WILEY

Travels on the Boundaries of Bolivia and Peru

Author(s): Erland Nordenskiöld

Source: *The Geographical Journal*, Vol. 28, No. 2 (Aug., 1906), pp. 105-127

Published by: geographicalj

Stable URL: <http://www.jstor.org/stable/1776086>

Accessed: 27-06-2016 03:58 UTC

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://about.jstor.org/terms>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Wiley, The Royal Geographical Society (with the Institute of British Geographers) are collaborating with JSTOR to digitize, preserve and extend access to The Geographical Journal

The Geographical Journal.

No. 2.

AUGUST, 1906.

VOL. XXVIII.

TRAVELS ON THE BOUNDARIES OF BOLIVIA AND PERU.*

By Baron ERLAND NORDENSKIÖLD.

THE travels in South America, the archæological and ethnographical results of which I am about to describe, were undertaken by Dr. Nils Holmgren (a zoologist) and myself during 1904 and the early part of 1905. In the start of the expedition Mr. D. de Bildt, one of our generous patrons, also took part. The field of our researches was the Peruvian-Bolivian plateau, previously visited by many investigators, lying north, south, and east of Lake Titicaca, and, above all, the eastern slopes of the Andes in the direction of the primeval forests between Rio Madre de Dios and Rio Beni, *i.e.* the province of Caupolican in Bolivia, at this spot known by Evans's † investigations, and the Peruvian provinces of Sandia and Carabaya, where researches were first carried on scientifically by Sir Clements Markham. ‡ Among other scientists who have visited this part of the boundary between Peru and Bolivia previously to our doing so, let me first of all mention Raimondi § and Bandelier, || as also the Bolivian and Peruvian travellers, *e.g.* Pando, ¶ Stiglich, ** Cipriani, ** etc.

* Read at the Royal Geographical Society, February 26, 1906.

† Evans, "Expedition to Caupolican, Bolivia, 1901-1902," the *Geographical Journal*, vol. 22, 1903.

‡ Markham, "The Province of Carabaya, in Southern Peru," the *Journal of the R.G.S.*, vol. 31, 1861. Markham, 'A List of the Tribes in the Valley of the Amazon, including those on the Banks of the Main Stream and of all its Tributaries.' Second edition. London: 1895.

§ Raimondi, "On the rivers San Gaban and Ayapata in the Province of Carabaya, Peru," *Journal of the R.G.S.*, vol. 37, 1867. Raimondi, 'El Peru.' Lima: 1874-1880.

|| Bandelier, "On the Relative Antiquity of Ancient Peruvian Burials," *Bull. Amer. Mus. Nat. Hist.*, vol. 20. New York: 1904.

¶ Colonel George Earl Church, "Northern Bolivia and President Pando's New Map," the *Geographical Journal*, vol. 18, 1901.

** 'Vías del Pacífico al Madre de Dios.' Publicación de la junta de vías fluviales. Lima: 1903.

Most of them having devoted their energies to other branches of science, previous to our investigations very little had been known of the ethnology of the regions in question.

It is but natural that on the eastern slopes of the Andes we experienced the utmost variations of temperature and scenery, being at times in the regions of eternal snow, and again in the tropical primeval forests, where indiarubber trees are plentiful. Moreover, as the declivity of the Andes is very abrupt towards the east, the distance between the snow-line and the forests where indiarubber is obtained, or the most sensitive tropical plants can be cultivated, is often but 50 to 60 miles. In some valleys it is possible, if mounted on a good steed, to plunge through snow on the one day, and on the next to pluck papaya or tap the rubber tree.

The Bolivian-Peruvian plateau round Lake Titicaca is inhabited by Aymara and Quichua Indians—the former south, east, and west of this lake; the latter north thereof. To the east of Lake Titicaca we passed the “language boundary” at Cojata; west of the lake, it was at the town of Puno.

The mountain valleys on the eastern slopes of the Andes have a population speaking Quichua, among which, on the fringes of the primeval forests east of the Bolivian province Caupolicán, we came across some few Apolistas speaking Lapachu, Rica-Rica-speaking Lecos, and Tacana-speaking Ydías. These tribes are, however, completely losing their own languages, which are superseded by Quichua. It was only with the greatest difficulty that I could obtain words and phrases of the Lapachu or Lapa-Lapa language, which is at present only spoken by elderly persons.

Farther east, towards the interior of the primeval forests on Tambopata, a tributary of Rio Madre de Dios, we met a small Tacana-speaking tribe, the Tambopata-Guarayo, and visited them. Other Indians live on the shores of the same river, but, as they were very shy, we did not succeed in coming in touch with them. On Rio Inambari the Pano-speaking Yamiaca live, as also the Tuyoneiri; the last mentioned speak a language which I cannot place. Between Rio Inambari and Tambopata there is another very small Pano-speaking tribe, the Atsahuaca; coming as I did from the Yamaica Indians, I was the very first white man that visited them. On Rio Marcapata, probably a tributary of Rio Inambari, there are some Indians speaking Tacana, who call themselves Arasa; north-east of them the Huachipairi Indians are settled. The Tuyoneiri, Arasa, and Huachipairi Indians were not visited by us; I have, however, succeeded in making a collection of words from the languages of the first two of these tribes, as I have come across members of the tribes at other places.

The Aymaras and Quichuas, *i.e.* the Indians of the plateau, fells, and mountain valleys, are all Christians, being, of course, in many other

respects under the influence of Spanish civilization, though simultaneously they have retained many customs (either unchanged or modified) from the pre-Spanish period, when they exhibited a purely Indian civilization, which was the most remarkable of any at that time existing in South America. The Apolistas, Lecos, and some Tacana-speaking Indians nowadays are not easily distinguishable from the adjacent Quichua Indians, or those Quichuas actually living with them.

