

ANUSCH 72305



ROOT CROPS DIGEST

Published by the Philippine Root Crops Information Service

A project funded by the International Development Research Centre (IDRC) of Canada.

Vol. 1 No. 5

MICROFICHED 1986

Minor Root Crops: Their Classification and Description

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3-P83-0308

Minor Yams

Nestor L. Pido
Subject Matter Specialist

Nami

CLASSIFICATION

Family : Dioscoreaceae
Genus : Dioscorea
Species : hispida
Scientific Name : *Dioscorea hispida* Dennst.

COMMON NAMES : Intoxicating yam, Asian
intoxicating yam

LOCAL NAMES : Nami, Namo (Luzon); Ka-
lut, Kurot, Kuwot (Visa-
yas, Mindanao)

DESCRIPTION

Nami is a wild climber with thorny stems twining to the left, trifoliate hairy leaves, small, pale yellow flowers and multiple lobed tubers which are produced near the surface of the soil. It is very common in Philippine forests and its tubers are usually used as "famine" food. Newly harvested tubers are not edible because of the presence of **dioscorine**, a toxic substance. When preparing the tubers for food, they are peeled and sliced into thin pieces, placed in a sack and soaked for the first three days in sea water and for the next five days in fresh running water to remove the poisonous substance.

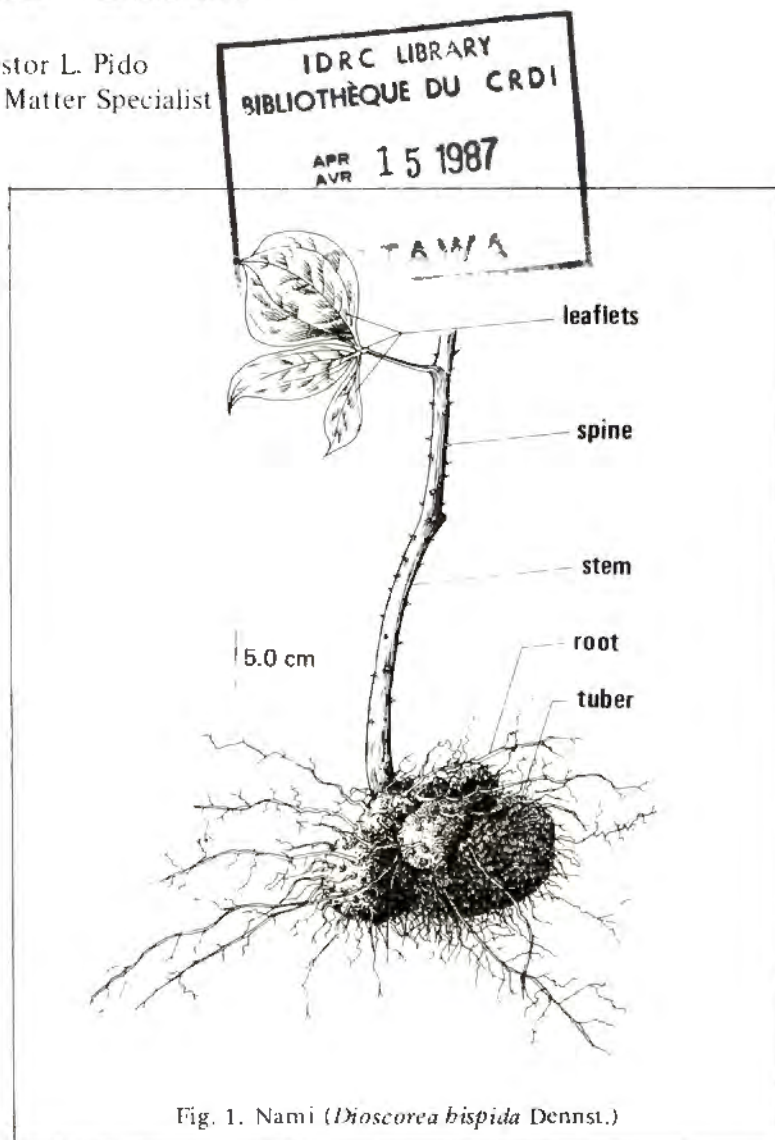


Fig. 1. Nami (*Dioscorea hispida* Dennst.)

