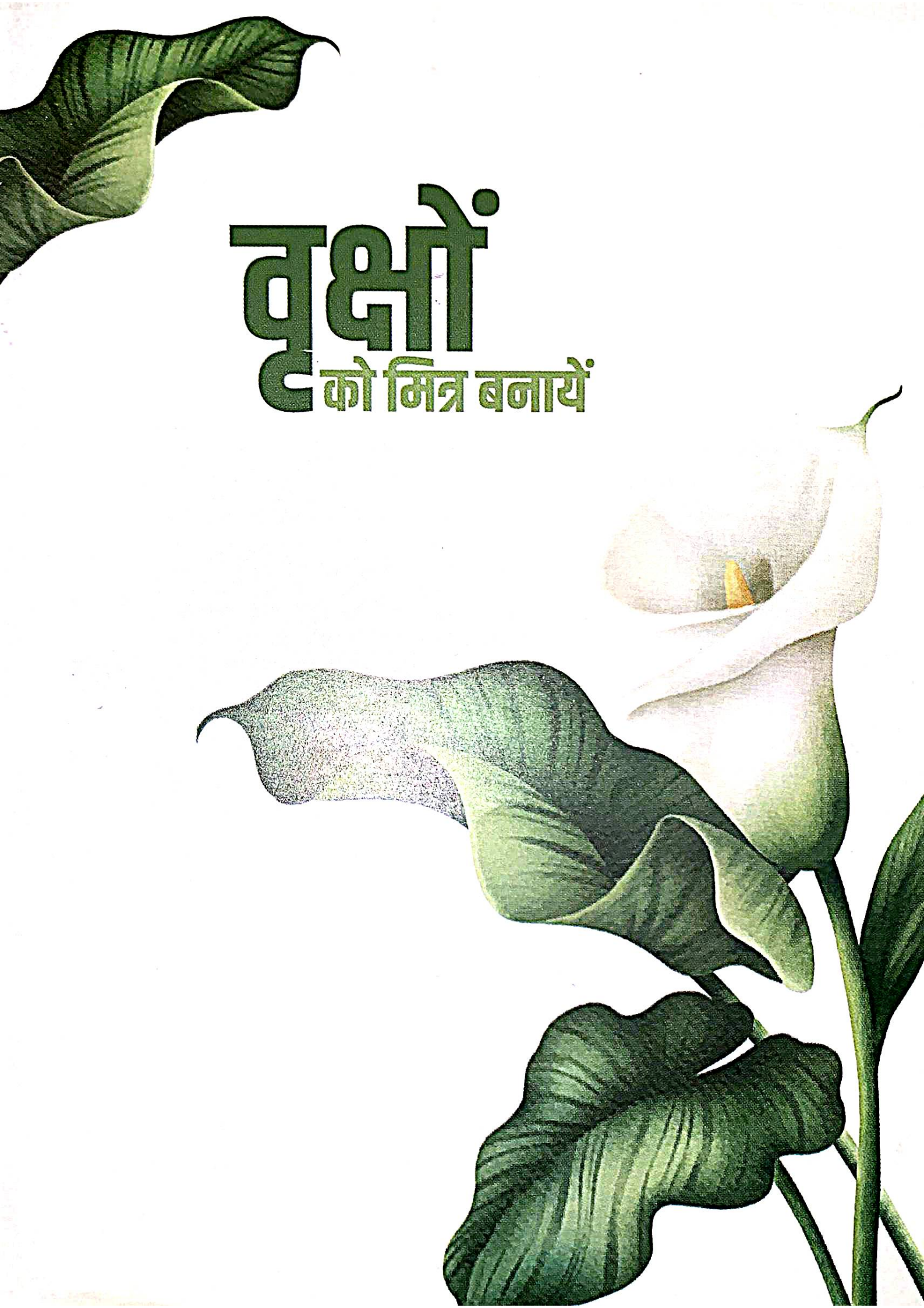
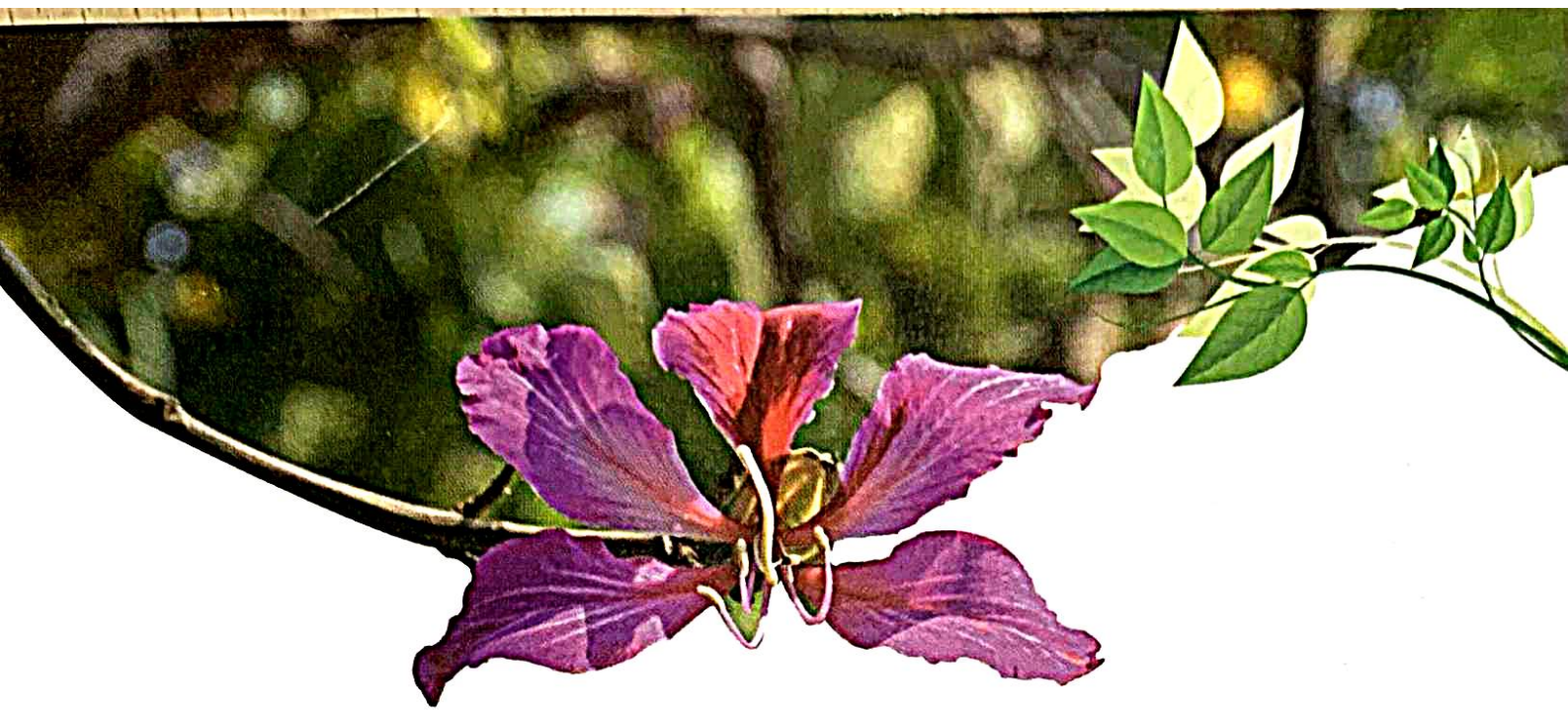




वृक्षों को मित्र बनायें

वृक्षों को मित्र बनायें





वृक्षों को मित्र बनायें

विगत वर्षों में बिहार राज्य के आमजनों में वृक्षों के प्रति जागरूकता में अभिवृद्धि हुई है। राज्य सरकार के जल-जीवन-हरियाली कार्यक्रम के अन्तर्गत बड़े पैमाने पर प्राकृतिक वनों, तथा प्राकृतिक वनों के बाहर काफी संख्या में वृक्ष लगाये गये हैं।

वर्तमान परिपेक्ष्य में यह स्पष्ट हो गया है कि वृक्षों के प्रत्यक्ष सानिध्य में ही हम स्वस्थ रूप से जीवित रह सकते हैं। इसके लिए बड़े पैमाने पर वृक्षारोपण किया जा रहा है।

वृक्षों की सुरक्षा हमारे सुरक्षित जीवन के लिए अत्यावश्यक है। वृक्षों की सुरक्षा सुनिश्चित करने के लिए वृक्षों के बारे में जानना आवश्यक है। वृक्षों से हमें प्राणवायु ऑक्सीजन प्राप्त होने के साथ, औषधि, भोज्य पदार्थ एवं मनोरंजन आदि प्राप्त होते हैं।

विशेष रूप से बच्चों में वृक्षों के बारे में वैज्ञानिक जानकारी यथा पत्तियों का विन्यास, फूलों की संरचना, वृक्षों की प्रजाति, उनकी पहचान के तत्व, उनसे लाभ का ज्ञान होना आवश्यक है।

प्रत्येक वृक्ष की अलग-अलग विशेषताएँ होती हैं, उनके बारे में जानकारी होने पर उन वृक्षों में बच्चों की रुचि बढ़ेगी जो वृक्षों की सुरक्षा में सहायक होगा।

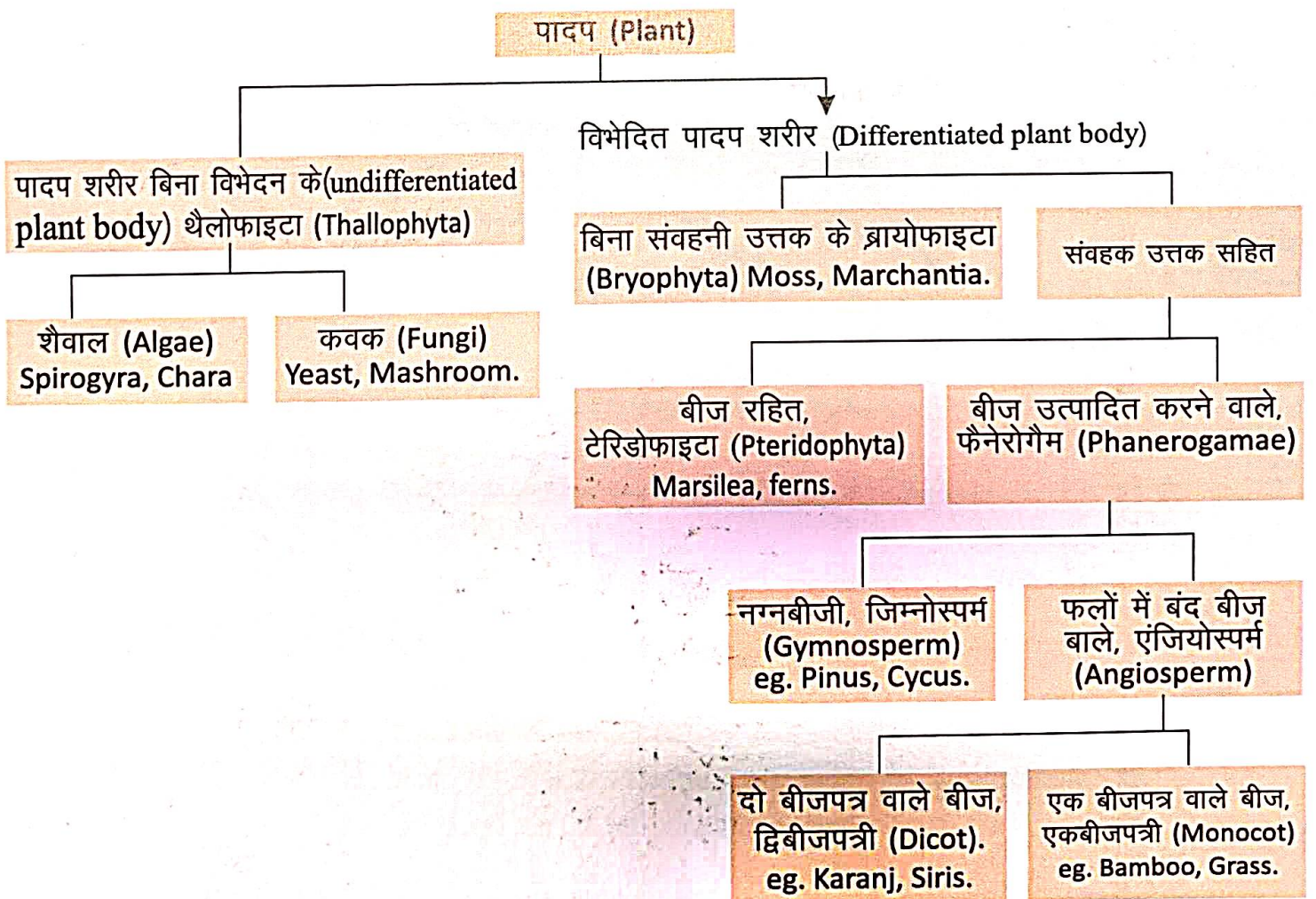
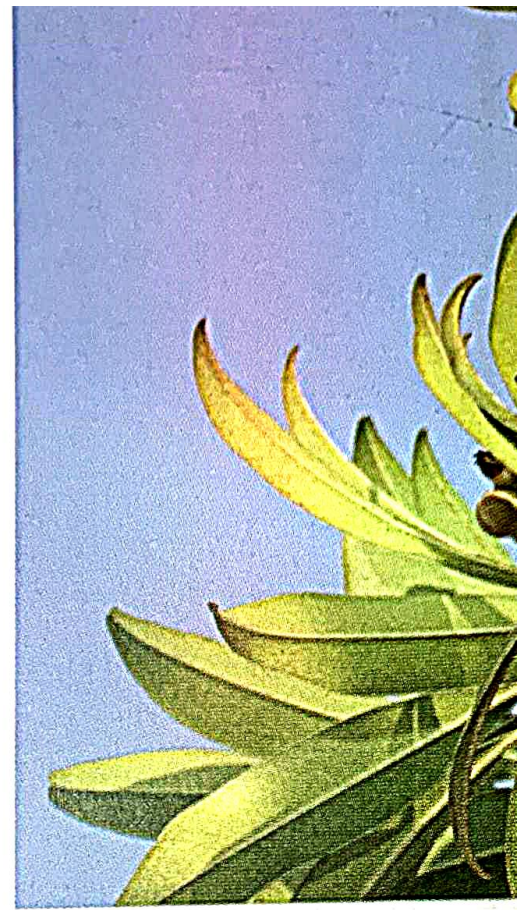
इस योजना का मुख्य उद्देश्य विद्यालयों में पढ़ने वाले बच्चों में वृक्षों को पहचानने के तरीकों उनके जीवन चक्र तथा प्राकृतिक अधिवास के क्षेत्रों से अवगत कराना है, जिससे बच्चों में वृक्षों एवं अन्य जीवों का सर्वेक्षण करने की क्षमता का विकास होगा।

राज्य के कोने-कोने में वृक्षारोपण के कारण वृक्षों के संरक्षण में लोगों की जागरूकता तो बढ़ी है, किन्तु विभिन्न प्रकार के वृक्षों की प्रजातियों के बारे में उनकी जानकारी सीमित है। वृक्षों के प्रति लोगों की संवेदना तभी बढ़ेगी जब उन्हें आस-पास के विभिन्न वृक्षों के बारे में विशिष्ट जानकारी प्राप्त होगी—यथा पत्तियाँ किस प्रकार की हैं, वृक्षों के छाल, फल, फूल इत्यादि विशिष्टताएँ कैसी हैं, वृक्ष का नाम क्या है, इसका मूल स्थल (Native) कहाँ है इत्यादि।

