

## Taste and plants: folk classifications of medicinal plants in north-western Madagascar

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**Abstract.** In north-western Madagascar, a knowledge of the flora is not merely the realm of specialised healers but is also highly developed among the general population. The inhabitants of the Manongarivo mountain range recognise the plants of their natural environment, name them, and classify them according to their own interpretative schemes. They know and use a very large number of wild plants in their daily lives. Out of an inventory of 160 species employed in the area, almost 75 percent have a medicinal and/or ritual use. Taste is a very salient criterion of classification in local speech and practices on medicinal plants. The tastes mentioned most often are what we would define as bitter, hot, and tart. Hot plants, which are associated with the feminine blood, are often reserved for women who

consume them during menstruation, pregnancy, and after childbirth. Tart plants are thought to be very concentrated and powerful, with a strengthening and aphrodisiac effect. They are linked with masculine virility. Bitter plants, which are not associated with a particular gender, are employed to heal disorders of the digestive system because they are seen to have cleansing properties. Research on the representations of these tastes in other spheres of the local socio-cultural life is needed to complete an analysis of this indigenous classification of medicinal plants. The botanical folk classifications are a reflection of the societies in which they developed, which makes them an interesting tool for studying the interactions between a human group and its natural environment.

**Key words:** Ethnobotany, Folk classifications, Gender, Madagascar, Manongarivo, Medicinal plants, Sakalava, Taste, Tsimihety

From the very beginning of the discipline, when J.W. HARSHBERGER coined the word "ethnobotany" in 1896, its traditional task has been the study of the uses of plants by human societies. In the 1960s, with the development of ethnoscience and its interest in indigenous speeches and representations, some ethnobotanists changed their focus of research from the mere listing of useful plants to the study of the systems of classifications of the natural world. As Claude LEVI-STRAUSS (1962) rightly pointed out in "The Savage Mind", knowledge of plants does not only meet utilitarian requirements, but it also satisfies an intellectual and cognitive interest in the plant world.

The population of north-western Madagascar, made up of members of the Sakalava and Tsimihety ethnic groups, not only recognises and names wild plants, but also organises them into categories. In order to think and to use the plant world, it is necessary to put order into it. This communication is about the indigenous classifica-

tions of the medicinal flora in the Manongarivo mountain range.

The findings exposed in this communication result from a study of the uses and representations of wild plants by the inhabitants of the "Manongarivo Special Reserve". The research also comprised the listing and the analysis of an inventory of 160 plants used locally. Fieldwork took place within the research project "Ecologie Politique et Biodiversité (EPB)", coordinated by the Conservatoire et Jardin Botaniques de Genève and the Institut Universitaire d'Etudes du Développement (CJBG and IUED, Geneva, Switzerland). A monography of the area is currently under preparation by the EPB project MATHEZ-STIEFEL 2005).

The inhabitants of Manongarivo live in hardly accessible mountain valleys with a high floristic and ecological diversity. The climax vegetation, which is included in the Sambirano domain, is dense humid forest. The knowledge of plants is

highly developed among the general population and is not merely the realm of specialised healers. The inhabitants of the area know and use a very large number of wild plants in their daily lives. Some plants are used as food, others as cosmetic or construction material, and most of them have a medicinal and ritual use.

Out of an inventory of 160 species of plants employed in the area, almost 75 percent have a medicinal and/or ritual use. I group these medicinal and ritual plants into one category in order to reflect the thought pattern of my informants who call them all by the same name *aody*. *Aody* can be translated as "medicine", but also as "amulet", or "object used for protection or aggression". The population makes use of plants to treat many kinds of illnesses, including hepatitis, dermatosis, flu, disorders of the digestive system, sexually transmitted diseases, and infections of the urinary system. The same plants used to heal illnesses can also be taken for prevention. Infants are particularly taken care of and administered small quantities of plant decoctions, in order to prevent them from catching diseases such as jaundice, cough and diarrhoea.

Women and men often pick the medicinal plants that they find on their way home from the rice fields. The gathering of most of these plants does not involve a ritual invocation of the ancestors, as it is the case with plants collected by the herbalists. Medicinal plants are usually collected in fallows, the regrowth of a secondary forest after a period of slash and burn rice cultivation, rather than in primary forests. This finding may seem surprising, since a great number of plant species only grow in the primeval forest. One of the reasons is that the fallows are of better accessibility but it is also because of the fear that the forest inspires to the local population that believes it is inhabited by all kinds of wild animals and nature spirits.