Lima-lima

CLASSIFICATION

Family : Dioscoreaceae
 Genus : Dioscorea
 Species : pentaphylla
 Scientific Name : *Dioscorea pentaphylla* L.

COMMON NAMES : none
 LOCAL NAME : Lima-lima

DESCRIPTION

This species usually grows wild and is rarely cultivated by farmers. Its stem which is round and spiny twines to the left. Its leaf is palmate with five leaflets hence it is called locally "lima-lima". The tubers which are non-toxic look very much like that of the ubi with the former having many roots and thinner skin.

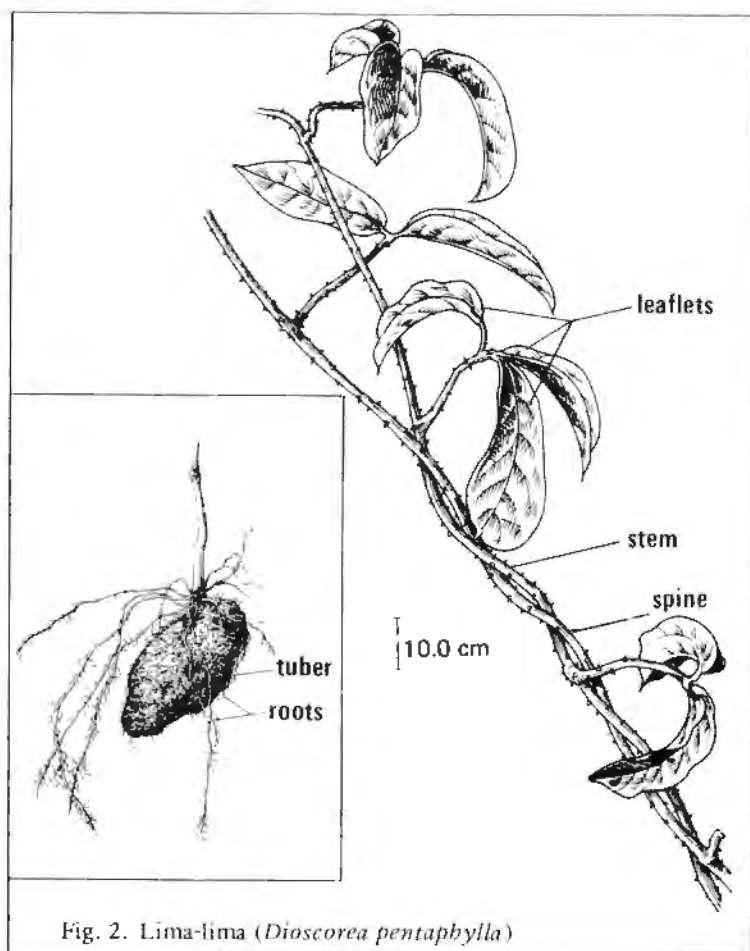


Fig. 2. Lima-lima (*Dioscorea pentaphylla*)

Abobo

CLASSIFICATION

Family : Dioscoreaceae
 Genus : Dioscorea
 Species : bulbifera
 Scientific Name : *Dioscorea bulbifera* L.

COMMON NAMES : Potato yam, aerial yam, air potato, bulbil-bearing yam, turkey liver yam

LOCAL NAMES : Banalu, Bayag-toro, Ubi-ubihan (Luzon); Abobo, Karibobo (Visayas, Mindanao)

DESCRIPTION

This species of yam is also found in the wild state in the Philippines. Its aerial tubers which are grey or dark brown in color are born on leaf axils. Its spineless stem is cylindrical and twines to the left while its leaves are large, simple, ovate and may be alternate or opposite. Its flowers which have spreading perianth are larger than those of the other species of yams. It bears grey or dark-brown aerial tubers at the leaf axils. The tubers are succulent and may need detoxification by soaking them in water before they can be eaten.

