to 60 cm.) long when doubled, with a wider cradle or stone-rest in the middle and a finger loop at one end. With these, they threw stones the size of a hen's egg or larger with great accuracy. The sling was also used for hunting, in dances, and wound around the head to keep the hair in place. The bolas was used at somewhat closer range than the sling to entangle the enemy's feet, and, like the sling, it was also used in hunting. It consisted of two to five weights of stone, copper, or wood, varying from the size of a robin's egg to that of a fist, connected by cords fastened together in the middle. The weights were usually wrapped in bits of rawhide to which the cords were fastened.

The Coast Indians used spear throwers and darts with fire-hardened points. This weapon was used in the Highlands in Chanapata and Tiahuanaco times, but seems to have been entirely superseded there by the sling and bolas before the Inca rose to power. It survived on the Coast, however, and was brought back to Highland battlefields by the Coastal soldiers of the Emperor.²³ The bow and arrow were not used as weapons by the mountain Indians. Their modern use-as-toys may be simply in imitation of their use by Montana tribes, whom the Highlanders love to mimic. However, there were words for bow and arrow in 16th-century *Quechua* (**picta* and *wachi*). The bowmen in the *Inca* army were all forest Indians, and their weapons were typical of the latter.

²³ I have not been able to determine the *Quechua* name of the spear thrower. It is usually called "tiradora" or "amiento" by the chroniclers; "*estólica*" seems to be a more modern word. See Cobo, 1890-95, bk. 14, ch. 9; Las Casas, 1892, ch. 5.

A favorite device of Indians defending a hill fort or a mountain pass was to roll large boulders down on the advancing enemy (fig. 23, c), a trick which the Spaniards found very disconcerting. (Cobo, 1890-95, bk. 14, ch. 9; Xérez, 1917, pp. 63-64; Poma, 1936, pp. 155, 157, 161, 167; Morba, 1922-25, bk. 1, ch. 22; bk. 2, ch. 6.)

The *Inca* fought hand to hand with a variety of clubs and spears. The favorite weapon of the Inca proper was a club with a circular stone, copper, gold, or silver head with six formidable projecting points. This kind of head, common in museum collections, is often called the "star-headed mace." The shafts seem to have averaged 3 feet (1 m.) long. Equally formidable was the macana (MAQANA) (fig. 29, a), a sword-shaped, double-edged war club, made of hard black chonta-palm wood, about 4 feet (1.2 m.) long, 4 inches (10 cm.) wide and tapering toward the handgrip. The hilt was rounded, and ended in a knob or pommel. Various kinds of battle axes and halberds were also used, having shafts of varying length and stone or bronze heads. The ax-heads were of the common Andean type with two ears on the back for hafting; the halberd heads had an ax blade on one side and the projections of the star-headed mace head on the others, or combined a blade and several sharp hooks similar to the heads of European halberds. The spears were long poles with fire-hardened points or copper or bronze tips. (Cobo, 1890-95, Morba, 1922-25, and Xérez, 1917; Poma, 1936, pp. 100, 149, 151, 163, 165, 194.)

Soldiers wore the regular Andean costume except for the cloak. The headdress was replaced by a helmet, often ornamented by fringes running across the top from ear to ear. Fringes were also worn below the knees and at the ankles. Nearly all soldiers wore round metal plates, about 6 inches (15 cm.) in diameter, as chest and back ornaments. The plates (*canipu) were a kind of military decoration, the metal indicating the wearer's prowess; copper was the lowest award, gold the highest. Some soldiers painted their faces to frighten the enemy, but this practice seems to have been rare. *Inca* soldiers are often contrasted with forest Indians by their lack of face paint, especially in battle scenes on 16th-century lacquered wooden cups.²⁴

The *Inca* were much addicted to martial music: songs insulting to the enemy, the noise of small tambourines (probably skin-covered), single-note shell and clay trumpets, and bone flutes (Morúa, 1922-25, bk. 2, ch. 1).

Each squadron had its standard, a small square banner about 8 inches (20 cm.) across, with the free vertical edge cut zigzag, and painted with the squadron device. These banners, perfectly stiff

²⁴ Poma, 1936, pp. 167, 161; Morúa, 1922-25, bk. 2, ch. 6. Morúa adds that 8 soldier who killed an enemy painted one arm; when he killed a second, he painted his chest; and for the third, drew a black mark across his face between the ears (1922-25, bk. 2, ch. 7).

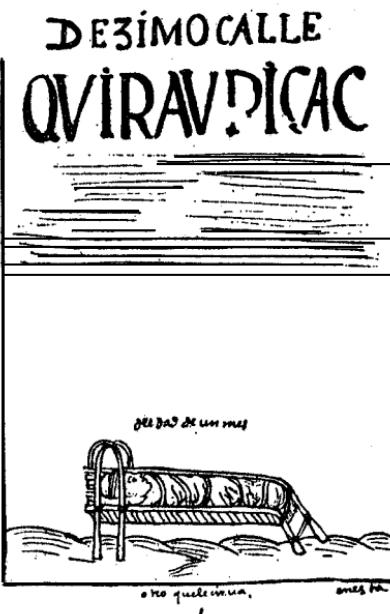
*a**b**c**d*

FIGURE 29.-Scenes of Inca life. *a*, Battle scene showing use of the swordlike club (*maqana*) and the "star-headed mace"; *b*, baby in cradle; *c*, child whipping a top; *d*, a dead man being carried to the family tomb in the Chincha Suyo. (After Guamsn Poma, 1936, pp. 151, 212, 208, 289.)

with paint, were usually carried on spears. A large army usually carried one or more sacred objects to watch over its fortunes. The *Inca* armies usually carried the stone that represented Manco Capac, or his "brother," the stone of Huanacauri (Cobo, 1890-95, bk. 14, ch. 9; Morda, 1922-25, bk. 3, ch. 6).

Training and tactics.—All able-bodied taxpayers were liable to military service, and were trained in the use of arms from boyhood (Las Casas, 1892, ch. 5). The only standing army seems to have been the Emperor's bodyguard of "big ears"; the rest of any military force was made up of men called up for the regular labor tax, and divided into squadrons by provinces. The officers were graded according to the same decimal classification used in the civil administration, and were probably in large part the same men (Cicza, 1880, bk. 2, ch. 23; Cobo, 1890-95, bk. 14, ch. 9).

The Inca army marched in regular ranks, under strict discipline. No soldier was allowed to stray from the road, steal food, or molest civilians, under pain of death (Cobo, 1890-95, bk. 12, chs. 26, 31; Molina of Santiago, 1916, p. 130). Atahuallpa punished some of his bodyguard with death for breaking ranks when frightened by a Spanish horse during an official visit (Anonymous Conqueror, 1929, f. 3). Comparable discipline does not seem to have been enforced in the heat of battle, however. Once engaged, the troops broke ranks and fought individually, depending on numbers and personal prowess. This lack of discipline in battle meant that the large Inca armies lacked an advantage proportionate to their numbers, for they could not be adequately controlled by their commanders. The conflict was accompanied by boasting and shouting.

In attack, the slingers began the engagement at long range. The bowmen held their fire until closer to the enemy, and the hand-to-hand fighters were the last to be engaged (Las Casas, 1892, ch. 5). Most soldiers used only one offensive weapon, but a man might wield a thrusting spear and one of the clubbing weapons. Men armed with the macana (*MAOANA*) carried no shield, keeping both hands free to handle the heavy sword-club (Cobo, 1890-95, bk. 14, ch. 9; Poma, 1,936, pp. 151, 157, 161, 165, 169, 171, 194).

Most military operations were either pitched battles, in which *Inca* troops had superior numbers, or fights for fortified hilltops. Valley towns were never fortified and rarely defended. The inhabitants usually retired when attacked to a refuge (*POKARA*), ingeniously chosen and fortified, on the top of some nearby hill. The slopes were terraced to increase their steepness, multiple walls with staggered gates were built to defend the easiest access, and the walls had salients from which defending slingers could strike the backs of any scaling party. The *Inca*'s masterpiece of fortification was the Sacsahuaman (*SAQSAYWAMAN*) fortress overlooking Cuzco, which was begun by

Pachacuti after his victory over the *Chanca*. Many other impressive defense works are scattered throughout the Andean area. The forts of Parmunca and Huarco on the coast are famous, and less well-known Highland forts, like Huata, Mallajasi, and the little ones above Ollantaytambo, are almost equally impressive from a military point of view. (See Squier, 1877, pp. 493, 499; Rowe, 1944; Means, 1931, fig. 130.)

The greatest pitched battle ever fought by *Inca* armies before Pizarro's arrival was probably Huascar's last stand on the Apurimac against Atahuallpa's great generals, Quisquis and Challcuchima. The superior tactical skill of Atahuallpa's men brought overwhelming victory in spite of inferior numbers. Both armies used such tricks as burning the grass to drive the enemy out of a strong position, ambush in a ravine, and dawn attack against a force which believed itself secure. (See Sarmiento, 1906, chs. 64-65, and Pdchacuti, 1879, pp. 318-321.) Cieza credits Inca Viracocha with heating a sling-stone red hot and hurling it across the Urubamba River to set fire to the thatched roofs of the town of Caytomarca (Cieza, 1880, bk. 2, ch. 39).

Prisoners, trophies, and honors. - The Inca took both prisoners and trophies. Captives were brought to Cuzco, where a few were sacrificed in thanksgiving for victory. After a particularly notable victory, the captives were led in triumphal procession through the streets of Cuzco, and the Emperor trod upon their necks in the temple of the Sun as a symbol of his power over them. Especially dangerous leaders were killed, usually by imprisonment in the dungeon of serpents (see p. 271), but most prisoners were sent home and treated as ordinary subjects. (Sarmiento, 1906, ch. 33; Betanzos, 1880, ch. 1; Cabello, ms., bk. 3, ch. 14.) The heads of important enemies killed in battle were taken as trophies, and fitted with a metal cup in the crown, drained through the mouth by a tube. The victor drank chicha from the trophy cup to recall the victory. One such head was shown to Pizarro's men by Atahuallpa (Poma, 1936, pp. 153, 194; Anonymous Conqueror, 1929, f. 5).

A more elaborate trophy was made by stuffing the enemy's skin with straw or ashes, and constructing a drum in the stomach, the skin of which served as the drumhead. (Cieza, 1880, bk. 2, ch. 46; Anonymous Discurso, 1906, p. 154; Poma, 1936, p. 334.) It seems likely that ordinary small war drums were also covered with human skin. The chroniclers usually referred to this treatment in a phrase such as, "He conquered him and made a drum of him." *Inca* soldiers generally made their flutes of an enemy's shin-bone (Means, 1931, p. 436). Warriors often made necklaces of enemies' teeth (Cobo, 1890-95, bk. 14, ch. 2).

The elaborate *Inca* system of military honors and rewards depended to such an extent on individual ability that military prowess was the

chief way by which a common taxpayer could improve his social rank. Awards began with gifts of clothing and decorative gold and silver plates to be hung on the back or chest. The gift of a Chosen Woman was an especial mark of the Emperor's favor. Soldiers could keep women they captured in a campaign. Outstanding warriors could aspire to an official position in the administrative bureaucracy, and hand the office down to their descendants. Nobles who distinguished themselves were rewarded with wives, promotion, gifts, and special privileges, such as riding in a litter, carrying a parasol, or sitting on a stool.

All soldiers on active service were supported by the Government; their neighbors tilled their fields and military service inflicted no economic hardships (Cobo, 1890-95, bk. 14, ch. 9; Anonymous Discurso, 1906, pp. 153 ff.).

Transport & Transport was a problem only beyond the frontiers of the Empire, as storehouses and camping places were so distributed along the main roads that a moving army found all necessary stores at the end of each day's march. These military storehouses supported both *Inca* armies throughout the civil war, and the Spanish troops used them for more than 10 years after the Conquest (Polo, 1917 a, p. 69). In fact, the existence of easy communications and full supplies probably expanded and prolonged the civil wars among the Spanish conquerors far beyond anything that would have taken place in an impoverished country where travel was difficult. Outside of the Empire, the supplies not found in the enemy's country were carried by llamas and men, and supplying the army became a serious problem.

Ceremonial aspects.—*Inca* warfare was deeply affected by religious beliefs and practices. From the time of Pachacuti, religion was used to justify the *Inca* conquest, on the pretext that the purest and highest form of religion was the Inca way of worshiping the Creator, the sky gods, and the place spirits, and that it was the *Inca's* duty to spread this religion throughout the world. It is difficult to state this claim without making it sound like an echo of crusading Christianity, but there is small doubt of its aboriginal character (Polo, 1940, p. 132).

Before going to war, the Inca held a ceremony to lessen the powers of the enemy idols (huacas) and to divine the outcome of the campaign. It began with the sacrifice of various wild birds, burned on a fire of thornwood. The priests walked around the fire holding stones on which snakes, toads, pumas, and jaguars had been painted, and chanting, "May it succeed" and "May the huacas of our enemies lose their strength." Then they sacrificed some dark-colored llamas which had been tied up for several days without food, and prayed,

"as the hearts of these animals faint, so may those of our adversaries." Each llama heart was inspected to see if a lump of flesh near it had been consumed in the animal's enforced fast; if not, it *was* a bad sign. They also sacrificed black dogs, threw them on a flat place, and made certain people eat the meat. The same ceremony was used when it was feared that the Emperor would be attacked with poison. The participants fasted all day, and feasted at night. (Polo, 1916 a, bk. 14, ch. 2; Acosta, 1940, bk. 5, ch. 18; Morúa, 1922-25, bk. 3, ch. 53; Cobo, 1890-95, bk. 13, ch. 22.)

In warfare, as in all other activities, the *Inca* were entirely dependent on divination, no move being made without favorable auguries. During the war between Huascar and Atahuallpa, both sides consulted such famous oracles as Pachacamac and made immense sacrifices to gain the favor of the gods. During the siege of Cuzco by Inca Manco, the *Inca* army attacked repeatedly at the new moon, believing that to be the luckiest time. (See p. 383.)

Victory was usually attributed to divine aid. During the defense of Cuzco against the *Chanca*, Pachacuti cried out that even the stones were turning to men to help the Inca, and after the battle he pointed out a large number of loose stones on the battlefield which had done so. These stones were reverently collected and distributed around Cuzco as shrines (Acosta, 1940, bk. 6, ch. 21; Cobo, 1890-95, bk. 13, ch. 8). Certain images, especially those representing tribal ancestors, were regularly carried into battle by the Inca and their neighbors. The *Inca* usually carried the stones representing Manco Capac and Huanacauri. The presence of such images undoubtedly aided morale, and provided rallying points of great emotional value. The Inca leaders seem to have believed that Viracocha, the Creator, was the ultimate giver of victory, but the soldiers probably attributed it to the *images* they carried (Pachacuti, 1879, pp. 305-6).

Diplomacy.—The Inca made shrewd use of diplomacy in their campaigns. When they had decided to expand in a certain direction, they first sent envoys to the threatened tribes to invite them to submit peacefully. The envoys explained that the *Inca* had a divine mission to spread the true religion and that they were the great champions of civilization. Privileges and immunities were offered for willing submission and the overwhelming power of the Empire was emphasized. The notable success of the *Inca* Government in bringing greater prosperity to its subjects, and the privilege accorded to local rulers of holding hereditary positions at least equaling their rank as independent chiefs were weighty arguments in behalf of submission. A small tribe at odds with most of its neighbors had little chance of successful resistance to the *Inca* power. As a result, a great many tribes accepted the offer, and the Inca army marched in

without a fight. The amazing speed of Topa Inca's conquests was due in large part to the success of his diplomacy. (Señores, 1904, p. 200; Anonymous Discurso, 1906, pp. 154-155; Cieza, 1880, bk. 2, ch. 17.)

LIFE CYCLE

Childbirth and infancy.—The chroniclers give few particulars about pregnancy. Children were a great economic asset in Inca society, and were probably greatly desired. Pregnant women were not supposed to walk in the fields, but otherwise their work was not interrupted (Cobo, 1890-95, bk. 13, ch. 38). Before bearing a child, a woman was supposed to confess and pray to the huacas for a successful birth. During the delivery, the husband and sometimes the woman fasted. Women who had borne twins often acted as midwives, but many women delivered unassisted. The midwives massaged the mother's abdomen to straighten the fetus, and could produce abortion. Immediately after birth, the mother took the baby to the nearest stream and washed both herself and it (Cobo, 1890-95, bk. 14, ch. 6).

On the fourth day after birth, the baby was put into a cradle where it was kept until old enough to walk (fig. 29, b). The cradle consisted of a board or slat back about the size of the baby, with four low feet. It was cushioned with a folded shawl, and the child was lightly tied to it. Two crossed hoops passed over the head, and another over the feet, so that a blanket could be thrown over the cradle without danger of suffocating the baby. The mother carried the cradle on her back wherever she went, supporting it with a shawl tied over her chest. Little care was taken to keep the cradle clean (Cobo, 1890-95, bk. 14, ch. 6; Poma, 1936, pp. 212, 233).

The child was not named until it was weaned, probably a year or two after birth. The name giving was part of an elaborate ceremony called *rutuchicoy, "hair cutting." Relatives and friends assembled for a feast, followed by dancing and drinking, after which, the child's oldest uncle cut its hair and nails, which were preserved with great care, and gave it a name. Then the uncle and other relatives gave it presents : silver garments, wool, etc. They prayed to the Sun that the child's life be fortunate and that he live to inherit from his father. The name given at the hair cutting was retained only until the person reached maturity. (Cobo, 1890-95, bk. 14, ch. 6; Gonzalez, 1608; Molina of Cuzco, 1913, p. 176.)

Education.—Most children learned only by helping their parents, which they began to do almost as soon as they could walk. Formal instruction was reserved for the nobility and the Chosen Women. Some kind of elaborate instruction in the use of arms, the *Quechua* language, Inca religion, history, and the use of the quipus was given in Cuzco to the sons of provincial officials sent there to serve as hos-

tages and learn *Inca* methods. Garcilaso (quoting Blas Valera) and Morúa) describe this *Inca* "school" as a C-year course, the first year of which was devoted to the study of *Queehua*, the second to religion, the third to quipus, and the fourth to *Inca* history. The teachers were not allowed to beat the students more than once a day, and that punishment was restricted to 10 blows on the soles of the feet! (Garcilaso, 1723, pt. 1, bk. 4, ch. 19; Morda, 1922-25, bk. 3, ch. 4.) Unfortunately, none of the other chroniclers refer to the methods of public instruction.

The Chosen Women were taught religion, spinning, weaving, cooking, and chicha-making at the convents to which they were sent when first selected, at about the age of 10. This instruction lasted for about 4 years, and prepared the girls to serve as *MAMA-KONA* (consecrated women), or as wives of nobles whom the Emperor wished to honor. (See p. 299. Cobo, 1890-95, bk. 13, ch. 37; Poma, 1936, p. 300.)

Maturity.—At the age of about 14, boys were given the breechclout and a new name in a ceremony called *WARACIKOY*, which was in a sense a puberty rite, although it coincided only approximately with physiological puberty. The *WARACIKOY* was held only once a year, and in Cuzco it coincided with the festival of *QHAPAQ RAYMI* in December. The rites were probably very simple for ordinary people, but boys of the royal family went through elaborate ceremonies lasting for several weeks.

Preparations for the royal *WARACIKOY* started in October when the boys' mothers began to make their costumes. In November, the candidates made a pilgrimage to Huanacauri to ask permission of the huaca to perform the ceremony. Each brought a llama for sacrifice, and the priests drew a line on the candidate's face with its blood, and gave the boy a sling. The boys then collected straw for their relatives to sit on during the coming festivities. In addition to performing various sacrifices and dances, the boys had to help chew the maize in preparing the great stores of chicha that would be consumed (Cobo, 1890-95, bk. 13, ch. 30).

