

Quick Guide

This book is divided into two sections: the first part provides descriptions of some common trees and shrubs of Botswana, and the second is the complete checklist.

The scientific names of the families, genera, and species are arranged alphabetically.

Vernacular names are also arranged alphabetically, starting with Setswana and followed by English. Setswana names are separated by a semi-colon from English names.

A glossary at the end of the book defines botanical terms used in the text.

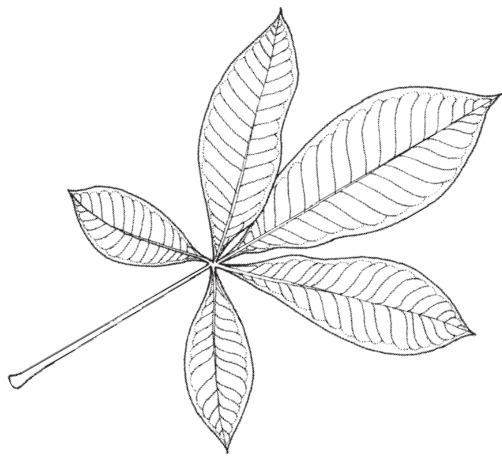
Species that are listed in the Red Data List for Botswana are indicated by an ® preceding the name.

The letters N, SW, and SE indicate the distribution of the species within Botswana according to the *Flora zambesiaca* geographical regions.

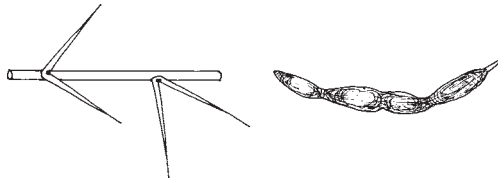
***Flora zambesiaca* regions used in the checklist.**

Administrative District	FZ geographical region
Central District	SE & N
Chobe District	N
Ghanzi District	SW
Kgalagadi District	SW
Kgatleng District	SE
Kweneng District	SW & SE
Ngamiland District	N
North East District	N
South East District	SE
Southern District	SW & SE





Trees of Botswana: names and distribution



Moffat P. Setshogo & Fanie Venter

Recommended citation format

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back cover: *Bauhinia petersiana* subsp. *macrantha*, flower; *Sterculia rogersii*, fruit; *Terminalia prunioides*, fruit; *Bauhinia petersiana* subsp. *macrantha*; *Sterculia rogersii*, fruit.

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IUCN
The World Conservation Union



Trees of Botswana: names and distribution

by

Moffat P. Setshogo & Fanie Venter



2003

Southern African Botanical Diversity Network Report No. 18

University of Botswana Herbarium

Rev. Dr P.J. Mott established the University of Botswana Herbarium in 1973 as part of the University of Botswana, Lesotho, and Swaziland (UBLS). In 1980, the herbarium was registered and listed in the Index Herbariorum. Two years later it became the Herbarium of the University of Botswana (UCBG).

UCBG is a teaching and research facility administered by the Department of Biological Sciences. It serves students and staff members who require assistance—mostly in plant taxonomy. In addition, the herbarium offers assistance to government institutions, non-governmental organisations, other researchers, and members of the public. The herbarium charges a fee for commercial or private consultancy.

The Herbarium Plant Collection

The herbarium contains about 10,000 specimens collected from different parts of Botswana, and a few from neighbouring countries. The collection is made up of carefully collected, preserved, dried, mounted, and labelled plant specimens. The collection is arranged by family according to the Cronquist Classification System. Most of the collections in the herbarium are by J.M. Woollard and P.J. Mott.

Activities and Services

Some of the main activities and services provided by UCBG are:

- Collecting and preserving plant specimens from different regions of Botswana
- Encoding the herbarium specimens using the PRECIS database
- Serving as a standard reference for identifying newly collected plant specimens
- Serving as a reference collection for Plant Taxonomy and other botanical courses provided by the university, and trains students in herbarium practices
- Providing information on plant diversity, distribution, and promoting awareness in plant conservation and utilization

- Providing information on plant vernacular names

Funding

UCBG functions, activities, and equipment are budgeted for under the Department of Biological Sciences. It has, however, benefited considerably from the SABONET project since 1997.

SABONET funding has made it possible to purchase a computer and PRECIS Database software, which is being used to encode and keep a record of the specimens in the herbarium.

Projects

SABONET is assisting UCBG and GAB in the compilation of the Poaceae Checklist (GAB), the National Tree List (UCBG), and the National Checklist (UCBG).

Additional projects include:

- A compilation of vernacular plant names (in collaboration with the National Herbarium (GAB), Sebele (MAH), and Peter Smith Herbarium (PSUB))
- The Flora of Botswana project
- An inventory of useful indigenous plants of Botswana

Literature

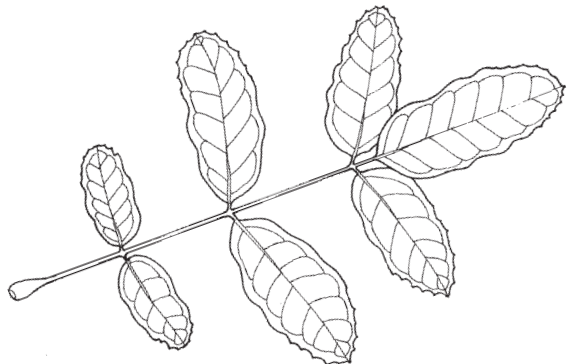
The library collection is mainly from donations by SABONET, from other herbaria, and research reports. Some books are on permanent loan from the University of Botswana library. UCBG is well equipped with a small literature collection of about 1,000 books.

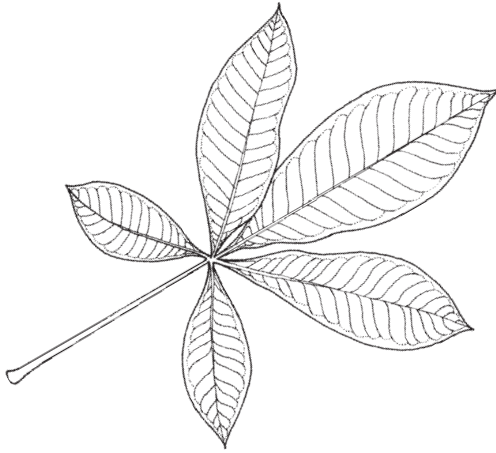
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Introduction

There are approximately 3 200 species of flowering plants recorded for Botswana: no comprehensive checklist exists for these. Similarly, no checklist has been compiled for trees at a national level. Information on tree species of Botswana is scattered in various regional publications (Coates Palgrave 2002, Van Wyk & Van Wyk 1997, Van Wyk *et al.* 2000, Van Rooyen 2001). Books by Ellery & Ellery (1997) and Roodt (1998) consider a few common trees and those of ethnobotanical importance in the Okavango Delta. Timberlake (1980) gives the only comprehensive account of the genus *Acacia* in Botswana.

This book, therefore, represents the first attempt at producing a national checklist of tree species recorded for Botswana—it lists approximately 440 species of indigenous trees. It does not claim to be exhaustive, and will be expanded as more data becomes available.

Definitions

The definitions of a tree and a shrub used in this book follow Venter & Venter (1996): a tree is any perennial woody plant growing to a height of at least 2 m, while a shrub is less than 2 m tall and mostly multi-stemmed.

