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INTRODUCTION

Lewin (1931, p. 30) describes stimulating and narcotic drugs as "agents capable of effecting a modification of the cerebral functions, and used to obtain at will agreeable sensations of excitement or peace of mind." He divides them into five groups: euphorica, phantastica, inebriantia, hypnotica, and excitantia. All of these five groups except the hypnotica are represented in the stimulants and narcotics of aboriginal use in South America, southern Middle America, and the West Indies. In the following pages we shall deal with these native stimulants and narcotics in the following order, rather than in that of Lewin: Tobacco, Piptadenia snuff, alcoholic beverages, Ilex (mate, guayusa), Paullinia (yoco, guarana), cocoa, coca, Banisteriopsis, Datura, miscellaneous. Lewin classes coca among the euphorica or sedatives of mental activity; Banisteriopsis and Datura among the phantastica or hallucinating substances; alcoholic beverages among the inebriantia; tobacco, Piptadenia, Ilex, Paullinia, and cocoa among the excitantia or mental stimulants.

TOBACCO

Tobacco (numerous native names, listed in: Dixon, 1921; Stahl, 1924) has been used in one form or another by the Indians of the West Indies, southern Middle America, and South America since earliest Contact times and had been used no doubt long before the coming of the European. It is derived from various species of the genus Nicotiana (N. tabacum, N. rustica, N. undulata, N. paniculata, and probably others), mostly from cultivated plants, and more commonly home-grown, although by some tribes it is procured through trade from other Indians or from Whites. There is some evidence of the use here and there of wild plants, as among the early Peruvians and some of the modern Aymara and Mato Grosso peoples.

The cultural history of aboriginal tobacco on the continent since the era of Discovery shows two dominant trends: first, marked tribal
and territorial expansion of use; second, equally marked increasing secularization in use.

Our earlier sources, prior to about 1700, are silent on the aboriginal use of tobacco in any form in the following areas: Most of the Amazon and its tributaries, much of Eastern Brazil, the Chaco, the Uruguayan and Argentine Pampas, Patagonia, and the Magellanic and Chonan Archipelagoes.

For good parts of this great blank area, especially the central Amazon region and the "Puelche" section of the western Argentine Pampa, our sources prior to 1700 yield scant cultural data of any kind; consequently, their silence falls short of proving absence of tobacco use at the time. In some other parts, as in Eastern Brazil, the Chaco, and the La Plata region, use may have been confined to magico-religious rites and so may have escaped the notice of early White observers. The problem is further complicated by the fact that archeological finds of pipes, in some cases in seemingly pre-Columbian deposits, have been made in Eastern Brazil and in the La Plata region, suggesting that at least in these areas tobacco smoking had been practiced in pre-Contact days.

In other parts of our great blank area the historical picture is clearer. Our cultural information from sources prior to about 1700 on the Charrua, "Querandi," and other peoples of the Uruguayan and eastern Argentine Pampas, the Tchuelche, the Fuegians, and the Chono is sufficient to justify the confident inference that tobacco was not used by them in this early period. The pipes found in the Chubut region of Patagonia are almost certainly post-1700. The beginnings of Tchuelche use of tobacco can be dated from historical records as of about the middle of the 18th century; of Fuegian use, as of quite recent decades.

At the present time tobacco is used in one form or another and for one purpose or another by nearly all the Indian tribes of Middle and South America from Honduras to Cape Horn. Exceptions are rare. A few scattered tribes, such as the Páez, some Montaña groups, Guahibo, Mura, Parintintin, Tupí-Cawahib, Chama of Bolivia, and Guayaki, do not, according to last recent reports, use it at all. Among a few others, such as the Cayapa, Sirionó, and Botocudo, tobacco is definitely reported on traditional or historical grounds to be of relatively recent introduction. Among the non-coca-chewing Indians of the Ecuadorean Sierra and the habitual coca-chewers of the Peruvian and Bolivian Highlands, tobacco is rarely or never used except to a limited extent medicinally and/or ritually.

During the period from first Discovery to about 1700, over most of the tobacco area, use was, it seems, exclusively or chiefly magico-religious and/or medicinal, as among the Peruvians and Mapuche-Huilliche,
but in some regions, as in the West Indies, it was pretty surely secular and hedonic as well. At the present time, in many parts of the tobacco area use is still chiefly magico-religious and/or medicinal, as among the Aymara, many Bolivian tribes, and the Ecuadorean Sierra Indians; but in many other parts, as in large areas of northern South America, the Chaco, the Pampa, Patagonia, Fuegia, and southern Middle Chile, use varies from largely to exclusively secular and hedonic. White influence seems partly, but not wholly, responsible for this basic historic shift in purpose of use.

Tobacco is used in South America in six main ways: smoking, snuffing, eating, chewing, drinking, and licking.

Of these six, smoking is by far the most widespread. The chief area in which cigars and cigarettes—a clean-cut distinction between the two is not definable, nor, for that matter, between them and one form of tubular “pipe” (cf. Stahl, 1930, pp. 64-74)—are or were the exclusive or prevalent forms of smoking is the continuous one extending from southern Middle America and the West Indies through the Guianas and most of the Orinoco and Amazon forest and savanna region.

At the present day pipe smoking occurs as the exclusive, prevalent, or alternative form of smoking in three chief areas of South America: (1) Part of the Guiana hinterland; (2) part of the Marañon-Huallaga-Ucayali region and downstream on the Amazon to about the mouth of the Javari; (3) the very extensive, almost continuous zone, beginning in the north on the lower Araguaia, expanding southeast, south, and southwest over a good part of inland southern Brazil, Mato Grosso, and central Bolivia, then down the whole Chaco to the Pampa and Patagonia, and crossing the Andes to embrace southern Middle Chile. The pipe is of recent or post-Columbian introduction in the Guiana hinterland, downstream on the Amazon, and Patagonia. In early Colonial times its presence is recorded for Eastern Brazil (“Tapuyas,” Tupinamba) and Chile (Mapuche-Huilliche), and not elsewhere on the continent.

Nearly all our archeological finds of pipes of clear-to-probable pre-Caucasian age have been made either in our zone 3 above or in the Sierral-Coastal belt from Ecuador to North Chile and the Calchaquí country.

The combined ethnological, historical, and archeological evidence appears to justify the following broad generalization: In earlier times, shortly after and some time before the period of Discovery—and in large measure at present as well—cigars-cigarettes prevailed over the great northern focal area of the continent and adjacent Antilles and Middle America, pipes over a roughly crescent-shaped belt peripheral thereto on the southeast, south, southwest, and west, a tobaccoless zone
being peripheral in turn to the pipe zone. This triple concentric distribution duplicates in reverse the similar triple concentric distribution in Middle and North America north of the Isthmus.

Cigars and cigarettes are made from whole or minced dried tobacco leaves, enclosed or wrapped in leaves of tobacco, maize, banana, or other plant or in the inner bark of trees. The spirally wrapped "cigars" range in length from about 2.5 inches (6 cm.), as occurring along with large ones in the upper Xingú region, to the giant ones of the Uaupés Valley, 8 inches to 2 feet (20–60 cm.), and of the early Panamá Indians, 2 to 3 feet (60–90 cm.). These large Uaupés cigars are smoked in an upright forked holder (fig. 180). The early Panamá cigars as described by Wafer (1903, p. 109, cut) were smoked with the

Figure 180.—Cigar holders of the Uaupés River Indians. (After Roth, 1924, fig. 66.)
lighted end in the mouth of the smoker, who blew the smoke through the length of the cigar into the faces of the others, who cupped their hands to breathe it in through mouth and nose, a mode of smoking very similar to one still current in the Panamá region (Spruce, 1908, 2: 436; Nordenskiöld, 1938, p. 497, pipes).