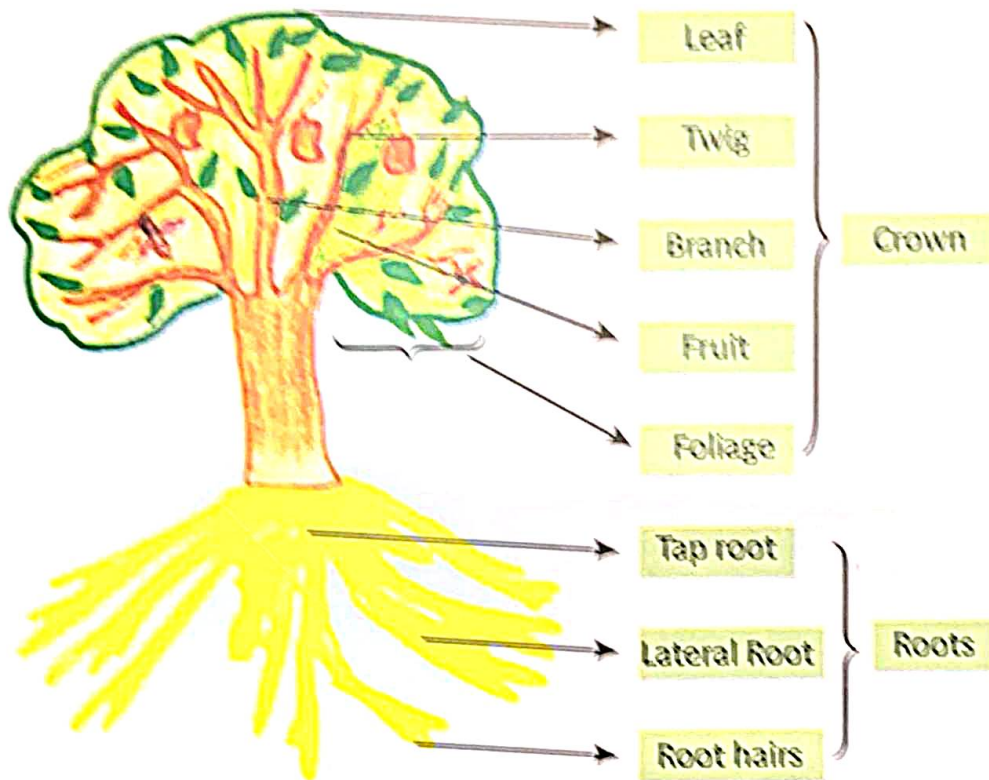


पौधों का वर्गीकरण

हम सभी जब अपने चारों ओर के पौधों का अवलोकन करते हैं तो हम देखते हैं कि कुछ पौधे छोटे होते हैं और कुछ विशालकाय, जबकि कुछ धास की तरह दिखाई देते हैं। कुछ पौधों की पत्तियाँ हरी होती हैं जबकि कुछ की पत्तियाँ लालिमायुक्त होती हैं। कुछ पौधों के फूल बड़े एवं कुछ के मध्यम या छोटे आकार के होते हैं। इसके रंगों में भी बहुत विभिन्नताएं पाई जाती हैं जबकि कुछ पौधे पुष्प रहित होते हैं। विभिन्नताओं को देखते हुए हमारे वैज्ञानिकों ने सारे पौधों का एक व्यवस्थित तरीके से वर्गीकरण करने का प्रयास किया है। सभी जीवधारियों को उनकी शारीरिक संरचना और कार्य के आधार पर पहचाना जाता है, और उनका वर्गीकरण किया जाता है। राबर्ट व्हिट्टकर (Robert Whittaker, 1969) द्वारा प्रस्तावित वर्गीकरण वर्तमान में उपयोग में है। जिसके अनुसार सभी जीवों को पाँच जगत (Kingdom) में विभाजित किया जाता है यथा—मोनेरा, (Monera) प्रोटिस्टा, फंजाई, प्लांटी और एनीमलिया। वनस्पतियों का वर्गीकरण उनके कोशिकीय संरचना, पोषण के स्रोत और तरीके तथा शारीरिक संगठन पर आधारित है। वनस्पति जगत में कोशिका भित्ति वाले बहुकोशिक यूकैरियोटीक जीव आते हैं। ये स्वपोषी होते हैं और प्रकाश-संश्लेषण के लिए क्लोरोफिल का प्रयोग करते हैं।



TREE

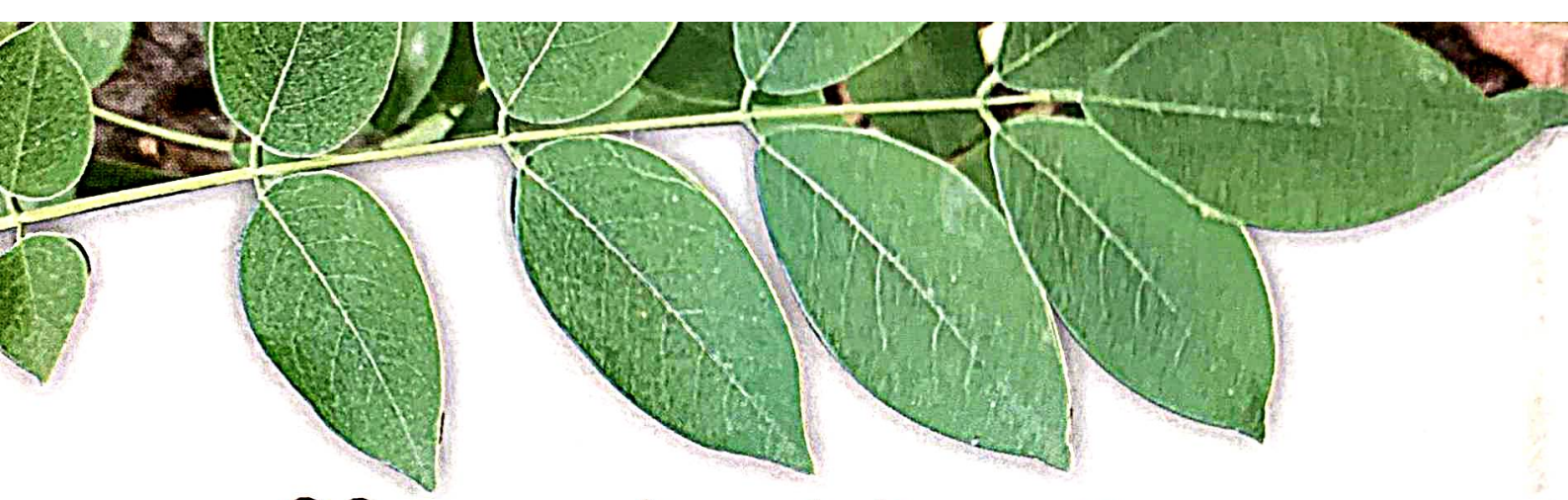


वृक्ष और उसके भाग

वृक्ष के उपरी भाग जिसमें शाखायें होती हैं वे पत्तियों के साथ मिलकर क्राउन (Crown) बनाते हैं। क्राउन (Crown) की संरचना अनेक प्रकार की होती है, जो वृक्ष को पहचानने में बहुत सहायक होती है।

- Cylindrical – In Phoenix (Date palm), Cocos (Coconut), and Borassus (Toddy tree).
- Conical – In Chit, Deodar and some other conifers.
- Spherical – In Mango, Neem, Imli, Mahua etc.
- Flat topped – In *Albizia chinensis* (Black siris)





विभिन्न आधारों पर पौधों का वर्गीकरण

1. स्वभाव (Habit) के आधार पर पौधों को तीन श्रेणियों में वर्गीकृत किया जाता है;
(क) शाक (Herb) इसका तना बहुत कोमल और हरा होता है जिसकी ऊँचाई आमतौर पर एक (01) मीटर से कम होती है।
(ख) झाड़ी (Shrub) कुछ पौधों में शाखाएँ तने के आधार के समीप से निकलती हैं। तना कठोर होता है परंतु अधिक मोटा नहीं होता। इन्हें झाड़ी कहते हैं और इसकी ऊँचाई आमतौर पर छः (6) मीटर से कम होती है।
(ग) वृक्ष (Tree) कुछ पौधे बहुत ऊँचे होते हैं तथा इनके तने सुदृढ़ होते हैं। इनमें शाखाएँ भूमि से अधिक ऊँचाई पर तने के ऊपरी भाग से निकलती हैं। इन्हें वृक्ष कहते हैं और इसकी ऊँचाई आमतौर पर छः (6) मीटर से अधिक होती है।
2. बीजपत्र (Cotyledon) के आधार पर पौधों को दो वर्गों में बाँटा गया है;
(क) एकबीजपत्री (Monocot) इन पौधों के बीज में केवल एक बीजपत्र होता है। जैसे—घास, ताड़ का पेड़, बांस आदि।
(ख) द्विबीजपत्री (Dicot) इन पौधों के बीज में दो बीजपत्र होते हैं। जैसे—महोगनी, आम, सिरिस, महुआ आदि।
3. पुष्प (Flower) की उपस्थिति के आधार पर पौधों को दो श्रेणियों में वर्गीकृत किया जाता है;
(क) जिम्नोस्पर्म (जिम्नोस — अनावृत, स्पर्म — बीज)—(Gymnosperm) ऐसे पौधे हैं; जिनमें बीजांड अंडाशय भित्ति से ढके हुए नहीं होते हैं और ये निषेचन से पूर्व तथा बाद में भी अनावृत ही रहते हैं। जैसे—पाइन, स्प्रूस, फर आदि।
(ख) पुष्पीपादप (Angiosperm) पुष्पी पादपों अथवा एंजियोस्पर्म में परागकण तथा बीजांड विशिष्ट रचना के रूप में विकसित होते हैं जिसे पुष्प कहते हैं। जबकि जिम्नोस्पर्म में बीजांड अनावृत होते हैं। एंजियोस्पर्म पुष्पी पादप हैं, जिसमें बीज फलों के भीतर होते हैं। जैसे—शीशम, बेल, पीपल, जामुन आदि।
4. पत्तियों के झरने का प्रतिमान (Leaf Shedding Pattern) पत्तों के झड़ने के तरीके के आधार पर पौधों को दो वर्गों में बाँटा गया है;
(क) सदाबहार (Evergreen)—एक बारहमासी पौधा जो कभी भी पूरी तरह से हरे पत्ते के बिना नहीं होता है, पुराने पत्ते एक नया सेट दिखाई देने तक बने रहते हैं। जैसे—आम, देवदार, चीड़, चंपा आदि।
(ख) पर्णपाती (Deciduous)—एक बारहमासी पौधे जो एक वर्ष के दौरान कुछ समय के लिए पत्ते रहित रहते हैं। जैसे—नीम, सेमल, अर्जुन, शिशम आदि।



पत्ती के प्रकार (Types of Leaves)

जब पत्ती की स्तरिका अछिन्न होती है अथवा कटी हुई लेकिन कटाव मध्यशिरा तक नहीं पहुँच पाता, तब वह सरल पत्ती कहलाती है। जब स्तरिका का कटाव मध्य शिरा तक पहुँचे और बहुत पत्राकों में टूट जाए तो ऐसी पत्ती को संयुक्त पत्ती कहते हैं। सरल तथा संयुक्त पत्तियों, दोनों में पर्णवृत्त के कक्ष में कली होती है। लेकिन संयुक्त पत्ती के पत्राकों के कक्ष में कली नहीं होती। संयुक्त पत्तियाँ दो प्रकार की होती हैं। पिच्छाकार संयुक्त पत्तियों में बहुत से पत्राक एक ही अक्ष (Axis) जो मध्यशिरा के रूप में होती है, पर स्थित होते हैं। इसका उदाहरण नीम है। हस्ताकार संयुक्त पत्तियों में पत्राक एक ही बिंदु अर्थात् पर्णवृत्त की चोटी से जुड़े रहते हैं। उदाहरणतः सिल्क कॉटन वृक्ष।

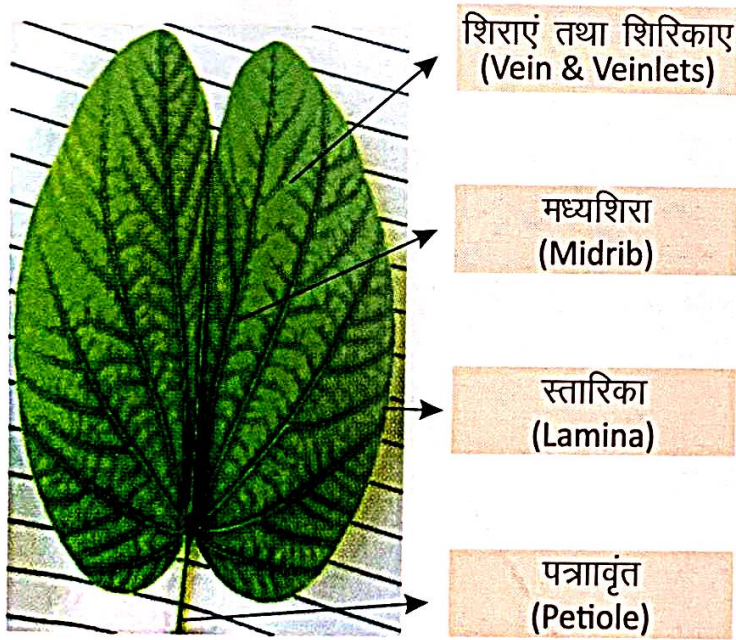
पत्तियाँ दो प्रकार की होती हैं

सरल पत्ती (Simple Leaf)

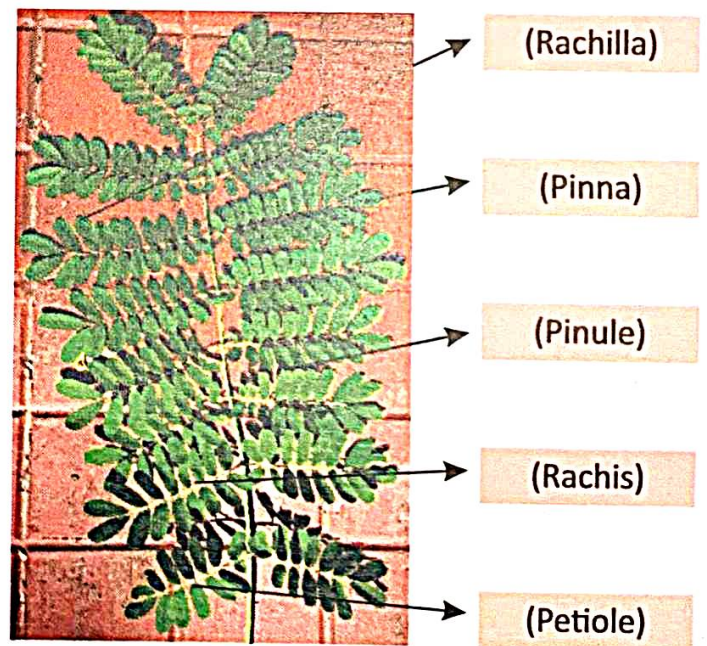
जब पत्ती की स्तरिका (Lamina) बिना कटी हुई हो अथवा कटी हुई लेकिन कटाव मध्यशिरा (Midrib) तक नहीं पहुँच पाता, तब वह सरल पत्ती कहलाती है।

संयुक्त पत्ती (Compound Leaf)

जब स्तरिका (Lamina) का कटाव मध्यशिरा (Midrib) तक पहुँचे और बहुत पत्राकों में टूट जाए तो ऐसी पत्ती को संयुक्त पत्ती कहते हैं।



सरल पत्ती (Simple Leaf, Kachnar)

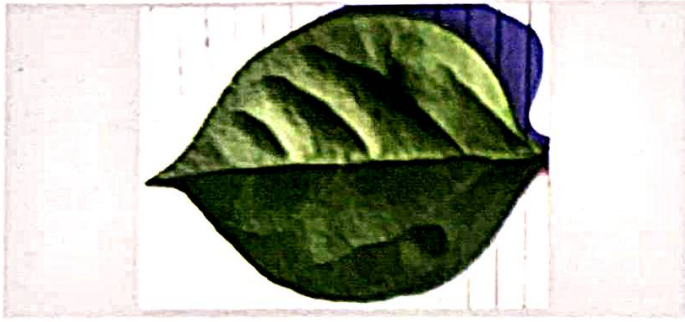


संयुक्त पत्ती (Compound Leaf, Gulmohar)

संयुक्त पत्तियाँ दो प्रकार की होती हैं:

हस्ताकार संयुक्त पत्तिया (Palmately Compound Leaf):- हस्ताकार संयुक्त पत्तियों में पत्राक एक ही बिंदु अर्थात् पर्णवृत्त की चोटी से जुड़े रहते हैं। उदाहरणतः सिल्क कॉटन वृक्ष।

पिच्छाकार संयुक्त पत्तिया (Pinnately Compound Leaf):- पिच्छाकार संयुक्त पत्तियों में बहुत से पत्राक एक ही अक्ष (Axis) जो मध्यशिरा के रूप में होती है, पर स्थित होते हैं। इसका उदाहरण नीम है।



Term:

simple

Description

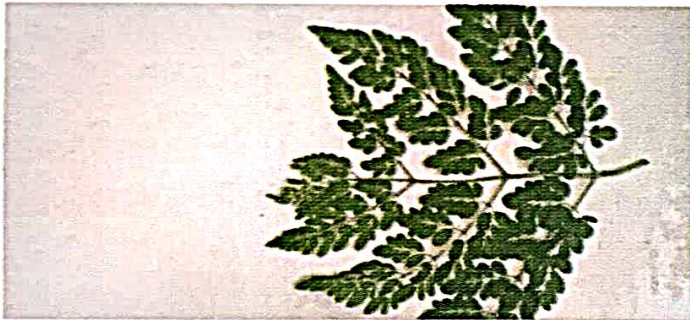
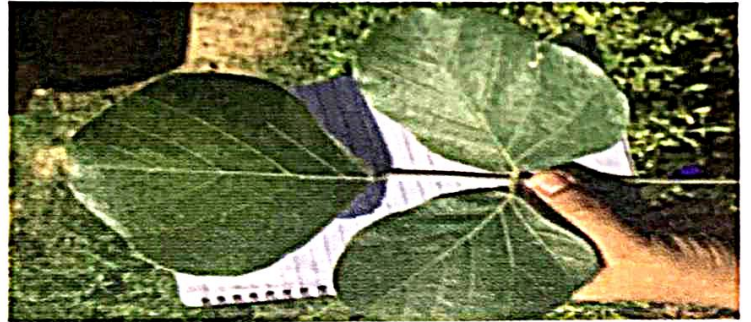
Leaf blade in one continuous section, without leaflets (not compound), Baugainvillea.

Term:

Trifoliolate

Description

With three leaflets, Palash.



Term:

tripinnate

Description

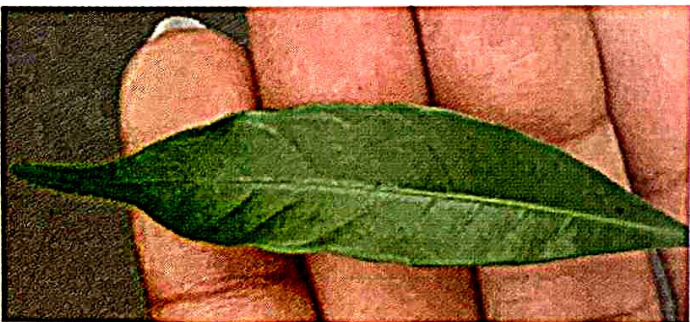
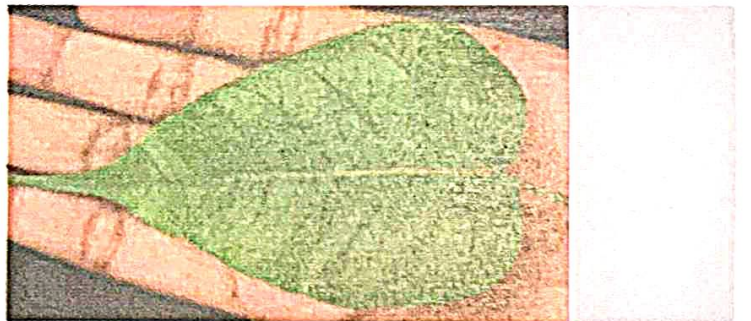
Pinnately compound in which each leaflet is itself bipinnate, Moringa.

