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A leaf key to Florida broad-leaved trees, native and exotic, except palms

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A LEAF KEY
To
Florida Broad-Leaved Trees

Native and Exotic, except Palms

by

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Illustrated by E. Bradley Tuttle



57 Union Street
Montclair, New Jersey

1937

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CONTENTS

Preface	4
Introduction	5- 7
A few places with interesting trees.....	7
Some useful literature	8
Abbreviations used in the Key	9
General Key	10
Simple leayes	11-46
Compound leaves	47-60
Plates	61-68
Index	60-79

PREFACE

The great size and varied climate of Florida make possible a vegetation comprising not only species native to this and other states and to the near-by islands, but also exotic plants from many other countries. This booklet offers to those passing through or living in the state a means of learning the names of most of its native and exotic trees. Palms, members of the pine order, and rare broad-leaved trees found only in nurseries, introduction gardens, and large private estates have been omitted. Over 600 species have been keyed, most of them readily found in the wild or along streets, and in parks, nurseries, and botanical gardens. A few of these places are listed elsewhere in the booklet.

The classification in this Key has been made on the basis of leaves, which are present for a longer time in the year than either flowers or fruits, and are more abundant and more easily studied. However, references have been made to other organs when leaves alone are insufficient to characterize a tree; and some indication has been given of the section of the state where each tree can be found (not the section to which it is native) and of its range in height. The two last-named characters can not be accurate until a survey of the whole state is made. Much valuable information concerning them can be obtained by interested persons, such as members of Garden Clubs. These and other corrections will be much appreciated if sent to me.

For a discussion of the names used in the Key see the beginning of the Index. The annotated reference list will suggest sources for the verification of results. They have been much used in its preparation.

The drawings have been made by Mr. E. Bradley Tuttle of Montclair, N. J., from specimens collected, for the most part, in Florida. They have been chosen to show types of branching, margin, etc., as well as to illustrate specific leaves, and should be consulted in connection with the Introduction, or explanation of terms used. Most of the drawings are half-size. It must be remembered, however, that leaves vary in size on the same tree.

I am greatly indebted to Dr. John Kunkel Small of the New York Botanical Garden, not only for much material contained in his *Manual of the Southern Flora*, the authority for the seed plants of that part of the country, but also for his advice, criticisms, and the loan of his manuscript on Florida exotics. Through him I have been able to meet many Florida botanists, who have served as guides and whose companionship has been a source of much pleasure.

I want also to thank for the use of herbaria the Directors of the New York Botanical Garden, the National Museum in Washington, and the State Agricultural Experiment Station in Gainesville, Florida; and for their services as advisers or field guides, Miss Adele Cazin, Woodbury, Conn.; Miss Lillian Arnold, Dr. H. Harold Hume, and Mr. Erdman West, Florida State Agricultural Experiment Station, Gainesville; Mr. George L. Taber, Jr., Glen Saint Mary Nurseries; Mr. and Mrs. William A. Knight, St. Augustine; Messrs. Jens Hansen and Henry Hofmann, McKee Jungle Gardens, Vero Beach; Mrs. H. M. Horton and Mrs. Carl Williams, Fort Pierce; Mrs. Beman G. Dawes, Jupiter Island, Hobe Sound; Mr. C. J. Briner, Fort Lauderdale; in Miami, Mr. Karl Dahlberg, Chief Horticulturist of the City of Miami; Mrs. Young C. Lott; Mrs. E. Peterson; Mr. F. J. Rimoldi, Lost Lake Arboretum; Mrs. Charles T. Simpson; and Mr. Gaines T. Wilson, Woodlawn Mausoleum; Dr. W. F. Buswell, University of Miami, and Mr. Frank Gephart of Coral Gables; Miss L. Downer, Dr. David Fairchild, and Mr. A. C. Splinter, Coconut Grove; Mr. T. B. McClelland and Mr. Joseph Fennell, Plant Introduction Gardens of the U. S. Department of Agriculture, Chapman Field; Mr. H. W. Johnston, Palm Lodge Nurseries, Homestead; Mr. R. L. McWilliams, Fort Myers; Dr. and Mrs. George W. Tyrrell, La Belle; Mrs. Marian A. McAdow, Treasure Island, Osprey; Mr. James A. Combs, Royal Palm Nurseries, Oneco; Mr. Charles S. Donaldson, Avon Park; Mrs. Mary F. Baker, Winter Park; and Dr. John H. Barnhart, New York Botanical Garden. Also Miss Eleanor R. Barrett of Montclair, N. J., who has helped with the Index.

MARY F. BARRETT.

57 Union Street, Montclair, N. J., October 2, 1937.

INTRODUCTION

What is a tree? For the purposes of this Key a tree is considered to be a woody plant with a single stem (trunk) at least three feet tall before it branches, and with a mature height of at least 10 feet. It is contrasted with a shrub or bush, which has more than one trunk and branches near the ground. The distinction between the two is hard to draw, because some shrubs are taller than certain trees, and because shrubs in one part of the state may be trees elsewhere. For that reason statements in the Key often read *sm.* or *sh.* (small or shrubby). No mention is made of shrubs which by pruning have been made to take on a tree-like shape.

Twig structures. (Pl. 1, f. 4.) A typical leaf grows sometimes from a tree trunk, but usually at a node on a twig. A twig is the youngest part of a branch—one year old or less. Often it is separated from the next older part of the branch by a series of close rings, the scars of the scales of the bud from which it developed. At intervals along a twig are nodes (“joints”), each of which bears a bud close to the twig and a leaf on the opposite side of the bud. The bud is said to be in the axil of the leaf. This is a typical arrangement; but sometimes the bud is invisible because it is under the bark, or it develops into a twig (pl. 3, f. 1), or a flower cluster, or a spine, or even into a leaf-like organ. The important things to remember are that the bud is in the leaf-axil, and that there is usually only one leaf-bud to a leaf.

Leaf arrangement. Sometimes a node bears only one leaf (pl. 1, fs. 3, 4; pl. 3, f. 4), sometimes two (pl. 2, fs. 2, 3; pl. 3, f. 1), and sometimes more than 2 (pl. 2, fs. 4, 5.) The first arrangement is called spiral; the second, opposite; and the third, whorled.

Spiral arrangement may have only two vertical rows of leaves on a twig (pl. 5, f. 5), or more than two, usually five (pl. 1, f. 3; pl. 3, f. 4). The first arrangement is easily detected, because the leaves, being on opposite sides of the twig, tend to lie flat when placed on a plane surface, number one and number three in the same straight line, and numbers two and four in an opposite line. Leaves in five rows, even when twisted so that they appear to be on opposite sides of a twig, always are betrayed by their nodes, some of which are on the upper, and others on the under side of a twig placed on a plane surface. A string passed from a node to the fifth node above it so that it touches each successive node will make two spiral turns around the twig. Number six will be directly above number one, number seven above number two, etc.

Opposite leaves are in four vertical rows on the twig. Sometimes the leaves of a pair, however, are not quite on the same level.

Usually a whorl of tree leaves consists of not more than four. A greater number means that the leaves are really spiral, but are crowded at the twig apex, or free end. (P. 6, fs. 4, 5.) This is often seen at the apex of spurs, which are dwarf branches, often many years old, but only a few inches in length. (Pl. 2, f. 1.)

Simple and compound leaves. Some leaves are simple (pls. 2-6); others compound (pls. 7, 8). A simple leaf (pl. 1, f. 4) has, typically, a blade, or flat expanded part; a petiole or stalk, which is to the blade what a neck is to a person's head; and a pair of stipules, miniature leaf-like parts at the base, or twig end of the petiole. Any one of these parts may be lacking. The stipules often are never present, or are spiny or scale-like, or drop early. In the last case, if they are large enough to have encircled the twig, they leave a ring around the node, as in the case of magnolias. This must not be confused with the scale scars at the base of a year's growth.

A once-compound leaf (pl. 7) may have stipules, and almost always has a petiole and a blade divided into leaflets. If there are only three leaflets the compound leaf is called trifoliate. (Pl. 7, f. 1.) If there are more than three leaflets, spreading out from the petiole apex like fingers on a hand, the leaf is digitately compound. (Pl. 7, f. 2.) It is pinnately compound if the leaflets grow alternately (pl. 7, f. 5) or oppositely (pl. 7, f. 6) along a rachis, which is a continuation of the petiole axis. This arrangement has nothing to do with the arrangement of the leaves on the twig and must not be confused with it.

A leaflet has a blade, sometimes a petiolule or stalk, and, rarely, stipels at the base of the petiolule. Fig. 5 in pl. 7 shows thickened petiolules; that of the apical leaflet being distinctly larger than the rachis at its base. **A leaflet never has a bud.** This differentiates it from a leaf. Nor is its rachis woody like a twig.

Some leaves are twice-compound. (Pl. 8.) Here the first division of the leaf is into pinnae. Each pinna itself is like a compound leaf, and its parts are called leaflets.

If the rachis of a leaf or of a pinna is terminated by a single leaflet the leaf is said to be odd-pinnately compound (pl. 7, f. 5; pl. 8, f. 5). Even-pinnately compound leaves are illustrated in pl. 7, f. 6; and pl. 8, fs. 1, 3.

The citrus trees and a few others have unifoliate leaves. There is a division between the apex of the petiole and the base of the blade which shows that the leaf, apparently simple, is really a compound leaf with only one leaflet. (Pl. 1, f. 3.)

Veining. Pl. 1, f. 1; pl. 2, fs. 1, 2, 5; and pl. 3, fs. 2, 4, 5 show basal veining. Most of the other figures picture pinnately veined leaves, those in which the midrib is much heavier than the secondary veins which branch from it. In pl. 4, fs. 1, 2, 5 the basal veins are more like secondary veins than like true basal veins, such as are seen in the above references. Some leaves of *Cordia myxa* (pl. 3, f. 7) appear to have basal veins, although others are obviously pinnately veined.

Pl. 4, f. 5 shows tertiary veins between and parallel to secondary ones. They are absent in oak leaves (pl. 6), in which the secondary veins and their branches are usually irregular, not parallel as in most of the figs (pl. 4).

In the background of a blade is a network, as shown in pl. 1, f. 3; pl. 4, fs. 3, 7; or tiny parallel veins, as in pl. 1, f. 2, where they are pinnately parallel since the leaf has a midrib; or in pl. 2, f. 1, where they are basally parallel. Pl. 4, f. 3 shows a checker-board network as contrasted with f. 7 on the same plate.

Margin. In pl. 4 all the leaves have entire side margins—untoothed and unlobed, although f. 7 has an abrupt lash-like apex and a slightly lobed base. Pl. 7, f. 1 shows an irregularly toothed margin; pl. 3, f. 3, a slightly scalloped one; and pl. 3, f. 6, spiny teeth. F. 7 in the same plate has distant coarse teeth; pl. 5, f. 5, fine ones; and pl. 8, f. 7, some double ones.

Pl. 1, f. 1 exhibits a basally lobed leaf in which the lobes are pinnately re-lobed. Pl. 1, f. 4 has toothed lobes, and pl. 3, f. 2 has entire lobes made by a cleft in the apex.

The apex of f. 4 in pl. 6 is rounded; of pl. 4, f. 2, narrowed and blunt; of f. 6 in pl. 4, abruptly long and slender; of pl. 4, f. 3, abruptly short-tipped; of pl. 4, f. 5, gradually, not abruptly tipped (gradually short-tipped); and of pl. 5, f. 2, gradually long-tipped.

There is a round base shown in pl. 3, f. 7; a wide V-shaped one in pl. 4, f. 4; and a narrow V in pl. 3, f. 4.

Petioles. Winged petioles are figured in pl. 7, fs. 1, 6; the latter of which has also a winged rachis. Pl. 8, f. 1 shows petiolules, and fs. 4, 6 on the same plate, unpetiololed leaflets.

References to other parts will be found in the text of the Key.

How to use the Key.

Choose a mature tree for examination. This is an outdoor Key, and even a good-sized branch is a poor substitute for a tree with its often characteristic bark and its thousands of leaves. The bark may help to determine whether a small tree is really mature, although some large trees have trunks which remain unfurrowed throughout increase in diameter.

Start with the General Key. Read the first statement: "1. Leaves large," etc. Look down the page to find another "1." There will be only one. Decide which statement fits your tree best, then examine the No. 2's under that statement, later the No. 3's, and so on until you reach either a name or a reference to another part of the Key.

The Key thus is made up of couplets (except in one case, P 5, which is very obvious). Therefore no time need be wasted in trying to find a third alternative. The sections of the Key are arranged alphabetically from A through Y, comprising the simple or apparently simple leaves; and from Z through ZZ, containing those which are compound. The simple leaves are often subdivided by using numerals. Ex. P 5.

Sometimes not all the characters given in a statement fit your tree. In that case first examine more leaves, more carefully. Then choose the statement nearest to the facts. Wherever possible the statements of a couplet have been made to contrast; but the omission of a character does not necessarily mean that it is lacking. Sometimes it is indefinite, or would not fit all the kinds of trees in its section. Statements are intended to suit the majority of leaves, but not all the leaves of the species named, since these vary greatly in size. Leaves of young plants or of rapidly growing shoots are particularly variable and should not be examined. If you find no statement to fit your tree you may have run across a rare, unincluded species, or one whose leaves are not typical, or one which is a hybrid or a variety and so is not keyed; or there may be a mistake in the key, which should be reported.

Leaves which vary decidedly in the same species or are likely to be misinterpreted usually appear in more than one section of the Key, with cross-references.

Dimensions of leaves are given in terms of the meter. This system is more accurate than that of the yard, since its divisions are always fixed. For example, there may be 8, 12, or 16 divisions of an inch, according to the measuring rule used; but there are only 10 divisions of a meter, decimeter, or centimeter. The metric system is simpler, too, when used in calculations. Its rulers are easily obtained.

A protractor is useful in measuring angles, and may usually be found in a five-and-ten-cent store or in a bookshop. Of course a magnifying glass is essential, but need not be of great power.

The divisions of the state of Florida which are represented by the initials N, C, and S are rough ones and have many exceptions. For instance, although the central part of the state is considered to lie between east-west lines drawn through Silver Springs on the north and Palm Beach-Punta Gorda on the south, coastal areas such as Merritt's Island on the east and similar places on the west coast, protected spots like the McKee Jungle Gardens at Vero Beach, and inland regions near large lakes will support trees normally found much further south. There is great need for observations along these lines, accompanied by accurate temperature records.

A FEW PLACES WITH INTERESTING TREES

This list is merely suggestive. It covers only the most accessible and best known places. Guides sometimes are available.

1. **Avon Park.** The Mall in the center of town.
2. **Dania.** Banyan Nursery. A few miles south of Fort Lauderdale on Route 1. It features an interesting banyan tree.
3. **Fort Pierce.** Cobb Park, recently acquired by a local nursery.
4. **Glen Saint Mary Nurseries.** On Route 90 at Glen Saint Mary, 30 miles west of Jacksonville. Native and exotic trees suited especially to north Florida, in an interesting setting.
5. **Homestead.** Palm Lodge Nurseries. Tropical fruit trees.
6. **Miami and vicinity.**
 - Bay Front Park.** Between Biscayne Boulevard and the water-front at N. E. 6th Street. Principally exotics in formal planting.
 - Chapman Field.** Plant Introduction Gardens of the United States Department of Agriculture. About 7 miles south of Coconut Grove on Red Road. Many labeled trees, some not found elsewhere.
 - Lost Lake Arboretum.** West of Miami on Bird Road east of Tropical Park. Labeled small specimens of economic trees.
 - Matheson Hammock.** About two miles south of Coconut Grove on Ingraham Highway. A natural hammock growth with some labeled trees.
 - Simpson Park.** South Miami Avenue and 15th Road. Principally wild species in a native setting. With Bay Front Park under the supervision of Mr. Karl Dahlberg, Chief Horticulturist of the City of Miami, an authority on native and tropical plants.
 - Woodlawn Mausoleum Park.** On the Tamiami Trail east of Coral Gables. Some unusual exotics.
7. **Oneco.** Royal Palm Nurseries. The celebrated Reasoner Nursery, which has imported many rare plants.
8. **Royal Palm State Park.** 45 miles southwest of Miami. Everglade Keys, swamps, etc., covering 4,000 acres. Paths through otherwise almost untouched vegetation of tropical and sub-tropical nature.
9. **Sebring.** Highlands Hammock. Natural hammock growth typical of the central section of the state. Has an interesting cypress swamp.
10. **Vero Beach.** McKee Jungle Gardens. A few miles south of town on Route 1. More than 100 different trees, some rare, in a beautiful setting. Labeled trees.
11. **Winter Haven.**
 - Citrus nurseries of **Glen Saint Mary Nurseries.**
 - Cypress Gardens.** Some labeled trees in a beautiful setting.

SOME USEFUL LITERATURE

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Valuable especially for names (with authors) of exotics, descriptions, some pictures, and pronunciations.
2. Bailey, L. H. & E. Z., compilers. Hortus. N. Y. The Macmillan Co. 1930
A condensation, brought up to date, of No. 1. Brief descriptions only.
3. Baker, Mary F. Florida wild flowers. N. Y. The Macmillan Co. 1926
An attractive popular book, describing some trees.
4. Donaldson, C. S. The trees and shrubs of Highlands Hammock; in The plant life of Highlands Hammock. Popular descriptions of the principal trees. Sebring
5. Mattoon, W. R. Common forest trees of Florida. Fla. Forestry Association. 1925
Descriptions and illustrations of 95 native trees, and references to several exotics. A "pocket manual."
6. Mowry, Harold; Toy, L. B. R.; & Wolfe, H. S. Miscellaneous tropical and sub-tropical fruits. Bulletin 85, Agricultural Extension Service. Gainesville Fla. 1936
Very complete descriptions, well illustrated, of about 45 fruit trees.
7. Mowry, H. Native and exotic palms of Florida. Bulletin 84, Extension Service as above. Attractive and well-illustrated, containing check list. 1936
8. Mowry, Harold. Ornamental trees. About 125 species are described or referred to. Attractive and well illustrated. Bulletin 261, Agricultural Experiment Station, Gainesville, Fla. Out of print. 1933
9. Rehder, Alfred. Manual of cultivated trees and shrubs. N.Y. The Macmillan Co. 1934
No pictures; but technical descriptions of and keys to some of the northern trees.
10. Rock, J. F. Leguminous plants of Hawaii. Bulletin of the Hawaiian Sugar Planters Association. Good illustrations and descriptions. Out of print.
11. Rock, J. F. The ornamental trees of Hawaii. Honolulu. 1917
Expensive work. Some of same pictures as in preceding bulletin.
12. Sargent, C. S. Manual of the trees of North America. Boston & N. Y. Houghton, Mifflin Co. 1921
Technical descriptions and illustrations of almost all native trees.
13. Simpson, C. T. Ornamental gardening in Florida. Little River, Fla. 1926
Interesting popular notes by a pioneer botanist in Florida.
14. Small, J. K. Florida trees. N.Y. 1913
Short technical descriptions with keys based on flowers and fruits. Material included in next reference.
15. Small, J. K. Manual of the southeastern flora. N. Y. 1933
The most authoritative work on the flora of Florida as well as of the rest of the states included. Technical descriptions and plates illustrating flower and fruit characters of most genera. Particularly valuable for names, regions, and sizes of native and naturalized species, and for checking with flowers.
16. Taylor, Norman, editor. The garden dictionary. Boston & N. Y. Houghton, Mifflin. 1936
Contains brief descriptions of many exotics as well as of native and naturalized species. Pronunciation well marked.