Pipes are of reed, bamboo, wood, dry hard fruits, bone, clay, or stone, in tubular, elbow, monitor, and composite forms. The composite pipes are often just a conico-tubular pipe to which a separate stem has been attached.

Of aboriginal types, the tubular (fig. 181, left) are the most widespread, especially in the Chaco and in Eastern and Southeastern Brazil, and, on the historical and archeological evidence, are apparently a

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**Figure 181.—Chaco tobacco pipes. Left: Tubular wooden pipe, Mataco. a, Side view; b, schematic cross section; c, end section (¼ actual size). Right: Tubular wooden pipe with flat lip piece, Choroti. a, Side view; b, schematic cross section; c, end section (¼ actual size). (After Nordenskiöld, 1908, figs. 2, 7.)**
from the Chaco and from widely scattered archeological sites—not all pre-Columbian apparently—in Venezuela, Ecuador, Perú, North Argentina, and extreme Southern Brazil.

Pipe tobacco is sometimes mixed with some other plant substance, such as tree bark in the Chaco and among the Mapuche-Huilliche, and calafate (Berberis sp.) wood shavings among the Tehuelche, or is replaced by some substitute, as among the Bororo, the Chilotans, and some Chacoans. Especially characteristic of the Chacoan-Patagonian region, although occurring also elsewhere with cigars (as among Bacaíri and Crévaux’s “Ouitoto”), is the custom of each of a group taking a few puffs and then passing the pipe to the next man.

According to Havestadt (1883, 2:663), the Mapuche-Huilliche of the middle 18th century smoked tobacco by burning it in a shell receptacle and inhaling the fumes through a tube.

Tobacco snuffing, not always distinguishable in our sources from Piptadenia snuffing, is recorded from three chief regions (map 9)—the Orinoco country (Otomac, Tamanac, Maipure), the Montaña with an extension down the Purús (mostly Tucanoans, with some Panoans, Arawakans, and Tupians), and early Perú.

The tobacco snuff used medicinally and hygienically by the early Contact Peruvians was made, according to Cobo, from the root of the plant. Elsewhere tobacco snuff is made by drying the leaves and powdering them. In some cases, the snuff is mixed with plant ashes, as among the Arawak of the Purús, or with Piptadenia, as among the Omagua.

Among some peoples, tobacco is snuffed without instruments, but among the great majority instruments, like those used for Piptadenia snuffing, are employed for inhaling or blowing the snuff into the nostrils. These are: a single hollow tube (Yamamadi); two tubes blown by two partners (Campa); forked tubes of three types—(a) with slightly diverging forks, one in each nostril, for inhaling (Pawmari); (b) with widely diverging forks (fig. 184, left), a companion
very old, perhaps the oldest, form on the South American continent. Among some of the tribes of Bolivia and the Chaco these have for convenience a flattened lip end (fig. 181, right). Among some of the Chacoans a fiber filter is fitted inside the tube. Elbow pipes are found chiefly, apart from obvious White borrowing elsewhere, in widely scattered sections of a belt running from Alagoas in extreme Eastern Brazil down the Brazilian coastal provinces and across North Argentina and Patagonia to Chile. Monitor pipes (fig. 182) occur mainly among the Mapuche-Huilliche and Tehuelche and in two seemingly pre-Columbian archeological sites of southeastern Bolivia (Nordenskiiöld, 1931, p. 91). Composite pipes, of separable bowl and stem, occur in various forms, two of the more characteristic forms being the cylinder- or spool-bowled ones of the Chaco and the cone-bowled ones of the Montaña (fig. 183) and Chaco. Pipes with human or zoomorphic carving or molding are relatively rare, being reported chiefly

![Figure 182](image-url)
blowing the snuff into his partner’s nose (Piro); (c) smaller (fig. 184, right), with widely diverging forks, the snuffer putting one fork in his nostril and the other in his mouth and blowing (Piro, Tamanac, Maipuré). Occasional substitutes for tobacco (and Piptadenia) are recorded, such as: the unidentified topasayri among the early Peruvians, cauca leaves in the Juruá-Purus region.

Tobacco eating is comparatively rare. It is recorded for the Coto and Cocama of the Montaña. Tobacco powder is just put in the mouth and swallowed.

Tobacco chewing has a very broken distribution (map 9): in the West Indies, among the Island Carib; in Colombia, by early Chibcha priests and modern Goajiro shamans; in the Montaña, by a large number of tribes; in Central Guiana, the Chaco, and Eastern Brazil, by some other scattered tribes. While a great number of these tobacco-chewing peoples are adjacent to the coca-chewers of the Andean Sierra, a very considerable minority are not. Tobacco chewing is definitely absent from the Mapuche-Huilliche-Tehuelche tobacco complex.

In some areas chewing tobacco is mixed with another substance, usually alkaline: in parts of the Guiana-Island Carib area, with ashes, black-niter earth, or pulverized shell; in the Chaco, with plant or bone ashes. Here and there, as with Goajiro shamans (Mackenzie, 1945, p. 158), the chewer swallows the tobacco-laden saliva, thus inducing a kind of nauseated intoxication. Where the tobacco supply runs short, a substitute may be chewed: the koro-pa root (Toba, Chunupi); several plants (Venezuelan Indians: Ernst, 1890, p. 243). These appear to be mostly nonstimulant masticatories, as is the Tehuelche maki (gum resin from the incense bush).
MAP 9.—Distribution of tobacco snuffing (horizontal hachure), chewing (vertical hachure), drinking (diagonal hachure, upward toward right), and licking (diagonal hachure, upward toward left).
Tobacco drinking has two main centers of distribution (map 9): much of the Montaña region, and some of the Guiana area. To prepare the tobacco liquid, tobacco leaves are either boiled in water, or chewed and then spit out into a container, as among the Jivaro, or else are just steeped in water, as among the Barama River Carib of Guiana. The liquid may be taken either through the mouth and drunk, usually nauseating and narcotizing the drinker, or else, as sometimes by men or shamans among some of the Montaña tribes, through the nose.

Tobacco licking (map 9) is reported for a very limited area of the upper Amazon tributaries (Witoto, Bora, Jivaro, Campa, Piro) and for the Arhuaco of northern Colombia (Mason, J. A., 1924, pp. 11-12). Tobacco leaves are boiled in water to the consistency of tar, or are soaked, pounded, and mixed with thickened cassava starch. The syrupy product is commonly kept in a shell or gourd and carried around. The user sticks a finger or two or a small stick into the dark mass, and then licks it off. Among the Arhuaco, it is customary when two men meet for each to dip his finger in the other's gourd and to touch his lips with the substance. A somewhat similar tobacco paste, with the addition of other ingredients, is in use as pellets in contemporary Venezuela (Lewin, 1931, p. 297).

While, on the whole, in South America tobacco is used more by men than by women and in many tribes the latter either must not or do not use it, nevertheless in many tribes and extensive areas, especially where White influence is strong, both sexes use it freely. Sex differentiation in use seems to have a very broken and erratic distribution, even within limited cultural areas, such as northern Colombia, Central Guiana, and the Chaco.

There is a marked tendency among South American Indians, as there was among earlier Antillean ones, so to use tobacco as to induce more or less acute intoxication. This may be done by swallowing the smoke (e. g., Tehuelche-Araucanian), by intensive rapid long-continued smoking, by swallowing the juice while chewing (Goajiro), by snuffing (early Perú, Ipurina), and by drinking tobacco water (Guiana, parts of the Montaña). In most cases this has magico-religious significance, as when done by shamans or lay persons to induce trance, dreams, visions, and communication with spirits; in other cases, as seemingly among the Tehuelche-Araucanians, merely for hedonic purposes.