When we look at the folk classifications of medicinal plants, we realise that taste is a very salient criterion of classification in local speech and practices. When a plant has a strong taste, it is almost always described. The taste is sometimes even apparent in the vernacular name of the plant. *Vernonia cinerea*, for example, an herb with a tart taste that is employed to heal fresh wounds, is

named *tsiro-manta* ("unripe taste"). The very bitter *Mollugo nudicaulis* is called by the metaphor *aferon-tany* ("bile of the earth"). Another example is given by *feli-mafana*, which means "hot leaves" and refers to *Acmella oleracea*, a popular plant eaten as a leaves broth but also taken by breast-feeding mothers to increase their milk.

The voucher specimens of all the plants cited in this paper can be found at the Botanical Garden of Geneva and the Institute of Botany of the University of Neuchâtel (Switzerland) and at the Herbarium TEF in Antananarivo (Madagascar).

The tastes mentioned most often are what we would define as bitter (*mafaiky*), hot (*mafana*), which also means "warm" like in the English language, and tart (*andatra*). Less frequently mentioned tastes are sweet (*mamy*), sour (*tsakia*) and slightly salty (*mahatraba*).

In Table 1, the plants whose tastes were spontaneously described by the informants are listed.

Hot plants are associated with the feminine blood. They are believed to liquefy blood, to have an effect on the inside of the belly, and to have a heating effect. This explains why hot plants are employed to treat an illness called *fofoko*, which develops from the inside of the belly to the outside of the body, causing red spots on the skin. Since people believe that it can be treated by heat, they will drink and inhale a very hot decoction of the bark of *tsianihimposa* (*Zanthoxylum* cf. *madagascariense*), a "hot" plant.

Hot plants are often reserved for women who consume them during menstruation, pregnancy, and after childbirth. These different phenomena are located by the people of Manongarivo inside the belly, which is the part of the body on which hot plants operate. During menstruation, for example, women may drink a decoction of *romba* (*Ocimum gratissimum*) in order to liquefy blood and reduce the menstrual pains. After childbirth, they use hot plants like *tamboro* (*Piper* sp.) and *ambatry* (*Cajanus cajan*) as drinks and baths as a general tonic, to cleanse the belly, and in order to expel what they call the "bad blood".

Tart plants are thought to be very concentrated and powerful, with a strengthening and aphrodisiac effect. These plants are associated with virility in males, which is located by the informants in the pelvic area. This is the reason why men use

Table 1 - Classification of plants according to the taste of the decoction of the leaves, bark, or root, unless otherwise mentioned (fresh fruits, leaves, stems, or seeds).

	<b>Hot plants (mafana)</b>
Ambatry	<i>Cajanus cajan</i> (L.) Millsp.
Felimafana	<i>Acmella oleracea</i> (L.) R.K. Jansen
Romba	<i>Ocimum gratissimum</i> L. var. <i>gratissimum</i>
Sakaitany	<i>Zingiber officinale</i> Rov.
Sakay pilipily	<i>Capsicum frutescens</i> L. ( <b>fruits</b> )
Tamboro, Vahimafana	<i>Piper</i> sp.
Tsianihimposa	<i>Zanthoxylum madagascariense</i> Baker
	<b>Tart plants (andatra)</b>
Fanazava vavy	<i>Turraea sericea</i> Sm. ( <b>and bitter</b> )
Fompoño	<i>Ficus botryoides</i> Baker
Lambohenjaña	<i>Woodfordia fruticosa</i> (L.) Kurz
Maimbovitsiky	<i>Pittosporum senacia</i> Putt. subsp. <i>pervillei</i> (Blume) Cufod ( <b>and bitter</b> )
Mantaly	<i>Terminalia mantaly</i> H. Perrier
Taindalitry	<i>Antidesma madagascariensis</i> Lam.
Tsipôtiky lahy	<i>Cyathula prostrata</i> (L.) Blume
Tsipôtiky vavy	<i>Achyranthes aspera</i> L. var. <i>aspera</i>
Tsiromanta	<i>Vernonia cinerea</i> (L.) Less
Vahimariraña	<i>Paullinia pinnata</i> L.
Valotra	<i>Breonia</i> sp. ( <b>and bitter</b> )
Vatrotroko	<i>Dichaetanthera</i> sp.
	<b>Bitter plants (mafaiky)</b>
Aferontany	<i>Mollugo nudicaulis</i> Lam.
Ambarasaha	<i>Burasaia madagascariensis</i> DC.
Beaty	<i>Vernonia colorata</i> (Willd.) Drake subsp. <i>grandis</i> (DC.) C. Jeffrey
Dokotera hely	<i>Tithonia diversifolia</i> (Hensl.) A. Gray
Fanazava vavy	<i>Turraea sericea</i> Sm. ( <b>and tart</b> )
Hazoadala	<i>Homalium albiflorum</i> (Tul.) O. Hoffm. var. <i>leucophloeum</i> (Tul.) H. Perrier
Hazondinta	<i>Molinaea sulcata</i> Radlk.
Katra	<i>Caesalpinia bonduc</i> (L.) Roxb.
Katrafay	<i>Cedrelopsis trivialis</i> J.F. Leroy
Katy	<i>Catha edulis</i> Forssk ( <b>leaves</b> )
Maimbovitsiky	<i>Pittosporum senacia</i> Putt. subsp. <i>pervillei</i> (Blume) Cufod ( <b>and tart</b> )
Malaintay	<i>Elephantopus scaber</i> L.
Marogôzy	<i>Momordica charantia</i> L.
Ndrambavifo	<i>Petchia erythrocarpa</i> (Vatke) Leeuwenb.
Rantendriky	<i>Strychnos mostueoides</i> Leeuwenb.
Tamenaka	<i>Combretum coccineum</i> (Sonn.) Lam.
Vahimbahia	<i>Mikania scandens</i> (L.) Willd.
Valotra	<i>Breonia</i> sp. ( <b>and tart</b> )
	<b>Sweet plants (mamy)</b>
Fary	<i>Saccharum officinarum</i> L. ( <b>stem</b> )
Hazomamy	<i>Anisophyllea fallax</i> Scott-Elliot ( <b>leaves</b> )
Jamala	<i>Cannabis sativa</i> L. (seeds)
Voamora	<i>Abrus precatorius</i> L. subsp. <i>africanus</i> Verdc. ( <b>plus sweet edible fruits</b> )
	<b>Sour plants (tsakia)</b>
Madiro	<i>Tamarindus indica</i> L.
Tsohabeloha tsakia	<i>Citrus aurantifolia</i> (Christm.) Swingle
Tsohafohy	<i>Citrus</i> sp.
	<b>Salty plants (mahatraba)</b>
Vahirontoño	<i>Leptadenia madagascariensis</i> (Decne)