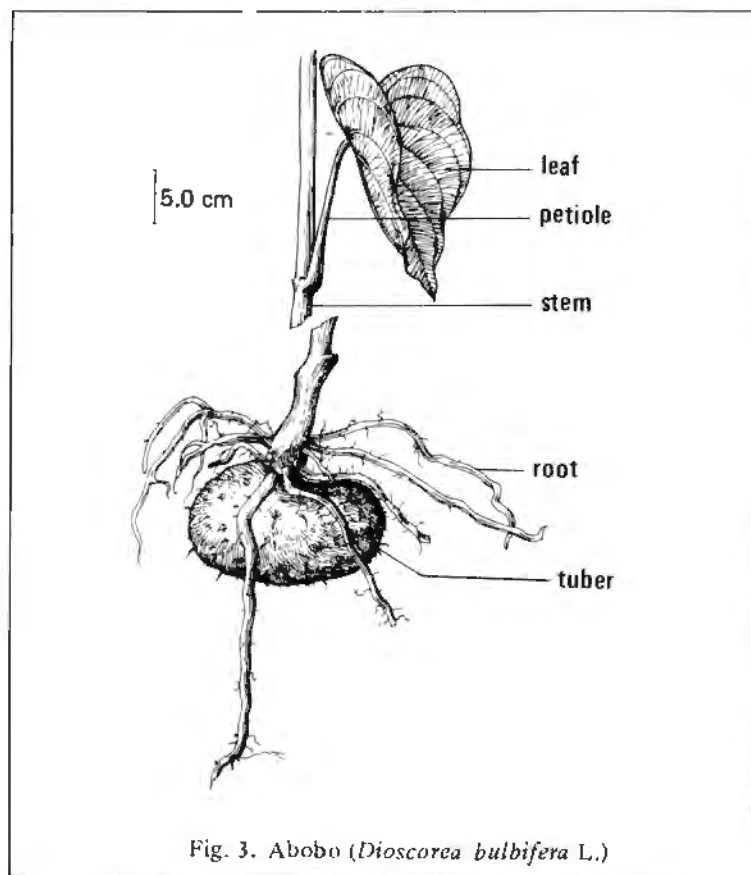


Fig. 3. Abobo (*Dioscorea bulbifera* L.)

Galiang

Minor Aroids

Jose R. Pardales, Jr.
Subject Matter Specialist

CLASSIFICATION

Family	: Araceae
Genus	: <i>Alocasia</i>
Species	: <i>macrorrhiza</i>
Scientific name	: <i>Alocasia macrorrhiza</i>
COMMON NAME	: Giant Taro
LOCAL NAMES	: Biga (Tagalog); Talian (Waray); Kaong (Cebuano)

DESCRIPTION

Galiang is a tall, succulent and herbaceous plant that grows as tall as 3.0 meters or more. It has a large elongated main corm that serves as the stem from which the leaves arise at its apical end. The leaves may grow as long as 1.0 m and are generally arrow-shaped with shallow but rounded lobes. One common characteristic which makes **galiang** easily distinguishable from other edible aroids (i.e., gabi and yautia) is that its leaves point upwards forming a straight line with the main axis of the petiole while the leaves of the other aroids point down to form an acute or right angle with the axis of the petiole. The leaves of **galiang** are generally green and have conspicuous midribs. This plant normally flowers especially at an older stage. The flower is a spadix type which is typical of all aroids.

The main corm of the plant is normally very itchy but it can be processed into a variety of products when its "itchiness" is removed by thorough cooking or boiling.