Term: acicular

Refers principally to : entire leaf

Description

Slender and pointed, needle-like, Peepal.



Term: acuminate

Refers principally to : leaf tip

Description:

Tapering to a long point in a concave manner, Chandani.

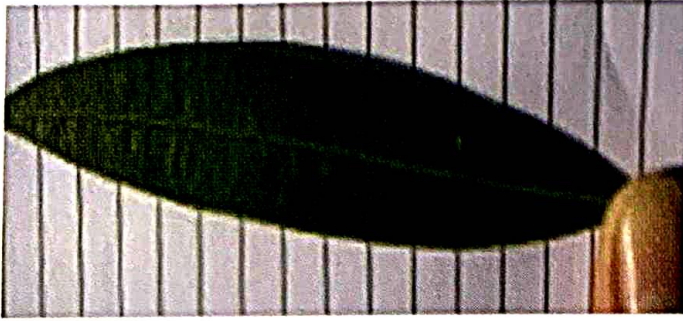


Term: acute

Refers principally to : leaf tip or base

Description

Pointed, having a short sharp apex angled less than 90°, Mango,



Term: lanceolate

Refers principally to : entire leaf

Description

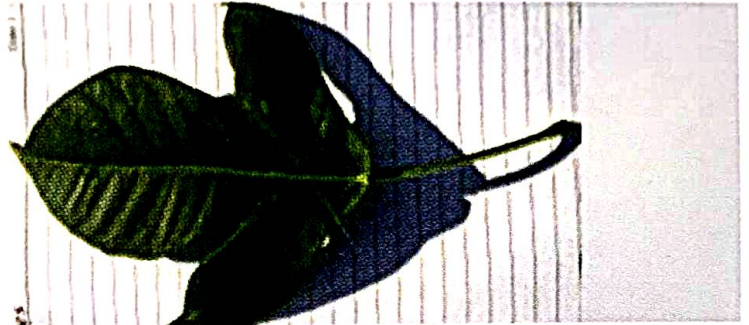
Long, wider in the middle, shaped like a lance tip, Bottle brush.

Term: lobed

Refers principally to : entire leaf

Description

Being divided by clefts, may be pinnately lobed or palmately lobed.



Term: mucronate

Refers principally to : leaf tip

Description

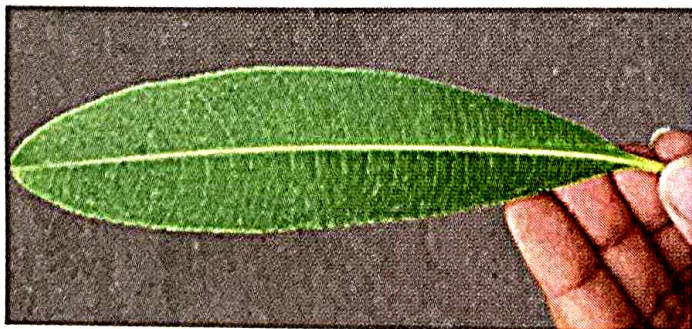
Ending abruptly in a small sharp point as a continuation of the midrib, Frangipani (Plumeria).

Term: Multifid

Refers principally to : Entire leaf

Description

Cleft into many parts or lobes, Castor.



Term: Oblanceolate

Refers principally to : Entire leaf

Description

Much longer than wide and with the widest portion near the tip, reversed lanceolate, Chitwan

Term: Oblique

Refers principally to : Leaf base

Description

Asymmetrical leaf base, with one side lower than the other, Neem.





Term: apiculate

Refers principally to : leaf tip

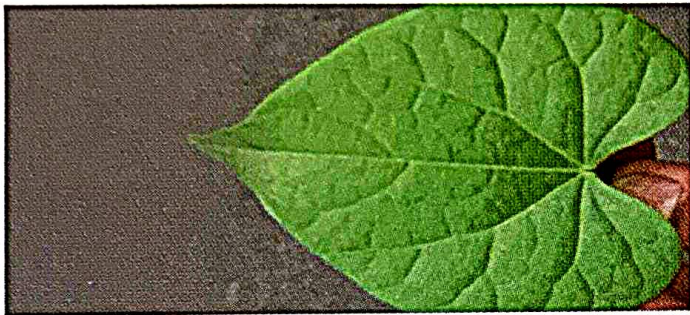
Description:

Tapering and ending in a short, slender point, Dalbergia.

Term: aristate
Refers principally to : leaf tip

Description

Ending in a stiff, bristle-like point, Date palm.



Term: cordate, cordiform

Refers principally to : entire leaf

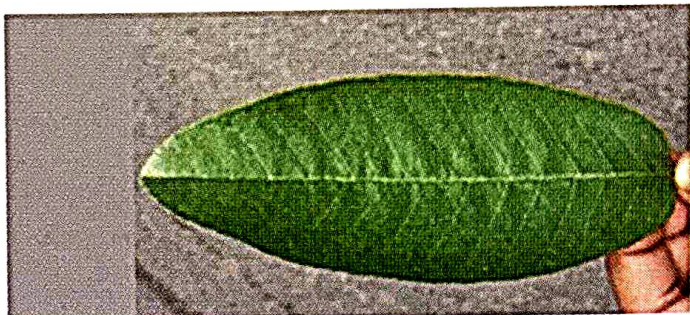
Description

Heart-shaped, with the petiole or stem attached to the notch, Betal nut.

Term: deltoid, deltate
Refers principally to : entire leaf

Description

Shaped like Greek letter Delta, triangular, stem attaches to side, Peepal.



Term: elliptic

Refers principally to : entire leaf

Description

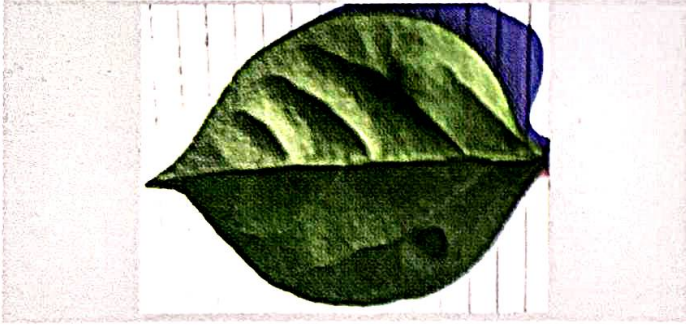
Shaped like an ellipse, with a short or no point, Guava.

Term: emarginate
Refers principally to : leaf tip

Description

Slightly indented at the tip, Bauhinia.





Term:

simple

Description

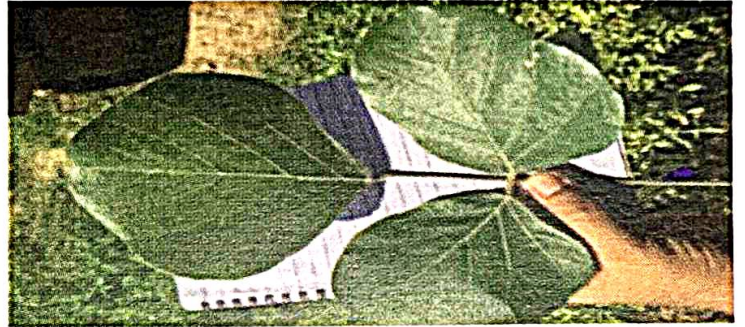
Leaf blade in one continuous section, without leaflets (not compound), Baugainvillea.

Term:

Trifoliolate

Description

With three leaflets, Palash.



Term:

tripinnate

Description

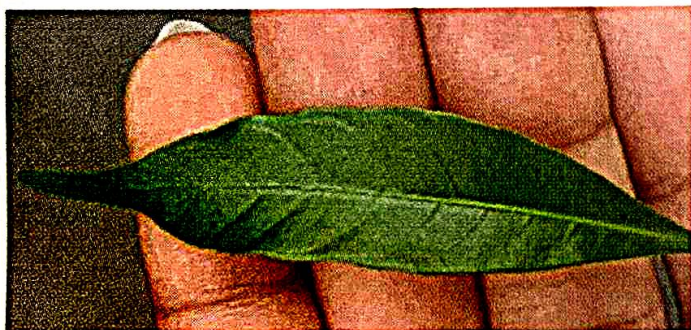
Pinnately compound in which each leaflet is itself bipinnate, Moringa.

Term: acicular

Refers principally to : entire leaf

Description

Slender and pointed, needle-like, Peepal.



Term: acuminate

Refers principally to : leaf tip

Description:

Tapering to a long point in a concave manner, Chandani.



Term: acute

Refers principally to : leaf tip or base

Description

Pointed, having a short sharp apex angled less than 90°, Mango,

वनस्पतियों की पहचान हेतु मार्गदर्शिका

(Field Guide for Plant Identification)

वैज्ञानिक रीति से पौधों की पहचान का मुख्य आधार उसके पुष्पों की संरचना होती है किन्तु भ्रमण में प्रायः सभी वृक्षों में फूल नहीं दिखते हैं क्योंकि उनका पुष्पित होने का समय निश्चित होता है। इसी लिए इस मार्गदर्शिका में वृक्षों को पहचानने के लिए पत्तियों का विन्यास, उनके प्रकार तथा आकार को आधार बनाया गया है। वृक्षों के Crown के आकार से भी उनकी पहचान में मदद मिलती है।

इस मार्ग दर्शिका में विभिन्न पौधे, जो प्रायः हमारे आस-पास पाये जाते हैं, की पहचान करने की सरल विधि बतायी गयी है, जिसे वनस्पति वैज्ञानिक भ्रमण में प्रयोग करते हैं।



वृक्षों का महत्व (Importance of a tree)



वृक्ष की पहचान का महत्व (Importance of tree identification)



पुष्पीपादप (ANGIOSPERMS)

यह शब्द दो ग्रीक शब्दों से बना है: एंजियो का अर्थ है ढका हुआ और स्पर्म का अर्थ है बीज। इन्हें पुष्पीय पौधे भी कहते हैं। बीज एक अंडाशय के अंदर विकसित होते हैं जो एक फल बनने के लिए संशोधित होते हैं। बीजों में पादप भ्रूणों की संरचनाएँ होती हैं जिन्हें बीजपत्र कहते हैं। बीजपत्रों को बीज के पत्ते कहे जाते हैं क्योंकि कई मामलों में बीज के अंकुरित होने पर वे निकलते हैं और हरे हो जाते हैं। एंजियोस्पर्म को बीज में मौजूद बीजपत्रों की संख्या के आधार पर दो समूहों में बांटा गया है। एक बीजपत्र वाले बीज वाले पौधे एकबीजपत्री कहलाते हैं। दो बीजपत्रों वाले बीज वाले पौधे द्विबीजपत्री कहलाते हैं।

पौधा और उनके भाग

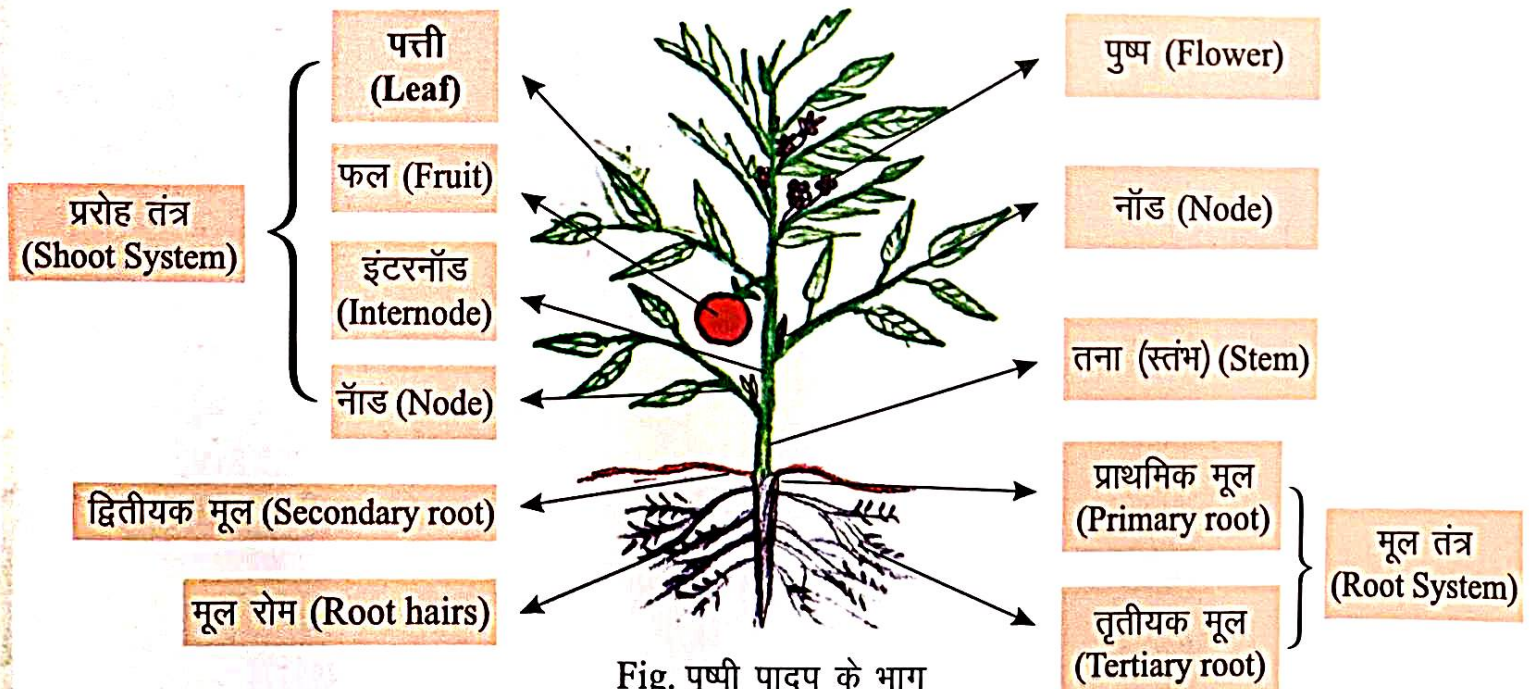


Fig. पुष्पी पादप के भाग



पत्तियों के पर्ण विन्यास, शिरा विन्यास तथा प्रकार

पत्ती (Leaf)

पत्ती पार्श्वीय, (Lateral) चपटी संरचना होती है जो तने पर लगी रहती है। यह गाँठ पर होती है और इसके कक्ष में कली होती है। एक सामान्य पत्ती के तीन भाग होते हैं— पर्णधर (Leaf base), पर्णवृंत (Petiole) तथा स्तरिका (Lamina)। पर्णवृंत (Petiole) पत्ती को इस तरह सजाता है जिससे कि इसे सूर्य का अधिकतम प्रकाश मिल सके।

पर्णविन्यास (Phyllotaxy)

तने अथवा शाखा पर पत्तियों के लगे रहने के क्रम को पर्णविन्यास कहते हैं। यह प्रायः तीन प्रकार का होता है— एकांतर (Alternate), सम्मुख (Opposite) तथा चक्करदार (Whorled)। एकांतर प्रकार के पर्णविन्यास में एक अकेली पत्ती प्रत्येक गाँठ पर एकांतर रूप में लगी रहती है। उदाहरणतः गुड़हल, सरसों, सूर्यमुखी। सम्मुख प्रकार के पर्णविन्यास में प्रत्येक गाँठ पर एक जोड़ी पत्ती निकलती है और एक दूसरे के सम्मुख होती है। इसका उदाहरण है केलोट्रोपिस, आकद्ध, और अमरुद। यदि एक ही गाँठ पर दो से अधिक पत्तियाँ निकलती हैं और वे उसके चारों ओर एक चक्कर सा बनाती हैं तो उसे चक्करदार पर्णविन्यास कहते हैं जैसे एल्सटोनिआ, डेविल ट्री।



Alternate,
(China rose)



Opposite,
(Quasqualis)



Ternate
(Nerium indicum)



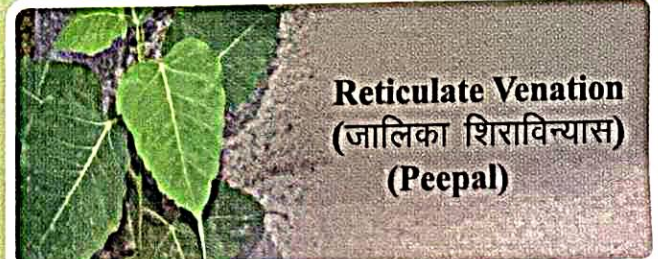
Whorled,
(Scholar tree)

शिराविन्यास (Venation)

पत्ती पर शिरा तथा शिरिकाओं के विन्यास को शिराविन्यास कहते हैं। जब शिरिकाएँ स्तरिका पर एक जाल-सा बनाती हैं तब उसे जालिका शिराविन्यास कहते हैं। यह प्रायः द्विबीजपत्री पौधों में मिलता है। जब शिरिकाएँ समानांतर होती हैं उसे समानांतर शिराविन्यास कहते हैं। यह प्रायः एक बीजपत्री पौधों में मिलता है।



Parallel Venation
(समानांतर शिराविन्यास)
(Bamboo)



Reticulate Venation
(जालिका शिराविन्यास)
(Peepal)

विभिन्न वनस्पतियों की पत्तियों की विशेषताएँ

विभिन्न पौधों में पत्तियों की स्तारिका (Lamina) की आकृति, सिरे, सतह तथा कटाव में भिन्नता होती है। प्रत्येक वृक्ष की पत्तियाँ विभिन्न आकर-प्रकार की होती हैं। यह वृक्षों की पहचान करने का एक बहुत आसान तरीका है।



Term:
bipinnate

Description
Pinnately-compound; twice pinnate, Gulmohar.

