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The Strange Activity of *Malouetia Tamaquarina* (Apocynaceae), a Toxic Amazonian Plant

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Bordering these soaky spots and in company with native grasses of many kinds is . . . this plant. [It] has a short growing and flowering time, and so timing is very important in finding [it] (after early thunderstorms) [i.e., start of wet season]. During Dec. 1946 . . . an aboriginal boy . . . introduced me to the plant . . . He called [it] "Chungra" . . . told me it was edible . . . assured me that his family ate the tuber, and encouraged me to try it. I ate it (not particularly pleasant tasting), and within 12 hours was on my back with a violent headache. I didn't die but *he* almost did, when I realised the connection between the headache and the tuber.

Brachystelma microstemma is slow growing and difficult to cultivate, with seed the only feasible means of propagation at present; the specialized floral structure prevents easy cross-pollination. For these reasons the species, though an important occasional food source for Australian aborigines, is unlikely to become significant economically for food.

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The Strange Activity of *Malouetia Tamaquarina* (Apocynaceae), a Toxic Amazonian Plant.—One of the very frequent trees in the western Amazon is *Malouetia tamaquarina* A. DC., especially common in the Leticia area of the Colombian Amazon. Known in Colombia and Peru as *cuchara-caspi*, it occurs in the under-story of the flood forest. The tree may reach 50 ft in height and has an abundance of thick white latex.

Tukano Indians in the area—particularly those along the ríos Loretoyacu and Amacayacu—report that the fruits are extremely toxic. According to these natives, the ripe fruit is eaten by the pajuíl (*Nothocrax urumutum* (Spix)). This wild bird is often seen domesticated in Indian houses; its flesh is a delicacy and can be eaten by the natives with no ill effects throughout the year.

Care must be taken, however, not to allow dogs to eat the bones of this bird during the fruiting season (March through June) even though the canine may with impunity eat the flesh. The bones poison the dogs—and only in this season—causing immediate and violent upsetting of the digestive tract, a glassy stare, and interference with muscular coordination of the legs within a few hours. This condition may frequently be fatal.

The toxic principle is not yet determined. *Malouetia* has not been reported as alkaloidal (1). The Indian information—from six or seven informants independently recorded—is unquestionably reliable.

There are closely related species of *Malouetia* in the northwest Amazon, and

they may likewise be toxic or at least biodynamic. *Malouetia nitida* Spr. is reputedly an arrow-poison constituent (2; p. 213), and the leaves of what appears to be *M. tamaquarina* are sometimes added to the hallucinogenic drink made from the bark of the malpighiaceae *Banisteriopsis Caapi* (Spr. ex Griseb.) Morton in the Colombian Vaupés (3; p. 39).

The Apocynaceae are a family of highly toxic species. A phytochemical and pharmacological investigation of this curious poisoning would seem to be extremely worthwhile from both the academic and practical points of view.

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The Horned Cucumber, alias "Kiwano" (*Cucumis metuliferus*, Cucurbitaceae).—The horned cucumber or kiwano (African horned melon, jelly-melon), *Cucumis metuliferus* E.H. May. ex Schrad. (Fig. 1), grows wild but not abundantly in Botswana, Transvaal, Namibia, Zimbabwe, Nigeria, and Nyasaland. It has been naturalized in Queensland, Australia, for at least 60 yr, as recalled by Gwen Rouse of Miami, who grew up there and, with her friends, ate the fruits as a child. Graham Jamieson, senior horticulturist, Department of Primary Industries, Brisbane, has written me that it is included in *Weeds of Queensland* (1977) as a weed of sugarcane fields and farms along the Mulgrave and Herbert rivers, one controlled with herbicides and fruit disposal to prevent reseeding.

The plant is an annual climbing vine (to 3 m) with slender stems coated with stiff, brown hairs. The 3- to 4-lobed, hairy leaves, to 7.5 cm long, have finely-toothed margins; a coiled tendril is at the petiole base. Yellow and funnelform, the flowers flare to 2.5 cm across. The ellipsoid fruits, to 12.5 cm long and 6.25 cm thick, are mottled dark-and-light-green when young, orange when ripe; the thin rind is studded with thick, conical protuberances tipped with soft or hard, sharp spines. In the interior is a mass of green, translucent, slightly mucilaginous juice-sacs enclosing many tightly packed, flat seeds. The flavor may be more or less bitter, or, if bland, may produce a long-lasting, unpleasant aftertaste (1).

In northern Nigeria the fruits are "rather bitter and not eaten," and in the Kalahari region they are "eaten by game animals, and in time of necessity are given to cattle and are even eaten by the Bushmen. The foliage contains saponin and gives a strongly frothing extract" (2). The leaves reportedly were cooked and eaten in Nyasaland (3).

The U.S.D.A. Vegetable Laboratory, Charleston, SC, grew the plant experimentally in 1976 in the hope of incorporating its nematode- and disease-resistance into muskmelons (4). In *South African Digest*, 15 Dec 1978, appeared a news item: "The seed of a rare South African wild plant, the jelly-melon, has been sent by the Department of Agriculture to a seed bank in Bulgaria, where it will be used, as it is in America, to increase the resistance of the common cucumber to diseases."