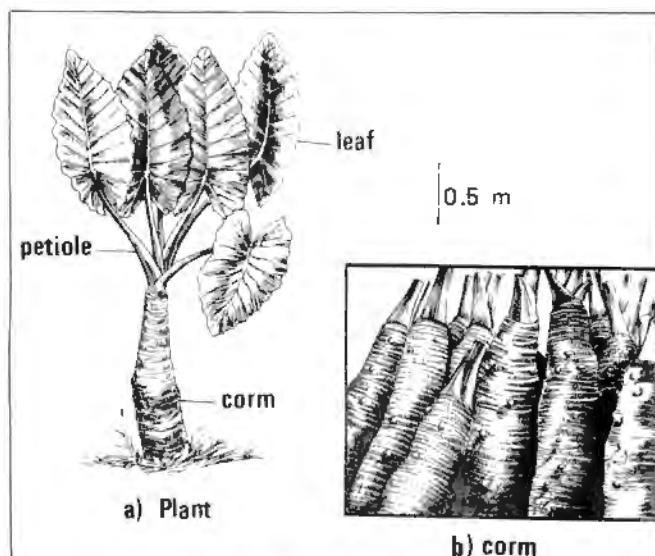


Fig. 4. Galiang (*Alocasia macrorrhiza*)

Palauan

CLASSIFICATION

Family	: Araceae
Genus	: <i>Cyrtosperma</i>
Species	: <i>chamissonis</i>
Scientific name	: <i>Cyrtosperma chamissonis</i>
COMMON NAME	: Giant swamp taro
LOCAL NAMES	: Palau (Cebuano); Palauan (Waray)

DESCRIPTION

Palauan is commonly called a giant swamp taro because the crop is normally found in swampy or watery areas. This plant is a giant herbaceous perennial that grows as high as 1-3 meters or more. Like **galiang** (*Alocasia*) the main corm of **palauan** serves as a stem. **Palauan** leaves are arrow-shaped which somehow look like that of **galiang** at first glance. The leaves have deep and sharply-pointed basal lobes carried on long, thick and rigid petioles. In some varieties, spines are present in the lower part of the petioles. Leaf shape, coloration and degree of spineness of petioles vary from one variety to another. **Palauan** also produces flowers occasionally. The corm of **palauan** develops by thickening and it is cylindrical in shape. The corm can only be eaten after thorough cooking by boiling.

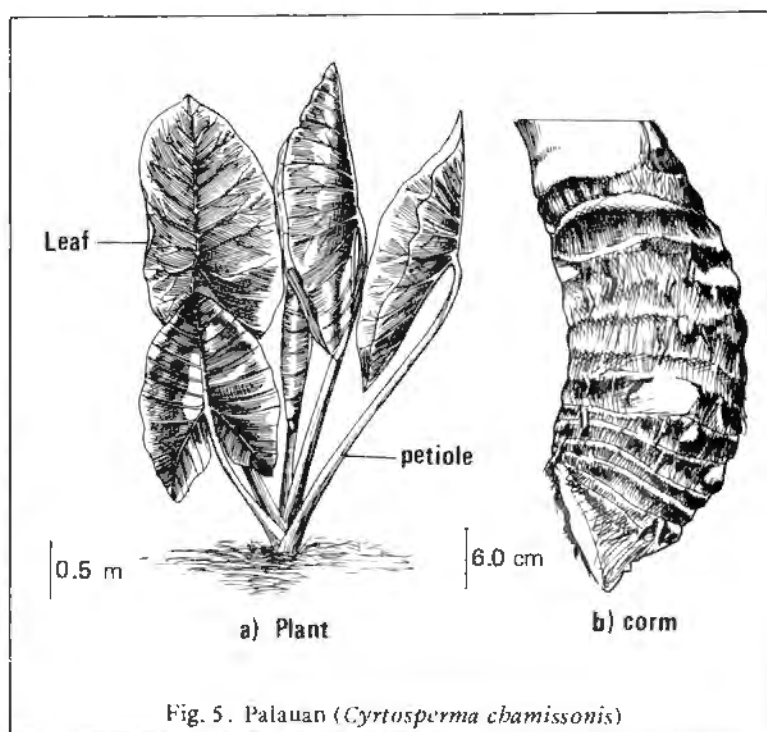


Fig. 5. Palauan (*Cyrtosperma chamissonis*)