The Yamiaca, Guarayo, and Atsahuaca, etc., or those small tribes that inhabit the primeval forests of Rio Inambari and Rio Tambopata, live, or at any rate a year or two ago lived, in the Stone Age almost entirely unaffected by the civilization of either the Indians of the mountain valleys or that of the whites. That we could find Indians so utterly untouched by civilization so close to the Andes and near tracts known since their early conquest, is solely owing to the difficulty of penetrating the primeval forests, as also that those rivers which flow from the Andes to the primeval forests in the beginning of their course through the latter are not navigable. We thus see that the district I visited is a borderland, not only as regards nature itself, but also with respect to man.

Without touching on the more well-known plateau, I will divide my paper into three parts—first dealing with the Quichua-speaking Indians on the eastern slopes of the Andes; then our archaeological researches both in the mountain valleys and the primeval forests; and, lastly, the savages of the primeval forests.

When studying the Quichua-speaking Indians, I specially devoted my attention to the economic conditions under which they live, and the customs they have retained from the period previous to the Spanish invasion. All the Quichua-speaking Indians on the eastern slopes of the Andes are agriculturists. The plants cultivated in the higher colder valleys or in the lower warmer ones are, of course, very different. In the Corani valley, for instance, which is 3985 metres (13,074 feet) above sea-level, various kinds of potatoes, oca (*Oxalis tuberosa*), broad beans, quinoa (*Chenopodium quinoa*) and cañagua (*Chenopodium*, cañagua), papa lisa (*Ullucos tuberosus*), and barley are all cultivated. In the Queara valley, 3460 metres (11,352 feet) above sea-level, besides all these, we met with both maize and a few garden plants. At Mojos, 1617 metres (5305 feet) above sea-level, the Indians have bananas, coffee, the sugar-cane, yucca, rice, mani, racacha (*Arracacha esculenta*), hualusa (*Colocasia esculenta*), oranges, lemons, maize, aji, tomatoes, coca, sweet potatoes, cotton, etc. Naturally each Indian does not cultivate all these plants; the most indispensable are bananas, coffee, the sugar-cane, yucca, coca, rice, and maize. Frequently the Indians of the higher mountain valleys not only have fields there, but also on the verge of the great primeval forest district in the east; for instance, the Indians of the elevated Chia valley, where only potatoes, oca,

quinua, cañagua, broad beans, and barley can be cultivated, possess fields in the vicinity of Rio Sangaban, there cultivating coca, maize, etc.

The fields are tilled in a very primitive manner. In order to loosen the soil, hoes are in use which, though nowadays provided with blades of iron, are in shape the same as those first made of bronze. The fields are seldom manured, whereas a rotation of crops is extensively used. In the mountain valleys the fields lie in neat terraces; farther towards the interior, clearings are made in the bamboo thicket or in the forest. In days of yore, when only bronze or stone implements were available, this method of clearing was no easy matter, as even with iron axes a good deal of labour is required to break a field in the primeval forest. These forests are a great obstacle to the agricultural Indian of the fell, used as he is to the fell valleys that are so easily cleared.

In the higher valleys of the fells the Quichua-speaking Indians are cattle-keepers, having alpacas, llamas, sheep, cows, small pony-like horses, donkeys, and mules. During the time of the missions, according to Armentia,* the more tropical grass-grown heights at Mojos, Pata, and Santa Cruz, etc., were well supplied with cattle, but these golden days are long since past. Farther in, towards the primeval forests no cattle-keeping can be carried on, as, in spite of the luxuriant vegetation, good pasturage is very scarce, while the animals are destroyed by the insects and vampires. The fact that the Indians of the fell are cattle-keepers is one of the chief reasons why they do not settle—except very occasionally—farther within the primeval forests.

Besides agriculture and cattle-keeping, the Indians of the fell earn their livelihood by working for the whites, more especially by tapping rubber in the primeval forests. A secondary source of income of but small importance is washing for gold, this being undertaken by Indians at Juan del Oro and at Rio Inambari in Peru. While it is true that in the provinces of Carabaya and Sandia, in Peru, a good deal of gold has been found—above all, by a North American company working a mine between Rio Inambari and Rio Tambopata with much success—it is also a fact that the importance of these finds has been much exaggerated. The trade in rubber, should good roads be constructed, may prove of vast importance; the days of cinchona are now past.

The Indians of the fells import very few necessities from outside their own domain; some pottery and bronze pins from the Indians of the plateau, colours and a few implements from the whites, that is all. They might live very happily if they were not addicted to certain vices, chiefly insobriety, and were not oppressed by many white parasites living at their expense. By the aid of "fire-water" these cheat the Indians of the product of their agriculture and cattle-keeping, and by

* Armentia, 'Relación Historica de las misiones Franciscanas de Apolobamba.' La Paz: 1903.

means of strong drink they lure the Indians to the indiarubber barracks for the purpose of tapping rubber. The most usual method is giving the Indians the intoxicant, either on credit, or during some great dance to lend them money with which to buy the wretched stuff. When the festivity and intoxication are past, the Indians cannot pay their debt, running as it does at a high rate of interest, but are forced to enter some indiarubber barracks. Once they are there, by various tricks it is arranged that the Indians remain in debt to their master.

The Governments of Peru and Bolivia, being now recruited from patriotic men who are deeply interested in the future of these districts, really ought to interfere and protect the Indian from both "fire-water" and the oppression of the white man. They would then, on the Andes, call into being a happy population of intelligent, industrious small farmers of the chaste Quichua race, for what I have just expressed applies certainly not only to the small and limited district I visited, but also to large portions of the Andes.

