

Ethnobotanical Notes on *Caryota ophiopellis* in Vanuatu

JEAN-MICHEL DUPUYOO
*Jardin d'Oiseaux
Tropicaux
83250 La Londe-les-
Maures
France
horticole@jotropico.org*



1. *Caryota ophiopellis*,
Tanna, Vanuatu.

Caryota ophiopellis Dowe is endemic to two islands of the Vanuatu archipelago, where it is used as a source of starch during famines. It is threatened by expanding human settlements.

The Vanuatu archipelago, made up of some 80 islands, is situated between Fiji and New Caledonia in the southwest Pacific. The climate is generally tropical, becoming more temperate towards the south and with increasing altitude. The islands are mainly of volcanic origin, and the relief is often abrupt. The highest point of Vanuatu, Tabwemasana on the island of Espiritu Santo, reaches an altitude of 1879 meters. The geographical complexity explains the diversity of the ecosystems found in the region, ranging from mangroves to lowland rainforest to high altitude montane forests.

One of the most distinctive palms of Vanuatu is *Caryota ophiopellis* (Fig. 1). This palm has a single stem 7–9 m in height and 30–40 cm in

diameter (at 1.5 m from the ground), but the diameter is slightly reduced at the base. The stem is marked with conspicuous nodes, and the internode length is 20–30 cm. The bipinnate leaves are characteristic of the genus *Caryota* (Fig. 2). The petioles, 60–70 cm long, have the texture and appearance of snakeskin, and for this reason, the palm is commonly known among the islanders as the “snake-skin palm.”

This palm is hapaxanthic and, because it is single-stemmed, it is also monocarpic, meaning that the individual dies after completing its flowering and fruiting cycle. The inflorescences carry both male and female flowers, but some of the uppermost



2. *Caryota ophiopellis*,
Anatom, Vanuatu.



3. Ripe fruits of *Caryota ophiopellis* are red; occasionally two-seeded fruits are found.

inflorescences have only female flowers. Each inflorescence is pendulous and can measure up to one meter in length. Fully matured fruits are red containing a little white gelatinous pulp and one seed, but we have also observed occasional two-seeded fruits (Fig. 3). The seeds, measuring 0.9–1 cm in length, are black and slightly rounded.

Caryota ophiopellis is found at an altitude of between 10 and 400 m (Dowe & Cabalion 1996), where it flourishes mainly in virgin forest, if one can consider that “virgin” forests still exist on these islands, as well as in secondary forests, with little undergrowth and a permanently humid soil. It does not colonize open spaces such as gardens and cultivated land, nor have we observed any young plants on fallow land or coppices. This leads us to believe that populations of *Caryota ophiopellis* are highly sensitive to modifications in their ecosystem and encounter difficulties in colonizing new territories.

The seeds of *Caryota ophiopellis* germinate in great numbers close to the parent palms, but seedlings also find their way under the crowns of large trees where pigeons and giant bats, great consumers of the fruit of *Caryota*, like to perch. It is worth noting here that the fruit

pulp does not seem to be an irritant to man or beast, unlike that of *Caryota urens*.

Caryota ophiopellis is found exclusively on the islands of Tanna (mainly the western part) and Anatom, to the south of the archipelago. It is found in abundance in other localities near Lenakel, Isangel, Loanatom and Green Point, on Tanna. Schmid (1970) collected one specimen on northern Tanna, but we have not as yet visited this part of the island to examine this population. Our correspondents tell us that the species is not found in the interior of Tanna (Middle Bush), because of low temperatures, nor to the east, which is prone to deposits of ash from the volcano Yasur. On Anatom, we observed small populations in the center of the island growing alongside arborescent ferns of the genus *Cyathea* and other species that appreciate humid conditions.

According to Dowe and Cabalion (1996) the species is native to the islands of Tanna and Anatom. Walter and Lebot (2003), on the other hand, suggested that it may have been introduced to the archipelago during the 19th century or later, but they provided no justification for their comment.

Etymology and local names

Caryota comes from the Greek *Karyota* meaning nut-bearing. The Latin terms *ophio* (snake) and *pellis* (skin) are reference to the color and texture of the petioles, which are similar to snakeskin. Of course, among the villages in Vanuatu, the scientific name has no meaning. Instead, common names are used.