ABBREVIATIONS USED IN THE KEY

- *. Exotic. Trees not so labeled are native or naturalized.
- All. Found throughout Florida.
- alt. Alternate.
- asym. Asymmetrical.
- C. Found in central Florida: in general south of east-west line through Silver Springs, and north of a line from Palm Beach to Punta Gorda.
- cm. Centimeter: $\frac{2}{5}$ of an inch. Contains 10 millimeters.
- diam. Diameter.
- dm. Decimeter. 10 centimeters. 4 inches.
- esp. Especially.
- f, fs. Figure (in plate), figures.
- Fla. Florida.
- Gen. Key. General Key.
- lf, lft, lfts, lvs. Leaf, leaflet, leaflets, leaves.
- M. Middle Florida, the interior of the Peninsula.
- m. Meter. 10 decimeters. 100 centimeters. About 40 inches.
- Med. Medium in height. About 30-60 ft.
- mm. Millimeter. $\frac{1}{10}$ of a centimeter. $\frac{1}{25}$ of an inch.
- N. Found in north Florida, north of an east-west line through Silver Springs.
- NW. Found in Florida west of the Peninsula.
- opp. Opposite.
- pl, pls. Plate, plates.
- pr. Pair.
- Pen. Found in the Peninsula.
- S. Found south of a line from Palm Beach to Punta Gorda.
- sec. Secondary, as in veins. See Introduction for explanation.
- Sh. Shrubby.
- Sm. Small. Less than 30 ft. tall.
- Sp. Species. Used also after a genus name when the plant has as yet no specific name, or when the species is uncertain.
- sym. Symmetrical.
- us. Usually.
- var. Variety (of a species).
- X. Hybrid.

GENERAL KEY

(Directions for using the key and explanations of some terms are included in the INTRODUCTION. Leaf characters are illustrated in the eight plates. For the meaning of the abbreviations see page 9. Synonyms and common names are in the INDEX.)

1. Leaves large, growing near the top of an almost or quite unbranched tree trunk, or, occasionally, lower on the trunk.
2. Leaves several feet long, forming flat, upright, fan-like foliage; trunk sometimes short, scarcely woody. Small. C.S.
3. Leaf blades erect.....**Ravenala madagascariensis*
3. Leaf blades drooping.....**Strelitzia nicolai*
2. Foliage not as just described, but horizontal or feather duster-like.
3. Smallest visible veins of blade almost parallel to one another. (Pl. 1, f. 2).
4. Blades partly divided into tapering finger-like lobes, or completely divided into separate leaflets growing along a central rachis.....*Palmae*
(The palms are omitted here. See Bulletin 84, State Experiment Station, Gainesville, Florida.)
4. Blades, unless injured, unlobed and undivided.
5. Largest veins of blade consisting of midrib and secondary side veins; blades several dm. wide, soon tattered by wind. Not woody.....*Musa*
5. Largest blade veins running lengthwise without midrib; blades less than 1 dm. wide. (Pl. 2, f. 1.).....*Key A*
3. Smallest visible veins of blade intersecting, forming a network. (Pl. 1, f. 3.)
4. Leaves simple (undivided into separate parts), although sometimes lobed.
5. Blades lobed digitately (like fingers).
6. Lobes deeply pinnately re-lobed, or deeply toothed.
7. Juice milky. Largest trees more than 12 ft. high. Melon-like fruits usually visible on trunk. C.S. (Pl. 1, f. 1.).....**Carica papaya*
7. Juice not milky. Trees less than 12 ft. high. No melon-like fruits. N.C. Also in KEY Q.....**Tetrapanax papyriferum*
6. Lobes not re-lobed or deeply toothed. Sm. C.S.
**Cecropia*, KEY O 3
5. Blades unlobed. Trees small or shrubby.
6. Blades long, narrow, toothed; juice milky. S.....**Ficus pseudopalma*
6. Blades large, almost round, untoothed, hairy underneath; juice not milky. C.S. Also in KEY R2.**Coccolobis pubescens*
4. Blades divided into pinnae, which are re-divided into leaflets; petiole very sticky. Tall or med. S. Also in KEY ZY.
**Schizolobium parahybum*
1. Leaves on twigs, sometimes at apex of spurs. (Compare pl. 2, f. 1.)
2. Branches as well as twigs round, green, thick, numerous, forking irregularly; leaves few, about 2.5 cm. long. Sm. or sh. C.S.....**Euphorbia tirucalli*
2. Branches and leaves not both as just described.
3. Leaves scale-, wedge-, spike-, or needle-like, usually very narrow; midrib usually only distinct vein. (Pl. 2, f. 4.).....KEY B
3. Leaves (or leaf-like twigs) of foliage type, usually not very narrow; other veins than midrib usually visible.
4. Smallest visible veins of blade nearly parallel to one anotherKEY A
4. Smallest visible veins intersecting, forming a network.
5. All leaves simple (undivided) or appearing so. (Pls. 1-6).....KEY D
5. Leaves compound (divided), sometimes with a few simple leaves also.
6. Leaves consisting of a usually winged petiole; and only one leaflet, with a division between it and the petiole; blade pinhole-dotted, aromatic; twigs green, usually spiny and ridged. (Pl. 1, f. 3)....KEY Y
6. Most or all leaves consisting of petiole, leaflets, and sometimes a rachis; or if twice-compound of petiole, pinnae, and leaflets, with a rachis supporting the pinnae and others supporting the leaflets. (Pls. 7, 8)KEY Z

KEY A. BLADES PARALLEL-VEINED

1. Blades small, fan-shaped; apex often notched; leaves mostly clustered on knob-like spurs. Large or med. N. (Pl. 2, f. 1.).....**Ginkgo biloba*
1. Blades long, narrow, grass-like; apex bristled; leaves not on spurs. Small, almost herbaceous, sometimes branched.....*Yucca*
2. Leaves upright or spreading, covering trunk, sometimes fraying; trunk bark light-colored. N.*Y. gloriosa*
2. Upper leaves spreading; lower ones drooping, soon dropping from trunk and leaving leaf scars; trunk bark dark-colored. NW & Pen.....*Y. aloifolia*

(The bamboos apparently belong here; but grow in clumps, several stems to a plant, and so are truly shrubby.)

KEY B. LEAVES LIKE SCALES, WEDGES, SPIKES, OR NEEDLES; VEINS INDISTINCT

1. Twigs (not leaves) needle-like, appearing jointed; leaves tiny, scale- or tooth-like, in a circle at each node; internodes not covered by leaves; fruit a roundish cone-like body. Tall. (Pl. 2, f. 4.)*Casuarina*, KEY C
1. Twigs not as just described, although leaves sometimes needle-like.
2. Leaves compound (divided), long, wiry; rachis flat, bearing leaflets of same width or less; spines at nodes. Sm. or sh. All. Also in KEY Z. *Parkinsonia aculeata*
2. Leaves simple (undivided), they and twigs not like *Parkinsonia*; tree not spiny.
3. Leaves not more than 2 mm. long, scale-like, pressed to twig, covering internodes. Sm. or sh. N.*Tamarix gallica*
3. Leaves and twigs not both as just described.
4. Lvs. to 2 cm. long, not resinous, long-pointed, basal-veined; margin minutely toothed; trunk bark pale-reddish, soft, splitting and opening. Med. C.S. Also in KEY Q2.....**Melaleuca styphelioides*
4. Lvs. and trunk not both as just described, lvs. usually resinous. Pine relatives, not included in this key.....*Gymnospermae*

KEY C. CASUARINA

(The easiest way to examine the leaves is to pull a twig apart at a node, and then to split and flatten out the section which has the leaves standing up like teeth.)

1. About 16 leaves at a node; internodes more than 1 cm. long, grayish, more than one mm. in diameter, stiff. C.S. (Pl. 2, f. 4.).....**C. glauca*
1. Less than 16 leaves at a node; internodes shorter than in above species, slenderer and more flexible, green except in *C. stricta*.
2. Internodes heavily ribbed, gray. C.S.**C. stricta*
2. Internodes striped rather than ribbed, green.
3. 6-8 leaves at a node. Common tree with irregular shape, horizontal branches and open head; often used near salt water. Pen.....*C. equisetifolia*
3. 8-12 leaves at a node. Branches drooping or ascending, darker green than above species; tree sprouting from roots. Pen.....*C. cunninghamiana*

KEY D. LEAVES SIMPLE OR APPEARING SO

1. Leaves opposite or whorled (pl. 2, fs. 2, 3, 4, 5) or in 4 vertical rows on twig; sometimes not quite on same level if more than 1 at a node. If more than 4 apparently are at the same node the leaves are spiral, but crowded.KEY E
2. Blades basally veined (pl. 2, fs. 2, 5.).....KEY E
2. Blades pinnately veined (pl. 2, f. 3; pl. 3, f. 1.)
3. Most or all blades untoothed (pl. 2, f. 3; pl. 3, f. 1.).....KEY F
3. Most or all blades toothed, although sometimes shallowly (pl. 3, f. 3).....KEY M
1. Leaves spiral, usually in 2 or 5 vertical rows on twig; sometimes appearing whorled because crowded at apex of twig or spur, but shown to be spiral by arrangement of leaf scars or buds lower on branch. (Pl. 1, f. 4.)
2. Trees armed; leaves or wood prickly or spiny. (Pl. 3, f. 6.)
3. Blades pinhole-dotted, aromatic when broken; petiole usually winged, a dividing line between it and blade base; margin usually slightly toothed; twigs green, waxy, often ridged. Citrus fruits. (Pl. 1, f. 3.).....KEY Y
3. Leaves and twigs not both as in citrus fruits.....KEY N
2. Trees unarmed on leaves and wood, although sometimes bearing prickly fruits.

3. Juice of leaves milky or noticeably sticky.....KEY O
3. Juice of leaves watery, sometimes apparently lacking.
4. Blades basally veined (pl. 3; fs. 2, 4, 5; pl. 5, f. 5.)
5. Side margins entire (pl. 3, f. 4), or lobed with entire margins (pl. 3, fs. 2, 5.)
KEY P
5. Side margins toothed (pl. 5, f. 5.) or having toothed lobes.....KEY Q
4. Blades pinnately veined [pls. 5 (except f. 5), 6.]
5. Both unlobed and lobed blades on same tree or same kind of tree. (Pl. 6, f. 5.)KEY X
5. Leaves similar or varying slightly in shape, but not from unlobed to lobed.
6. Side margins of blade unlobed, although sometimes a lobed base is present. (Pl. 5, fs. 1-3; pl. 6, f. 4.)
7. Side margins untoothed in blades of mature trees and shoots.
8. Large stipules present, or else a ring left by them completely around twig at each node.....KEY R
8. Large stipules lacking; no rings around twig except between years' growths.
9. Blades aromatic when crushed and sometimes distinctly pinhole-dotted (not merely pitted where hairs or scurf have been).
KEY S
9. Leaves not pinhole-dotted or aromatic.
10. Leaves in 2 distinct rows on twig. (Compare pl. 5, f. 5.)
KEY T
10. Leaves in more than 2 distinct rows, or apparently clustered at apex of twig or spur in groups of more than 4. (Pl. 6, fs. 4, 5)KEY U
7. Side margins toothed in most blades of mature trees.
8. Leaves in 2 vertical rows on twig. (Compare pl. 5, f. 5.).....KEY V
8. Leaves in more than 2 vertical rows or irregular, but not in 4 rows.
KEY W
6. Side margins of blade lobed; sometimes also toothed or re-lobed. (Pl. 5, f. 4; pl. 5, f. 4; pl. 6, fs. 1, 2, 3.).....KEY X

KEY E. LEAVES SIMPLE, OPPOSITE OR WHORLED, BASALLY VEINED

1. Side basal veins curved toward apex of blades, more or less parallel to side margins. (Pl. 2, f. 2.)
2. Crushed leaves and/or bark cinnamon-scented. Med. C.S.
**Cinnamomum cassia*
2. Trees not cinnamon-scented.
3. Blades seen to be pinhole-dotted when held to light.....KEY H 2
3. Blades not pinhole-dotted. Sm. or sh. S.
4. Length of largest blades more than 7 cm., more than 3 times their greatest width; under surface silvery-scurfy. Tree not spiny. (Pl. 2, f. 2.)
Tetrazygia bicolor
4. Length not more than 7 cm., not more than 3 times width; under surface not silvery. Typically 2 spines at a node.....**Strychnos spinosa*
1. Side basal veins straight or only slightly curved, running to side margins. (Pl. 2, f. 5.)
2. Margin of blade untoothed and unlobed, or with untoothed lobes; blades roundish or heart-shaped. Large. Not in S.
3. Usually only 2 leaves at a node; upper blade surface hairy (as seen with lens); flower buds or short pods often seen in clusters at apex of branches. N.
Paulownia tomentosa
3. Often 3 leaves at a node; mature upper surface bare of hairs; fruits long narrow pods; buds not evident. NW,C. (Pl. 2, f. 5.).....*Catalpa bignonioides*
2. Margin of blade toothed, or lobed with the lobes toothed or re-lobed.
3. Blades lobed, somewhat star-shaped; no stipules or milky juice; fruit 2-winged.
Acer relatives, KEY E 2
3. Blades lobed only at base, oblong rather than star-shaped; large stipules at nodes; juice milky; fruit, small figs on trunk. KEYS G, M, O 2.
**Ficus hispida*

KEY E 2. ACER RELATIVES

(Considered by some authorities species of the genus ACER.)

1. Blades toothed, but not lobed. Becoming large. All.**Rufacer carolinianum**
1. Blades lobed, the lobes toothed or untoothed.
 2. Lobes blunt, the largest one bearing 3 small rounded lobes or teeth; fruit-halves 1.5-3 cm. long. Med. NW.....**Saccharodendron floridanum**
 2. Lobes pointed; more teeth present than in above species, teeth often pointed.
 3. Under surface of blade densely white-hairy even when mature; fruit halves more than 4 cm. long. Large or med. All.**Rufacer drummondii**
 3. Under surface usually not very hairy when mature, but pale or silvery.
 4. Margin indented more than halfway to petiole; lobes deeply cut or re-lobed with at least some pointed teeth, often long-tipped; base of middle lobe narrowed; fruit halves 5-6 cm. long. Large. N.C.**Argentacer saccharinum**
 4. Margin less deeply indented; lobes not deeply cut or long-tipped or narrowed near their base.
 5. Teeth sharp-pointed, close, lobes appearing jagged; base more or less lobed; fruit halves usually less than 3 cm. long. Large. All.**Rufacer rubrum**
 5. Teeth rounded or hooked, not very close; base seldom lobed; fruit halves usually 3-4 cm. long. Becoming large. All....**Rufacer carolinianum**

KEY F. LEAVES SIMPLE; OPPOSITE, IN 4 ROWS, OR WHORLED; PINNATELY VEINED; ENTIRE

1. Blades grass-like; width 5-10 mm., length at least 10 times greatest width. Sm. or sh. N. Native to southwestern U. S.***Chilopsis linearis**
1. Blades not as just described.
 2. Stipules or their scale-like remnants showing between leaves at upper nodes.**KEY G**

2. Stipules not present.

3. Blades pinhole-dotted (translucent when held to strong light) or thickly pimply (seen when upper surface is magnified). Not to be confused with thickened or transparent parts of network, or with pits left by scurf or hairs, or with occasional dots or pimples.....**KEY H**

3. Blades not pinhole-dotted or pimply.

4. More than 2 leaves at some or all nodes; largest leaves at least 10 cm. long.

5. Length of leaves less than 5-6 times their greatest width. Sm. or sh. S.***Kopsia arborea**
5. Leaves' length 5-6 times their width. Large common shrub, possibly sometimes tree-like.....**Nerium oleander**

4. Leaves opposite only, or if whorled then less than 10 cm. long.

5. Secondary veins 3 or more to 1 cm. at center of midrib, or side veins so close and equal that secondary can not be told from tertiary; largest blades at least 10 cm. long.

6. Side veins leaving midrib at upper angle of about 45°; blades fleshy, widest near apex. Med. or sm. S.**Clusia rosea**
(**Clusia flava**, not recently found, has narrower leaves.)