Term:
imparipinnate

Description
An odd number of leaflets, pinnate with a terminal leaflet (the opposite of paripinnate), Rose plant.



Term:
paripinnate

Description
Pinnate with an even number of leaflets, lacking a terminal leaflet (the opposite of imparipinnate), Gulmohar.



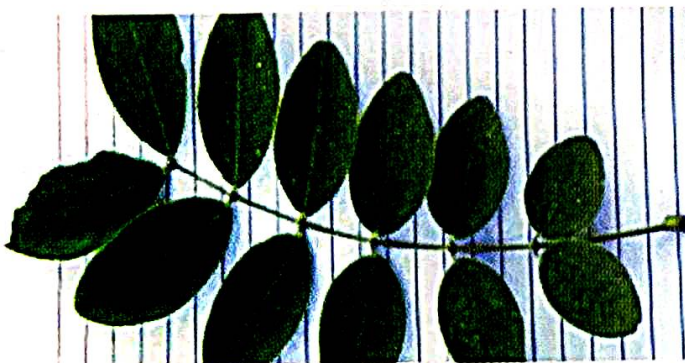
Term:
palmately compound

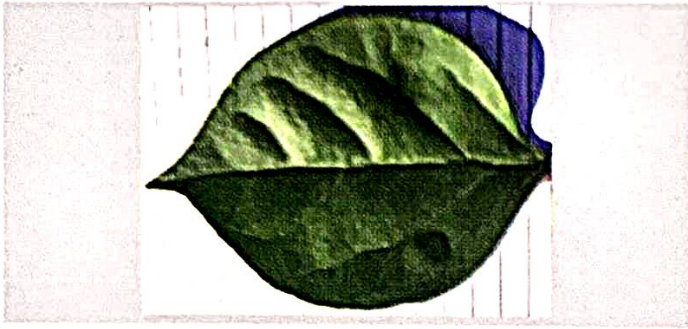
Description
All leaflets radiate from one point, Semal tree.



Term:
unipinnate

Description
Having two rows of leaflets on opposite sides of a central axis, see imparipinnate and paripinnate, Amaltash.





Term:

simple

Description

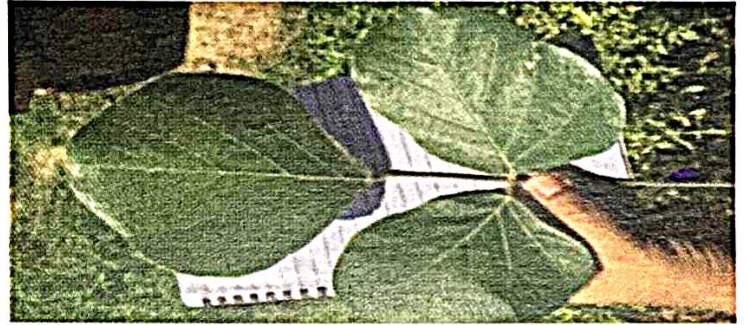
Leaf blade in one continuous section, without leaflets (not compound), Baugainvillea.

Term:

Trifoliate

Description

With three leaflets, Palash.



Term:

tripinnate

Description

Pinnately compound in which each leaflet is itself bipinnate, Moringa.

Term: acicular

Refers principally to : entire leaf

Description

Slender and pointed, needle-like, Peepal.

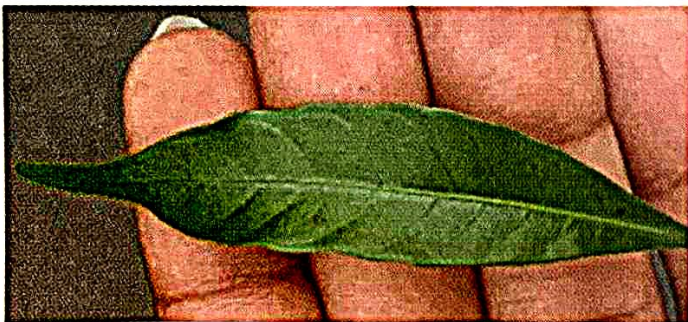


Term: acuminate

Refers principally to : leaf tip

Description:

Tapering to a long point in a concave manner, Chandani.



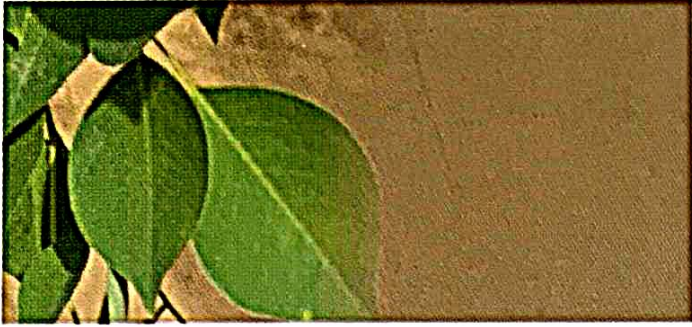
Term: acute

Refers principally to : leaf tip or base

Description

Pointed, having a short sharp apex angled less than 90°, Mango,





Term: apiculate

Refers principally to : leaf tip

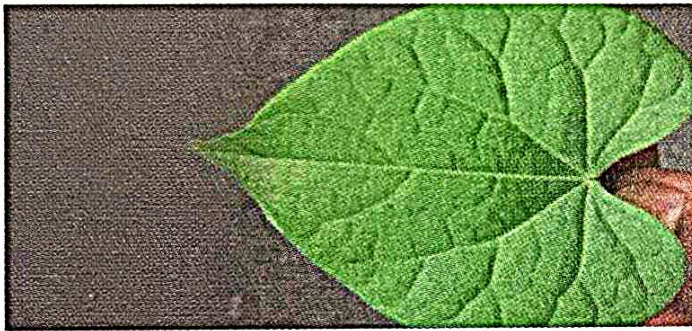
Description:

Tapering and ending in a short, slender point, Dalbergia.

Term: aristate
Refers principally to : leaf tip

Description

Ending in a stiff, bristle-like point, Date palm.



Term: cordate, cordiform

Refers principally to : entire leaf

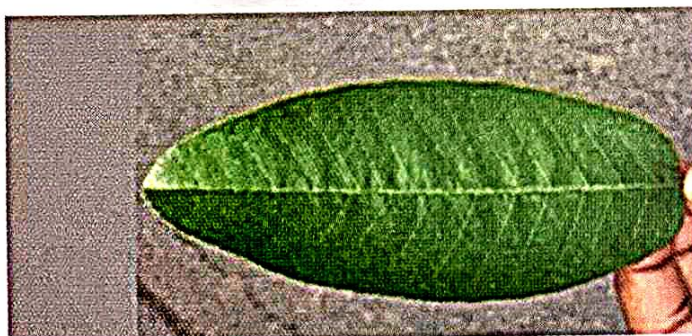
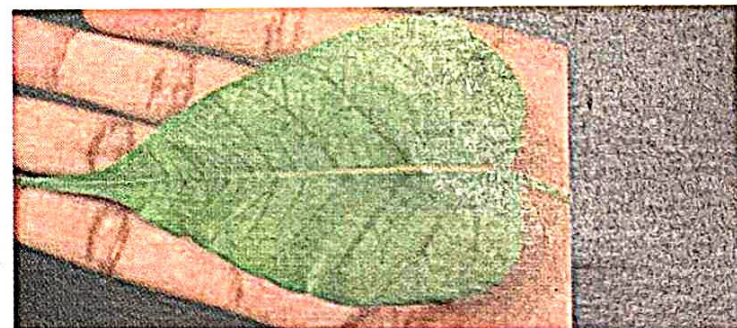
Description

Heart-shaped, with the petiole or stem attached to the notch, Betal nut.

Term: deltoid, deltate
Refers principally to : entire leaf

Description

Shaped like Greek letter Delta, triangular, stem attaches to side, Peepal.



Term: elliptic

Refers principally to : entire leaf

Description

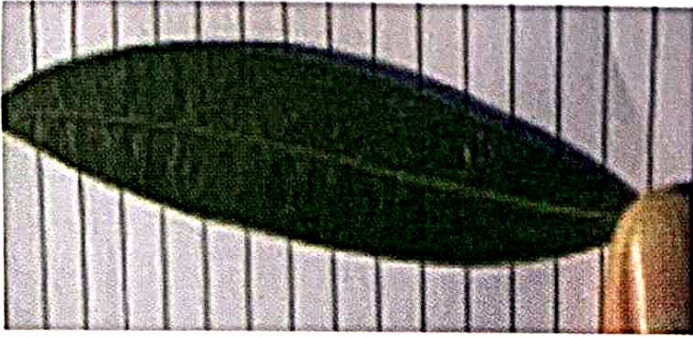
Shaped like an ellipse, with a short or no point, Guava.

Term: emarginate
Refers principally to : leaf tip

Description

Slightly indented at the tip, Bauhinia.





Term: lanceolate

Refers principally to : entire leaf

Description

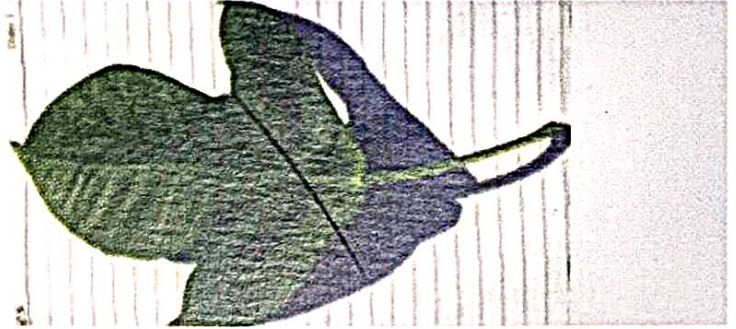
Long, wider in the middle, shaped like a lance tip, Bottle brush.

Term: lobed

Refers principally to : entire leaf

Description

Being divided by clefts, may be pinnately lobed or palmately lobed.



Term: mucronate

Refers principally to : leaf tip

Description

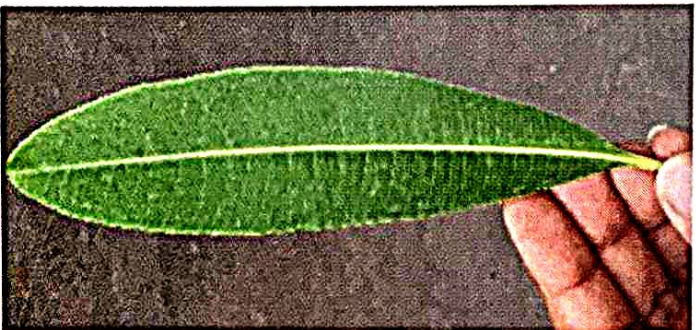
Ending abruptly in a small sharp point as a continuation of the midrib, Frangipani (Plumeria).

Term: Multifid

Refers principally to : Entire leaf

Description

Cleft into many parts or lobes, Castor.



Term: Oblanceolate

Refers principally to : Entire leaf

Description

Much longer than wide and with the widest portion near the tip, reversed lanceolate, Chitwan

Term: Oblique

Refers principally to : Leaf base

Description

Asymmetrical leaf base, with one side lower than the other, Neem.





Term: Ovate

Refers principally to : Entire leaf

Description

Egg-shaped, with a tapering point and the widest portion near the petiole, China rose.

Term: palmate

Refers principally to : entire leaf

Description

Palm-shaped, i.e., with lobes or leaflets stemming from the leaf base, Semal.



Term: Palmatifid

Refers principally to : Entire leaf

Description

Palm-shaped, having lobes with incisions that extend less than half-way toward the petiole, Kanak champa.



Term: Palmatipartite

Refers principally to : Entire leaf

Description

Having palmate lobes with incisions that extend over half-way toward the petiole, Papaya.



Term: Peltate

Refers principally to : Stem attachment

Description

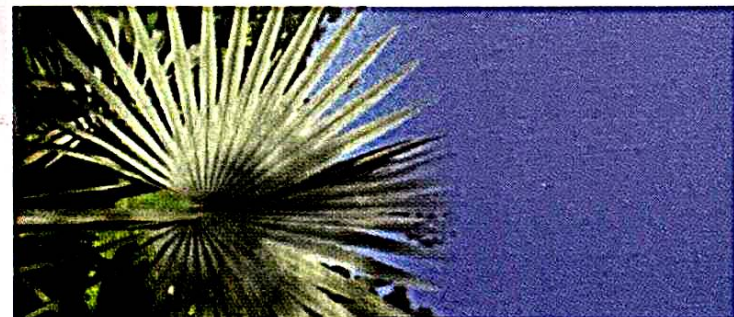
A round leaf where the petiole attaches near the center, Water lily, Lotus.

Term: Plicate

Refers principally to : 3-d shape

Description

Folded into pleats, usually lengthwise, serving the function of stiffening a large leaf, Palmyra palm.





Term: Sinuate

Refers principally to : 3-d shape

Description

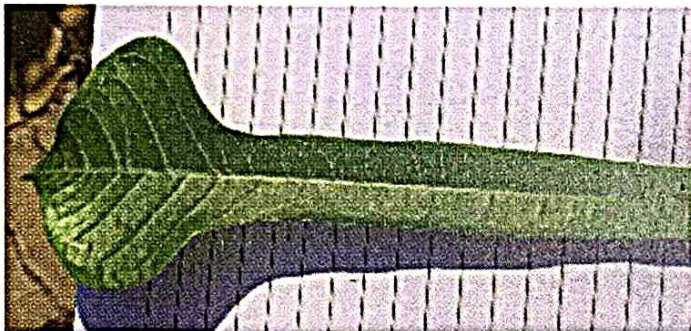
Circularly-lobed kind of leaves, *Urena sinuata*.

Term: Sagittate

Refers principally to : Entire leaf

Description

Arrowhead-shaped with the lower lobes folded, or curled downward, *Alocasia*.



Term: Spatulate

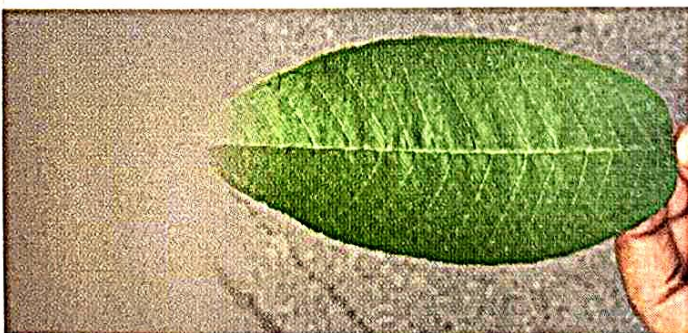
Refers principally to : Entire leaf

Description

Spoon-shaped; having a broad flat end which tapers to the base, *Calendula* and *Drosera*.

पत्तियों के किनारे (Margin)

पत्तियों के किनारे भी प्रायः पौधे की पहचान में सहायक होते हैं।



Term: Entire

Description

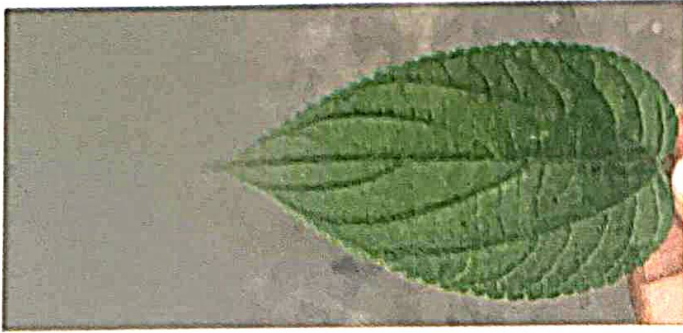
Even; with a smooth margin; without toothing, *Guava*, *Mango*.

Term: Serrate

Description

Saw-toothed; with asymmetrical teeth pointing forward, *China rose*, *Apple tree*.





Term: Serrulate

Description

Finely serrate, Black cherry, Sahtoot.

Term: Sinuate

Description

With deep, wave-like indentations; coarsely crenate, *Urena sinuate*.



Term: Lobate

Description

Indented, with the indentations not reaching the center, Kanak Champa.

Term: Undulate

Description

With a wavy edge, shallower than sinuate, False Ashok.



Term: Spiny or pungent

Description

With stiff, sharp points such as thistles, Argemone.

पत्तियों के बलन (Leaf Folding)

कुछ पौधे की पत्तियाँ विभिन्न रूप से मुड़ी हुयी (Folded) होती हैं। यह उनके पहचान में सहायक होती है।



Term: Involute

Description

rolled upwards (towards the adaxial surface), Cycas species.

Term: Plicate

Description

with parallel folds, Palmyra palm.



Term: Reduplicate

Description

folded downwards, with the surfaces close to parallel, Coconut leaf.

Term: Revolute

Description

Rolled downwards (towards the abaxial surface), Quercus Species.





1. Botanical Name - *Acharas sapota*
(*Manilkara zapota*).

Common Name - Chikoo

Family - SAPOTACEAE.