Data collection

Data on the distribution of the species was gathered during numerous field trips covering literally the whole country. Information was also gathered from herbarium specimens

at the following herbaria: FHO, GAB, K, NH, PRE, PSUB, SRGH, UCBG, UNIN, and WIND (herbarium codes according to Holmgren *et al.* 1990; Smith & Willis 1999). Voucher specimens for the different species are indicated together with the herbaria housing them.

Arrangement of the list

The book is divided into two sections: the first part provides descriptions of some common trees and shrubs of Botswana, and the second is the complete checklist.

Circumscription of families and genera follows Leistner (2000). To ease reference, the scientific names of the families, genera, and species are arranged alphabetically. Similarly, the vernacular names are also arranged alphabetically, starting with the Setswana name(s) and followed by the English ones. Setswana names are separated by a semi-colon (;) from the English names. Species that are listed in the Red Data List for Botswana (Setshogo & Hargreaves 2002) are indicated by an ® preceding the name.

A distribution map and line drawing of the leaves accompany every taxon in the list. The maps were created in MAPPIT, based on PRECIS data. Fanie Venter and Marietjie Steyn made the leaf drawings.

A glossary at the end of the book defines botanical terms used in the text.



Sources of vernacular names

Vernacular names in the list were obtained in the following ways:

- Recorded during the field trips from local informants.
- From lists published from a number of other sources, for example, Campbell & Hitchcock (1985) and Woollard (1981, 1984). Literature was used extensively for the English names.
- From herbarium specimens, which often had Setswana names recorded against them.

For Setswana names, no attempt was made to indicate either the tribe (or dialect) or part of the country where the name was in com-

mon use. More research is needed before this can be done. An exception is with the San/Sesarwa names of *Acacia* species, which are listed according to Timberlake (1980).

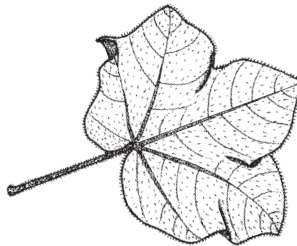
Distribution of the species

The letters N, SW, and SE indicate the distribution of the species within Botswana according to the *Flora zambesiaca* (FZ) geographical regions (Pope & Pope 1998). These are explained in Table 1.

The maps show the division of Botswana into administrative districts (Figure 1) and FZ geographical regions (Figure 2). The distribution maps for individual species are based on herbarium collections.

Table 1. *Flora zambesiaca* regions cited in the checklist.

Administrative District	FZ geographical region
Central District	SE & N
Chobe District	N
Ghanzi District	SW
Kgalagadi District	SW
Kgatleng District	SE
Kweneng District	SW & SE
Ngamiland District	N
North East District	N
South East District	SE
Southern District	SW & SE



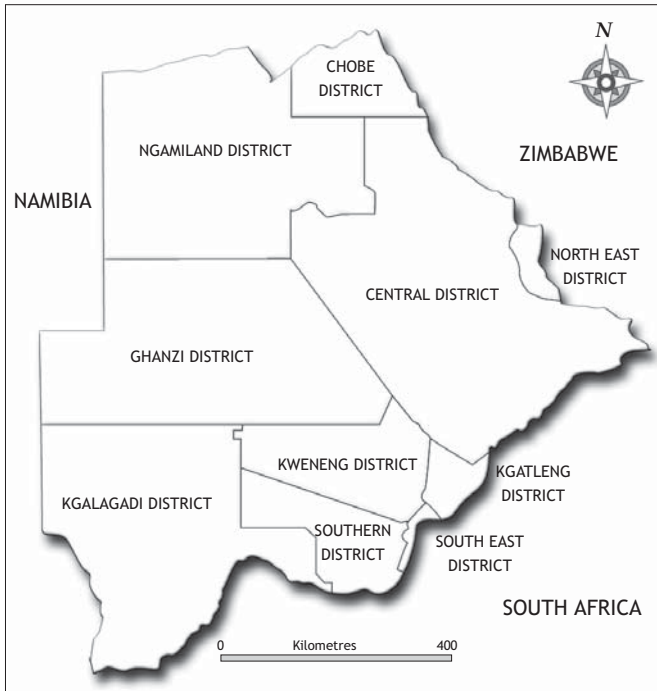


Figure 1: Administrative districts of Botswana.

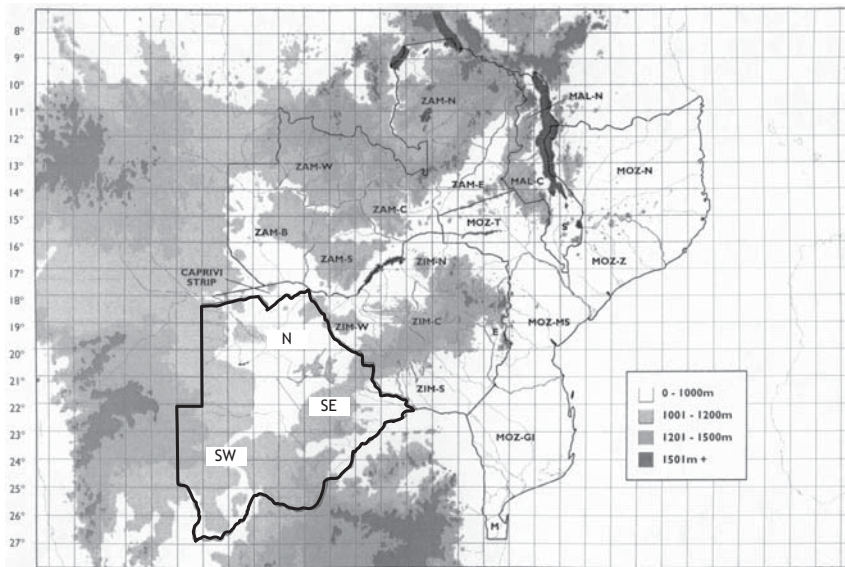


Figure 2: Flora zambesiaca geographical regions. (Source: Pope & Pope 1998)

Descriptions of some common trees of Botswana

This section contains descriptions of a few common and useful species in the list. They are arranged alphabetically by family, and alphabetically by genus and species within families.

A glossary at the end of the book defines botanical terms used in the text.

Monocotyledonae

ARECACEAE

Palm Family

***Hyphaene petersiana* Klotzsch ex Mart.**

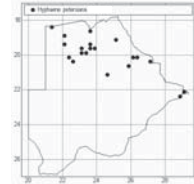
mokolane, mokolwane; northern ilala palm, real fan palm

A medium-sized palm tree with a single bare and straight stem. The stem often has scars from where the old leaves have fallen off. The leaves are fan-shaped, with long stalks having recurved thorns. The male and female flowers are on separate individuals. The fruit is characteristically brown to reddish brown.

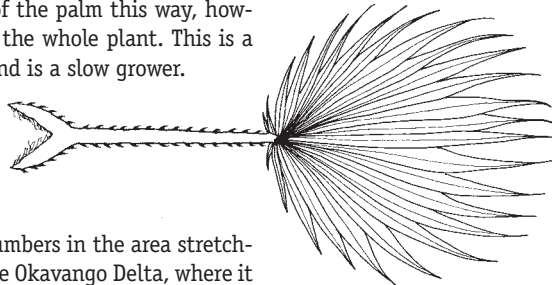
The plant is defoliated to expose the stem and the sap is collected from these stems. It is then distilled into an alcoholic beverage called *muchame*. The use of the palm this way, however, is worrisome, since it destroys the whole plant. This is a very difficult species to propagate and is a slow grower.