In direct opposition to the Indians of the primeval forest, the fell, Indians show great possibilities of development. Both Peru and Bolivia would in this manner solve the question of immigration far better than by importing Chinese, and the inferior elements among European emigrants.

The Quichuas still practise several customs which remain, more or less modified, from the pre-Spanish period. Among these we must reckon their dances, which are always performed in connection with religious, *i.e.* Roman Catholic festivals. Among other festivals I have witnessed, there is the festival of the Cross (*La fiesta de la Cruz*). The crosses on the heights and in or near churches were hung with flowers, and in the huts crosses decked with flowers were set up. In some huts I saw two crosses, one larger than the other, representing a male and female cross. Among the very peculiar customs at this festivity, let me mention two paper lanterns which were taken to the cross by night, the one shaped like the sun, the other in form like the moon. The sun is carried by a man, the moon by a woman. As we know, the Incas worshipped the sun and moon, the sun being the male, the moon the female divinity. It is only the men who take any part in this dance, as in most purely Indian dances. In Pelechuco the dancers at the Easter festivities had large feather ornaments in the form of suns on their heads (Fig. 1). At these dances both "fire-water" and *chicha* (ale made from maize) are drunk to excess.

Even now the dead Christian Quichua Indian takes with him his worldly possessions when departing to another sphere. This is accomplished by there first being a regular drinking-bout for a full week after a death, and then the things deemed necessary for the deceased's future state, *e.g.* tools, food, clothes, and, as a matter of course, "fire-water," are taken to an open place, where they are all burnt.

Presumably the Indians imagine they succeed in freeing the souls of these objects by this means, so that they can accompany their master. In Pelechuco these sacrifices were offered by night outside the consecrated churchyard where the dead Indian (man or woman) had been buried. The corpses themselves are never burnt.

Should the Quichua Indian build a new hut, he buries the foetus of a llama, coca, tin figures, etc., underneath it. This is to bring luck. According to Bandelier,* during the pre-Spanish period, the

FIG. 1.—QUICHUA INDIANS DANCING AT THE EASTER FESTIVITIES WITH LARGE FEATHER ORNAMENTS IN THE FORM OF SUNS ON THEIR HEADS.

natives on the Peruvian coast, when building palaces or similar buildings, gave their walls a core formed of objects, some of which were of metal. The most valuable treasures found in Peru are said to have been obtained from such cores. The above-mentioned custom of burying objects when erecting huts is apparently a survival of this usage.

* Frederick Webb Hodge, "Bandelier's Researches in Perú and Bolivia," *American Anthropologist*, 1897.

If the Quichua Indian erects a mill in order to grind the sugar-cane, under the central post he buries the fœtus of a llama, laden with small jars of wine, fire-water, and chicha. Should the Quichua Indian desire a drought, he takes the cranium out of a modern, *i.e.* Christian Indian, grave, and sets it on a pole. Sometimes the skull is again buried, but very often it is allowed to moulder above ground. This peculiar custom may perhaps explain the headless graves described by Ten Kate,* as found among the so-called Calchaquies of Argentina. The Quichuas have very peculiar ideas concerning diseases. Should they wish a certain individual to fall ill, they place a small quantity of that person's hair, or something similar, in an ancient grave. Moreover, on all possible occasions the Indians offer up coca and fire-water; on many occasions when searching for archæological remains for me.

The Quichua-speaking Indians east of the Andes have very few objects of their own manufacture which possess any interest of importance. On the plateau you become accustomed to see stuffs where viscachas, birds, and llamas, etc., predominate as ornaments, but east of the Andes such stuff is rare. The high caps they wear (Fig. 2) are, however, of a certain interest, as their ornaments generally are different in the various valleys. In the Queara valley you find llamas on the caps; while plants ornament on those of the Quiaca valley. These latter ornaments have a certain connection with a passion that these Indians have for flowers, since in this valley, both men and women decorate themselves with flowers, and have regular gardens containing pelargoniums, chrysanthemums, tulips, etc. In the Corani valley the Indians adorn themselves with wild flowers.

Let me now touch on my archæological excavations on the eastern slopes of the Andes. In the higher fell valleys at present inhabited by Indians speaking Quichua, I have excavated many sepulchres, so-called Chulpas, and sepulchral grottoes, collecting the objects and skeletons I found therein, carefully keeping the contents of each separate from every other find. Moreover, I have purchased various articles of bronze and stone, which the Indians now living in the fell valleys have found when breaking ground, etc. Some rock carvings and sculpture on stone have been photographed by me. Old dwelling-places have been discovered by me in the primeval forest at Buturo (670 metres, 2198 feet), where pottery and stone implements were found totally unlike those of the fell valleys.

The types of graves found east of the Andes are chulpas and sepulchral grottoes. Moreover, the former are chiefly met within that district of the Andean plateau inhabited by Aymaras, and for many reasons are

* Ten Kate, "Anthropologie des anciens habitants de la région Calchaquie," *Anale del Museo de La Plata*, 1896.

ascribed to their ancestors. As Middendorf,* by studying the names of places, having proved that these Indians were formerly far more widely spread than now, it is believed that those sepulchres met with in the Quichua-speaking districts are also derived from the Aymaras. If this is correct, the valleys of the fell in question must formerly have had an Aymara population which has been ousted by Quichua, or, what

FIG. 2.—QUICHUA INDIANS FROM SANTA ROSA WITH HIGH CAPS (WEST OF THE ANDES).

is far more probable, has adopted the Quichua language. By the way, let me observe that, as the study of the nomenclature of places is in these parts so very important, it is a great mistake to do as did the French expedition to Bolivia under de Créqui Montfort,† when on their map they call the well-known islands of Lake Titicaca by the names of French discoverers, instead of retaining the Indian names thereof.