6. Central side veins leaving midrib at angle of 65° or more; 10 or more secondary veins to 1 cm. at midrib, and largest blades 9 cm. long or more. Med. or sm. S.**Calophyllum**

7. Largest blades more than 7 cm. wide; base of blade usually rounded.***C. inophyllum**

7. Blades not more than 5 cm. wide; base much narrowed and V-shaped.***C. antillanum**

5. Less than 3 secondary veins to 1 cm. at midrib, except sometimes when blades are less than 10 mm. long.

6. Apex of most or all blades formed by the meeting of the side margins without an abrupt change in their direction; apex blunt, sharp, notched, or gradually prolonged, sometimes bristle-tipped or bearing a tiny sharp point. (Cf. pl. 3, f. 4; pl. 5, f. 2.).....**KEY I**

6. Apex of most or all blades prolonged by an abrupt change in direction of one or both side margins; making a beak, snout, slender tip or lash. (Pl. 3, f. 1.).....**KEY L**

KEY G. LEAVES SIMPLE, OPPOSITE OR WHORLED, PINNATELY VEINED, ENTIRE, NOT GRASSLIKE, STIPULES OR THEIR REMNANTS PRESENT

1. Large tree; figs often present on trunk; juice milky; stipules large; blades to 20 cm. long or longer, rough on upper surface, hairy below. S. Also in KEYS E, M, O 2.....**Ficus hispida*
1. Usually small or shrubby; no figs or milky juice; stipules small or scale-like.
2. Twigs and/or foliage hairy, at least on under side of blade.
3. Upper blade surface rough; blade base roundish; veining prominent. S.
Guettarda scabra
3. Upper surface not rough.
4. Blades less than 10 cm. long (us. less than 7 cm.); base V-shaped or rounded.
5. Apex abruptly short-, sharp-, slender-tipped; secondary veins curving, not forking. S.*Guettarda elliptica*
5. Apex blunt or notched, sometimes abruptly prolonged into a thick tip; secondary veins straight, then forking. Med. or sm. C.S. (Pl. 2, f. 3.).....*Krugiodendron ferreum*
4. Largest blades more than 10 cm. long.
5. Base rounded or slightly lobed; blade densely light-hairy. S.
**Vangueria infausta*
5. Base V-shaped, or rounded with a V-shaped dip at petiole.
6. Twigs, petiole, and midrib reddish, not very hairy; blade base a long narrow V; lvs. often whorled. Dry places. C.S.*Hamelia patens*
6. Twigs and leaves not reddish, very hairy; base of blades not a narrow V; all leaves opposite. Wet places. NW.*Pinckneya pubens*
2. Twigs and foliage almost or quite bare when mature.
3. Apex rounded, us. with a short, sharp, abrupt tip or bristle; blades leathery, widest above center; sec. veins at acute angle. S.*Casasia clusiifolia*
3. Apex narrowed.
4. Blades not more than 7.5 cm. long; about 5-7 secondary veins. S.
Exostema caribaeum
4. Largest blades more than 7.5 cm. long.
5. Base a narrow V (30°-40°); secondary veins conspicuous on upper surface.
Psychotria
6. Veins depressed on upper surface, surface shiny; length of largest blades less than 3 times their greatest width. C.S.*P. nervosa*
6. Veins and surface not so marked as just described; length 3 times greatest width. S.*P. bahamensis*
5. Base a broad V, or rounded.
6. Blade thin, network inconspicuous; tip not very short, varying; petiole more than 1 cm. long, slender; 2 or 3 leaves at a node. Wet places. Scattered*Cephalanthus occidentalis*
6. Blade leathery; tip very short; petiole to 1 cm. long, thick; only 2 leaves at a node. Dry places. S.
7. Upper surface very shiny, network conspicuous; width of stipules greater than their length.....**Portlandia grandiflora*
7. Upper surface not very shiny; network inconspicuous; length of stipules greater than width.....**Posoqueria latifolia*

KEY H. LEAVES SIMPLE, OPPOSITE, PINNATELY VEINED, ENTIRE, NOT GRASSLIKE, UNSTIPULED, DOTTED

(Dots in such genera as *Amarolea*, *Ligustrum*, *Viburnum* and others come from rubbed-off scurf or hairs, as may be seen by comparing mature with immature leaves. Doubtful specimens should be looked for under undotted leaves.)

1. Under blade surface hairy.
2. Veins depressed on upper surface, raised on under one; apex blunt, not prolonged; trunk bark peeling. Med. to sh. C.S.*Psidium guajava*
2. Leaves not as just described.....*Eugenia* relatives, KEY H 2
1. Under surface almost or quite hairless; other characters not all as just described.
2. Largest blades at least 11 cm. long from base through tip (if present).
3. Network very distinct, almost as thick as secondary and tertiary veins; side veins at almost a right angle to midrib; no prominent border vein. To large. S.**Mammea americana*
3. Network finer than secondary veins, or invisible without a lens, or else border veins prominent.

4. Network not visible; apex not much, if at all, prolonged; blade leathery.
Sm. S. Also in KEYS K, K 2.....**Garcinia spicata*
4. Network visible without lens.
5. Blade apex slender, gradually long-pointed; length usually 4 times greatest width, or longer. Med. or sm. C,S. KEY in H 2.
**Jambosa jambos*
5. Blade not as just described.
6. Blade apex not abruptly prolonged.
 7. Blade apex rounded or notched or bristled; side veins irregular; some blades more than 15 cm. long. Sm. or sh. S. Also in KEY K 2.....**Garcinia livingstonei*
 7. Apex narrowed, blunt or pointed; side veins parallel; blades to 15 cm. long. To large. C,S.....**Calodendrum capense*
6. Blade apex abruptly prolonged.
 7. Side veins curved irregularly; largest blades 20-35 cm. long; petiole very thick. Med. or sm. S. Also in KEYS K 2, L.
**Garcinia tinctoria*
 7. Side veins parallel; petiole not thick for leaf size.....*Eugenia*, KEY H 3
2. Largest blades less than 11 cm. long.
3. Dots often opaque; veins transparent. Sm. or sh. Pen....**Forestiera porulosa*
3. Dots translucent; veins opaque.....*Eugenia* relatives
4. Blade apex formed by the natural meeting of the side margins without change of direction; prolonged, or rounded, or tipped with a point or bristle.
KEY H 2
4. Blade apex abruptly prolonged into a tip by the change in direction of one or both side margins.....KEY H 3

KEY H 2. EUGENIA RELATIVES. BLADE APEX NOT ABRUPTLY PROLONGED

(All these species are considered by some authorities to belong to the genus *Eugenia*.)

1. Largest blades more than 8 cm. long, sometimes reddish when young.
2. Blade length of largest leaves at least four times their greatest width; apex slender, long, narrowed from center or below. Med. or sm. C,S. Also in KEY H.....**Jambosa jambos*
2. Length of blade less than 4 times its width.
 3. Side veins at almost right angle to midrib; petioles often more than 1 cm. long. Tall or med. C,S. Also in KEY H 3.....**Syzygium cumini*
 3. Side veins at almost right angle to midrib; petioles often more than 1 cm. long. Med. S.**Eugenia brasiliensis*
1. Blades not more than 8 cm. long.
 2. One or 2 pairs of secondary basal veins near blade base, running at a more acute angle than other secondary veins and starting a border; base very narrow; apex slightly narrowed, blunt. Sm. C,S.**Eugenia buxifolia*
 2. No basal veins; secondary veins almost parallel to one another.
 3. Twigs and under blade surface hairy.
 4. Length of blade 3-4 times its greatest width; apex gradually prolonged to a point. Med. or sm. C.**Eugenia myrcianthes*
 4. Length of blade less than 3 times width; apex rounded with a point, or abruptly prolonged. Med. or sh. C.**Eugenia edulis*
 3. Twigs and under surface hairless, at least when mature.
 4. Base almost round; apex narrowed. Sm. or sh. S.**Myrciaria cauliflora*
 5. Apex blunt, usually rounded; blades to 5 cm. long.....**Mosiera bahamensis*
 5. Apex sharp, long-pointed; largest blades more than 5 cm. long.
 4. Base narrowed, V-shaped.
 5. Length of blade about 3 times its greatest width; apical and basal halves about equal. Sm. or sh. S.**Eugenia eucalyptoides*
 5. Length of blade less than 3 times greatest width, or else halves not equal.
 6. Apex rounded; vein border 1-2 mm. from side margins. Sm. or sh. C. *Eugenia anthera*
 6. Apex sharp-pointed, at least at first; border almost on margin; trunk bark peeling. Med., sm., or sh.
 7. Blades usually not more than 4 cm. long and/or 2 cm. wide; apex sometimes tapering gradually, sharp-pointed, or rounded with a point; upper surface not pimply. N, C, S.**Ananomis dierana*
 7. Largest blades more than 4 x 2 cm.; apex rounded with a point; typically pimply on upper surface. C,S.**Ananomis simpsonii*

KEY H 3. EUGENIA RELATIVES, APEX ABRUPTLY PROLONGED

(All but *Calypttranthes* often are considered *Eugenia*.)

1. Largest blades 9 cm. long, at least.
2. Secondary and tertiary veins almost same thickness or else less than 1.5 cm. apart at central part of midrib.
 3. Blade length never much more than twice its greatest width; network indistinct. Tall or sm. C.S. Also in KEY H 2.....**Syzygium cumini*
 3. Blade length often much more than twice width; network distinct. Tall or sm. C.S.**Syzygium smithii*
2. Sec. veins 1.5 cm. or more apart at midrib center, thicker than tertiary veins.
 3. Angle of secondary veins about 45°; base usually narrowed. Sm. S.**Jambosa malaccensis*
 3. Angle of secondary veins at least 65°; blade base usually rounded; a faint border outside of main border. Sm. C.S.**Jambosa grandis*
1. Blades less than 9 cm. long.
 2. Blade apex a long lash-like tip 1/3-1/2 as long as rest of blade; leaves conspicuously dark green, shiny; 2 basal secondary veins forming a border; network very distinct. Med. or sm. S.*Eugenia confusa*
 2. Blade apex shorter in proportion to rest of blade than that of *E. confusa*, or gradually prolonged.
 3. Blade base a narrow V; apex narrow and sharp-tipped; twigs, petioles, and new leaves reddish; twigs usually not ridged. Sm. or sh. Pen.**Syzygium paniculatum*
 3. Blade base rounded or a wide V; apex stout and blunt; twigs light-colored.
 4. Twigs not ridged or angled.
 5. Secondary veins sometimes 1 cm. apart or more; skunky odor about tree; flowers and fruits short-stalked. Sm. or sh. C.S.*Eugenia axillaris*
 5. Secondary veins less than 1 cm. apart; no skunky odor; flowers and fruits long-stalked. Sm. S.*Eugenia rhombea*
 4. Most twigs ridged or angled, sometimes developing in axil of leaves.*Calypttranthes*
 5. Petioles often over 5 mm. long; tips to 1 cm. long; twigs distinctly ridged. Sm. or sh. S.**C. pallens*
 5. Petioles not more than 5 mm. long; tips less than 1 cm. long; some twigs not ridged. Med. or sh. S. (Pl. 3, f. 1.).....**C. zuzygium*

KEY I. LEAVES SIMPLE, OPPOSITE, PINNATELY VEINED, ENTIRE, UNSTIP-ULED, UNDOTTED, APEX NOT ABRUPTLY PROLONGED

1. Under surface of blade almost or quite bare (sometimes a few hairs on midrib).
 2. Largest blades not over 7.5 cm. long.....KEY J
 2. Largest blades more than 7.5 cm. long.....KEY K
1. Under surface of blade decidedly scurfy or hairy.
 2. Twigs, petioles and under surface of blade red-scurfy; blade pitted where scurf has come off. Sm. or sh. N, C. Also in KEY M 2.*Viburnum obovatum*
 2. Twigs and leaves not red-scurfy, although sometimes red-hairy.
 3. Length of blade less than twice its greatest width. Sm. or sh. S. Also in KEY J.....**Pisonia rotundata*
 3. Length of largest blades more than twice their greatest width.
 4. Blade width less than 2.5 cm.; upper surface scurfy, at least at first; under surface silvery; tree grayish. Med. or sm. N, C, S.....**Olea europaea*
 4. Width of largest blades more than 2.5 cm.
 5. Under blade surface white as if whitewashed; width less than 4 cm. Sm. or sh. All. Near coast.....**Avicennia nitida*
 5. Under surface not white; largest blades 4 cm. wide or wider.
 6. Apex and base of blade somewhat rounded; more than 8 pairs of secondary veins; trunk bark often peeling. Tall or med. S. Also in KEYS K, L, M, U 5. (Pl. 3, f. 3.).....**Terminalia arjuna*
 6. Apex and base of blade narrowed.
 7. Not more than 8 distinct pairs of secondary veins, at angles of about 35°-45°. Sm. or sh. C, S. Also in KEYS K, L, M.*Citharexylum fruticosum*
 7. More than 8 pairs of secondary veins in blade, at a greater angle than 45°. Also in KEY L. See KEY K for difference between *Amarolea* and *Chionanthus virginica*

**KEY J. LEAVES SIMPLE, OPPOSITE, PINNATELY VEINED, ENTIRE, UNSTIP-
ULED, UNDOTTED, APEX NOT ABRUPTLY PROLONGED, UNDER
SURFACE BARE, BLADES NOT OVER 7.5 CM. LONG**

1. Largest blades more than 4 cm. long.
 2. Length of most blades at least 3 times their greatest width; petioles red; twigs sometimes spiny. Sm. or sh. All. **Punica granatum**
 2. Length of blades less than 3 times their greatest width; twigs not spiny.
 3. Base of blade a narrow V; leaves not always quite opposite, and sometimes alternate on young shoots.
 4. Petioles less than 1 cm. long, thick; blades thick, margin much rolled. Sm. or sh. S. **Jacquinia keyensis**
 4. Petioles to 1 cm. long, very slender; blades thin, flat. Med. to sh. S. **Torrubia, KEY J 2**
 3. Base of blade almost round, or a wide V.
 4. Petioles hairy; apical half of blade equal to basal half; apex rounded; border almost on margin; secondary veins very prominent beneath. Sm. or sh. S. Also in KEY I. **Pisonia rotundata**
 4. Petioles almost or quite bare, or else blade not as just described.
 5. Blades thick; largest over 6 cm. long; side margins only slightly curved; apex broad, rounded; veins forking 3-6 mm. from margin. Med. or sh. Pen. Also in KEY K. **Laguncularia racemosa**
 5. Blades not thick, not more than 6 cm. long.
 6. Petiole to 1 cm. long or more, usually slender; blade side margins much curved. Sm. or sh. S. **Torrubia, KEY J 2**
 6. Petiole 2-4 mm. long, thick; side margins not much curved.
 7. Upper angle of side veins at center of midrib about 50°; trunk bark peeling, leaving light-colored trunk. Sm. or sh. All. Also in KEY L. **Lagerstroemia indica**
 7. Angle of side veins almost a right angle; bark not as just described. Sm. or sh. S. **Reynoldsia septentrionalis**
 1. Normal blades not more than 4 cm. long.
 2. Petioles 5-10 mm. long, slender; some blades almost round; apex very broad; base narrowed. Sm. S. **Torrubia, KEY J 2**
 2. Petioles much less than 1 cm. long; blades not round; base usually V-shaped.
 3. Upper angle of central side veins at midrib about 45°; some blades toothed; side margins slightly curved; twigs angled. Sm. or sh. S. Also in KEY M. **Gyminda latifolia**
 3. Angle of side veins greater than 45°, or else side veins not easily seen.
 4. Twigs angled.
 5. Basal half of blade as large as or larger than apical half; blades not stiff; secondary veins very close together. Sm. N. Not native to Florida. Hedge and specimen tree. ***Buxus sempervirens**
 5. Apical half of blade larger than basal half; blades very thick, stiff; secondary veins almost invisible. Sm. or sh. S. **Jacquinia keyensis**
 4. Twigs not angled.
 5. Blade apex rounded, with a short sharp point; base V-shaped. Sm. or sh. S. **Brysonima lucida**
 5. Apex rounded or notched, without point; base narrowed, but usually rounded at petiole. Sm. or sh. S. **Reynolds septentrionalis**

KEY J 2. TORRUBIA

1. Blades not more than 3 cm. long. Sm. S. **T. globosa**
1. Largest blades more than 3 cm. long.
 2. Blades thin; length about twice width; base decidedly narrowed; petioles often more than 1 cm. long. Sm. or sh. S. **T. longifolia**
 2. Blades thick; length less than twice width; base round or slightly narrowed; petioles to 1 cm. long. Sm. or sh. C,S. **T. bracei**

**KEY K. LEAVES SIMPLE, OPPOSITE, PINNATELY VEINED, ENTIRE, UNSTIP-
ULED, UNDOTTED, APEX NOT ABRUPTLY PROLONGED, UNDER SUR-
FACE HAIRLESS, LARGEST BLADES MORE THAN 7.5 CM. LONG**

1. Base of blade almost round; apex broad, rounded or notched.
 2. Largest blades over 8.5 cm. long.
 3. Side veins not strictly parallel, often irregular; blades leathery. Sm. S.
(Really dotted, although dots often are almost invisible.)
 - **Garcinia*, KEY K 2
 3. Side veins distinct, parallel; blades not leathery; margin sometimes faintly scal-
loped; trunk bark peeling. Med. or sm. S. Also in KEYS I, L, M, U 5
(Pl. 3, f. 3.) **Terminalia arjuna*
 2. Largest blades not over 8.5 cm. long; veins forking 3-6 mm. from margins; blades
thick. Med. or sm. Pen. & Keys. Wet places. Also in KEY J.
..... *Laguncularia racemosa*
 1. Base of blade V-shaped.
 2. Blades leathery, shiny; brown sprouting fruits usually present on twigs. Med.
when back from water; sm. or sh. in salt or brackish water, sending roots
down from trunk and branches, forming thickets. Pen. & Keys.
..... *Rhizophora mangle*
 2. Blades sometimes leathery, but fruit and habit different from above species.
 3. Upper angle of secondary veins at midrib about 30°-45°; less than 8 distinct
pairs of secondary veins; blade base very long, narrow. Sm. or sh.
C.S. Also in KEYS I, L, M. *Citharexylum fruticosum*
 3. Angle of secondary veins greater than 35°; 8 pairs of secondary veins or more
in largest blades.
 4. Apex of blade broad, rounded; blades leathery; leaves not always exactly
opposite. Sm. S. Dry places. Also in KEYS H, K 2.
 - **Garcinia spicata*
 4. Apex of blade narrowed; trees often in wet places.
 5. Upper surface shiny, but not "varnished"; margin not rolled; blades some-
times thin; length less than 3 times width; side veins and network distinct;
under surface hairy at first. Med. or sh. S. to Everglades.
Deciduous. Also in KEYS I, L. *Chionanthus virginica*
 5. Upper surface appearing varnished; side margins rolled; blades thick;
length often 3 times greatest width; side veins inconspicuous, network
almost invisible; leaves and twigs hairless. Evergreen. Med. to sh.
Also in KEYS I, L. *Amarolea*
 6. Under surface often scurfy; fruit 2-2.5 cm. in diameter. Sm. or sh.
C. *A. megacarpa*
 6. Under surface bare, sometimes rough; fruit less than 2 cm. in diameter.
Sm. or sh. S. to Everglades. *A. americana*
- Osmanthus floridana* may differ from the above species in the color of its fruit.