Purely hedonic or recreational use of tobacco is at present very common in many areas. Such secular use is, however, largely post-Columbian and due to White influence. But it was not unknown at the time of Discovery, as the West Indian evidence shows pretty clearly. Pleasure use is common at drinking sprees. Among social purposes
of use, the most common perhaps is in greeting guests or visitors and in symbolizing friendship and camaraderie. Peruvian Indians are reported by Yacovleff and Herrera (1934-35, p. 45) to use *Nicotiana glauca* in powder form with chicha for criminal ends, the effect being like that of *Datura stramonium*.

Tobacco is hygienically and medically used for many purposes: to relieve fatigue (*Tapirape*), to clear the head (early Perú, *Jivaro*), to cure headache (*Conibo*), dysentery (*Campa, Piro*), and other ailments. A large number of tribes in and adjacent to eastern Bolivia, many of whom do not smoke, use it to get rid of gadflies that burrow under the skin of human beings—a use reported also among the 18th-century Indians of Maynas Province (Veigl, 1785, p. 285), the modern *Jivaro*, and from Ega on the Amazon (Bates, 1892, p. 384).

Tobacco enters very much into the South American shamanistic and general magico-religious complex. Evidence of its use as an offering or sacrifice comes from a great many parts of the continent—ranging from the *Cuna* rite of burning the leaves in a brazier as incense, to the *Tehuelche* one, reminiscent of North America, of blowing smoke ceremonially toward the four quarters.

Among the many and varied uses made of tobacco by shamans, the two more commonly reported are: blowing the smoke on persons, especially the sick, and on objects; and smoking, drinking, or snuffing tobacco to induce narcosis, dreams, visions, and visitations from and communication with spirits. Tobacco is also used, less frequently, in shamanistic or lay divination, as among the *Goajiro* by watching the direction in which the smoke drifts (Nicholas, 1901, p. 629), and in foretelling the future, as among the early Peruvians (Polo de Ondegardo, 1916, p. 197). The drinking of tobacco water in such quantity as to bring about intoxication with nausea plays a central role in the preparation of candidates for shamanship in Guiana and in parts of the Montaña (*Jivaro, Zaparo*). Among the *Jivaro*, drinking tobacco water, squirting juice in the nose, smoking large cigars, swallowing smoke, and painting the body with tobacco juice are prominent features in initiation and marriage ceremonies, victory feasts, and other rites. The *Jivaro* have a well-defined concept of a tobacco-plant spirit.

An over-all comparison of tobacco use in South America and in North America north of about the Mexican border reveals certain major resemblances and contrasts. In both areas: the tubular pipe looks very archaic; magico-religious purposes of use are, or earlier were, primary, with secular or hedonic use secondary; tobacco was a favorite sacrifice or offering; hedonic use has greatly gained on religious since the Discovery. Pipe types show appreciably less variety and elaboration in South America than in North America. On the
other hand the tobacco complex shows appreciably greater variety and elaboration (many kinds of snuffing, drinking, licking, etc.) in the cigar-cigarette zone of South America than in North America—although perhaps not greater in the South American pipe zone, which is a better basis for comparison. In general, too, the use of tobacco in South America, in the West Indies, and in Middle America up to the northern Mexican border tends much more toward intoxication or extreme excitation, is in a sense more “Dionysian,” and is associated more closely with free individualistic shamanism; while in North America north of the Mexican border the use of tobacco is, or was, generally much more tranquil, sober, and moderate, more “Apollonian,” and is associated in secular and religious practices more with institutionalized formal ritualism.

(Chief general sources on South American use of tobacco: Stahl, 1924, all phases of problem; Nordenskiöld, 1908, pipes; Mason, J. A. 1924, brief general treatment; Karsten, 1935, magico-religious aspects.)

PIPTADENIA SNUFF

A potent snuff (paricá, curupa, cohiba[?], yupa, yopa, yop, niopo, vilca, huilca, sebil, hatax, jataj) is made from the seeds of wild or cultivated trees of the genus Piptadenia (P. peregrina, P. macrocarpa, P. colubrina).

To judge from such records as we have, the chief center of intensive use of Piptadenia snuff is in northwestern South America—among most of the Chibchan-speaking and other tribes of the area extending from the Colombian Highlands east across the llanos to the upper Orinoco and south to the Uaupés and Yapura (Chibcha of Highlands, Tunebo, Girara, Achagua, Otomac, Yaruro, Saliva, Piapoco, Guahibo, and peoples of the Meta, Vichada, Guaviare, Sipapo, and Uaupés Rivers). Outside this area the use of Piptadenia snuff is specifically recorded for: the early Contact Indians of Trinidad (Castellanos, 1850, 4: 93) and perhaps Hispaniola; the “Ouitoto” (of Crévaux), Tuyuca, Yahuna, Piro, Ticuna, Passé, and Western Omagua of the upper Amazon and the Montaña; the Mura and Maué of the Amazon-Madeira and the Catawishi of the Purús; the Paravilhona and Taulipang of northern Brazilian Amazónas; the Highland Quechua of Perú, the Mataco and the upper Guaporé tribes; the 18th-century Lule and the 16th-century Indians around Córdoba, Argentina. (Fairly full listing in: Lovén, 1935; Restrepo, 1895; Uhle, 1898; Spruce, 1908; Safford, 1916; Roth, W. E., 1924; Pardal, 1937; Serrano, 1941.)

Our tribal records on which the above list and the accompanying distribution map (map 10) are based are probably very incomplete. On the other hand, some of the attributions may not be correct, since
Map 10.—Distribution of *Piptadenia* snuffing (solid black) and *Ilex* preparations, (horizontal hachure), maté to the east, guayusa to the west.
in some cases the lack of exact botanical identification makes it doubtful whether we have to do with *Piptadenia* snuff, tobacco snuff, or snuff from some other plant—as, for instance, from “topasayri” in early Perú (Cobo, 1890–93, 1: 404–405), or from an unidentified tree bark among the *Yecuaná* (Koch-Grünberg, 1917–28, 3: 386).

The seeds were dried and pulverized, and used without addition of lime or ash among the *Guahibo* (Spruce, 1908, 2: 426), but among the *Otomac* were mixed with quicklime from calcined snail shell and with cassava flour; among the *Maué*, with plant ashes and juice of the leaves of *Cocculus* sp.; among the upper Guaporé tribes, with plant ashes and pulverized tobacco leaves. The mixture was dried into hard cakes. Among the early Contact Peruvians, the seeds and the sap or juice were also mixed with chicha (Polo de Ondegardo, 1916, p. 30; Cobo, 1890–93, 2: 95, 4: 142), while among (unspecified) Indians of the Paraguay region the pods were burned and the smoke inhaled (Dobrizhoffer, 1822, 1: 399).

When used as snuff, the hard cake was reduced to powder and taken into the nostrils through two quills secured together, as among the *Maué*; or through Y-shaped tubes of bird or jaguar leg bones—in some cases, as among the *Guahibo*, *Catawishi*, and *Tuyucu*, by placing one end in the nostril and the other in the mouth and blowing hard; in others, as among the *Otomac*, *Guahibo*, *Omagua*, and *Maué*, by placing the ends of the forks in the nostrils and the stem in the snuff and inhaling strongly. Under still another method, as among the “Ouitoto” (of Crévaux), *Omagua*, *Mura*, and upper Guaporé tribes, two men paired, with two straight or curved hollow tubes, and each vigorously blew the snuff into the nostril of the other. A *Piptadenia* decoction was also used as an enema among the *Catawishi* and the *Mura*.