Habit - Tree

Identifying Characters --

1. Its leaves are glossy, alternate, spirally clustered at the tips of the forked twigs.
2. Flowers are small and bell-like, with 3 brown-hairy outer sepals and 3 inner sepals enclosing the pale-green corolla.
3. The fruit may be nearly round, oblate, oval, ellipsoidal, or conical. When immature it is hard, gummy and very astringent. Though smooth-skinned it is coated with a sandy brown scurf until fully ripe.

2. Botanical Name - *Achyranthes aspera*

Common Name - Chaff-flower, Crocus stuff

Family - AMARANTHACEAE.

Habit - Herb.

Identifying Characters -

1. Leaf blades elliptic, ovate, or broadly ovate to orbiculate.
2. Flowers: tepals 4 or 5, length 3-7 mm; pseudostaminodes with margins fimbriate at apex, often with dorsal scale.



3. Botanical Name - *Adenanthera pavonina*.

Common Name - Red Sandalwood.

Family - MIMOSACEAE.

Habit - Tree.

Identifying Characters --

1. Leaves are compound bipinnate.
2. The small, yellowish flower grows in dense drooping rat-tail flower heads, almost like cat-tail flower-heads.
3. Fruits are curved, hanging, green pods that turn brown, coil up and split open as they ripen to reveal small bright red seeds.



- 4. Botanical Name** - *Adina cordifolia.*
Common Name - Haldu, Karam.
Family - RUBIACEAE.
Habit - Tree.

Identifying Characters --

1. Leaves are simple, oppositely arranged and broadly oval in shape, heart-shaped at the base and pointed at the tip.
2. The flowers may be insignificant individually but are very pretty when they bloom together in balls. They are usually yellow in colour often tinged with a shade of pink.



- 5. Botanical Name** - *Alstonia scholaris.*
Common Name - Scholar Tree, Devil tree, Blackboard Tree.
Family - APOCYNACEAE.
Habit - Tree

Identifying Characters -

1. It is a tall elegant tree with greyish rough bark.
2. Branches are whorled, and so are the leaves.
3. The slightly rounded, leathery, dark green leaves form whorls of 4-7.
4. small, greenish white yet fragrant flowers are present.

- 6. Botanical Name** - *Albizia lebbek*
Common Name - Siris tree, Woman's tongue
Family - MIMOSACEAE.
Habit - Tree

Identifying Characters -

1. Medium to large tree with gray-brown bark.
2. leaves bipinnate, the primary leaflets subopposite, ultimate leaflets opposite.
3. Flowers mimosa-like, cream or yellowish-white and each flower with numerous long stamens.



- 7. Botanical Name** - *Alternanthera sessilis.*
Common Name - Stalkless Joyweed.
Family - AMARANTHACEAE.
Habit - Herb.

Identifying Characters -

1. A much branched prostrate herb, branches often purplish.
2. leaves simple, opposite, somewhat fleshy.
3. flowers small, white, in axillary clusters.



- 8. Botanical Name** - *Amaranthus viridis.*
Common Name - Pigweed, Prince of Wales feather.
Family - AMARANTHACEAE.
Habit - Herb.
Identifying Characters -

1. Leaves are triangular-ovate to narrowly rhombic.
2. Flowers are green, in slender, paniculate spikes.

- 9. Botanical Name** - *Annona squamosa.*
Common Name - Sugar Apple, Custard apple.
Family - ANNONACEAE.
Habit - Tree.
Identifying Characters --

1. The leaves are thin, oblong while the flowers are greenish - yellow.
2. Flowers are oblong, never fully open, drooping stalks, and 3 fleshy outer petals, yellow-green on the outside and pale-yellow inside with a purple or dark-red spot at the base.
3. The avoid or conical fruit, with a purple knobby skin is juicy and creamy - white.



- 10. Botanical Name** - *Artocarpus lacucha.*
Common Name - Lakoocha, Monkey Jack.
Family - MORACEAE.
Habit - Tree
Identifying Characters -

1. Branchlets are 3-6 mm thick, densely covered with stiff pale brown to yellow velvety hairs.
2. Leaves are large, 25-30 cm long, 15-20 cm wide, sometimes pinnately lobed, base wedge-shaped.
3. Flowers are tiny, yellowish, fused into a round flower body.

- 11. Botanical Name** - *Balanites roxburghii*.
Common Name - Desert Date, Egyptian myrobalan.
Family - ZYGOPHYLLACEAE.
Habit - Small Tree.

Identifying Characters --

1. The dark green compound leaves are made up of two leathery leaflets which are variable in size and shape.
2. Greenish stalkless flowers are borne in few-flowered fascicles. Flower buds are ovoid and velvety.
3. Fruit is ellipsoid and green. Ripe fruit is brown or pale brown with a brittle coat enclosing a brown or brown-green sticky pulp and a hard stone seed.



- 12. Botanical Name** - *Bauhinia purpurea*.
Common Name - Purple Orchid Tree, Butterfly tree.
Family - CAESALPINIACEAE.
Habit - Tree.

Identifying Characters --

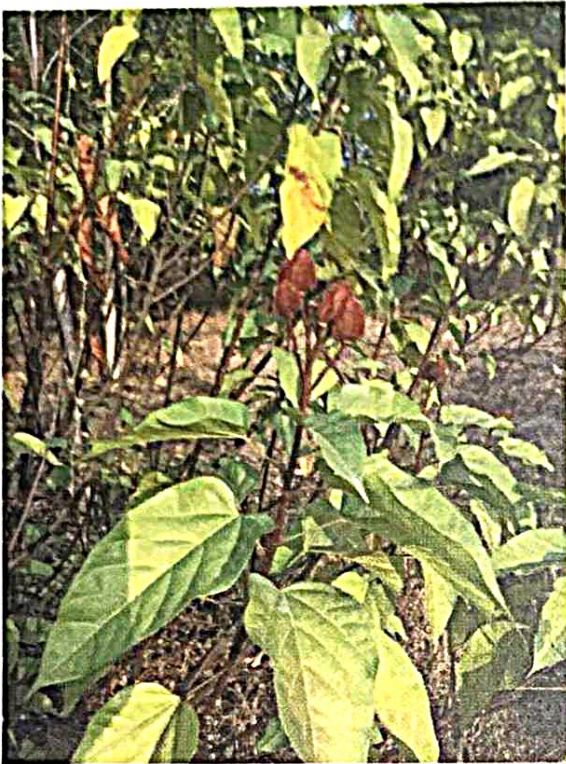
1. the narrow purple, pink, and lavender petals arranged to closely resemble an orchid.
2. The foliage light green and deeply notched at the tip.
3. Purple orchid tree can be easily distinguished from Orchid Tree (*Bauhinia variegata*) in that the petals of Purple orchid tree are narrower and do not overlap.
4. slender, brown, flat seedpods which usually persist on the tree throughout the winter.

- 13. Botanical Name** - *Bauhinia variegata*.
Common Name - Kachnar, Orchid Tree, Varigated Bauhinia.
Family - CAESALPINIACEAE.
Habit - Tree

Identifying Characters --

1. Leaves are rounded with lobed ends and heart shaped bases and are shaped a little like a cow's hoof.
2. The flowers are reminiscent of showy orchids, with five irregular, usually slightly overlapping petals in shades of magenta, lavender, purplish blue or even white.





- 14. Botanical Name** – *Bixa orellana*.
Common Name – Lipstick tree, Annatto.
Family – BIXACEAE.
Habit – Tree.

Identifying Characters --

1. Flowers occur in vertical upright clusters which prominently appear above the foliage and are showy, white or pink with five petals and a dense mass of stamens in the center.
2. Fruit is 2-valved, ovoid, red, spiny and seeds are many, ovate, with a scarlet covering.
3. Its seeds are processed to obtain the orange-yellow pigments, bixin and norbixin (carotenoids), as dye for the food, cosmetic and soap industries.

- 15. Botanical Name** – *Bombax ceiba*.
Common Name – Silk Cotton Tree, Kapok Tree.
Family – MALVACEAE.
Habit – Tree



Identifying Characters --

1. It has whorl type of branching pattern.
2. Semul trees bear beautiful red-colored flowers during January to March.

- 16. Botanical Name** – *Boswellia serrata*.
Common Name – Indian Olibanum, Salai wood.
Family – BURSERACEAE.
Habit – Tree

Identifying Characters --

1. It is a medium sized tree with ash coloured papery bark.
2. Alternately arranged leaves are pinnate, crowded at the end of branches.
3. Flowers are tiny, creamy, borne in racemes in leaf axils.





- 17. Botanical Name** - *Bougainvillea glabra*.
Common Name - Bougainvillea, Lesser Bougainvillea.
Family - NYCTAGINACEAE.
Habit - Lianas.

Identifying Characters --

1. It is a semi-climber and Leaves are alternate, simple, ovate to somewhat elliptic.
2. Has sharp thick thorns on its stem.
3. Flowers arise in leaf axils, in clusters of threes, each flower with a purple, red, pink, or orange bract beneath.

- 18. Botanical Name** - *Callistemon viminalis* (*Melaleuca viminalis*).
Common Name - Weeping Bottle brush.
Family - MYRTACEAE.
Habit - Tree.

Identifying Characters --

1. Its leaves are arranged alternately and are more or less flat, very narrow elliptical to narrow egg-shaped with the narrower end towards the base and the other end tapering to a sharp point.
2. The flowers are bright red and are arranged in spikes on and around the ends of branches which continue to grow after flowering.



- 19. Botanical Name** - *Cannabis sativa*.
Common Name - Marijuana, Hemp.
Family - CANNABACEAE.
Habit - Herb.

Identifying Characters --

1. The leaves are palmately divided into 3-7 narrow, toothed segments.
2. The stems are rough and scabrous and the inner bark is fibrous.
3. Hemp is normally a dioecious species. The female flowers are in greenish leafy spikes borne on stem tips, and the male flowers are yellowish, tiny, and borne in axillary clusters.

- 20. Botanical Name** - *Carica papaya*.
Common Name - Papaya, Melon tree.
Family - CARICACEAE.
Habit - Herb.

Identifying Characters -

1. The leaves are deeply incised and lobed, a palmlike head of foliage at the top.
2. The five-petal flowers are usually cream coloured, fleshy, waxy and fragrant.
3. The smooth-skinned fruits are green, yellow, orange or rose colored.



- 21. Botanical Name** - *Carissa carandas*.
Common Name - Karanda.
Family - APOCYNACEAE.
Habit - Shrub

Identifying Characters --

1. Leaves are very dark green, shiny and opposite and they have large spines like many other Carissas.
2. Small fragrant three-quarter-inch white flowers, with rose stalk.
3. The clusters of small purplish to black fruit ripen from May through October.

- 22. Botanical Name** - *Cassia fistula*.
Common Name - Amaltas, Golden shower tree.
Family - CAESALPINIACEAE.
Habit - Tree.

Identifying Characters --

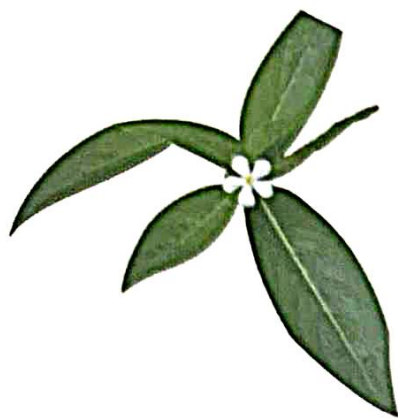
1. Tree with a trunk consisting of hard reddish wood.
2. It has showy racemes, up to 2" long, with bright, yellow, fragrant flowers.
3. The fruits are dark-brown cylindrical pods which also hold the flattish, brown seeds.



- 23. Botanical Name** - *Casuarina equisetifolia*.
Common Name - Whistling Pine, Common Ironwood, Beefwood.
Family - CASUARINACEAE.
Habit - Tree.

Identifying Characters --

1. The species name equisetifolia refers to the resemblance of the leaves to a horse's tail. Leaves are wispy grey green twigs reminiscent of pine needles.
2. The stout trunk is covered with thick pebbly textured brownish grey bark.
3. The male flowers are borne in slender cylindrical spikes at the twig tips. The tiny brownish red female flowers grow in heads attached to the branchlets.



- 24. Botanical Name** - *Catharanthus pusillus.*
Common Name - Tiny Periwinkle, Tiny Vinca.
Family - APOCYNACEAE.
Habit - Herb.

Identifying Characters --

1. It has several quadrangular branches, spreading from the base.
2. Leaves are oppositely arranged, lance-shaped, with rough margin.
3. Small white, periwinkle like flowers appear singly or in pairs, in the upper leaf axils.

- 25. Botanical Name** - *Catharanthus roseus.*
Common Name - Periwinkle, Rosy periwinkle.
Family - APOCYNACEAE.
Habit - Herb.

Identifying Characters --

1. The leaves are oval to oblong, glossy green, hairless, with a pale midrib and a short leaf-stalk, they are arranged in opposite pairs.
2. The flowers are white to dark pink with a darker red centre with five petal-like lobes.



- 26. Botanical Name** - *Cinnamomum camphora.*
Common Name - Camphor Tree.
Family - LAURACEAE.
Habit - Tree

Identifying Characters --

1. The leaves have a glossy, waxy appearance and smell of camphor when crushed and are alternately arranged.
2. The inconspicuous tiny cream colored flowers are borne in the spring on branching 3 in flower stalks.
3. Its fruits are comprised of round pea sized berries attached to the branchlets by cuplike little green cones. The berries first turn reddish, then ripen to black.

- 27. Botanical Name** - *Cordia dichotoma.*
Common Name - Indian cherry, Fragrant manjack, Lasora.
Family - BORAGINACEAE.
Habit - Tree.

Identifying Characters --

1. Leaves are simple, entire and slightly toothed, elliptical-lance shaped to broad ovate with a round and heart-shaped base.
2. Flowers are short stalked, bisexual and white to pinkish in colour and appear in loose corymbose cymes.
3. Fruits are edible with sticky flesh mass. It is a yellow or pinkish-yellow shining spherical or ovoid drupe seated in a saucer-like enlarged calyx. It turns black on ripening and the pulp gets sticky.





- 28. Botanical Name** - *Corymbia citriodora*.
Common Name - Lemon Scented Gum, Blue spotted gum.
Family - MYRTACEAE.
Habit - Tree.
Identifying Characters --

1. It has smooth, pale, uniform or slightly mottled bark, white to coppery in summer.
2. Leaves are simple and conspicuously narrow tip which smells strongly of lemons.
3. Pear-shaped buds are borne in clusters of three, formed in the corner of leaf and stem junctions, whilst fruit (capsules) are urn-shaped.

- 29. Botanical Name** - *Crinum asiaticum*.
Common Name - Grand crinum lily, Poison Bulb, Spider Lily.
Family - AMARYLIDACEAE.
Habit - Herb.

Identifying Characters --

1. Dark green strap-like leaves may be more than 3 feet long by 4 inches wide.
2. Flowers are shaped like tubes that flare open into a crown of narrow petals. The flowers are white and are arranged in clusters atop thick, succulent stems. Stamens are purple in color.



- 30. Botanical Name** - *Cryptostegia grandiflora*
Common Name - Rubber vine.
Family - APOCYNACEAE.
Habit - Lianas.

Identifying Characters -

1. Leaves are dark green and glossy, and in opposite pairs, oblong-ovate to elliptic-ovate.
2. Flowers are large and showy, with five white to light purple petals in a funnel shape.



- 31. Botanical Name** - *Cynodon dactylon*.
Common Name - Bermuda Grass, Doob.
Family - POACEAE.
Habit - Herb.

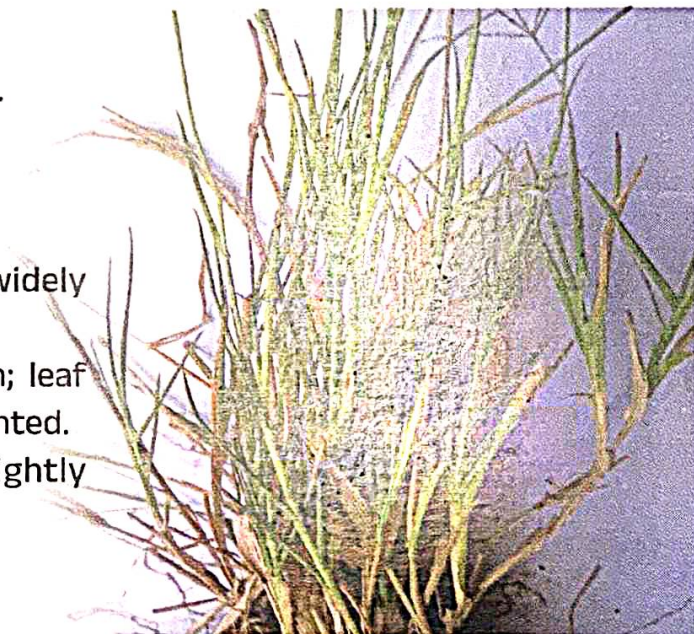
Identifying Characters--

1. The blades are a grey-green colour and are short, with rough edges.
2. The stems are erect, slightly flattened, often tinged purple in color.
3. The seed heads are produced in a cluster of 3–7 spikes (rarely two) together at the top of the stem. It has a deep root system.

- 32. Botanical Name** - *Cynodon radiatus*.
Common Name - Arched Bermuda Grass.
Family - POACEAE.
Habit - Herb.

Identifying Characters--

1. It is a perennial grass, forming runners, widely creeping. Stems are slender.
2. Leaf sheaths are hairless or hairy at mouth; leaf blades broadly linear, glaucous, hairless, tip pointed.
3. Flower-racemes are digitate, flexuous, slightly drooping.



- 33. Botanical Name** - *Dalbergia sissoo*.
Common Name - Shisham, Indian rosewood.
Family - FABACEAE.
Habit - Tree.