The first part of the *WARACIKOY* proper consisted of another pilgrimage to Huanacauri and more llama sacrifices. On the return, the boys' relatives beat their legs with slings, exhorting them to be strong and brave. A dance called *WARRI* was then performed, followed by drinking and a 6-day rest. Then the boys dressed in fresh costumes and went out to the hill of Anahuarque, near Huanacauri, for a foot race. At Anahuarque, they repeated the sacrifices, beating, and dancing previously performed at Huanacauri. The race was from the top of the hill to the bottom, and its termination was marked by a group of girls of the noble class carrying chicha for the runners. Each runner was accompanied by an older man who was his sponsor and could help him in the race if he needed it. The "hill" of Anahuarque has not

been certainly identified, but was probably about 2,000 feet (650 m.) high, and the race could well have taken an hour or so. Falls were frequent, and the runners were sometimes seriously hurt. Another excursion was made to the hills called SAWARAWRA and YAWIRA, where the candidates were given their breechclouts after more sacrifices. On another trip to the spring of Callispupio, they were given their weapons. A boy's most important uncle gave him a shield, a sling, and a mace, and other relatives made him presents also, as well as much good advice about his duty as an *Inca*. At the end of the ceremony, the candidate's ears were pierced for earplugs, and he became a warrior. (Cobo, 1890-95, bk. 13, ch. 25; Molina of Cuzco, 1913, pp. 156-168; Garcilaso, 1723, pt. 1, bk. 6, chs. 24-27; Cieza, 1880, bk. 2, ch. 7; Pachacuti, 1879, pp. 249-250; Fernández, 1876, pt. 2, bk. 3, ch. 6.)

The girls' maturity ceremony, called *quicuchicuy, was held at their first menstruation, and consequently was an individual, rather than a collective annual affair like the boys' (Sarmiento, 1906, ch. 13). The girl fasted 3 days, eating nothing the first 2 days, and only a little raw maize the 3d day, and remaining shut up in the house. On the 4th day, her mother washed her and combed and braided her hair. 'She put on fine new clothes and white woolen sandals, and emerged to wait on her relatives, who had assembled for a feast. The most important uncle then gave her a permanent name, and all present gave her gifts (Cobo, 1890-95, bk. 14, ch. 6; Molina of Cuzco, 1913, pp. 176-177).

Inca names referred to animals the qualities of which were admired, and to natural objects, places, or abstract qualities. A man might be named for his father or grandfather, but there was no fixed rule for naming. He might acquire a nickname such as "weeper of blood," "stone-eye," etc. Usually, when an Indian is given several names in the chronicles, most of them are titles of rank (*IÑKA*, *QHAPAQ*, *APO*, etc.), but multiple names were not unknown, especially among the nobility; Huascar's given name was *THOPA KOSI WAL'PA*, Huascar (*WASKHAR*) being a nickname. The names of the emperors were often composed entirely of honorific titles (*QHAPAQ YOPAÑKI*, *IÑKA PACAKOTI*, etc.). *MAÑKO*, *ROQ'A*, and *MAYTA* have no known meanings. A few of the most common *Inca* names and titles with their meaning are: *IÑKA*, member of the *Inca* family or nation; *APO*, lord; *QHAPAQ*, powerful, wealthy; *YOPAÑKI*, honored; *THOPA*, royal; *T'ITO*, liberal; *SINCI*, strong; *PACAKOTI*, cataclysm; *AMARO*, dragon; *KOSI*, happy; *SAYRI*, tobacco; *WAMAÑ*, hawk; *POMA*, puma; *KONTOR*, condor (Andean vulture); *QISPI*, crystal; *OTOROÑKO*, jaguar. Women's names were similar: *QOYLYOR*, star; *RONTO*, egg; *OQLYO*, pure; *CIMPO*, mark; *QORI*, gold; *KOKA*, coca.

Marriage.-As stated (p. 257), the *Inca* recognized only one principal wife, although nobles and other privileged persons might have a number of secondary wives. Secondary wives were taken without special ceremony, but there was a regular form of marriage for the principal one.

Marriages seem to have been arranged by the young couple with the consent of their parents, or by the parents. Under the Inca Empire, however, the couple were not engaged until the Governor assembled the marriageable boys in one row and the girls in another. Each boy in turn chose a girl and put her behind him. If two boys were rivals for a girl, the second boy made no choice when his turn came, and the Governor investigated the dispute and arbitrated. The loser then made a second choice. When all the couples had been satisfactorily paired off, the Governor ceremonially presented each girl to her future husband, giving the Emperor's blessing to the marriage. (Morúa, 1922-25, bk. 3, ch. 34; RGI, 1881-97, 1: 101; Cobo, 1890-95, bk. 14, ch. 7.)

Following the public betrothal, the two families arranged a wedding following the ancient tribal custom, which varied locally. Among the *Inca* proper, the groom and his family went to the home of the bride, whose family formally presented her to him. As acceptance, the groom put a sandal on her right foot, of wool if she was a virgin, otherwise of *icro* grass, and then took her by the hand. Both families then proceeded to the house of the groom, where the bride presented the groom with a fine wool tunic, a man's head band (*lyawt'o*), and a flat metal ornament which she had brought stowed under her sash. The groom put these on, and then the couple's relatives lectured them on the duties of married life. Both families made them presents, and a feast closed the ceremony. In some provinces, the suitor served his prospective parents-in-law for 4 or 5 days before the wedding, bringing them wood and straw (Cobo, 1890-95, bk. 14, ch. 7; Molina of Cuzco, 1913, p. 177).

In some if not all districts a couple lived together for a time in a kind of trial marriage. References to the custom are numerous, but so vague that no further details of it are available. (Morúa, 1922-25, bk. 3, ch. 52; Arriaga, 1920, oh. 6; and see discussion and references in Romero, 1923 a, and Bandelier, 1910, p. 147.)

Divorce of the principal wife after the Government had sanctioned the marriage was theoretically impossible, but secondary wives could be divorced easily. Information on the subject is scanty (Cobo, 1890-95, bk. 14, ch. 7).

Ordinary citizens became fully mature only at marriage, when they set up their own households and became taxpayers (pp. 252, 265). Quite possibly, outside the Inca royal lineages the boys' maturity

ceremony or its equivalent was of minor importance, and indicated only that the boy was ready for marriage, though he did not reach full social adulthood until he was married and became a taxpayer.

Death and burial.—At death, the relatives dressed immediately in black, and remained in mourning for some time, a full year among the nobles. Women cut their hair and wore their cloaks over their heads. The family served food and drink to **everyone** who attended the funeral. First, the mourners did a slow dance accompanied by drums and dirges, then part of the property left by the dead man was burned, and the body was wrapped and buried with the rest of his personal belongings. No fires were lighted in the house during the funeral. The funeral rites for nobles were similar but more elaborate and lasted longer. Processions were made to places that the dead man had frequented in life, and his virtues and achievements were celebrated in songs. Some of his wives and servants might be killed and buried with him. The funeral rites lasted for 8 days (see pp. 259-260). At intervals after the burial, the family visited the tomb and made fresh offerings of food, drink, and clothing (Cobo, 1890-95, bk. 14, ch. 19).

When a man's principal wife died, he might not remarry for a year, and wore a black cloak. Poor men often did not remarry for 2 years, and suffered severely meanwhile from the lack of household assistance, and because they were considered to be undergoing divine punishment for some secret sin. The principal wife had a more elaborate funeral than the secondary ones (Cobo, 1890-95, bk. 14, ch. 7).

No tombs of **Inca** nobles of the Cuzco region have ever been described, probably because most of them were looted long ago. Ordinary tombs are numerous and of several different types. In large rock shelters protected against the rain, the **Inca** built small beehive tombs of field stones laid in clay, with rough corbel vaulted roofs. These are square or round, free standing or built against the cliff, and vary in size and degree of finish, the finest being carefully plastered with fine mud. Each tomb has a small door, blocked with stones and clay at the funeral. Inside, the body was placed in a sitting position (fig. 29, d) with the knees drawn up to the chest, wrapped in cloth and mats or sewed into a skin. Such burials are usually accompanied by food, pottery, baskets, simple jewelry, and bone and metal tools. The dry air under the rock shelters preserves perishable objects as well as the dry sands of the Coastal deserts. The presence of several bodies in one tomb, without the rich offerings which would accompany a noble and his train, suggests that some tombs may have been family burial places. Such tombs are abundant in the lower Cuzco Valley, and along the Urubamba River from above Quiquijana down to Ollantaytambo.

At Machu Picchu, where the rainfall is heavy and caves are seldom dry, the dead were buried with their possessions under over-

hanging boulders (Eaton, 1916).²⁸ Morúa mentions cremation and the suttee (voluntary immolation of the widow) as Andean customs, but as far as I am aware, there is no other evidence for such practices (1922-25, bk. 3, ch. 34). Urn burial of infants, probably in the houses, was occasionally practiced at Cuzco, as attested by a find of *Inca* date at Coripata on the southwest side of town (University Museum, Cuzco).

ESTHETIC AND RECREATIONAL ACTIVITIES

Art.-The wealth and pageantry that characterized the *Inca* court created a greater demand for beautiful objects than had been the case in any previous period of Andean history, while the economic security which the *Inca* state provided the craftsmen similarly increased production. In spite of looting by the Spanish conquerors, the quantity of Inca artifacts which has survived is astounding. The very abundance of Inca material in the Andean region has led to interest in the rarer objects at the expense of the commonplace ones.

Inca objects consistently show certain qualities which reflect the new political and economic conditions and are in marked contrast to the products of earlier cultures. The first is a general high level of technical excellence, which involves few really new elements, but incorporates developments contributed by many conquered peoples: bronze tools and metal casting, accurate fitting of large, irregular blocks of stone, fine tapestry, lacquered wooden cups, and fine metal-hard pottery. Another notable quality of *Inca* art is the constant repetition of a few simple types, a mark of mass-production. The painted designs on *Inca* water jars, for instance, consist of simple elements repeated from jar to jar in the same order and so mechanically that they might almost be machine-printed. After studying a few whole pieces, one can tell instantly on what part of the jar a small sherd fitted by examining the bit of painted pattern on its outside face. A few Inca pieces, however, show a freshness and originality comparable even to the finest Early Nazca pieces, but the rule in Nazca collections is the exception in *Inca* ones (fig. 28, p. 244).

The *Inca* decorated wooden cups, pottery, tapestry, and probably the walls of their houses with geometric patterns and life designs which are often informative and always charming. Motives are most often plants and flowers, next insects, then men, and last animals, especially llamas and pumas. Battle and hunting scenes are common, and women are usually shown with flowers. The figures are conventionally reduced to an idealized, somewhat geometric shape, filled in with simple areas of flat color.

²⁸ Early in 1043, workmen removing gravel from a pit near the Cuzco railroad station found 8 few interments in habitation rubbish with Late *Inca* pottery, but the burials were removed before they could be properly recorded.

In contrast to Old World or Central American art, the *Inca* characteristically lacked interest in decorative stone sculpture and relief modeling. This does not reflect lack of technical ability or artistic feeling, for the *Inca* decorated a few stone bowls with animal and fish figures which will bear comparison with any Aztec work. Rather, the *Inca* had a functionalist's love of simple structural surfaces and solid blocks of stone, with surfaces uncluttered by carving. Wall paintings and decorative hangings prevented monotony and added a touch of color without destroying the structural lines of the wall.

Inca objects are solid and practical; beauty was never at the expense of utility. Stone bowl and silver pin, wooden cup and masonry house all give an impression of simple strength that can be very appealing to the modern inquirer.

Games and sports.-Inca children were so busy helping their parents in the daily tasks of farming, herding, and keeping house that they had time for few elaborate games. They made a top (*PISQOYNYO*) which was spun by whipping (fig. 29, c), played with balls (*PAPA AWKI*, "potato chief"), and played a kind of pig-pile (*taucca-taucca, "one pile after another") (Gonzalez, 1608; Poma, 1936, p. 208). The abundance of round pottery counters of ground potsherds in all archeological periods at Cuzco suggests that some game such as flipping counters at a hole in the ground may have been played also. (See Morda, 1922-25, bk. 2, 13.) Puma (*POMA*, "mountain lion") is the name of a game, but we are not told how it was played (Gonzalez, 1608).

Contests of skill formed an important part of the boys' maturity rite (*WARACIKOY*), when the candidate's fitness for war was being tested. Foot races, bolas-throwing contests, and mock battles are mentioned as parts of this rite (Cobo, 1890-95, bk. 13, chs. 25, 26; bk. 12, ch. 15).

Adults played a number of games scored with a die marked with one to five points, and hence called *PICQANA* ("instrument for playing the game of fives," from *PICQA*, modern *PISQA*, "five"). Pottery examples were found at Machu Picchu, and are illustrated by Bingham (1915 b, p. 176; 1930, fig. 172, b-h) and Gonzalez says that dice were also made of wood. (Cf. Gonzalez, 1608, under *pichcana; Cobo, 1890-95, bk. 14, ch. 17; Morúa, 1922-25, bk. 3, ch. 25.) The simplest game played with these dice (*PICQA*, "fives") seems to have consisted in trying to throw certain combinations of points (Cobo, 1890-95, bk. 12, ch. 15). Another game called *COÑKANA* was played with beans of different colors, and a board or stone marked into five divisions, counting, respectively, 10, 20, 30, 40, and 50. The beans were moved according to the points scored by throwing the die. Beans were also used for keeping score in other games called *tacanaco and *apaytalla (Cobo, 1890-95, bk. 14, ch. 17; Morúa, 1922-25, bk. 2, ch. 13). Morúa

mentions another, supposedly difficult game called *awqay*, in which a board was used. The beans were moved in this game, and the scoring was with the *picqana* (Morúa, 1922-25, bk. 2, ch. 13). No gaming boards have yet been identified in the archeological collections from the Cuzco region. Some of these games may still survive among the Indians.

The Inca gambled lightly on games of skill and chance, betting such things as clothing, llamas, and guinea pigs, but amusement rather than winnings was the main purpose of their games. This attitude toward games was well exemplified by Atahualpa at the time of the Conquest. (See *The Neo-Inca State*, this volume, p. 343. Also, Cobo, 1890-95, bk. 14, ch. 17; Morúa, 1922-25, bk. 3, ch. 25.)

Music.—A number of studies of Andean music have been made in modern times (cf. especially d'Harcourt, 1925; Mead, 1924), but all are unsatisfactory because they rather arbitrarily combine data from widely separated parts of the area and from different historical periods. Nearly all the archeological musical instruments studied are from graves on the Peruvian Coast, while the modern instruments are from the Highlands of Ecuador, southern Perú, and Bolivia. The information supplied by the chroniclers is meager, but it applies chiefly to Cuzco and the *Aymara*-speaking region around Lake Titicaca. The d'Harcourts had the excellent idea of collecting modern songs and looking for survivals of ancient musical practice in them, but of the 294 songs in their monumental collection, one was recorded here, two there all through the Andean countries, and no one region was studied sufficiently closely to control the survey. Another draw-back to the collection is that most of the songs were recorded from renderings by local Mestizo song collectors and not directly from the Indians. Consequently, further detailed studies of native music are urgently needed.

The Inca made a number of percussion and wind instruments, none very complicated. No examples are known to have survived, but the use of some is illustrated by Poma, and similar ones are abundant in archeological collections from the coast, of which good representative pieces are illustrated by d'Harcourt. The following can be identified:

The notched end-flute, *quena* (*QINA* or *QINA-QINA*), made usually of a joint of cane (*Cecropia* sp.), open at both ends. The number of finger holds (stops) varies: modern ones generally have six holes on the front and a thumb hole. The mouth end is notched, but there is no separate reed or whistle mouthpiece (Cobo, 1890-95, bk. 14, ch. 17).

A small bone *quena* (*PIRORO*) (Gonzalez, 1608). Fragments of a bone flute about $\frac{1}{2}$ inch (12 mm.) in diameter are on exhibition in the University Museum at Cuzco.

A small plug-flute has three or four finger holes (*PINKOLYO*) (González, 1608; Cobo, 1890-95, bk. 14, ch. 17).

The panpipes or syrinx (**antara* or **ayarichic*) are made of joints of

cane graded in length (Cobo, 1890-95, bk. 14, ch. 17). They are not now played in the Cuzco region, but are known there as a typical *Aymara* instrument. D'Harcourt illustrates a variety of ancient examples of cane or pottery (1925, pls. 15-22).

A single-note trumpet made of a large sea shell (POTOTO) was used as a war trumpet by the *Inca*, and is used as a ritual instrument, blown at certain points in the Mass, by the modern *Quechua*.

A gourd trumpet (WAYLYA-KIPA) (Cobo, 1890-95, bk. 14, ch. 17). The Inca seem to have used no clay trumpets, though magnificent specimens have been found in older graves. (Chavín, Mochica, Recuay, Nazca, Pucara, and Chiripa. See d'Harcourt, 1925, pls. 10-13.) Wooden trumpets are also known from the Coast (d'Harcourt, 1925, pl. 13).

Drums made of a hollow log with two heads of llama hide (*huancar) and often painted. These varied from long war drums, about 20 inches (50 cm.) in diameter, to very small festival drums. They were played with a single drumstick by men and women drummers. In some dances, each performer carried his own drum. (Cobo, 1890-95, bk. 14, ch. 17; Poma, 1936, pp. 320, 324; Gonzalez, 1608.)

A small drum or tambourine used in dances (TIRYÁ) (Gonzalez, 1608).

Small copper or silver bells (*chanrara). (See Bingham, 1915 b, p. 184; Cobo, 1890-95, bk. 14, ch. 17.)

Snail-shell rattles (*churu), used for anklets in dances. Certain pods from the eastern forests called *zacapa were also used for this purpose (Cobo, 1890-95, bk. 14, ch. 17).

The quena or end-flute was and is the only musical instrument of general popular use. Trumpets, big drums, and bone flutes were used principally in war, and small drums, bells, and rattles in festivals. The quena was used especially to play love songs, a use to which its haunting, vibrant tone makes it admirably suited (Garcilaso, 1723, pt. 1, bk. 2, ch. 26).

Little can be said about *Inca* music except that it was used for religious chants as well as for love songs (Poma, 1936, pp. 315-317). The d'Harcourts thought they could isolate a group of tunes in their collection composed on a pentatonic scale and seemingly very Indian in character, which, they suggest, represent a type of music which has survived from ancient times (1925, pp. 131-178). It would be highly desirable to check their material with more collected in the Cuzco region.

Dances.-An important element of all *Inca* public worship was dancing (see p. 308). The steps were usually accompanied by songs or chants and drumming by the dancers or by specially appointed drummers. The usual name for a ritual dance was TAKI, which also means singing. Dance costumes were very elaborate and included masks (fig. 25, a) and animal skins as well as special garments of

ordinary cut. Costumes and dances varied widely from province to province.

Cobo gives brief descriptions of some of the dances used in Cuzco. The most common, called *guacon, was restricted to men. The dancers wore masks and carried animal skins or dried animals in their hands. The dance involved a lot of jumping. Another dance, called *guayayturilla, was for both men and women, who painted their faces and wore a gold or silver ornament over the nose. The accompaniment was played on an instrument made of the dried head of a deer. One dancer led off, and the rest followed. In a farmer's dance (*HAYLYI*) imitating the plowing festival, men and women carried the agricultural implements they used for breaking the earth. The warrior's dance (*cachua) was only performed on solemn occasions. Both sexes took part, the men dressed for war. The dancers performed in a circle with joined hands.

The *Inca* family had a special dance (*WAY-YAYA*) which was led by men carrying the royal standard and the *CAMPI*. It was accompanied by a great drum which an Indian of low birth carried on his back and a woman beat. Men and women joined hands to form long lines, with the sexes mixed or with men in one line and women in another. Two or three hundred people took part. The step was slow and dignified: one step backward and two steps forward, progressing across the Great Square to where the Emperor sat.

Another *Inca* dance was performed by a man with a noble lady on each hand. The movement consisted in twisting and untwisting the group without letting go, and struck Father Cobo as being the most interesting and pleasing of all the Indian dances. All dance steps were very simple (Cobo, 1890-95, bk. 14, ch. 17).

