

ETNOLOGISKA STUDIER

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CONTRIBUTORS

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ILEX GUAYUSA FROM 500 A.D. TO THE PRESENT

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I.

The recent find in the tomb of a medicine man from a Tiahuanacoid Culture in highland Bolivia of leaves of a holly represents ethnobotanically one of the most interesting and possibly most significant discoveries of the last several decades. The material is dated by radiocarbon measurements at about the fifth century.

Amongst the several artifacts in this find—a snuffing tube, other tubes that have been interpreted as clysters, bamboo storage tubes for powder, spatulas, snuff trays, a mortar and pestle and a hollow fruit-capsule container—were several bundles of flattened leaves neatly tied with fibrous material and so perfectly pressed that one might logically compare them with recently prepared dried herbarium specimens. One of these bundles was wrapped in a large leaf; three had been packed in bags or pouches.

The several kinds of tubes appear to be referable to *Arthrostylidium*. The snuff trays are made from a soft, light wood which has not yet been identified. The bundles of flattened leaves represent *Ilex Guayusa* Loes. The fibrous material tying these bundles is probably monocotyledonary. The large leaf used as a wrapper had been determined by Harling and Sparre as a species of *Duroia*, possibly *D. saccifera* Benth. et Hook. The capsule container is the lecythidaceous *Cariania decandra* Ducke. The leaf fragments have yet definitively to be pharmacognostically identified.

Several factors concerning the leaves of *Ilex Guayusa* are especially noteworthy. The leaves were prepared for the grave with great care, indicating that they had been included in the burial for a specific purpose. This purpose may now only be guessed at: was it for medicine, stimulant, food, hallucinogen or for some merely symbolic significance?

The leaves gave positive tests for caffeine. No other alkaloids nor biodynamically active principles were found in them.

This discovery of caffeine was not unexpected, inasmuch as over a century ago Jameson (12) reported that guayusa "a species of *Ilex* . . . which abounds in the Provinces of Quijos and Canelos" contained caffeine.

Other hollies are known to contain caffeine or from their use as stimulants are suspected to contain this compound. *Ilex paraguariensis* St. Hil. or "yerba maté" of southern South America and *I. vomitoria* Ait. or "yaupon", source of the "black drink" of the Indians of southeastern North America, are employed as economic plants for their relatively high content of caffeine. In addition to these major and well known caffeine-containing hollies, a number of other species are locally employed to prepare stimulating beverages or as additives to some of the major species which are the source of such drinks. The leaves of *Ilex yunnanensis* Franch. var. *eciliata* Hu or "shui-cha-tze" (meaning "water tea" or "tea growing by the water") are employed as a substitute for real tea (*Camellia sinensis* (L.) O. Ktze.) in the border region between Tibet and China (10, 11). Four North American species are utilized in the same way as is *Ilex vomitoria* (9): *I. Cassine* Walt. (9), *I. glabra* A. Gray (23), *I. Perado* Ait. (= *I. quercifolia* Meerb.) (23) and *I. verticillata* A. Gray (23). In southern South America, the leaves of *Ilex amara* Loes., *I. conocarpa* Reiss ex Mart., *I. fertilis* Reiss ex Mart., *I. pseudobuxas* Reiss ex Mart. and *I. theezans* Mart. are the source of stimulating beverages of lesser importance (28). Still other species of *Ilex* have been indicated as sources of stimulant drinks in South America. Hartwich (8) enumerates *I. affinis* Gardn., *I. chamaedryfolia* Reiss. ex Mart., *I. cognata* Reiss. ex Mart., *I. Congonhina* Loes., *I. cuiabensis* Reiss. ex Mart., *I. diuretica* Mart. in Reiss. ex Mart., *I. dumosa* Reiss. ex Mart., *I. Glaziouwiana* Loes., *I. pallorioides* Reiss. ex Mart., *I. pseudosphaera* Reiss. ex Mart., *I. symplociformis* Reiss. ex Mart., and *I. vitis-idaea* Loes. *I. tarapotina* Loes. has likewise been suggested (18) as the source of a tea in eastern Peru.

No caffeine containing plant has ever been known to be used anywhere except in the form of a beverage. Consequently, an obvious assumption would be that these archaeological leaves of *Ilex Guayusa* were placed in the burial for use by the deceased as a beverage. The presence in the burial, however, of a mortar and pestle, snuff trays and tubes of a kind suggestive of use in snuffing offers us an unconfirmable suspicion that these leaves might have been placed in the grave for the preparation and use by the deceased of a snuff. Although we lack direct evidence that the leaves

were destined to this purpose, there is no reason to believe that caffeine administered in this way would not be absorbed into the general circulation through the nasal mucosa. The administering by snuffing of intoxicating preparations of tobacco and of the hallucinogenic *Anadenanthera* (*Piptadenia*) is known to have been practiced in this general area of South America.

If this suspicion that *Ilex Guayusa* were the source of a snuff proved to be true, then it would represent the first time that any caffeine-rich plant in either the Old World or New is known to have been employed in this way.

The presence in the burial of tubes of a type known to have been utilized as clysters hints—even if remotely and tangentially—even more strikingly at the possibility of the use of *Ilex Guayusa* as an enema. While no caffeine plant has ever been known to be employed in this manner, the fact that rectal administration of tobacco and *Anadenanthera* is widespread in South America should here be remembered.

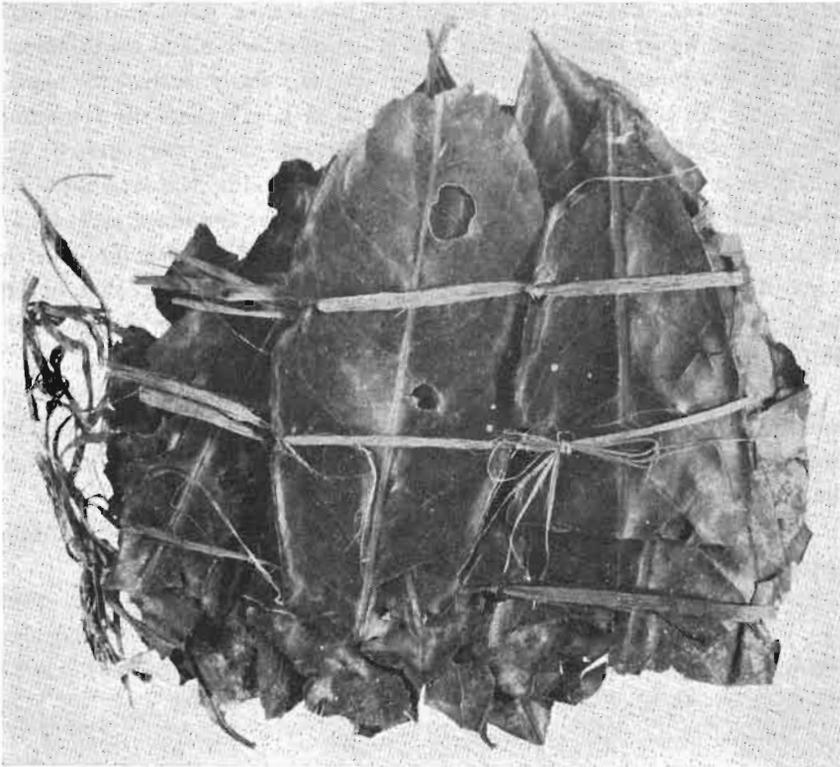


Fig. 1. Photograph of archaeological leaves of *Ilex Guayusa* from Bolivia. Gothenburg Ethnographic Museum, Coll. 70.19.206. Photograph by B. Thörnberg.