* Middendorf, 'Die Einheimischen Sprachen Perus,' Bd. V. Leipzig: 1891.

† De Créqui Montfort and Sénéchal de la Grange, "Rapport sur une Mission scientifique en Amérique du Sud." Nouvelles Archives des Missions scientifiques, Tome 12. Paris: 1904.

Chulpas or sepulchral grottoes, or both of them, have been found by me in all the higher valleys of the fells visited by our expedition. There is no essential difference between chulpas and sepulchral grottoes, a natural grotto having often been used as a wall or roof for a sepulchre. In Pelechuco valley, where it is easy to obtain large slates, very beautiful stone sepulchres (Fig. 3) have been made thereof. In some valleys where natural grottoes are numerous, these are used as burial-places.

FIG. 3.—CHULPA PELECHUCO VALLEY.

In the Quiaca valley there is a peculiar kind of sepulchre, consisting of a massive pillar above a small sepulchral chamber. Many of the chulpas are constructed like regular miniature houses, being provided with a door (Fig. 4). These belong to a type often seen represented in travels on the plateau. The door is not directed towards any special point of the compass as a general rule. Some of the graves in the Ollachea valley are constructed on such inaccessible spots on the mountain that it is quite perilous to reach them. Several graves are of masonry. On some in the Ollachea valley, there are traces of their having been painted red.

Neither chulpas, sepulchral grottoes, nor stone or bronze implements are here found west or east of the highest chain of the Andes, above the present limit of cultivation. Not once have I made a single observation pointing at this limit being higher or lower than at present, so long as these districts have been inhabited by man. The settled population, mostly speaking Quichua, and exclusively devoted to cattle-keeping, now inhabiting the extensive plains round Cojata, Macusani, etc., lying west of the highest chain of the Andes, and above the limit of cultivation, have settled there in a period later than the time when sepulchres were erected, or bronze implements were in use. On the lower parts of the plateau, on the contrary, the Indians live both by cattle-keeping and agriculture. East of the Cordillera Real, in the higher valleys of the fell, the possibilities of human subsistence are about the same as on the plateau. On the verge of the primeval forests, as I have previously observed, far more tropical plants can be cultivated than anywhere on the plateau.

Penetrating deeper down into the valleys to the east, farther into the primeval forests, we find, as I have before stated, that it is no longer possible to carry on cattle-keeping, above all, to keep llamas, the cultured plants that can be grown being different to those that can be cultivated in the higher valleys of the fell, or on the plateau. It will also be found that you never meet with chulpas or sepulchral grottos (at any rate, not in those valleys I visited), and very rarely come across objects of bronze or pottery typical of the valleys of the fell or the plateau farther towards the interior of the primeval forests, except in those places where pasturage for llamas has existed in the vicinity, and it has been possible to cultivate those plants so characteristic of the plateau.

On the accompanying map the chulpa limit to the east in that district visited by me is marked. It proceeds somewhat further up the Andes than the limit of the present expansion of the Quichua-speaking Indians. The difficulty of breaking ground with the primitive implements they possess, the dread of fever and of the savage Indians of the primeval forests, have contributed to the fact that the Indians of the fell (which otherwise present so great a power of expansion) have not spread towards the interior of the exceedingly fertile districts of the primeval forests; but the chief reason has probably been their not having pasturage for their llamas, and their not being able to cultivate the same plants they were accustomed to on the fells.

In the primeval forests east of Cuzco the Indians of the fell (with the exception of some military expeditions of the Incas) have not spread. There, according to Squier,* the fortresses of Paucartambo,

* Squier, 'Peru.' New York: 1877.

Pisac, and Ollantaytambo determine the eastern boundary of the Inca rule. Their territory did not extend further than 60 miles east of their capital, Cuzco, and yet they, or, at any rate, their cultural influence, predominated from Argentina to Ecuador. Squier considers that the vast primeval forests and the savages hindered the Incas in their passage eastwards.

Most of the chulpas and sepulchral grottoes had been plundered previous to their being discovered by me. In the valleys of Pelechuco and Queara, however, Mr. and Mrs. Bandelier excavated several

graves, thus preserving a good deal of material from destruction. Most Quichuas of the present day were not much inclined to show me where the graves were, but made no attempt to hinder me from digging. In the Queara valley they believed that I took the skeletons in order to bring them to life in my own country, where they would either be employed as workmen—the people of my own land being weak and lazy—or would be whipped till they discovered where the Incas had their gold-mines. It is very pardonable for the Indians to think that gold always attracts the white man.

Only in a few of the graves did I find one single skeleton; most of

them contained a quantity. In one sepulchral grotto I found close upon two hundred, and in one chulpa sixteen. Those skeletons that I found entire, and that I feel convinced have never been disturbed, were always in a sitting posture. All the dead have been placed in the sepulchral chambers, not merely buried in the grave.

The chief finds of the graves are bronze pins—so-called *topos*. They are adorned with llama heads, or have heads in the form of leaves, at times also flowers (?), or still more often simply a flat disc. *Topos* are

FIG. 4.—CHULPA QUIACA VALLEY.

used by the Quichua women of the present day to fasten the shawl they wear over their shoulders. The modern *topos* are invariably more pointed than those of ancient days. The cloths of which remains are found in the graves were so coarsely woven that blunt *topos* did not necessarily damage the garment. Pottery is rare. The patterns thereon are mostly diamond or spiral, painted in black, seldom in yellowish-white. In most graves, though they have certainly not been disturbed, nothing but skeletons were found. Perfectly empty sepulchres were also found; this is often owing to the skeletons having

entirely mouldered away, but at times it seems probable that the sepulchre has never been used.