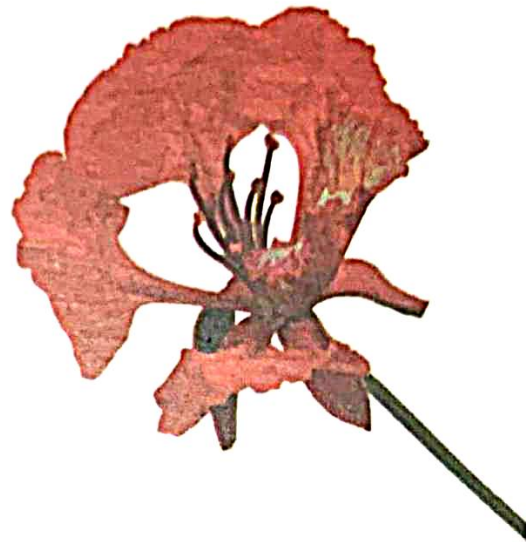
Identifying Characters--

1. It is a tree with rough bark and mainly longitudinal furrows, young branches are velvet-hairy.
2. Leaves are compound, broadly ovate or nearly round and tapering.
3. Inflorescence in leaf-axils panicle, composed of several short spikes with stalkless to nearly stalkless flowers. Bract small, velvet-hairy, falling off and flowers are yellowish white.

- 34. Botanical Name** - *Delonix regia.*
Common Name - Flame Tree, Gulmohar.
Family - CAESALPINIACEAE.
Habit - Tree.

Identifying Characters --

1. The delicate, fern-like leaves are composed of small individual leaflets, which fold up at the onset of dusk.
2. Flowers are striking: they have four spoon shaped spreading scarlet or orange-red petals and one upright slightly larger petal (the standard) which is marked with yellow and white.
3. It has an elegant wide-spreading umbrella-like canopy can be wider than its height.



- 35. Botanical Name** - *Dillenia indica.*
Common Name - Elephant Apple, Indian catmon.
Family - DILLENIACEAE.
Habit - Tree.

Identifying Characters --

1. The leaves are long, with a conspicuously corrugated surface with impressed veins, like potato chips.
2. The flowers are large with five white petals and numerous yellow stamens. It arise solitary at the ends of the twigs, facing downward.
3. The fruit is an aggregate of 15 carpels, each carpel containing five seeds embedded in an edible pulp.

- 36. Botanical Name** - *Diospyros melanoxylon.*
Common Name - Coromandel Ebony, Black Ebony, Tendu.
Family - EBENACEAE.
Habit - Tree.

Identifying Characters --

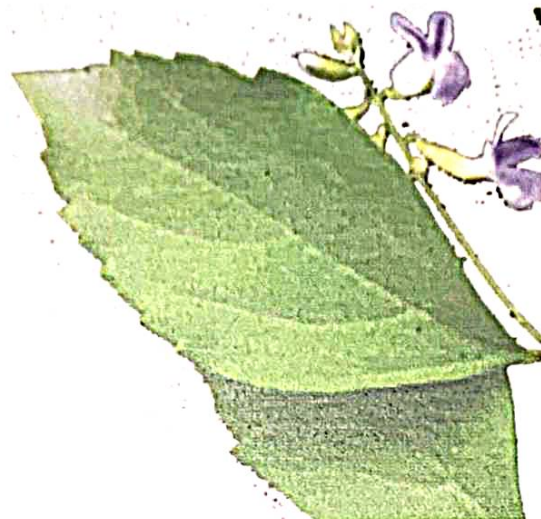
1. The bark is pelican in colour, peeling in rectangular scales, which is an identifying feature.
2. Elliptic-oblong leaves can be opposite or alternate, leathery, velvety on both sides when young, becoming smooth above when fully grown.
3. Male flowers are mauve in colour, tetramerous to sextamerous, sessile or nearly sessile in short peduncles, mostly 3-flowered. Female flowers mauve, mostly extra-axillary or sometimes solitary, axillary generally 2, opposite each other, larger than the male flowers.



- 37. Botanical Name** - *Duranta erecta.*
Common Name - Sky flower, Golden Dew Drop, Pigeon Berry.
Family - VERBENACEAE.
Habit - Shrub.

Identifying Characters -

1. Leaves are Simple, green to yellowish green in colour.
2. It has clusters of fragrant, pale blue flowers.
3. It has bunches of golden-orange berries.



- 38. Botanical Name** - *Euphorbia nerifolia.*
Common Name - Indian Spurge Tree, Hedge Euphorbia.
Family - EUPHORBIACEAE.
Habit - Shrub.

Identifying Characters --

1. Leaves are alternate, apically clustered, persistent, fleshy; spine shields small, stipules pricklike; leaf-stalk short; leaf blade obovate or obovate-oblong to spoon-shaped.
2. Cyathia in subat branch-ends cymes, flower-cluster-stalk, cyathophylls membranous, falling off; involucre bell-shaped, fleshy, thick and entire.
3. Male flowers are yellow, many, bracts linear. Female flowers rarely developed.

- 39. Botanical Name** - *Evolvulus alsinoides.*
Common Name - Dwarf Morning Glory, Slender Dwarf Morning Glory
Family - CONVOLVULACEAE.
Habit - Herb.

Identifying Characters --

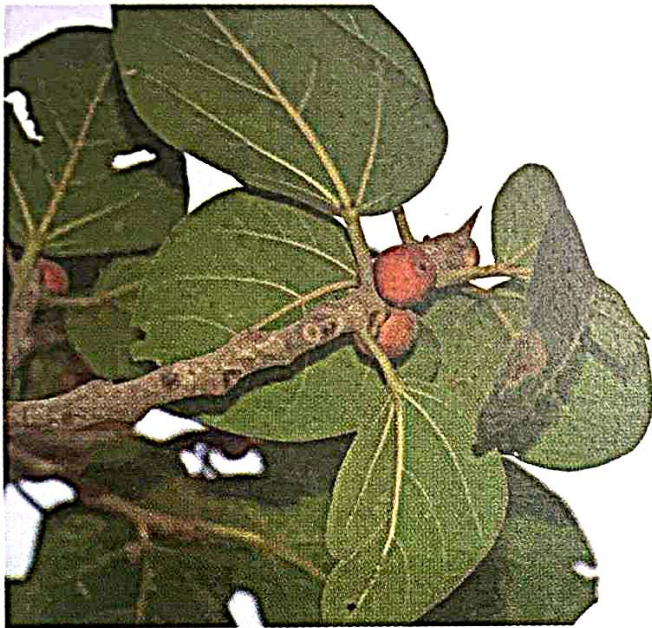
1. The leaves, which are densely clothed with appressed, white, and silky hairs, are variable clothed, lanceolate to ovate.
2. The flowers are pale blue and 6-8 mm in diameter. The fruit (capsule) is rounded.



- 40. Botanical Name** - *Fernandoa adenophylla*.
Common Name - Katsagon.
Family - BIGNONIACEAE.
Habit - Tree.

Identifying Characters --

1. Leaves are large, compound with leaflets 3-6 on each side of midrib and long elliptic in shape.
2. Large, pale yellow, trumpet shaped flowers occur in panicles.
3. The fruit is long and twisted, hanging like snakes from the branches.



- 41. Botanical Name** - *Ficus benghalensis*.
Common Name - Banyan tree.
Family - MORACEAE.
Habit - Tree.

Identifying Characters -

1. Perhaps the most amazing part of this extraordinary tree is its flower. The fruit is really a hollow, flower-bearing structure called a cyconia. The inside it is lined with hundreds of male and female flowers. The males carry pollen and the females bear seeds.
2. It bear prop roots.



- 42. Botanical Name** - *Ficus elastica*.
Common Name - Rubber tree.
Family - MORACEAE.
Habit - Tree.

Identifying Characters --

1. It has broad shiny oval leaves. Leaf size is largest on young plants. It develops inside a reddish sheath at the tip of branches, which looks very attractive.
2. The small stalkless, yellow-green oval figs, grow in pairs.
3. The tree can yield a milky white latex, which has been used to make rubber.



43. Botanical Name - *Ficus racemosa*.

Common Name - Cluster fig, Goolar.

Family - MORACEAE.

Habit - Tree.

Identifying Characters--

1. It is an attractive fig tree with a crooked trunk and a spreading crown. Unlike the banyan, it has no aerial roots.
2. The most distinctive aspect of this tree is the red, furry figs in short clusters, which grow directly out of the trunk of the tree.
3. Flowers minute within the receptacle. Fruit is a fig.

44. Botanical Name - *Ficus religiosa*.

Common Name - Peepal, holy fig tree.

Family - MORACEAE.

Habit - Tree.

Identifying Characters--

1. It is a large deciduous tree with a pale stem often appearing fluted on account of the numerous roots which have fused with the stem.
2. Leaves leathery, somewhat egg-shaped or rounded, tailed at the tip and heart-shaped at the base, or sometimes rounded. The young leaves are frequently pink, change to copper and finally to green.
3. Flowers minute within the receptacle. Fruit is a fig.



45. Botanical Name - *Ficus virens*.

Common Name - White Fig, Pakad.

Family - MORACEAE.

Habit - Tree.

Identifying Characters--

1. It is a large strangling fig with a spreading canopy. The aerial roots commonly wrap around the main stem instead of forming props.
2. The leaves are simple with a whitish midrib. New leaves emerge in March with colors of purple and red and bronze, giving the tree a wonderful look.
3. The pea-sized figs are in pairs and greenish-white to brown with spots. It is a beautiful shade tree.



46. Botanical Name - *Gardenia gummifera*.
Common Name - Gummy Gardenia, Dekamali.
Family - RUBIACEAE.
Habit - Shrub.
Identifying Characters--

1. The leaves are opposite or in whorls of three or four, dark green and glossy with a leathery texture.
2. The flowers are solitary or in small clusters, white or pale yellow, with a tubular-based flower.

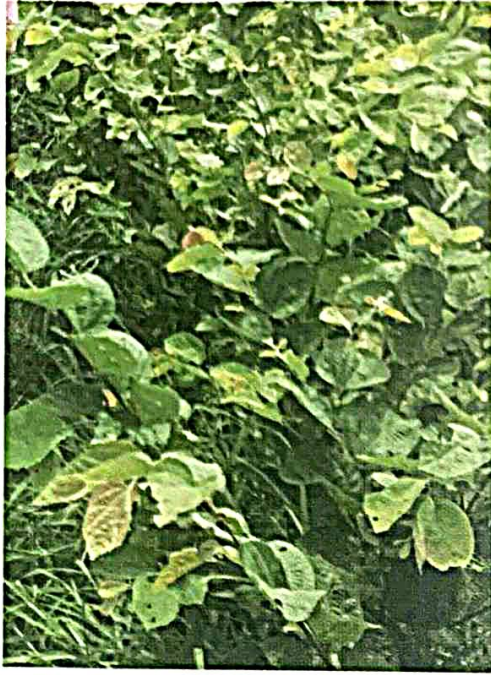
47. Botanical Name - *Gardenia jasminoides*.
Common Name - Gardenia, Cape jasmine, Gandhraj.
Family - RUBIACEAE.
Habit - Shrub.
Identifying Characters--

1. The leaves are elliptic-oblong, glossy and leathery.
2. The flowers are white, turning to creamy yellow as they age, and have a waxy feel. They are double in form.



48. Botanical Name - *Gliricidia sepium*.
Common Name - Mexican lilac, Mother of cocoa, Quick stick.
Family - FABACEAE.
Habit - Tree.
Identifying Characters--

1. The bark is smooth but can vary in colour from whitish grey to deep red-brown. The stem and branches are commonly flecked with small white lenticels.
2. Inflorescences appear as clustered racemes on distal parts on new and old wood, flowers borne singly.
3. Flowers bright pink to lilac, tinged with white, usually with a diffuse pale yellow spot at the base of the standard petal, calyx glabrous, green, often tinged red.



49. Botanical Name - *Grewia asiatica*.

Common Name - Phalsa.

Family - TILIACEAE.

Habit - Tree.

Identifying Characters --

1. Its bark is greyish-white or greyish-brown.
2. Leaves with serrated margins vary from broadly heart-shaped to obliquely ovate.
3. The flowers are yellow and borne in densely crowded (rarely solitary) axillary cymes.
4. The fruit is edible, rounded, small dark blue to almost black when ripe and each drupe contains a rather large seed.

50. Botanical Name - *Helianthus annuus*.

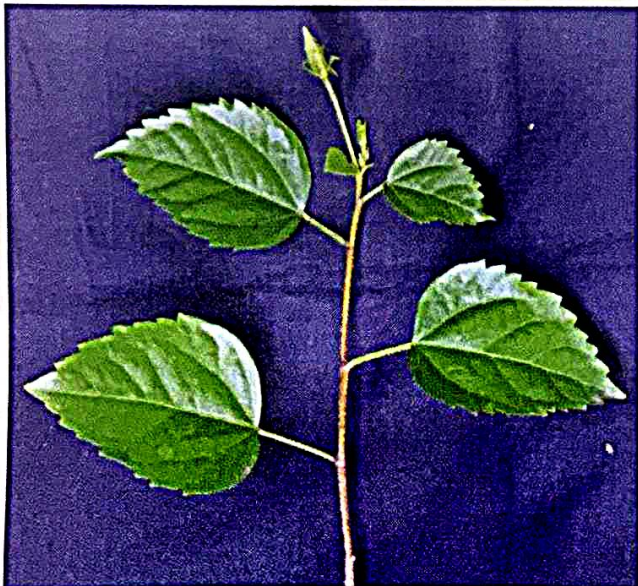
Common Name - Sunflower.

Family - ASTERACEAE.

Habit - Herb.

Identifying Characters --

1. Most sunflowers are tall, most have rough-hairy oval to heart shaped leaves.
2. Most have large flowerheads; and most have yellow ray florets and purplish brown disk florets. The ray florets of sunflowers are sterile, and only the disk florets produce seeds.



51. Botanical Name - *Hibiscus rosa-sinensis*.

Common Name - China Rose, Chinese hibiscus.

Family - MALVACEAE.

Habit - Shrub.

Identifying Characters --

1. The toothed leaves are arranged alternately and vary a lot, but tend to be large, dark green, and shiny.
2. Flowers are glorious and huge and occur in many colors. Most are flared and have a bell shape and may be single or double, smooth or scalloped. They have a long central tube with stamens and pistils at the tip.

- 52. Botanical Name** - *Ipomoea cairica*.
Common Name - Cairo Morning Glory, Coastal Morning Glory, Railway creeper.
Family - CONVOLVULACEAE.
Habit - Lianas.

Identifying Characters --

1. Its stem is hairless, readily set roots when in touch with the earth.
2. This species can be identified by its leaves which are palmately compound, hairless with 5-7 lobes, middle lobe the largest.
3. Flowers purple, pink or rarely pinkish white, solitary or in groups of 2-3.



- 53. Botanical Name** - *Ixora notoniana*.
Common Name - Large-Flower Ixora.
Family - RUBIACEAE.
Habit - Shrub.

Identifying Characters --

1. Bark brown, rough. Branchlets corky, with short internodes, hairless.
2. Leaves simple, opposite, decussate; stipule broadly ovate and subulate, interpetiolar, falling off and leaving scar.
3. Inflorescence at branch-ends corymbose cymes; flowers nearly stalkless, rosy tinged, tubular, Berry, spherical.

- 54. Botanical Name** - *Lagerstroemia indica*.
Common Name - Common Crape Myrtle.
Family - LYTHRACEAE.
Habit - Tree.

Identifying Characters --

1. It is an often multi-stemmed, deciduous tree with a wide spreading, flat topped, rounded, or even spike shaped open habit.
2. The bark is a prominent feature being smooth, pinkish-gray and mottled, shedding each year.
3. leaves are small, smooth-edged, circular or oval-shaped, and dark green changing to yellow and orange and red in autumn.
4. Flowers, on different trees, are white, pink, mauve, purple or carmine with crimped petals, in panicles.





- 55. Botanical Name** - *Lagerstroemia speciosa*.
Common Name - Common Crape Myrtle.
Family - LYTHRACEAE.
Habit - Tree.

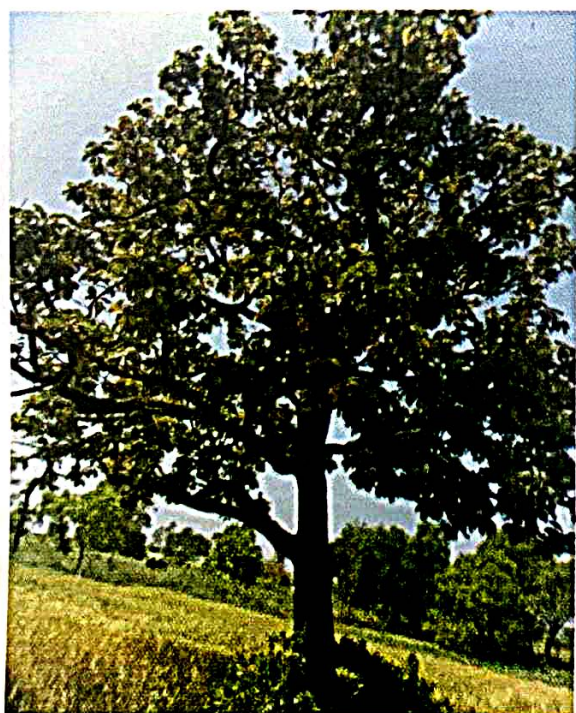
Identifying Characters --

1. The bark is a prominent feature being smooth, pinkish-gray and mottled, shedding each year.
2. Leaves are small, smooth-edged, circular or oval-shaped, and dark green changing to yellow and orange and red in autumn.
3. Flowers, on different trees, are white, pink, mauve, purple or carmine with crimped petals, in panicles.