The nuts are eaten raw. The leaves are used to make baskets: the species is one of the major species supporting the basket industry in the Okavango Delta.

H. petersiana occurs in sizeable numbers in the area stretching from Nata village, westward to the Okavango Delta, where it occurs mostly on seasonally flooded areas. It is thought to be an indicator of saline soils.



actual size: 1300 mm



Dicotyledonae

ANACARDIACEAE

Mango family

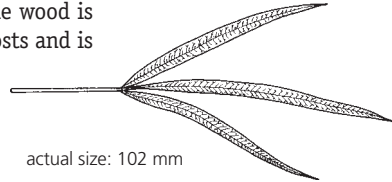
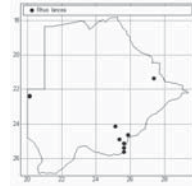
***Rhus lancea* L.f.**

moshabela, mosilabele, motshotiso, motshotlho, nsasane, nseseni; bastard willow, karee, karoo tree, willow rhus

This is a small to medium-sized evergreen tree normally occurring in varying habitats. It has a characteristic rough dark brown bark. Leaves of the species have differently coloured surfaces; they are dark green above and paler green below. The leaves give out a characteristic aromatic smell when crushed. The fruit is a small, edible, flattened, dull yellow to brown drupe.

The fruit can be pounded with water and allowed to ferment to make a good beer (Van Wyk & Van Wyk 1997). The wood is hard, tough, and durable. It is valuable as fencing posts and is used to make handles for some implements. The bark of *R. lancea* is also used for tanning. The tree can be cultivated as a garden ornamental.

This tree can be confused with *Rhus leptodictya*, from which it is separated by the nature of the leaves. The margins of the leaflets are entire in *R. lancea* and toothed in *R. leptodictya* (see description of *R. leptodictya* below).



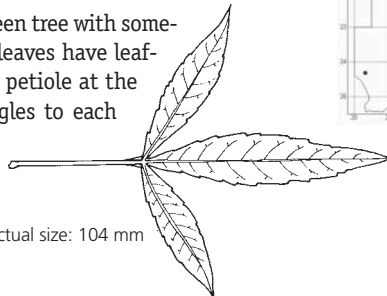
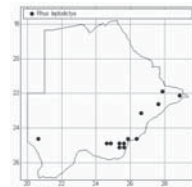
actual size: 102 mm

Rhus leptodictya Diels

lehata-la-basimane, mogogobadimo, motshotlho, motshotlwane, nsasane; mountain karee, rock rhus

This is a small to medium-sized evergreen tree with somewhat drooping branches. The trifoliate leaves have leaflets with toothed margins, join the leaf petiole at the same point and are almost at right angles to each other. The fruits are small, edible, flattened, orange-red drupes.

Intoxicating liquor can be made from the fruit (Roodt 1998).



actual size: 104 mm

Sclerocarya birrea (A.Rich.) Hochst. subsp. *caffra* (Sond.) Kokwaro

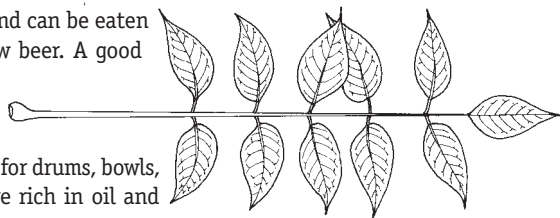
morula, morwa, ntala, nthula; cider tree, marula tree

A medium to large deciduous tree with an erect trunk and a spreading, rounded crown; dioecious. Leaves are crowded near the ends of branches. Fruit is yellow when ripe, with a very juicy mesocarp.

The most valuable asset of this tree is its fruit; therefore the tree is often conserved, even in cultivated lands. Marula fruits are rich in vitamin C and can be eaten ripe, but are popularly used to brew beer. A good jelly can be made from the pulp. The wood of *S. birrea* does not crack easily, hence it is used to make pestles for stamping grain. It is also suitable for drums, bowls, plates, and spoons. Seed kernels are rich in oil and



actual size: 294 mm



protein. The bark is traditionally used for treating malaria.

It is believed that a pregnant woman can influence the sex of the unborn child by drinking an infusion of the bark from either a male or a female tree.

It occurs throughout the eastern, southeastern, and northern parts of the country, often growing at very low population densities per unit area.

BOMBACACEAE

Baobab family

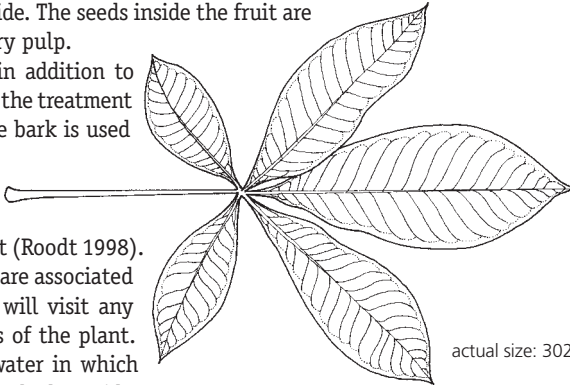
***Adansonia digitata* L.**

dovuyu, ibozu, mbuyu, moana, mobuyu, mowana; Africa's upside-down tree, baobab

This tree is sometimes referred to as Africa's upside-down tree (when leafless, the branches have the appearance of roots). It has a hugely swollen trunk. The fruit is large (up to 12 cm long), with a hard woody shell, and is covered by yellowish grey, velvety hairs on the outside. The seeds inside the fruit are embedded in a whitish powdery pulp.

The leaves contain tannin in addition to mucilage, which is effective for the treatment of diarrhoea (Roodt 1998). The bark is used for making mats. The toxin in the latex of this plant includes a cardiac glucoside, strophanthin, which slows the heartbeat (Roodt 1998).

Certain superstitious beliefs are associated with this species. Evil spirits will visit any person who plucks the flowers of the plant. It is also said that drinking water in which parts of the plant have been soaked provides protection against crocodiles.



actual size: 302 mm

CAPPARACEAE

Caper family

Boscia albitrunca* (Burch.) Gilg & Benedict var. *albitrunca

makgolela, mareko, monomane, motlopi, ntopi; caper bush, shepherds' tree

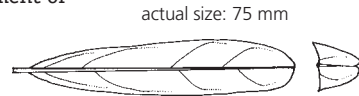
The trunk of this species is characteristically whitish (*albitrunca*). The leaves are clustered or fascicled on the branches. The fruits ripen to yellow, with a sweet, slimy pulp and a smooth



skin. A delicious drink is prepared blending the fruits with milk.

Coates Palgrave (2002) refers to this species as 'a tree of life' because of the various uses it has to humans, livestock, and wild animals. The leaves provide nourishing fodder for game and livestock. A cold infusion of the leaf is used as a lotion for inflamed eyes of cattle. The wood is tough and durable; it is used to make household utensils such as spoons and bowls. A decoction of the root is said to be effective in the treatment of haemorrhoids (Roodt 1998). Birds, baboons, monkeys, elephants, as well as humans, eat the fruit.

It is believed that if the wood of the species is burned, only male calves will be produced. It is also said that if the fruit withers before the sorghum crop harvest, the crop will fail.



COMBRETACEAE

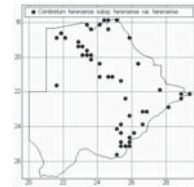
Combretum family

***Combretum hereroense* Schinz**

mokabi, mokata, mongare, monwana, mungave, nswazwi; mouse-eared combretum, russet bushwillow

A small tree, 3–5 m in height. A characteristic feature of this species is its typical four-winged *Combretum* fruit (samara). However, this fruit is smaller than that of similar-sized combretums. It is rich dark reddish brown from an early age, becoming rich brown with golden-edged wings. The fruits remain on the tree for a long time.