The word for dance mask was *SAYNATA*, and Gonzalez' definition indicates that some masked dancers were buffoons (González, 1608, under *caynata and *saynata). It would be interesting to know whether the masked dancers ever represented supernatural beings or the dead, but the chroniclers do not state the purpose of the masks.

Narcotics.-Narcotics were unimportant in *Inca* culture. No narcotic was taken expressly to obtain visions, although suitable drugs were available in the eastern forests (notably ayahuasca). The strongest drug-containing substance used by the Inca was coca, next tobacco, and finally, perhaps *WIL'KA*, the narcotic properties of which have never been analyzed.

Coca (*Erythroxylon coca*; *Quechua*, *KOKA*) is a low bush which grows in the wettest belt on the eastern slopes of the Andes. The leaf had been used through the Andes for centuries before the *Inca* conquest, as attested by its presence in graves on the Coast, but the *Inca* restricted its use to the nobility and the demands of religion. In the early Colonial Period, the Spaniards enlarged the coca plantations and

the use of coca spread to all classes of *Inca* society. Coca leaves were picked four times every 14 months., and then carefully dried and packed in bundles weighing about 18 pounds net for shipment by llama train to the Highlands.

The *Inca* used coca leaves for divining and sacrifice, and chewed them with lime to absorb a small amount of cocaine. The lime was made by burning quinoa stalks, bones, limestone, or sea shells. The Indians made a quid of leaves and lime about the size of a walnut and held it in their cheek, swallowing only the juice. The amount of cocaine liberated from a quid is minute and its only effect is to dull the senses slightly, making the chewer less hungry, thirsty, and tired. Coca chewing was believed to be very good for the teeth (Cobo, 1890-95, bk. 5, ch. 29).²⁶

The *Inca* did not cultivate tobacco (SAYRI), but used several wild varieties native to the Andes. They powdered the root as a medicine, and the plant was believed to be a charm against poisonous animals and snakes. Tobacco was also taken as snuff (Garcilaso, 1723, pt. 1, bk. 2, ch. 25). Smoking is not mentioned as an ancient practice by any chronicler, but pottery objects resembling elbow pipes have turned up occasionally in archeological collections (Bandelier, 1910, pl. 77).

WIL'KA is a tree (*Piptadenia colubrina*) which produces pods containing bitter yellow seeds. The seeds were taken in chicha as a purge, and boiled to make a medicinal tea. Polo says that the sorcerers who communicated with the gods by visions got drunk on chicha with WIL'KA seeds in it, but it is not clear whether the seeds helped produce visions, or were taken only for their purgative qualities. Gonzalez gives "xeringar villcani" (1608, p. 330). This translation suggests that WIL'KA was used also as an enema with a syringe of some sort, and the deduction is confirmed by Poma (1936, p. 71).

Intoxicants.—The Inca made a number of fermented drinks or chicha (AQHA) from different cultivated plants-maize, quinoa, ocas, and molle berries-but had no distilled liquor. Chicha was made by women, who chewed the pulp of the fruit used, and spat the mash out into jars of warm water. The liquid was then allowed to ferment to the desired strength. The strongest chicha was made from molle berries.

Chicha was the everyday Indian beverage, and was also an important element in all ceremonies, being served in enormous quantities during ritual dances, when all the participants were supposed to drink until they dropped. To the *Inca*, intoxication was a religious act, not an individual vice. Indians did not drink to excess except at the prescribed point in their regular ceremonies. Many of the Spanish missionary tirades against Indian drunkenness stem from a realization that group intoxication was a pagan ritual and are part of the campaign against idolatry rather than against the abuse of alcohol as such. In-

* Morúa claims that an especially fine variety of coca was grown on the coast, in the neighborhood of Ica. The claim may be absurd, but deserves careful investigation. (Morúa, 1922-25, bk. 3, chs. 33, 48; bk. 6, eh. 6.)

toxication is still a ritual act to the Highland Indians. (Cobo, 1890-95, bk. 6, ch. 78; bk. 11, ch. 6; Garcilaso, 1723, pt. 1, bk. 8, chs. 9-12; Polo, 1940, p. 193.)

RELIGION

The ritual and ceremonial life of the Andean Indians was extraordinarily rich, and the Indians showed such ingenuity in carrying out their old rites under the cover of Christian forms that some aspects of the ancient religion have survived almost unchanged to the present day. The Spanish missionaries of the 16th and 17th centuries, much concerned about their failure to stamp out the old paganism, studied its survival in great detail, especially in the Cueco region (Polo, 1916 a; Molina of Cuzco, 1913; Betanzos, 1880; Cieza, 1880, bk. 2, chs. 2730; Cobo, 1890-95, bk. 13) and in the hinterland of Lima. (Arriaga, 1920; Avila, 1939; Calancha, 1638, bk. 2, chs. 10-12, 19; bk. 3, chs. 1-19; RGI, 1881-97, 1: 70-72; Hernández, 1923; Medina, 1904; Romero, ed., 1919, 1923.) Although the religious practices of these two regions are similar, they differ in details and the names of cult objects. It is possible that many of the similarities are the result of Inca influence on the provinces under the Empire. The following describes only the Inca proper of the Cuzco region unless otherwise noted.

Inca religion emphasized ritual and organization rather than mysticism and spirituality, and its chief interests were the food supply and curing. Divination was such an important prerequisite to action that the influence of the priesthood on public affairs must have been very great. Sin and purification were important concepts, and gave *Inca* religion something of an ethical character. Sacrifice accompanied nearly every religious rite.

Supernatural beings.—The Inca worshiped a large number of supernatural beings of varying power and importance.

The Creator.—The greatest god was the Creator, a being without beginning or end, who created all the other supernatural beings, animals, and men, and ruled them very much as the Inca Emperor ruled his Empire. He was represented as a man, and the Spaniards saw several statues of him in various temples. The most important of those in Cuzco was a standing figure of solid gold, about the size of a 10-year-old boy, with his right arm raised as if in command and the right hand clenched, except for the thumb and forefinger (Molina of Cuzco, 1913, pp. 126-7). The Creator had no name but a long series of titles, the most usual being "Ancient foundation, lord, instructor of the world" (*ILYA-TIQSI WIRAQOCA PACAYACACIQ*). The chroniclers generally call him *Viracocha*, a Hispanicization of the middle title.²⁷

²⁷ Garcilaso is the only chronicler who calls the creator *Pachacamac* (i.e., *PACA-KAMAQ*, "maker of the world"), but Garcilaso's prestige in modern times has been so great that most modern accounts of *Inca* religion follow his example. (Cf. Means, 1931; Baudin, 1928, p. 61.) All other early writers use *Pachacamac* to refer specifically to an idol at the Coastal town of *Pachacamac*. The cult of this idol was so important that the Inca found it expedient to identify it with their own creator to the extent of calling it "maker of the world." The identification was never complete, however, as *Pachacamac* is never called *Viracocha* (Cobo, 1890-95, bk. 13, ch. 17).

Viracooha, the Creator, was the theoretical source of all divine power, but the Indians believed that He had turned over the administration of his creation to a multitude of assistant supernatural beings, whose influence on human affairs was consequently more immediate. He lived in the heavens, and appeared to men at crises. He was also a culture hero, **as** it was believed that after the creation He had journeyed through the country teaching people how to live and performing miracles. He finally reached Manta (in Ecuador), and set off across the Pacific Ocean walking on the water.²⁸

The Sun.—The most important servants of the Creator were the sky gods, headed by the Sun, who was believed to be the divine ancestor of the **Inca** dynasty. The Sun protected and matured crops, and his cult was naturally preeminent among an agricultural people. He was thought of as male, but seems usually to have been represented by a golden disk with rays and a human face. There were several images of the Sun in Cuzco, and the official Inca worship seems to have been carried out in his name. Indians and Spaniards called the great Government-built sanctuaries "sun temples," and the fields which supported the religious officials, as well as the Chosen Women who served in the temples, are repeatedly mentioned as "of the sun." On detailed examination, however, it becomes apparent that the Sun's position was not as imposing as appears from these attributions. The "Temple of the Sun" in Cuzco housed images of all the sky gods of the **Inca** and a host of lesser supernaturals besides; its most important image was not of the Sun but of Viracocha. The fields attributed to the Sun supported the whole Inca priesthood, not just the ministers of the Sun, and the Chosen Women served all the deities in the temples, not the Sun alone. Although a very important power in Inca religion, the Sun was merely one of many great powers recognized in official worship, and his importance was more theoretical than real.²⁹

The Thunder, or Weather God.—After the Sun, ranked Thunder, God of Weather, to whom prayers for rain were addressed. He was pictured as a man in the sky, and identified with a constellation. He held a war club in one hand and a sling in the other, and wore shining

²⁸ The title of **WIRAQOCA** was applied to the **Spaniards** and **is still used** to address White men. There¹⁸ little doubt that **in** the 16th century **it implied divinity**, and that the Spaniards **were** regarded **with a certain amount of awe**. Polo says that **after** the capture of **Huascar**, the **members of his party** made frantic sacrifices to the **Creator** for deliverance from **Atahualpa's vengeance**. When the news arrived almost **immediately** that strange White men from over the sea had captured **Atahualpa**, **Huascar's party** concluded that the White men had come **in answer** to their prayers, and so called them **WIRAQOCA**. Polo adds that **Atahualpa's** followers, until long after the fight at **Cajamarca**, called the **Spaniards** not **WIRAQOCA** but **SOÑKHASAPÀ**, "bearded men" (Polo, 1949, p. 154). On the attributes of **Viracocha**, see **Cobo, 1890-95**, bk. 13, chs. 2, 4; **Molina** of Cuzco, 1913, pp. 122-127; **Sarmiento, 1906**, chs. 6, 7; **Cieza, 1334**, bk. 2, ch. 5; **Betanzos, 1880**, chs. 1-3.

²⁹ The Sun was called **INTI**, "sungod," and **F'ONCAW**, "daylight" (modern **F'ONCAT**). Polo and his disciples, **Acosta** and **Cobo**, say that there were **three images** of the Sun called **APO. INTI**, "lord sun," **CORI-INTI**, "son sun," and **INTI-WAWQI**, "sun brother," for which different explanations were given. (See **Cobo, 1890-95**, bk. 13, ch. 5.) While the existence of these three statues is perfectly possible, they look suspiciously like a **conscious imitation** of the Christian Trinity made up for the benefit of the Spanish missionaries. For the Sun in general, see **Cobo, 1890-95**, bk. 13, ch. 5; **Pachacuti**, 1379; **Molina** of Cuzco, 1913, p. 127; **Cieza, 1880**, bk. 2, oh. 27; **Poma**, 1936, pp. 79, 258, 264, etc.

garments. The thunder was the crack of his sling, the lightning the flash of his garments as he turned, and the lightning bolt was his slingstone. The Milky Way was a heavenly river from which he drew the water for rain. According to Blas Valera, the rain was kept in a jug belonging to his sister, and fell when he broke the jug with a well-aimed slingstone (Garcilaso, 1723, pt. 1, bk. 2, ch. 27). This Weather God was called *ILYAP'A* (a word which includes the ideas of thunder, lightning, and thunderbolt) or *INTI-ILYAP'A*, or *COQI-ILYA*. The Indians called the Spanish firearms *ILYAP'A* (Hispanicized, illapa), and identified their Weather God with Santiago (Saint James, patron saint of Spain).³⁰

The Moon.—The third great sky deity was the Moon (*MAMA-KILYA*, "mother moon"), a woman and wife of the Sun, important chiefly in calculating time and regulating the *Inca* festival calendar. The Indians believed that a moon eclipse was caused by a serpent or mountain lion trying to devour her, and made all the noise possible to scare off the attacker, threatening it with their weapons. This custom is still practiced in Cuzco.

The Stars.—A number of stars or constellations were believed to be the special patrons of certain human activities. The Pleiades (*QOLQA*, "granery") watched over the preservation of seed, and marked certain agricultural seasons. A group of stars in Lira called *ORQO-CILYAY*, representing a p&i-colored llama, watched over the flocks. Other stars of uncertain identification watched over wild animals; the snakes, for instance, had a patron star called *MAC'AQWAY*, "snake." Venus as the Morning Star was called *CHASKA qovlyor*, "shaggy star," and figured prominently in mythology. Inca star lore was very elaborate, but only a few fragments of it have been preserved by the chroniclers. It is quite possible that much more has been preserved to the present day by oral tradition. (Cobo, 1890-95, bk. 13, ch. 6; Calancha, 1638, bk. 2, ch. 11; Valera, 1879, pp. 138-140; Pachacuti, 1879, pp. 256-7; Gonzalez, 1608.)

The Earth and Sea.—Of equal importance with the sky gods were the female supernaturals, Earth (*PACA-MAMA*, "earth mother") and Sea (*MAMA-QOCA*, "mother sea"). Earth was especially important to the Highland Indians concerned chiefly with agriculture, whereas Sea was especially worshiped by the fishermen of the Coast (Cobo, 1890-95, bk. 13, ch. 7).

Huacas.—All other supernatural powers worshiped by the *Inca* were either places or objects, of local importance only, and are generally referred to indiscriminately as huacas (uacas, guacas, from

³⁰ Although there is no reason to assume that the religion of the people of Tiahuanaco was the same as that of the Incas. If such an assumption is to be made, a very good case could be made out for identifying the central figure on the Monolithic Gateway ("Portada del Sol") at Tiahuanaco with *ILYAP'A* or his *Aymara* equivalent, *THONAPA*. On the Thunder God in general, see Cobo, 1890-95, bk. 13, ch. 7; Molina of Cuzco, 1913, pp. 132-3; Pachacuti, 1879, pp. 237-240.

WAK'A, "shrine"; they were also called WIL'KA). It is not entirely clear whether the Indians believed that the supernatural beings had a separate existence from the object in which they resided (animism), or whether the object was the supernatural being (animatism), although the latter appears to have been the case. The problem is complicated by the Spanish practice of speaking of the shrines as inhabited by devils, probably from their own rationalization of oracular responses.

The shrines called huacas were so numerous that very few inhabitants of any town could have known all the recognized ones in the neighborhood. Cobo lists over 350 huacas in a radius of perhaps 20 miles around Cuzco, and Polo de Ondegardo indicates that they were proportionately numerous in most other Highland towns. Those listed for Cuzco include templos and cult objects, tombs of ancestors, places associated with mythological characters or dead Inca Emperors, battlefields, calendar markers, hills, caves, springs, palaces, prisons, houses, meeting places, bridges, forts, quarries, stones, and roots. The most numerous were springs and stones, which together formed nearly half of the total. Buildings and hills were also numerous.

A few of the most important huacas were worshiped as the residences of important natural powers. A flat place in one of the squares at Cuzco was supposed to be the abode of the Earthquake, and a doorway in one of the palaces, the home of the Wind. Some objects associated with the cult were worshiped; for instance, the brazier from which fire for sacrifice was taken, a field dedicated to the cult of Huanacauri, and so forth. Places associated with an Emperor, especially with Pachacuti or Topa Inca, or with Topa Inca's queen, Mama Occho, were huacas. The stones which had turned to men to help Pachacuti defeat the *Chanca* were very numerous. The city of Cuzco itself was sacred, as is clear from the fact that the places where a traveler caught his first and last glimpses of it were important shrines.

The most important huaca outside of the temples of the sky gods was Huanacauri (WANAKAWRI), a spindle-shaped unwrought stone on Huanacauri hill near Cuzco, which was believed to represent one of Manco Capac's brothers (see Cobo, 1890-95, bk. 13, ch. 25; Rowe, 1944) and was a special protector of the *Inca* royal family and a prominent feature in the maturity rites of the *Inca* youth. Certain other hills near Cuzco were also of exceptional importance (Anahuarque, Seneca, etc.). In general, the supernatural power of a hill or mountain varied in direct proportion to its height, and all snow-capped peaks were very important deities. The powerful peaks of Ausangate (visible from Cuzco), Vilcanota, Coropuna, and Pariacaca were widely worshiped. This mountain worship is a very important element of modern *Quechua* religion. In modern times, mountain peaks are called APO ("lord"), but this title does not appear to have been used in ancient religion (Cieza, 1880, bk. 2, ch. 27; Poma, 1936, p. 266).

Two kinds of huacas were associated with cultivated fields: the boundary markers (*SAYWA*) and the field guardians (*WAÑKA*). Field guardians were long stones set upright in the center of the field, and their importance is indicated by the fact that the principal *WANKA* of Cuzco was believed to have been a brother of Manca Capac (Sarmiento, 1906, ch. 13).

Another special type of huaca was the *APACITA*, a pile of stones marking the top of a pass or other critical point on a road, where travelers stopped to make small offerings and pray for strength before continuing. The offering might consist of worn-out sandals, a coca quid, straw, another stone added to the pile, or anything else of little value. This custom is still general throughout the Andes on trails where the Indians travel on foot, and the ancient huacas are being constantly augmented (Cobo, 1890-95, bk. 13, ch. 11).

Besides the localized huacas, the Inca used a variety of portable images and amulets for different purposes. Some were in human form, some represented animals, ears of maize, or potatoes, and others were natural stones of unusual shape or color, bezoar stones, or crystals. These were all called indiscriminately *WAK'A*, but were distinguished by function, as *WASI-KAMAYOQ*, "house guardian," *SARA-MAMA*, "maize mother," etc. Bezoar stones, favorite amulets, were called *ILYA* or *AYAYLYA*.³¹

Bodies of the dead and all unusual things were also called huaca, regarded with awe, and worshiped. Gonzalez (1608) gives the following examples: *AYRIWA-SARA* ("April maize"), two grains of maize growing together, or a stalk with a black and a white ear on it; twins (*WAK'A-WACASQA* or *ISKAY-WACASQA*); persons with six fingers like a puma (*POMA-BONA*); persons born feet first (**chaepa*). Similar terms are given by Arriaga for central Perú.

Each *Inca* Emperor had a personal guardian, usually a portable huaca, which he called *WAWQI*, "brother," and which protected and advised him. It is not certain whether other men also claimed to have personal guardians, but it seems likely. These guardians were rarely animals. Pachacuti took an image of the Thunder God for his guardian (Sarmiento, 1906, ch. 14; Cobo, 1890-95, bk. 12, ch. 13; bk. 13, ch. 9).

Evil spirits.-Evil spirits (*SOPAY*) were probably numerous, but the chroniclers avoid the subject so consistently that we know little about them. González (1608) says that the Indians greatly feared "an apparition or fairy which used to appear with two long teats so that they could grasp them" (*HAP'TINYONYO*), and *OMA-PORIQ*, a human head which went abroad at night saying "wis, wis." The wandering heads were believed to be witches who assumed that shape in the

³¹ Cobo, 1890-95, bk. 13, ch. 11; Arriaga, 1920; González, 1608. Amulets were called **conopa* on the Coast and **chancea* in some parts of the Highlands, according to Arriaga. In modern literature, the term "*conopa*" is frequently used to distinguish portable from localized *huacas*.

course of their evil activities. (See González, 1608, under *hapuñufú and *vissocco.) Many ancient beliefs about evil spirits and apparitions have survived in *Quechua* and Mestizo folklore, and could be collected from oral tradition.

The Inca's supernatural beings were almost entirely potential protectors and friends of man, who only punished with bad luck for remissness about ceremonial obligations or for sin. They were worshiped in the hope of gaining practical benefits. The evil spirits were of much less importance, and seem not to have been worshiped, except perhaps by sorcerers, as they were believed incapable of anything but evil.