When this snuff is inhaled or blown in strongly, as is the more common practice, a temporary mild or deep intoxication results, and sometimes a condition described as fury or madness. Trance, too, may be superinduced, especially among shamans, with visions and spirit visitations.

The snuff was taken for various purposes: as a stimulant in everyday use, by, e.g., the *Guahibo*, and as an excitant in drinking sprees or before war expeditions; by hunters to make them more alert and to give them keener vision (and, among the *Piro* and *Catawishi*, given to hunting dogs, too, for the same purpose); as a prophylactic against fevers, among the *Maué*; by medicine men, to induce trance, visions, and communication from spirits, and so to help in clairvoyance, prophecy, and/or divination, as among the *Chibcha*, early Peruvians, the *Uaupés* and upper Orinoco peoples, and *Mataco*; or to bring rain, as among the 18th-century *Lulé*. 
Fermented alcoholic beverages (chicha, massato, kashiri, paiwari, kawin, kawim: for other names, cf. La Barre, 1938) were reported in use in the West Indies, Middle America, the Andean cultural region from Colombia to southern Middle Chile, and in most of the Silval region by the earliest White explorers, colonists, and missionaries, and undoubtedly had long been part of the pre-Contact aboriginal culture. Distilling is practiced at present by certain Indian groups, as a rule largely Europeanized in culture, here and there from Honduras (Paya) and Nicaragua (Ulwa) to Colombia, Ecuador, and Perú (Quillacinga, Pasto, Coaiquer, Cayapa, Canelo, upper Napo and Tiquié Rivers), but is of post-Contact introduction from Hispano-American culture. Nearly all South American Indians in close touch with Whites have taken readily to our distilled liquors; the Ona of Tierra del Fuego are one of the rare exceptions.

While the use of home-made or bartered alcoholic beverages is today extremely widespread in South America, it is not universal, and in some extensive areas where prevalent at present was earlier absent.

The Fuegians had no alcoholic drinks until relatively recent times; the Tehuelche none until about the middle of the 18th century, and even in Musters' day (1869) made none of their own, although the Poyas, of the Lake Nahuelhuapi region adjacent to Araucanian territory, who may have spoken a Tehuelche dialect, were brewing a beverage from fruits in the early 18th century. Whether the "Puelche" of the western Argentine Pampa had intoxicants prior to the middle 18th century is uncertain. Of the Chaco tribes, the Mbaya-Guaicurú were using fermented drinks from algaroba beans when first observed in the second quarter of the 16th century (Schmidel, 1891, p. 18; Pero Hernandez, 1891, p. 135).

In recent decades, alcoholic beverages are reported absent from considerable sections of three areas in the tropical and subtropical forests, viz, sections of: (1) Eastern and Southern Brazil and Paraguay (Northern, Northwestern, and Central Ge, tribes of headwaters of the Xingú, Guayaki, Tapirapé); (2) Bolivia (the Tacanan-speaking tribes); (3) the Montaña (Witoto, Okaina, Minuane, Bora, Pinches (of Veigl's time, around 1768)). Occasional isolated tribes, such as the Arhuaco-Cagabá of Colombia (Brettes, 1903, p. 319) and Carimé of Brazilian Amazonas (Salathé, 1931-32, p. 302), also lack alcoholic beverages of their own.

Among the alcoholic beverages of aboriginal South America, those made from maize are used by the greatest number of people and have the widest geographical distribution (map 11). They are chiefly found: in the great fairly continuous area from Honduras to the
Map 11.—Distribution of alcoholic beverages: $X$, Approximate southern limit of manioc beer (*dotted section indicates lack of data*); $Y$, approximate southern limit of maize beer; stipple, approximate area of algaroba beer.
Isthmus in Middle America, and along the Andean cultural belt from the Isthmus and northern and western Colombia through Ecuador and Perú to western Bolivia, the Atacama, the Diaguita country, Middle Chile, Chiloé, and, by later introduction from Chiloé, to the southern limit of maize-growing on the Guaitecas Islands; the Antilles; Venezuela and the Guianas; the Tupí-Guaraní regions of the Amazon, the Paraguay-Paraná, and the Brazilian Coast and hinterland. They are also common in much of the Montaña, the Orinoco, and upper and middle Amazon and their tributaries, eastern Bolivia and the Chaco, Mato Grosso, and non-Tupí Eastern Brazil.

Alcoholic beverages from manioc rank second to those from maize, and have approximately the same distribution as the latter (map 11)—except for two chief areas in which they are lacking, viz: the Andean cultural belt from northern Colombia all the way south to Chiloé; and most of the Chaco. In the major regions where both maize and manioc beverages occur, there are numerous tribes or smaller subregions where only one or the other is recorded. In some of these major regions, as in the Guianas and the Amazon lowlands, premier rank is held by manioc beverages; in others, as in most of the Tupí-Guaraní territory, by maize beverages.

Ranking next to maize and manioc beverages are those from palms, algaroba, and honey; and next to these, those from bananas (and plantains), pineapples, sweet potatoes, and sugarcane.

Palm wine, from the sap or fruit of various palms (Mauritia sp., Guilielma sp., and others), occurs in two main areas; a larger one to the north, embracing much of the Antilles, Middle America, northern and eastern Colombia, the Montaña and upper Amazon, the Río Negro, Venezuela, and the Guianas; a smaller one, in the Mato Grosso, middle Paraguay, and middle Paraná regions (Guató, Bororo, Nambiquara, Caingang, Mbayá).

Algaroba beer (map 11) from the seeds of the "carob" tree (Prosopis spp.), holds first place among the Chaco tribes and is made by the Chiriguano to the west and by the "Pampa Indians" (including probably the Puelche) and Argentine Araucanos to the south. It is also recorded in early Colonial times from the Diaguita region. It is brewed mostly during the season from about November to February or later when the seeds are ripe.

Mead, of fermented honey, occurs in two main areas: in parts of Middle America; and widespread though far from universal in a great crescent belt, more or less marginal to the southern Amazonian watershed, extending from the southeastern Brazilian coast to Southern Brazil, Paraguay, and Uruguay, through the Chaco, to the Sirionó of eastern Bolivia. In this area it is or was brewed by a number of the Tupí-Guaraní and southern Ge, by the Botocudo and Charrua, and by
most of the Chaco peoples. It was recorded very early by Schmidel among the Cario, by del Techo among the Kaaigua (Cainguí) and Guadalche, and [fermented?] by Barlœus among the "Tapuya." That mead is not more widely brewed in South America is probably due to the fact that in most areas other materials for alcoholic beverages are so much more readily procurable than honey in quantities sufficient for large numbers of drinkers. (Cf. Dobrizhoffer, 1822, 2: 435.)

Fermented drinks from bananas (or plantains), pineapples, sweet potatoes, and sugarcane occur fairly commonly in and are mostly confined to the tropical and subtropical forest and savanna regions of Middle America, Venezuela, the Guianas, and the Orinoco and Amazonian watersheds. There are occasional occurrences outside this area, such as brews from: sweet potatoes among the Island Carib, Camacán, and Caingang; bananas among the Abipón.