tart plants to treat problems linked to the pelvic area like pains in the lower back or renal aches, as well as venereal diseases. In the case of gonorrhoea, for example, they will drink a decoction of the bark of *taindalitry* (*Antidesma madagascariensis*).

Because of their strengthening effect, men also use some tart plants on a daily basis to fight overall fatigue provoked by the hard work in the fields and by the carriage of heavy loads of agricultural products and wood between the mountains and the villages of the plain. A very popular strengthening plant is *valotra* (*Breonia* sp.).

Local people believe that tart plants are not good for women because they are too "concentrated" and powerful, and might therefore create disorders of the feminine functioning. In the indigenous perception, tartness could be harmful for a woman's belly and could even cause miscarriages.

Bitter plants are not associated with a particular gender. They are employed to heal disorders of the digestive system like stomach aches, diarrhoea and constipation, because they are thought to have cleansing properties. They are also believed to have a calming effect on sore muscles.

As we can see, some particular characteristics are associated with taste categories of plants. Based on the perception of these different qualities and tastes, the inhabitants of north-western Madagascar combine remedies in order to obtain the effects that they desire. For example, they often say that hard work causes an overall fatigue and pain in the stomach, in the back and in the muscles. They might therefore drink a decoction of a mixture of bitter and tart plants like *marogôzy*

(*Momordica charantia*) and *vahimariraña* (*Paullinia pinnata*), as the bitter plant will have a calming effect on the sore muscles and the tart plant will act as a general tonic.

Research on the representations of the tastes mentioned above in other spheres of the local socio-cultural life is needed to complete an analysis of this folk botanical classification and answer questions such as "Why are hot plants associated with women and not with men?", "Why are the different parts of the human body linked to a particular taste?", "What is relationship between the taste of a plant and its effect on humans?". An hypothesis could be that hot plants with their heating effect are associated with women because they share the same power of death in the local perception. The indigenous category of "hot" (*mafana*) is linked to danger and death in northern Madagascar, in the same way as women's sexuality is believed to be potentially dangerous and deadly. The understanding of "cold" being associated with health and healing, and on the opposite "hot" with danger, is a general theory in Madagascar.

As a concluding comment, we can say that each society recognises the plants of its natural environment, names them, and classifies them according to its own interpretative schemes. Botanical folk classifications are a reflection of the societies in which they developed. They are a mirror of practices and representations of the environment and, as such, they may reveal social logics. This makes plant classifications an interesting tool for studying the interactions between a human group and its natural environment.

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