II.

Description of the leaves of Ilex Guayusa found in the archaeological site:

Folia firme chartacea vel subcoriacea, elliptica vel elongato-elliptica, usque ad 16 cm. longa et 5 cm. lata (siccitate), acuta, basi late cuneata, in petiolo apparenter crasso, canaliculato, usque ad 7–10 mm. longo, usualiter 1.5 mm. in diametro producta, margine leviter incurvata, distante crenato-serrata, dentibus (6–) 10 mm. distantibus, glabra, apparenter vivo supra nitida atque subtus pallidiora, nervo centrale supra valde impresso, subtus conspicue elevato, nervis secundariis vel lateralibus utrinque 7–10, sub angulo plus minusve 45–60° patentibus, juxta basin sibi plus minusve approximatis et sub angulo angustiore obviis, omnibus ad apicem versus arcuatis, minoribus inconspicuis, subreticulatis.

A peculiarity in the packing of these dried leaves which may have magical significance has been brought to my attention by my graduate student, Mr. Robert Bye: "While studying the two leaf bundles of *Ilex Guayusa*, I have noticed a possible specific construction of the bundles of dried leaves. Each bundle consists of five leaves. Each leaf is placed so that the upper surface of the leaf is exposed, while the lower surface remains unexposed. In this way, the smooth, shiny surface is readily noticeable. The middle leaf of each bundle is larger than the remaining four and is transversely folded so as to expose the upper surface. The two lateral pairs of leaves are shorter than the middle leaf would be if it were unfolded. Each pair of leaves is turned so that the lower surfaces are in contact, exposing the upper surfaces. The petioles are pointed in the same direction in one bundle, although the petioles in the other bundle point in either direction. Is it possible that the construction of the bundle of five *Ilex Guayusa* leaves has any magical significance?"

The dried leaves are a rich chocolate brown, still glossy on the upper surface, duller and paler on the nether surface. They are, in general, smaller than those found on the few modern herbarium collections of *Ilex Guayusa*; but, in other aspects, they match the leaves of this species perfectly.

Ethnobotanical Collection, Botanical Museum, Harvard University.
Accession No. 36/1.

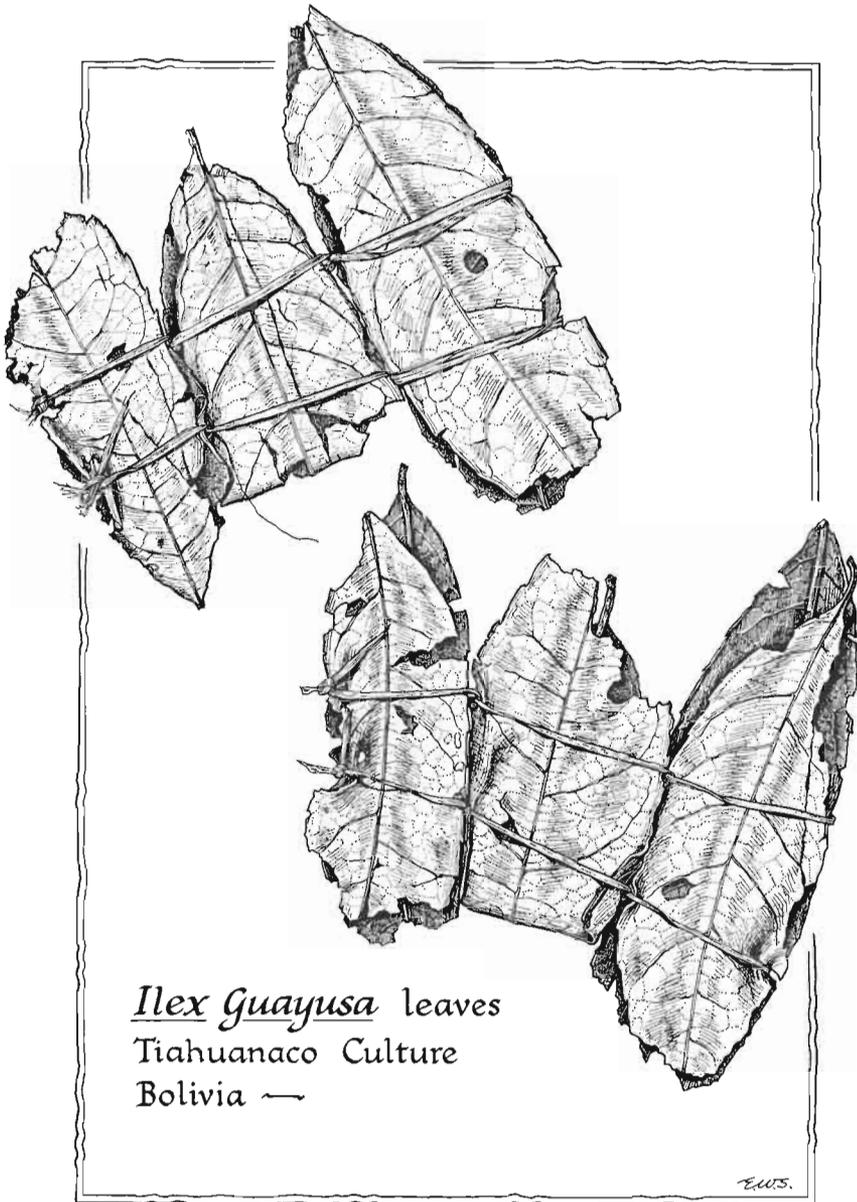


Fig. 2. Drawing of archaeological leaves of *Ilex Guayusa* from Bolivia. Coll. Gothenburg Ethnographic Museum. Drawn by E. W. Smith.

III.

Loesener described *Ilex Guayusa* as a "species nova atque dubia", since he had available no flowering or fruiting specimens. Stating that it was without any doubt allied to *Ilex paraguariensis* and *I. nitida* (Vahl) Maxim., he distinguished it by its larger leaves, the tips of which are acutely acuminate.

In the original description, Loesener outlined its range as Ecuador and northern Peru. He cited two collections: one from Huancabamba and one from Jaen Bracamoros—made by Warszewicz and Lagerheim respectively. Both collectors gave the vernacular name *guayusa*, and both mentioned its use in the preparation of a tea resembling that of *Ilex paraguariensis*.