Pungapong

CLASSIFICATION

Family	: Araceae
Genus	: <i>Amorphophallus</i>
Species	: <i>campanulatus</i>
Scientific name	: <i>Amorphophallus campanulatus</i>

COMMON NAME	: Elephant yam
LOCAL NAMES	: Bagong (Bisaya, Waray); Pungapong (Tagalog)

DESCRIPTION

Pungapong is a robust herbaceous plant with one erect stem reaching about 1.5 m in height and bearing at the top a single tripartite leaf of which is divided into three segments. The petiole is thick, solid and light green with pale spots. After the growing cycle of the plant the above-ground organs disappear and then a large terminal inflorescence emerge consisting of a short stalk, spathe and spadix. The inflorescence which is very similar in structure with that of taro emits an unpleasant smell.

The corm which is the underground swollen part of the plant is large and glubose and may be brownish or dull yellow in color. About 5-10 cormels are produced from the main corm at the end of the growing cycle. The plant can be harvested for its corm and cormels from 10 to 12 months after planting. Both the cormels and the main corm are utilized for food but the people prefer the former to the latter.

Propagation in **pungapong** is usually through the use of small cormels.

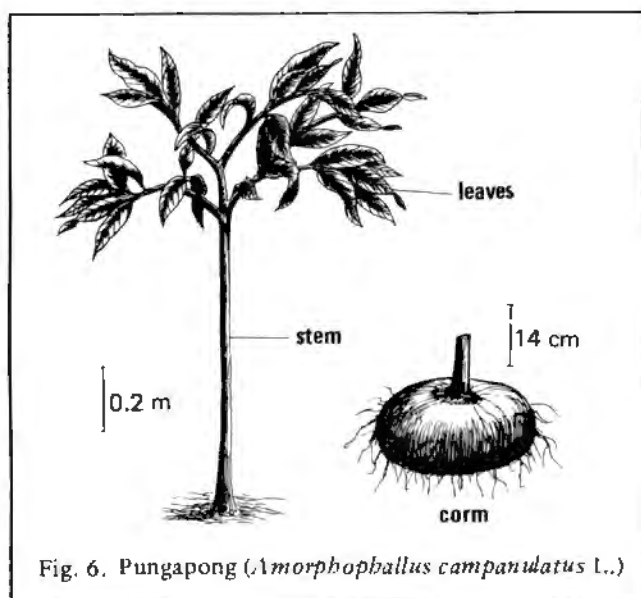


Fig. 6. Pungapong (*Amorphophallus campanulatus* L.)

Other Minor Root Crops

Sinkamas

Federico G. Villamayor, Jr.
Subject Matter Specialist

CLASSIFICATION

Family	: Leguminosae
Sub-family	: Papilionatae
Genus	: <i>Pachyrrhizus</i>
Species	: <i>erosus</i>
Scientific Name	: <i>Pachyrrhizus erosus</i> (L.) Urban

COMMON NAME	: Yambean
LOCAL NAME	: Sinkamas or Singkamas

Yambean is native to Southwestern Mexico. It was introduced in the Philippines by Spaniards who were engaged in the Galleon trade between Manila and Acapulco. It is usually planted in areas where there is a distinct dry season because it was found out that yambean or "singkamas", as it is locally known, grown in these areas taste sweeter than those grown where rainfall is more evenly distributed.

DESCRIPTION

Yambean is a coarse, hairy climbing vine that grows vigorously, often reaching 5 meters long. The leaves are trifoliate with deltoid base and irregularly and shallowly lobed in the upper half while the terminal leaves are broader than they are long (up to 15 cm long and 20 cm wide). The lateral leaflets are inequilateral. The inflorescence is a raceme reaching 45 cm long. Flowers are pale-blue or blue and white, 2.0 to 2.5 cm long and 1.5 cm wide. The pods are flat, pubescent, about 10 cm long, 10 to 12 mm wide and with 4 to 10 seeds.