Life after death.—Virtuous persons went to live with the Sun in heaven (**HANAQ-PACA**, "upper world"), where there was plenty to eat and drink and life went on much as on earth. Sinners went to the interior of the earth (**OKHO-PACA**), or hell, where they suffered from cold and hunger, and had no food but stones. The nobility, however, was believed to go to heaven regardless of moral character. Under certain circumstances, the souls of the dead might linger on earth, and, in any case, they protected their descendants. They required offerings of food and liked to have their bodies brought out to take part in festivals. The Inca did not believe in the resurrection of the body. A belief in reincarnation is mentioned for the Cavina, near Cuzco, but not for the *Inca* proper, nor for other peoples of Perú (Cobo, 1890-95, bk. 13, ch. 3; Cieza, 1554; bk. 1, ch. 97).

Shrines and temples.—*Inca* temples were built to house the cult objects, priests, and attendants, with space for the storage of regalia. They were not meant to shelter congregations. The holiest *Inca* temple, the "Temple of the Sun" in Cuzco, was built on the same plan as an ordinary house compound, with six or more one-room buildings grouped around an open courtyard and surrounded by a blank enclosure wall. The construction was superb, and the buildings were lavishly decorated with gold plates for impressive effect. The buildings were used chiefly for storage and as the living quarters of priests and consecrated women. Most ceremonies were conducted in the open air. Most huacas were outdoors, although there might be buildings nearby for the attendants, as at Huanacauri. Most of the great *Inca* ceremonies took place in the Great Square of Cuzco (**HAW-KAY-PATA**, "leisure square"), or in one of the smaller squares near the Temple of the Sun (**INTI-PAMPA**, **RIMAQ PAMPA**). The cult objects were brought out into the square, and divination, sacrifice, prayer, dancing, and drinking were carried out in public. Ordinarily, only the priests and Inca officials were permitted to enter the temples (Cobo 1890-95, bk. 13, ch. 12, etc.; Rowe, 1944).

Priesthood.—All important shrines had at least one resident attendant; the larger ones had a considerable staff of diviners, sacri-

ficers, caretakers, and so forth. Shrines of the official cult ("Sun Temples") also had a group of consecrated women (*MAMA-KONA*, "mothers"), chosen from among the Chosen Women (p. 269), who were sworn to perpetual chastity, and who spent their time weaving the textiles used in ceremonies as garments by the priests, victims, and images, or as *sacrifices*, and preparing *chicha* for festivals. These women formed a sort of order, presided over by a high priestess (**Coya pacsa*), who was supposed to be the Sun's wife, and was always of the noblest birth (Molina of Cuzco, 1913, p. 141; Cobo, 1890-95, bk. 12, ch. 37). The priests in charge of official shrines were organized into a graded hierarchy, corresponding roughly to the pyramid of Government officials. The lowest rank included the assistants at the important shrines, then priests in charge, with responsibility varying according to the size of the shrine, and at the top a high priest who was one of the most important officials of the Government and was usually a near relative of the emperor.³²

Shrines of only local importance were supported by the families or ayllu interested and attended by an old man incapable of doing hard work in the fields, who probably was *not* part of the official hierarchy. Besides tending the shrine, making sacrifices, and praying when paid to do so, the priest or attendant was a diviner, interpreter of oracles, and confessor. In ordinary *Quechua* usage, his title varied according to his function; there was probably no general word summing up all his priestly functions. He might be called **huatusyapa* (*ACI*Q), diviner; *ICHORI*, confessor; *OMO*, sorceror; **yacarca*, consultant of the dead; *KAL'PA-RIKOQ*, diviner from the lungs of sacrificed animals. There were undoubtedly specialists, but the variety of titles does not mean that methods of dealing with the supernatural world were rigidly departmentalized among the *Inca*. (See The Aymara, p. 564.)

As the diagnosis and treatment of disease was essentially a priestly function, and disease was explained by the Indians in religious terms, the priests and attendants at the huacas were usually curers besides, and might answer to the additional titles of *HAMP'I-KAMAYOQ*, "medicine expert," *KAMASQA*, "cured," etc., (See Disease and Curing, p. 312) Practitioners of white or black magic might or might not also be attendants on the huacas. Blas Valera mentions a special class of

³² The chroniclers give a number of widely differing accounts of the official priesthood, but the differences seem to be due mostly to the varying influence of Catholic ideas on the description, and to lack of agreement on the *Quechua* names for the official priests ("sun priest"?"). Cobo calls the priests *TARPONTAY*, and says that they all belonged to the *ayllu* of that name. Guaman Poma and Pachacuti call them *WISA* (in compound forms *WALYA-WISA*, "huallo-priest"; *KONTI-WISA*, "contí-priest," etc.). Blas Valera says that important priests were called *WIL'KA*, and assistants *YANA-WIL'KA* "servant priest"). Blas Valera is generally unreliable about religion, and the dictionaries give *WIL'KA* as a synonym for *WAK'A*, "shrine."

The high priest's title is variously given as *WILA-OMA*, *WILYA-OMA*, ("announcement head," cf. Catholic nuncio) or *WILYAQ-OMO* ("announcing sorceror"). The second form is probably the correct one. (Cobo, 1890-95, bk. 13, ch. 33; Cleza, 1654, bk. 1, oh. 92; bk. 2, ch. 27; Las Casas, 1892, ch. 10; Valera, 1879, pp. 167-163; Garcilaso, 1723, pt. 1, bk. 3, ch. 22; Molina of Santiago, 1916.)

ascetic hermits, but his whole description of the personnel of Inca religion too closely parallels Catholic practice to inspire much confidence. (Cobo, 1890-95, bk. 13, ch. 35; Molina of Cuzco, 1913, pp. 129-130; Polo, 1916 a, ch. 13; Valcra, 1879, pp. 156-163; González, 1608; Arriaga, 1920.)

Ceremonial practices.--Inca religion displays characteristic Andean formality and richly developed ceremonialism. (See modern *Quechua* and *Aymara*.) Many of the favorite *Inca* ceremonial practices will be discussed in connection with confession, sacrifice, and public ceremonials, but a few deserve independent mention.

The *Inca* recognized only two ceremonial directions, cast and west, which were important because of the rising and setting of the sun. *Quechua* lacks words for north and south, and customarily gave directions in relation to known geographical points; for example, "in the direction of Quito." The neighborhood of Cuzco was divided into ceremonial quarters corresponding to the four great divisions (*soso*) of the whole Empire, and the two north quarters corresponded to "Upper Cuzco," the two south quarters to "Lower Cuzco." These quarters were areas, not directions, however. The huacas in each quarter were under the care of the ayllus or *Inca* lineages living in the quarter.

The classification of the huacas within these ceremonial quarters is interesting. The huacas were thought of as lying along a limited number of lines radiating from the Temple of the Sun. Each quarter contained nine lines, except *konti-soso*, which had 15. Each line included 4 to 15 irregularly distributed and ceremonially named huacas. The lines were grouped by threes in the quarters with nine lines, a series of three names being repeated: *cayao, *payan, and **QOLYANA** ("excellent"). In *konti-soso*, the line names were somewhat irregular. This arrangement of the huacas by lines and quarters was beautifully adapted to the *Inca* system of recording on knotted strings; each huaca was a knot, each line a string, and the strings were probably of three kinds corresponding to the three repeating names, and differing by size or color. The huaca classification was diagramed by Polo de Ondogardo before 1561 (the famous "Carta de Zeques" or "Diagram of *siq'i* (lines)"). Molina of Cuzco rewrote the diagram in the form of a list, which has been preserved by Cobo (1890-95, bk. 13, chs. 13-16). Polo's diagram is lost, but can be easily reconstructed from the list.

The huaca classification provides almost the only information about *Inca* ceremonial numbers, and suggests the importance of three. Because of the general silence of the chroniclers on the subject it seems likely, however, that ceremonial numbers were unimportant in *Inca* religion.

The **Inca** had a standard gesture of reverence in addressing any divine being or the Emperor. The worshiper stood facing the object of his reverence, and bowed low from the hips with his arms stretched out in front of him, parallel to each other and a little above the level of his head, the hands open and the palms out. Then he made a kissing noise with his lips (labial click), brought his hands to his lips and kissed the fingertips. As a sign of extra reverence while worshiping the Creator, the Sun, or the Thunder, the worshiper held a switch in his hands. The gesture of reverence was called *mocha*, from which the Spaniards made a verb "mocha?" which the chroniclers used repeatedly to mean "worship Indian fashion."

In passing a spring or crossing a river, travelers stopped to take a drink of the water and prayed for permission to pass and a safe journey.

When drinking chicha, the Indians dipped their fingers in the liquid and spattered it toward the Sun, the Earth, or their fire, with a prayer for life, peace, and contentment. There was no set form of words for an oath, but a man might grasp a handful of earth and look toward the Sun, as if taking *PACAMAMA* and *INTI* as his witnesses (Cobo, 1890-95, bk. 13, ch. 23).

Another important ceremonial act was fasting, which assumed a number of forms. The lightest fast consisted in abstaining from salt and chili pepper; a more serious form prohibited taking meat and chicha, and indulging in sex relations. In another fast, only cooked maize, herbs, and cloudy chicha were consumed (Cobo, 1890-95, bk. 13, ch. 24; Molina of Cuzco, 1913, pp. 135-36, 169).

Prayers.—The **Inca** prayed both silently and aloud, and usually made up their own prayers to fit the occasion. They also asked the priests or their friends to pray for them when the object of the prayer was sufficiently important. It was customary to preface any prayer to a huaca with one to Viracocha. Cobo (1890-95, bk. 13, ch. 21) gives a sample prayer, such as a farmer might address to the spring which supplied his land with water:

To thee, Lord, who nourishest all things and among them wast pleased to nourish me and the water of this spring for my support, I pray that thou wilt not permit it to dry up, but rather make it flow forth as it has done in other years, so that we may harvest the crop we have sown.

O fountain of water which for so many years has watered my field, through which blessing I gather my food, do thou the same this year and even give more water, that the harvest may be more abundant.

Such a prayer was followed by an offering.

The prayers for the great public ceremonials were traditional, and did not vary. Many have been preserved by Molina in the original *Quechua* (Molina of Cuzco, 1913), and a few English translations are given by Means (1931, pp. 437-39). The authorship of such prayers was traditionally assigned to Inca Pachacuti, as the Psalms are assigned

natives of Huaro, near Cuzco, were greatly feared and respected. They placed two metal or pottery braziers end to end, and built fires in them with slivers of wood soaked in fat. The fire was controlled by blowing through a metal tube with a copper mouthpiece and the lower end of silver. Around the braziers, dishes of food and drink were set out. Then the officiating diviner took a quid of coca in his mouth, and began to invoke the spirits by chanting and weeping, inviting them to come and partake of this banquet offered to them in the presence of the holy Fire, the Sun, and the Earth. The spirits summoned might be those of living or dead persons. As the flames got higher and began to come out of the openings in the braziers, the voices of the spirits were heard coming from the fire, probably by ventriloquism. First, the spirits accepted the banquet offered to them, and then they answered questions put to them through the diviner. At times, a diviner summoned a different spirit in each brazier and conversed with both of them. The spirit's statements were ratified by streams of flame issuing from designated openings in the brazier, manipulated, of course, by the assistants with the blowing tubes. This method of divination was employed only for very serious matters, such as to identify treasonable plotters, and it was accompanied by sacrifices of children, spotless white llamas, gold, silver, and other valuable objects. The Emperor himself was sometimes present, having prepared himself by fasting for 2 or 3 days.

Government officials customarily divined the outcome of important decisions, like a military campaign or the choice of an heir, by a sacrifice called KAL'PA ("strength"). A priest sacrificed a llama, took out the lungs, and blew into a vein; the markings on the lung's surface indicated whether the augury were good or bad. In less important cases a similar ceremony was carried out with a guinea pig or even a bird. (Cobo, 1890-95, bk. 13, ch. 34; Molina of Cuzco, 1913, p. 129; Sarmiento, 1906, chs. 27, 62.)

Simpler methods of divination were numerous and varied. One common type involved counting a pile of small objects to see if they came out odd or even; maize kernels, beans, pellets of llama dung, and pebbles were all used. The pebbles used were usually supposed to have a magical origin; they were received in a dream from the Thunder God or some huaca, or a woman had borne them after being made pregnant by the Thunder on a stormy day in the fields. Some diviners chewed coca, and spat the juice onto the palm of their hand, with the two longest fingers extended: If it ran down both fingers equally, the augury was good; if unequally, it was bad. Another method was to burn llama fat and coca leaves, and watch the way in which they burned. (Cobo, 1890-95, bk. 13, ch. 34; Molina of Cuzco, 1913, p. 129; Gonzalez, 1608, under *achik and *huatuc.)

A good deal of divining was done by observing the movements of animals, particularly snakes and spiders. The spider diviners were especially respected in the Chincha Suyo quarter, which included Central and Northern Perú. When the diviner was consulted, he uncovered a large spider which had been kept shut up in a covered jar; if any of its legs were bent, it was a bad augury (Cobo, 1890-95, bk. 13, ch. 34).

Dreams were regarded as supernatural experiences and omens of great importance: fire meant sickness; a river, a bridge, or the sun or moon meant the death of a parent; killing a llama foretold the death of a father or brother, and so on (Poma, 1936, pp. 282-83; Cobo, 1890-95, bk. 13, ch. 38). Occasionally, the supernatural beings appeared directly to important people in dreams. Both Viracocha and the Sun appeared at various times to the Emperors to promise them help and success. (Molina of Cuzco, 1913, p. 127; Betanzos, 1880, ch. 8; Sarmiento, 1906, ch. 24; Cobo, 1890-95, bk. 12, ch. 10.)

Evil omens seem to have outnumbered good ones in *Inca* belief. Eclipses and falling stars were very bad, and the latter foretold the death of an Emperor. The very word for comet (*TAPIYA QOYLYOR*) meant "star of ill omen." A comet appeared during the imprisonment of Atahualpa at Cajamarca, and he concluded immediately that death was near (Cieza, 1554, bk. 1, ch. 65; Xérez, 1917; pp. 111-12). The rainbow usually was regarded as an evil omen, but one which appeared over Huanacauri Hill during the migration of Manco Capac in the origin legend of the *Inca* was interpreted as a sign of divine favor (Pachacuti, 1879, p. 241). The hooting of an owl or the howling of a dog foretold the death of a relative, while the songs of other birds meant a quarrel. The Indians made offerings of coca to the birds, and asked them to direct the bad luck to their enemies. To see snakes, lizards, spiders, toads, big worms, moths, or foxes was a bad omen, especially if they were in the house. When an Indian found a snake, he killed it, urinated on it, and stepped on it with his left foot to ward off the omen. Twitching of the eyelid, lip, or other part of the body, stumbling, or humming in the ears indicated that the person was about to hear something said: good, if it were the right side of the body, bad if it were the left. When the fire jumped or gave off sparks, they believed it was angry, and poured a little maize or chicha on it to calm it (Cobo, 1890-95, bk. 13, ch. 38; Poma, 1936, p. 212).

Purification and confession.—The *Inca* believed that sin angered the gods, and made the sinner unfit to take part in any religious ceremony until he had confessed and purified himself. Worse, the sinner was in terrible personal danger, for the gods punished sin by bad luck in this life and consignment to the underworld in the life to come. Cripples and persons whose children died young were looked upon as very great sinners to have deserved such bad luck from heaven.

The Emperor's illness was attributed to the sinfulness of his subjects, who confessed and purified themselves to speed his cure.

The most serious sins were murder, especially by poisoning or witchcraft, stealing, carelessness in worship, neglect of festivals, and cursing or disobeying the Emperor. Fornication and seduction were sins because the Emperor had forbidden them. Only overt acts were confessed; thoughts were not considered sinful.

The confessors were usually priests of both sexes in charge of huacas. Serious sins were taken to more important priests. *Aymara* confessors were considered to be the best, and, at *Cuzco*, the *Aymara* name (*ICHORI*, "straw man") was used for the office. Members of the Inca royal family never consulted professional confessors, but confessed directly to the Sun in secret, asking the Sun to be their intercessor with Viracocha. After such a confession, the noble bathed in a river, asking the river to carry away his sins. With a few exceptions, professional confessors were bound to secrecy.

In confessing one was supposed to tell the whole truth, for hiding a sin was a serious sin in itself. The confessor counted a pile of small stones or examined the entrails of an animal to see if the truth had been told. If the augury were unfavorable, or if there were any other reason to suspect a lie, the confessor struck the man in the back with a stone and made him confess again.

After a satisfactory confession, the confessor gave a penance, usually several days' fasting or a night spent in prayer at the 'huaca'. The penance was likely to be heavier if the sinner were poor and could not pay the confessor. The penitent finally washed in running water to purify himself. Some confessors made the penitent hold a handful of straw during the confession, spit in it, and throw the straw into a river afterward as a symbol of purification (hence the name *ICHORI*). (Cobo, 1890-95, bk. 13, chs. 24, 38; Molina of Cuzco, 1913, pp. 130-31; Polo, 1916 a, ch. 5.)

Sacrifices.—A great many sacrifices were made as part of certain festivals celebrated at fixed seasons. The sacrificial objects were provided from the fields and flocks dedicated to religion, part of which were assigned to each huaca. State sacrifices to the Creator were made in the name of the various huacas rather than in the Emperor's name. The priests of a huaca selected the proper offerings from its income and sacrificed them in its name. Extraordinary sacrifices were contributed by the people interested. The priests first determined by divination the most acceptable offering, and then collected the offerings. An individual's sacrifice was divided between the huaca and its priests, providing part of the latter's upkeep.

The most valuable sacrifice was of human being+ who were offered only to the most important divinities and huacas on the most solemn occasions, such as pestilence, famine, and war reverses, at the corona-

tion of a new Emperor (when 200 children were sacrificed), when the Emperor went to war in person, or when he was sick.³³ There were three types of victims. When a new province was conquered, a few of the handsomest inhabitants were brought to Cuzco and sacrificed to the Sun in thanks for victory. All other victims were boys and girls collected from the provinces as part of the regular taxation, or offered by their parents in time of terrible need. They had to be physically perfect, without marks or blemishes, the boys, about 10 years old, the girls 10 to 15. The girls were picked from the Chosen Ones being educated in the convents. The children were feasted before being sacrificed, so that they might not go hungry or unhappy to the Creator; older children were usually made drunk first.

The victims were made to walk around the image or cult object two or three times, and were then strangled with a cord, their throats cut, or their hearts cut out and offered to the deity still beating. With the victim's blood, the priest drew a line across the face of the image or royal mummy bundle from ear to ear, passing across the nose. Sometimes the blood was smeared all over the body of the image and sometimes it was poured on the ground.

When an Indian was very sick, and the diviner told him he would surely die, he sometimes sacrificed his own son to Viracocha or to the Sun, praying that the god be satisfied with the life offered and spare his own. (Cobo, 1890-95, bk. 13, ch. 21; Molina of Cuzco, 1913, pp. 177, 183; Morúa, 1922-25, bk. 3, ch. 44, bk. 4, ch. 2; Cieza, 1880, bk. 2, ch. 28; Polo, 1926 a, ch. 9.)

The usual sacrifices, however, were llamas and guinea pigs, which were offered in large numbers to all the huacas. Wild animals were not ordinarily sacrificed, except that birds were used in the war rite. (See Warfare, p. 280.) A ceremonially fixed number of llamas were chosen, each animal having a color, amount of wool, and markings appropriate to the god, the festival, and the season. Brown llamas were usually sacrificed to Viracocha, white llamas and alpacas to the Sun, and particolored llamas to the Thunder. The priest led the animal around the image, then took its head over his right arm, turned it toward the god, said the words of offering, and slit its throat.

Food and *chicha* were regularly offered to the huacas and to the bodies of dead Emperors. The food was burned, and the *chicha* poured onto the ground. When the food for the Sun was burned, an attendant announced the offering in a loud voice, and all the Indians within hearing sat without speaking or coughing until the offering was consumed. In public festivals, the Emperor poured an offering of *chicha*

³³ A survival of human sacrifice is reported from Huayllabamba in the Urubamba Valley by Juan José Escobar, of Cuzco. About 1903, during a severe drought, the villagers decided to make a sacrifice to the Urubamba River. The sorcerors picked a victim, and persuaded him to offer himself. A grant festival was held, and the victim got drunk and threw himself into the river from a bridge.

into a great gold cup in front of the image of the Sun, and the priests emptied it into a gold-sheathed stone basin which was kept in the Great Square for this purpose.

