

Medicinal and Useful Plants of the Upper Amazon

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February 26, 2006

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Contents

1	Dragon's blood <i>Sangre del Grado</i>	4
2	Sensitive Plant <i>Chami</i>	5
3	Toothache Tree <i>Insira Amarilla</i>	6
4	Thatch Palm <i>Irapay</i>	7
5	Stilt Palm <i>Pona</i>	8
6	Soul Vine <i>Ayahuasca, Yagé</i>	9
7	Snake Bite Plant <i>Curarina</i>	10
8	Lemon Grass <i>Hierba Luisa</i>	11

Citation Abbreviations

The following is a list of citation abbreviations that were used.

AAB = Arvigo and Balick

AED = Amazonian Ethnobotanical Dictionary

AHG = Alwyn H. Gentry (Publications & Personal Communications)

AMP = Antonio Montero Pisco (Personal Communications)

AYA = Ayala, Flore F.

HGB = Henderson, Galeano, and Bernal

NIC = Maxwell, Nicole

RAR = Rutter, R.A.

RVM = Vasquez Martinez, Rodolfo

SAR = Schultes and Raffauf

VDF = Feo, Vincent de

1 Dragon's blood

Sangre del Grado

Latin Name: *Croton lechleri* Muell.-Arg.
Euphorbiaceae: Spurge Family

Description: This species is a medium-sized tree, fairly open in growth habit and with the leaves tending to be clustered towards the ends of the branches. Dragon's blood is so named because the bark when cut exudes a reddish to orange latex. The simple, alternate, entire leaves are heart-shaped (= cordate) and terminate in a long narrow drip-tip. Leaves range in size from approximately 15-30cm long by 15-30cm wide, and are borne on long petioles that range from 15-30cm in length. There are three main veins that radiate palmately from the leaf base, as well as 6-8 obvious parallel secondary veins that diverge diagonally from the midvein. The larger veins and petiole are covered with what appears to be tiny bumps or hairs (= trichomes) that rub off. The smaller veins have a 'dotted' appearance. The small flowers are borne on a tall slender upright spike from 30-50cm long. The fruits are three-part capsules.

Uses: Many species of *Croton* are used by indigenous people as a purgative, while the sap from some forms the constituent of certain varnishes (SAR). The red resin of dragon's blood is taken orally in hot water to hasten internal healing following an abortion (AMP). The sap is also used to staunch the flow of blood and heal wounds (NIC). It is used as a vaginal douche subsequent to childbirth (AED), and to treat tuberculosis and bone cancer (AMP). Two drugs derived from this plant are currently in clinical trials.



(a) Dragon's blood exudes a red latex if cut.



(b) Distinctive foliage of dragon's blood

Figure 1: Dragon's blood

2 Sensitive Plant

Chami

Latin Name: *Mimosa pudica* L.

Mimosaceae: Mimosa Family

Description: The sensitive plant is a low-growing herb that seldom reaches a meter in height and often is found in disturbed areas. The leaves are even bipinnately compound with typically four finger-sized leaflets. There is a petiole 6-10cm long to which the leaflets attach without stalks. These leaflets range from 6-10cm long by 2-2.5cm wide. They are composed of many (30-50) tiny oblong pinnae that are .5-1cm long by only 1-2mm wide, giving the leaflet a feathery or fern-like appearance. The unique feature for which the plant is named is the ability of the leaflets to quickly fold up and close along their central axis, the opposing pinnae becoming appressed, in response to disturbance. The entire leaf itself will drop down towards the stem when the petiole is touched. The blossoms are pink and round, about 2cm in diameter. They are borne singly from stalks along the length of the stem, which is often armed with small thorns.

Uses: A tea from the leaves of this plant is drunk by women during menstruation as a contraceptive (AMP). A Doctrine of Signatures usage has been proposed noting that sometimes the leaves are placed in pillows to help people sleep (SAR). The leaves may also be powdered and used as a sleeping potion (AED). In Central America, sensitive plant has been used as a pain reliever, relaxant, diuretic, and antispasmodic (AAB). The dried leaves are also sometimes smoked to alleviate muscle spasms and backache (AAB).



(a) The palmate-looking leaf of the sensitive plant before it is touched. (b) The same leaf closed in response to the leaflets being touched.

Figure 2: Sensitive plant

3 Toothache Tree

Insira Amarilla

Latin Name: *Maclura tinctoria* (L.) Gaud.