Curiously enough for a locally very important plant, there have been few collections made of *Ilex Guayusa*—notwithstanding relatively sustained botanical studies along the eastern slopes of the Andes of southern Colombia, Ecuador and northern Peru.

Although Richard Spruce, the English plant-explorer, was thoroughly familiar with *guayusa*, he apparently did not make a collection of it during his work in Amazonian Peru and Ecuador some 115 years ago (25).

There is in the herbarium at Kew an unidentified collection of *Ilex* made during the last century in Guilaguiza and Zamora, Ecuador (*E. C. Lehmann 5581*). I have examined the specimen, which has a few remnants of dried fruits still adhering to the twigs, and believe that, while it may possibly represent *Ilex Guayusa*, it can be so determined only with strong reservations.

On October 21, 1939, Dr. Erik Asplund of the Riksmuseet in Stockholm made an excellent collection of *Ilex Guayusa* in Tena, Provincia Napo-Pastaza, Ecuador (*E. Asplund 9485*). This collection is sterile.

Several significant collections, all from cultivated sources, were made by my student, Mr. Homer V. Pinkley, in 1966 in eastern Ecuador (*H. V. Pinkley 199, 454, 455, 456*), respectively at Dureno, Río Aguarico; Puerto Napo; between Tena and Archidona; and Archidona, Guayura. Notes on these collections state that the leaves are prepared as a tea drunk as a "health tonic" and, amongst the Jivaro, as an "emetic".

Like the other three collections of undoubted *Ilex Guayusa*, the Pinkley material is all sterile. In a personal communication, Pinkley informs me that local missionaries assert that *guayusa* does flower, and, in fact, on December 30, 1968, Mr. W. G. Tidmarsh wrote to Pinkley from the field as follows: "Yes, *guayusa* does have a flower. Last time I was down in

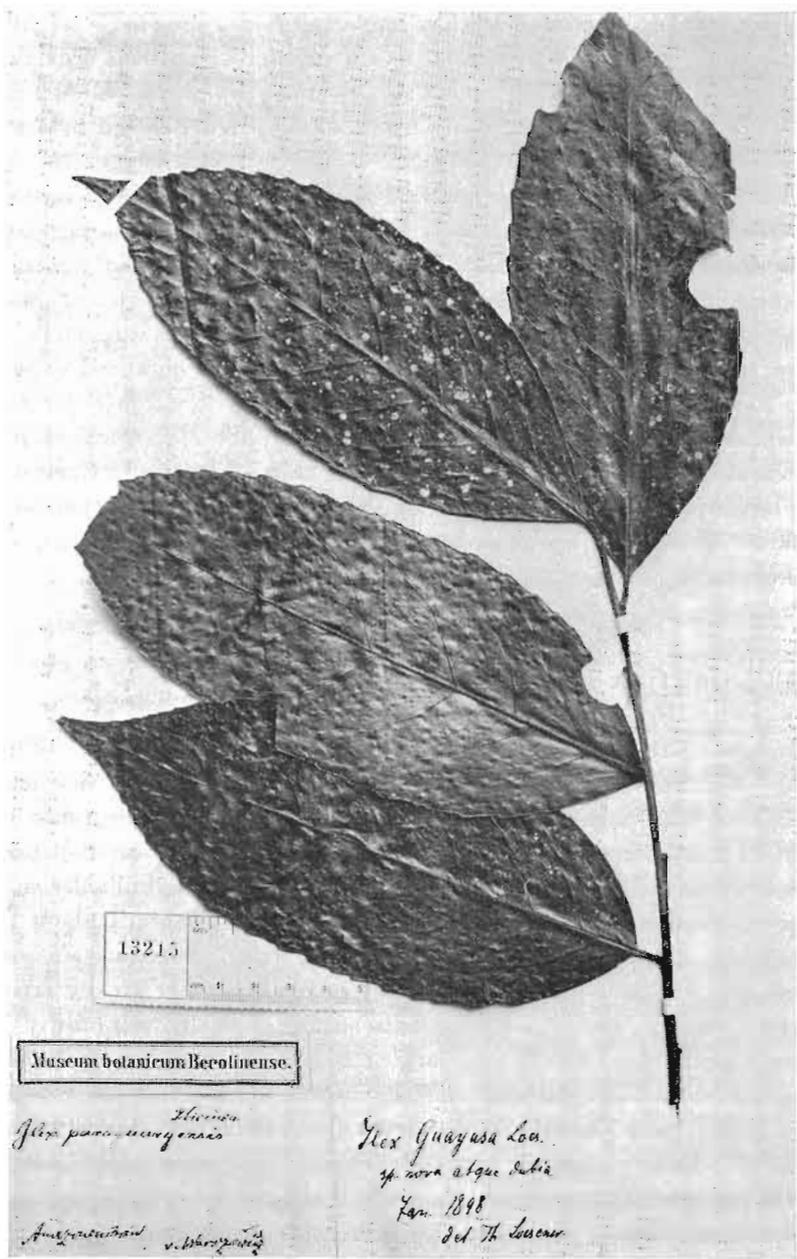


Fig. 3. Warszewicz collection of *Ilex Guayusa* from eastern Peru, cited by Loesener in original description. Photograph courtesy of Field Museum of Natural History, Chicago, Ill.

Shandia, our big guayusa bush had one small flower growing straight out of the stem, its stem a little less than a quarter of an inch. The flower made up of petals making a bowl shape, and a very pale yellowy green colour. The flower was out of my reach, so I cannot tell you how many petals or give you more exact details.”

Pinkley (pers. comm.) believes that the lack of flowering of bushes of *Ilex Guayusa* may be due to the custom of very heavy pruning carried on by the natives and that, if and when wild bushes are located, blossoming will be found to occur normally. The truth is, however, that no flowering material has ever been made available to scientific investigators, and there can be no doubt that the several outstanding botanical explorers who have collected the species must assuredly have searched for fertile specimens. Consequently, the suspicion exists that *Ilex Guayusa* might represent one of those cultigens which, like others—especially those which can be propagated vegetatively in the wet tropics—have lost their ability to flower or which flower so irregularly and so seldom that they seem to be evolutionarily on the way towards losing the flowering habit.

ILEX GUAYUSA *Loesener* in *Nova Acta Acad. C.L.C.G. Nat. Cur.*
78 (1901) 310.

Branches glabrous or subglabrous, sometimes minutely and longitudinally thinly striolate. Leaves large, 2.5–4.5 cm. long; stipules conspicuous, subulate-deltoid, sometimes becoming ashy, acute, up to hardly 1 mm. long, short- or, in comparison with length of the blade, very short-petiolate; petiole 22–26 times shorter than leaf blade, usually longitudinally sulcate above about half its length and more or less rugulose, glabrous, about 1.6–2 cm. thick; blade oblong or oblong-elliptic, rarely subovate-lanceolate, marginally for most part very narrowly recurved, rather grossly crenate-serrate, basally acute or subcuneate-obtuse, apically manifestly and acutely acuminate, 18–21 cm. long, 6.5–7.5 cm. wide, chartaceous or submembranaceous, glabrous, usually rather glossy above, obscurely olive-brown, paler beneath, lateral nerves about 10 on each side, at an angle of 45–60°, basally more or less approximate, near apex curved, smaller nerves single or slightly joined, especially near margin reticulate, somewhat conspicuous above, prominent beneath with reticulation conspicuous, especially beneath.