KEY K 2. GARCINIA. ALSO IN KEY H

1. Apex abruptly prolonged into a tip; blades to 35 cm. long. Med. or sm. S.
Also in KEY L. **G. tinctoria*
1. Apex rounded, sometimes bristled; blades usually not more than 20 cm. long.
2. Length of blade 12-20 cm.; network visible. Sm. or sh. S. **G. livingstonei*
2. Blade not more than 11 cm. long; network sometimes invisible. Sm. S.
Also in KEY K. **G. spicata*

**KEY L. LEAVES SIMPLE, OPPOSITE, PINNATELY VEINED, ENTIRE, UNSTIP-
ULED, UNDOTTED, APEX ABRUPTLY PROLONGED**

1. Blades not more than 7.5 cm. long; leaves not exactly opposite; trunk bark peeling
off, leaving smooth surface. Sm. or sh. All. Also in KEY J.
..... *Lagerstroemia indica*
1. Largest blades more than 7.5 cm. long.
2. Two uppermost secondary veins curved up along midrib toward apex.
..... *Cornus* relatives. KEY L 2
2. Secondary veins not curved toward apex until they near margins.
3. Blade base almost round, or a wide V (70° or more).
4. Under surface more or less hairy; largest blades to 7.5 cm. wide or wider.
Large or med. S. **Bunchosia glandulifera*
4. Under surface not hairy.

5. About 8 pairs of secondary veins; border sometimes 5-7 mm. from side margins; under surface scurfy or pitted. Sm. or sh. All.
**Ligustrum lucidum*
(Often called *L. japonicum*, although that is more shrubby.)
5. More than 8 pairs of secondary veins; border missing or close to margins.
6. Largest blades 20-35 cm. long, leathery, waxy. Med. or sm. S. Also in KEYS H, K, K2.....**Garcinia tinctoria*
6. Blades not more than 20 cm. long.
7. Leaves usually not quite opposite; margin untoothed; apex abruptly sharp-pointed. Med. or sh. C.S.....**Lagerstroemia speciosa*
7. Leaves opposite; some margins faintly toothed; apex rounded or short-tipped. Med. or sm. S. Also in KEYS I, K, M, U 5. (Pl. 3, f. 3.)**Terminalia arjuna*
3. Blade base a narrow V, less than 70°.
4. Angle of secondary veins about 30°-45°, not more than 8 distinct pairs. Sm. or sh. C.S. Also in KEYS I, K, M.....**Citharexylum fruticosum*
4. Angle of secondary veins more than 45°; more than 8 pairs of secondary veins. Also in KEY I. See K for differences between
Amarolea and *Chionanthus virginica*

KEY L 2. CORNUS RELATIVES

(Often considered all to be members of the genus *Cornus*)

1. Leaves spiral, crowded at apex of twig. Sm. or sh. NW. In KEY U 6.
**Svida alternifolia*
1. Leaves opposite on twig; not crowded.
2. Length of blades usually twice their own greatest width; apex long-tipped; trunk bark almost smooth; twigs reddish or purplish. Sm. or sh. All. Wet places*Svida stricta*
2. Length of blade usually less than twice its greatest width; apex not long-tipped; trunk bark breaking into small scales "like alligator hide"; twig bark grayish. Sm. N, C to lake region. Edges of woods, etc.....**Cynoxylon floridum*

KEY M. LEAVES SIMPLE, OPPOSITE OR WHORLED, PINNATELY VEINED, MARGIN TOOTHED

1. Trees armed and leaves actually or apparently whorled.
2. Most leaves in whorls of 3 (not always quite on same level); blades spiny-toothed, very stiff, not lying flat; largest more than 10 cm. long. Med. C.S.
**Macadamia ternifolia*
2. Leaves appearing whorled because sometimes on spurs in leaf axils; length not more than 10 cm.; spines in axils. Sm. or sh. All.**Duranta repens*
1. Trees unarmed; usually only 2 leaves at a node.
2. Juice milky; blades to 20 cm. long or longer; stipules conspicuous with young leaves; blades hairy beneath. Large, often with figs on trunk. S. Also in KEYS E, G, and O 2.**Ficus hispida*
2. Juice watery or not perceptible; blades less than 20 cm. long; no figs.
3. Side margins of blade almost straight and parallel through center; apex rounded or with a very short snout; base rounded or slightly lobed; secondary veins definite, almost parallel; teeth shallow. Med. S. Also in KEYS I, K, L, U 5. (Pl. 3, f. 3.).....**Terminalia arjuna*
3. Side margins curved, not parallel. Sm. or sh.
4. Twigs, petioles, and sometimes buds and under blade surface red-scurfy, at least when young.....**Viburnum*, KEY M 2
4. Twigs and leaves not red-scurfy although sometimes hairy.
5. Blades not more than 10 cm. long.
6. Both apex and base of blade V-shaped; petiole sometimes more than 1 cm. long; teeth usually few, in apical 2/3 of blade. Sm. or sh. NW, N. Wet places**Forestiera acuminata*
6. Blade base V-shaped; apex rounded or notched; petiole very short; teeth scanty; leaves and twigs pale; twig 4-angled. Sm. or sh. S. Also in KEY J.....**Gyminda latifolia*
5. Largest blades more than 10 cm. long.
6. Angle of secondary veins about 30°-45°; teeth few, in apical half. Sm. or sh. C.S. Also in KEYS I, K, L.....**Citharexylum fruticosum*
6. Angle of secondary veins greater than 45°; teeth abundant. Sm. All.**Osmanthus fragrans*

KEY M 2. VIBURNUM

1. Blades not more than 2 cm. wide; teeth irregular, mostly above center. Sm. or sh. N, S to Everglades. Wet places. Also in KEY I.....*V. obovatum*
1. Largest blades more than 2 cm. wide.
 2. Blades usually widest above center, or roundish; petiole very short; margins more or less scalloped. Sm. NW. River swamps.....*V. nashii*
 2. Blades usually widest below margin; longest petioles 1 cm. or more long; margin toothed almost all around. Sm. N. Woods and thickets. *V. rufidulum*

KEY N. TREE ARMED; LEAVES SIMPLE, SPIRAL

1. Spines on blade margins.....*Ilex*. KEY W 6
 1. Spines on woody parts, although sometimes near leaves.
 2. Blade margins untoothed.
 3. Two twigs at apex of most branches, giving forked appearance to outside of tree; leaves sometimes red; to 10 cm. x 5 cm., usually less; in bunches on stumpy spurs, largest near twig apex. Med. or sm. S.....*Bucida buceras*
 3. Twigs not as just described, although lvs. sometimes in bunches on spurs.
 4. Juice of young leaves and/or twigs milky or sticky.
 5. Petioles more than 2 cm. long in largest leaves; apex long-pointed; largest blades about 15 cm. x 7 cm., usually less; mature trunk with deep orange-colored furrows, and ridges divided into small blocks. Med. or sh. N,C.*Maclura pomifera*
 5. Petioles not more than 2 cm. long; apex not long-pointed. *Bumelia*, KEY N 2
 4. Juice watery or not apparent; leaves sometimes bunched on spurs and arrangement obscure.
 5. Leaves in more than 2 vertical rows on twig; angle of secondary veins more than 45°. Sm. or sh. All.....*Ximenia americana*
 5. Leaves really in 2 vertical rows on twig; angle of secondary veins less than 45°. Sm. or sh. S.**Dovyalis caffra*
 2. Blade margins toothed, sometimes with toothed lobes.
 3. Longest petioles to 8-12 cm. or longer; largest blades more than 12 cm. long; spines on trunk and sometimes on branches; sap milky, poisonous. Med. C.S.**Hura crepitans*
 3. Petioles and blades smaller than in above species.
 4. Leaves in 2 vertical rows on twig; blade base usually round.
 5. Petiole and under surface hairy; blades not more than 10 cm. long.
 6. Apex prolonged; blades to 10 cm. long; length of largest more than twice greatest width; margin slightly toothed; pinnately veined; lowest secondary veins almost straight. Sm. or sh. C.S.**Dovyalis hebecarpa*
 6. Apex not prolonged beyond a sharp point; length of blades less than twice greatest width; basal-veined; side veins curved. *Zizyphus*, KEY N 3
 4. Leaves in 5 vertical rows on twig.
 5. Petiole and surfaces bare; largest blades more than 10 cm. long; spines 3 cm. long or more. Sm. or sh. S.**Onchoba spinosa*
 4. Leaves in 5 vertical rows on twig.
 5. Margins distinctly, unequally, and sometimes double-toothed, often irregularly lobed; spines single at nodes, with a roundish bud in axil of each; spines colored like twigs; flowers like those of cherry; fruit brightly colored, or blue or black, round; trunks usually scaly; trees small. (Pl. 1, f. 4.) Also in KEYS W, X.....*Cratægus*
- (It is easy to recognize a tree as a hawthorn, but almost impossible to determine its species by its leaves. For descriptions and drawings of 15 species found in Florida see Sargent: Manual of the trees of North America; and for descriptions alone consult Small: Manual of the southeastern flora; which describes 11 species.)
5. Margins sometimes faintly, but quite regularly toothed, although often not all around margins.
 6. Margins coarsely scalloped or bluntly single-toothed, not lobed; blades thin, turning purple where injured. Sm. or sh. C.S. Also in KEY W 3.....**Flacourtia indica*
 6. Margins sharp-toothed, sometimes double-toothed, and occasionally lobed; but spines resembling spurs, unlike those of *Cratægus*. KEY W 5

KEY N 2. BUMELIA

1. Petiole and under surface almost bare when mature.
 2. Blade widest near center; more than 6 cm. long; apex gradually pointed; petiole at least 1 cm. long. Sm. or sh. N. Woods and near rivers. **B. lycioides**
 2. Blade widest near apex; less than 6 cm. long; apex blunt; petiole a few mm. long. Sm. or sh. S. Coastal hammocks.....**B. angustifolia**
1. Petiole and under surface decidedly hairy even when mature.
 2. Hairs silky, shiny, light-colored to coppery. Sm. or sh. N,C.....**B. tenax**
 2. Hairs woolly, dull, rusty or yellowish. Med. or sm. NW, N,C.....**B. lanuginosa**

KEY N 3. ZIZYPHUS

1. *Both spines straight; blades often only about 2.5 cm. long. Sm. C,S.***Z. mistol**
1. One spine straight, the other curved; at least some leaves larger than in above.
 2. Under surface of blade hairless. Sm. All.....***Z. jujuba**
 2. Under surface of blade very hairy or woolly. Sm. All.....***Z. mauritiana**

KEY O. TREES UNARMED; LEAVES SIMPLE, SPIRAL; JUICE MILKY OR STICKY, SOMETIMES POISONOUS

1. End bud cone-shaped, often large, with a sheath covering rolled leaves; leaves in 5 vertical rows; stipule scars or stipules sometimes present; milk ducts prominent where petiole and blade join; upper surface often showing pimples when observed with lens; roots from trunk and/or branches, buttresses at base of trunk, and figs often present.....**Ficus, KEY O 2**
1. Trees not as just described.
 2. Blades basal-veined; usually toothed and/or lobed; more or less hairy beneath.
 3. Largest blades with 9-13 deeply divided lobes; white-hairy beneath; leaves clustered near apex of branch; trunk smooth, pale, showing scars and, usually, holes. Med. S. Also in GEN. KEY.....***Cecropia, KEY O 3**
 3. Lobes absent, or if present then less numerous and less deeply divided than above; leaves not clustered; blades often varying in shape in same tree, sometimes lobed.
 4. Leaves in more than 2 vertical rows; general shape heart- or star-shaped; teeth, if present, enormous; sometimes 2 small glands near apex of petiole. Cultivated for oil.....***Aleurites & *Jatropha, KEY O 5**
 4. Leaves in 2 vertical rows; general shape of blade oval or heart-shaped; teeth rather coarse, but not enormous; no petiolar glands. **Broussonetia & Morus, KEY O 4**
 2. A ring around twig at each node; lobed leaves sometimes present. Large. S. ***Artocarpus, KEY O 6**
 3. Nodes lacking rings (except at beginning of year's growth); no lobed lvs.
 4. Twigs 2-3 cm. thick, spongy; leaves with more than 20 pairs of secondary veins at almost a right angle to midrib. Med. or sm. C,S. ***Plumeria, KEY O 7**
 4. Twigs and leaves not as just described.
 5. Leaves in 2 vertical rows on twig; under blade surface coppery-hairy; red leaves sometimes present. Med. C,S.....***Chrysophyllum** in KEY O 8
 5. Leaves in more than 2 vertical rows on twig, sometimes clustered so as to appear whorled.
 6. Apex very broad and round; secondary veins at almost a right angle to midrib. Med. C,S.***Anacardium occidentale**
 6. Apex narrowed, often abruptly prolonged into a tip.
 7. Length of body of blade about equal to width; apex abruptly prolonged into a slender pointed tip; petiole several cm. long, slender; 2 glands at apex of petiole; juice poisonous. Sm. C,S. **Triadica sebifera**
 7. Length of body decidedly greater than its width.
 8. Blades to 10 cm. long; base round; apex abruptly prolonged into a sharp tip; some leaves faintly toothed; most distant secondary veins more than 5 mm. apart; juice poisonous. Med. to sh. Extreme S. Not very common.....***Hippomane mancinella**
 8. Blades not entirely as just described; base usually V-shaped. **Sapotaceae, KEY O 8**

KEY O 2. FICUS (PL. 4.)

1. Leaves opposite, the largest 2-3 dm. long; under surface hairy; apex abruptly slender-tipped; margin toothed or untoothed. Med. S.
Also in KEYS E, G, M.....***F. hispida**
1. Leaves spiral.
 2. Blade margin toothed, sometimes also lobed.
 3. Margin digitately 3-5 lobed; blades basal-veined; surfaces hairy, the upper one rough. Sm. or sh. All.***F. carica**
 3. Margin not lobed; one conspicuous pair of basal secondary veins.
 4. Length of largest blades at least twice their greatest width; some blades widest at or below center, hairless. Med. or sm. C,S.....***F. capensis**
 4. Length of blades less than twice width; blades widest above center; petiole hairy. To large and spreading. S. (Pl. 4, f. 2.).....***F. sycomorus**
 2. Blade margin not toothed, although sometimes wavy.
 3. Blade apex abruptly narrowed into a slender lash about half as long as rest of blade; petiole very long. Large or med. C,S. (Pl. 4, f. 7.)
***F. religiosa**
 3. Tip (lash) absent or not so long as in **F. religiosa**.
 4. Under surface of blade and/or petiole hairy even when mature.
 5. At least largest blades more than 15 cm. long.
 6. More than 9 pairs of secondary veins in body, exclusive of basal veins; apex abruptly prolonged.
 7. Blade base deeply lobed, not lying flat; central side veins almost perpendicular to midrib. Med. or sm. S.***F. bussei**
 7. Blade base not deeply lobed, flat; secondary veins at acute angle to midrib. Med. or sm. C,S.***F. mysorensis**
 6. Not more than 9 pairs of sec. veins in blade body; apex not prolonged, but blunt or very short-pointed. To large. C,S.....***F. benghalensis**
 5. Blades less than 15 cm. long.
 6. Under surface rusty-hairy; side secondary veins not more than 1 cm. apart; tertiary veins present. Sm. or sh. S.***F. rubiginosa**
 6. Under surface light-hairy; side secondary veins more than 1 cm. apart; no tertiary veins. To large. S. (Pl. 4, f. 2.).....***F. sycomorus**
 4. Blades almost or quite bare when mature.
 5. Tertiary veins lacking or very faint as compared with secondary veins; not noticeably parallel to secondary veins or reaching margin; secondary veins usually prominent.
 6. Blades roundish or heart-shaped.
 7. Two large basal secondary veins; blades heart-shaped rather than round; apex not abruptly slender-tipped. To large. S. (Pl. 4, f. 2.).....***F. sycomorus**
 7. 4-8 basal secondary veins; blades round rather than heart-shaped; apex abruptly slender-tipped. Med. C,S.
 8. Texture thin.....***F. nymphaeifolia**
 8. Texture thick.....***F. platyphylla**
 6. Blades not roundish or heart-shaped, but oval or oblongish.
 7. Blades thin, not leathery, mostly less than 2 dm. long.
 8. Blade unequally divided by midrib; base very asymmetrical; petiole less than 2 cm. long; a yellow color perceptible in leaves and/or wood. Sm. S.***F. tinctoria**
 8. Base almost or quite symmetrical.
 9. Blades widest above center, curving to a wide V at base; less than 15 cm. long; apex abruptly short-, thick-tipped; petioles not more than 2 cm. long; network distinct. Sm. S.
***F. glabella**
 9. Blades widest near or below center; petioles more than 2 cm. long.
 10. Apex rounded, then abruptly prolonged into a slender tip; base rounded. To large. S.***F. cunninghamii**
 10. Apex narrowed before being abruptly prolonged.