Among the more localized alcoholic drinks, with some records of occurrences of each, are those from: quinoa (Highland Ecuador and Perú, Uro-Chipaya, Mapuche-Huilliche); oca (Highland Perú); pine nuts (Mapuche-Huilliche, Caingang, Guayaná, Napo River tribes); cashew (Mosquito-Sumo, Guiana); agave (north coast of Veragua, Ica); chañar (Gourliea decorticans), tusca (Acacia aroma) (Chaco, Choroté); mistol (Zizyphus mistol) (Chaco); mamey (north coast of Veragua); white potatoes, apples, wheat, barley, pears, quinces, strawberries (Araucanians); molle berries (Contact Inca, Araucanians); Dioscorea (Mosquito-Sumo, Taulipáng, Camaracoto); "pumpkins" (Lengua); melons or watermelons (Mataco, Choroté); papaya (Camacán). Numerous other fruits and berries are also used here and there sporadically.

As regards three of the most important South American alcoholic beverages, those from maize, manioc, and algaroba, the general rule seems to hold that in any given tribe or area the favorite beverage is made from the food that bulks largest in the dietary. There are, however, exceptions to the rule, as among some of the tribes of Costa Rica, whose staple food is plantain but whose favorite drink is from maize.

The fermented beverages are made in two main ways: without or with mastication.

Beverages from palm sap, honey, sugarcane, pineapple, and fruits or berries rich in sugar are made without mastication. By way of exception, the Abipón chewed honeycomb in their mead making. Beverages from palm fruits, bananas (or plantains), and sweet potatoes are very commonly reported as made with mastication. Beverages from manioc, and from maize, algaroba, and other seeds rich in starch, are usually made with mastication, although there are exceptions as regards maize and manioc (e. g., Sirionó) and algaroba (e. g., some-
times in Chaco), and in a great many cases our records are silent as regards presence or absence of mastication. In general, however, the custom of mastication is found very commonly and very widely diffused over practically our whole area in which aboriginal alcoholic beverages occur: Middle America (from Honduras south), the West Indies, and continental South America down to and including the Chaco and southern Middle Chile.

With ingredients rich in sugar, the brew material is left to be acted upon directly by wild yeasts. With those rich in starch, sprouting without mastication is here and there relied on to promote conversion of starch into the simpler carbohydrates or sugar upon which the yeasts can feed; but far more commonly resort is had to mastication through which the ptyalin in the saliva changes part of the starch into sugar and so hastens fermentation by giving the yeast a quicker start.

Details of the process of preparation of alcoholic beverages differ somewhat according to tribe or area, to material fermented, and to use or nonuse of mastication. Grains are dried and crushed or ground to flour, in some areas (e.g., early Panamá and Perú, eastern Bolivia) after being steeped in water until they sprout. They are then usually boiled or heated. The masticated grain may be added to the nonmasticated before or after this boiling, or between a first and second boiling. The liquid is then allowed to ferment, commonly about two to four or more days. Manioc beer preparation follows the same general lines; it may be ready to drink within 24 hours. The sap from palm wine is more commonly collected from incisions in the upper trunk, with or without felling of the tree. For some areas—parts of the Chaco and of the Montaña—concepts of plant spirits and animistic rites to promote fermentation and to strengthen the brew are specifically reported (Karsten, 1926, 1935) and, to judge from scattered hints in our sources, are probably much more widespread.

The liquor is very commonly prepared and stored in large troughs made of hollowed tree trunks (fig. 185); sometimes, in earthen jars. Preparation of fermented beverages is predominantly the woman's.

![Community chicha trough, Motilón, Colombia. (After Bolinder, 1917, fig. 13.)](image-url)
task. The women, too, in some cases only the old or the young women, ordinarily do the masticating, although here and there (Mogaza, Guiana, Rio Aiarí region) the men or the men and children do all or part of it.

To promote fermentation, the Guaraná and the Guarataguaja (of the Guaporé) add certain leaves to their brew; the Caingang, the woody stem of a fern. To promote fermentation, or to give flavor or greater strength, or to do both, leaves (Sisusi), palm stems (Aweicoma), sugar-cane juice (Cuna, Carajá), goat or sheep excrement (Lenca), and other ingredients are or were added by tribes here and there. Brews of mixed maize and cassava are also reported occasionally (Carajá, Conebo).

In some regions, particularly the Andean and parts of the forested lowlands, fermented beverages are drunk as a common everyday beverage. Most of the drinking, however, throughout the great brewing area of the West Indies, Middle America, and continental South America is in connection with drinking sprees, of a social and/or magico-religious nature in which groups participate. These drinking bouts are main or attendant features of gatherings of all kinds, especially in connection with hunting, fishing, harvesting, and other food-getting activities, with visiting and hospitality to guests, with war, victory, and peacetime councils, with births, naming, initiations, weddings, and funerals, and with magico-religious festivals, rites, and celebrations—the specific occasions differing from tribe to tribe and from area to area. The sprees may last from a few hours up to many days, usually until all the available liquid is exhausted. The participants imbibe until they reach various stages of intoxication, from mild tipsiness to complete alcoholic coma. Among nearly all peoples on whom we have information, the bouts are accompanied by and end in the airing of grudges and hurling of insults, which lead to quarrels and fighting more or less violent and not uncommonly fatal. Sex intrigues and orgies are equally common accompaniments. Only here and there, as among the lower Xingu tribes, and the Ashluelay and Choroti, is quarreling specifically reported absent. In both the Guiana and Chaco-Pampa area, to prevent grave or fatal results, the women hide all weapons before intoxication has reached an advanced stage. In a good many regions, as in the Chaco, the women (at least the younger and middle-aged ones) do not take part in the drinking, or at most drink quite moderately. In others, as in the Panamá region, and parts of the Montaña and Andean Highlands, they as well as the men get drunk.

(For detailed description of spree, cf., e.g., Appun, 1870, pp. 299–302, 315–317.)

Some medicinal use is made of alcoholic beverages, as among the Aymara, but the usual purposes of drinking and of drinking sprees
are hedonic, social, magico-religious, or, as more commonly, combinations of all three. That the hedonic bulks large is obvious from our sources. The sprees are eagerly anticipated, and are joyous and hilarious affairs, at least until the fighting starts. Some of the social purposes, such as symbolizing hospitality and so forth, are clear from the above-given list of occasions on which drinking is indulged in. Dobrizhoffer adds (1822, 2: 413-414) particularly the desire of the Abipón through drinking to acquire acuteness in counsel and bravery in fight. Guests and hosts among the early Peruvians customarily exchanged and drank together maize chicha (Betanzos, 1924, pp. 199-200).

Alcoholic beverages were common offerings or sacrifices to supernatural beings and/or the dead in the Andean cultural belt and such sacrifices were early reported by the Carvajal expedition of 1542 far down the Amazon east of the mouth of the Rio Negro. They play an important part in girls’ rites in parts of the Panamá and Montaña regions, and in many other feasts among the Jivaró and Canelo. In the Montaña, Mato Grosso and elsewhere, they are important accompaniments of shamanistic training and practice.

We have no published intensive field study of the functions of alcoholic beverages in contributing to the stability or instability of society or of the individual in any South American tribe or community. Such field studies are an urgent desideratum. A short paper by Rodríguez Sandoval (1945) reviews the motives for and rationalizations under which the Indians of the Ecuadorean Sierra drink, viz, to “warm the blood” and impart physical energy, to prolong life, to “rejoice the heart,” to give courage and peace of spirit, to manifest friendship, hospitality, and solidarity, to ask favors, to maintain status by thus evidencing wealth, to conform to festival requirements, and so forth.