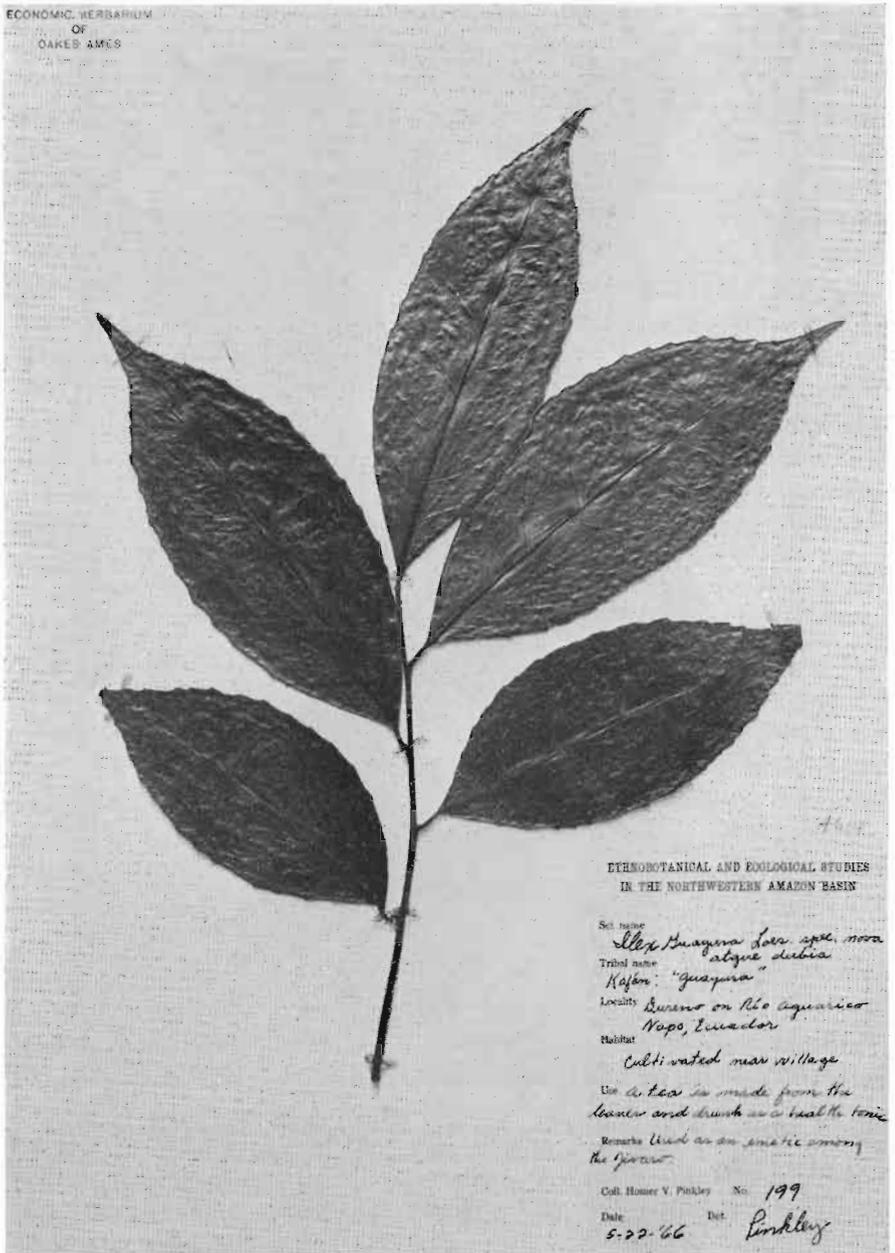


Fig. 5. Pinkley (199) collection of *Ilex Guayusa* from Dureno, Río Aguarico, Ecuador.

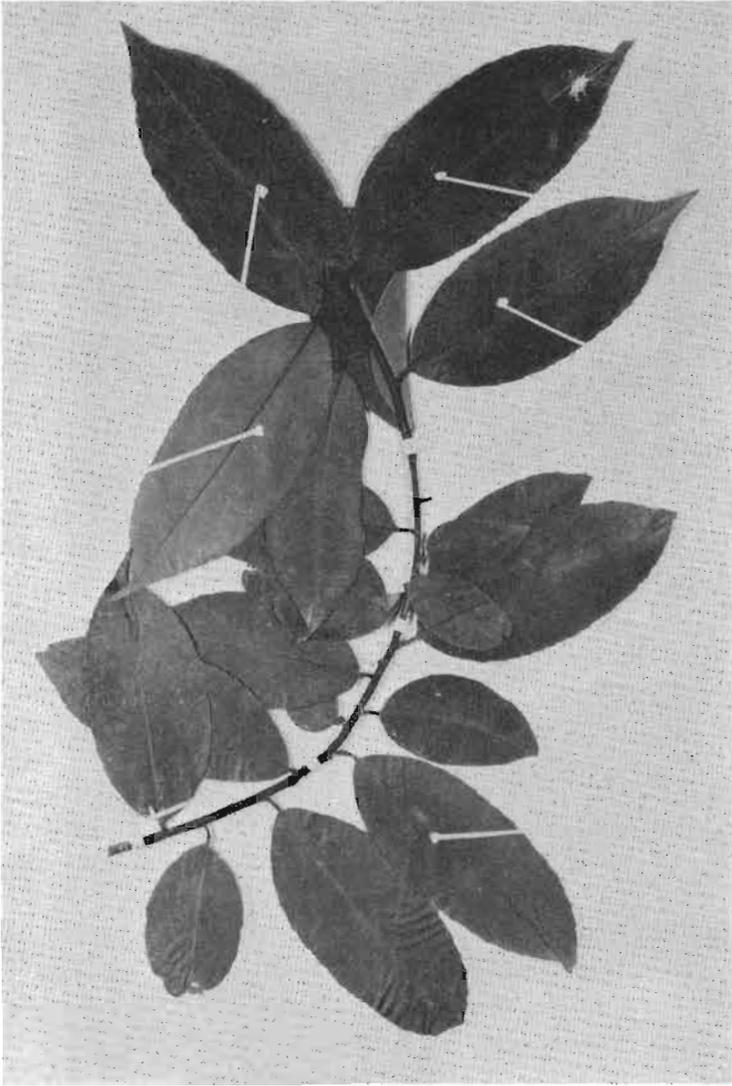


Fig. 4. *Asplund* (9485) collection of *Ilex Guayusa* from Tena, Napo-Pastaza, Ecuador.
Photograph courtesy Riksmuseet, Stockholm.