11. Blade base slightly narrowed to a wide V; many short transparent veins almost perpendicular to midrib. Fruit on trunks. Med. S. ***F. glomerata**
11. Blade base much rounded; perpendicular veins lacking. Med. or sm. S. ***F. infectoria**
7. Blades thick, leathery; largest over 2 dm. long.
8. Base deeply lobed, sometimes pleated; margin often indented, making a large apical and smaller basal lobe ("fiddle-shaped"). Med. S. ***F. lyrata**
8. Blade not as just described.
9. Blades shining; a pair of conspicuous basal secondary veins.
10. Base of blade narrowed; blades to about 15 cm. long; angle of central secondary veins about 50°. Large. C.S. ***F. altissima**
10. Blade base rounded; largest blades more than 15 cm. long; vein angle more than 50°. Large. S. ***F. benghalensis**
9. Blades not as described in previous section.
10. Blades to 25 cm. long; side veins straight, almost parallel; usually no basal veins. Med. C.S. ***F. nekbudu**
10. Largest blades more than 25 cm. long; side veins slightly irregular, not straight or parallel; usually 2 basal secondary veins. Med. C.S. ***F. vogelii**
5. Tertiary veins present, parallel to and often almost as large as sec. veins; sec. veins not prominent; a checkerboard network sometimes present.
6. Longest blades at least 15 cm. long.
7. Apex very abruptly prolonged into a tip in at least some blades; petiole less than 5 cm. long.
8. Secondary veins to 1.5-2 cm. apart in largest blades; blades less than 20 cm. long; 8-12 pairs of secondary veins in body; yellow tinge to leaves and/or wood. A strangling fig. To large. C.S. (Pl. 4, f. 8.) ***F. aurea**
8. Sec. veins less than 1.5 cm. apart; largest blades more than 20 cm. long; 30-50 pairs of sec. veins. Large. S. ***F. elastica**
7. Apex prolonged gradually or not at all; longest petioles at least 5 cm. in length; blades widest below center, tapering gradually to apex. To large. S. (Pl. 4, f. 5.) ***F. macrophylla**
6. Blades less than 15 cm. long.
7. Apex abruptly prolonged into a long slender tip.
8. Length, including tip, sometimes more than 3 times greatest width; width less than 3.5 cm. Sm. C.S. (From Philippines.) (Pl. 4, f. 6.) ***F. sp.**
8. Length never more than 3 times width; width often more than 3.5 cm. To large. C.S. Branches drooping. (Pl. 4, f. 4.) ***F. benjamina**
7. Apex blunt or abruptly short-, thick-tipped.
8. Base long-narrowed. Med. C.S. Sm. (Pl. 4 f. 1.) ***F. nitida**
8. Base rounded, at least in most blades.
9. Petioles less than 3 cm. long; blades to 15 cm. long; yellow tinge to leaves and/or wood. A strangling fig. To large. C.S. (Pl. 4, f. 8.) ***F. aurea**
9. Petioles 3 cm. long or longer in largest blades; most blades less than 10 cm. long. Med. or sh. C.S. (Pl. 4, f. 3.) **F. brevifolia**

KEY O 3. CECROPIA

1. Upper blade surface smooth; apex of lobes blunt, not abruptly prolonged. ***C. palmata**
1. Upper blade surface rough.
2. Length of lobes less than twice their greatest width; flower spikes (both pistillate and staminate) less than 10 cm. long. ***C. peltata**
2. Length of lobes 2 to 3 times their greatest width; flower spikes longer than 10 cm. ***C. mexicana**

KEY O 4. BROUSSONETIA AND MORUS

1. Under surface of blade typically hairy, upper surface sometimes rough; blades sometimes lobed.
2. Petioles not usually more than 4 cm. long; they and twigs becoming almost or quite hairless; trunk bark scaly. Large. All. *M. rubra*
2. Mature petioles over 4 cm. long; petioles and twigs hairy; bark smooth. Med. All. *B. papyrifera*
1. Under surface of mature blades bare except sometimes on veins; upper surface not always very rough. Med. or sh. All. *M. nigra*

KEY O 5. ALEURITES AND JATROPHA

1. Blades all heart-shaped. Sm. C.S. **A. trisperma*
 1. Blades both star- and heart-shaped, sometimes also lance-shaped or round.
 2. Side margins of middle lobe or of unlobed lance-shaped blades almost straight.
 3. Length of middle lobe or of unlobed lance-shaped blades greater than the width; blades sometimes also star-shaped. Tall or med. C.S. **A. moluccana*
 3. Blades star-shaped or heart-shaped; length of middle lobe no greater than its width. Sm. or sh. C.S. **J. curcas*
 2. Side margins of blade or of lobes curved; blades never round. Sm. S.
 3. Leaves on fruiting branches us. lobed; fruit surface wrinkled. **A. cordata*
 3. Leaves on fruiting branches us. unlobed; fruit surface smooth. **A. fordii*
- (Both the above species and *A. montana*, which has been considered a synonym of *A. cordata*, are called tung-oil trees. *A. cordata* is the important Oriental tree. *A. fordii* was not separated from it until 1906, and may sometimes be confused with it.)

KEY O 6. ARTOCARPUS

1. Blades 3-9-lobed, 3-11 dm. long; lobes long-tipped. Tall to med. S. **A. communis*
1. Blades 2-3-lobed, not more than 2 dm. long, some unlobed ones also present; lobes short-tipped. Large. S. **A. integra*

KEY O 7. PLUMERIA (OR PLUMIERA)

1. Under surface of blade decidedly hairy.
 2. Blades not more than 4 cm. wide; side margins almost parallel, not rolled; apex rounded, notched or with a short abrupt tip. Sm. C.S. **P. sericifolia*
 2. Largest blades more than 4 cm. wide; side margins slightly curved, rolled, gradually narrowed to a pointed apex. Sm. C.S. **P. alba*
 1. Under surface of blade almost or quite hairless.
 2. Side margins straight rather than curved; apex rounded, sometimes bristle-tipped, or notched, or with a short sharp point.
 3. Side veins almost at right angle to midrib. C.S. **P. emarginata*
 3. Side veins at less than a right angle to midrib. S. **P. obtusa*
 2. Side margins curved rather than straight. S. **P. rubra*
- (The form called *F. acuminata* has almost the same leaf.)

KEY O 8. SAPOTACEAE (MOSTLY)

1. Secondary veins averaging considerably less than 1 cm. apart.
2. Leaves in 2 vertical rows on twig; under blade surface copper-hairy. Sm. or sh. C.S. *Chrysophyllum*
3. Blade base V-shaped, at least at petiole; apex abruptly prolonged. **C. cainito*
3. Blade base rounded; apex blunt or very short-tipped. *C. oliviformis*
2. Lvs. in more than 2 vertical rows, sometimes crowded at twig apex; not coppery.
3. Blade base usually rounded; apex narrowed, but blunt, rounded, or notched. Sm. or sh. S. *Mimusops emarginata*
3. Blade base usually V-shaped.
4. Young apex sharp-pointed; upper angle of secondary veins with midrib less than 75°; petiole less than 2 cm. long. Med. or sh. S. *Dipholis salicifolia*
4. Apex thick-tipped or rounded; angle of secondary veins more than 75°; longest petioles more than 2 cm. long. Large. C.S. *Sapota achras*
1. Secondary veins in center of blade averaging almost or quite 1 cm. apart.

2. Blades hairy on under surface, at least at first; widest above center; thick.
3. Under surface white-hairy; largest blades more than 3 dm. long and/or 1 dm. wide. To large. S. Rare.**Calocarpum viride*
3. Under surface brown-hairy at first; blades not more than 3 dm. long and 1 dm. wide. To large. S.**Calocarpum mammosum*
2. Blades hairless underneath.
3. Largest blades more than 25 cm. long, thick, reddish when young; juice sticky rather than milky. Tall. C.S. (Pl. 5, f. 2.) Also in KEYS U, U 4. *Magnifera indica*
3. Blades not more than 25 cm. long, rather thin; juice milky.
4. Color yellow-green; veins turning up near margin, very pronounced on under surface and often more than 1 cm. apart; blade length 3 times greatest width or more. Sm. S.*Lucuma nervosa*
4. Color dark-green; veins turning up before reaching margin, not very pronounced and barely 1 cm. apart; blade length less than 3 times width. Tall. C.S.*Sideroxylon foetidissimum*

KEY P. TREES UNARMED; LEAVES SIMPLE OR APPARENTLY SO, SPIRAL, JUICE WATERY, BASAL-VEINED, ENTIRE OR WITH ENTIRE LOBES

1. Blades unlobed, except sometimes for a lobed base.
2. Base rounded or V-shaped, not lobed.....KEY P 2
2. Base lobedKEY P 3
1. Blades lobed at apex or on sides.
2. Blade apex divided part way down, making two equal lobes. Pl. 3, f. 2. *Bauhinia*, KEY P 5
2. Blades showing more than 2 lobes.....KEY P 4

KEY P 2. TREES UNARMED; LEAVES SIMPLE OR APPARENTLY SO, SPIRAL, JUICE WATERY, BASAL-VEINED, ENTIRE, BASE ROUNDED OR V-SHAPED

1. Length of largest blades at least 3 times their own greatest width.
2. Leaves distinctly petioled.
3. Leaves in 2 vertical rows on twig; side margins curved, not parallel; upper surface usually rough; under surface sometimes hairy.....*Celtis*, KEY Q 7
3. Leaves in more than 2 irregular rows; side margins almost straight and parallel; surfaces very hairy. Sm. or sh. S. Also in KEY U 3. *Colubrina cubensis*
2. Petioles short or lacking; leaves in more than 2 vertical rows; blades narrow; side margins only slightly curved, almost parallel through center of blade.
3. Blade microscopically pinhole-dotted; length not more than 7 times width; trunk bark spongy, light-colored, splitting and peeling. Med. Slender. C.S. Pl. 3, f. 4.*Melaleuca leucadendra*
3. "Blades" not dotted; length more than 7 times width; bark not as just described. *Acacia*, KEY P 6
1. Length of largest blades less than 3 times their own greatest width.
2. Side basal veins directed from midrib up toward blade apex, usually curved.
3. Blades hairless; apex abruptly prolonged into a long slender tip; crushed leaf camphor-scented. Large or med. All. Also in KEY S 5. *Camphora officinarum*
3. Blades rusty-hairy on under surface and petiole; not tipped as in *Camphora*, not camphor-scented. Sm. S. Also in KEY U 6.....*Colubrina arborescens*
2. Side basal veins directed first toward margin, not curving up until near margin.
3. Petiole apex above blade base; largest blades more than 10 cm. long; somewhat heart-shaped, but base rounded. Large or sm. S....**Hernandia sonora*
3. Petiole apex at blade base.
4. Blade apex blunt or bristled; surface very hairy. Sm. or sh. S. Also in KEY U 3.....*Colubrina cubensis*
4. Blade apex long-pointed.
5. Blade length less than twice width; apex an abrupt tip; body of blade almost round. Sm. or sh. C.S. Also in KEY P 3. *Kleinhovia hospita*
5. Blade length about twice greatest width; apex gradually pointed.
6. Blades somewhat heart-shaped, not lobed, no V at base. Sm. or sh. C.S. Also in KEY P 3.....**Bixa orellana*
6. Blades lance-shaped, some deeply lobed; base rounded with an abrupt V at petiole; apex of petiole thickened in unlobed leaves. To large. N.C. Also in KEYS P 4, U 4, X.....**Brachychiton populneum*

KEY P 3. TREES UNARMED; LEAVES SIMPLE OR APPARENTLY SO, SPIRAL, JUICE WATERY, BASAL-VEINED, ENTIRE, BASE LOBED

1. Leaves in 2 vertical rows on twig.
 2. Stipules present or leaving a ring around twig at each node; blades leathery, stiff, some more than 13 cm. long, almost round.....**Coccolobis**, KEY R 2
 2. No such stipules or stipule scars; blades not leathery or stiff, not more than 13 cm. long.
 3. Base of blade almost symmetrical; upper surface smooth; apex of petiole abruptly thickened**Cercis**, KEY P 7
 3. Base of blade noticeably asymmetrical; upper surface rough; apex of petiole not thickened**Celtis**, KEY Q 7
1. Leaves in 5 vertical rows; blades more or less heart-shaped, with a tip.
 2. Under surface of blade more or less hairy; length less than or not much greater than width. Med. or sm. Sometimes rooting from branches. Also in KEY Q 3.....**Pariti**, KEY P 8
 2. Under blade surface not hairy.
 3. Length of largest blades about 1½-2 times their greatest width.
 4. Blade base deeply lobed; apex rather gradually prolonged; texture of blade thick, no transparent red spots; only slightly scurfy, or bare; no distinct marginal veins. Sm. or sh. C.S.....**Thespesia populnea**
 4. Blade base slightly lobed; apex abruptly prolonged; texture thin; microscopical transparent red spots; red-scurfy on under surface; two basal veins forming a marginal border. Sm. or sh. C.S. Also in KEY P 2.....**Bixa orellana**
 3. Length of blade less than 1½ times its greatest width.
 4. Under surface of blade scurfy; base of basal veins enlarged and united. S. **Maga cubensis**
 4. Under surface of blade bare; basal veins not as just described.
 5. Upper surface often mottled with light color; base shallow-lobed; more than 6 secondary veins besides basal veins (in largest blades). Sm. or sh. C.S. Also in KEY P 2.....**Kleinhovea hospita**
 5. Upper surface not mottled; base deep-lobed; 3-6 secondary veins. Med. S.**Firmiana barteri**

KEY P 4. TREES UNARMED; LEAVES SIMPLE, SPIRAL, JUICE WATERY, BASAL-VEINED, THREE TO FIVE ENTIRE LOBES

1. Apical half of lobes larger than basal half; lobes extending almost to petiole; unlobed leaves sometimes present. Sm. C. Also in KEYS P 2, U 4, X. **Brachychiton populneum**
1. Apical half of lobes smaller than or equal to basal half.
 2. Blades very large, often drooping and lobes partly folded on midrib. Sm. S. **Sterculia carthaginensis**
 2. Blades not as just described.
 3. Blades hairless. Med. or sm. C.S.**Brachychiton acerifolium**
 3. At least some blades hairy on under surface.
 4. Middle lobe widest at its base. Sm. or sh. S.**Gossypium hirsutum**
 4. Middle lobe narrower at its base than nearer to apex.
 5. Bark of trunk and branches green; petiole much longer than blade. Med. to sh. N.C. Pl. 3, f. 5.**Firmiana simplex**
 5. Bark not as just described; petiole shorter than blade. Sm. or sh. C. **Sterculia bidwillii**

KEY P 5. BAUHINIA

1. Under blade surface very hairy, usually 7-nerved. Sm. or sh. S. Pl. 3, f. 2. Also called **Alvesia tomentosa**.....**B. tomentosa**
1. Under blade surface bare, except sometimes on veins. These forms have leaves which vary in each species, but resemble those of the other species. C.S.
 2. Flowers purple.....**B. purpurea**
 2. Flowers purplish and white.....**B. variegata**
 2. Flowers white. (Often called **B. alba**).....**B. variegata** var. **candida**

KEY P 6. ACACIA (IN PART), SEE ALSO KEYS ZW AND ZY

1. Largest leaves often wider than 2 cm.; often more than 15 cm. long. Med. C,S. **A. auriculiformis*
1. Leaves not more than 2 cm. wide; less than 15 cm. long.
 2. More than 5 basal veins; side margins curved..... **A. richii*
 2. Not more than 5 basal veins; side margins not much curved..... **A. confusa*

KEY P 7. CERCIS

1. Upper surface of blade shining when young. Med. to sh. C..... **C. chinensis*
1. Upper surface of blade dull when young. Med. to sh. NW, N..... *C. canadensis*

KEY P. 8. PARITI (SOUTHERN SPECIES)

1. Under blade surface not densely hairy; flowers orange with a red center, becoming dark red..... *P. grande*
1. Under blade surface densely hairy; flowers not as just described.
 2. Flowers pure yellow, becoming pinkish..... *P. tiliaceum*
 2. Flowers red..... *P. elatum*

The genus name is often written *Paritium*. All three species have been considered to be *P. tiliaceum*.

KEY Q. TREES UNARMED; LEAVES SIMPLE, SPIRAL, JUICE WATERY, BASAL-VEINED, TOOTHED OR WITH TOOTHED OR LOBED LOBES

1. At least some blades with more than 7 deep lobes; large. Trees small or shrubby.
 2. At least some lobes re-lobed; under blade surface silvery. N,C. Also in GENERAL KEY **Tetrapanax papyriferum*
 2. Lobes toothed, but not re-lobed; a ring around twig at each node. All sections. *Ricinus communis*
1. Blades with less than 7 lobes, or unlobed, or irregularly lobed.
 2. Leaves in 2 vertical rows on twig..... KEY Q 2
 2. Leaves in more than 2 vertical rows on twig KEY Q 3

KEY Q 2. TREES UNARMED; LEAVES SIMPLE, SPIRAL IN 2 ROWS, JUICE WATERY, BASAL-VEINED, TOOTHED OR WITH TOOTHED LOBES, LESS THAN 7 LOBES

1. All blades regularly palmately lobed and also toothed; trunk bark peeling in large patches; inner bark pale. Large trees..... *Platanus*, KEY Q 4
1. Blades not palmately lobed; trunk not as in *Platanus*.
 2. Blade width less than 1 cm.; trunk bark reddish, splitting. Sm. C,S. Also in KEY B..... **Melaleuca styphelioides*
 2. Blade width more than 1 cm.
 3. Blades somewhat heart-shaped, more or less hairy on under surface.
 4. Blades regularly toothed; upper surface not rough..... *Tilia*, KEY Q 5
 4. Blades irregularly or incompletely toothed; upper surface usually rough. *Celtis*, KEY Q 7
 3. Blades not heart-shaped.
 4. Blades oval; to 15 cm. long; upper surface rough; 3 basal veins Pl. 5, f. 5..... *Trema*, KEY Q 6
 4. Blades irregular in shape; largest more than 15 cm. long; upper surface not rough; more than 3 basal veins. Large. C.S. **Pterospermum acerifolium*

**KEY Q 3. TREES UNARMED; LEAVES SIMPLE, SPIRAL IN MORE THAN 2 VER-
TICAL ROWS, JUICE WATERY, BASAL VEINED, TOOTHED, OR WITH
LESS THAN 7, OR WITH IRREGULARLY TOOTHED LOBES**

1. Blade 15-30 cm. long; more or less heart-shaped or sometimes slightly 3-lobed; hairy all over. Sm., or large shrub. Pen. ***Dombeya wallachii**
1. Trees not entirely as just described.
2. Blades unlobed.
 3. Mature trees tall or medium; blade margin usually regularly toothed; petiole often flattened at right angle to blade surface. NW, N. Also in KEYS W 3, W 4. **Populus, KEY Q 8**
 3. Mature tree small or shrubby or else not in NW and N; margin irregularly or shallow-toothed or scalloped; petiole not flattened.
 4. Margin shallow-toothed but not lobed; under surface hairy.
 5. Teeth not bristle-tipped; largest blades more than 15 cm. long; upper surface smooth. **Pariti, KEY P 8**
 5. Teeth bristle-tipped; blades not more than 15 cm. long; upper surface rough. Sm. or sh. S. Also in KEYS W 4, W 7. ***Cordia alba**
 4. Margin coarse-toothed or lobed and toothed.
 5. Under surface of blade bare when mature, although petiole often hairy. Common shrubby plant; flowers many-colored. Pen. **Hibiscus rosa-sinensis**
 5. Under surface hairy on veins. Sm. or sh. S. Rare. ***Cordia, KEY W 7**
2. Blades lobed.
 3. Blades 3-lobed.
 4. Lobe margins curved, untoothed; young lobes ending in lash. To large. C,S. ***Liquidamber formosana**
 4. Lobe margins coarsely and irregularly toothed; lobes not ending in lash. Sm. or sh. Scattered. **Hibiscus syriacus**
 3. Blades palmately 5-lobed.
 4. Teeth rounded; branches not corky-winged; no prickly fruit balls. Med. S. ***Maximiliana vitifolia**
 4. Teeth sharp, at least when young; some branches corky-winged; round bristly fruit balls often on tree. Med. N,C. **Liquidamber styraciflua**