Habitual addicts proper, driven to daily or periodic alcoholic excess by psychosomatic impulsion, appear to be rare, or, at least in most regions, nonexistent. To judge from the continuous distribution of intoxication over the whole range of alcoholic beverages, and from the fact that getting drunk or being made drunk is customary or obligatory indiscriminately for participants in the rites, festivals, and socio-civic observances, such impulsion as exists looks more social and magico-religious, and in this sense more cultural than psychosomatic. The degree to and manner in which in individual cases physiological and psychological or psychopathic factors, such as physical craving, anxiety, frustration, escape, and so forth, may enter into the picture awaits intensive field investigation, investigation which should yield rich returns.

Nonfermented drinks made from maize, manioc, palm sap and
fruits, honey, pineapples, and various berries and other fruits are reported from most areas of the continent. Often our later as well as earlier sources are not clear as to whether the drinks they record are fermented or not, this being particularly the case as regards beverages made from palm and from honey.

(The sources on alcoholic beverages in South America are exceedingly numerous and very widely scattered. Among the most important are: Appun, 1870; W. E. Roth, 1924; Karsten, 1920b, 1926, 1935; Bruman, 1940, for southern Middle America.)

**ILEX (MATE, GUAYUSA)**

From the leaves of various wild and cultivated species of the genus *Ilex* (*I. paraguariensis*, *I. spp.*; active principle, caffeine) are prepared the stimulants mate (herva mate, yerba mate, caá guazú, Paraguay tea) and guayusa. There are two main centers of distribution: the mate center in the Paraguay region, and the guayusa center in the Montañá.

At the time of first White contact, mate appears from our sources to have been in use chiefly or only by the Guarani of the region watered by the Paraná, Paraguay, and Uruguay (map 10), and solely as an herbal curative and by shamans as a means of entering into communication with spirits. Later it came into more general use as a mild stimulant among the neighboring tribes (*Charrau, Caingang*, and *Chamacoco* specifically mentioned), and especially after the beginning of the 17th century among the Whites of the region, from whom its use spread through Southern Brazil, Paraguay, Uruguay, Argentina, Bolivia, Chile, and part of Perú. At the present time, mate is drunk, according to Lewin’s estimate (1931, p. 276), by about 15 million people, as a pleasurable beverage and a mild nerve tonic and muscular stimulant.

The beverage is ordinarily made by putting a portion of the powdered leaves of the *Ilex* into a little cold water, and afterward adding boiling water. It was earlier drunk through a narrow wooden pipe or a slender reed; the *Chamacoco* used a bird-bone pipe with a woven fiber strainer on the distal end. It is at present more commonly drunk through a metal pipe with a globular strainer at the end.

Guayusa is specifically recorded for the *Jivaro, Záparo, Quijo, Canelo, Candoshi, Aguano, Panobo*, and 18th-century *Pinche*, of the Montañá region (map 10) but may be more widespread in the area. Our sources are silent on early use of *Ilex* beverages among the peoples of the Andean Highlands and west thereof.

Our most detailed information on the purposes for which guayusa, the boiled infusion of leaves of *Ilex* spp., is used in the Montañá comes from the *Jivaro* (Villavicencio, 1858; Spruce, 1908; Karsten, 1920a,
1920 b, 1935). The Jivaro men and women daily drink it and give it to their children the first thing in the morning after arising, to induce vomiting and thus to cleanse and fortify the body—as is done with other liquid emetics for the same purposes among other tribes (e.g., Taulipang, Yecuana) of northern South America. Guayusa is believed by the Jivaro to confer strength and swiftness, especially on the hunter—and for the same reason is also given to hunting dogs, as Piptadenia is given among the Piro and Catawishi—and to bring dreams regarding hunting luck. It likewise enters largely into the Jivaro religiously colored victory and other feasts. The 18th-century Pinche drank guayusa at dances and took it with them when they went away from home for some days (Veigl, 1785, p. 46).

PAULLINIA (YOCO, GUARANA)

From wild and cultivated lianas of the genus Paullinia (P. yoco, P. cupana, P. sorbilis, and perhaps others: Schultes, 1942) are prepared stimulant and medicinal beverages (yoco, guarana, cupana) with a high cafffein content—in guarana usually 3 to 4 percent, occasionally as high as 6 percent.

Yoco, recorded to date only for the Inga, Siona, Cotán, and Coreguaje of the Putumayo-Aguarico-Cauquetá area in southern Colombia and adjacent parts of Ecuador and Peru (map 12), is prepared from Paullinia yoco and perhaps also from Paullinia pterophylla. The stem is cut into pieces 1 to 3 feet long, and the epidermis, cortex, and phloem are rasped. The scrapings thus obtained are squeezed to express the caffeine-bearing sap into cold water, the rasped tissues being then discarded. The liquid, of a cloudy milky-white or light chocolate-brown color, is drunk cold. The beverage, which is taken early every morning, allays hunger and supplies muscular stimulation. It is also used medicinally as a febrifuge and as a curative for a bilious disease (Schultes, 1942).

Guaraná is recorded specifically for only a few tribes (such as the 17th-century Andiras, the Maué, Piapoco, and the Indians of Yavita on the Atabapo River of southern Venezuela) (map 12), but is apparently of somewhat more widespread use among the Indians of the Amazon and Río Negro valleys (Spruce, 1908, 2: 450–451). It is prepared from Paullinia cupana (P. sorbilis), normally a twining plant, but often kept pruned in cultivation to the size of a currant bush. The seeds are scraped or ground, mixed with cassava flour, and kneaded to a paste, which on drying becomes the hard saffron-yellow or brown pasta guaraná (guaraná paste). The beverage, of bitter taste, is made by scraping the paste and dissolving the powder in cold or hot water. It is taken, commonly in the morning, as a mild stimulant. Bettendorf (1910, p. 37) recorded that the Andiras Indians
Map 12.—Distribution of *Paullinia* beverages: yoco and guaraná.
believed it gave them strength to hunt long without feeling the pangs of hunger.

Around the middle of the last century, the Maué had a sort of monopoly on the production of guaraná, at least in their area, and exported it widely.

Our sparse source information on yoco and guaraná contains no reference, so far as the writer has been able to discover, to any shamanistic or other magico-religious use of these beverages.

CACAO

Cacao (Theobroma cacao; alkaloid, theobromin) grows wild in many parts of northern South America, as along the Amazon, and is at present widely cultivated there by Whites and by some Indians. So far, however, as our historical records go, it was not used anywhere on the South American continent south of Panamá before the coming of the Europeans, and no seeds, pods, or representations of cacao have been found in Peruvian or other archeological sites.

But in southern Middle America it has long been used as food and drink by the Indians from Honduras (Mosquito-Suma) to Panamá and the Colombian border (Cuna), and perhaps goes back, in part at least of the area, to pre-Hispanic times. The burning of cacao nibs as incense in braziers enters prominently into the magico-religious practices of the Cuna of Panamá (Nordenskiöld, 1938, pp. 321, 364, 577, and passim).

COCA

The leaves of Erythroxylon coca are the basis of the stimulant, coca (from Quechua cuca, coca; ipadú in Brazil; hay, hayo, jaya in Colombia and Venezuela). The coca plant, a shrub from about 3 up to 12 feet (0.9-3.6 m.) high, grows wild in warm ravines in sub-Andean Perú, in Bolivia, and in Brazil, and is widely cultivated in and near its general range by both Indians and Whites, particularly in the valleys of the eastern slope of the Bolivian and Peruvian Cordillera.

Archeological evidence indicates that aboriginal use of coca goes well back into pre-Contact times. Bundles of coca leaves, woven bags containing the leaves, gourds holding lime and ash, and spatulae have been found frequently in graves in Perú and as far south on the coast as Arica in northernmost Chile.

