

## Virola theiodora - Cumala Tree

- Myristicaceae - Tropical zones of Central and South America



Most, if not all, species of *Virola* have a copious red "resin" in the inner bark. The resin from a number of species is prepared as an hallucinogenic snuff or small pellets. Probably the most important species is *Virola theiodora*, a slender tree 25-75 ft (7.5-23 m) in height, native to the forests of the western Amazon basin. The cylindrical trunk, 1 1/2 ft (46cm) in diameter, has a characteristic smooth bark which is brown mottled with gray patches. The leaves (with a tea-like fragrance when dried) are oblong or broadly ovate, 3 1/2-13 in. (9-33 cm) long, 1 1/2-4 1/2 in. (4-11 cm) wide. The male inflorescences are many-flowered, usually brown or gold-hairy, shorter than the leaves; the very small flowers, borne singly or in clusters of 2 to 10, are strongly pungent. The fruit is subglobose, 3/8-3/4 in. (1-2 cm) by 1/4-5/8 in. (1/2-1 1/2 cm); the seed is covered for half its length by a membranaceous, orange-red aril.

### SEMEN OF THE SUN

At the beginning of time, Father Sun practiced incest with his daughter who acquired Viho by scratching her father's penis. Thus the Tukano received this sacred snuff from the sun's semen. And since its still hallowed, it is kept in containers called muhipu-nuri, or "penis of the sun". This hallucinogen enables the Tukano to consult the spirit world, especially Viho-mahse, the "snuff-person," who, from his dwelling in the Milky Way, tends all human affairs. Shamans may not contact other spiritual forces directly but only through the good graces of Viho-mahse.

Consequently, the snuff represents one of the most important tools of the paye or medicine man. Although the sixty species of *Virola* are spread throughout tropical forests of the New World and psychoactive principles have been found in at least a dozen species, it is only in the western Amazon and adjacent parts of the Orinoco basin that this genus has been used as the source of a sacred inebriant. The species most important as sources of the intoxicating snuff are *V. calaphylla*, *V. calophylloidea*, *V. elongata*, and *V. theiodora*, the last-named being without doubt the most frequently employed. Yet locally, *V. rufula*, *V. cuspidata*, and other species may supply the drug.

There are Indians-- the primitive nomadic Maku of the Rio Piraparana of Colombia, for example-- who ingest the red "bark-resin" directly, with no preparation, using *B. elongata*. Other tribes, especially the Bora and Witoto, swallow pellets made from the paste of the "resin," valuing for this purpose *V. peruviana*, *V. surinamensis*, *V. theiodora*, and possibly *V. lorentensis*. There is a vague evidence that shamans in Venezuela may smoke the bark of *V. sebifera* "at dances when curing fevers" or that they may boil the bark and drink the liquor "to drive away evil spirits." Although the mythological significance and magico-religious use of Epana snuff is indicative of a great age, the drug was not known until very recently.

Perspicacious plant-explorer though he was, Spruce failed to discover this fundamental narcotic use of *Virola*, notwithstanding his special study of the group that resulted in the discovery of a number of species new to science. The earliest references to this hallucinogen dates from the beginning of this century, when a German ethnologist reported on the Yelwana of the upper Orinoco area. It was not, however, until 1938 and 1939 that the botanical association of *Virola* with the snuff was made. The Brazilian botanist Ducke reported that the leaves of *V. theiodora* and *V. cuspidata* represented the

source.

The leaves, of course, are never used, but this report first focused attention on *Virola* which, until then, had never been suspected as an hallucinogen. The first detailed description and specific identification of the drug, however, was published in 1954 when its preparation and use among medicine men of Colombian Indians was described.

Taken mainly by shamans among the Barasan, Makuna, Tukano, Kabuyare, Kuripako, Puinave, and other tribes in eastern Colombia, the drug was employed ritualistically for diagnosis and treatment of disease, prophecy, divination, and other magico-religious purposes. At that time, *V. calophylla* and *V. calophylloidea* were indicated as the species most valued, but later work in Brazil and elsewhere has established the primacy of *V. theiodora*.