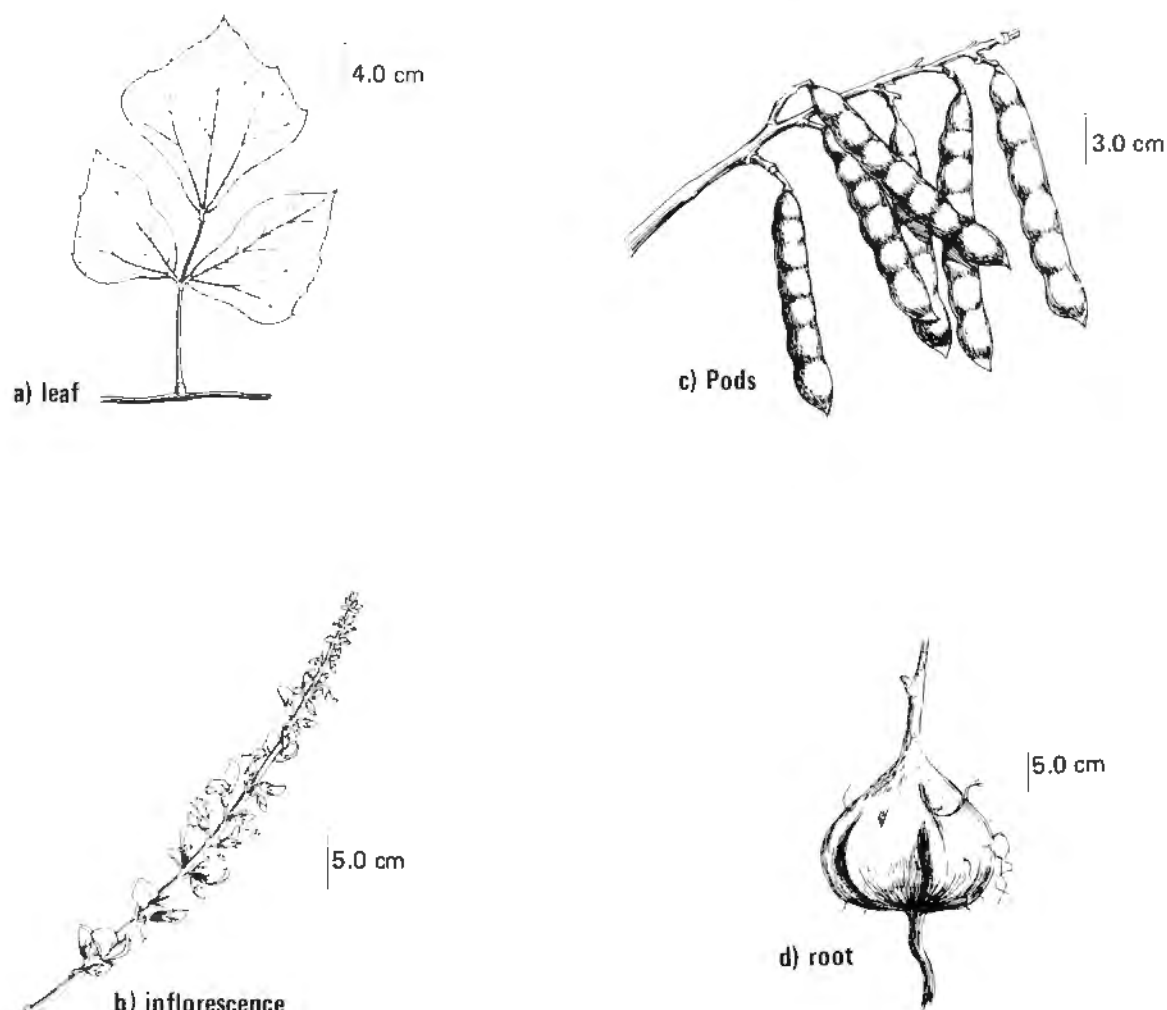


Fig. 7 *Pachyrhizus erosus* (L.)