Moraceae: Fig or Mulberry Family

Description: The toothache tree is a large monoecious canopy tree that has spiny branches and a milky latex. The alternate, simple leaves have toothed margins and obvious drip-tips. The venation is distinctive. The trunk has raised reddish pustules (AHG). The female (= pistillate) flowers occur in compact rounded inflorescences on very short stalks from the branches. The male (= staminate) flowers are arranged along elongated spikes (= catkins). The fruits are multiple of drupelets with accessory tissue.

Uses: As the English common name implies, this tree is often used to treat problems associated with toothaches. Indigenous people collect the latex on 'cotton' provided by the balsa tree *Ochroma pyramidalis* or by kapok trees *Ceiba* spp., and then apply it to the infected tooth (AED). In this manner, the removal of the tooth is accomplished without pain and bleeding, but care must be exercised as this technique will evidently remove healthy teeth with equal ease (NIC). Preparations of this tree are also used as a diuretic and to treat venereal problems (AED). The AED also suggests that due to certain chemicals produced by this tree that it would serve as an astringent and antiseptic. It is further used for cough, gout, sore throat, and rheumatism (RAR). It is the source of an olive-colored dye, and the wood is used for lumber and in carpentry (AED).



(a) Leaves and fruits of the toothache tree (b) Leaves and fruits for the toothache tree (*Maclura tinctoria*).

Figure 3: Toothache tree

4 Thatch Palm

Irapay

Latin Name: *Lepidocaryum tenue* Mart.

Areaceae: Palm Family

Description: This palm is listed as *Lepidocaryum tessmannii*, a synonym, in the **AED**. It is a small, slender, understory palm found throughout tropical South America, especially in western Amazonia. It is typically 2-4 meters tall with a ringed trunk and seldom gets greater than 3-4cm in diameter. There are usually twenty leaves or less that are borne on long slender petioles. The leaves are palmate and deeply split into halves, then further subdivided into long, narrow leaflets that range from 50-75cm long by 2-8cm wide (**HGB**). The total number of leaflets per leaf can vary from 4-22 (**HGB**). The barrel-shaped fruits are 2-3cm long by 1-2cm in diameter and covered with tightly overlapping orange-brown scales. These palms reproduce vegetatively from underground stems (= rhizomes) which sometimes results in many being found clustered in one area.

Uses: As the English common name implies, this palm is used in the construction of roof thatch. The palm leaves are cut, including the petiole, then woven together and tied to a slat about two meters in length. The finished thatch section (= *crisneja*) is then dried in the sun. Successive layers of *crisnejas* are attached in an overlapping manner to support poles by means of philodendron roots. The life expectancy of this kind of roofing material is about five years. Roofs constructed of thatch palm cover the majority of *Ribereños* dwellings along the Amazon and Napo Rivers.



(a) The deeply split leaf of thatch palm, a (b) A section of newly-woven roof thatch or *crisneja* using thatch palm leaves

Figure 4: Thatch palm

5 Stilt Palm

Pona

Latin Name: *Socratea exorrhiza* (Mart.) H.Wendl.

Areaceae: Palm Family

Description: These palms are found throughout Central and northern South America in tropical forests below 1000m elevation. They typically range from 10-20m in height and 15-18cm diameter. Although similar to *Iriartea deltoidea*, *Socratea* differs by having stilt roots which are densely covered with spines and that form a 'root cone' that one can see through. There are usually 6-8 long pinnate leaves whose sheathes form a smooth green slightly swollen crownshaft at the top of the trunk. Often a new leaf is seen sticking straight up from the center of the crown. The leaflets are wider and ragged at the apex, and split into segments. When in flower, thickly-packed small white blossoms along 30-40cm long branches hang down at the base of the crownshaft. The yellow oval fruit are 3-4cm long by 2-3cm in diameter.

Uses: Bark from the trunk is split off and used as flooring slats, walls, and dividers (AED). The spiny stilt roots are used as graters (HGB). Different tribes use a leaf brew or the roots as treatment for hepatitis (AYA, NIC).