An infusion of the roots is used for stomach disorders (Roodt 1998). Like all other combretums, the wood is very hard, tough and durable and it provides excellent firewood. It is termite and borer proof. Most browsers eat the leaves and small twigs of *C. hereroense*.



actual size: 43 mm



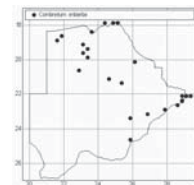
***Combretum imberbe* Wawra**

kavimba, madikolo, mbgweti, monyondo, motswere, motswiri, movimba; bastard yellow wood, elephant trunk, ivory tree, leadwood

This tree has a characteristic pale grey bark that cracks into rectangular flakes. Mature trees often have dead, bare branches and twigs. The grey-green foliage gives it a characteristic tinge throughout the year. The species flowers in October.

According to Coates Palgrave (2002), a cough mixture can be prepared from the flowers.

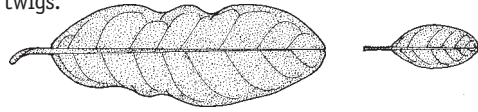
C. imberbe grows very slowly, forming exceptionally hard wood. Prior to the advent of iron implements, hoes were made of the timber and in the past it was used for railway sleepers, fencing posts, and mine props. The wood is very good fuel and is also



used to make grain mortars. The fruits make beautiful necklaces. Browsers eat the leaves and young twigs.

The Herero worship this tree as an ancestor of all animals and people.

actual size: 84 mm

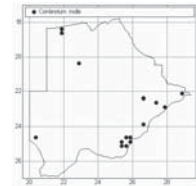


Combretum molle R.Br. ex G.Don

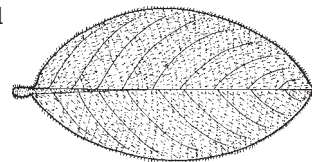
modubatshipi, mohudiri-wa-lentswe, molatswe; velvet bushwillow, velvet-leaved combretum

A small to medium-sized tree up to 10 m in height. The bark is grey, grey-brown to almost black, rough and fissured, and inclined to be flaky. Leaves are opposite and the apex tapers; the base is rounded to shallowly lobed and margins are entire. Flowers are greenish and heavily scented, attracting insects; they appear in September/October. The fruit is yellowish green flushed with red, drying to golden reddish brown.

According to Roodt (1998), fresh or dry leaves of the species are used for dressing wounds. The leaf and the root are also believed to be an antidote for snakebite, while the root alone is used to treat both abortion and constipation. A feverish child is bathed in a decoction of the dried leaves to reduce its temperature, while an infusion of the inner bark is taken orally or as an enema to relieve various stomach complaints. The wood is hard and yellow; it is suitable for implement handles and fencing posts and is said to be reasonably termite-proof.



actual size: 80 mm



EBENACEAE

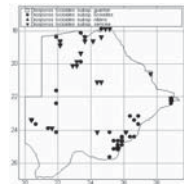
Ebony family

Diospyros lycioides Desf. sensu lato

letlhaja, letlhajwa, molootsameno, mothajaja, nshangule; bluebush, hairy bluebush, Kalahari star-apple, red star-apple, Transvaal bluebush, velvet bluebush

This plant occurs as a shrub in most parts of Botswana. The leaves are clustered towards the ends of branches. The plants are dioecious. The fruit is a berry, orange-red to dark red when ripe, usually with a persistent calyx.

The bark is sometimes used for tanning. The root of this shrub is an excellent substitute for toothpaste.



actual size: 36 mm



Euclea undulata Thunb. subsp. myrtina (Burch.)

Hiern

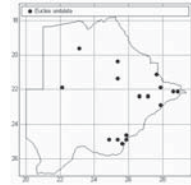
mokwelekwele, moshitondo, mosokola, mothakola, motlhakolana, mothakolane, mothakolwana, mothakolwane, motokola, nshangule-ntukunu; common guarri, fire-fighter's blessing, small-leaved guarri, thicket euclea

actual size: 29 mm



This is a shrub with characteristic undulate leaves (with wavy margins). It has berry-like fruits of about 5 mm in diameter, which are initially brownish red, turning black at maturity.

The roots are used medicinally for heart diseases, headaches, and toothaches (Van Wyk & Van Wyk 1997).



EUPHORBIACEAE

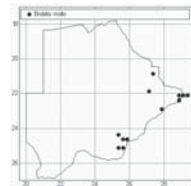
Euphorbia family

***Bridelia mollis* Hutch.**

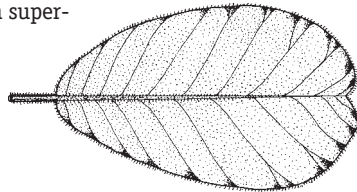
mokokokwena, mokokonane, kokokonyana, kokokwane, kokokwele, kokokwenana, kokokwenane, kokomanawe, kokopakopa, kokopokopo, kokororo, mongwanengebe, nkumbakumba; velvet bridelia, velvet sweetberry

A small shrub common on rock outcrops and hills. It has characteristic velvety leaves (*mollis*). It produces a spherical edible fruit, green when immature, and turning black when mature.

The wood is apparently not used for fuel because of a superstitious belief that its use might result in cows never bearing calves. The wood is, however, good for making implements, house timbers, and fences. The leaves are boiled and the solution rubbed on the body.



actual size: 93 mm



Croton gratissimus* Burch. var. *gratissimus

mhakwana, mmakwana, moologa, ngala-dombo, umumbango; lavender croton, lavender fever-berry

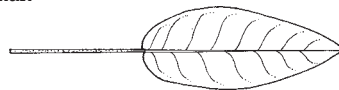
This is a multi-stemmed tree of rocky places. Leaves are dark green above and silvery on the lower surface, dotted with many brown scales. There are two small glands where the stalk joins the leaf. Flowers are small and rather inconspicuous; they appear in October. The fruit is a small, three-lobed capsule.

The leaves and bark are used medicinally. The tree is also very popular with boys who use its Y-shaped branches for making catapults. The slender stems of the species are used in the roofs of traditional huts.

This species is generally characteristic of hills in southern Botswana.



actual size: 88 mm

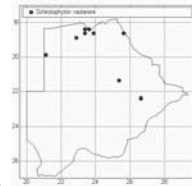
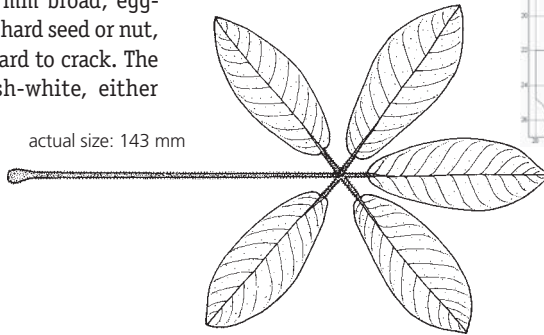


***Schinziophyton rautanenii* (Schinz) Radcl.-Sm.**

mokongwa, mongongo, mungongo; featherweight tree, manketti nut, manketti tree, mongongo nut

This species has a nutritious and well-known fruit. It is about 35 mm long and 25 mm broad, egg-shaped, fleshy with a hard seed or nut, which is extremely hard to crack. The kernels are yellowish-white, either eaten raw or roasted, and taste like cashew nuts. The nut is pounded and cooked with a variety of vegetables (Story 1958). It is distributed in northern Botswana.

actual size: 143 mm



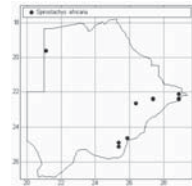
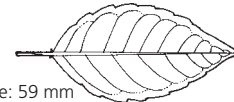
***Spirostachys africana* Sond.**

morekhure, morukuru; African mahogany tree, African sandalwood, jumping bean tree, tamboti

This tree is valued for its straight, upright, single bare trunk, which makes it amenable to many uses. The bark is characteristically dark to black and neatly cracked into regular rectangles. The plant produces a milky latex when its branches are injured. The species flowers in October.