Sometimes quite modern articles are found in the graves. In a grave at Quiaca, in which bronze objects had been discovered, I found not only trepanned crania, but pottery of modern Pucara manufacture, and glass bottles. On one of these bottles there stood, "Die Keisserrliche Privilegirt Altonatische W. Kronessents." They have evidently been put into the graves by the Quichua-speaking Indians at present living in the vicinity, probably in connection with the plundering of the grave. I have already mentioned the customs of placing objects in graves for the purpose of bewitching persons that are disliked. In one sepulchral grotto I found a gilded glass bead; in another, together with bronze objects, a piece of a cow-horn.

Burial in the old manner in chulpas, etc., was continued long after the conquest of the country by the Spaniards in exactly the same way as before, as also artificial deformation of the crania, etc. Bandelier,* when mentioning the attempts of the Catholic priesthood to eradicate the ancient mode of burial prevalent among the Indians, states, "Not only was the ancient mode of burial extensively practised until more than a hundred years after the first arrival of the Spaniards, but the cloth with which all the corpses (ancient and modern) were covered was periodically renewed as late as the middle of the seventeenth century. The fact that food and drink also were replaced from time to time implies that the vessels found along with the bodies are no longer those originally buried with them." Bandelier points out that as late as the close of the sixteenth century artificial deformation of the cranium was practised, since it was prohibited by the viceroy D. Francisco Toledo. It is, therefore, very difficult to decide whether what is found was really deposited in the graves at the same time as the skeleton or no when all the objects are met with superficially.

In the sepulchres incomplete articles are often found, *e.g.* handles of hoes without any blade, pestles without any mortar, pieces of pottery, etc. This must be some kind of "grave goods" for some reason or another placed in the sepulchres in this incomplete state. It cannot possibly be owing to these sepulchres having been inhabited—which, according to Bandelier,† has been the case with some chulpas—since the objects are found in this state in chulpas which cannot possibly be used even for a casual shelter over-night.

One great deficiency in my investigations of the eastern slopes of the Andes is my not having succeeded in making a single thorough

* Bandelier, "On the Relative Antiquity of Ancient Peruvian Burials," *Bull. Amer. Mus. Nat. Hist.*, vol. 20. New York: 1904.

† 'Sinopsis Estadística y Geográfica de la Republica de Bolivia,' Tomo 1, p. 129. La Paz: 1903. Original paper not seen.

examination of any dwelling-place in the valleys of the fell. There are a number of ruins of houses, deemed by some Indians to be of ancient date, but the finds made by me were generally very poor, and certainly belonged to different periods. In the valley of Queara there are a couple of round houses with slate roofs that are called Incahuasi, resembling large chulpas of the type I have mentioned as having a small door. At Corani there are remains of a number of houses that are also round, which, in my opinion, might belong to the chulpa period. Entrance to these houses has probably been obtained through the roof. The reason why the dwelling-places are destroyed is that the Indians do not leave them undisturbed, as is the case with the sepulchres, when making fields or gardens, etc. Most of the finds made when the Indians break ground are derived from dwelling-places that have been destroyed.

A number of bronze and stone implements found by the Indians when making similar clearings have been purchased by me. The articles of bronze are so far interesting that they prove how widely those implements, so characteristic of the civilization of the Andean fells, have spread. Axes, hoes, chisels, awls, knives, so-called "tumis," are found here that are in form almost identical with those described by Ambrosetti * as seen in North Argentina, 600 or 800 miles from these districts.

Here, as in Argentina, bronze and stone axes of a T-shape are found. One stone axe found by me shows the influence of metal technics on working in stone, as its edge is curved outwards. Similar instances are very common with us in Northern Europe from the early days of the Bronze Age, but I have not met with any mention of their having ever been discovered in South America.

In the Sina valley numerous sculptured stones are found, which may possibly be derived from some vast building. They are, for the most part, built into the walls of the church and belfry, but you come across many here and there in the village of Sina. One I found on which a jaguar was cut; another had a conventionalized head of a jaguar. This latter is a great stone that serves as a bridge over the brook of Sina. Each mule or pedestrian passing across it naturally gives the head one or several kicks, so that in a very short time the sculpture will be totally obliterated. Several stones are ornamented with serpents, while one is adorned with a fish, seen from above. These large stones with animal figures thereon are the only specimens of a highly developed stone-cutting found in this part of the eastern slopes of the Andes.

Rock paintings and carvings are rarely seen here. I must mention a grotto at Corani, lying far above the limits of cultivation

* Ambrosetti, "El bronce en la Región Calchaquí," *Anales del Museo Nacional de Buenos Aires*, tomo xi. Buenos Aires: 1904.

and chulpas, in which the wall is perfectly covered with figures (Fig. 5). To this very day the Indians offer coca there. A few crosses painted in red above a number of incised figures are probably intended to counteract the evil influence the figures may be deemed to exercise. It was probably with the same idea that a priest read prayers above the painted grottoes at Quatchihocana * in North Argentina, in order to exorcise witchcraft and evil.

This is, in brief, what I have discovered in the fell valleys east of the Andes, bearing any close connection with the civilization of the Andean fells, more especially with the builders of the chulpas, who

FIG. 5.—FROM THE CAVE AT CORANI.

were probably the ancestors of the Aymaras. *As we have ascertained, the remains of this civilization is not met with farther east than the verge of the primeval or dense tropical forests, with the sole exception of the valleys of the fell, which afford to man about the same conditions of life as the lower parts of the Bolivian-Peruvian elevated plateau round Lake Titicaca.*

Further east towards the interior of the primeval forests, in the dense tropical forests at Rio Tuiche (Buturo), 600 to 700 metres (1960 to 2300 feet) above sea-level, I found large dwelling-places. They prove that the now uninhabited primeval forests formerly had a numerous population. The things found there were absolutely unlike

* Erland Nordenskiöld, "Resa i gränstrakterna mellan Bolivia och Argentina," *Ymer*, 1902, Fig. 8, p. 451.

anything discovered in the fell valleys, and are derived from a population that has evidently occupied a higher status than the savages at present living in the primeval forests at Rio Madidi, Rio Tambopata, and Rio Inambari.