Recent field studies have shown that the narcotic snuff is used among many Indian groups in Amazonian Colombia, the uppermost Orinoco basin of Colombia and Venezuela, the Rio Negro, and other areas of the western Amazon of Brazil. The snuff is apparently most highly prized and most deeply involved in aboriginal life among the sundry Indian tribes collectively called Waika in the upper Orinoco of Venezuela and the northern affluents of the Rio Negro of Brazil. These groups are variously named, but are most commonly known to anthropologists as the Kirishana, Shiriana, Karauetare, Karime, Parahure, Surara, Pakidai, and Yanomama. They generally refer to the snuff as Epana, Ebena, Nyakwana, or some variant of these terms.

In northwestern Brazil, this snuff and others are often generically known as Parica. Unlike the Colombian Indians, among whom the use of the snuff is usually restricted to shamans, these tribes may often take the drug in daily life. All male members of the group above the age of thirteen or fourteen may participate. The hallucinogen is often snuffed in frighteningly excessive amounts and, in at least one annual ceremony, constantly over a two- or three-day period.

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#### TRADITIONAL PREPARATIONS:

1. Among the Colombian Indians, the bark is stripped from the trees in the early morning and the soft, inner layers are scraped. The shavings are kneaded in cold water for twenty minutes. The brownish liquid is then filtered and boiled down to a thick syrup which, when dried, is pulverized and mixed with ashes of the bark of a wild cacao tree.

2. The various groups of Waika have several other methods of preparation. Those living in the Orinoco area frequently rasp the cambial layer of the bark and trunk and gently dry the shavings over a fire so that they may be stored for future use. When a supply of the sacred plant is needed, the shavings are wetted and boiled for half an hour or more, the resulting liquid being reduced to a syrup, which, after drying, is ground to a powder and finely sifted. This dust is then mixed with equal amounts of a powder prepared from the dried, aromatic leaves of a small plant, *Justicia pectoralis* var. *stenophylla*, cultivated for this purpose.

Finally, a third ingredient is added: the ashes of the bark of an Ama or Amasita, a beautiful and rare leguminous tree, *Elizabetha princeps*. The hard outer bark, cut into small pieces, is placed in glowing embers, then removed, and allowed to smolder to ashes.

3. In more eastern areas of Waika country in Brazil, the preparation of the snuff takes place mainly in the forest. Trees are felled and long strips of bark are peeled from the trunk. A copious flow of liquid which rapidly turns a blood-red accumulates on the inner surface of the bark. After gently heating the strips, the shaman gathers the "resin" into an

earthenware pot which is set on the fire. When the pot of red liquid is reduced to a thick syrup, it is sun-dried, crystallizing into a beautiful amber-red solid that is meticulously ground to an extremely fine dust-like consistency. This powder-Nyakwana snuff-may be employed directly, but usually the pulverized leaves of *Justicia* are added "to make it smell better."

4. The Bora, Muinane, and Witoto Indians of Amazonian Colombia and adjacent Peru use *Virola* not as a snuff, but by oral administration. They ingest small pellets or pills made from the resin to induce an intoxication during which the medicine men communicate with the "little people." These Indians utilize several species: *V. theiodora*, *V. pavanis*, and *V. elongata*, as well as possibly *V. surinamensis* and *V. lorentensis*.

5. The Bora of Peru indicate that they have used a related myristicaceous genus, *Iryanthera macrophylla*, as the source of a narcotic paste for making the pellets.

6. The Witoto of Colombia completely decorticate the trunk of a *Virola* tree. The shiny cambial layer on the inner surface of the bark and adhering to the bare trunk is rasped off with the back of a machete, and the raspings are carefully collected in a gourd. This material gradually darkens to a brownish red. The still moist raspings are kneaded, squeezed repeatedly, and pressed over a wicker sieve. The liquid that oozes through, primarily of cambial sap, has a light "coffee and milk" hue. Without further preparation, this liquid is quickly boiled, possibly to inactivate enzymes which might destroy the active principles, and is then allowed to simmer, with frequent stirring, until its volume is reduced.