KEY Q 4. PLATANUS

1. Blade base almost straight or lobed, rarely V-shaped; side lobes cut less than half-way to center of blade; width of middle lobe greater than its length; angles between lobes usually 90° or more. Large. All. **P. occidentalis**
1. Blade base a wide V, or rarely lobed; side lobes cut halfway or more to center of blade; width of middle lobe less than its length; angles between lobes sometimes much less than 90°. Large. Scattered. **P. orientalis**

KEY Q 5. TILIA

1. Under surface of blade almost or quite bare of hairs, except in upper angle of veins, sometimes silvery; teeth us. long-tipped. Sm. NW,N. **T. floridana**
1. Under surface very hairy.
 2. Twigs hairy when young; blade hairs rusty or brownish.
 3. Teeth indefinite, except for glandular tip. To large. NW. **T. lasioclada**
 3. Teeth distinct, prominent.
 4. Length of blades often twice greatest width; base not distinctly lobed; upper surface bearing long spreading hairs; teeth slender, slightly hooked. NW. **T. porracea**
 4. Length of blades much less than twice greatest width; upper surface hairless; teeth not hooked.
 5. Secondary veins straight; blade base slanting rather than lobed. Sm. NW, N, C. **T. georgiana**
 5. Secondary veins curved; blade base lobed rather than slanting. To large. NW. **T. caroliniana**
 2. Twigs bare or almost so; blade hairs gray or whitish.
 3. Hairs white; often more than 4 teeth to 1 cm. of margin. Tall. NW. **T. eburnea**
 3. Hairs gray or tan; not more than 4 teeth to 1 cm. of margin. Large. NW,N. **T. heterophylla**

KEY Q 6. TREMA

1. Blades less than 6 cm. long and/or 3 cm. wide, stiff; base rounded or a wide V, not lobed. Sm. or sh. S. Pl. 5, f. 5. **T. lamarckiana**
1. Largest blades more than 6 cm. long and 3 cm. wide, rather thin, not stiff; base lobed.
 2. Tip produced abruptly, about 5-10 mm. long; base not very asymmetrical. Sm. or sh. C.S. **T. floridana**
 2. Tip produced gradually, longer than just described; base very asymmetrical. Medium, spreading tree. S. ***T. orientalis**

KEY Q 7. CELTIS

1. Blades not more than 6 cm. long; apex typically pointed or blunt, but not prolonged; twig, petiole, and sometimes under surface hairy; upper surface rough, dark green; margin toothed or untoothed. Sm. or sh. NW, M. **C. georgiana**
1. At least largest blades more than 6 cm. long; apex prolonged into a usually slender sharp tip.
 2. Twig and petiole hairy.
 3. Upper surface rough or smooth; under surface hairy; margin more or less coarsely and shallowly toothed, or untoothed; some blades more than 10 x 4.5 cm. Large or medium. C. ***C. australis**
 3. Upper surface almost or quite smooth; under surface almost or quite bare; margin toothed mostly toward apex end of blade; blades less than 10 x 4.5 cm. Med. C. ***C. sinensis**
 2. Twig and petiole bare when mature; upper surface smooth; margin seldom much toothed; bark sometimes warty.
 3. Under surface bare; margin usually untoothed; blade light-green. Large. All. **C. mississippiensis**
 3. Under surface sometimes hairy; margin toothed; blade dark green. Med. All. **C. smallii**

KEY Q 8. POPULUS

1. Margin often lobed as well as toothed; petiole and under blade surface densely white-hairy. Large. **P. alba**
1. Margin not lobed; mature leaves not densely white-hairy.
 2. Petiole flat at apex; blade triangular rather than oval.
 3. Tree narrow; branches growing up rather than out; margin teeth incurved. To tall. NW, N. **P. italica**
 3. Tree spreading; margin with teeth like cogs. Large. NW, N. **P. balsamifera var. missouriensis**
 2. Petiole round at apex; blades oval rather than triangular.
 3. Petiole to 4 cm. long, bare; blades not more than 12.5 x 7.5 cm.; widest near center; not hairy; more than 3 teeth to 1 cm. Med. or sm. N. ***P. simonii**
 3. Petioles often more than 4 cm. long, white-hairy; blades often larger than 12.5 x 7.5 cm.; widest near base; under surface often hairy; teeth 1 or 2 to 1 cm. Large. N. **P. heterophylla**

KEY R. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, WITH LARGE STIPULES OR A STIPULAR RING

1. Apex of blade almost straight across, or broadly notched. Tall. N. Also in KEY X. **Liriodendron tuplipifera**
1. Apex of blade rounded, sharp or blunt, or prolonged into a tip.
 2. Largest blades more than 30 cm. long; length 3 or more times greatest width; base narrowed or rounded; under surface bare or hairy but not grayish. Med. or sm. S. ***Triplaris americana**
 2. Blades not entirely as just described.
 3. Stipules or their scale-like remnants present at most leafy nodes. **Coccolobis, KEY R 2**
 3. Only a stipular ring present at mature nodes. **Magnolia and Michelia, KEY R 3**

KEY R 2. COCCOLOBIS

1. Blades ovalish; length greater than width; base narrow or rounded. Med. or sm. C.S. *C. laurifolia*
1. Blades almost round; width usually greater than length; base lobed.
 2. Width mostly 1-2 dm.; surfaces bare; secondary veins (but not network) raised. Small or shrubby much-branched tree. C.S. *C. uvifera*
 2. Width more than 2 dm.; under surface and petiole hairy, at least at first; network raised. Small, few branches. C.S. Also in GEN. KEY.... **C. pubescens*

KEY R 3. MAGNOLIA AND MICHELIA

1. Blade base lobed or 2-eared; under surface bluish-gray or white-hairy.
2. Blades, buds, and twigs not hairy; blades much narrowed just above base, to 22 cm. long. Sm. NW. *Magnolia pyramidata*
2. Under surface of blades, buds, and twigs white-hairy, at least at first; largest blades more than 22 cm. long, sloping from above center to base without abrupt narrowing. NW.
 3. Large tree of rich woods; corolla (of flower) not over 3 dm. wide; outer petals more than 17 cm. long; fruit cone roundish..... *Magnolia macrophylla*
 3. Small or shrubby tree of moist sandy soil; corolla often over 3 dm. wide; outer petals to 15 cm. long; fruit cone oblong or oval..... *Magnolia ashei*
1. Base rounded or V-shaped.
 2. Blades (largest) more than 11 cm. long.
 3. Blade apex prolonged more or less abruptly into a distinct tip.
 4. Less than 15 pairs of secondary veins. Sm. or sh. Much branched. N. A popular hybrid with flowers purplish to white. **X Magnolia soulangeana*
 4. More than 15 pairs of secondary veins in largest blades. Large. S. **Michelia champaca*
 3. Blade apex blunt or sharp, sometimes bristled, barely or not at all prolonged; upper surface shiny; blades leathery.
 4. Largest blades more than 15 cm. long; twigs and under blade surface often rusty-hairy. Large, triangular tree, bark dark. NW, N, C. *Magnolia grandiflora*
 4. Blades not more than 15 cm. long; under surface gray, sometimes hairy. Tall, slender, or sh., bark pale. NW, N, C, S. Wet soil. *Magnolia virginiana*
 2. Blades not more than 11 cm. long. Twigs and buds hairy. Sm. or sh.
 3. Hairs rusty; blade apex abruptly prolonged. Small tree or large shrub with several trunks. C. **Michelia fuscata*
 3. Hairs not rusty; blade apex little if at all prolonged. Very small tree, or shrub, usually one trunk. NW, N. **Magnolia stellata*

KEY S. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, DECIDEDLY AROMATIC WHEN CRUSHED AND SOMETIMES DISTINCTLY PINHOLE-DOTTED

(Leaves of other species may have faint odors or be indistinctly dotted. They should be looked for in KEYS T-X.)

1. Leaves in 2 vertical rows on twig; odor unpleasant or perfumed, but not spicy. *Annonaceae*, KEY S 2
1. Leaves in 5 vertical rows or crowded at apex of twig or spur.
 2. Length of largest blades more than 4 times their greatest width.
 3. Blades less than 1.5 cm. wide, almost straight; flowers and fruit on branch between sets of leaves. Med. or sm. or sh. **Callistemon*, KEY S 3
 3. Blades usually wider than 1.5 cm., usually curved, drooping, and long-petioled; trunk bark scaling off or deeply furrowed. Tall.... **Eucalyptus*, KEY S 4
 2. Length of blades not more than 4 times their greatest width.
 3. Most blades widest at or below center (basal half equal to or larger than apical half).
 4. Blades round or tapering from a rounded or wide-angled base to a pointed tip; trunk bark peeling off or deeply furrowed. Tall.... **Eucalyptus*, KEY S 4
 4. Trees and leaves not both as just described..... *Lauraceae*, KEY S 5
 3. Most blades widest above center (apical half larger than basal half).
 4. Blades red-dotted. Sm. or sh. *Ardisiaceae*, KEY S 6
 4. Blades dotted, but not red-dotted, biting tongue when tasted. Med. to sm. S. *Canella winterana*

KEY S 2. ANNONACEAE

1. Under blade surface and/or petiole and twig hairy.
 2. Base very long and narrow; blade showing microscopic pinhole dots; apex abruptly prolonged. Med. or sm. N.C. *Asimina triloba*
 2. Base rounded or a wide V; blades not pinhole-dotted.
 3. Under surface not densely hairy; blade length twice its greatest width or longer; apex rather gradually prolonged. Tall. C.S. *Canangium odoratum*
 3. Under surface densely hairy; length of largest blades less than twice width; apex abruptly short-tipped or not prolonged. Sm. S. **Annona cherimola*
1. Under surface, petiole, and twig bare of hairs or soon becoming so.
 2. Length of most blades about 3 times their own greatest width; secondary veins prominent beneath, parallel. Sm. C,S. **Annona reticulata*
 2. Length of most blades less than 3 times their width; secondary veins not noticeably parallel; network distinct.
 3. Apex rounded, then abruptly prolonged.
 4. Blades seldom over 15 cm. long. Sm. or sh. S. **Annona muricata*
 4. Largest blades more than 15 cm. Med. or sm. S. **Annona montana*
 3. Apex gradually prolonged or not prolonged.
 4. Blades varying in shape; length usually less than 2½ times width; often widest above center. Sm. S. **Annona diversifolia*
 4. Blades similar to one another, widest near or below center. C,S. **Annona squamosa*
 5. Blade length often 2½ times greatest width, or more. Sm. *Annona glabra*
 5. Blade length seldom more than twice greatest width, usually less. Med. *Annona glabra*

KEY S 3. CALLISTEMON

1. Leaves stiff, rather thick; largest more than 10 cm. long.
 2. Upper surface depressed along midrib; midrib very prominent beneath; side margins rolled under..... **C. linearis*
 2. Blade surfaces flat; upper surface not channeled. N. **C. rigidus*
1. Leaves not stiff or very thick; not more than 10 cm. long.
 2. Side margins sloping from center to apex and base. S. **C. acuminatus*
 2. Side margins almost parallel.
 3. Under surface bearing raised glands; leaves to about 6 cm. long. S. **C. coccineus*
 3. Glands of under surface not conspicuously raised; largest leaves more than 6 cm. long.
 4. Blades not more than 1 cm. wide. Sh. C,S. **C. lanceolatus*
 4. Largest blades more than 1 cm. wide. Tree. S. **C. salignus*

KEY S 4. EUCALYPTUS

(Only leaves of mature trees should be examined. Those of immature trees of certain species are very different in shape from those which will appear later, and sometimes are opposite or in 2 vertical rows. Long-leaved species are difficult to distinguish by their leaves.)

1. Length of blades less than 4 times their own greatest width.
 2. Length of most blades less than twice own width, not round, widest near center; dull green on both surfaces; seed-case 2.5-5 mm. in diameter, less than 1 cm. long; bark scaly and furrowed. Med. or sm. N.... **E. polyanthemos*
 2. Length of blades more than twice width, or else roundish, widest near base; seed-cases more than 1 cm. long.
 3. Blades almost round or with straight sides, surfaces equally green; diam. of body of seed-case less than 7 mm. All..... **E. rudis*
 3. Blades never round, sides curved; body of seed-case at least 7 mm. wide; under surface paler than upper surface. C,S. Pl. 5, f. 1..... **E. robusta*
1. Length of blades 4 times their own greatest width or longer.
 2. Under surface of blade paler than upper surface.
 3. Trunk bark persistent; branches peeling; dots us. faint. C..... **E. resinifera*
 3. Trunk bark peeling; dots distinct. C. **E. saligna*
 2. Under surface of blade not paler than upper surface.

3. Seed-cases less than 1 cm. long, stalk shorter than body. C,S.....**E. viminalis*
3. Seed-cases more than 1 cm. long or/and stalk as long as body.
4. Trunk bark peeling, leaving trunk smooth, gray.
5. Body of seed-case at least 1.5 cm. in diameter.....**E. globulus*
5. Body of seed-case less than 1.5 cm. in diameter. N,C,S.....**E. tereticornis*
4. Trunk bark usually persistent.
5. Seed-case a stalked hemisphere. S.**E. rostrata*
5. Seed-case not hemispherical. N, C, S.**E. rudis*

KEY S 5. LAURACEAE

1. Two large secondary veins just above blade base, each with a gland in its axil; leaves aromatic of camphor when crushed. Med. All. Also in KEY P 2.*Camphora officinarum*
1. Secondary veins all similar; blades not camphor-scented, but spicy.
2. Under surface of blade very hairy, sometimes also petiole and twig.
3. Blades not more than 10 cm. long; hairs red-silky, fading to grayish. Sm. or sh. C,S. Scrub land.....*Persea humilis*
3. Largest blades more than 10 cm. long; hairs woolly rather than silky. Sm. N,C,S. Moist ground. Common.....*Persea pubescens*
2. Under surface almost or quite bare of hairs.
3. Most blades widest below center; base often asymmetrical; midrib us. curved; apex long-tipped. Sm. or sh. C,S.*Nectandra coriacea*
3. Blades widest near center; all above characters not present in any one tree.
4. Apex abruptly prolonged into a tip; blades to 13 cm. long; trunk bark rather flaky. Med. S. Rare*Misanteca triandra*
4. Apex gradually, or not at all prolonged, or abruptly prolonged when largest blades are more than 13 cm. long.
5. Under blade surface gray, sometimes with a bloom, network fine.
6. Secondary veins impressed above; blades not more than 9 cm. long. Sm. or sh. Pen.*Persea littoralis*
6. Secondary veins not impressed above; largest blades more than 9 cm. long; trunk bark deeply furrowed. Large to sm. All.*Persea borbonia*
5. Under surface not gray.
6. Blade base rounded or a wide V; us. 7-8 pairs of sec. veins in body of blade. Large. S. Much cultivated. Varying.*Persea americana*
6. Blade base a narrow V. Rare exotics.
7. Blades less than 14 cm. long. Sm. or sh. C.**Laurus nobilis*
7. Blades 14 cm. long or longer. Sm. S.**Persea indica*

KEY S 6. ARDISIACEAE

1. Common; native; shrubby; juice not biting tongue when tasted. C,S.
2. Leaves mostly near apex of twig; flowers, flower buds, or fruits behind them.*Rapanea guayanensis*
2. Flowers, flower buds, or fruits at apex of twig; leaves scattered along twig.*Ardisia pickeringia*
1. Not common; exotic; sm. or sh.; juice astringent. S.**Wallenia laurifolia*

KEY T. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, NO LARGE STIPULES OR STIPULAR RINGS, NOT AROMATIC, IN 2 VERTICAL ROWS

1. Blades about 12-15 x 2-3 mm.; twigs hairy, resembling rachis of compound leaf; twig falling like compound leaf; trunk wrinkled horizontally. Med. S.**Phyllanthus emblica*
1. Blades more than 2 cm. long and wide.
2. Blade apex not prolonged.
3. Under surface of blade bare, network easily seen.
4. Rows of leaves at an angle, not in the same plane; length of blades much less than twice greatest width; twigs not gray.....*Chrysobalanus*, KEY T 2
4. Rows of leaves not angled as above; length of some blades almost twice greatest width; twigs gray. Med. or sm. S.....*Drypetes diversifolia*

3. Under surface hairy, network not very conspicuous; length of blades more than twice their greatest width. Sm. S.**Bridelia monoica*
2. Blade apex prolonged, gradually or abruptly, into a tip.
3. Under surface and/or margin and twig more or less hairy; some leaves usually in 5 vertical rows. Also in KEY U 6.....*Diospyros*, KEY T 3
3. Twigs and leaves not hairy.
4. Twigs whitish; network distinct in blade; length of blade 2½-3 times its greatest width. Sm. or sh. S.*Drypetes lateriflora*
4. Twigs not whitish.
5. Largest blades 13 cm. long, or more.
6. Base a wide V; apical half larger than basal half; width less than 7 cm.; pinhole-dotted, but not aromatic. Sm. S....**Antidesma bunius*
6. Base rounded or slightly lobed; basal half the larger; width of largest blades more than 9 cm. Sm. S.....**Cormonema ovalifolium*
5. Blades less than 13 cm. long.
6. Length of blade less than twice width; apex, if prolonged, a short blunt snout; rows of leaves at less than an angle of 180°.
Chrysobalanus, KEY T 2
6. Length of largest blades at least twice their greatest width; apex not a short blunt snout; rows of leaves in about same plane.
7. Twig very slender, like rachis of compound leaf, falling with lvs., making conspicuous scar on branch. Sm. or sh. S.
Phyllanthus acidus
7. Twigs not slenderer than normal, not deciduous. Also in KEY V.
Laurocerasus, KEY T 4

KEY T 2. CHRYSOBALANUS. SMALL OR SHRUBBY

1. Most blades not more than 6.5 cm. long; fruit oblong rather than round. Native to Everglades*C. interior*
1. Largest blades more than 6.5 cm. long; fruit roundish. Native to SE coast.
C. icaco

KEY T 3. DIOSPYROS

(Many horticultural varieties, some of which may not fit this key to species.)