Sinkamas is cultivated mainly for its roots. The fleshy root is usually solitary and frequently turnip-shaped. The brownish roots have a thick, tough skins that peel off exposing the white flesh beneath. The roots are often eaten raw or cooked as vegetable. They have a crisp, succulent texture with a sweet pleasant flavor. On the average the roots contain 82.38% moisture, 1.47% protein, 0.09% fat, 9.72% starch, 5.20% sugars, 0.64% fiber and 0.50% ash. For every 100 g edible portion, there are 1.13 mg Fe, 16.0 mg Ca, 0.5 mg thiamine, 0.02 mg riboflavin, 0.2 mg niacin and 14 mg ascorbic acid. The crop is usually harvested after 3 to 8 months.

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Oraro

Algerico M. Mariscal
Subject Matter Specialist

CLASSIFICATION

Family : Marantaceae
Genus : Maranta
Species : arundinacea
Scientific name : **Maranta arundinacea** L.

COMMON NAME : Arrowroot
LOCAL NAMES : Oraro (Luzon) Oraro (Visayas) Sago (Panay)

DESCRIPTION

Arrowroot is a native of tropical America. It is now grown and cultivated in many tropical countries including the Philippines.

This species is an erect perennial herb reaching about 1 m high. The subterranean rhizomes are white, fleshy, cylindrical, swollen and thickened toward the apex (Fig. 8). The leaves are ovate-oblong and green. Another type usually used as ornamentals has white streak leaves. The inflorescences which bear few white flowers are terminal.

This tuberous plant grows well in the lowlands as well as in the uplands up to 900 meter altitude. It prefers humid soils and grows very well under shade.

The suckers emerging from the sprouted rhizomes are usually used as propagation material. These are usually planted at the start of the rainy season on well-tilled soils. The rhizomes are ready for harvest 10-11 months after planting.

The rhizomes may be used in many ways: (1) As food for adults which may be boiled and served as is or as a delicacy which may be sliced, dried and made into crisp crackers. (2) As food for babies and sick persons because of its fine starch which is of good quality and easy to digest.

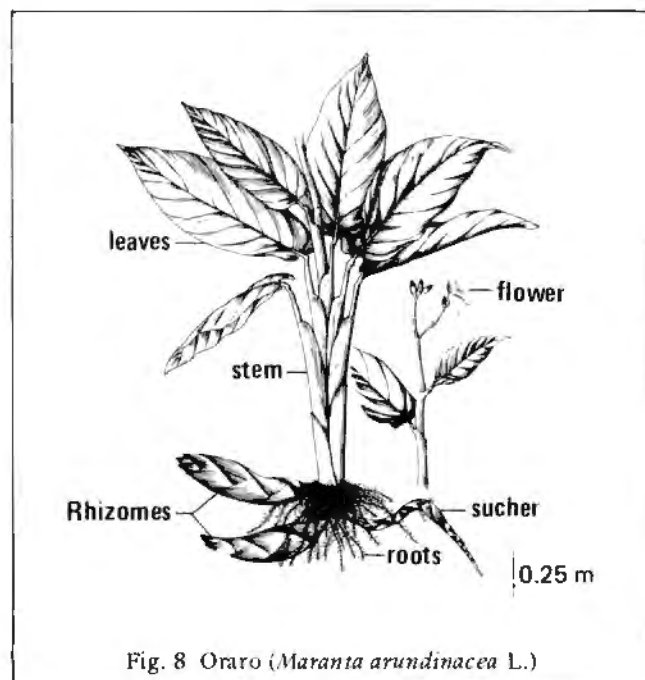


Fig. 8 Oraro (*Maranta arundinacea* L.)

(3) As ingredients in the manufacture of cosmetics, glue and alcoholic drinks (4) As poultices for the treatment of wounds caused by poisoned arrows, bee-stings, etc.

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Editor

Perfecto U. Bartolini

Editorial Consultants

Dr. Emiliana N. Bernardo
Prof. Manuel A. Ancheta