IV.

How extensively does *Ilex Guayusa* occur in northern South America? Collections are so few that we cannot expect to map its distribution wholly from botanical vouchers. By combining modern collections with modern and older reports in the historical and anthropological literature of the use of guayusa, we might outline its present and former area of cultivation as the eastern slopes of the Andes in southernmost Colombia, Ecuador and northernmost Peru. There is no historical record of the plant or its use in the highlands themselves or in the western Andean slopes of these countries.

One significance of the discovery in highland Bolivia of archaeological remains of *Ilex Guayusa* lies in part in the extension southeast of the known area of cultivation and use of the species. Guayusa could not grow at the altitude of the archaeological site. Consequently, the leaves in the tomb must have been imported from a lower, warmer region, probably from the Amazonian slopes of the Bolivian Andes. This suspicion is strengthened by the discovery in the burial also of a leaf of *Duroia* and a capsule of *Cariania*, both of which species occur only in warmer country and are to be expected as elements of the Amazonian regions of Bolivia. The archaeological find, consequently, greatly extends the range of the occurrence and use of *Ilex Guayusa*.

At first impression, it might appear that Bolivia would lie far out of the area of known distribution of *Ilex Guayusa*. Botanical collections, few though they be, would indicate a more northerly Andean range for the species; and it appears definite that the real centre of its cultivation lies on the eastern slopes of the Ecuadorian Andes, especially in Canelos and adjacent valleys.

There are, nevertheless, several considerations that must be borne in mind as we study the distribution and use of guayusa in the light of this archaeological find in Bolivia. First: the archaeological material dates from about 500 A.D., and since, as shown below, the use and cultivation of *Ilex Guayusa* seems actually to be shrinking in extent in the past 300 years, there is every possibility that the plant could have been known and employed much more widely 1600 years ago. Second: it is possible, albeit rather remotely so, that the archaeological leaves represent material of such magical or medicinal importance that they were traded into the area from a great distance. Third: we do have a modern collection from Bolivia which can with little or no hesitation be referred to *Ilex Guayusa*. The collection *B. A. Krukoff's 8th Expedition to South America 11271*,

preserved in the Arnold Arboretum, Harvard University, was made in the Departamento La Paz, Provincia Laracaja, Copacabana, about 10 km. south of Mapiri, at an altitude of 850–950 m. (October 8–November 15, 1939); it is said to be a “shrub 45 ft. high”. This specimen was originally identified by E. J. Alexander of the New York Botanical Garden as *Ilex amygdalifolia* Rusby, but the specialist on the Aquifoliaceae, Dr. Shiu-Ying Hu of the Arnold Arboretum, has determined the material, which is sterile, as “*I. cf. Guayusa*”, an identification with which I fully concur. The leaves of this material match in size and coriaceousness most of those in the archaeological find under consideration: both are in general smaller and more rigidly leathery than the typical *Ilex Guayusa* of Ecuador, but these differences may possibly be correlated with the growth of the Ecuadorian material in heavier rain forests with greater shade and rainfall and possibly at somewhat higher elevations than the Bolivian specimens.

V.

One of the most inexplicable shortcomings in modern ethnobotanical knowledge of South America is the dearth of detailed information concerning the use of *Ilex Guayusa*. It is almost equally as puzzling as the scarcity of collections of the plant in our herbaria. That guayusa is still used, and in some regions rather commonly, is attested by the number of references to it and the collections of specially designed pots, called *guayuceros*, which certain tribes of Amazonian Ecuador and Peru make for the brewing and serving of the stimulating drink.

The first and by far the most complete study of guayusa is that of Victor Manuel Patiño (21, 22), who has traced references to the use of the plant from 1683 to the present time.

Three centuries ago, a Jesuit, Padre Juan Lorenzo Lucero, reporting on an expedition into the basin of the Rio Marañon, wrote to the Viceroy of Peru that the fierce Jivaro Indians “. . . put together these evil herbs [*Datura*, *Banisteriopsis*, and other narcotics] with guañusa and tobacco, also invented by the devil, and allow them to boil until the small remaining quantity of juice becomes the quintessence of evil, and the faith of those who drink it is rewarded by the devil with the fruit of malediction, and always to the great misfortune of many . . .” (13). He wrote further that the Jivaros “. . . were accustomed to drink a decoction of an herb called *guayusa*, similar to laurel, several times daily. They were thus able to stay

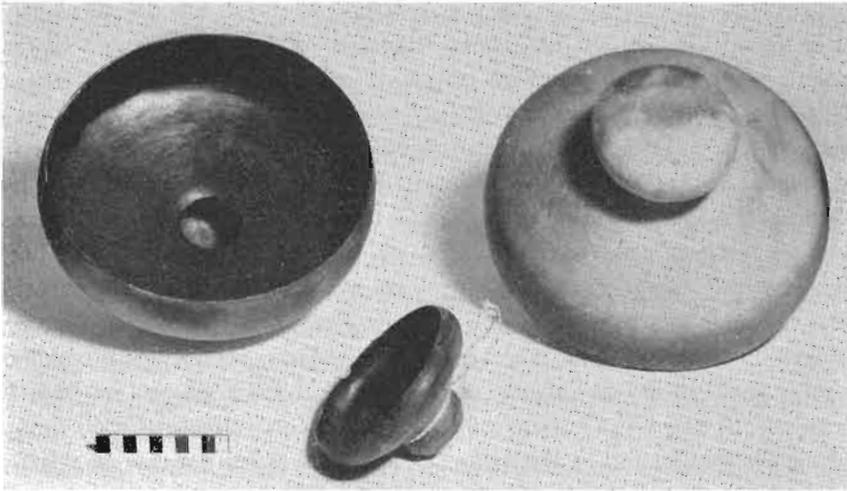


Fig. 6. *Guayuceros* or bowls for preparing and drinking the beverage made from leaves of *Ilex Guayusa*. Mainas Jivaro, Río Macusari, Peru. Courtesy Botanical Museum of Harvard University, Cambridge.

awake without losing consciousness for many nights, when they feared an invasion by their enemies.”

Half a century later, in 1738, an Italian missionary working amongst the Maynas of Peru, recorded that, when the priests lacked necessary remedies, they “. . . frequently use [for stomach disorders] the leaves of a plant called *guayusa*, similar to wild laurel” (13). At the same time, in 1739, Padre Andrés de Zarate reported that one product of the Jesuit mission territories was “*guayusa*, which is an herb that missionaries use in the same way as the tea of the Paraguay herb” (6). The following year, another Jesuit, Padre Juan Magnin (19), described plants used by the natives of Provincia de Maynas in Peru and listed “the *guayupa* [probably a typographical error] . . . , another beneficial potion which, when boiled, turns the water black as ink, and is found in Borja, Santiago and Archidona.” *Guayusa* was reported in 1785 and again in 1788 as a drink preferred by the Pinches, a tribe inhabiting the Río Pastaza of Ecuador and Peru.