Some 110 languages are still spoken in Vanuatu (Bonnemaison 1986). Eight different languages are used in Tanna and one language in Anatom. One single species can have many different names depending on the locality. We have found the following names locally given to *Caryota ophiopellis*: *Nip* near Lenakel (Tanna), *Nipitari* near "Green Point" (Tanna) and *Irejei* in Anatom. This list is certainly incomplete, as not all of the linguistic zones have been visited.

The legend of the Nip

During our visit to the village of Lowanatom (west coast of Tanna) the following story was related to us:

All the plants came from the sea, but the first was the *Nalien* the Magician (*Tradescantia* sp.). The *Nalien* summoned all the new arrivals in order to attribute a place where each could grow. In this manner the coconut palms and the yams found their place on the coast, and the arums were confined to the mountains. Two plants, the banana and the *Nip* declined the summons on the grounds that they would not take orders from a creeping plant. As punishment, *Nalien* condemned them never to see their children grow up, and ever since the banana and the *Nip* die immediately after bearing their first fruits.

Traditional usage

The *Nip* has many nutritional and cultural uses. As with many *Caryota* originating in southeast Asia and Papua New Guinea, the *Nip* is a kind of sago palm. Starch, stored within the stem, can be extracted and used as food. According to the tribal chiefs we interviewed the consumption of sago by the islanders is an extremely ancient practice. Sago is traditionally mixed with grated coconut and cooked in a stone oven. Thus prepared, sago "bread" is highly calorific. We have learned of two different methods of sago extraction.

The first method was recounted to us by an elder of the village of White Sand (eastern Tanna). The palm is cut down whilst in flower, because at this period the quantity of starch

within the pith is at its greatest. The stem is then split lengthways, and the pith is separated from the bark and reduced to powder with wooden pestles before being placed in a receptacle. Water is then added and mixed well with the pulverized pith. The milky liquid thus obtained is transferred to a second receptacle by way of a channel of bamboo which helps to trap any fibrous debris. A white starch settles in the bottom of the second receptacle. This sago starch is collected and used as food. We were able to witness a similar means of preparation in a village in the Lenakel region in western Tanna.

The second method of preparing *Caryota* sago was described to us by Chief Sam Kuke of the village of Lenatam (western Tanna). The method is similar in many respects to the first, but here the work is done at the river bank. Water from the river is drawn through a narrow channel into a deep hole lined with leaves to make it partially watertight. The pith is again pounded and placed at the top of the channel where water from the river flows over it and takes the starch into the hole. The starch clings to the leaves and can be easily collected after the water has drained away.

Today, sago is used as food in Tanna only during periods of famine. When plantations are devastated by cyclones or drought, the people turn once more to the forest in general and the *Nip* in particular for survival. Certain inhabitants of very remote villages affirm that they regularly consume sago, and on Tanna and on Anatom, the pith is used to feed domestic pigs.

On Anatom, the terminal buds of *Caryota ophiopellis* are a source of food, but the use of sago seems to have been either forgotten or ignored. Another indigenous palm, *Metroxylon warburgii*, is still known for its sago by the elders. The stem is also used as construction "wood" for flooring, walls and supports. The leaves, together with those of arborescent ferns and coconut palms, are used to make screens around the *Nakamal*, a place of initiation where young boys are circumcised and kept out of the sight of women for three months. *Caryota ophiopellis* also has medicinal uses. Decoctions of roots and the bark of the stem are a part of traditional remedies.

Conclusion

The most senior of our correspondents told us that *Caryota ophiopellis* was once abundant in all of the forests to the west of Tanna. The

development of agriculture and to a lesser extent the expansion of villages means that the palms are now found only in the valleys and other uncultivated lands and in regions farther from the villages. Although *Caryota ophiopellis* is occasionally grown as an ornamental tree, it is a species in real danger, except perhaps in Anatom where the human pressure is less severe. The danger is all the more real as this highly attractive palm is very rarely cultivated by collectors or botanical gardens.

Acknowledgments

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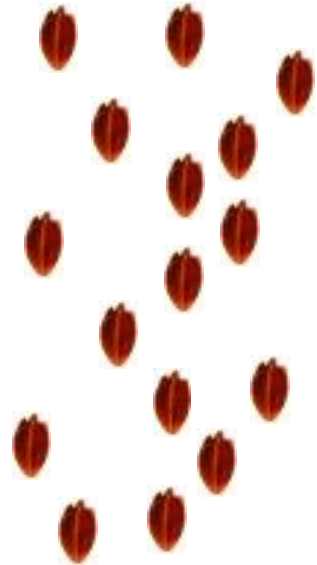
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