Thus in the primeval forests large grinding-stones (Fig. 6) are found, masses of fragments of pottery, furnished with totally different ornaments from those seen on the pottery from the chulpas, the ornamentation being made by the laying on of fillets of clay, whereas the ornaments on the pots from the valleys of the fell are diamond, spiral, and triangular patterns chiefly painted in black. The stone axes from the primeval forests possess a characteristic form. Human faces, modelled in clay, have also been found by me, one having the lower and the upper lip perforated, another being simply perforated through the upper.

It is no easy matter to decide from which tribe these finds from the primeval forests are derived. About 1670 it appears that a tribe Suquitunia* were living in these districts, but it is impossible to know whether these objects belonged to them or no. It seems, from the accounts of the missionaries, that the tribes speaking Tacana and Lapachu they met in these parts did not even boil their food, but simply roasted it, which statement does not agree very well with the quantity of pottery found in the primeval forests. The clay figures might possibly be those idols mentioned by the missionaries, unless, as Ehrenreich† supposes, the latter were simply dance masks.

On my former travels in Chaco, in Argentina, I also found large dwelling-places in the primeval forests beyond the real Calchaqui territory, in districts at present very sparsely inhabited. Ceramic art was in this case also of a characteristic local type.

It would be very interesting to institute researches with a view of ascertaining whether very large ranges east of the Andes, at present inhabited by more or less wandering tribes, were not formerly occupied by a settled population of far higher standing than that now dwelling there. It would also be of importance to learn in what degree these Indians of the primeval forests have possessed any independent civilization, or how far they have been influenced by that of the fell. In Chaco I found shells (*Oliva peruana*) from the Pacific in a grave‡ which proves that communication for purposes of barter existed from the shores of the ocean to the dense tropical forests of Chaco. In the

* Armentia, 'Relación Histórica de las misiones Franciscanas de Apolabamba.' La Paz: 1903. 'Relación y Descripción de las misiones y conversiones de infieles, Vulgarmente Llamados de Apolabamba,' etc. La Paz, 1898. Published by M. V. Ballivian.

† Ehrenreich, "Die Ethnographie Südamerikas," etc., *Archiv. für Anthropologie*, Neue Folge, Bd. 3, Heft I. Braunschweig: 1904.

‡ Erland Nordenskiöld, "Präcolumbische Wohn- und Begräbnisplätze an der Südwestgrenze von Chaco," *Kongl. Svenska Vetenskaps-Akademiens Handlingar*, Bd. 36, No. 7. Stockholm: 1903.

primeval forests of Rio Tuiche I found no object that can be considered derived from the Indians of the fell, but, having discovered no graves, I have been forced to content myself with investigating dwelling-places, which, as a general rule, give a poor result.

Let me now proceed to describe those forest Indians living in the immediate vicinity of the Andes and the Quichuas. As already mentioned in my introductory paragraph, of these tribes we visited the

FIG. 6.—GRINDING-STONE FROM THE FORESTS OF BUTURO.

Guarayo at Rio Tambopata, the Yamiaca at Rio Inambari, and the Atsahuaca residing between these two rivers.

It was no easy matter to go to these Indians, and perils beset our route both down the Tambopata when we followed the last unexplored portion of this river, and our march into the primeval forests between Tambopata and Inambari. However, it is not our adventures and sufferings that are to be described here, but the result obtained by our exertions.

The Quichuas and whites call the savages of the primeval forests "Chunchos." Yamiaca and Atsahuaca are tribe names or horde names
No. II.—AUGUST, 1906.]

K

the savages also give the rivers they live on. The signification of Guarayo is, on the contrary, very complicated. It is evident that this word at times simply means "enemy," but it also appears that it is sometimes used to designate just those Indians living on Rio Tambopata, Rio Heath, or the Rio Madidi, thus Tacana-speaking savage tribes. There are no Tupi-speaking Guarayo in the forests between the Rio Madre de Dios and the Beni. It would land me far too deep in the slough of detail if I attempted to give any comprehensive explanation of the use of Guarayo* as a tribal name. Let me denominate the tribe of Indians at the Rio Tambopata as Tambopata-Guarayo, leaving to the future the choice of a better name for them.

The tribes living beside the rivers Rio Inambari and Rio Tambopata are very small in number. The Yamiaca consists of from thirty to forty individuals, the Atsahuaca of about twenty-five. Of the Tambopata-Guarayo tribe I have seen about thirty or forty, but they are far more numerous. Each tribe has its own chief; this dignity does not pass by inheritance from father to son, however, but it seems that the chief warrior of the tribe is chosen as its head. Though these tribes are so small in number, several different languages are met with in these districts, as already mentioned by me. Thus the Tambopata-Guarayo speak Tacana; the Atsahuaca and Yamiaca speak Pano; while the Tuyoneiri living near the Yamiaca speak a third language. The Yamiaca mix many Tacana words in the Pano language they speak. The Tacana-speaking peoples are not widely disseminated, their territory being between the lower Rio Madre de Dios and the Rio Beni. Some of them are christened and civilized. The person who has done most to make them known is Armentia.† The Pano-speaking peoples live on the shores of Rio Ucayali, Rio Madre de Dios, and the Rio Beni, and the intermediate district. It was de la Grasserie‡ who first made them one group. K. v. d. Steinen§ has made the most important contribution to our knowledge of this group of languages.