The Jesuits exported *guayusa* from their missions and sold leaves of it in Quito (five leaves for half a real) (24). An explanation of its value was offered by a missionary writer of the period as follows (32, 33): “*Huayusa*, not a very tall tree with leaves as long and wide as a hand, dentate and

thick. These are strung together and carried from the low provinces [the Amazon regions] to the highlands. Prepared in the same manner as tea, with a very agreeable taste, the infusion is said to cure chills and venereal infection. It is also used widely to overcome sterility in women, even though the condition has existed for years." Patiño (21) comments on the excellent business that the sale of these leaves must have been in a region "where dissolute customs prevailed and the incidence of venereal diseases was alarming". He suggests that leaves of other plants might also have been mixed with those of *Ilex Guayusa*: for example, several piperaceous species and the monimiaceous *Siparuna Eggersii* Hieron., all of which have occasionally been called by the same name, *guayusa*, possibly as a result of similar uses. Professor Gunnar Harling (pers. comm.) informs me that in highland Ecuador the natives commonly refer to a species of *Hedyosmum* of the Chloranthaceae by the name *guayusa*. The reason for this application of the name undoubtedly stems from the use of *Hedyosmum* in the preparation of a stimulating tea. The Indians of the Valle de Sibundoy in adjacent southern Colombia, for example, are accustomed to drink an infusion of the leaves of a species of *Hedyosmum* when travelling or working in the high páramos of the region.

Patiño (21) postulates that, when the Jesuits, who had established the use of *guayusa* in the treatment of venereal disease, were expelled in 1766, the plant fell into disuse in the Ecuadorian highlands. There would seem, however, to be no reason why its employment as a stimulant should have been affected amongst the Indians of the lowlands.

It was reported by a missionary (3) that, in 1853, the Jivaros were cultivating *guayusa* among other useful plants around their houses. The use of *guayusa* was thought, in this period, to be confined to the Jivaros and Kanelos of the Ríos Napo and Pastaza.

It was at this time, in 1857, that Richard Spruce encountered *guayusa* extensively under cultivation amongst these same natives at Antombós, near Baños, in Ecuador. Spruce's report (25) is a most detailed record of *guayusa* and deserves, therefore, to be quoted in full. I am unable to explain why Spruce failed to make herbarium specimens of *Ilex Guayusa*, unless his reason for neglecting this task was absence of flowers or fruits on the trees which he found. He wrote: "Instead of Cupána or Guaraná [*Paullinia Cupana* HBK.], the Zaporos and Jibaros, who inhabit the eastern side of the Equatorial Andes, have Guayúsa, a plant of very similar properties, but used by them in a totally different way. The Guayúsa is a true Holly [*Ilex*], allied to the maté or Paraguay tea (*Ilex paraguayensis*), but with much

larger leaves. I was unable to find it in flower or fruit, and cannot say if it be a described species. The tree is planted near villages, and small clumps of it in the forest on the ascent of the Cordillera indicate deserted Indian sites. The highest point at which I have seen it is at about 5000 feet above the sea, in the gorge of the Pastasa below Baños, on an ancient site called Antombós, a little above a modern cane-farm of the same name. There, in 1857, was a group of Guayúsa trees, supposed to date from before the Conquest, that is, to be considerably over 300 years old. They were not unlike old Holly trees in England, except that the shining leaves were much larger, thinner and unarmed.

“When I travelled overland through the forest of Canelos, and my coffee gave out, I made tea of guayúsa leaves, and found it very palatable. The Jibaros make the infusion so strong that it becomes positively emetic. The guayúsa-pot, carefully covered up, is kept simmering on the fire all night, and when the Indian wakes up in the morning he drinks enough guayúsa to make him vomit, his notion being that if any food remain undigested on the stomach, that organ should be aided to free itself of the encumbrance. Mothers give a strong draught of it, and a feather to tickle the throat with, to male children of very tender age. I rather think its use is tabooed to females of all ages, like caapi on the Uaupés.”

An hitherto apparently unpublished Spruce note on guayúsa, preserved at Kew, in a letter to the “Agent of Ecuador Land Company (Mr. G. P. Pritchett) in a reply to enquiries stet the feasibility of forming a colony of Europeans in Forests of Canelos (written at Baños, Dec. 1857)”, gives additional information on guayúsa and would seem to support the suspicion that the centre of distribution of the plant was the eastern slopes of the Ecuadorian Andes. “I am not sure that the Guayúsa, which the wild Inds plant near their houses might not successfy compete in the English market against the inferior sorts of Tea. This is the leaf of a sort of holly, perfectly difft from the Maté or Paraguay Tea, tho somewhat allied to it, and it has much the same aromatic flavour without the bitterness of Chinese tea. I have used it for weeks of thogt instead of tea, & I believe you have drunk [?] some.”

At about the same time, the Ecuadorian geographer, Villavicencio (34), made similar observations concerning guayusa: “This habit [drinking guayusa every morning] is so widespread among them [the Jivaros] that even the children are given by the mother a fair quantity of the decoction of guayusa, and a feather is used to promote vomiting and accustom them to this practice from early years.”

Tessmann (26) has cited the use of guayusa amongst some five tribes of the Amazon of Ecuador and Peru in modern times: Aguano, Auishiri, Chebero, Chivaro, Ikito, Kandoshi, Kanelo, Kashibo, Kichos, Kokama, Koto, Lamisto, Mayoruna, Omagua, Omurana, Panobo, Pintshe, Pioche, Ssabela, Ssimaku, Tshamikuri, Tshayahuita, Yagua, Yameo, Zaparo.

Perhaps the most detailed modern report on the employment of *Ilex Guayusa* is offered by Rafael Karsten (14), the anthropologist who records its contemporary use amongst the Jivaros and the Kanelos. According to Karsten, only males may prepare the guayusa beverage, but it is drunk by adult males and females as well as by children. It is often administered to dogs before the hunt. Guayusa has a ritual significance in the Jivaro Tobacco Ceremony of the Women, when all guests, before they can touch food, ". . . must wash their mouths with a guayusa solution. Both the cooking of the guayusa and the taking of the tonic has the same ceremonial character as other important acts at the feast. A small clay pot . . . is placed on the ground by the women assisted by a priestess. The latter first makes the bride pull off the leaf from the twig and put it down in the *yukunda* [pot]. The same manoeuvre is repeated with the second and third woman. Then the bride . . . pours a little water, first into a gourd, and thereupon into the pot with the guayusa leaves. All three women, assisted by the priestess, now carry the pot cautiously to the fire where it is allowed to boil.

"As soon as the drink has boiled enough, the priestess puts a little of it into a gourd and gives it to the bride to wash the mouth with it. The latter, having washed her mouth, spits out the solution without drinking it. The same is repeated by the other women." Following this ritual the women are ready to eat and to continue with other parts of the ceremony.