S. africana occurs in the eastern hardveld of Botswana. The wood is used to make splendid furniture. It provides hut poles and rafters and is also used for making sledges.

actual size: 59 mm



FABACEAE
Pod-bearing family

Acacia species

These are typical thorn bushes and thorn trees comprising a major part of the vegetation of Botswana. All acacias have bipinnate leaves, pairs of straight or hooked thorns, and flattened pods. Thorns and details of leaves are most important in separating species of this difficult genus. Flowers are fluffy, occurring in inflorescences of two types, a long spike and a round ball. All acacias are deciduous.

***Acacia erubescens* Welw. ex Oliv.**

g//are (G//ana), moloto, murengambo, n!ã (!Kung), omungongomwi; blue thorn

A small tree or bush. It has 4–6 pairs of pinnae of 10–15 pairs of leaflets. Leaflets are relatively small and it has vicious, hooked thorns. The bark of *A. erubescens* is pale, even cream, and sometimes flaking. The pods are pale-brown, thin, flat, and horizontally veined. This species can be confused with *A. fleckii*, but



the latter flowers later, has many more pinnae, has small leaflets, and has a shorter leaf stalk (see description of *A. fleckii* below). The species flowers in October.

Livestock may browse leaves and pods. The bark is used for making rope used in thatching. The wood is used for firewood and fence posts.



actual size: 80 mm (pod)



Acacia fleckii Schinz

/kane, gare (G//ana), mfafu, mhahu, mohahu, mokoka, mokoko, mokokwane, mukona, nꞥahli (!Xó), nꞥeng (!Kung), omutaurambuku; blade thorn

A tree or bush, with 6–15 pairs of pinnae of 10–30 pairs of densely crowded leaflets. Leaflets are grey-green, small and hairy. *A. fleckii* has a prominent gland near the base of the stalk and vicious, hooked thorns. Young twigs of *A. fleckii* are pale grey and slightly zigzag. Bark on the trunk is pale to cream, flaking. Pods are pale, brown, broad, thin, often slightly curled up and horizontally veined.

Leaves are browsed by animals. The wood is used for firewood.



actual size: 80 mm (pod)

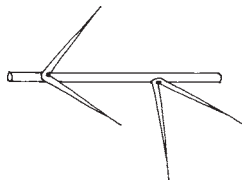


Acacia karroo Hayne

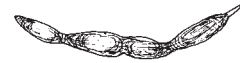
butema, gaba, mokha, mooka, mookana, mookane, orusu; gum Arabic tree, karoo thorn, mimosa thorn, sour thorn, sweet thorn, thorn tree, white thorn

The characteristic features of this species include the following: a dark and rough bark; striking, long, paired, white thorns; yellow, sweet-smelling, ball-like flowers producing copious amounts of nectar. Sometimes called the 'bee tree' because bees in search of nectar visit it. It is one of the last acacias to flower in spring. The trees exposed to browsing by animals tend to be thornier, usually on lower branches where the animals can reach easily. The pods are sickle-shaped and dehisce by splitting lengthwise in the middle.

This is a good fodder tree, browsed by cattle and goats. The bark can be used for tanning leather.



actual size: 80 mm (pod)



Acacia mellifera (Vahl) Benth. subsp. *detinens* (Burch.) Brennan

!gou (!Kung), //ha (!Xó, Nharo), //kowa, //wa (G//ana), mongana, monka, more-o-mabele, mukona, nkoshwana, omusaona, ungandu; black thorn, hook thorn, wait-a-bit thorn

This tree often bushes in large thickets. This species has 2–4 pairs of pinnae and rarely possesses more than one pair of large leaflets. It also has many hooked thorns. Flowers of *A. mellifera* are sweet-smelling white balls, appearing just before or with the leaves. Pods are short, broad, papery, pale brown, and hori-



zontally veined. The fruits appear in October.

This species can be confused with *A. nigrescens* (see description of *A. nigrescens* below) from which it is distinguished by the absence of knobs on stems and branches.

A. mellifera is one of the most valuable fodder trees and is highly sought-after by game and livestock. It contains a high percentage of raw protein and is thus often ground up to feed game and livestock. It is used traditionally as medicine. For instance, roots can be used to relieve stomach complaints. It is often thought undesirable in the range when it encroaches on overgrazed areas. It is also an indicator of calcium-rich soils.



actual size: 66 mm (pod)



***Acacia nigrescens* Oliv.**

goshwe, mokoba, more-o-mabele, mughandutji, mwanduchi, nkogo, yi (!Kung); knob-thorn

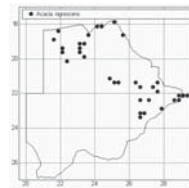
This is usually a tree of up to 30 m in height. Its characteristic feature is the scattered, irregularly shaped knobs on the trunk and large branches. The leaflets are uncharacteristically large for an *Acacia* (up to 30 mm long by 20 mm wide), normally two pairs of pinnae per leaf.

It can be confused with *A. mellifera*, from which it is distinguished by the leaflets and the knobs on the trunk and branches. Both *A. mellifera* and *A. nigrescens* are good barrier plants because of their vicious, hooked thorns, hence they are usually used in kraal and homestead fences.

The tree is extremely fire resistant and is therefore an excellent firewood. The leaves are eaten eagerly by browsers.



actual size: 66 mm (pod)



***Acacia tortilis* (Forssk.) Hayne subsp. *heteracantha* (Burch.) Brenan**

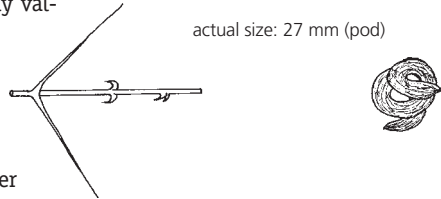
/gali (!Kung), mojwa, mokhu, morwane, moshaka, moshu, mosu, mosunyana, mudjwa, nsu, orusu-orupunguya; curly-pod acacia, umbrella thorn

This is a deciduous tree and usually not more than 10 m high. In northern Botswana (Moremi Game Reserve) some trees reach 20 m. The well known, conspicuous umbrella-shaped crown only develops fully in old specimens; young trees have roundish or flat-topped crowns. The stem is usually fairly short and the main branches are bare. Old bark is dark grey to black, longitudinally fissured and ridged. The sharp spines of *A. tortilis* are unique: some are short, blackish and hooked, while others are long, white and straight. The spines occur in pairs, mostly two of the same kind together, but sometimes mixed (thus a hooked and a straight spine together). The bipinnately compound leaves are probably the smallest among the thorn trees. The same ap-



plies to the leaflets, which are minute (1.5 x 0.5 mm). The fruit consists of characteristic, pale brown pods, which are always spirally contorted and sometimes intertwined with each other.