Peaceable communication between the tribes, as also the capture of women, naturally conduce to the confusion of languages. Wars are of very usual occurrence, being chiefly undertaken for the purpose of capturing women or plunder. It cannot be stated that the Tambopata-Guarayo, Yamiaca, and Atsahuaca Indians have carried on warfare with their nearest neighbours to the west, the Quichuas, or the whites;

* Erland Nordenskiöld, "Beiträge zur Kenntnis einiger Indianerstämme des Rio Madre de Dios-Gebietes," *Ymer*, Heft III., 1905.

† Armentia, 'Navegación del Madre de Dios.' La Paz: 1887. Lafone Quevedo, "Arte y Vocabulario de la Lengua Tacana," *Revista del Museo de la Plata*, 1902.

‡ De la Grasserie, "De la famille linguistique Pano," *Amer. Congr.*, p. 438. Berlin: 1888.

§ K. v. d. Steinen, 'Diccionario Sipibo.' Berlin: 1904.

there have simply been some surprises from the savages, which have scarcely led to any reprisals being taken by either the whites or the still more cowardly Quichuas. Nor have these Indians been subjected to any direct persecution by the whites on Rio Madre de Dios, but have simply had the unpleasant experience of hostile tribes penetrating closer to their territory. Their arms of warfare are the bow and arrow. They do not poison the arrow-tips. They are totally unacquainted with knives and clubs. Peaceable communication exists also between the tribes, and by this means Indians like the Atsahuaca, never previously visited by the whites, have obtained iron axes, machetes, etc.

All these Indians of the primeval forest are agriculturists, though they have no settled place of abode. They are people who till the soil, and yet are constantly ambulant. Each tribe owns fields spread over a large territory, which they visit in turn for sowing and reaping. The Yamiaca and Tambopata-Guarayo, living on the larger rivers abounding in water, move from place to place in canoes and on rafts. The Atsahuaca, living by rapid-flowing brooks, have no such craft, but, on coming to a river which they cannot wade through, they cross it by riding on a log.

The reasons why the fields often lie at a distance of several days' marches from each other are numerous. One of the chief causes has doubtless been the difficulty of finding ground that could be broken with ease. A couple of years ago all these savages were exclusively restricted to stone and bone implements, and it is not an easy matter to clear a glade in the dense tropical forests with such tools. Just for this reason the fields are invariably found in the "chucal," a kind of extremely dense bamboo thicket, where it is comparatively easy to break ground, as few large trees grow there. Another motive for these numerous fields has doubtless been that the Indians wished to have them spread over as extended fishing and hunting grounds as possible. Perhaps they also wished to have numerous fields, in case one or other was plundered by their enemies. As a rule the fields are not large, about 50 by 20 metres (164 by 65 feet) or so; but as they can break many fields in the same bamboo thicket, the entire area may be large. The largest field seen by me—it belonged to the Tambopata-Guarayo—was 150 by 75 metres (492 by 246 feet). In almost all the clearings bananas are cultivated, the plants being placed at a certain distance from each other, so that they give the impression of being planted in rows. Other plants are cultivated between them, those needing much sun, however, in fields where the banana is not grown, or the banana plants are quite small. Special care is devoted to the sugar-canes, they being fenced in and provided with supports.

Besides bananas, I have seen the following plants under cultivation: yellow and white mandioca, sweet potatoes, kalabasses, cotton, a narrow,

very palatable variety of sugar-cane, and maize. Besides these, the Tambopata-Guarayo cultivate hualusa (*Colocasia esculenta*) and tobacco, the Atsahuaca aji, and the Yamiaca the pine-apple, which is obtained from the whites. Of all these plants the banana is the most important, then mandioca and maize. The Tambopata-Guarayo do not smoke the tobacco cultivated, nor do I believe it to be chewed or taken as snuff. The fields are common property, at any rate with the Tambopata-Guarayo and Atsahuaca, but there is apparently an exception made with respect to the sugar, so delicious to them. When carried into camp, the produce of the fields becomes private property.

FIG. 7.—ATSABUACA HUT.

These Indians support life, not only by agriculture, but also by hunting and fishing. The Yamiaca and Tambopata-Guarayo are very ardent fishers; the Atsahuaca are the best hunters. Fishing is carried on with bow and arrow. For this purpose the Yamiaca have harpoon arrows. The Tambopata-Guarayo use wooden hooks. The Yamiaca and Atsahuaca have a way of catching fish by poisoning the water with

a certain root. It would be interesting to touch upon the various types of arrow used for hunting and fishing, but would necessitate far too many details. Much labour is expended on these weapons, and, for instance, an arrow from Atsahuaca can always be distinguished from one from Tambopata-Guarayo. The spoils of hunting and fishing become common property, at any rate when any large kill or good catch is made. All these Indians own dogs; the Yamiaca have fowls they have obtained from the whites, but, as is the case with the wild birds these savages sometimes tame, they keep them, not for food, but for company.

As I have previously stated, these tribes have no settled dwelling-place, but own a number of huts at different places in the vicinity of their fields. The Tambopata-Guarayos and also the Yamiaca live in communal huts, *i.e.* several families live together in one hut, where each has its own domain and fireplace. In the Atsahuaca tribe each family inhabits a separate hut (Fig. 7). These huts are as simple as possible, the Atsahuaca contenting themselves with a protective roof of a few palm-leaves, while the Tambopata-Guarayo and Yamiaca set up an oblong round hut of the stems of an enormous reed (*Gynerium sacchariodes*) stuck into the ground.