Guayusa has an important role in the Victory Festival and the Tsantsa Feast, when the heads of slain enemies are shrunk. On the way back from battle, "they break off some twigs of guayusa . . . called *weisa* by the Jibaros, a tree the leaves of which are used for the preparation of an aromatic and tonic drink, with which the Jibaros wash their mouths every morning. This drink has now to be prepared. The slayer as well as his wife and daughter together grasp a small clay pot . . . pour water into it from a large vessel, and together place it on the fire. As soon as the drink has boiled, the *whuea* [chief of the ceremony] takes a little of it in a small gourd, mutters an incantation over it, and passes it to the slayer who washes his mouth with it without swallowing much of it. Thereafter the *whuea* in the same way gives of the drink to the wife and the daughter of the slayer, who likewise wash their mouths with it. The small clay pot is then taken off

the fire and laid aside. The three persons are now properly purified for breaking the fast."

The Jivaros seem also to ascribe certain divinatory importance to guayusa. Karsten reports that just as they "... take certain narcotic drinks when they are preparing for war, to see whether they will be lucky or not in the undertaking, so they also understand a kind of divination in regard to hunting. The drink then used is prepared of the guayusa . . . , the leaves of which are boiled in water for the purpose. The guayusa is not a real narcotic but a tonic, to which the Indians ascribe magical purifying effects. The Jibaros, however, seem to believe that the drink produces dreams of divinatory significance or, more strictly speaking, what they call 'small dreams', especially such as have reference to hunting.

"When the Jibaro gets up in the morning, his first act is to place a small clay pot on the fire to prepare his guayusa . . . , of which he then takes a small quantity, washing the mouth with the rest. If the liquid in the guayusa pot boils well so that the water whirls round rapidly, the Jibaro thinks that on that day he will have good luck in hunting . . . if the guayusa does not boil well, he believes that on that day he will not be able to kill any game. In the dream, the same thing can be 'seen' . . . , and this is considered more important. If the Jibaro dreams that he sees his guayusa pot boiling furiously, so that the water whirls round as in a whirlpool, he is convinced that on the following day he will have good luck in killing wild hog, monkeys, birds, and other animals, and the young men in the house are sent out into the forest to look for game.

"In general, the Jibaros have the idea that the guayusa makes the body strong and swift, particularly for hunting. This also explains why the guayusa forms a part of the medicine given the dogs at the feast *Yawapani*."

According to Gill (7), guayusa is extensively employed as a ritual mouth-cleanser amongst the Jivaros: before making curare, ayahuasca (*Banisteriopsis inebrians*) is taken, "a long bitter swallow of the juice of the soul-vine . . . and go into your lean-to to sleep with your hunger and dream strange dreams about the magic of curare and the mighty hunting you will do . . . Early the next morning, . . . you quickly rinse your hunger-tasting mouth with the acrid guayusa and swallow a mouthful of some food which has no salt and chew a bit of sugar cane. By then, you are ready for the actual making."

Although the centre of use of *Ilex Guayusa* in the 18th Century appears to have been the eastern Andean slopes of Ecuador and northern Peru, the plant was recorded from Colombia, somewhat to the north of this area.

A missionary, Padre Juan Serra (24), who worked in the Putumayo-Caquetá region of Colombia from 1756 to 1767, wrote that guayusa was used by the head Franciscan priest, Padre José Berrutieta, at Santa Rosa. In view of the extraordinary detail of Padre Serra's report, it may be worth transcribing it here in full.

"The day after the arrival of the President [head priest], I saw strings being hung out in the patio and hanging from them bundles of leaves. I went into the kitchen and asked their purpose. A woman answered: 'Father, this is guayusa. The President drinks it twice a day, and we have hung it in the sun to dry.' I told her that I would like to try it, and she said that she would give me some in the afternoon. Later . . . I tasted it; but as it was already sweetened, I did not drink more, but told her: 'I do not like it sweet, but unsweetened, in order to discover its true taste.' Later, they brought me more, and I drank a whole cupful. It has the color of dark honey, and five leaves are enough to make a chocolate pot full of its juice. Its taste is like tea but finer and more pleasant. When I drank it, I began to sweat and expectorate so much that I was obliged to change my habit, and within half an hour coughed enough phlegm to fill a large cup. These effects seemed to me to be very good. I went to the President and asked him about guayusa. He said that the beverage was excellent for the treatment of venereal diseases, that it . . . cleansed the blood and improved the digestion and appetite, because, when taken in the morning, one does not feel hunger until the afternoon. It strengthened the body and removed all impurities through perspiration and phlegm. All these effects are true, and I have experienced them many times. Father Berrutieta told me also that guayusa taken with honey caused women to become fertile, and, if the honey was that of the bee called *apate*, the woman, if married, would become pregnant immediately. This fact is well known and proven in Quito and the highlands. The Jesuits brought the plant from their mission and sold it in Quito at five leaves for a half real. I asked him where it might be found, and he told me that in the village of La Concepción, Fr. José Garvo had a big tree, but in Pueblo Viejo, the first town one reaches from here, about four days distant, there is a grove of more than one league in area, entirely of guayusa trees. I at once wrote the name of the village and the name of the tree, in order not to forget them, in order that I might provide myself with supplies for my journey and destination."

When Padre Serra arrived at Pueblo Viejo in December, 1756, he ". . . asked the . . . Mayor about Guayusa. He said that there was a great deal, and that if I so wished he would have some brought, because it grew in

the forest somewhat outside the town. I told him that I wanted to go there myself and see the guayusa trees. He said that I could not go, that the mountain growth of brush was dense, but I insisted, and he assigned to me three Indians, each with a machete . . . We took with us two *saparos* or baskets . . . We arrived at the guayusa grove, which is on a plain. The guayusa tree is the most beautiful and luxuriant tree that I have ever seen. It grows to be rather large in girth, so much so that three men could not encircle it, and tall in proportion, with a heavy crown. The trunk is ash-color, like the trunk of the poplar, the leaf a gentle and delightful green. So much so that, seeing it, I considered the hardship of the journey well worth while. From the first tree I came to, I took some leaves and began to eat them to find out their taste. I found that it was very agreeable, somewhat similar to tea, but finer and more pleasant. Seeing that there were many seedlings in the field, while the Indians gathered leaves . . . I . . . cut six internodes of bamboo, and, with the machete, took out eighteen seedlings with roots, placing three in each internode with earth from the same place. I took them with me and, in each village of the Putumayo, I planted three guayusa trees, and they all grew, so that, at the end of three years, they were giving many leaves. In this way, all the priests were provided with guayusa for their own consumption." When Padre Serra finished his stay in Colombia and went to Peru, he took half a hundred-weight of guayusa leaves with him, as well as a supply to display in Bogotá and Popayán.