When the liquid finally becomes pasty, the vessel is taken from the fire, and the paste is rolled into pellets for immediate use. These pellets may keep their potency, according to the natives, for about two months. When the pellets are not for immediate consumption, they are usually coated with a "salt," as the natives say, prepared from any numerous plants. The "salt" is always made by the same process.

The plant material is first burned and the ashes are placed in a crude funnel made of leaves or bark. Water seeps slowly through the ashes, dripping out through a hole at the bottom to be collected beneath. The filtrate is then boiled down until a gray-white residue or "salt" remains. The pellets of sticky resin are rolled in this powder. There is apparently a large assortment of plants employed for this "salt," which the Witoto call *Le-sa*. The lecythidaceous *Gustavia poeppigiana* is a common source of the ashes for filtration. In the same family, the bark of the huge tree *Eschweilera itayensis* is valued. An unidentified tree of this family, known to the natives as *Cha-pe-na*, is used. The woody stump of a species of *Carludovica* or *Sphaeradenia* of the *Cyclanthaceae* is reduced to ashes for this purpose. The leaves and fragrant inflorescence of the aroid *Spathiphyllum cannaefolium* give an ash which leaches out a high quality of "salt." The bark of a wild species of *Theobroma*, or several small palms, probably species of *Genoma* and *Bactris*, are similarly used.

7. The Bora of Peru strip pieces of bark, only from the lower 4-8 ft of the trunk. The hard, brittle outer layer of bark is chipped off, leaving only the softer inner phloem. This later quickly turns brown from congealed oxidized "resin" and is vigorously pounded on a log with a mallet, until it is shredded. These shredded sections are soaked in water with occasional kneading for half an hour or more, when the pot is brought to a vigorous boil for another half-hour. The bark material, squeezed dry, is then removed, and the remaining liquid is boiled with constant stirring until only a thick paste remains. Small pellets for ingestion are then made from this paste.

Fewer plants are used by the Bora for preparing the "salt" for coating the pellets: the leaves and stump of a species of *Carludovica* and a palm of the genus *Scheelea*. The hallucinogenic principles appear to be present mainly in the almost colorless exudate from the inner surface of the bark, which appears as soon as the bark is stripped from

the tree. This resin-like substance quickly turns reddish in a typical oxidase-type reaction and then darkens, drying to a hard, glossy mass. In specimens dried for chemical study, it appears as a sticky, dark reddish brown gummy material. This material in many species contains tryptamines and other indolic hallucinogens.

Observation of the process indicates that the reason for scraping the surface of the bark is to obtain all traces of the cambial layer that adheres to it. The drug is prepared from the cambial sap, which is quickly boiled, causing coagulation of protein and possibly polysaccharides, and then simmered slowly to reduce the volume to near dryness. The whole process resembles that used for isolation of natural products from the cambium of other trees, coniferin from gymnosperms, for example, except that ethyl alcohol or acetone is now used, rather than heat, to destroy enzyme activity, which might otherwise act adversely on the desired product.

The "resin" of *Virola* plays an important role in everyday native medicine: several species are valued as antifungal medicines. The resin is spread over infected areas of the skin to cure ringworm and similar dermatological problems of fungal origin which are so prevalent in the humid tropical rainforests. Only certain species are chosen for this therapeutic use-- and the choice seems not to have any relationship to the hallucinogenic properties of the species. Indians who are familiar with *Virola* trees from the point of view of their hallucinogenic potency exhibit uncanny knowledge of different "kinds"--which to a botanist appear to be indistinguishable as to species. Before stripping the bark from a trunk, they are able to predict how long the exudate will take to turn red, whether it will be mild or peppery to the tongue when tasted, how long it will retain its potency when made into snuff, and many other hidden characteristics. Whether these subtle differences be due to age of the tree, season of the year, ecological situations, conditioning of flowering or fruiting, or other environmental or physiological factors it is at present impossible to say-- but there is no doubt about the Indian's expertness in recognizing these differences, for which he often has a terminology, so significant in his hallucinogenic and medicinal use of the trees.