There are no large families. These Indians are monogamists, and from one to three children are seen in each family. In the very largest family I saw among these Indians—it was in the Atsahuaca tribe—there were but four children. In a portion of the hut, or in a hut of their own, each family has their fireplace, where the wood is spread fanwise, not only in order to save the fuel, but so that the members of the family may creep close to the warm wood. Fire is obtained in the usual way with wooden sticks.

The Tambopata-Guarayo have no other cooking-vessels than sections of bamboo, in which they steam their food. The Yamiaca and Atsahuaca possess crocks of a most primitive type. Among the Atsahuaca it is only the women who boil their food (K. v. d. Steinen * made a similar observation among the Bakairi); the men invariably roast theirs. Both men and women carry in wood to the huts. Making pottery is "woman's work." The males of all these Indian tribes are clad in a shirt without sleeves, made of beaten bast or of the cotton they themselves cultivate. The females wear a square piece of the same material round their hips (Fig. 8), sometimes also wearing a similar square across their shoulders. Both men and women have the cartilage of the nose pierced, having a disc of mother-of-pearl inserted in it, or nowadays sometimes a coin. This perforation of the nasal cartilage has no connection with arriving at puberty, being undertaken long before that period. Some men also have the corners of their mouth

* K. v. d. Steinen, 'Unter den Naturvölkern Zentral Brasiliens.' Berlin: 1894.

perforated, having small wooden plugs in them for everyday occasions, but inserting feathers on high days. Among other adornments the men have frontals of gay parrots' feathers. The Atsahuaca women wear necklaces of monkeys' teeth, while with the Tambopata-Guarayo these are worn by men.

The Tambopata-Guarayo Indians paint their arms, legs, and faces red. The Atsahuaca adorn themselves with patterns in red and blue. None of these Indians are tattooed. All these Indians, in direct opposition to the Quichua, are extremely cleanly in their habits. Nevertheless, they fall a prey to various diseases. While I was with the Atsahuaca they suffered from dysentery; a woman attacked by

[FIG. 8.—ATSAHUACA WOMAN AND BOY.

this disease was beaten with nettles (*Urea*, sp.) all over her naked body with a view to curing her. When this treatment had not the curative effect desired, her husband trampled on the various parts of her body, evidently with the intention of thus driving away the ailment.

These savages, more especially the Atsahuaca and Guarayo, were extremely kind and friendly towards us, built us huts, gave us fire, and presented us with different produce from their fields. The Atsahuaca offered me their most beautiful woman, Tamutsi, if only I would marry her and remain with them altogether. These savages of the primeval forest awaken much sympathy in me, though I know full well that they are doomed to extinction. The forests they live in are rich in

indiarubber, so that very soon the whites will have taken possession of every scrap of their domain. Probably I am one of the very few who have been permitted to see any of the small primitive tribes living at the base of the Andes previous to their losing all their original customs and usages. They will soon become wretched objects, tapping indiarubber trees and drinking fire-water; this is the inexorable fate to which "los terribles chunchos" are hastening with incredible speed.

Before the paper, the CHAIRMAN (Sir THOMAS HOLDICH): Baron Nordenskiöld, who is to address us to-night, is a member of a well-known geographical family. He is the son of the late Baron Adolf Nordenskiöld, who was famous as one of the most eminent geographers of the last century. It is not very long ago that we had the pleasure of hearing from his cousin, Dr. Otto Nordenskiöld, an account of Antarctic discovery. To-night the baron will take us to a part of South America which has been very little visited by white men—the eastern slopes of the Andes and those sources of the Amazon river which are buried in primeval forest. This part of the continent of South America offers many points of unusual interest, perhaps as much ethnographically as geographically, for it is undeniable that very many of the aboriginal tribes of South America are rapidly disappearing. There are tribes in the northern parts of South America, as in the south, that can now be numbered by tens which not long ago could be reckoned in thousands. It is for this reason that all the information we can obtain about them is so important. I will ask Baron Nordenskiöld to commence his address.

After the paper, the CHAIRMAN: I think we may well congratulate Baron Nordenskiöld on the excellence of his illustrations. They are most wonderfully clear, and most appropriate to the subject of his paper. We are fortunate to-night in having several gentlemen here who are more or less acquainted with the regions about which he has been telling us; amongst others the Belgian *Chargé d'affaires*, Colonel Don Pedro Suarez. I will ask him to address a few words to you.

Colonel PEDRO SUAREZ: Kindly allow me to commence by thanking Baron Nordenskiöld, in the name of the Government of Bolivia and in my own, for the interesting lecture he has just given us on his troubles on the boundaries of Bolivia and Peru. As a Bolivian, I am always very grateful to those distinguished travellers who have honoured my country with even a hurried visit, which, however, frequently does not give them sufficient time to study personally the habits and customs of the country, and to a great extent they have to rely upon information they receive, which in the majority of cases is very misleading. From my own personal knowledge and experience, both in South America and in Europe, I have acquired a thorough acquaintance with the grading and export of indiarubber and other tropical products grown in the forests and on the banks of our great rivers. Our Governments as a rule spare no efforts to protect the natives, and when abuses crop up, as they needs must in those immense regions, the Governments put a stop to them as soon as they become known. I can proudly assert, speaking on behalf of my people, that the indiarubber and other products which I have mentioned are not stained with blood, nor have they been wrung from the helpless aborigines without giving them something of fair value in exchange, as is notoriously the case with the indiarubber coming from other parts of the world.

I am sorry to disagree with Baron Nordenskiöld in reference to the photos he has just shown us of some persons supposed to be Mojos Indians, and which in no