The wood is used as fuel. The pods are highly valued, showing contents of 18.83% protein, 2.44% fat, 46.25% carbohydrates, 5.1% minerals, and 20.1% fibre (Roodt 1998). They are browsed by game and are also collected by farmers for feeding small stock. The tree is common on abandoned and old ploughed fields, and is an encroacher on heavily eroded lands.

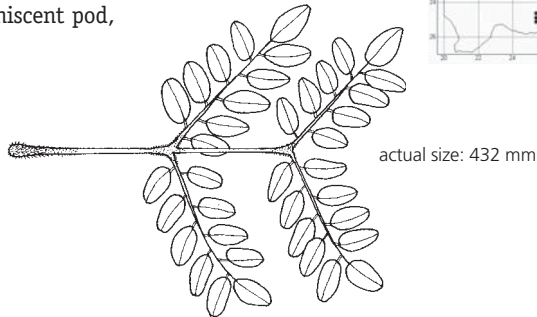


***Burkea africana* Hook.**

kudumela, monato, mosheshe, nkalati, ohehe; burkea, red syringa, Rhodesian ash, wild syringa

This tree has a dark grey, rough and flaking bark. The leaves are crowded at the ends of branchlets. The fruit is a thin, flat, single-seeded, indehiscent pod, often persistent for months.

The timber has been used for wagons and furniture. The pounded bark and fruit are used as a fish poison. The bark and fruit are also used for tanning (Roodt 1998).



***Colophospermum mopane* (Kirk ex Benth.) Kirk ex J.Léonard**

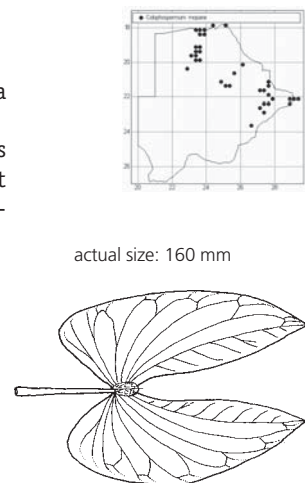
mophane, mpani; balsam tree, black ironwood, butterfly tree, mopane

The species has a characteristic butterfly leaf. The fruit is a kidney-shaped pod, covered in oil glands.

The southernmost distribution of the species in Botswana is just north of Radisele village. It usually dominates wherever it occurs, forming a distinct vegetation type called 'Mopane woodland'. It is regarded as an indicator of shallow, poorly drained, often alkaline, soils. It is slow-growing outside its distribution range.

C. mopane is the most sought-after building material in Botswana, as it is almost completely termite-resistant and the straight growth form of the young specimens lends itself to utilisation for this purpose. It is also ideal for fencing poles and wagon shafts. *C. mopane* is also a host for the commonly harvested *phane* worm in Botswana.

It is thought that mopane trees attract lightning.



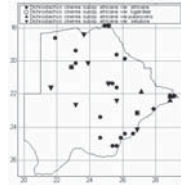
***Dichrostachys cinerea* (L.) Wight & Arn. sensu lato**

moselesele, mpangale; hairy sickle bush, Kalahari Christmas tree, large-leaved sickle bush, sickle bush, velvet sickle bush

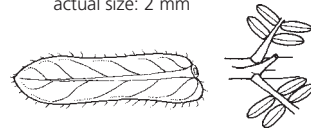
This species is deciduous and grows as a spiny bush, often forming thickets. It can have 4–13 pairs of pinnae with 10–25 pairs of small, crowded leaflets. Leaves grow from short spine-tipped side twigs. The flowers are distinctive dropping tassels, with upper part mauve to pink, and lower part narrower and yellow. The thin, twisted pods grow in a tangled mass. Although the leaves of *D. cinerea* are like those of an *Acacia*, the absence of paired thorns or spines easily distinguishes this bush.

There is a strong similarity of medicinal application throughout Africa, even in the most remote regions, for example, treatment for snake-bite, which is prepared by chewing the leaf well and then applying it to the lesion by binding it with strips from the inner bark (Roodt 1998). *D. cinerea* is said to be an excellent cure for toothache and it is also considered a remedy for abdominal pains, pneumonia, internal abscesses, dysentery, gonorrhoea, worms, and maladies of the urinary tract, suggesting that the tree may have some antibiotic properties (Roodt 1998). By inhaling the smoke of the dried leaves and root, chest complaints and a blocked nose can be relieved. Dried seed pods soaked in hot water make a soothing eyewash (Roodt 1998). An extract of the leaves mixed with salt is even more effective for this purpose.

The wood is used for making fence poles and is good fuel. The timber is termite-resistant and so durable that it was once used instead of iron posts, since it withstands even veld-fires. The inner bark is tough and pliable and makes strong rope and string. The whole plant has a high nutrition value and the leaves and pods are eaten by livestock and wildlife.



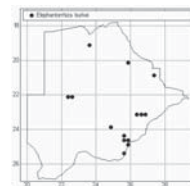
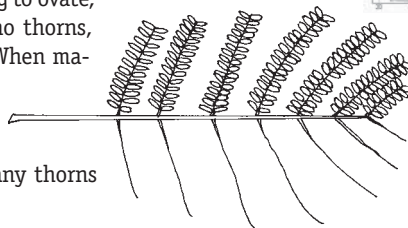
actual size: 2 mm

***Elephantorrhiza burkei* Benth.**

mbola, mosetlha-o-monnye, mosidi, mosidigodimo, mositsane; sumach bean, sumach elephant root

This species is deciduous and it is a sparsely foliated bush or small tree, usually growing on rocky hills. Leaves are large, with 5 or 6 pairs of pinnae of 10–25 pairs of leaflets, spaced out. Leaflets are largish, oblong to ovate, with a pointed apex. *E. burkei* has no thorns, and a large, broad, flat woody pod. When mature, most parts of the pod fall away or roll up leaving just the rims. The species flowers in October. The large size of the leaf and the absence of any thorns distinguish this species from acacias.

actual size: 216 mm



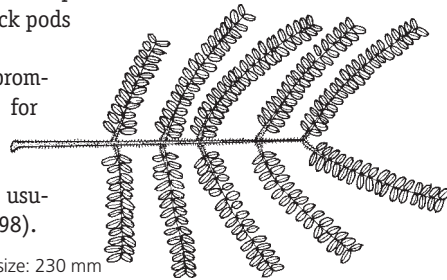
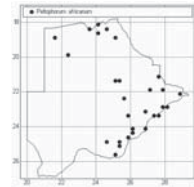
It is often used in leather tanning, but is not as popular as *E. elephantina*.

***Peltophorum africanum* Sond.**

mosetha, mosiru, moyeri, moyethu, moyevu, nzeze, setimamollo; African wattle, weeping wattle

In summer, the abundant, pea-like, yellow flowers amongst the large, feathery leaves are characteristic. The tree has striking, dull green, large, *Acacia*-like, soft, feathery leaves. It branches low down from a trunk that is often crooked, to form a spreading, irregular and untidy crown. The flowers appear in November. It produces dark brown to black pods that remain on the tree for most of the year.