Coca, the most important vegetable offering, was burned. Sometimes the leaves were burned whole, and sometimes after chewing, Maize flour and other powdered grains, wool, and llama fat were very common offerings. Fine clothing, full size or miniature, formed part of nearly every sacrifice. It was burned alone, or wrapped around bundles of carved wood which represented human beings. Gold and silver were offered in small lumps or in the form of human or animal figurines, and were usually buried or hung on the walls of the shrine. (Cobo, 1890-95, bk. 13, ohs. 21-22; Molina of Cuzco, 1913; Morúa, 1922-25, bk. 13, ch. 13; Las Casas, 1892, ch. 12.)

Sea shells were the favorite offering to springs. Sometimes they were thrown in whole, other times cut into small pieces, carved into figures, or ground to powder. They were offered after planting, with a prayer, like the one translated above, that the spring continue to give its water. White maize flour and red ocher were offered to the sea. When no other offering was available, the worshiper pulled out a few eyebrow hairs or eyelashes and blew them toward the shrine.

In Cuzco, all fire for sacrifice had to be taken from a stone brazier near the Temple of the Sun, where a fire of carved and scented wood supplied by the *Chicha* tribe was kept always burning. (Morúa, 1922-25, bk. 14, ch. 2; Cobo, 1890-95, bk. 13, ch. 22.)

Certain sacrifices were performed daily in Cuzco. Every morning before sunrise a fire of carved wood was laid. Just as the sun appeared it was lighted, and some specially prepared food was thrown in, while the priest said, "Eat this, Lord Sun, in recognition of the fact that we are thy children." The priests ate the surplus. Later, a dark-red llama was sacrificed to the Sun, and some baskets of coca were burned with it.

Other sacrifices were made the first day of every month. The Emperor and his court assembled in the Great Square, and 100 picked llamas were brought in. The high priest then came forward, made a gesture of reverence to the images of Viracocha and the other gods, had the animals led four times around the images, and then dedicated them to Viracocha in the name of the Sun. The llamas were then distributed to 30 attendants who represented the days of the month. Each attendant brought out three or four for sacrifice on the day that his turn came, so that at the end of the month, the whole 100 had been sacrificed. A great fire of carved wood **was** built, and the sacrificed llamas were cut into quarters and burned as completely as possible. The unburned bones were ground to a powder, a little of which the priests blew from their hands while repeating a ritual phrase. Any powder that remained was stored in a building in the district called

POMA-COPA ("puma's tail")³⁴ White maize, ground chili pepper, and coca were thrown on the fire when the llamas were sacrificed (Cobo, 1890-95, bk. 13, chs. 21, 25).

Public ceremonials.—The public ceremonials of the *Inca* were numerous and elaborate. Most of them were regular festivals associated with stages in the agricultural year or with the calendar, but some were special ceremonies for times of drought or disaster, and the coronation or burial of an Emperor. In Cuzco, ceremonies were usually performed in the Great Square (**HAWKAY-PATA**, "leisure square") or in the smaller squares (**INTI-PAMPA** and **RIMAQ-PAMPA**). The Emperor and his court attended, and the images of the gods were brought from their temples and set up in the square. The mummy-bundles of dead Emperors, who were also regarded as divinities, were brought out with the images. Most ceremonies included elaborate sacrifices, dances, and recitations, during which all present consumed enormous quantities of chicha. Every detail of Inca ceremonies was regulated by ancient tradition, and no effort was spared to make them acceptable to the gods and impressive to the people.

The ceremonial calendar closely paralleled the agricultural one. (See Valcárcel, this volume, p. 471.) The year was divided into 12 lunar months, named for important festivals or for the agricultural season, and began probably in December. Because of the variable positions of such lunar months and the festivals they included in the solar year, it will be convenient to accept the month for month correlations reported by Polo, Acosta, and Cobo. (For the astronomical basis of the *Inca* calendar, see Lore and Learning, p. 327.) These chroniclers made **QHAPAQ RAYMI** correspond to December, and this correlation makes the sowing and harvest festivals come the nearest to the proper time of year. Detailed accounts of the *Inca* ceremonies and ceremonial calendar are available, especially in Cobo,³⁵ but a summary list with a more detailed account of one or two representative ceremonies is all that present space permits.

The *Inca* months were:

(1) **QHAPAQ RAYMI** ("magnificent festival"; spelled *Capac *raymi* by Cobo and Polo, and also called **raimi*, *rayme*, and **raymiquiz*). December. This, the first month of the rainy season, included the December solstice. In it, the *Inca* held their **WARACKOY** rites, in which boys of the royal lineages were given their breechclouts and earplugs and admitted to the status of manhood. (See Life Cycle,

³⁴ Near the modern railroad station.

³⁵ The best accounts of the *Inca* year are those given in Cobo, 1890-95, bk. 13, ohs. 25-30; Molina of Cuzco, 1913, pp. 131-175; Polo, 1916 a, ohs. 7, 8; Acosta, 1940, bk. 5, ch. 28; Anonymous *Discurso*, 1906, pp. 156-160; Poma, 1936, pp. 235-360. See also Means, 1931, pp. 367-384. On the time-reckoning aspects of the calendar, see below (p. 327). The names of the months are also given by Fernández, 1878, pt. 2, bk. 3, ch. 10; Betanzos, 1880, pp. 15, 18; and in part by González, 1608.

p. 282.) The rite was combined with a variety of semipolitical public ceremonies emphasizing the interest of the gods, especially the Sun, in the Inca state. All provincials resident at Cuzco had to leave the ceremonial center of the town during the 3 weeks of maturity rites, and when they returned they were fed lumps of maize flour mixed with the blood of sacrificed llamas (*YAWAR-SAÑKHO*, "blood porridge"), which they were told was a gift of the Sun and would remain in their bodies as a witness against them if they spoke evil of the Sun or of the Emperor. Several days of dancing and drinking followed. On the last day of the month, a special sacrifice was made at the hill of Puquin (*POKIÑ*), on the southwest side of the city. The products of the fields of the Emperor and of religion were brought in from the provinces at the end of the maturity rite (Cobo, 1890-95, bk. 13, ch. 25).

(2) **KAMAY** (spelled *camay by the chroniclers; also *pura opiaquiz, Fernández; coyaquiz, Betanzos; and camayquilla). January. On the day of the new moon, the newly matured boys staged a mock battle in the Great Square, and a llama was sacrificed to mark the end of a limited fast imposed on the city since the first day of the last month. The old llamas (*APO ROKO*) to be used in next year's maturity rite were consecrated, and a dance (*YAWAYRA*) was held for 2 days. Additional sacrifices and dances were held at the full moon, ending with a dance in which the performers carried a great woolen rope of four colors. Six days later, the ground bones of the previous year's sacrifices were mixed with coca, flowers, chili pepper, salt, burned peanuts, and chicha, and dumped into the river to be carried to Vira-cocha by the current (Cobo, 1890-95, bk. 13, ch. 26.)

(3) **HATOÑ POQOY** ("great ripening"; spelled *hatun pucuy; also called *colla-pocoyquis, Betanzos). February. Twenty guinea pigs and 20 loads of firewood were offered to the Sun, for the crops.

(4) **PAWQAR WARAY** (spelled *paucar-huaray; also *paucar auray-quiz, Fernández; *pacha pocoy, i. e., *PACA POQOY*, "earth ripening," Polo, Betanzos). March.

(5) **AYRIWA** (spelled *ayrihua; also *ayrihuaquiz, and *arihuaquiz). April. In this month, a ceremony was held in honor of the royal insignia. An elaborate pompon on a staff (*SONTOR PAWQAR*) and a perfect white llama (*NAPA*), both symbols of royal authority, were brought out into the plaza. The llama was dressed in a red shirt with golden ear ornaments and had its own attendants (*YANA-KONA* and *MAMA-KONA*). It was taught to eat coca and chicha, and took a prominent part in many ceremonies at Cuzco. It was never killed, and when it died, it received an elaborate funeral and was replaced by another picked animal. It was said to symbolize the first llama which appeared on earth after the Flood. In the April ceremony, 15 llamas were sacrificed in its name, and the *NAPA* offered chicha daily by kicking over jars of the beverage.

(6) **AYMORAY** (called also **HATON** koski, "great cultivation," usually written *hatun cuzqui by the chroniclers). May. The festivals celebrated the maize harvest. A large number of llamas were sacrificed to the Sun, and all the inhabitants of Cuzco ate some of the meat raw with toasted maize. Thirty llamas were sacrificed in honor of the huacas, and a little of the meat was taken and burned at each. The boys who had gone through the maturity rite the previous December harvested a crop of maize grown in a designated field, and then the nobles plowed the field ceremonially, accompanied by songs, races, and sacrifices. The **MAMA-SARA** rite, described under Agriculture, took place in this month also (Cobo, 1890-95, bk. 13, ch. 27).

(7) **INTI RAYMI** (also **AWQAY-KOSKI**, "warrior's cultivation"). June. This month included the June solstice and a great festival in honor of the Sun, when elaborate sacrifices were offered on the hills near Cuzco in the presence of the men of royal blood, and a dance (**cayo*), which was performed four times a day.

(8) **CAWAWARKIS** (*chahuahuarquis; also *cauay, *chahuarhuay, *chaguaruayquez, and *cahuarquiz). July. Sacrifices were made to the huaca of *tocori, which presided over the irrigation system of the valley. Inca Roca was believed to have increased the supply of water for irrigation and to have instituted this sacrifice (Cobo, 1890-95, bk. 13, ch. 28).

(9) **YAPAKIS** (*yapaquiz; also *capac siquis, Betanzos). August. Sacrifices were made to all the huacas of the city, and a new maize crop was sown in the holy field mentioned in the ceremonies of May. A thousand guinea pigs were furnished by the provinces for sacrifice in this field in honor of the Frost, Air, Water, and Sun, as the powers with most influence on the crops, and a dance (**WAYARA**) was performed.

(10) **SITROWA** (*situa; also *coya raymi and *puzcuayquis, Fernández). September. In this month a little rain is likely to fall, and the festival of **SITROWA** was directed against sickness, especially that resulting from the change of weather. All persons with physical defects i. e., sinners, and dogs (whose howling was an evil omen) were sent out of the city. The day after the conjunction of the moon, the population assembled at the Temple of the Sun to wait for the appearance of the new moon. As soon as they saw it, they began to shout, "Sickness, disasters, and misfortunes get out of this land," and struck at each other with lighted torches, in fun. Then all went to their houses and shook their clothes from the door, as if to shake all evil out of the house. At the same time, four troops of 100 runners each, dressed for war, took up the cry from the priests at the temple, ran out along the 4 main roads, and passed it on to other waiting runners. The last runners along each road bathed themselves and their weapons in a river, so that the running water would carry the evil away. All the inhabitants of Cuzco also bathed. Then a porridge of partly ground

maize was distributed, and everyone smeared it on his face and the lintel of his door as a symbol of purification. Several days of dancing and feasting followed, after which there were more sacrifices, and the provincials were allowed to reenter and receive lumps of maize flour mixed with llama blood, as in the December ceremony. Then four llamas were sacrificed, and their lungs examined to see whether the year would be prosperous. All the tribes subject to the Empire got out their huacas and brought them into the Great Square to do reverence to the Emperor. (Cobo, 1890-95, bk. 12, ch. 29; see also Means, 1931, pp. 374-77; Molina of Cuzco, 1913, pp. 136-54.)

(11) **E'ANTARAY** (*cantarayquis, Fernández; *homa raymi punchayquis, Cobo; *omac rayma, Molina of Cuzco; etc.). October. This month was critical for the crops, which were sown mostly in August and September. A ceremony was held to bring rain if there was a drought. (See Agriculture, p. 210.) Preparations for the next year's maturity rites were started.

(12) **AYAMARKA** (*ayasmarca-raymi, Molina of Cuzco. The name is said to result from the fact that the *Ayamarca* tribe held its maturity rites in November). November. The boys who were preparing for the maturity rite spent a night at Huanacauri to make sacrifices and ask the huaca's permission to perform the rite (Cobo, 1890-95, bk. 13, ch. 30).

Some ceremonies were held without regard to the ceremonial calendar. The most important of these (*Itu) was performed whenever the *Inca* wanted their gods' help, for example, in times of pestilence, drought, or serious earthquake, or when the Emperor went to war in person. Everyone fasted for 2 days beforehand, abstaining from salt, chili pepper, chicha, and sexual intercourse. Then all provincials and dogs were sent out of the city, and the images of the gods were brought out into the Great Square. Two llamas were sacrificed, and, if the occasion were especially serious, some children were sacrificed also. The boys under 20 years old then put on special costumes of fine red shirts with long fringes and ornaments hanging to their feet, great feather crowns, and shell necklaces. In their hands, they carried small dried green birds and small white drums. The rest of the population wore their shawls over their heads, and preserved a strict silence.

The boys in costume walked slowly once around the square in procession, beating their white drums, and then sat down in silence. A noble then walked around the square where the procession had gone, scattering coca on the ground. After a short interval, the boys repeated their slow procession, and coca was again scattered. This ritual was completed eight times. That night, the performers stayed in the square praying to Viracocha and to the Sun as intercessor. In the morning, they returned the costumes to their storehouse, while everyone began a feast, with joyous dancing and chicha drinking.

which lasted for 2 days (Cobo, 1890-95, bk. 13, ch. 31; Acosta, 1940, bk. 5, ch. 28).

Disease and curing.—In Inca belief, all disease had supernatural causes, and had to be cured by religious and magical means. Even herbal medicines were used for magical reasons, rather than from any understanding of physiological processes. Consequently, curing was a very important part of Inca religion and an important cultural interest.

Disease might be caused by the following: Supernatural beings angered by sin or by the neglect of their cult; the magic of sorcerers hired by a man's human enemies; exposure to evil spiritual forces which were believed to reside in certain springs or wind; or the loss of one's soul as the result of a sudden fright. Sickness might take the form of a foreign object lodged in the body, displacement of the organs, or poison, or it might be simply a sort of magical influence.

An enormous variety of wild plants and plant products were used as medicines; it is quite probable that every plant known to the Indians was believed to have magical power either to cause or to cure disease. Many of the plants and their uses are listed by Cobo (1890-95, bks. 4-6), and the extensive survivals of this belief have been partially studied by modern Peruvian botanists (Herrera, 1940). Other substances used in cures were maize flour, guinea pig fat, amulets, and the variety of odd objects which were the stock in trade of Inca sorcerers. (See below.)

The curers were called **HAMPI-KAMAYOQ**, "medicine specialists," **KAMASQA**, "cured," **SORQOYOO**, "heart men," etc. The general word for sickness was **ONQOV**. A curer was usually a diviner as well, and might practice black magic in secret; there were no rigid divisions between such functions. Curing power was usually acquired either in a vision or by making an unusually quick recovery from severe illness (whence the name **KAMASQA**, "cured," applied to such practitioners). In the vision, a being usually appeared in human form and gave the sleeper the necessary instruments and instructions along with power to use them. Before treating a patient, the curer made a sacrifice to his vision.

Professional midwives got their power either through a similar vision or by bearing twins and going through an elaborate series of fasts and ceremonies. They massaged pregnant women to straighten out the fetus, and could produce abortions for a price.

Broken bones and dislocations resulted from the anger of the place spirit which controlled the spot where the accident occurred, and the curer made repeated sacrifices there as an important part of the treatment.

When a sick man summoned a curer, the latter first sacrificed to his vision, and then determined the cause of the disease by divination. If the sickness resulted from neglect of worship, the curer made several

colors of maize flour, added ground sea shells, and put some of the powder on the sick man's hand. The patient blew the powder in the direction of the huacas with a prayer. Then he offered a little coca to the Sun in the same way, and scattered bits of gold and silver on the ground as an offering to Viracocha. In case the man's ancestors were angry, the curer ordered him to set food on their tombs or in some designated part of the house and to pour some chicha on the ground. If the sick man were well enough to walk, the curer made him go to a place where two rivers met and wash his body with water and white maize flour; if he were too sick to walk, he was washed in the house.

When the curer decided that the sickness resulted from displacement of the internal organs or the presence of some foreign object in the body, he rubbed the body with guinea pig fat, massaged, or sucked. He sucked where pain was felt, then exhibited blood, worms, small stones, toads, bits of silver, straw, sticks, or maize and announced that the object had caused the pain.

If the disease were caused by black magic or poison, the sick man consulted a sorcerer for the cure. The chroniclers give no details about the methods employed, but they probably were very similar to those described for the modern *Aymara*. If the diviner declared that the illness was incurable, a man might sacrifice his own child in the hope that the angry supernatural being, satisfied with one life, would spare him.

A very elaborate cure was practiced when a member of the royal family or some other important person became seriously ill. The curers first purified a small room by cleaning it, sprinkling black maize flour on its floor and walls, and burning maize in it, then repeating the ceremony with white maize flour. The sick person was brought in and put to sleep, apparently by hypnotism, and the curers cut him open with crystal knives and took snakes, toads, and other foreign bodies out of his abdomen. The objects removed were immediately burned. The curers were paid with food, clothing, gold and silver ornaments, and similar gifts (Cobo, 1890-95, bk. 13, ch. 35; Poma, 1936, pp. 279-80).

Trepanation was probably still being practiced in the neighborhood of Cuzco at the time of the Conquest, but it is not mentioned in any of the chroniclers. Two series of datable skulls with trepanations are known from the Cuzco region: one, from near Calca, published by S. A. Quevedo (1942), is probably of Late *Inca* date; the other, from a cemetery at Yucay, is probably Early *Inca* (University of Cuzco Expedition, July-August 1943). Most of the trepanned skulls in the University Museum at Cuzco are probably of Inca date also. The collection includes two skulls with trepanations made by drilling an oval row of slightly overlapping round holes, each hole

about $\frac{1}{4}$ inch in diameter. Another skull was trepanned by sawing two pairs of parallel cuts, one pair crossing the other. The patient was probably in a drunken stupor when the operation was performed. Examples of healed trepanations are numerous, and some skulls show very large trepanations, or several successive operations, all apparently successful.

Sorcery. Practitioners of black magic were hated and feared by the *Inca*. As they practiced in secret, no one knew which of his neighbors might be weaving spells against him. As these sorcerers were usually poison experts, their neighbors' fears were sometimes well grounded. Murder by magic or poison was one of the most heinous crimes under *Inca* law, and conviction meant death for the sorcerer and all his family (Cobo, 1890-95, bk. 12, ch. 26). Sorcerers were called *KAWCO* in *Quechua*; in modern times, the *Aymara* word *LAYQA* is more generally used.

Sorcerers used the principles of sympathetic and contagious magic, and worked with human exuviae (teeth, hair, nails, etc.), shells, animal figurines and amulets, toads, animal heads, small dried animals, large hairy spiders kept in closed jars, roots, herbs, and ointments. (See *Bingham*, 1915 b, pp. 214-15; 1930, figs. 112-14). A sorcerer who wished to bring sickness or death to an enemy might make an image of him, dress it in his clothes, hang it up, and spit on it, or he might burn a figurine of clay or wax representing the enemy, or otherwise mistreat it (Cobo, 1890-95, bk. 13, ch. 38). Another method was to take a toad, sew up its eyes and mouth with thorns, tie its feet, and bury *it* in a place where the enemy would be likely to sit down. The suffering of the toad was supposed to pass into the enemy.

Another method was to spin a thread of black and white wool, twisting it to the left (the reverse of the customary direction), and then place a noose of it on a path where the enemy might pass so that it would catch his foot. A sorcerer could spoil a man's harvest by burning a bundle of maize ears, fat, thorns, and some of the enemy's hair in his field with the proper ceremonies (Poma, 1936, p. 275). The power of the "devil" was so real to the Spanish writers of the 16th and 17th centuries and this sort of black magic was so similar to that practiced in their own country towns that they were as reluctant to write about it as the Indians were to explain it.