Our early historical sources report coca chewing and/or ritual use of coca leaves as prevalent: in Middle America, among the Nicaragua of the Pacific Coast of Nicaragua, and perhaps in the Veragüa region of western Panamá; in South America from the Cumaná area of Venezuela, the Goajira Peninsula, and Isthmus of Panamá through the Andean Sierra and sub-Sierra of Colombia, Ecuador, and Perú to
northern Chile. Coca chewing is not found among the modern Quechua-speaking Indians of the Sierra of Ecuador. The evidence for the use of coca in the Antilles in early Contact times seems very tenuous. (Cf. discussion by Lovén, 1935, pp. 398-400.)

Our more recent sources, particularly those of the last hundred years, reveal two important extra-Sierral extensions of aboriginal coca use: one in the equatorial belt, which includes many of the tribes of the northern affluents of the Amazon, with one far eastern outpost in Spruce's day, a century ago, at the mouth of the Río Negro; a second, in the south, which includes a certain number of southwestern Brazilian, western Bolivian, and northwestern Argentine tribes in touch with the Quechua and Aymara, and a very recent further extension by Indian sugar-factory laborers well across the Chaco nearly to the Paraguay (map 13). (For listing of majority of coca-chewing peoples, see Bolinder, 1925, pp. 82-93, with references; cf. also: Ernst, 1890; Tessmann, 1930; Nordenskiöld, 1920; Lewin, 1931.)

Methods of preparation and use of coca as a stimulant differed from region to region. In parts at least of Colombia, Ecuador, and the North Coast, the dried leaves were chewed without addition of lime or ash.

Throughout most of the Andean area from Colombia to South Perú, Bolivia, and North Chile, the leaves are dried and kept separately from the lime or ash in a small pouch or woven bag (chuspa), the limy substance (llicta, llista, lipta) being carried in a small gourd (poporo), with a thin stick or spatula to transfer the alkali to the mouth. North of about Cerro de Pasco (Central Perú, around lat. 11° S.), the llicta consists of lime from calcined snail or other shells; south thereof, of ash from burnt quinoa stems or other plants, and sometimes mixed with potato meal. Cobo also mentioned ash from bones and "piedras" (limestone?). The coca chewer first puts the dried leaves in his mouth, and after they are sufficiently moistened with saliva and worked into a quid, he wets the end of the stick or spatula, dips it into the lime or ash in his poporo, and transfers the alkali to his mouth. The stick may be replaced by a small spoon. The juice is swallowed, not the leaves. From time to time he adds leaves and lime or ash. The early Peruvians also used a decoction of coca leaves medicinally (Cobo, 1890-93, 1: 476-477), as the modern Panobo do to lighten the body.

In most of the lowland Amazonian area where coca is used, the leaves are dried and pounded to fine powder, which is then mixed with plant ash, and in some regions with cassava flour as well. This ready-made mixture is put in the mouth to be moistened with saliva and slowly swallowed.

Shell lime is mostly lime with only traces of potash; wood ash ordinarily contains an average of about 25 to 30 percent of lime and
Map 13.—Area of coca use.
0.5 to 3 percent of potash. In the presence of strong alkalis like lime or potash, alkaloids occurring in combination in the coca leaves are liberated. Whether the fatigue-dispelling effects of coca as used by the South American Indians are due to liberation of the cocaine content or of other substances in the leaves is not certain (Blake, 1943). In any case, coca chewing should not be confused with cocaine addiction.

The chief physiological effects of coca chewing are the allaying of thirst and hunger and the freeing of bodily energy for prolonged physical exertion, especially at high altitudes, “presumably by making foods already stored in the body available for conversion into manpounds” (Blake, 1943, p. 116).

Coca chewing is indulged in distinctly as a stimulant, to induce the above-mentioned effects. It is not to any appreciable extent an escape medium. Nor is it used alone and at present, at least, by shamans to produce trance. It enters, however, and, according to Polo de Ondegardo and Montesinos, did enter considerably into Andean shamanistic divination and other practices. The leaves are thrown by the modern Aymara like cards to discover lost or stolen property; divination was also practiced in the Cuzco region by spitting coca juice on the hand. Coca leaves were offered by the Peruvians to certain birds to have them give knowledge of the future and wreak evil on enemies. Coca leaves were very common sacrificial offerings among the Chibcha and Quechua, as they are among the modern Quechua, Aymara, and Uro-Chipaya. Among the ancient Chibcha and Peruvians they were also burned as incense. Coca appears to enter very slightly into the magico-religious culture of the forest Indians to the east of the Sierra—an indication perhaps of more recent introduction into this area from the western Highlands.

As a general rule coca-chewing peoples are not habitual tobacco-users, but there are exceptions, such as the Omagua. More commonly, coca chewing is a masculine rather than a feminine habit, but here too there are exceptions, as among the Aymara and in parts of the forested region. Among many peoples, as, for example, the Ica, Moguex, and Páez of Colombia, coca is chewed little or not at all by women.

BANISTERIOPSIS

From the stem of plants of the genus Banisteriopsis (B. inebrians, B. caapi, B. quitensis: cf. Morton, 1931; chief active elements, the alkaloids banisterin, yagein, yagenin) are prepared narcotic beverages called yagé, ayahuasca, hayahuasca, hayac-huasca, cadána, natéma, iyona, nepe, pinde, honi. It is possible that some of the beverages recorded in our sources under these names were from plants other
Map 14.—Area of Banisteriopsis preparations.
than *Banisteriopsis*, since in many instances scientific botanical identification was not made.

The main area of distribution of *Banisteriopsis* narcotics is along the affluents of the upper Orinoco and of the upper Amazon (map 14). Their use is specifically recorded among: the *Guahibo* and, according to Spruce, most of the tribes of the Meta, Vichada, Guaviare, Sipapo, and intervening rivers that flow into the middle and upper Orinoco; the *Yeconá* of the upper Venturí; most (about 40 in all) of the peoples of the Uaupés and the Tiquié, the upper Caquetá, Apáporis and Putumayo, the Napo, the Pastaza, the middle Huallaga, the upper Ucayali, and the far upper Juruá Rivers; the *Colorado* and *Cayapa* of western Ecuador. (Fairly full listing in: Spruce, 1908; Reinburg, 1921; Tessmann, 1930; Pardal, 1937.)

The plant is cultivated over most of the area but is also gathered wild. On the Orinoco affluents the dried stem was chewed, but both there and elsewhere *Banisteriopsis* is usually taken as a beverage. Sections of the stem are pounded in water, and the strained liquid is taken either crude or after being boiled and let cool. Often leaves, young shoots, or roots of other plants—*Datura* sp., *Haemadictyon* sp. and/or tobacco water—are added. The beverage is of a brownish-green color, with a bitter taste. In many tribes it is drunk only rarely or not at all by the women; in Ecuador both women and young boys drink it.

The more common effects are: at first vomiting, even among seasoned users; then trembling and giddiness (sometimes, according to Spruce and Villavicencio, accompanied by violent and reckless fury, though this is denied or questioned by Karsten and Reinburg); next exhaustion and profound sleep, before and during which sleep occur gorgeous and/or terrifying visions of marked clearness that may have a bluish aureole and that are vividly remembered after awakening; clairvoyance; communication during narcosis with the spirit world. (Cf.: Reinburg, 1921; Karsten, 1920 b, 1935; Morton, 1931.)