- 56. Botanical Name** - *Livistona chinensis*.
Common Name - Chinese Fan Palm, Fountain Palm.
Family - ARECACEAE.
Habit - Tree.

Identifying Characters --

1. Chinese Fan Palm has a single straight trunk and large, six-foot-long leaves which have drooping tips.
2. The divided leaves have long, tapering, ribbon-like segments which gracefully sway beneath the leaves, creating an overall fountain-like effect.
3. The inconspicuous flowers are hidden among the leaves and are followed by small, blue-black, olive-like fruits.



- 57. Botanical Name** - *Madhuca longifolia* var. *latifolia*.
Common Name - Indian Butter Tree, Mahua.
Family - SAPOTACEAE.
Habit - Tree.

Identifying Characters --

1. It is a large and deciduous tree with a thick, grey bark, vertically cracked and wrinkled.
2. The plum-coloured calyx is also furry and divides into four or five lobes; within them lies the globular corolla, thick, juicy and creamy white.
3. They are fleshy, green berries, quite large and containing from one to four shiny, brown seeds.



- 58. Botanical Name** – *Magnolia champaca*.
Common Name – Champa, Golden Champa.
Family – MAGNOLIACEAE.
Habit – Tree.

Identifying Characters --

1. Leaves elliptic or ovate, slightly puberulous below, base broadly wedge-shaped or rounded, tip long-pointed tip falling off.
2. Flowers are fragrant, tepals 15-20, yellow, inverted-lance-shaped.
3. Fruit is a mature carpels obovoid-ellipsoid and tuberculate.

- 59. Botanical Name** – *Mallotus philippensis*.
Common Name – Kamala Tree, Monkey face tree, sinduri.
Family – EUPHORBIACEAE.
Habit – Tree.

Identifying Characters --

1. Leaves are alternately arranged, ovate or rhombic ovate and are rusty-velvety.
2. Male and female flowers occur in different trees. Female flowers are borne in lax spike like racemes at the end of branches or in leaf axils. Male flowers occur three together in the axils of small bracts.
3. Capsule is trigonous-globular, covered with a bright crimson layer of minute, easily detachable reddish powder.



- 60. Botanical Name** – *Melia azedarach*.
Common Name – Chinaberry tree, Persian lilac, Pride of India (Bakain).
Family – MELIACEAE.
Habit – Tree.

Identifying Characters --

1. The bark is reddish brown, becoming fissured on mature trees.
2. The deciduous leaves are bipinnate (twice feather-like). The individual leaflets are pointed at the tips and have toothed edges.
3. It produces masses of purplish, fragrant, star shaped flowers, that arch or droop in 8 in panicles.
4. They are followed by clusters of spherical, yellow fruits.

- 61. Botanical Name** - *Millingtonia hortensis.*
Common Name - Indian Cork Tree, Tree Jasmine.
Family - BIGNONIACEAE.
Habit - Tree.

Identifying Characters--

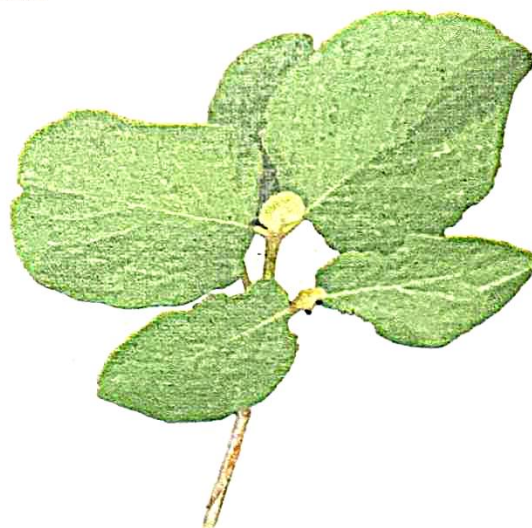
1. The ashy bark is cracked and furrowed and the numerous fissures make removal of the cork an easy matter.
2. The long leaves bear two or three widely spaced pinnae, each with five or seven smooth leaflets, oval, pointed and slightly round-toothed.
3. Each flower is a tiny bell-shaped calyx, a long slender tube of palest green dividing into four waxy, silvery-white petals and several conspicuous yellow anthered stamens. Many flowers are delicately tinted with rose.



- 62. Botanical Name** - *Mitragyna parvifolia.*
Common Name - Kaim, True Kadamb.
Family - RUBIACEAE.
Habit - Tree.

Identifying Characters--

1. Leaves are a dark green in color, smooth, rounded in shape, and opposite in growth pattern.
2. Flowers are very fragrant, yellow and grow in ball-shaped clusters.



- 63. Botanical Name** - *Murraya paniculata.*
Common Name - Orange Jasmine, Chinese box.
Family - RUTACEAE.
Habit - Tree.

Identifying Characters--

1. The evergreen leaflets are dark green and pinnately compound with three to nine leaflets arranged alternately along the spine.
2. The dark green leaves make a dramatic backdrop for the highly fragrant cream colored flowers.
3. The flowers are followed by small oval red fruits with one or two seeds.

64. Botanical Name - *Nelumbo nucifera*.

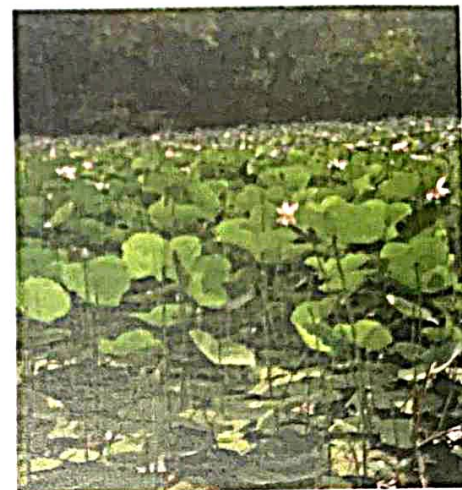
Common Name - Lotus, Sacred lotus.

Family - NELUMBONACEAE.

Habit - Herb.

Identifying Characters --

1. The large, round leaves are simple and covered with a network of microscopic hairs, which keep them dry in a rain.
2. It has large pink or white petalled flower.
3. When the flower petals fall, they are replaced by a flat-topped seed pod divided into compartments, resembling a wasp's hive.



65. Botanical Name - *Nerium oleander*.

Common Name - Oleander (Kaner).

Family - APOCYNACEAE.

Habit - Shrub.

Identifying Characters --

1. Dark dusty green leathery narrow leaves, which grow in whorls. They are narrow lance-like with an entire margin.
2. The flowers grow in clusters at the end of each branch; they are white, pink or yellow with 5 petals fringed at the base.

66. Botanical Name - *Nyctanthes arbor-tristis*.

Common Name - Har singar, Coral Jasmine.

Family - NYCTANTHACEAE.

Habit - Tree.

Identifying Characters --

1. The leaves are Simple, large, rough and hairy.
2. The sweet scented flowers are small, attractive with white petals and an orange-red tube in center and bloom profusely, opening at night and drop off in the morning.



67. Botanical Name - *Peltophorum pterocarpum*.

Common Name - Copperpod, Rusty shield-bearer.

Family - CAESALPINIACEAE.

Habit - Tree.

Identifying Characters --

1. Copperpod is sometime also called yellow flame tree, because of the resemblance of its fern-like leaves to that of Gulmohar.
2. The leaves are bipinnate with 16-20 pinnae, each pinna with 20-40 oval leaflets.
3. The flowers are yellow, produced in large compound raceme.



- 68. Botanical Name** – *Phoenix sylvestris*.
Common Name – Wild Date Palm, date-sugar palm, Indian wild date.
Family – ARECACEAE.
Habit – Tree.

Identifying Characters --

1. The leaves are gently recurved, on 1 m petioles with spines near the base. The leaf crown grows containing up to 100 leaves.
2. The inflorescence grows to 1 metre with white, unisexual flowers forming to a large, pendent infructescence.
3. The single-seeded fruit ripens to a purple-red colour, and is eaten in India.

69. Botanical Name – *Phyllanthus emblica*.

Common Name – Amla, Indian gooseberry.

Family – PHYLLANTHACEAE.

Habit – Tree.

Identifying Characters --

1. The tree has crooked trunk and spreading branches.
2. The leaves are simple, nearly stalkless and closely set along slender branchlets.
3. The genus name Phyllanthus is derived from Greek words meaning leaf-flower, an allusion to the apparent bearing of flowers on the leaves.
4. Amla flowers are small, greenish-yellow or pinkish. The flowers have six segments, but no real petals. Male and female flowers are carried separately on the same branch.



70. Botanical Name – *Pithecellobium dulce*.

Common Name – Manilla Tamarind, Madras Thorn, Sweet tamarind.

Family – MIMOSACEAE.

Habit – Tree.

Identifying Characters --

1. Leaves are deciduous but foliage is persistent, as the new leaves appear while the old ones are being shed and the base of each leaf is normally found a pair of short, sharp spines.
2. Flowers are borne in small spherical glomerules of about forming short axillary panicles. Flowers are white-greenish slightly fragrant with a hairy corolla.
3. Pods are greenish-brown to red or pinkish, rather thin. Pods are irregularly in shape and flattened, set in a spirals of 1 to 3 whorls and strangled between the seeds - looks like the north Indian sweet, Jalebi.

- 71. Botanical Name** - *Polyalthia longifolia.*
Common Name - False Ashok, Mast Tree.
Family - ANNONACEAE.
Habit - Tree.

Identifying Characters--

1. The bark is smooth and dark greyish-brown.
2. Leaves are simple and glossy green, long, narrow have attractive wavy edges.
3. The tree is covered with a profusion of delicate, star-like flowers, which, being palest-green in colour, give the tree a peculiar hazy appearance.



- 72. Botanical Name** - *Portulaca oleracea.*

- Common Name** - Purslane.
Family - PORTULACACEAE.
Habit - Herb.

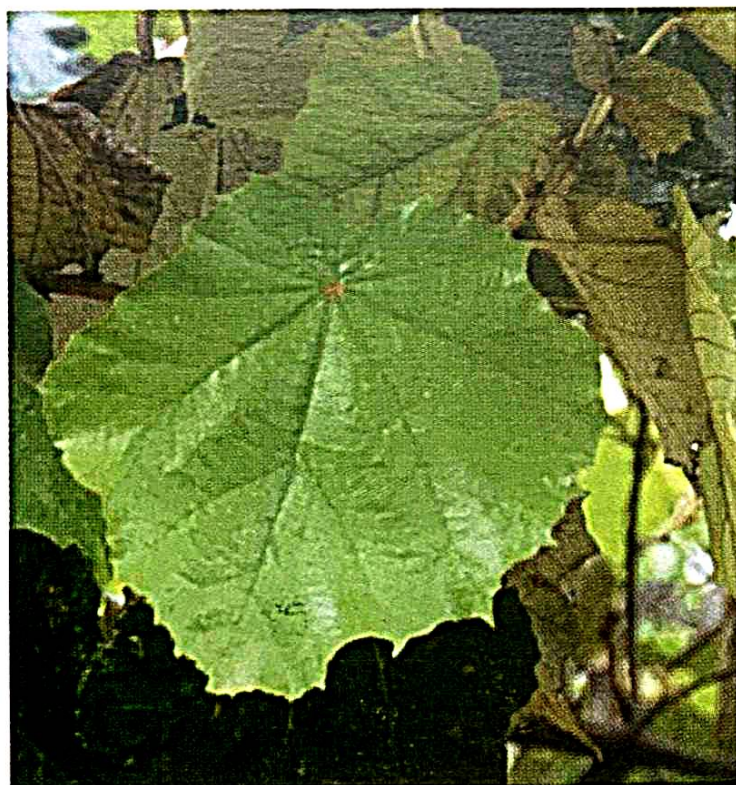
Identifying Characters--

1. The leaves are alternate. Each succulent leaf is entire and the leaves are clustered at stem joints and ends.
2. The flowers are yellow and open singly at the center of the leaf cluster for only a few hours on sunny mornings.

- 73. Botanical Name** - *Pterospermum acerifolium.*
Common Name - Kanak Champa, Maple-leaved Bayur tree.
Family - STERCULIACEAE.
Habit - Tree.

Identifying Characters--

1. Leaves are simple, alternate, have stipules and are palmately ribbed.
2. It has large fragrant nocturnal white flowers, occurring in axillary fascicles.
3. Fruit is a capsule, angled and ferulaceous.





74. Botanical Name - *Pterygota alata*.

Common Name - Buddha Coconut.

Family - STERCULIACEAE.

Habit - Tree.

Identifying Characters --

1. Leaves are blade broadly ovate, heart shaped, wavy, smooth, pointed or tapering.
2. Flowers are racemes and have no petals, sepals are 5, nearly free, linear-lance- shaped or elliptic, fleshy, densely ferruginous pubescent outside, sparsely velvet-hairy and purple with red streaks within.
3. Fruit is large, woody, obliquely round. Seeds are oblong, compressed, in 2 rows, winged.



75 Botanical Name - *Putranjiva roxburghii*.

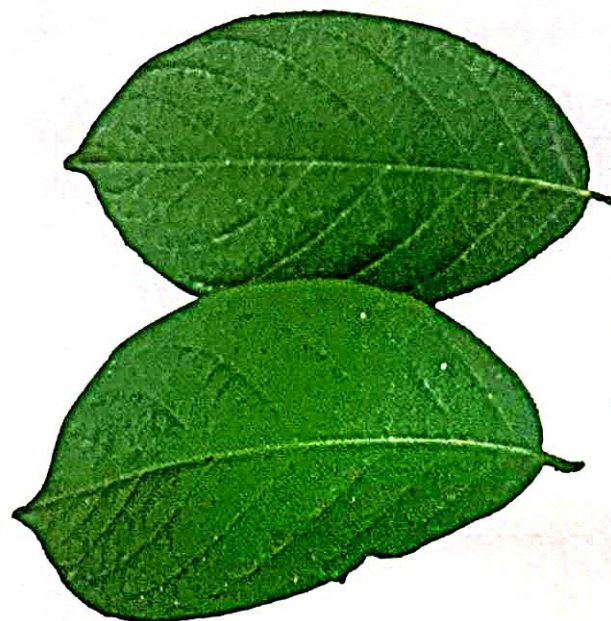
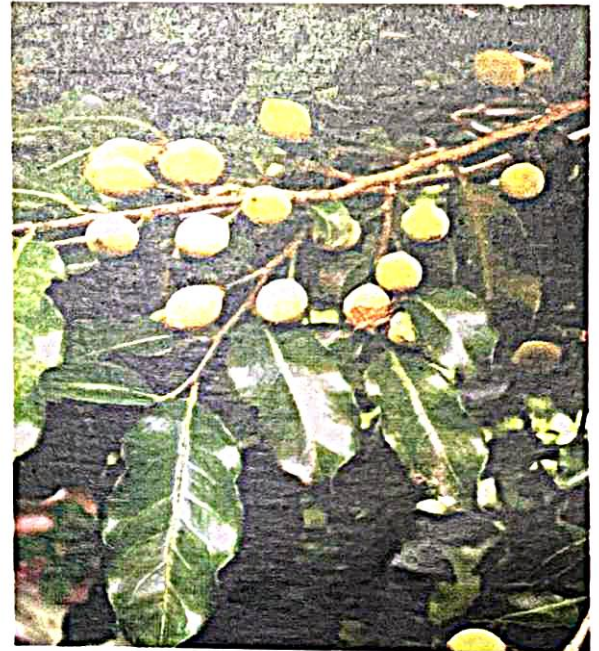
Common Name - Putranjiva, Lucky Bean Tree.

Family - PUTRAJIVANACEAE.

Habit - Tree.

Identifying Characters --

1. It has pendant branches and dark grey bark having horizontal lenticels.
2. Leaves are simple, alternately arranged, dark green, shiny, elliptic-oblong, distantly serrated.
3. Fruits ellipsoid or rounded drupes, white velvety; seed normally one, stone pointed, rugose, very hard.



76. Botanical Name - *Quisqualis indica* (*Combretum indicum*).

Common Name - Rangoon Creeper, Burma creeper.

Family - COMBRETACEAE.

Habit - Climber.

Identifying Characters --

1. Leaves are simple and elliptical with an acuminate tip and a rounded base.
2. Flowers are pendent racemes and white pendulous trumpets open white then change to pink, red and finally a deep maroon.



77. Botanical Name - *Rhoeo spathacea*
(*Tradescantia spathacea*).

Common Name - Moses in the Cradle, Oysterplant, Boatlily.

Family - COMMELINACEAE.

Habit - Herb.

Identifying Characters --

1. long sword-shaped leaves arising from a trunklike stem. The leaves are a dark teal-tinged forest green on top and vivid violet underneath.
2. The small white three-petaled flowers are hidden in boat-shaped purple bracts nestled in the leaf axils.

78. Botanical Name - *Ricinus communis*.

Common Name - Castor bean, Wonder tree.

Family - EUPHORBIACEAE.

Habit - Small tree.

Identifying Characters --

1. The joints of the hollow stem, stalks and leaves are reddish to purple.
2. Leaves are palmate with uneven serrated edge, are also red or colored.
3. Often have a blue-gray bloom with female flowers are the fuzzy red structures at the top of the flower spike with the male flowers positioned on the lower half, and have conspicuous yellow anthers.



79. Botanical Name - *Ruellia prostrata*.

Common Name - Bell Weed, Prostrate Wild Petunia, Black weed.

Family - ACANTHACEAE.

Habit - Herb.