Some sorcerers furnished love charms for a price. The charms, of many different kinds (called generically *WAQAN*KI), were made of feathers, thorns, stones, or herbs, and had to be secreted in the garments or bed of the person whose affections were desired. (Cobo, 1890-95, bk. 13, ch. 36; Poma, 1936, p. 276; Morúa, 1922-25, bk. 3, ch. 47.)

MYTHOLOGY AND LITERATURE

Myths and legends.—The *Inca* tales that have come down to us are all either origin myths or historical legends; there is no indication in the chroniclers of the existence of animal fables such as the modern *Quechua* and *Aymara* tell. It would be possible to make a very good case for the European origin of these animal fables, on the basis of the distribution of common motives and the silence of all the older writers, but the question is better left open. Peruvian scholars in particular are taking a new interest in folklore, and it is to be hoped that their work will produce fresh evidence bearing on this and other doubtful points.

Inca origin myths are attempts to explain the existence of natural objects, shrines, and human customs, and from their very nature they varied greatly from one village to another. The best-known series is that current at Cuzco in the 16th century, which, except as otherwise indicated, is given here. *Garcilaso* is not cited because his testimony on religion and history is extremely untrustworthy. The mass of source material is so great that space permits only brief summaries of some of the most important myths.

The Creation by Viracocha.—Viracocha, the Creator (i. e., *ILYA TIQSI WIRAQOCA PACAYACACIQ*), made a world of earth and sky and left it in darkness. Then he decided to make people to live in it, so he carved statues of stone in the shape of giants and gave them life. After a while, when the giants displeased him, he destroyed them by turning some to stone at Tiahuanaco, Pucara, and other places, and overwhelming the rest with a great flood (*ONO PACAKOTI*, "water cataclysm"), from which he saved only two assistants.

Then he created a new race of his own size to replace the giants he had destroyed. First he gave the world light by causing the sun and moon to emerge from the Island of Titicaca. The moon was originally brighter than the sun, but the sun was jealous and threw a handful of ashes in the moon's face, which obscured her brilliance. Then Viracocha went to Tiahuanaco, where he modeled animals and men out of clay, each species and tribe in its proper shape. On the models of men, he painted the clothes that they were to wear. Then he gave men their customs, food, languages, and songs, and ordered them to descend into the earth and emerge from caves, lakes, and hills in the districts where he instructed them to settle. Viracocha himself set out toward the north with his two assistants to call the tribes out of the earth and to see if they were obeying his commands.

Viracocha took the central route along the line of the *Inca* mountain highway, and sent one assistant to follow the Coast and the other to inspect the edge of the eastern forests. Many people along

the way did not recognize Viracocha because he appeared to be only an old man with a staff. At Cacha, in the province of Canas (now San Pedro near Sicuani), the people came out to stone him because they did not like strangers. Viracocha called down a fire from heaven which began to burn the rocks on the hill around him and frightened the people, who begged him to save them. He took pity on them, and put the fire out with a blow of his staff. The burned hill remained as a reminder of his power and mercy, and the *Canas* built a shrine in his honor. (A great temple was afterward built there by the Inca.) Then Viracocha went on to Urcos near Cuzco, where he summoned the inhabitants to come out of a mountain. They honored him during his visit, and later built a shrine in his honor on the mountain. He went to Cuzco, and continued northward to the province of Manta in Ecuador. Here he said farewell to his people, and set out across the Pacific walking on the water. (Betanzos, 1880, chs. 1-2; Cieza, 1880, bk. 2, ch. 5; Sarmiento, 1906, chs. 6-7; Molina of Cuzco, 1913, pp. 118-123; Cobo, 1890-95, bk. 13, ch. 2.)

COMMENTS: Besides explaining the origins of the heavenly bodies, animals, and men, this myth accounts for the Inca shrines of Titicaca, Cacha, and Urcos, the prehistoric stone sculpture at Tiahuanaco and Pucara, and the origin legends of the various tribes. The "burned hill" at Cacha is a mass of cinders and lava from the Volcano of Tinta. (See Gregory, 1916, p. 100.) The shrine there is illustrated by Squier (1877, pp. 405412) and Means (1931, fig. 170). Garcilaso's account of it is of doubtful value (1723, pt. 1, bk. 5, ch. 22).

A striking feature of the story is its comparatively late character. It deals with places which were not incorporated into the **Inca** Empire until the reign of **Topa** Inca, and it provides an explanation for the diversity of local origin myths which the **Inca** were more likely to have devised after the formation of their Empire than before. The story is probably based on a number of older local legends put together under Inca supervision at the end of the 15th century. Mythology is only static when people no longer believe in it. The most important episodes take place in **Aymara** territory because, lacking a general creation myth of their own, the Inca took over **Aymara** elements of the story that were adapted to their purpose of explaining the diversity in Andean origin legends.

The origin of the Inca.-About 18 miles (30 km.) southeast of Cuzco in the modern province of Paruro is a place (**PAQARI-TAMPO**, "origin tambo") where there is a hill (**TAMPO-T'OOQO**, "tambo hole"), in which are three small caves. (One of the side caves was called **MARAS T'OOQO**, the other **SOTIQ-T'OOQO**, and the middle one **QHAPAQ-T'OOQO**.) From the side caves emerged the ancestors of several of the Inca ayllus, and the founders of the Inca royal family came out of the middle one. There were four brothers (entitled **AYAR**, "wild quinoa"),

and four sisters (called MAMA, "mother"). The men's names were: Manco (AYAR MAÑKO); AYAR AWQA, "warrior"; AYAR KACI, "salt"; and AYAR oco, "chili pepper". The women's names were: MAMA OQLYO, "pure"; MAMA *huaco; MAMA IPA QORA, "aunt weed"; and MAMA RAWA. These eight brothers and sisters gathered a following and set off on the road to Cuzco in search of new and better farm lands. They moved slowly, staying for a year or two at various towns along the way. At one such place (TAMPO-KIRO, "tambo tooth"), a son (named SINCI ROQ'A) was born to Manco and MAMA OQLYO. During the journey, AYAR KACI made himself greatly feared by his feats of strength. He climbed the hill of Huanacauri (WANAKAWRI), and hurled slingstones at neighboring hills with such force that he opened ravines where none had been before.³⁶ His brothers and sisters, determined to get rid of him, persuaded him to return to the cave (QHAPOQ T'OOQO) and bring out the sacred llama of the Inca (NAPA), some gold cups, and some seed which they had left there. They sent a man with him to shut him into the cave when he had entered it, which was accomplished as planned. He has remained sealed in the mountain. The rest of the party then decided that each of the men should undertake a specific function. AYAR oco remained at Huanacauri, where he turned himself into stone and became the cult object of the *Inca* shrine there, having first given Manco instructions for performing the men's maturity rite. AYAR AWQA went to the site of Cuzco, which had been chosen for settlement, and turned himself into a field-guardian huaca (hence he was called qosqo WAÑKA, "field guardian of Cuzco"). Manco was left to found the new town.

The site of Cuzco had been chosen with the aid of a golden staff which the brothers carried for testing the ground. They found the land just east of the modern city to be fertile and well suited for cultivation and decided to build their houses where the Temple of the Sun was later built. As the whole valley, however, was already occupied by other peoples, the ancestors of the Inca had to take it by force. Near the fertile fields they had chosen lived a small tribe called *Hualla* (WALYA, Gualla); where they wanted to build their houses lived an ayllu (SAWASIRAY); and just to the north lived the *Alcahuiza*, the most powerful of the indigenous peoples. Mama Huaco attacked the *Hualla* with a single heavy bolas weight on the end of a cord and slew one *Hualla*. She cut out his entrails and blew air into his lungs, a gruesome spectacle which sent the terrified *Hualla* fleeing from the valley of Cuzco to escape the ferocious invaders. After several skirmishes, the ayllu SAWASIRAY was also driven out, and Manco and the four women founded their town at the site of the Temple of the Sun,

³⁶ This part of the story, minus the name of AYAR KACI, is still part of the local folklore. In 1941, an old Indian living near Huanacauri told me that in ancient times an AWKI (hill spirit) stood on that hill and made the neighboring ravines with casts of his sling. Compare Betanzos, 1880, ch 3; Cieza, 1880, bk. 2, ch. 6; Sarmiento, 1906, ch. 12.

where **AYAR AWQA** had taken possession. (Betanzos, 1880, chs. 3-5; Cieza, 1880, bk. 2, chs. 6-9; Sarmiento, 1906, chs. 11-14; Cobo, 1890-95, bk. 12, chs. 34; Pachacuti, 1879, pp. 240-246; Poma, 1936, pp. 80-87; Garcilaso, 1723, pt. 1, bk. 1, ch. 18; Morúa, 1922-25, bk. 1, ch. 2.)

COMMENTS: This seems to have been the most common **form** of the legend in Cuzco, to judge by the number of independent sources which repeat it. The story explains the origin of the **Inca** royal dynasty, of sister-marriage by the ruler, of three important **Inca** shrines, of the maturity rite, and of the sacred llama. The skepticism which naturally arises with greater experience of the world was not absent in Cuzco under the later Emperors, and the old legend was re-rationaled in rather cynical terms, producing what Means has called the "Shining Mantle" story. According to the cynics, Manco Capac, or Ayar Manco, was a mythical character. The founder of the Inca royal house was **Sinchi Roca** (Manco's son in the traditional story), who was imposed on the gullible people by an elaborate trick of his mother's. She spread the word that the Sun was about to send them a ruler, and then, when all had assembled to see, brought forth her son from the mouth of a cave dressed in cloth covered with golden bangles (*chaquira, "beads"). Dazzled by the vision, the people accepted the boy as a heaven-sent ruler. (See Means, 1931, pp. 215-219 for references.) Neither the original legend nor the Shining Mantle story can be accepted as a historical account of **Inca** origins.

Another well-known version of the story of Manco Capac is that preferred by Garcilaso. It makes Manco a culture hero sent by the Sun from the Island of Titicaca to instruct the people in the arts of life (Garcilaso, 1723, pt. 1, bk. 1, chs. 15-17). If it really was told to Garcilaso by one of his old Inca relatives, as Garcilaso claims, and is not a fabrication of his own, it represents an interesting confusion of the cycle of Viracocha with the cycle of Manco Capac.

The pages of Betanzos, Cieza, and Sarmiento are treasure houses of delightful hero-tales, probably preserved in pre-Conquest times in **Quechua** narrative verse. The volume of such material makes it impossible to summarize the whole here, but a sample may be of interest.

The deeds of Mayta Capac. -Lloque Yupanqui, Manco Capac's grandson, had grown old without having any children. His people were very much distressed, and made great sacrifices and consulted the oracles, one of which replied that Lloque Yupanqui would yet have an heir. The people were very happy, and persuaded the old chief to try again. Although he was so old that it was considered miraculous, he begot a son, Mayta Capac, who was born in only 3 months, and already had his teeth and was very strong. At the end of a year, he was as big as a boy of 8, and at 2 years he began to fight with really big boys for amusement.

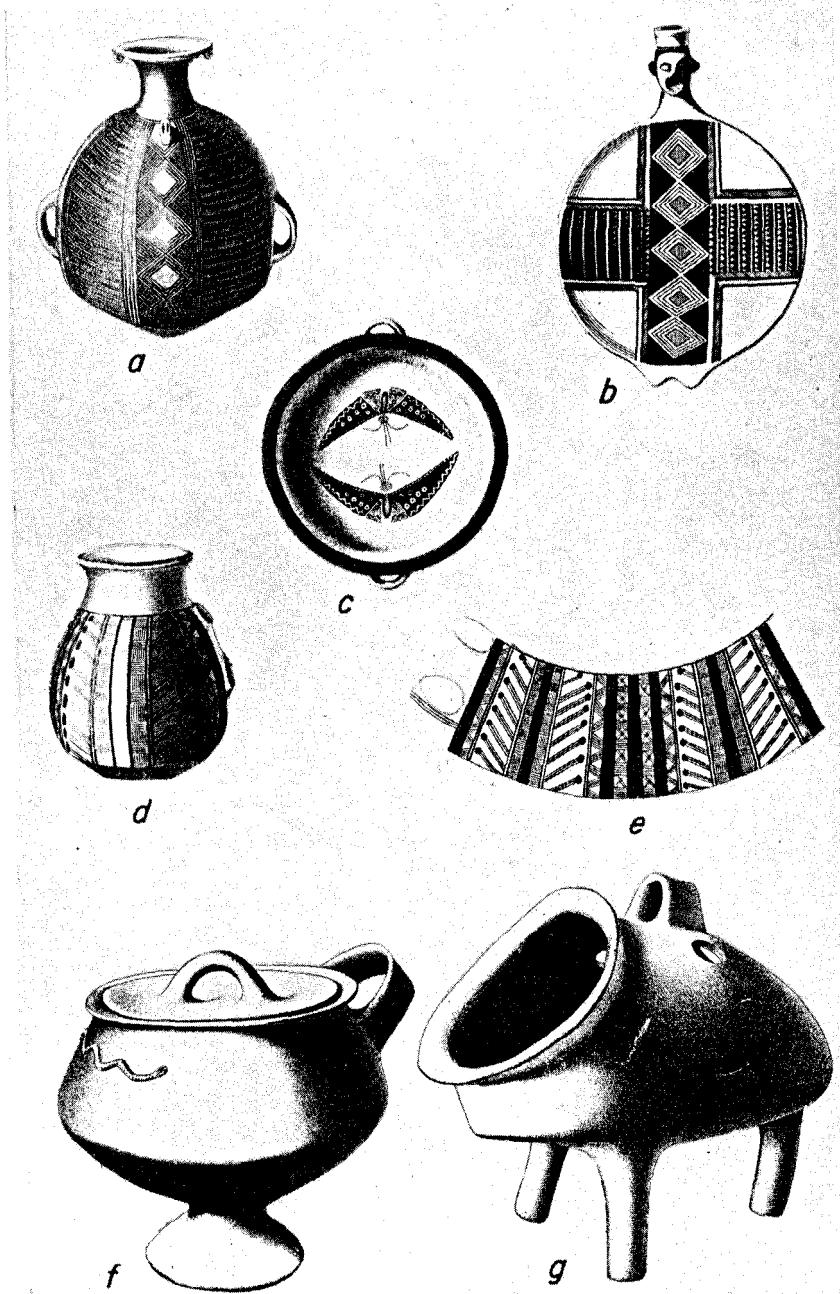


PLATE 77.—Late *Inca* pottery. *a*, Polychrome aryballoid jar (diameter $11\frac{3}{4}$ inches (29.5 cm.)); *b*, polychrome plate (diameter $6\frac{1}{2}$ inches (16.5 cm.)); *c*, polychrome dish (diameter 5 inches (12.5 cm.)); *d*, a one-handled jar of *Inca* polychrome (diameter $4\frac{1}{2}$ inches (11.5 cm.)); *e*, design panel from *d*; *f*, *Inca* footed pot (diameter $9\frac{1}{2}$ inches (25 cm.)); *g*, pottery brazier (height $6\frac{3}{4}$ inches (17 cm.)). (After Bingham, 1930, figs. 74, 95, 122, 112, 113, 114, 104, 125.)

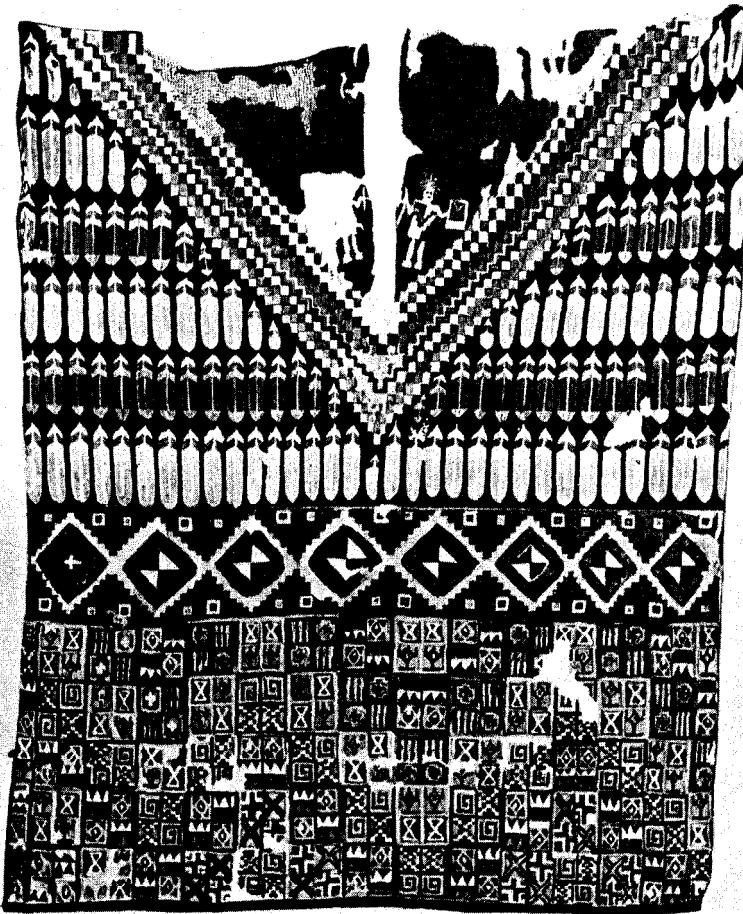


PLATE 80.—**Inca** tunic and painted wooden goblets. Top: Tapestry from the Island of Titicaca. (After Bandelier, 1910, pl. 62.) Bottom (left): Lacquered goblet. (After Musée d'Ethnographie, Paris, 1933, pl. 4.) Bottom (right): Animal effigy head goblet. (Courtesy American Museum of Natural History.)

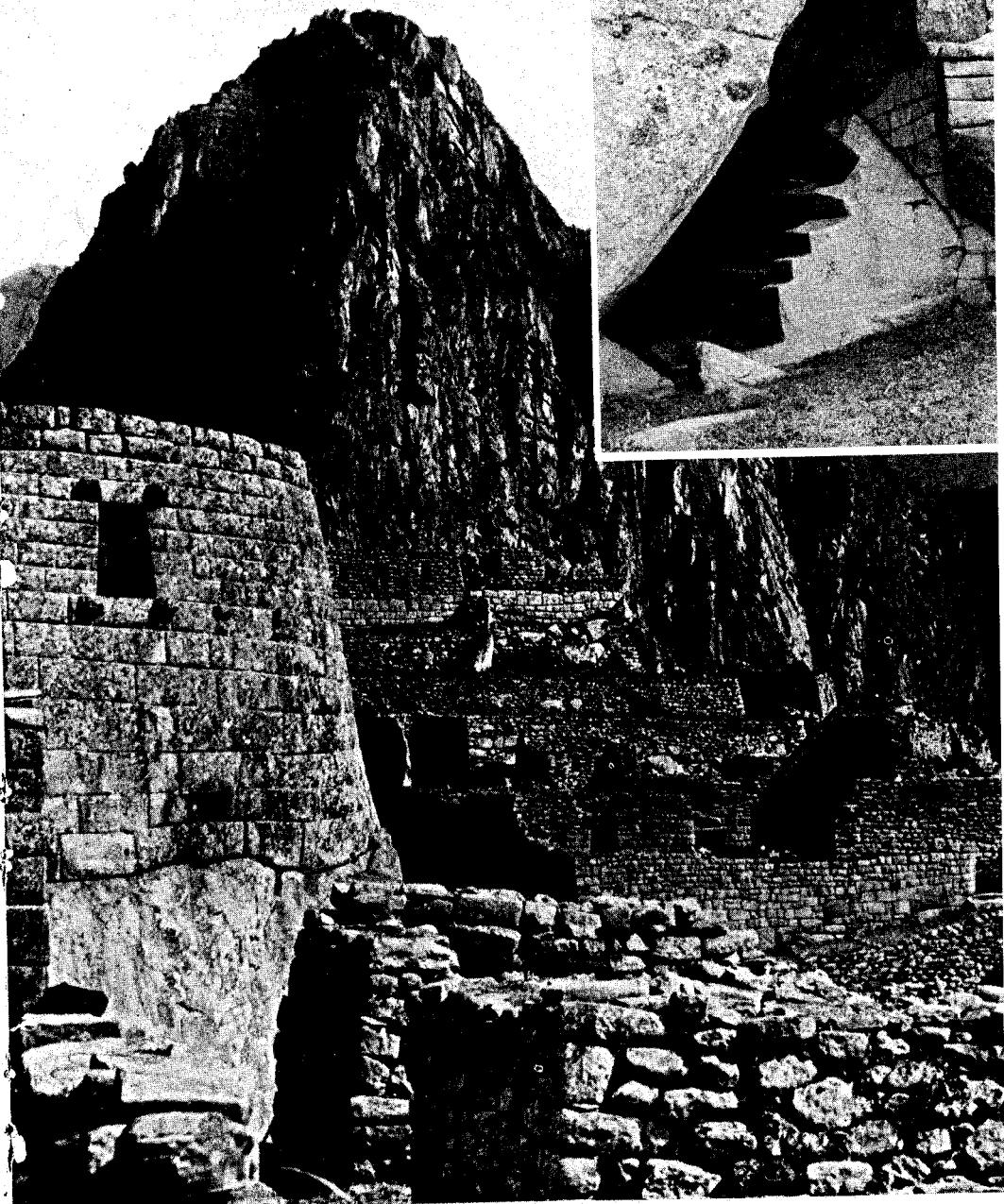


PLATE 81.—Machu Picchu stone masonry and architecture. *Top (right):* Monolithic carving combined with ashlar masonry. (Courtesy Truman Bailey.)