Among many tribes *Banisteriopsis* narcotics are taken for their exciting and pleasurable effects, frequently on the occasion of drinking sprees; among others, solely by shamans or in connection with shamansitic or other magico-religious rites. Shamans drink them to enter into communication with manistic or other spirits, to learn the cause and cure of illness, the whereabouts of enemies, the future, the right decision in disputes, and so forth, and to bewitch enemies. Among the *Záparo*, these beverages are drunk by the men before war, hunting, rubber gathering, and other expeditions; among the *Jívaro*, at the feast of dogs, victory feasts, special natéma feasts, and so forth. (Cf. especially: Karsten, 1935; Tessmann, 1930; Calella, 1944.)
DATURA

Narcotic preparations (floripondio, campanilla, borrachero, yakoborrachera, huacacahu, yerba de huaca, huanto, huantuc, cháhico, miaya, maícoa, maikoma, tonga, peji, isshiona) are made from the bark, seeds, and leaves of various wild and cultivated species of the genus Datura (D. stramonium, D. arborea, D. candida, D. rosei; active elements, chiefly hyoscyamin, scopolamin, and atropin).

So far as our records go, these Datura preparations have an exclusively western distribution in aboriginal South America—along the Andean and Pacific fringe of the continent from Colombia to southern Perú and in southern Middle Chile (map 15). They are specifically reported for the Chibcha and Chocó of Colombia, the Quechua of Ecuador, Perú, and Bolivia, and the Mapuche-Huilliche of Chile, and for the Záparo, Jivaro, Canelo, Inga of Mocoa, Siona, Pioje, and Omagua of the Montana. Some of the “brujos” among the Indians of the Ecuador Sierra have recently been taking professional lessons from Jivaro shamans and have introduced or reintroduced Datura into Sierral practice (Disselhoff, 1939). Preparation, use, and purpose differ appreciably from people to people.

Among both the Mapuche-Huilliche and the Jivaro, Datura is administered as a correctional measure of last resort to very unruly children: among the former, as a mixture of crushed Datura seeds and parched maize, to produce partial intoxication, in which state the children are lectured; among the latter, in liquid form to boys after a 2-day fast in order that the spirits of their forefathers may properly admonish them in the ensuing dreams and visions. The pre-Contact Chibcha of the middle Magdalena gave potions of Datura and tobacco leaves in chicha to women and slaves to deaden their senses before burial alive with their dead husbands and masters (Castellanos, 1886–87, 1: 65–66). In the early 19th century, the Indians of the Peruvian Highlands used to give Datura sap in chicha to women as an aphrodisiac (Tschudi, 1846, 2: 23).

Among the Chibcha, Chocó, Quechua, Jivaro, Záparo, Canelo, and Siona, and probably among the Inga, Piojé, and Omagua—but not among the Mapuche-Huilliche—Datura preparations, usually in the form of a drink, play or played an important role in shamanistic and other magico-religious rites and practices. In some cases, as among the Chibcha of Colombia and the Quechua of Perú and Bolivia (Vázquez de Espinosa, 1942, p. 658), the seeds were ground and taken as an infusion or in chicha; in others, as among the Jivaro, the drink is simply the juice, of light green color and insipid taste, squeezed by hand from the rind scratched off the stem. These beverages, taken in strength as they commonly are taken, induce marked initial confusion
Map 15.—Area of *Datura* preparations.
and excitation, and often such violent fury that the takers have to be watched or held; this stage is followed by profound sleep with visions and spirit visitations through which the shaman or lay person acquires knowledge of the originator and the cure of maladies, the location of enemies or of treasure, the identity of thieves, the outcome of prospective war expeditions, and so forth. Among the Jívaro at least, Datura drugs—much more powerful than Banisteriopsis ones—were taken mostly by male shamans, candidates for shamanship, youths at initiation, and warriors; rarely by women. (Karsten, 1920 b, 1935; Safford, 1917 b, 1922; Reinburg, 1921; Tschudi, 1846; Lewin, 1931; Pardal, 1937.)

MISCELLANEOUS STIMULANTS AND NARCOTICS

Among the less important and more narrowly localized excitants and stimulants are: the Mojo decoction made from marari, a plant described as similar to our verbena, and taken by shamans when they had to interview the spirits (Métraux, 1943 a, pp. 15–16) ; the Macushi crushed-pepper infusion poured into the nostrils as a stimulant, excitant, and headache cure (Roth, W. E., 1924, p. 247) ; the potent Yurimagua tree-fungus beverage (Chantre y Herrera, 1901, p. 85) ; the Malalí preparation of an unidentified dried larva, bicho de taquara, the eating of which was reported to bring long-lasting ecstatic sleep with marvellous dreams (Saint-Hilaire, 1830–33, 1: 432–433) ; the vision-producing yurema-root infusion of the Coriri and Pancarari. To judge from many hints scattered through our sources, there is good probability that more meticulous field research and more exact scientific identification and analysis of specimens will reveal other aboriginal stimulants and narcotics, in addition to those dealt with in the present article.

CONCLUDING GENERALIZATIONS

In South American Indian life, aboriginal stimulants and narcotics are confined almost exclusively to the horticultural peoples, and one or more such stimulants and/or narcotics are in use among practically all these peoples. Conversely, stimulants and narcotics of all kinds are, or in earlier post-Contact days were, completely lacking among the southern nonhorticultural peoples from the southern and perhaps the northern limits of the Pampa to Cape Horn, as also they are or until recent times were from a large and fairly continuous block of peoples (Ge and other non-Tupi), some horticultural, some nonhorticultural, of Eastern and Southern Brazil.

Of the various aboriginal South American stimulants and narcotics, alcoholic beverages and tobacco have the widest distribution, being practically coterminous with gardening. Coca, Datura, and guayusa
are found mostly in the Andean and Montaña regions; Banisteriopsis, mostly in the Montaña; mate, mostly in the Paraguay section; cocoa, in Middle America as far south as but not beyond the Cuna of Panamá. Piptadenia and Paulinia have much more scattered and broken distributions.

BIBLIOGRAPHY

Appun, 1870; Bates, 1892; Betanzos, 1924; Bettendorf, 1910; Blake, 1943; Bollinder, 1925; Bretes, 1903; Bruman, 1940; Calella, 1944; Castellanos, 1850, 1886–87; Chantre y Herrera, 1901; Cobo, 1890–93; Dusselhoff, 1930; Dixon, 1921; Dobrizhoffer, 1822; Domínguez, L. L., 1891; Ernst, 1890; Havestadt, 1883; Herrera (see Yacovleff and Herrera, 1934–35); Karsten, 1920 a, 1920 b, 1926, 1935; Koch-Grünberg, 1917–23; La Barre, 1938; Lewin, 1931; Lovén, 1935; Mackenzie, 1945; Mason, J. A., 1924; Métraux, 1943 a; Montesinos, 1930; Morton, 1931; Murr, 1785; Nicholas, 1901; Nordenskiöld, 1908, 1920, 1931, 1938; Pardal, 1937; Pero Hernandez, 1891; Polo de Ondegardo, 1916; Reinburg, 1921; Restrepo, 1895; Rodríguez Sandoval, 1945; Roth, W. E., 1924; Safford, 1916, 1917 a, 1917 b, 1922; Saint-Hilaire, 1830–51; Salathé, 1931–32; Schmidt [Schmidel], 1891; Schultes, 1942; Serrano, 1941; Spruce, 1908; Stahl, 1924, 1930; Tessmann, 1930; Tschudi, 1846; Uhle, 1898; Vásquez de Espinosa, 1942; Velgl, 1785; Villavicencio, 1858; Wafer, 1903; Yacovleff and Herrera, 1934–35.