(a) *Socratea exorrhiza* forms a root cone of (b) The leaves, crownshaft, and flower spiny stilt roots that you can see through. branches of the stilt palm *Socratea exorrhiza*

Figure 5: Stilt palm

6 Soul Vine

Ayahuasca, Yagé

Latin Name: *Banisteriopsis caapi* (Spruce ex Griseb.) Morton
Malpighiaceae: Malpighia Family

Description: Soul vine is a plant that has more than fifty vernacular names in Spanish in Amazonia where it is used. It is a liana with simple opposite leaves that have entire margins. The leaves terminate in a point that may or may not be extended into a drip-tip. Mature leaves are approximately 10-12cm long and 6-8cm wide. Secondary veins are alternate and do not quite reach the leaf edge. The pink or yellow flowers are about two centimeters in diameter and occur in clusters, arising from the space between the leaf petiole and the stem. Each has five petals with a fringe-like margin and narrow stalk at its base.

Uses: The main use of soul vine is as a hallucinogenic drink (*ayahuasca*) that is made from the bark of the plant. Several other plant species are used as additives when preparing the brew. It has a long history of use and importance in various ceremonies led by tribal shamans and *ayahuasqueros*. Soul vine has been used as a 'cure all' for many kinds of medical problems. It is commonly used within the Amazon regions as a laxative and emetic (AED). Shamans are believed to be able to cure various ailments through communication with the spirit world, which is reached while under the effects of the drug. Much has been written about the use of *ayahuasca* and its powers.



(a) Leaves of the soul vine.

(b) A cluster of distinctive soul vine flowers.

Figure 6: Soul vine

7 Snake Bite Plant

Curarina

Latin Name: *Potalia amara* Aubl.

Loganiaceae: Logania Family

Description: Snake bite plant is indigenous to the lowland tropical forests of South America and is found commonly throughout the Amazon Basin, especially on nutrient deficient soils. It is the single species found within the genus *Potalia*, and is sometimes even elevated to the rank of its own family (the Potaliaceae). It is an understory treelet whose leaves grow clustered together at the top of the stem or small trunk (= pachycaul). The cultivated specimen examined was approximately one meter tall. This plant has large, opposite, entire, stiff leathery leaves. These leaves are long and narrow with an oblanceolate shape (= wider towards the tip). The leaves terminate in a short point. Typical mature leaves are 25-35cm long by 8-12cm wide (at their widest point). The leaves narrow towards the base into a short, thickened, laterally-flattened petiole. The flowers are borne in clusters at the top of the stem and give rise to round fruits.

Uses: Snake bite plant is a name 'coined' by the authors due to the widespread reports in the literature of its usage in varying preparations for this purpose. The mottled patterning on the trunk of the plant suggests a Doctrine of Signatures usage (SAR). Some of the other uses of this plant are as an analgesic and to treat ophtalmia, poisoning, venomous ant stings, and the sting from the fresh-water skate (SAR). Snake bite plant is also used to treat venereal diseases (AED) and to promote the healing of cavities (RVM).



(a) Typical growth form of the snake bite plant with leaves clustered at the top of stem. (b) A cluster of flowers of the snake bite plant.

Figure 7: Snake bite plant

8 Lemon Grass

Hierba Luisa

Latin Name: *Cymbopogon citratus* (DC.) Stapf.

Poaceae: Grass Family

Description: Lemon grass is an introduced plant that is grown as a cultivated herb in the Amazon region. It has long (30-60cm), narrow (1-3cm), leaves that sheath the stem at their base. The blades grow grouped together, several to a fascicle. They have parallel venation which is indistinct. The leaf blades are rough and somewhat saw-like to touch. A typical clump of lemon grass is 90-120cm in diameter. The leaves are highly aromatic (due to oils present) and when bruised or crushed, give off the odor of lemons.

Uses: Lemon grass is cultivated and used in various culinary dishes as an herb. An extract of the leaves is used in making carbonated drinks, and also as a digestive aid (AED). Amazonian Indians use the leaves in preparations to treat fever, headache, influenza, and stomachache (SAR). The roots are squeezed and the extract used to control menstrual problems (AED), and to relieve back-aches and muscle spasms. Essential oils are extracted and used commercially in soaps and perfumes. Certain preparations of lemon grass are also used by some indigenous groups as a contraceptive (VDF).



Figure 8: A typical clump of lemon grass (*Cymbopogon citratus*)

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References

- [1] J.L. Castner, S.L. Timme and J.A. Duke. *A Field Guide To Medicinal and Useful Plants of the Upper Amazon*. Feline Press, 1998, ISBN 0-9625150-7-8.