The wood produces a smooth finish and seems promising for furniture use. It has also been used for wooden buckets, grinding blocks and even wagons in the past. Steam from a hot decoction is used to relieve sore eyes and the bark is usually chewed to treat abdominal pains (Roodt 1998).



actual size: 230 mm

MALVACEAE

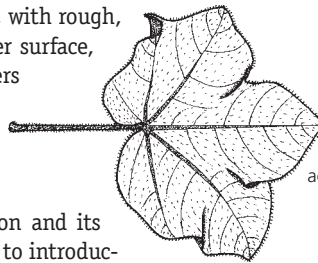
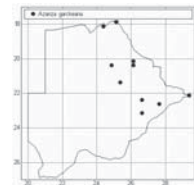
Hibiscus family

***Azanza garckeana* (F.Hoffm.) Exell & Hillc.**

moroja, morojwa, ntobgwe; azanza, chewing gum tree, snot apple

An evergreen shrub to medium-sized tree. Branchlets have woolly hairs. Leaves are 3–5-lobed, with rough, stellate (star-shaped) hairs on the upper surface, and soft hairs on the lower surface. Flowers are solitary, yellow, with a maroon patch in the centre. The fruit is a yellowish green to brown, five-lobed woody capsule, and is edible.

The species is northern in distribution and its occurrence in the south is probably due to introductions.



actual size: 332 mm

MORACEAE

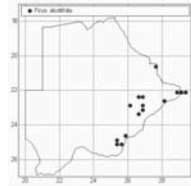
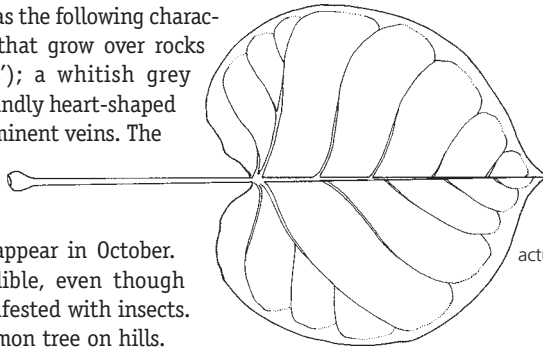
Fig family

***Ficus abutilifolia* (Miq.) Miq.**

mhawa, mohawa, mokoyo, momelantsweng, mpawa, ntulukuse; large-leaved rock fig

The species has the following characteristics: roots that grow over rocks ('rock splitters'); a whitish grey trunk; large, roundly heart-shaped leaves with prominent veins. The species flowers in August/September, and the fruits appear in October. The figs are edible, even though nearly always infested with insects.

This is a common tree on hills.



actual size: 286 mm

OLACACEAE

Sourplum family

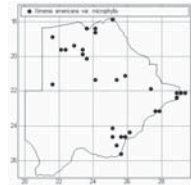
Ximenia americana L. sensu lato

chibitswa, moretologana, moretologa-wa-pudi, moretonoga, moretonoha, motsididi, nswanja-bakhwa, seretologa; blue sourplum, small sourplum

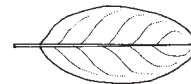
This is a much-branched shrub or small tree with a blue-green appearance. Leaves occur in axils of straight spines or are clustered on short side branches, folding inwards along the main vein. The plants are dioecious. The species flowers in November. Fruits are yellowish red and fleshy.

The fruit is sour, but edible, and is often used to make beer. The leaf, which contains tannin and resins, is used as a remedy for cough, fever, and wounds. The oily kernel is used for softening leather, as a cosmetic, and for making torches (Roodt 1998).

The species can be confused with *X. caffra*, which has dark green leaves.



actual size: 48 mm

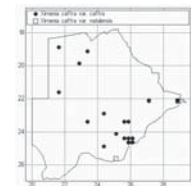


Ximenia caffra Sond. sensu lato

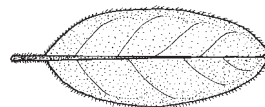
moretologa, moretologa-wa-kgomo, moretonoga, morokolo, motsidi, mwombe, nswanja-ngombe; hairy large sourplum, large sourplum, monkey plum

This is a sparsely-branched shrub or small tree. Leaves are clustered on short side branches, are dark green in colour and fold inwards along the main vein. The plants are dioecious. The fruits are bright red, smooth and fleshy when ripe, and are edible.

The species can be confused with *X. americana*, which has waxy, blue-green leaves. Both species are fairly widespread in Botswana.



actual size: 68 mm



RHAMNACEAE

Dogwood family

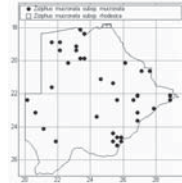
Ziziphus mucronata* Willd. subsp. *mucronata

mabyana-a-mala-a-tupa, moketekete, mokgalo, monganga, nchecheni;
buffalo thorn, shiny leaf, wait-a-bit

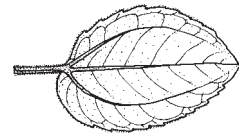
This is a shrub to a medium-sized tree. Young branches bend at the nodes, giving them a zigzag appearance. The leaves are shiny green. Paired thorns are present at the base of the leaf stalk; one is curved while the other is straight. The species flowers in October/November. The fruit is round, berry-like, shiny reddish to yellowish brown.

A decoction of the roots is commonly administered as a pain-killer. An infusion of the bark and leaves is used for chest complaints (Roodt 1998). Pastes of the root and leaves can be applied to treat boils and swollen glands. The leaves are an important source of fodder for stock, and all browsers feed on the tree. Impala often feed on the dead leaves lying under trees. The elasticity of the wood makes it suitable for bows and, especially, hammer handles. Ox yokes are cut from larger trees, while saplings and coppice shoots make whip sticks. As with most fruits, a beer can be made if fruit is allowed to ferment. The tree is a good indicator of the presence of underground water.

In Botswana, this tree is considered immune to lightning, so any person sheltering under it is thought to be safe. It is also believed that if it is felled after the first rains, a drought will certainly ensue.



actual size: 63 mm



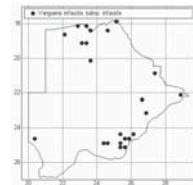
RUBIACEAE

Coffee family

Vangueria infausta* Burch. subsp. *infausta

mmilo, monyonyana, mothwane, nzwigwa; wild medlar

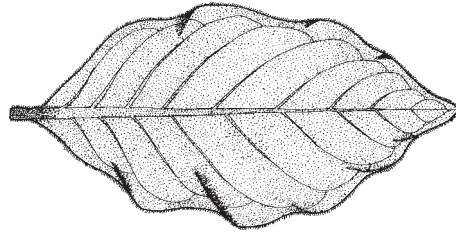
This is a shrub to small tree, occurring mostly on rocky places and hills throughout Botswana. Its stems have prominent triangular stipules between each pair of leaves. It has boat-like leaves bent backwards in a sickle shape. Small gall-like growths may be noticed on the leaf surfaces. These are caused by a species of fungus, which often attacks these trees. *V. infausta* flowers in late October. It has roundish fruit, which can be up to 40 mm in diameter, with a glossy brown skin when ripe.



The fruit is edible and contains a high level of vitamin C. Roots are used medicinally to treat malaria.