1. Petioles not more than 1.5 cm. long. Exotic.
2. Four to eight prominent secondary veins; length of blades usually less than twice their own greatest width. Med. N.**D. kaki*
2. Eight to ten prominent secondary veins; at least some blades with length twice their width. Med.**D. lotus*
1. Longest petioles more than 1.5 cm. long. Native. Leaves alike.
2. Sm. or sh. Corolla of flower 6-8 mm. long; length of seeds not much greater than width. Pen., especially S.*D. mosieri*
2. Sometimes large. Corolla 9-11 mm. long; length of seeds much greater than width. N,C.*D. virginiana*

KEY T 4. LAUROCERASUS

1. Apex short, sharp, bristle-tipped at first; base less than a right angle; some margins toothed. Sm. or sh. N,C.*L. caroliniana*
1. Apex 1 cm. long or longer, thick, not bristle-tipped; base rounded or almost a right angle. Sm. or sh. S.*L. myrtifolia*

KEY U. TREES UNARMED: LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, NO STIPULAR RINGS, NOT AROMATIC, MORE THAN 2 VERTICAL ROWS

1. Blades not more than 7 cm. long. Small or shrubby trees.....KEY U 2
1. Largest blades more than 7 cm. long.
 2. Upper surface of blade hairy or rough.....KEY U 3
 2. Upper surface of blade almost or quite hairless when mature, not rough.
 3. Blades not more than 25 cm. long.
 4. Blade apex not abruptly prolonged into a tip.....KEY U 4
 4. Apex of some or most blades abruptly prolonged into a tip.
 5. Blade base rounded or lobed.....KEY U 6
 5. Blade base V-shaped.....KEY U 7
 3. Largest blades more than 25 cm. long.
 4. Blades widest near or below center, gradually narrowed to a long point; leaves reddish-brown when young, hairless; oval stalked fruits often seen. Large or med. C.S. Much cultivated; many varieties. Also in KEYS O 8, U 4. Pl. 5, f. 2.....*Mangifera indica*
 4. Blades widest above center (apical half larger than basal half); under surface more or less hairy.
 5. Base of blade abruptly narrowed, then slightly rounded at petiole; red leaves usually present; side veins more than 1.5 cm. apart in largest blades; leaves clustered at apex of twig. Med. C.S. Much planted. KEY in U 5. Pl. 5, f. 3.....*Terminalia catappa*
 5. Blade base V-shaped or rounded gradually narrowed; side veins 1-1.5 cm. apart; leaves not crowded; fruit on trunk. Large. S. Rare. Also in KEYS U 6, U 7, W 4.....**Couroupita guianensis*

KEY U 2. SMALL OR SHRUBBY UNARMED TREES; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, ENTIRE, NO STIPULAR RINGS, NOT AROMATIC, MORE THAN 2 VERTICAL ROWS, BLADES TO 7 CM. LONG

1. Blades to 1 cm. wide.
 2. Surface very hairy; leaves crowded at twig apex, also scattered; about 5-7 mm. wide, widest near apex. C.S. Near coast.....*Suriana Maritima*
 2. Blades hairless.
 3. Side margins almost parallel; apical and basal halves almost equal; young branches short, stiff, perpendicular to older ones. N. Wet places. *Ilex* KEY, W 6.....*Ilex myrtifolia*
 3. Side margins not parallel; apical larger than basal half; young branches not perpendicular, sometimes vine-like. C. Dry land.....*Cyrilla arida*
1. Most or all mature blades more than 1 cm. wide.
 2. Upper surface of blade and/or margin rough. S. Also in KEYS U 3. *Bourreria revoluta*
 2. Upper surface not rough, although sometimes wrinkled, scurfy, or hairy.
 3. Under surface of blade, also petiole and twig, red-scurfy.
 4. Blade base rounded or a wide V; twigs much ridged, twisted. S. *Capparis cynophallophora*
 4. Blade base a narrow V; twigs not as just described. NW,N.C. *Lyonia ferruginea*
 3. Both twigs and leaves not red scurfy, although sometimes scurfy.
 4. Twigs and sometimes leaves gray or yellowish.
 5. Twigs yellow-scurfy, at least when young; blades depressed-wrinkled above, very hairy beneath, with prominent veins; side margins almost parallel, rolled. N.C. Sandy soil. KEY X 3 b. *Quercus geminata*
 5. Twigs and leaves not as just described; twigs gray; blade margins curved.
 6. Base of largest blades round. S. *Schoepfia chrysophylloides*
 6. Base of blade V-shaped.
 7. Blade apex broad, rounded, sometimes bristled or notched; blades thick, gray, side veins indistinct; twigs slightly zigzag, not ribbed. S. *Maytenus phyllanthoides*
 7. Apex gradually narrowed and slender-pointed at first, becoming round; blades thin, light-green, shining, veins distinct; twigs ribbed. S. *Schaefferia frutescens*
 4. Young twigs and leaves not gray or yellow, although young branches may be gray.

5. Largest blades more than 3.5 cm. wide; apex rounded, notched, or pointed, not prolonged abruptly. S. Also in KEY U 4.....*Bourreria ovata*
5. Blades not more than 3.5 cm. wide.
6. Apex rounded, sometimes with a tiny point or notch.
 7. Blade base running almost to petiole base, making a very narrow V.
 8. Angle of secondary veins more than 60°; blade surface resin-dotted. NW. Also in KEY U 4.....*Cerothamnus inodorus*
 8. Angle of secondary veins less than 60°; blade surface sometimes scurfy, but not resin-dotted. S.*Dodonaea microcarya*
 7. Petiole distinct from blade, although sometimes very short.
 8. Blade base a narrow V; petioles to 1 cm. long; many small lvs. NW. Pineland swamps. Also in KEY U 4.....*Nyssa ursina*
 8. Blade base rounded or a wide V; petioles less than 5 mm. long.
 9. Seven to eight pairs of secondary veins; blades less than 3 cm. wide. S. Native to lower Fla. Keys.....*Savia bahamensis*
 9. About 5 pairs of secondary veins; largest blades at least 3 cm. wide. ALL. Sandy soil. KEY X 3 b. *Quercus myrtifolia*
6. Apex narrowed.
 7. Length of blades usually not more than twice greatest width; apex pointed; base not decurrent; blades sometimes hairy beneath on midrib. NW,N. Dry or moist places....*Batodendron arboreum*
 7. Length of blades more than twice width. Wet places.
 8. Blades resin-dotted, but not aromatic. NW. Also in KEY U 4. *Cerothamnus inodorus*
 8. Blades not resin-dotted.
 9. Side veins almost invisible; blade base short-decurrent, giving appearance of short petiole. NW,N.*Cliftonia monophylla*
 9. Side veins visible; blade base long-decurrent, giving appearance of long petiole to 1 cm. long. NW,N. Also in KEY U 4. *Cyrilla racemiflora*

KEY U 3. TREES UNARMED, SMALL OR SHRUBBY UNLESS OTHERWISE STATED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, NO STIPULAR RINGS, NOT AROMATIC, MORE THAN 2 VERTICAL ROWS; BLADES MORE THAN 7 CM. LONG, UPPER SURFACE HAIRY OR ROUGH

1. Blades not more than 10 cm. long. South.
 2. Base of blade V-shaped; upper surface and/or margin usually rough; about 5-7 secondary veins, not straight or parallel. Also in KEY U 2. *Bourreria revoluta*
 2. Blade base rounded; surfaces velvety-hairy; more than 7 secondary veins, very straight and parallel. Also in KEY P 2.....*Colubrina cubensis*
1. Largest blades more than 10 cm. long.
 2. Blade base a wide or narrow V. Swamps.
 3. Apex gradually narrowed to a sharp point; basal and apical halves about equal; petioles 2.5-5 cm. long. NW. Also in KEYS U 4, U 7. *Leitneria floridana*
 3. Apex variable; basal half usually smaller than apical half; petiole less than 2.5 cm. long. Large. N. Also in KEY U 4.....*Nyssa ogeche*
 2. Blade base rounded. South.
 3. Upper surface bristly-rough; twigs and leaves not yellow-mealy; some blades toothed. C.S. Also in KEYS W 4, W 7.....*Cordia sebestena*
 3. Upper surface soft-hairy; under surface, twigs and petiole yellow-mealy; all blades untoothed. Pen. & Keys.....*Solanum verbascifolium*

KEY U 4. TREES UNARMED; LEAVES SIMPLE, SPIRAL IN MORE THAN 2 VERTICAL ROWS, PINNATELY VEINED, SIMILAR, ENTIRE, NO STIPULAR RINGS, NOT AROMATIC, 7-25 CM. LONG, UPPER SURFACE HAIRLESS, SMOOTH, APEX NOT ABRUPTLY PROLONGED

1. Under surface and petiole very hairy even when mature.
 2. Longest petioles 2.5-5 cm. long; basal and apical halves about equal. Sm. or sh. NW. Swamps. Also in KEYS U 3, U 7.....*Leitneria floridana*
 2. Petioles less than 2.5 cm. long.

3. Largest blades at least 4.5 cm. wide and 12-22 cm. long. To large. N.
Also in KEY U 3. Swamps.....*Nyssa ogeche*
3. Blades less than 4.5 cm. wide; often less than 12 cm. long. Not in swamps.
4. Leaves clustered at twig apex, which turns up; blades sometimes red-spotted,
apex gradually sharp-pointed. Sm. C.S. Also in KEY U 5.
**Terminalia angustifolia*
4. Leaves clustered, but also scattered; twigs not turning up; blades not red-
spotted; apex usually blunt, sometimes bristled.....*Quercus*, KEY X 3 b
1. Blades almost or quite hairless when mature, sometimes scurfy.
2. Length of largest blades less than twice their own greatest width; petioles to 2-3
cm. Sm. or sh. S. Also in KEY U 2.....*Bourreria ovata*
2. Length of most blades twice or more than twice their width.
3. Blade base rounded.
4. Apex of blade not prolonged, but blunt or pointed; apical and basal halves
almost equal; petiole apex not thickened.
5. Angle of secondary veins more than 50°; network not conspicuous on upper
surface. Sm. S. KEY W 7.....**Cordia leucosebestena*
5. Angle of secondary veins not more than 50°; network of upper blade sur-
face distinct. Sm. or sh. S.**Capparis flexuosa*
4. Blade apex gradually long-pointed; basal half larger than apical one; apex
of petiole thickened. To large. N.S. Also in KEYS P 2, P 4, X.
**Brachychiton populneum*
3. Base of most blades V-shaped.
4. Apex rounded, sometimes with a tiny point.
5. Blades less than 10 cm. long.
6. Blades not more than 9 cm. long and 3 cm. wide. Sm. or sh. Edges
of pineland ponds and swamps.
7. Angle of secondary veins more than 50°; blades resin-dotted. NW.
Also in KEY U 2.....**Cerothamnus inodorus*
7. Angle of secondary veins about 50°; blades not resin-dotted. Apala-
chicola River Delta. Also in KEY U 2.....*Nyssa ursina*
6. Largest blades larger than 9 cm. long and 3 cm. wide, crowded at twig
apex, also scattered.
7. Number of rows irregular. Sm. C.....**Pittosporum viridiflorum*
7. Number of rows definitely 5.....*Quercus*, KEY X 3 b
5. Largest blades longer than 10 cm.; leaves crowded at twig apex or/and on
spurs.
6. Largest blades more than 6 cm. wide, often showing red color; spurs and
twigs often curving up.....**Terminalia*, KEY U 5
6. Largest blades not more than 6 cm. wide, not red; twigs and spurs not
curving up*Quercus*, KEY X 3 b
4. Apex distinctly narrowed, sometimes to a point.
5. Blades not more than 3.5 cm. wide.
6. Blade base long, narrow, running down petiole, making petiole appear
longer than it is. Sm. or sh. NW,N,C. Also in KEY U 2.
Cyrilla racemiflora
6. Petiole distinct from blade.
7. Longest petioles to 1 cm. long or more; some blades faintly toothed.
Sm. or sh. All. Also in KEYS W 4, W 6.....*Ilex cassine*
7. Petioles less than 1 cm. long; blades not toothed....*Quercus*, KEY X 3 b
5. Largest blades more than 3.5 cm. wide.
6. Blade unequally divided by midrib; margins wavy. Large. All but
extreme S. In KEY X 3 b. Pl. 6, f. 4.....*Quercus laurifolia*
6. Blade equally divided by midrib; margins not wavy.
7. Blade length not more than 3 times greatest width; apex not long and
slender. To large. NW and N. Wet soil.....*Nyssa biflora*
7. Blade length often more than 3 times width; apex gradually prolonged;
leaves crowded at end of year's growth. Not in wet soil.
8. Margin not flat; 10-14 pairs of secondary veins; length less than 4
times width. Med. C.S. Also in KEY U 7.
**Pittosporum undulatum*
8. Margin flat; more than 14 pairs of secondary veins; length about 4
times width or more. Large or med. C.S. Oval stalked
fruit. Many varieties. Pl. 5, f. 2. Also in KEYS O 8, U.
Mangifera indica

KEY U 5. TERMINALIA

1. Leaves opposite; margins sometimes toothed. Med. S. Pl. 3, f. 3. **T. arjuna*
1. Leaves spiral, although crowded at apex of twig or spur; untoothed.
 2. Largest blades 25 cm. long or longer; base abruptly narrowed, then rounded at petiole. Large or med. C,S. Pl. 5, f. 3. *T. catappa*
 2. Blades less than 25 cm. long.
 3. Largest blades more than 5 cm. wide.
 4. Largest blades at least 13 cm. long; length at least twice greatest width. Med. S. **T. muelleri*
 4. Blades less than 13 cm. long; length less than twice width. Med. S. **T. saffordii*
 3. Largest blades less than 5 cm. wide. Small. C,S. **T. angustifolia*

KEY U 6. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, NO STIPULAR RINGS, NOT AROMATIC, MORE THAN 2 VERTICAL ROWS; BLADES 7-25 CM. LONG, UPPER SURFACE HAIRLESS, TIP ABRUPT, BASE ROUNDED

1. Under surface of blade reddish-hairy; largest blades 11-17 x 5-8 cm. Sm. or sh. S. Also in KEY P 2. *Colubrina arborescens*
1. Under surface of blade bare or hairy, but not red-hairy.
 2. Length of blade (including tip) less than twice its own greatest width; base very wide. Sm. or sh. NW. Key in L 2. *Svida alternifolia*
 2. Length of blade at least twice its greatest width.
 3. Largest blades more than 18 cm. long; fruit on trunk. Large. S. Also in KEYS U, U 7, W 4. **Couroupita guianensis*
 3. Blades less than 18 cm. long.
 4. Blades less than 10 cm. long; sec. veins at acute angle to midrib, curving almost at once toward apex. Med. or sh. S. *Colubrina reclinata*
 4. Blades 10 cm. long or longer.
 5. Blade base rounded, no V at petiole; secondary veins straight and parallel. Med. or sh. NW, M. Also in KEY W 4. *Rhamnus caroliniana*
 5. Blade base V-shaped at petiole; secondary veins not parallel, irregular. Many horticultural varieties. *Diospyros*, KEY T 3

KEY U 7. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, SIMILAR, ENTIRE, NO STIPULAR RINGS, NOT AROMATIC, MORE THAN 2 VERTICAL ROWS, BLADES 7-25 CM. LONG, UPPER SURFACE HAIRLESS, TIP ABRUPT, BASE V-SHAPED

1. Petioles usually less than 1 cm. long, sometimes lacking, and blade base narrowed and twisted.
 2. Blades widest near center; fleshy or leathery; not more than 10 cm. long; glands on petiole near apex; usually some red leaves; twigs ridged. Large or sh. Pen. & Keys. Wet shores. *Conocarpus erecta*
 2. Most blades widest above center; base much narrowed; largest blades more than 10 cm. long.
 3. Length of largest blades at least 3 times their greatest width, usually not wider than 5 cm.; leaves in bunches on spurs and/or single along twig. Med. to sm. S. *Crescentia cujete*
 3. Length of blades less than three times width; leaves single and crowded at apex of twig; largest more than 5 cm. wide. Med. or sm. S. *Enallagma latifolia*
1. Longest petioles 1 cm. or more in length.
 2. Most blades widest above center.
 3. All leaves crowded on spurs; usually some red leaves. *Terminalia*, KEY U 5
 3. Not all leaves on spurs.
 4. Leaves crowded on short straight spurs and scattered; base a wide V; length less than 3 times greatest width. Tall. NW,N. *Nyssa sylvatica*
 4. Leaves mostly scattered; length of some blades at least 3 times width.