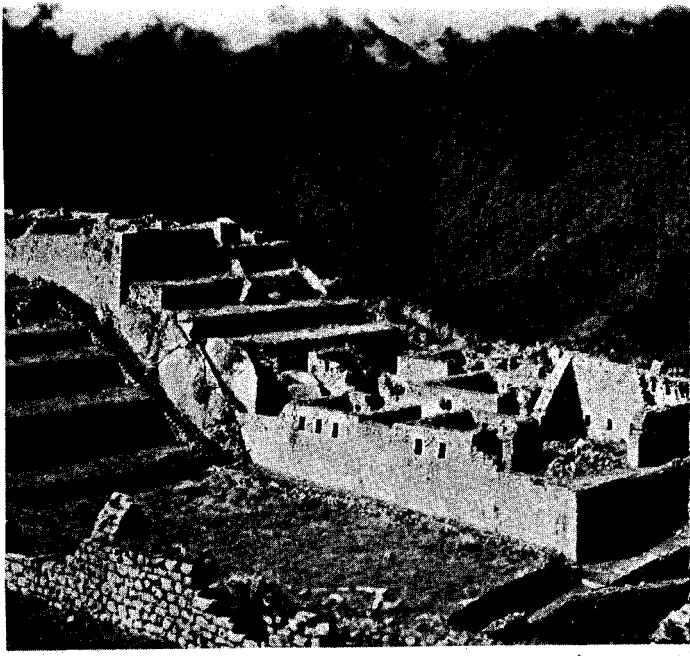
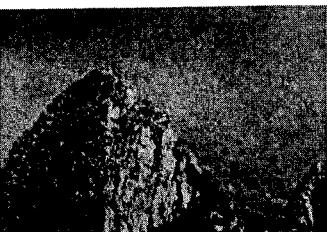


PLATE 82.-Two views of **Machu Picchu**. (Courtesy Truman Bailey and courtesy James Sawders.)

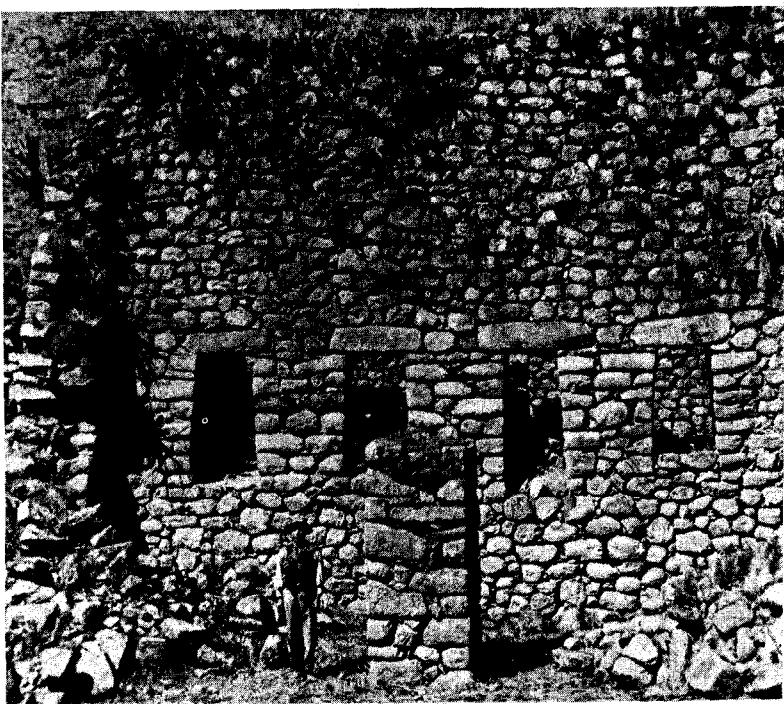
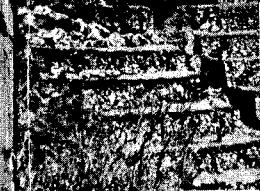
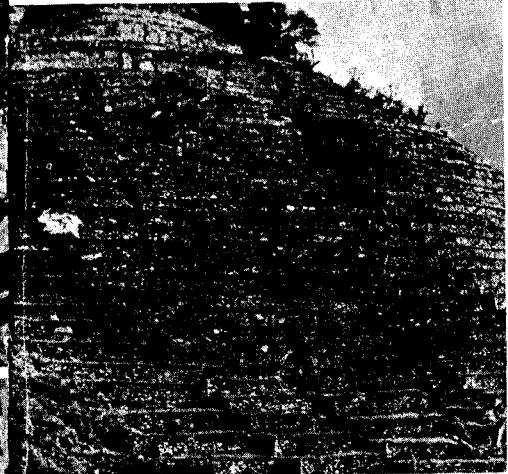


PLATE 83.—*Inca* architecture. *Top (left)*: Agricultural terraces at Inty Pata. (Courtesy Paul Fejos.) *Top (right)*: Polygonal wall in Cuzeo, supporting modern buildings. (Courtesy Grace Line.) *Bottom*: A wall at Chachabamba. (Courtesy Paul Fejos.)

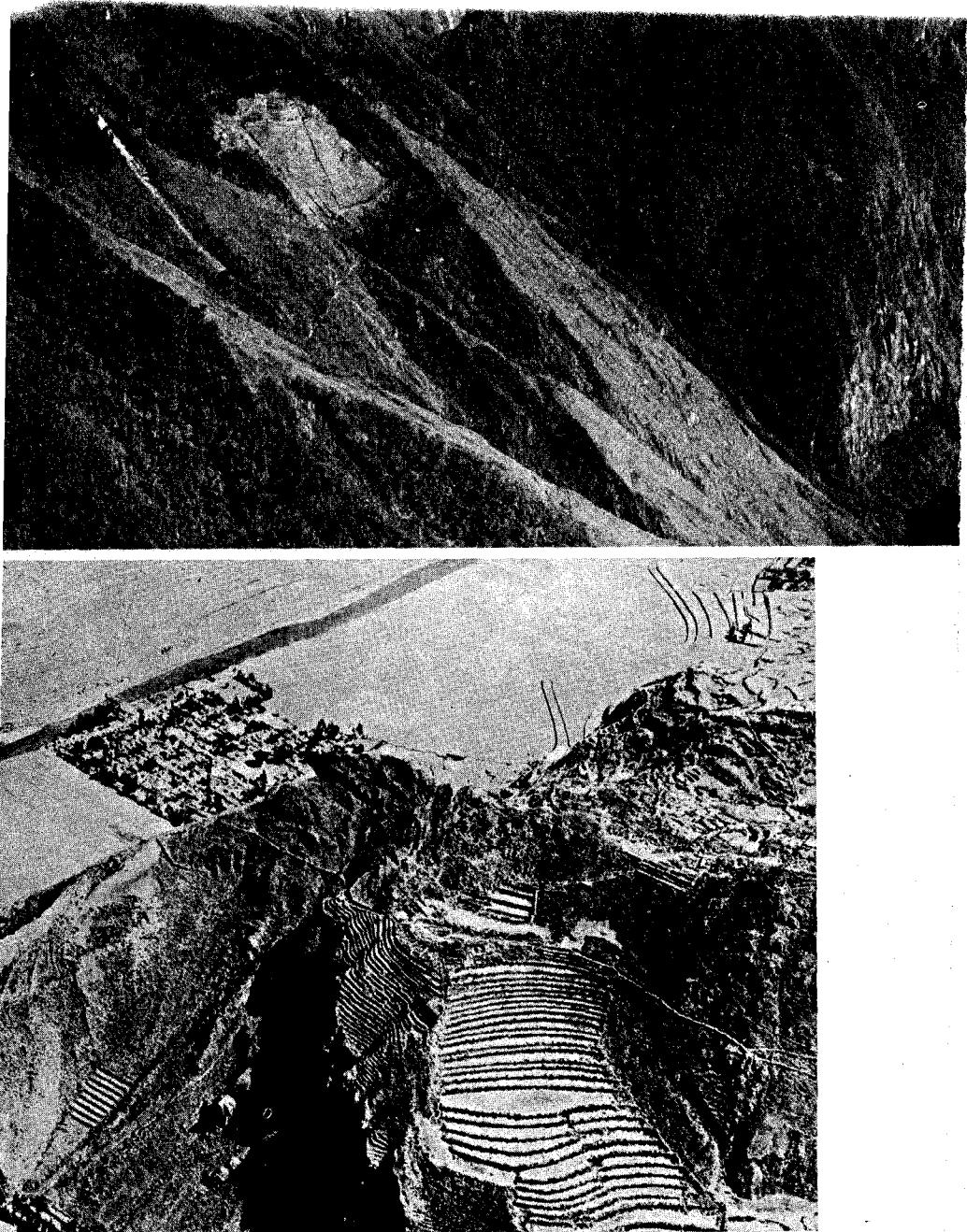


PLATE 84.—*Inca* sites and terrain. Top: Inty Pata dwarfed by the great slopes of the forested mountains. The expansion of the agricultural *Inca* was not, blocked by the most precipitous terrain. (Courtesy Paul Fejos.) Bottom: Pisac, ancient town on ridge at upper right; modern town lies below. (Courtesy National Geographic Magazine.)

The Inca were then living at uneasy peace with their nearest neighbors, the *Alcahuiza*. One day when Mayta and some of his friends were playing with the *Alcahuiza* boys, they fought over who should draw water first from a spring, and Mayta broke the leg of the *Alcahuiza* chief's son. Furious, the *Alcahuiza* sent 10 warriors to raid the *Inca* town and kill Mayta and his father. Mayta, who was playing ball in his courtyard when the raiders arrived, turned on them immediately and killed two with the balls with which he was playing. The rest fled precipitately.

Lloque Yupanqui, man of peace, begged his son to stop provoking the neighbors, but the *Inca* warriors were spoiling for a fight and told the old man to let his son alone. The *Alcahuiza* now came in force and Mayta's forces repulsed the attackers in a pitched battle. The *Alcahuiza* next attacked the *Inca*'s house compound, but without success. Feeling that he had now sufficiently proved his manhood, Mayta went through the maturity rite and became a full-fledged warrior. In a final pitched battle, a hailstorm broke over the *Alcahuiza*, and the Inca, encouraged by this sign of divine favor, decisively defeated the enemy and captured their chief, ending the bitter struggle. (Sarmiento, 1906, ch. 17; Cieza, 1880, bk. 2, chs. 32-33; Cobo, 1890-95, bk. 12, ch. 7.)

COMMENTS: A whole cycle of stories of this sort surrounds the figure of Yahuar Huacac, seventh *Inca* ruler, and others cover the *Chanca* war in the time of Viracocha and Pachacuti; Indeed, dramatic elements of mythical character continued to appear in *Inca* narrative poetry until at least the time of the Conquest. The following is another sample.

The coming of the pestilence. -One midnight when Huayna Capac was campaigning around the Gulf of Guayaquil, he had a vision in which he saw the camp surrounded by half a million ghosts, the souls of living men, arrayed as if to attack him. In great fear, the Emperor took his army back to Quito, where they celebrated the festival of **QHAPAQ RAYMI**. Then one day, a messenger arrived wearing a black cloak and carrying a small covered box (*p'ott*) with the cover fastened. The Emperor ordered him to open it, but the messenger begged his forgiveness, saying that he came by command of the Creator, and that the Emperor himself should open the box. Huayna Capac unfastened the cover, whereupon a host of moths and butterflies came out and disappeared into the air. They were the pestilence, which swept the *Inca* camp until even the Emperor himself died of it (Pachacuti, 1879, p. 307).

COMMENTS: These examples indicate the character and scope of Inca folklore. Abundant materials have been preserved, but never carefully studied. In addition to the authors cited, Morúa, (1922-25) and Cabello (ms. and 1840) contain much folklore material. Considerable

material has also been preserved for other parts of the Andean region, especially the Yauyo (see Avila, 1939; RGI, 1881-97, 1: 70-72), the central Coast (Calancha, 1638, bk. 2, ch. 19), the north Coast (Calancha, 1638, bk. 3, chs. 1-4; Cabello, ms. III, 17; Rubíos, 1936, pp. 361-363); the north Highlands (Religiosos Agustinos, 1865), the *Huanca* (Cieza, 1554, bk. 1, ch. 84), and the *Cavana* (RG, 1881-97, 2: 40). Comparative material for the *Aymara* is also available.

Literature.—*Inca* literature was unwritten, with all the implied limitations of form and constant modification. As only small fragments were recorded by the Spaniards at the Conquest and as the continuity of the oral tradition was broken during the 16th and 17th centuries, there is little hope of recovering much pre-Conquest literature not known today. Existing fragments and the references in the chroniclers are sufficient, however, to give an impression of what has been lost.

The *Quechua* language has certain marked characteristics which would be bound to influence any literary production composed in it. Nearly all *Quechua* words are accented on the penult, which gives a certain rhythmical character even to prose. Then again, *Quechua* has a very small number of phonemes, and these are carefully arranged in surprisingly formal patterns in true *Quechua* words. As a result, it is very difficult for *Quechua* to borrow words from phonetically different languages; ancient borrowings are nearly all from *Aymara*, which has almost the same sounds as *Quechua*. When a new word is necessary, it is made up from existing elements, as in German, rather than borrowed from a foreign language, as in English or Spanish. As if to compensate for its rigid phonetic pattern, *Quechua* allows the greatest freedom in word formation. A noun can be made from a verb by merely adding nominal *suffixes* instead of verbal suffixes to the stem, and the finest gradations of meaning can be expressed by inserting *affixes* between the stem and its grammatical ending. The precision of feeling and emotion that is possible in *Quechua* was so frightening to the Spanish priests, whose theology was carefully thought out in the broad and matter of fact terms of Latin, that many of them hesitated even to catechize the Indians in their own language.

The surviving fragments of *Inca* literature can be grouped under the four headings of prayers and hymns, narrative poems, dramatic pieces, and songs. The prayers and hymns are justly noted for their lofty thought and beauty of expression. A considerable number have been preserved by Molina of Cuzco, Pachacuti, Guaman Poma, and others, and excellent examples have been published in English by Means (1931, pp. 437-439). For instance:

O conquering Viracocha!
Ever-present Viracocha!
Thou who art without equal upon the earth!

Thou who art from the beginnings of the world until its end!
Thou **gavest** life and valour to men, saying,
“Let this be a man”
And to the woman, saying,
“Let this be a woman.”
Thou madest them and **gavest** them being.
Watch over them, that they may live in health and in peace.
Thou who art in the highest heavens,
And among the clouds of the tempest,
Grant them long life
And accept this our sacrifice,
O Creator.

[Translation by Means from the Spanish of Molina of Cuzco.]

The great bulk of Inca literature seems to have taken the form of narrative poems (Cieza, 1880, bk. 2, chs. 11, '12; Sarmiento, 1906, ch. 9). Mythology, legend, historical romance, and history were handed down from generation to generation in the form of long poems (ballads, sagas, and little epics) which were learned word for word and repeated at public gatherings until everyone was familiar at least with their content. Because the ideas of *Inca* religion were so thoroughly woven into these poems, they were frowned on by the missionaries and none was ever literally recorded. However, summaries of several were preserved in Spanish prose by Sarmiento, Betanzos, and Pachacuti. There are passages in Sarmiento's text which are strongly reminiscent of the medieval Spanish “prosificaciones” of older epic material. The stories of Mayta Capac, Yahuar Huacac, the war with the *Chanca*, and the civil war between Huascar and Atahualpa were almost certainly summarized by Sarmiento's interpreters from *Quechua* narrative verse. In the account of the *Chanca* war, the anonymous character of a *Quilliscachi* Indian is introduced for the sole purpose of providing a dramatic link between the two camps and reporting the events of the other camp when necessary in order to avoid too frequent changes of scene.

Although no actual examples of pre-Conquest narrative poems in *Quechua* have been preserved, two ballads of the 1570's preserved by Morúa give some idea of the ancient forms. Unfortunately, the published text is so corrupt that considerable study will be necessary before the two fragments can be adequately translated, and Morúa's translations are unduly free (1922-25, bk. 2, ch. 15). The meter is trochaic tetrameter. As similar meter is common in Spanish also, there has been some debate as to whether its occurrence in *Quechua* verse was the result of Spanish influence. Much more early text material is necessary to settle the problem.

The nature of Inca drama is a thorny problem, revolving for the most part around the question of the antiquity of the play called “*Ollanta*,” of which some five 18th- and 19th-century manuscripts are known to exist. The play, though often proclaimed a masterpiece,

has a weak plot, unconvincing characters, and a stilted dialogue. Middendorf, Means, and Rojas have shown very convincingly that the play in its present form is not older than the 17th century and may be as late as the middle of the 18th. Parts of it, especially the songs, may, however, be very much older, and the story may be derived from an ancient legend (Rojas, 1939; Means, 1931, pp. 440-441 and references).

Garcilaso describes *Inca* "comedies" and '(tragedies" in a way that sounds just a little too European to be plausible, but Cieza and Acosta explain that *Inca* dramatic pieces were parts of public dances, and probably derived from them. At most, they consisted of a narrative or a dialog to be sung by one or two actors, with a chorus to answer them. (Acosta, 1940, bk. 6, ch. 28; Cieza, 1880, bk. 2, ch. 12; Garcilaso, 1723, pt. 1, bk. 2, ch. 27.) The missionaries took advantage of the Indians' interest in drama and, even before 1560, wrote a number of Spanish-type plays in *Quechua*, which were performed by Indian actors. They were "autos," plays whose purpose was first to point a moral and only second to amuse. The best-known example is probably "El Pobre más Rico" (Garcilaso, 1723, pt. 1, bk. 2, ch. 28; Basadre, 1938, pp. 135-141).

All the types of *Inca* literature so far considered suffered heavily from Spanish influence or repression since the Conquest, but not so *Quechua* song. Indeed, the influence has been so heavily the other way that nearly all popular poetry (as distinguished from conscious literary effort) in the Andean countries today is heavily Indianized in feeling and expression, whatever the language in which it is sung. Some beautiful examples of Spanish poetry in *Quechua* style are given by d'Harcourt (1925).