That guayusa was well known in the Colombian Putumayo in those years is attested also by the reports of several Franciscan missionaries who had a mission on the Río Putumayo slightly downstream from its confluence with the Río Sucumbíos (5, 35). "Among the medicinal plants cultivated by our missionaries . . . for the relief of the poor Indians and themselves, the guayusa tree is outstanding. A description of this tree is being sent, at his request, to Don Pedro de Valencia, treasurer of the Royal Mint at Popayán. Its leaves, which are the most valued part of the plant, are eagerly sought in various parts of New Granada by those acquainted with its beneficial properties as a purgative and an aid to digestion".

About a century later, Padre Manuel María Albís (1) wrote about his trips to the Macaguaje Indians along the Ríos Mecaya, Senseya and Caucaya, in the same Putumayo-Caquetá area of Colombia. Of guayusa, he reported that (21) "it is hot and used in poisonings; the burned leaves, when mixed with barley and honey, are given to women suffering amenorrhoea; when boiled and mixed with *yoco*, a caffeine-containing liana [*Paullinia Yoco*

R. E. Schult. et Killip] the preparation is used to cure dysentery; the liquid is used for stomach aches”.

Patiño (21) insinuates that guayusa “grows both wild and cultivated.” Pinkley (pers. comm.) also believes that the species may grow in a truly wild state, although he has never encountered it outside of cultivation. Except for the vague statement by Padre Serra that “it grew in the forest”, I find no evidence in the literature to suggest its occurrence in an undoubtedly wild state. All references indicate that guayusa, when not planted, grows as an escape or vestige of former plantings around abandoned human habitation sites. Patiño further intimates that, since guayusa, according to early reports, grew so prolifically in the Colombian Putumayo-Caquetá region; that, since Padre Serra’s experiments in guayusa propagation were so easily successful; and that since, in Pueblo Viejo, there was a grove “more than a league in size”—guayusa might be still found in the area. This, however, is definitely open to grave question.

Ilex Guayusa, together with all knowledge of it, has apparently disappeared from the Colombian Putumayo-Caquetá region. No botanical collections are known from this area. I worked in the area for a year in ethnobotanical investigations in 1941 to 1942, and one of my constant queries concerned guayusa; I failed to find the plant, and no natives knew of any plant of that name employed as a stimulant or medicine. My enquiries amongst the Capuchin missionaries, many of whom were very knowledgeable in the anthropology of the region and some of whom had resided for more than 15 years in the area, uncovered no acquaintance with guayusa. My enquiries amongst the itinerant medicine-men of the Valle de Sibundoy, excellent botanists and cognizant of all medicinal plants of the adjacent lowland areas, likewise led to naught. Other botanists who have worked assiduously in this region—Guillermo Klug, José Cuatrecasas and Hernando García-Barriga—have failed to collect *Ilex Guayusa*. Several of my colleagues and students who have worked more briefly in the Putumayo have never encountered guayusa. Although *Ilex Guayusa* is still used and cultivated in adjacent regions of Ecuador and Peru, I believe that we are justified in stating that it has disappeared completely from, and that no folk-knowledge of it has survived in, the Putumayo-Caquetá portion of the Colombian Amazon.

In the Colombian city of Pasto, however, leaves of *Ilex Guayusa* are still sold under the name guayusa, presumable as a folk-medicine in the native herb market. Pinkley collected a specimen in Pasto in 1966, but the exact provenience of the leaves—whether the Colombian Putumayo or Ecu-



Fig. 7. Ring of *Ilex Guayusa* leaves purchased in herb market, Pasto, Colombia. Collector H. V. Pinkley. Coll. Gothenburg Ethnographic Museum 71.2.1.

dorian territory—has not been ascertained. I would venture to guess that the leaves were imported from nearby Ecuador where, in the herb market in Baños, Pinkley purchased *Ilex Guayusa* in July, 1966, as an “anti-spasmodic”. This Pinkley collection from Baños is exceedingly interesting, since the leaves, folded together into a small packet, are strung together in a ring in exactly the same way as done by the 18th Century Jesuits who took guayusa for sale to Quito and the highlands of Ecuador from the warmer lowlands.

This disappearance, within a century or even less, of an important economic plant may seem to be a source of mystery, but it has happened on sundry occasions, and it may be more common than we realize. According to Spruce (25), the guaraná plant, *Paullinia Cupana*, was cultivated all the way up the Rio Negro of the Brazilian Amazon a century ago. I searched

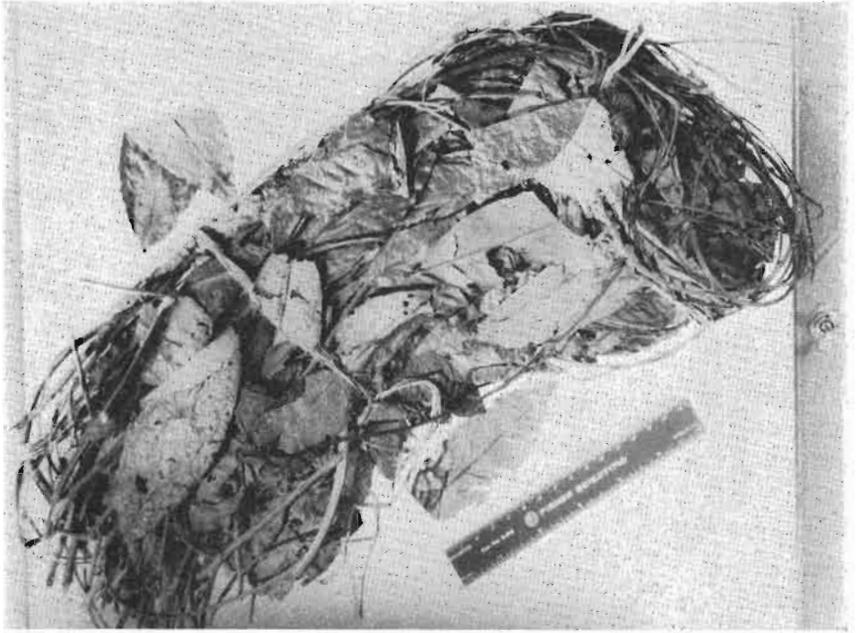


Fig. 8. Dried leaves of *Ilex Guayusa* purchased in herb market of Baños, Ecuador. Collector H. V. Pinkley. Coll. Gothenburg Ethnographic Museum 71.2.2.

for this cultigen on the Rio Negro in 1947 and 1948 and found none, not even escapes from cultivation; and several other modern collectors who have devoted years of botanical study to this interesting region, likewise fail to report it. Spruce, furthermore, stated that the source of an hallucinogenic snuff, *Anadenanthera peregrina* (L.) Speg. (= *Piptadenia peregrina* (L.) Benth.) grew along the Rios Negro and Solimões; modern botanists, a century later, find trees along these rivers so rare that one may assume that the species has, for practical purposes, disappeared from the area. Ethnobotanists, and especially anthropologists, must reevaluate their ideas concerning the rapidity in change of use of plants in primitive societies, above all in those located in the tropical forest areas. Guayusa probably is simply one more example.

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