Identifying Characters --

1. Bell Weed is a prostrate perennial herb, with stems often rooting at the nodes.
2. Ovate green leaves, 2-10 cm long, have lower surface conspicuously paler.
3. Flowers occur solitary in the leaf axils, each one subtended by oblanceolate to ovate bracts and colour vary from violet blue to occasionally nearly white.,

- 80. Botanical Name** - *Ruellia tuberosa*.
Common Name - Waterkanon, Minnie Root, Ironroot.
Family - ACANTHACEAE.
Habit - Herb.

Identifying Characters --

1. Minnie Root is a West Indian herb with curiously shaped blue flowers and fusiform tuberous roots.
2. The simple leaves are opposite and elliptic.
3. The big bisexual flowers are violet.



- 81. Botanical Name** - *Sagittaria trifolia*.
Common Name - Chinese Arrowhead, Threeleaf arrowhead.
Family - ALISMATACEAE.
Habit - Herb.

Identifying Characters --

1. Leaves are aerial at least when mature, arrow shaped, sheathing, tip tapering to rounded, lateral lobes longer than middle lobe.
2. Flowers are unisexual, borne in racemes, in 3 to many whorls of 3 flowers, lower 1-3 whorls usually branched; bracts free or fused toward base.

- 82. Botanical Name** - *Saraca asoca*.
Common Name - Sita Ashok, Sorrowless tree.
Family - CAESALPINIACEAE.
Habit - Tree.

Identifying Characters --

1. It is an erect tree, small and evergreen, with a smooth, grey-brown bark.
2. The foot-long leaves each have four, five or six pairs of long, wavy-edged, leaflets. Young leaves are soft, red and limp and remain pendent even after attaining full size.
2. Flowers are yellow when young, they become orange then crimson with age and from the effect of the sun's rays.



- 83. Botanical Name** - *Schleichera oleosa*.
Common Name - Ceylon oak, Lac tree, Gum lactree.
Family - SAPINDACEAE.
Habit - Tree.

Identifying Characters --

1. The leaves are pinnate, with each leaf having 2-4 pairs of leaflets. This tree is mostly noticed because of its bright red leaves when they are new.
2. Flowers are tiny, occurring in short dense yellow clusters.
3. The fruit is about the size of a small plum.



- 84. Botanical Name** - *Senna siamea*.
Common Name - Siamese Senna, Siamese cassia.
Family - CAESALPINIACEAE.
Habit - Tree.

Identifying Characters --

1. Leaves pinnate, alternate. Leaflets oblong, rounded at the base and at the apex, slightly retuse. Upper side dark green and shining, underside dull-green, shortly haired.
2. Flowers yellow in dense racemes at the end of the shoots, and in their axils.
3. Glabrous, brown, slightly curved pods in dense clusters and long.



- 85. Botanical Name** - *Senna tora*.
Common Name - Stinking Cassia, Chinese senna.
Family - CAESALPINIACEAE.
Habit - Shrub.

Identifying Characters --

1. The compound leaves are arranged spirally and usually have three pairs of symmetrically egg-shaped leaflets.
2. One to three yellow flowers appear on short axillary stems.
3. The linear pods long, curve downward and contain many shiny, angular seeds.



- 86. Botanical Name** – *Setaria pumila ssp. pumila.*
Common Name – Yellow Foxtail, pigeon grass, cat-tail millet.
Family – POACEAE.
Habit – Herb.

Identifying Characters --

1. Leaf blades may reach 12 inches in length and 7-12 mm in width, and have long silky hairs at the leaf bases.
2. Spikelets are approximately 3 mm long, green, and each spikelet has 1-3 bristles. The bristles turn yellow at maturity, giving the plant its name.
3. The seedhead is a cylindrical bristly panicle.

87. Botanical Name – Shorea robusta.

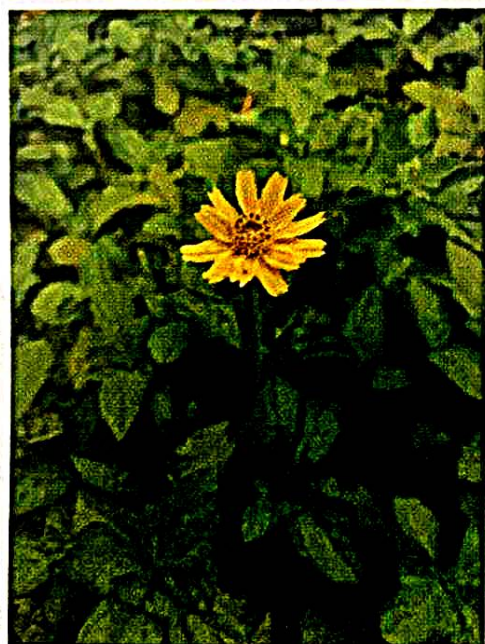
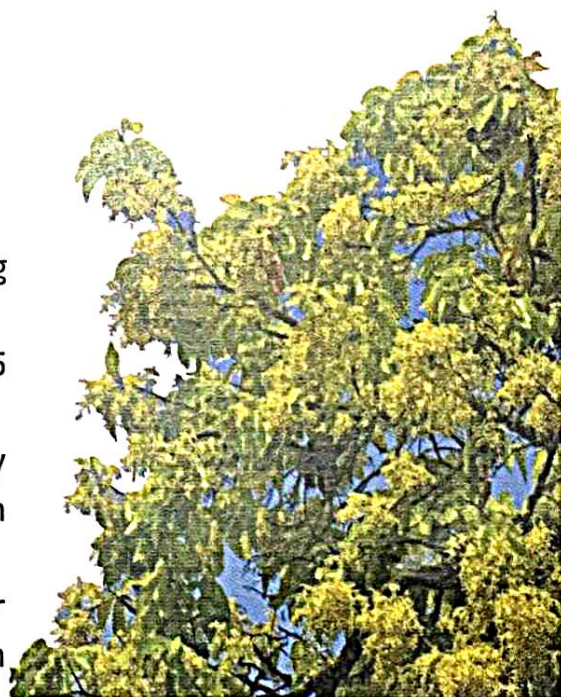
Common Name – Sal.

Family – DIPTEROCARPACEAE.

Habit – Tree.

Identifying Characters --

1. The bark of the young tree is smooth with a few long deep and vertical furrows.
2. The leaves are ovate-oblong, 10-25 cm long and 5-15 cm broad.
3. The sal flowers, whitish in color, appear in early summer. These are borne in raceme-like panicles in leaf axils, covered with white pubescence.
4. It has hard, coarse-grained wood that is light in colour when freshly cut, and becoming dark brown with exposure. The wood is resinous and durable.



- 88. Botanical Name** – *Sphagneticola trilobata.*
Common Name – Yellow Dots, Creeping daisy, Wedelia.

Family – ASTERACEAE.

Habit – Herb.

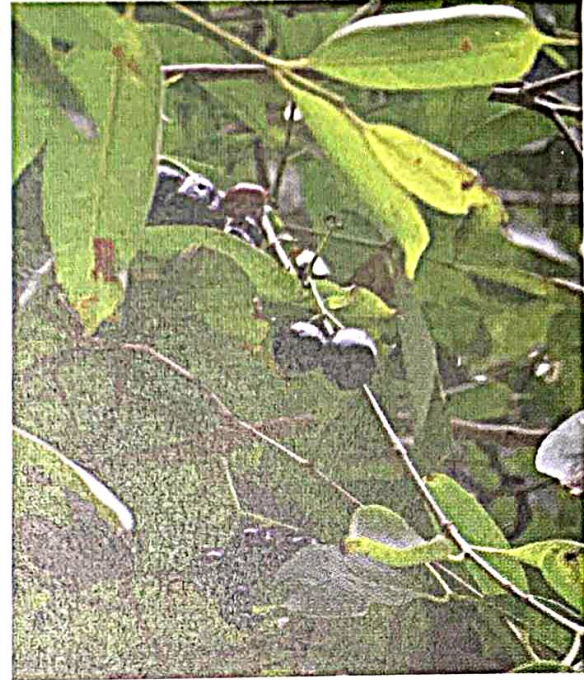
Identifying Characters --

1. It is a creeping evergreen perennial that roots at the leaf nodes and spreads widely.
2. The leaves are ovate and usually 3 lobed.
3. The flower is a yellow daisy-like flower.
4. Plant creeps and roots at nodes, making a dense ground cover, as well as a great hanging basket.

89. Botanical Name – *Syzygium cumini*.
Common Name – Java plum, Jamun.
Family – MYRTACEAE.
Habit – Tree.

Identifying Characters --

1. At the base of the tree, the bark is rough and dark grey, becoming lighter grey and smoother higher up.
2. An evergreen tropical tree with oblong opposite leaves that are smooth, glossy and having a turpentine smell and are pinkish when young, changing to a leathery, glossy dark green with a yellow midrib as they mature.
3. It has fragrant white/cream coloured flowers in branched clusters at stem tips and purplish-black oval edible berries.



90. Botanical Name – *Tabernaemontana divaricata*.
Common Name – Crape jasmine, Moonbeam, Carnation of India.
Family – APOCYNACEAE.
Habit – Shrub.

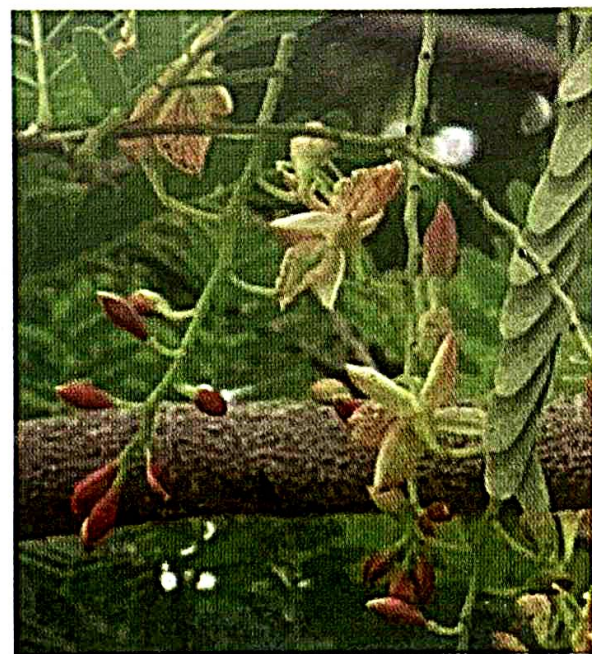
Identifying Characters --

1. It is a small tree with a thin, crooked stem And its leaves are simple, large shiny and deep green in colour.
2. Crape jasmine blooms in spring but flowers appear sporatically all year. The waxy blossoms are white five-petaled pinwheels that are borne in small clusters on the stem tips.

91. Botanical Name – *Tamarindus indica*.
Common Name – Tamarind, Imli.
Family – CAESALPINIACEAE.
Habit – Tree.

Identifying Characters --

1. It is a large tree with a short massive trunk and ferny pinnate leaves.
2. The flowers are pale yellow with purple or red veins. They have five unequal lobes and borne in small drooping clusters.
3. The velvety cinnamon brown pods are sausage shaped and constricted between the seeds. The pulp that surrounds the 8-10 seeds is both sweet and extremely sour.





- 95. Botanical Name** - *Terminalia chebula*.
Common Name - Chebulic Myrobalan, Myrobalan, Harra.
Family - COMBRETACEAE.
Habit - Tree.

Identifying Characters --

1. The leaves are alternate to subopposite in arrangement, oval with petiole.^[3] They have an acute tip, cordate at the base, margins entire, glabrous above with a yellowish pubescence below.
2. The dull white to yellow flowers are monoecious, and have a strong, unpleasant odour. They are borne in terminal spikes or short panicles.
3. The fruit is drupe-like, broad, blackish, with five longitudinal ridges.

- 96. Botanical Name** - *Tradescantia zebrina*.
Common Name - Striped Wandering Jew.
Family - COMMELINACEAE.
Habit - Herb.

Identifying Characters --

1. Striped Wandering Jew is a succulent-stemmed plant that creeps and sprawls and trails all over itself to make a dense groundcover.
2. Leaves are oval, pointed, that clasp the stem alternately, and have hairy upper surfaces with a silky iridescent sheen. They are an intense violet on the underside and striped with pale silvery turquoise and dark burgundy-tinged green on top.
3. Flowers are borne in small clusters at branch ends, and are subtended by two leafy bracts. They have three bright pink or purple-magenta petals.



- 97. Botanical Name** - *Trema orientale*.
Common Name - Indian Charcoal Tree, Indian Nettle, Pigeon wood.
Family - CANNABACEAE.
Habit - Tree.

Identifying Characters --

1. Its bark is smooth and light grey with conspicuous lenticels (corky spots).
2. The leaves are simple, alternate, stipulate although the stipules drop early, and usually 3-nerved from the base. The leaf base is frequently unequal. Leaves taper from the base to the apex.
3. Leaf margins are finely serrated, and the young leaves are rough and hairy, occasionally becoming smooth when old.
4. Flowers are small, inconspicuous and greenish, carried in short dense bunches. They are usually unisexual

92. Botanical Name - *Tectona grandis*.

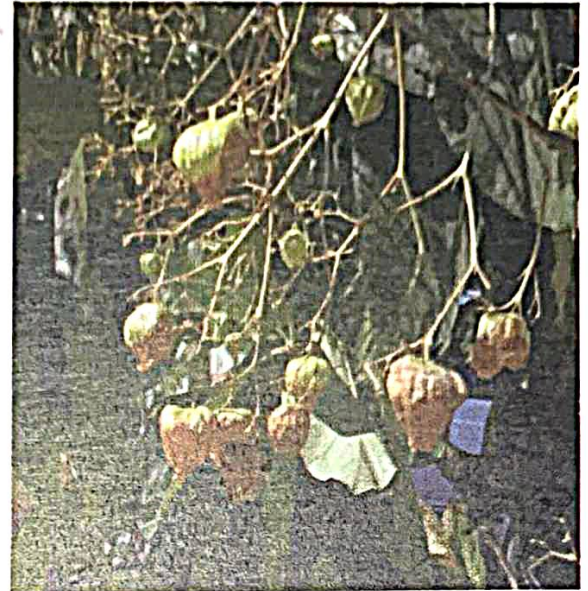
Common Name - Teak.

Family - VERVENACEAE.

Habit - Tree.

Identifying Characters --

1. Leaves of the tree are opposite, 30-60 cm long and 15-30 cm broad with rough texture.
2. The flowers come in large numbers in lax clusters at the end of branches. They are white and rather small.
3. The fruit is spongy and enclosed in the persistent calyx.



93. Botanical Name - *Terminalia arjuna*.

Common Name - Arjun.

Family - COMBRETACEAE.

Habit - Tree.

Identifying Characters --

1. Arjuna is a large, evergreen tree, with a spreading crown and drooping branches with bark is grey and smooth.
2. Leaves are sub-opposite, oblong or elliptic oblong.
3. Flowers small, white, and occur on long hanging racemes.
4. Fruit is long, fibrous woody, glabrous and has five hard wings, striated with numerous curved veins.

94. Botanical Name - *Terminalia bellirica*.

Common Name - Baheda, Belliric Myrobalan.

Family - COMBRETACEAE.

Habit - Tree.

Identifying Characters --

1. Leaves are alternately arranged or fascicled at the end of branches, elliptic or elliptic obovate, leathery, dotted, entire.
2. Flowers arise in spikes in leaf axils. Flowers are greenish yellow, stalkless, upper flowers of the spike are male, lower flowers are bisexual.
3. Fruit is obovoid in diameter, covered with minute pale pubescence, stone very thick, indistinctly 5 angled.



- 98. Botanical Name** - *Wrightia tinctoria*.
Common Name - Sweet Indrajao, Dyers's oleander, Dudhi
Family - APOCYNACEAE.
Habit - Tree.

Identifying Characters --

1. It is a small, deciduous tree with a light gray, scaly smooth bark.
2. The leaves of this tree yield a blue dye called Pala Indigo. Sweet Indrajao is called dhudi (Hindi) because of its preservative nature.
3. The white flowers may appear like snow flakes on a tree.
4. The fruits pendulous, long paired follicles joined at their tips. The hairy seeds are released as the fruit dehisces.



- 99. Botanical Name** - *Ziziphus jujuba*.
Common Name - Jujube, Red date, Chine
Family - RHAMNACEAE.
Habit - Small tree or shrub.

Identifying Characters --

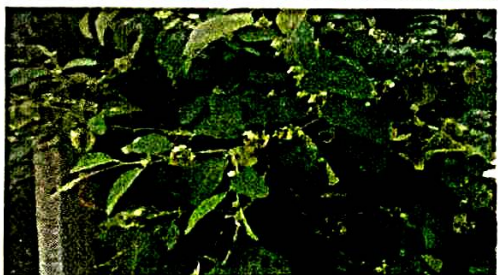
1. The leaves are shiny-green, ovate-pointed, with three prominent veins at the base, and a finely toothed margin.
2. The flowers are small, 5 mm wide, with five inprominent yellowish-green petals.
3. The fruit is an edible oval drupe. when immature it is smooth-green, with the consistency and taste of an apple with lower acidity, maturing brown to purplish-black, and eventually wrinkled, looking like a small date.



- 100. Botanical Name** - *Ziziphus mauritiana*.
Common Name - Indian jujube, Indian plum (Ber).
Family - RHAMNACEAE.
Habit - Small tree.

Identifying Characters --

1. Its bark, rough, gray or dull black, irregularly cracked, covered with a thick layer of green moss in the case of older trees and, thus, looking green.
2. Leaves, ovate, petiolate (petiole, 5 mm long), having very fine serration, 3.8 cm long, 2.9 cm broad, dark green and shining from above, white tomentose from beneath.
3. The flowers are yellowish and born in clusters along the leaf axils.





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