Quechua examples of proved antiquity are very scanty. The oldest is a well-known verse remembered by Garcilaso (1723, pt. 1, bk. 2, ch. 27) from before 1560:

In this place
Thou shalt sleep
Midnight
I will come.

Sarmiento (1906, ch. 47) translates a verse of a song from a dramatic or narrative piece on the death of Pachacuti, which is almost certainly pre-Conquest :

I was born like a lily in the garden,
And so also was I brought up.
As my age came, I have grown up,
And, as I had to die, so I dried up
And I died.

Much of the poetry scattered through the pages of Guaman Poma is either ancient or composed in the ancient style in the century fol-

lowing the Conquest. The following verses are of the second type (Poma, 1936, p. 317. From the Spanish translation of J. M. B. Farfán (Basadre, 1938, p. 85), modified by comparison with the original) :

What evil fortune separates us, queen?
What barriers separate us, princess?
My beautiful one, for you are a chinchircoma flower,
In my head and in my heart I would carry you.
You are like the sparkling water,
You are like a mirror of water.
Why don't I meet my loved one?
Your hypocrite mother causes our unbearable separation;
Your contrary father causes our neglected state.
Perhaps, queen, if the great lord God desires,
We will meet again and God will bring us together.
The memory of your laughing eyes makes me sicken.
A little, noble lord, just a little!
If you condemn me to weeping, have you no compassion?
Weeping rivers, over the cantut lily, in every valley,
I am waiting for you, my little beauty.

Most *Quechua* poetry, ancient as well as modern, is nostalgic love poetry like the last example, filled with allusions to nature. Some of the associations sound strange in English, but seem perfectly natural to the Indians, to whom the plants and the birds, his associates in every-day life, have some traditional character perhaps derived from their use in medicine and in sorcery. There is much similar verse of great beauty and strength that could be easily collected by the student of folklore. Additional published texts can be found conveniently in d'Harcourt (1925) and Basadre (1938), where further references are given.

LORE AND LEARNING

Measurements.-Information on Inca units of measurement is relatively abundant, but so scattered and unsystematized as to give the impression that the Inca had no very precise standards. Actually, *Inca* skill in engineering works almost required a system of measurement at least as exact as that in use in 16th-century Europe.

Inca measures were based on parts of the human body. Measures of length probably began with the finger (*ROK'ANA*), but this unit is not specifically mentioned for *Quechua*, though Bertonio lists it for the *Aymara* (1879 a, pp. 174-180). Next came the *yuku, Spanish "jeme," the distance between the tip of the outstretched thumb and forefinger; about 5 or 6 inches (12-14 cm.). The span (*K'APA*) was equivalent to the Spanish "palmo" of 8 inches (20 cm.). The Inca also used the cubit (*Khococ*) of about 18 inches (45 cm.). The largest measurement based on the human body was the fathom (*RIKRA*) of about 64 inches (162 cm.), which was divided into 2 yards (1.8 m.)

(*sikya). The fathom was the standard measurement of land, and a measuring stick (*cqta-k'aspi*) of this length was kept as a legal check (Gonzalez, 1608, pp. 373, 127, 315, 326, and 117).

Measures of traveling distance were based on the pace (*thatkiy*), which is the most convenient unit for travelers on foot. A larger unit called *topo* ("measure") was used along the Inca roads, some of which had a "milestone" at every *topo*. The *topo* was approximately equal to $1\frac{1}{2}$ Spanish leagues, or about $4\frac{1}{2}$ -miles. (Cieza, 1880, bk. 2, ch. 15; Polo, 1916 b, pp. 103-104; Acosta, 1940, bk. 6, ch. 17; Calancha, 1638, prologue; Bertonio, 1879 b, vocabulary.) Morúa says that a *topo* contained 6,000 paces (1922-25, bk. 3, chs. 24, 29). If both these equivalents are approximately correct, the Inca pace would have been about 4 feet (1.3 m.), counted from the time one foot was put down until the same foot touched the ground again (that is, two steps), which is a comfortable walking pace for a man of medium height. The chroniclers sometimes speak of "legua de indios" or "legua de acá" when they mean the *topo*. A passage in Pachacuti suggests that the Inca also used a larger unit called *wamani* (30 *topo*) in calculating road distances (1879, p. 300).

Area was also measured by the *topo*, but its size in this case is much less certain. Cobo says it was an area 50 fathoms long (about 300 ft.) and 25 fathoms (about 150 ft.) wide, and his statement is the most precise reference to its size that I have been able to locate (1890-95, 14, ch. 15). Garcilaso says that it equaled $1\frac{1}{2}$ Spanish fanegas, but the fanega was so variable that it would be difficult to establish an exact equivalent (1723, pt. 1, bk. 5, ch. 3). If the fanega is taken at its modern Spanish value of about 1.59 acres, Garcilaso's *topo* would equal nearly 2.4 acres, and Cobo's only 0.8 acre. Baudin suggested that the Inca *topo* of area was simply the amount of land necessary to support a married couple without children, and hence varied with local conditions (Baudin, 1928, p. 90), but it was probably more precise. In the first place, Cobo gives exact dimensions for it in fathoms, which, Gonzalez states explicitly, was the public land measure of the *Inca*. In the second place, the modern use of the *topo* suggests just such a definition as Cobo gives. At least two *topos* are in general use in Highland Perú today; the *topo* of Cuzco, an area 88 by 44 varas (44 by 22 fathoms or about 264 by 132 feet), and the *topo* of Arequipa, a somewhat larger but similarly measured area. Jiménez de la Espada mentions a Colonial *topo* of 60 by 50 paces, but does not give his source (Cieza, 1880, p. 53, note d). Precisely measured units of land area are not likely to be the result of Spanish influence, for the common Spanish unit was the space in which a fanega of grain (about 1.6 bushels) could be sown! On the whole, the evidence favors Cobo's measurements. A study of the modern uses of the *topo* in Andean countries is much to be desired.

According to Cobo, the Inca had no standard liquid measure, but measured grain by the *ccullu (*PHOQCA*), which equaled approximately half of a Spanish fanega, or nearly 26 quarts (1890-95, bk. 14, ch. 15; also Gonzalez, 1608, p. 293). It was usually a large calabash, but might be of wood or silver.

The Inca used the pan balance (*AYASANA*), and may have also used the steelyard, which is reported for the Coast of Ecuador (Estete, 1924, pp. 15-17), but seem not to have had a standard system of weights. The Quechua word for weight (*WARKO*), was used as an equivalent for the Spanish "peso" in Colonial times (Gonzalez, 1608, p. 177).

The time of day was indicated by pointing to the position of the sun, and elapsed time by the distance the sun traveled. In addition, two *Quechua* phrases referred to the time needed to boil potatoes, which were used as equivalents for "hour": "One cooking so much" (*HOKYANOY CHIKA*), and "one cooking" (*HOKWAYK' OY*) (Cobo, 1890-95, bk. 12, ch. 37; Gonzalez, 1608, pp. 197, 367).

Mnemonic devices.—As far as is now known, no form of writing was ever used in the Andean area before the Spanish Conquest, and it seems most unlikely that pre-Columbian writing will ever be discovered. Suggestions have been advanced that certain motives found on pottery, cloth, and stone represent hieroglyphic symbols, but these are all too few and too symmetrically placed to be conceivable as linguistic symbols. Some are probably heraldic motives and others may represent divination or games, but most are purely ornamental. The fact is that the Andean peoples possessed substitutes for writing which were so satisfactory that they probably never felt the need for anything more elaborate.

The *Inca* used an ingenious apparatus, the *quipu* (*KHIPU*, "knot"), which consisted of a main cord from which hung smaller strings with groups of simple knots on them at intervals (fig. 25, *d*). Frequently, subsidiary strings are attached to the main pendant strings, and often the strings are distinguished by color or method of twisting. A large number of *quipus* found in graves on the Central and South Coast (Chancay to Ica) have been studied by Locke, Nordenskiöld, and Altieri, who used the admirably detailed and specific accounts in the chroniclers to interpret their use. (Locke, 1923, 1928; Nordenskiöld, 1925 a and 1925 b; Altieri, 1941.) Although the specimens come from the Coast, whereas the descriptions in the chroniclers refer to the Highlands, and most of the specimens have been separated from their grave lots and are undatable, the specimens so obviously illustrate the descriptions that their use to supplement one another is probably justified.

Locke has shown quite conclusively that some of the *quipus* were used for recording numbers and their sums in a decimal system sim-

ilar to our own. The group of knots farthest away from the main cord were units, the next group tens, the next hundreds, etc. (Locke, 1923). Nordenskiöld added that he had seen only one quipu with a knot in the 10,000 place, and stated that there was no sign for zero in the quipus (Nordenskiöld, 1925 b, pp. 7-8, 36). Zero, however, means simply that no number is to be read in the place where it occurs, but the place is to be counted. String No. 14 on Nordenskiöld's quipu No. 6 (pl. 3) and other examples show quite clearly that zero was indicated by the absence of a knot in the desired place, and as long as only one number was knotted on a string, and the number of places was known, no possible confusion could result. The quipu had to be accompanied by an oral comment anyway, so that if it were not clear from the way the knots were spaced on the various strings how many places were intended, this information could be included in the instructions. There is no doubt from Nordenskiöld's examples that the concept of an empty place in the number, which is what our zero stands for, was certainly understood by the makers of the Coast quipus.

The quipu is still generally used among Andean shepherds for counting. As several different ways of tying it are known, it would not be surprising to find ancient quipus which were tied differently. A quipu represented a series of numbers which could, perhaps, be read by any trained *Inca* accountant, but, in order that anyone but the original maker might understand what the numbers referred to, the quipu had to be explained.

The quipu is excellently adapted for recording numbers, but would be an exceedingly clumsy instrument with which to calculate. The chroniclers make it quite clear that calculation was done with piles of pebbles or grains, or by means of an abacus consisting of a tray with rows of compartments in which counters could be moved. The results of the calculation could then be recorded on the quipu" (Wassén, 1940).

In addition to recording numbers, the quipu was used as a memory aid in reciting genealogies, liturgical material, and narrative verse, so that some chroniclers (e. g., Valera and Morúa) speak of *Inca* history as based on the quipus in such a way that they might appear to have been a form of writing, which they certainly were not,

The *Inca* had a special class of professional quipu interpreters (*KHIPO-KAMAYOQ*), whose duty it was to memorize the statistical, historical, and liturgical material accumulated by the government and to be prepared at all times to repeat it for the benefit of officials who desired to refer to it.³⁷

At least in some districts, painted sticks were probably used as aids

³⁷ The most important descriptions of *Inca* quipus in the chroniclers are the following: Cieza, 1880, bk. 2, ch. 12; Molina of Cuzco, 1913, pp. 125-126; Acosta, 1940, bk. 6, chs. 8, 14, 19; Garcilaso, 1723, pt. 1, bk. 6, chs. 7-9; Calancha, 1638, bk. 1, ch. 14; Cobo, 1890-95, bk. 12, ch. 37; Fray Antonio, 1920, pp. 6-7; Morúa, 1922-25, bk. 3, chs. 14, 25; Poma, 1936, pp. 335, 358, 360, 800.

to the memory supplementary to or instead of the quipu (Pachacuti, 1879, pp. 237, 291).

Astronomy and the calendar.—The *Inca* looked upon the sun, moon, planets, and stars as important supernatural beings, and most of their star lore was consequently of a religious character. (See Religion.) However, the heavenly bodies were also observed in order to regulate the *Inca* calendar, an aspect of their study which is more properly classed as astronomical.

The *Inca* took the movements of both the sun and the moon into account in making their calendar, but it is not entirely clear how the two were reconciled. The difficulty is that the solar year is just under 365 days and a quarter, while 12 lunar months come only to about 354 days. Hence, a cycle of 12 lunar months falls behind the solar year at the rate of about one-third of a month a year.

The sun was observed to fix the seasons for planting and thereby start the agricultural year. The observations were taken by means of four small square masonry towers (*PACA-ONANCAQ*, "time markers") built in a row on the skyline east and west of Cuzco to mark the places where the sun rose and set at sowing time. The two center ones were close together, and the outside ones farther apart. Observations were taken from the middle of the Great Square of Cuzco, where there was a raised platform (*OSNO*) used as an imperial judgment seat. When the sun passed the outside tower, it was time to sow early crops (August), and, when it was framed by the two central towers, it was time for the general sowing (September).³⁸

Cobo states that similar observations were taken to fix the beginning of the year at the December solstice, when the festival of the first month (*QHAPAQ RAYM*) was celebrated, and, following Polo de Ondegardo, that there were towers to mark the beginning of every month (Cobo, 1890-95, bk. 12, ch. 37; Polo, 1916 a, chs. 7, 16). Garcilaso says that the towers were used to observe the solstices, while a sort of sundial, made by setting a pole in a circular space and noting its shadow, was used to mark the equinoxes (1723, pt. 1, bk. 2, ch. 22). These claims are doubtful for several reasons. First, Garcilaso is the first chronicler who says that the *Inca* observed the solstices, and the only one who claims that they observed the equinoxes. Cobo probably borrowed his story of the solstices from Garcilaso, so that both claims stand only on Garcilaso's authority, which is not great in matters of this kind. Second, if the Inca observed the solstices, or both solstices and equinoxes, these events should figure prominently in the ceremonial calendar, and they are not mentioned there. Polo's story that solar observations were taken at the beginning of every month

³⁸ Anonymous *Discurso*, 1906, pp. 150-52; Betanzos, 1880, chs. 15, 18; Cleza, 1880, bk. 2, oh. 28; Poma, 1936 P. 260 (modification used in the provinces); Sarmiento, 1906, ch. 30 (he evidently failed to understand the principle involved). It should not be difficult to locate the ruins of the "calendar towers" on the skyline of Cuzco, and to make observations as a check on the chroniclers.

implies that the *Inca* had a series of solar months independent of the lunations, but Polo himself *says* that the *Inca* had lunar months, and Cieza, Garcilaso, and the author of the Anonymous *Discurso* say the same (references as above).

It seems most likely, then, that the *Inca* fixed at least two *sowing* dates by solar observation, from which they could determine the approximate number of days in a year if they were sufficiently interested to keep count. However, they probably made no use of solstices and equinoxes in their calendar, whether or not they displayed enough theoretical interest to observe them. Their months were lunar, and they seem to have had no very exact way of adjusting them to the solar year. Probably the count was arbitrarily adjusted when the annual solar observations indicated that it *was* seriously wrong.

Anonymous *Discurso* gives some interesting data on the development of the Inca calendar which have a ring of probability and imply that the Inca were at least aware of the problem presented by the difference between the lunar and the solar year. It says that at first the Indians timed their planting by the flowering of a certain cactus, but that Inca Viracocha established a year of 12 lunar months, each to begin at the conjunction (new moon), named the months, and designated the work to be done in each. His successor, Pachacuti, soon found that the year was in utter confusion, and built the sun towers after consultation with his council of state so as to have some kind of a check on the lunar months. Special officials were appointed to take the observations (Anonymous *Discurso*, 1906, pp. 149-52).

The phases of the moon were carefully observed, and had some importance in ceremonial (Gonzalez, 1608, pp. 174, 265, 306; Garcilaso, 1723, pt. 1, bk. 2, ch. 23), but no other subdivisions of the month were in general use. Poma and Montesinos speak of a week of 10 days. Possibly such a week was used in some parts of the Andean area, but there is no good evidence for it at Cuzco (Poma, 1936, pp. 235, 260; Montesinos, 1882, pp. 69, 74).³⁹

The calendar in use in the *Chimu* Kingdom seems to have been based on entirely different principles from that of the *Inca*, for Calancha

³⁹ Archeological literature has used • intihuatana to designate oortain outcrops of bed rock carved so as to leave an irregular vertical **protuberance** in the middle which is assumed to have been some sort of a sundial for oalendrioal observations. The most famous examples are those at Pisac (Squier, 1877, pp. 625-W Montesinos, 1920, pl. 6 facing p.53) and Machu Picchu (Bingham, 1913, p. 509). The word does not occur in any chronicler nor in any of the older *Quechua* dictionaries, as far as I am aware. The first mention of it I have been able to locate is in Markham's "Cuzco and Lima" (1855, p. 181), where it is cited as the name of a group of **ruins** at Ollantaytambo. Squier records it both for Ollantaytambo and Pisac in such a way as to suggest that both the word and its implied meaning were current in the local *Quechua* of the Urubamba Valley at the time of his visit. He identified it with the pole sundial described by Garcilaso.

The word is good *Quechua*, and means "hitching-post of the sun." It was probably coined when the real use of the stone protuberances had been forgotten and Is of a piece with **QORI-WAYRACINA** ("gold-winnowing place"), and **INKA-WASI** ("house of the Inca"), which have been applied to dozens of ruins in Southern Perú. As to the protuberances being sundials of some sort, all known examples are too short and too irregular to have been of the slightest use for solar observations. They were probably cult objects, and may have symbolized the place spirit of the hills on which they stand. The word • intihuatana should be discarded from archeological literature, except as a place name.

says that the *Chimu* counted a year from the time the Pleiades appeared until they appeared again. The Pleiades were believed to be the patrons of agriculture (Calancha, 1638, bk. 3, ch. 2; cf. Means, 1931, p. 62).

THE INCA ACHIEVEMENT

The 90-odd years of the *Inca* Empire formed the most significant period in all of Andean Indian history. In it, the whole of Andean culture was given a new orientation and turned into paths of development which it is still following after four centuries of alien domination. In a very real sense, modern Indian history begins, not with the Wars of Independence or with the Spanish Conquest, but with the organizing genius of Inca Pachacuti in the 15th century.

At the time of the *I&a* conquest, the Andean area was occupied by a very large number of tribal groups and small states differing from each other politically, linguistically, and culturally. They shared many elements of culture, such as common food plants and domestic animals, similar basic style of dress, huaca-worship, and certain religious attitudes, similar weapons and tactics, and simple techniques of weaving, metallurgy, and other handicrafts, but the differences between them were at least as numerous as the similarities, and were as notable in degree as in kind. There was a vast gulf between the simple culture of poverty stricken and disorganized groups, like the Indians of the Huancapampa region in northern Perú, and the rich and complex life of Coastal states, like the *Chimu* Kingdom. It was the *Inca* mission to level up such differences by efficient administration, exchange of populations, and the prestige value of Inca culture, and gradually to unify the life, language, and institutions of the whole vast Inca Empire. The task was half accomplished at the time of the Spanish Conquest, but the change of ruling class did not stop the program of unification. A comparison of modern Indian life with that of pre-Inca days shows many differences: Instead of dozens of independent languages, five-sixths of the Indians now speak *Quechua*, the language of the *Inca* administration, and the other sixth speak *Aymara*, which had enjoyed a privileged position before the Spanish Conquest. The ayllu has become a less rigid unit, and new social groups based on the village have grown up; religion is uniform. All these changes had their beginning in *Inca* policy, and were merely continued by the Spanish Colonial government. The continuity of policy, of course, was only to a very limited extent the result of a deliberate Spanish imitation of *Inca* practice; for the rest, similar administrative problems suggested similar solutions. Nevertheless, the *Inca* were the first to apply these solutions in the Andean area, and they applied them very successfully.

During the contact between Indian and Mestizo since the coming

of the Spaniards, there has gradually developed a feeling of cultural and linguistic solidarity among the Indians which justifies the use of the term "*Inca* nation" to refer to the 6 million speakers of *Quechua* and *Aymara* in the modern republics of Ecuador? Perú, and Bolivia. The *Inca* are a "nation" in the sense of being a group which shares a feeling of solidarity and a belief in a common culture, and which regards its language as the symbol of its separate existence. No political organization of any kind is implied, for the *Inca* nation exists without any national movement, without parties, and without a separate voice in any government. The feeling of solidarity is certainly present among the modern Indians, and can be traced back at least into the 19th century. It is a direct result of the unifying policies of Pachacuti and *Topa Inca*, and its existence in the modern world is their justification, their glory, and their fitting monument.

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