It is considered unlucky to use the wood of this species, hence the specific epithet, *infausta*, which means unlucky. The wood is never used, not even as fuel.

actual size: 119 mm



SAPINDACEAE

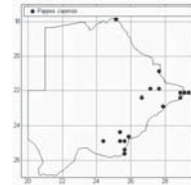
Litchi family

***Pappea capensis* Eckl. & Zeyh.**

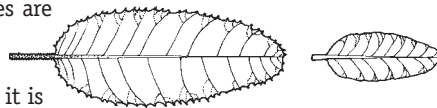
molalagaka, mpanyobojalwa, mopenoene, mopenwaeng, mothata, ntorido; indaba tree, jacket plum, wild cherry

Over most of its range the Jacket Plum is a small tree (7 m) but it can reach a height of 12 m. It is semi-deciduous and has a short trunk and a fairly dense, spreading crown. The leaves are usually crowded at the ends of the branches. They are simple, variable in size, hard and rough and the margins may be entire or finely spine-toothed. The outstanding characteristic feature of the tree is its fruit—these are softly hairy, green, round berries, about 15 mm in diameter. During some seasons the berries occur in masses. When ripe, the pericarp splits in two to reveal the bright red, fleshy, shining false aril, which envelops the black seed. This fleshy part is delicious and is enjoyed by people and animals. It is also used to make jelly and to brew an alcoholic beverage and vinegar.

The wood has a fine grain and is quite heavy, hard and pale brown with a reddish tinge. The quality is good enough for it to be used for various purposes, but large pieces are rare. The leaves provide valuable browsing for game and stock. The seed can provide fairly heavy oil that is edible as suggested by Roodt (1998); it is claimed that farmers oil their guns with this oil.



actual size: 74 mm

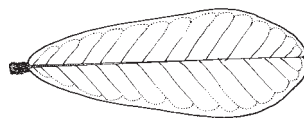


SAPOTACEAE

Milkwood family

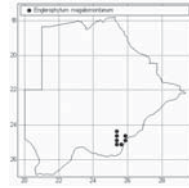
***Englerophytum magalismontanum* (Sond.) T.D.Penn.**

mothatswa; red milkwood, stemfruit, Transvaal milkplum, wild plum



actual size: 79 mm

The fruits are plum-like, ovoid, about 20 mm in diameter, red when ripe, sweet and deliciously flavoured. They have a high vitamin C content. They are used for making syrup, brandy, and wine. This is a species occurring mostly on hills in southeastern Botswana.

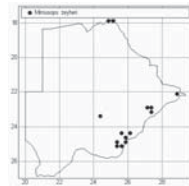


Mimusops zeyheri Sond.

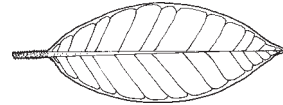
mmopudu, mmupudu, mobu, mosamtuzza, mupudu; common red milkwood, Transvaal red milkwood

This is a small to medium-sized evergreen tree. The parts exude a milky latex when injured. All young parts have dense reddish brown hairs. The leaves are glossy dark green and leathery. The flowers are star-shaped, white and scented, and appear in October. The fruit is oval, fleshy, orange, with a persistent style attached to it.

The fruit is edible, eaten by both humans and animals. A juice is prepared from the fruit and can be used fresh or fermented. The fruit is commonly sold in local markets in November and December.



actual size: 73 mm



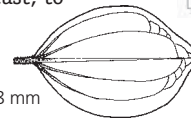
STRYCHNACEAE

Wild Elder family

Strychnos cocculoides Baker

mogorogoro, mogorogorwana, mogorogorwane, mohoruhoru, moruda, nhume; corky-bark monkey orange

The fruit is large, spherical, about 80 mm in diameter, and yellowish when ripe. The juicy pulp is refreshing and has a delectable flavour when eaten fresh or crushed to make a fermented juice. It has a patchy distribution in the southeast, to the eastern and northern parts of the country.

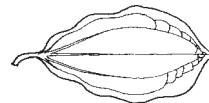
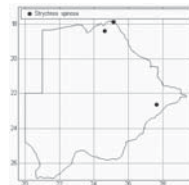


actual size: 48 mm

Strychnos spinosa Lam.

maume, mogorogoro, mogororo, moyimbili; elephant orange, green monkey orange, monkey ball, spiny monkey orange

The fruits are bigger than those of *S. cocculoides* (about 120 mm in diameter), spherical, deep yellow to yellow-brown in colour and fleshy. The pulp is sweet and has a delicate flavour.



actual size: 55 mm

TILIACEAE

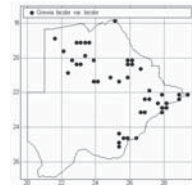
Jute family

***Grewia bicolor* Juss.**

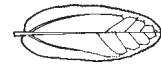
kukuruthwe, mambalane, mogwana, monabo, motuu, ntewa; bastard brandybush, false brandybush

This is mostly a multi-stemmed shrub. The bark is dark grey, deeply fissured, and peels away in old specimens. Leaves are a dark, dull green above and almost silvery-white below (hence *bicolor*). The fruit is a drupe, one- or two-lobed, reddish brown to purple black.

Although slightly sour, the fruit is eaten by humans when ripe or is dried for later use. It is also one of the ingredients for making traditional *khadi* brew. Fibre obtained from the inner bark is used for making ropes and baskets.



actual size: 39 mm

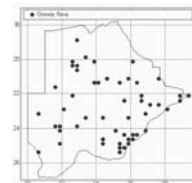
***Grewia flava* DC.**

maphokwe, monabo, moreswe, moretlwa, moseme, ntewa, phomphokwe; brandybush, raisin tree, velvet raisin, wild currant, wild plum

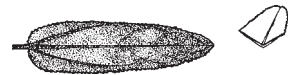
This is a multi-stemmed shrub. It has greyish green leaves. The species flowers in October. The fruit is usually two-lobed.

The fruit has a high sugar content and although not very fleshy, is eaten fresh or dried. The fruit, like that of *G. bicolor*, is also one of the ingredients of a traditional brew, *khadi*. The bark provides a fibre from which baskets are woven and the frayed ends of the branchlets are used as toothbrushes. The foliage is browsed by livestock and game, particularly during the dry season when other food is scarce.

Branches of *G. flava* are used to make baskets; very thin branches are used to make brooms. The inner bark is used to weave baskets. Pegs made from the wood of this species are put upright onto the roofs or driven into the ground to ward off lightning. According to Roodt (1998), it is also used in death rites by the Bakgalagadi tribe, where a piece of the inner bark is tied to the right arm of the dead man to ensure a type of spiritual bond with his children. The same is done to each of his children in sequence from the oldest to the youngest.



actual size: 54 mm

***Grewia flavescens* Juss. sensu lato**

mokankele, motsotsojana, motsotsojane, mpuzu; donkey berry, river rough-leaved raisin bush, rough-leaved raisin bush, sandpaper raisin

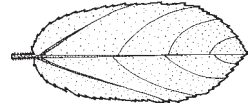
This is a scrambling multi-stemmed shrub. Older stems are characteristically four-angled (rectangular). Leaves are covered with harsh hairs (hence giving the feel of sandpaper) and have



irregularly toothed margins. The fruit is 2–4-lobed and yellowish brown when ripe.

The leaves are browsed by game and livestock. The wood is very tough and is commonly used to make walking sticks and bows.

actual size: 63 mm



***Grewia retinervis* Burret**

mokankele, mokgomphatha, mopundu, mpuzu; arib, false sandpaper raisin, Kalahari sand raisin bush, rough-leaved raisin bush

This is a shrub to small, bushy tree. The bark is brownish. Older branches tend to have grooves on two sides. The edible fruit is always single, spherical and is orange-red to reddish brown when ripe.

The berries are a favourite with humans and can be eaten either raw or dried. An alcoholic beverage can be prepared from the fruit because of the high sugar content. The angular stems are used for spear shafts.

Grewia species are fairly well distributed throughout Botswana.



actual size: 46 mm