5. Blades less than 20 cm. long; secondary veins at acute angle to midrib.
Sm. S. In KEY W 7.....**Cordia glabra*
5. Largest blades more than 20 cm. long; secondary veins at almost a right
angle to midrib. Large. S. In KEYS U, U 6, W 4
**Couroupita guianensis*
2. Most blades widest at or below center.
3. Under surface hairy even when mature.
4. Hairs pale, but not yellow; secondary veins forming border near margin.
Sm. or sh. NW. Also in KEYS U 3, U 4.....*Leitneria floridana*
4. Hairs bright yellow (also dried leaves); secondary veins forming border far
back from margin with supplementary border near margin. Sm. or sh.
NW, N. Also in KEY W 4.*Symplocos tinctoria*
3. Under surface bare of hairs.
4. Secondary veins difficult to distinguish; margin flat or rolled. Med. or sm.
or sh. NW.*Kalmia latifolia*
4. Secondary veins distinct; margin not flat. S. Also in KEY U 4.
**Pittosporum undulatum*

**KEY V. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED,
SIMILAR, UNLOBED, TOOTHED, 2 VERTICAL ROWS ON TWIG**

1. Blade margin bearing teeth which are double, triple, or irregular.
2. Trunk "muscle" (fluted), but smooth, dark- or blue-gray; one large tooth at
apex of each secondary vein, several smaller teeth between large ones.
Med. or sh. NW, N.*Carpinus caroliniana*
2. Trunk unlike that of *Carpinus*.
3. Small or shrubby; end buds distinctly stalked, scurfy or hairy, at least when
young.
4. Blade teeth rounded, coarse; blade base very asymmetrical; buds not covered
with scales. NW.*Hamamelis virginiana*
4. Blade teeth fine, sharp; blade base almost symmetrical; buds scaly. NW, N
Alnus rugosa
3. Usually good-sized trees; leaf buds not stalked.
4. Bark of trunk smooth or peeling around trunk in thin papery curls; blade
base almost symmetrical. S.*Betula nigra*
4. Bark rough, sometimes scaly but not peeling in sheets.
5. Blade teeth flaring, very fine and sharp, long-pointed. NW, N, C.
Ostrya virginiana
5. Blade teeth convex or almost straight, not usually flaring or fine or very
long-pointed.*Ulmaceae*, KEY V 2
1. Blade margin single-toothed.
2. A secondary vein running to each tooth.
3. Teeth convex on outer side or straight; trunk bark rough, smooth, or peeling in
flakes.
4. Teeth fine, sharp; buds not stalked.....*Ulmaceae*, KEY V 2
4. Teeth like convex scallops, coarse, blunt; leaf buds stalked. Sm. or sh.
NW.*Hamamelis virginiana*
3. Teeth concave, each tipped with a point or bristle; trunk bark not peeling.
4. 9-14 pairs of secondary veins in blade; trunk bark pale, smooth. To large.
NW, N.*Fagus grandifolia*
4. More than 14 pairs of secondary veins in largest blades; trunk bark not pale,
sometimes smooth. Sm. or sh. NW, N, C.*Castanea*, KEY V 3
2. Not all teeth supplied with secondary veins.
3. Length of blade less than twice its greatest width; end buds distinctly stalked.
Med. or sh. NW, N.*Alnus rugosa*
3. Length of blade at least twice its greatest width; end buds not stalked.
4. Margin incompletely and coarsely toothed, some blades untoothed; secondary
veins very irregular, resembling network. Sm. or sh. A.
Laurocerasus, KEY T 4
4. Margin regularly, rather finely toothed; about 6-8 distinct pairs of irregular
secondary veins. Med. or sm. NW, N, C.**Ehretia acuminata*

KEY V 2. ULMACEAE

1. Leaves with 3 or more basal veins in blade. *Trema*, *Celtis*.....KEYS Q 6, Q 7
1. Leaves pinnately veined.
 2. At least some young branches bearing 2 opposite corky wings. To large. N,C.
Ulmus alata
 2. Branches not winged.
 3. Blades sometimes or always single-toothed. N.
 4. Upper surface of blade usually smooth. Med. or sm.
 5. Blade base almost symmetrical; under surface bare; trunk rough.
**U. pumila*
 5. Base asymmetrical; under surface hairy at first; trunk smooth.
 4. Upper surface of blade rough. Large or med.**U. parvifolia*
 3. Blades double-toothed, sometimes with several secondary teeth.
 4. Base almost symmetrical; secondary veins conspicuously forked, with a branch to each tooth. Med. N. Swamps.....*Planera aquatica*
 4. Base very asymmetrical.
 5. Twigs typically bare; upper blade surface smooth. Med. or sm. NW,N,C. Swamps.**U. floridana*
 5. Twigs typically hairy; upper blade surface rough. Moist, but not always swampy ground.
 6. Twigs and leaves very hairy; bark and leaves aromatic and "slippery" when crushed. Large. NW.**U. fulva*
 6. Twigs and leaves not hairy when mature; bark and leaves not aromatic or slippery. Large. NW, N, C. Much planted....**U. americana*

KEY V 3. CASTANEA

1. Length of blades less than 3 times their own greatest width; under surface of blade white-hairy, also petiole and twig. Sm. or sh. NW, N, C.**C. pumila*
1. Length of largest blades at least 3 times width; leaves becoming almost or quite bare of hairs.
 2. Length of blade to about 10 cm. x 4 cm.; teeth distinct and bristled; twigs becoming hairless. Sm. or sh. NW, N, C.**C. ashei*
 2. Length of blade often more than 10 cm.; often no distinct teeth, merely bristles; twigs typically hairy. Sm. or sh. N,C.**C. crenata*

KEY W. TREES UNARMED; LEAVES SIMPLE, SPIRAL IN MORE THAN 2 ROWS, PINNATELY VEINED, SIMILAR, UNLOBED, TOOTHED

1. Length of largest blades usually at least 5 times their own greatest width; blades slender, pointed, thin; twigs usually flexible; buds showing only 1 scale and usually flattened against twig. Damp or wet places.....*Salix*, KEY W 2
(Specimens from a similar-leaved small tree have been collected from waste ground at Pensacola from "seeds evidently brought in ballast from South America."† However, the buds of this rare *Sapium biglandulosum* var. *lanceolatum* are round and have more than one visible scale.)
 1. Trees and leaves not entirely as in *Salix*.
 2. Length of blades not more than 8 cm.KEY W 3
 2. Length of largest blades more than 8 cm.KEY W 4
(*Crataegus* is sometimes spineless and unlobed. See KEY N.)
- †Small, J. K. Manual of the southeastern flora.

KEY W 2. SALIX

The willows are difficult to distinguish, not only because their leaves are similar, but also because the flowers of each have the stamens on one plant and the pistils on a different one; both usually appearing before the leaves. In addition, the willows have many varieties and hybrids. The following key shows three types, each of which may have related species. Other Florida species are shrubs.

1. Leaf blades green on both surfaces, although the under surface may be paler than the upper one. Sm. or sh. N.**S. nigra*
1. Under surface of blade gray or whitish.
 2. Branches long, hanging. Large tree when mature.....**S. babylonica*
 2. Tree not "weeping." Sm. or sh. NW, N, C.**S. longipes*

**KEY W 3. TREES UNARMED; LEAVES SIMPLE, SPIRAL, IN MORE THAN 2 ROWS,
PINNATELY VEINED, SIMILAR, UNLOBED, TOOTHED, NOT MORE
THAN 8 CM. LONG, NOT LIKE SALIX**

1. Petiole several cm. long, apex flat; blade base almost straight; tree narrow, branches growing erect. Tall. Local. Also in KEYS Q 3, Q 8.....**Populus italica**
1. Leaves and tree not like **Populus italica**.
2. Twigs and under blade surface resin-dotted, hairy at first; blades spicy-scented when crushed; teeth irregular, far apart, mostly in apical half. Med. or sh. All. Also in KEY W 4.**Cerothamnus ceriferus**
2. Twigs and leaves not resinous and aromatic, although sometimes hairy.
3. Blade base a V not larger than a right angle.
4. No real teeth, merely glands, some blades entire. Sm. or sh. NW,N. Also in KEY U 2.**Batodendron arboreum**
4. Blades toothed, teeth sometimes gland-tipped.
5. Blade length to 3 times its own greatest width; apex gradually pointed and bristled; a black gland on each tooth. Sm. or sh. S.***Maytenus boaria**
5. Blade length less than 3 times width.
6. Network very distinct on both surfaces, almost as heavy as secondary veins. Med. or sm. S. Also in KEY W 4.....**Gymnanthes lucida**
6. Network indistinct, much finer than secondary veins.....**Ilex**, KEY W 6
3. Base of largest blades rounded or a V wider than a right angle.
4. Bark corky, deeply furrowed; twigs yellow-hairy; 4-6 pairs of short or bristle-like teeth in blade. Med. Local. KEY in X 3 c.***Quercus suber**
4. Trees not like **Quercus suber**.
5. Only a few teeth, toward apex of blade; some entire blades. Med. or sh. C,S. KEY in W 6. Also in KEY W 4.**Ilex krugiana**
5. Blades toothed throughout most of margin, although sometimes shallowly.
6. Blades to 2 cm. wide; teeth small rounded scallops, sometimes with an incurved bristle. Sm. or sh. All. In KEY W 6.**Ilex vomitoria**
6. Teeth not as just described except when blades are more than 2 cm. wide or when trees are spiny.
7. Teeth rounded scallops, the largest 5 mm. or more long; blades more than 2 cm. wide; twigs sometimes spiny; trunk bark usually light-colored, unfurrowed. Sm. or sh. C,S. Also in KEY N.***Flacourtia indica**
7. Trees not completely as just described.....KEY W 5

**KEY W 4. TREES UNARMED; LEAVES SIMPLE, SPIRAL, IN MORE THAN 2 ROWS,
PINNATELY VEINED, SIMILAR, UNLOBED, TOOTHED, LARGEST
MORE THAN 8 CM. LONG, NOT LIKE SALIX**

1. Petiole apex flat and blades somewhat triangular; or petioles round and blades oval or heart-shaped, with large, pointed, resinous end buds. Large or med. NW,N.**Populus**, KEY Q 8
1. Petiole apex not flat, buds not resinous, large, and pointed.
2. Teeth few, sometimes large in proportion to size of blade, irregularly spaced.
3. Blades less than 4 cm. wide; apex prolonged or merely sharp-pointed. Med. or sh.
4. Blades spicy when crushed, resin-dotted, thin. All. Also in KEY W 3.**Cerothamnus ceriferus**
4. Blades not spicy, not dotted.....**Ilex**, KEY W 6
3. Largest blades more than 4 cm. wide; apex prolonged.
4. Apex thick; upper surface very rough; under surface white-hairy; largest blades 12-20 cm. long, some untoothed. Med. to sh. C,S. Also in KEYS U 3, W 7.....**Cordia sebestena**
4. Apex prolonged into a slender tip.
5. Under surface yellow-hairy at first; teeth very small; some blades untoothed. Sm. or sh. NW & N. Also in KEY U 7.**Symplocos tinctoria**
5. Hairs not yellow; teeth few, very large and irregular. Tall. NW,N. Swamps**Nyssa aquatica**
2. Teeth throughout margin, except sometimes near base.

3. Largest blades more than 20 cm. long. Med. or tall. Exotic.
4. Petiole very short or none at all.
 5. Blade teeth 1 cm. apart or more, conspicuous, sometimes double; under blade surface densely rusty-hairy. Sm. All... **Eriobotrya japonica*
 5. Blade teeth inconspicuous, wavy; under surface, if hairy, not rusty. Large. Rare. S. Also in KEYS U, U 6, U 7..... **Couroupita guianensis*
 4. Petiole 2-several cm. long; teeth conspicuous, single, a secondary vein to each tooth. Med. C.S. **Dillenia indica*
3. Blades not over 20 cm. long.
 4. A secondary vein to each tooth; fruit, acorns, sometimes visible. *Quercus*, KEY X 3 c
 4. Fewer secondary veins than there are teeth.
 5. Trunk bark usually dark, smooth or loose-scaly or peeling around trunk; or else light colored and loose-scaly but not peeling; buds many-scaled; lenticels usually conspicuous on twigs; spurs and stipules often present; petiole apex and teeth often bearing glands; teeth often double. Mostly in NW and N. Deciduous fruit trees (apple, pear, cherry, peach, plum.).....KEY W 5
 5. Trees not as just described, not fruit trees.
 6. Blade base rounded or a wide V (more than a right angle).
 7. Blade apex sharp-pointed or thick-tipped.
 8. Teeth rounded, coarse, like scallops. Sm. or sh. S. Pl. 3, f. 7. **Cordia myxa*, KEY W 7
 8. Teeth faint, like bristles, fine.
 9. Length of blade at least twice greatest width. Sm. or sh. NW, C. Also in KEY U 6..... *Rhamnus caroliniana*
 9. Length of blade less than twice greatest width. Sm. or sh. S. Also in KEY Q 3..... **Cordia alba*, KEY W 7
 7. Blade apex prolonged into a slender tip; teeth small, but distinct, or wavy.
 8. Blades bitter-tasting; bark of branches not shredding lengthwise; 10 or more pairs of secondary veins. Tall or sh. NW, N. *Oxydendrum arboreum*
 8. Blades not bitter-tasting; bark of branches soon shredding; less than 10 pairs of secondary veins. NW, N. *Halesia*. KEY W 8
 6. Blade base narrow V-shaped.
 7. Petiole and/or under surface hairy.
 8. Blades to 10 cm. long; bark of branches not shredding. Sm. or sh. NW. In KEY W 6..... *Ilex verticillata*
 8. Largest blades more than 10 cm. long; bark of branches sometimes shredding. Tall to sh. NW, N. *Halesia*, KEY W 8
 7. Petiole and under surface of blade hairless.
 8. Base of blade running down almost to base of petiole; blades sometimes red, shallow-toothed. Tall to sh. N.C. *Gordonia lasianthus*
 8. Blades not decurrent, not red; secondary veins and network very conspicuous. Med. or sm. S. Also in KEY W 3. *Gymnanthes lucida*

KEY W 5. AMYGDALACEAE & MALACEAE

1. Twigs red on one surface, green on the opposite side; leaves narrow, not flat, usually drooping and curling under. Sm. NW, N. *Amygdalus persica*
1. Twigs and leaves not both as just described.
2. Trunk naturally dark-colored; smooth, loose-scaly, or peeling horizontally.
 3. One or more glands near apex of most petioles, on petiole or blade base.
 4. Blade teeth single; upper surface of blade shining.
 5. Trunk scaly, but not peeling horizontally; twigs not spiny; blade teeth incurved; blades (largest) more than 7 cm. long. To large. N.C. *Padus virginiana* (L.) Mill.
 5. Trunk peeling horizontally when mature; twigs sometimes spiny; tips of blade teeth flaring; blades usually not more than 7 cm. long. Sm. or sh. NW, N. Also in KEY N. *Prunus angustifolia*
 4. Blade teeth both single and double; upper blade surface dull. NW, N.
 5. Under surface of blade hairless. Med. or sm. *Prunus cerasus*
 5. Under surface of blade more or less hairy. To large..... *Prunus avium*

3. Most or all petioles glandless. Small or shrubby trees.
4. Apex of blade blunt or notched, barely or not at all prolonged; twigs and parts of leaves hairy; twigs not spiny.....**Padus cuthbertii**
4. Apex of blade sharp, sometimes prolonged; twigs sometimes spiny.
 5. Apex abruptly long-tipped; largest blades more than 7 cm. long. Sm. NW, N.**Prunus americana**
 5. Apex short-tipped or merely sharp; blades not more than 7 cm. long. Sm. or sh. N,C.**Prunus umbellata**
2. Trunk not naturally dark-colored; usually rough, but not peeling.
 3. Tree narrow; twigs sometimes spiny; blade teeth very shallow, regular, blunt; petiole 1.5-5 cm. long. Med. or sm. Local.....**Pyrus communis**
 3. Trees spreading; petioles not more than 1.5 cm. long; teeth sharp or bristled.
 4. Blades almost bare underneath when mature, dark green above; not more than 7 cm. long; twigs sometimes spiny. Med. NW, N.**Malus angustifolia**
 4. Blades hairy underneath, yellow-green above; largest blades more than 7 cm. long. Med. M.**Malus bracteata**

KEY W 6. ILEX

(Small or shrubby unless otherwise stated.)

1. Margins of most or all blades armed with stiff prickly spines.
2. Blade rectangular rather than oval; 2-3 spines at apex. NW,N.***I. cornuta**
2. Blades oval rather than rectangular; usually more than 2-3 apical spines.
 3. Blades not more than 6 cm. long; side margins rolling under; twigs not hairy, whitish; branches growing up; head often dense. N, C, M. In scrub. Pl. 3, f. 6.**I. cumulicola**
 3. Largest blades more than 6 cm. long; twigs hairy when young; branches spreading, but head rather narrow. Med. NW, N, C. Woods, etc. **I. opaca**
1. Blade margin not stiff-spiny; entire or more or less toothed; apex and teeth sometimes bristled.
 2. Blades less than 2 cm. wide.
 3. Margins usually untoothed; sides almost parallel; apex spine-tipped. NW, N. Near ponds and swamps. Also in KEY U 2.**I. myrtifolia**
 3. Margins shallow-toothed.
 4. Margin distinctly toothed, side margins curved; blade base rounded or a wide V. All regions, but especially near coast. Also in KEY W 3. **I. vomitoria**
 4. Margin faintly scalloped; blade base V-shaped. NW. Near rivers. **I. curtissii**
 2. Blades more than 2 cm. wide.
 3. Largest blades more than 7 cm. long.
 4. Leaves not leathery, deciduous; margin fine-toothed except base. NW, N. Moist places. Also in KEY W 4.....**I. verticillata**
 4. Leaves leathery, evergreen; teeth few, irregularly spaced or lacking.
 5. Twigs bare; blades widest near or below center; apex usually long-tipped. Med. or sh. C,S. Hammocks. Also in KEY W 3.....**I. krugiana**
 5. Twigs hairy, at least at first; some blades widest above center; apex usually not long-tipped. Med. or sh. N,C. Moist places. Also in KEY U 4 **I. cassine**
 3. Normal blades not more than 7 cm. long.
 4. Blades bare beneath; teeth tipped with flaring bristles; blade apex abruptly slender-tipped. N,C. Near swamps.....**I. ambigua**
 4. Blades more or less hairy beneath or along margin.
 5. Teeth tipped with bristles; margin often hairy; fruit stalks longer than fruit. NW. Woods and stream banks.....**I. longipes**
 5. Teeth tipped with glands, not bristles; margin not hairy.
 6. Twigs and upper surface of blade hairless; fruit stalks not longer than fruit (about 1 cm.). NW. Swamps and along streams.**I. decidua**
 6. Twigs and upper surface hairy, at least at first; fruit stalks more than 1 cm. long. NW. Woods.....**I. cuthbertii**

KEY W 7. CORDIA

1. Upper surface very rough or bristly; twig, petiole, and under surface white-hairy; margin untoothed, wavy, or bristle-toothed. Med., sm. or sh. S.
2. Largest blades more than 12 cm. long; margin wavy or untoothed; upper surface very rough. Also in KEYS U 3, W 4.....*Cordia sebestena*
2. Blades not more than 12 cm. long; margin fine-toothed with bristles; upper surface bristly. Also in KEYS Q 3, W 4.....**Cordia alba*
1. Upper surface smooth or only slightly rough.
2. Margin bearing distant rounded teeth; under surface only slightly hairy; basal-veined. Sm. C.S. Also in KEY W 4. Pl. 3, f. 7.....**Cordia myxa*
2. Margin untoothed; blades pinnately veined. Small. South.
3. Apex prolonged; largest blades more than 10 cm. long. Also in KEY U 7.
**Cordia glabra*
3. Apex not prolonged; blades not more than 10 cm. long; twigs white-hairy. Also in KEY U 4.....**Cordia leucosebestena*

KEY W 8. HALEZIA

1. Four to five teeth to 1 cm. in center of side margin.
2. Base a narrow V. Sm. or sh. NW.*Halesia parviflora*
2. Base a wide V or round. Large or sh. NW, N.*Halesia carolina*
1. Fewer than 4 teeth to 1 cm. of margin; base rounded. Med. or sh. NW, N.
Halesia diptera

KEY X. TREES UNARMED; LEAVES SIMPLE, SPIRAL, PINNATELY VEINED, ALL LOBED, OR BOTH UNLOBED AND LOBED

1. Lobes very narrow, divided almost to midrib (making leaf appear compound); re-lobed in one species; under surface somewhat silky; margin rolled under; entire leaves also present in one species. Pl. 5, f. 4.....*Grevillea*, KEY X 2
1. Blades not both narrow-lobed and so deeply divided as those of *Grevillea*.
2. Lobed blades shaped like a mitten with 1 or 2 thumbs; leaves spicy when tasted; buds and twigs green, smooth. Med. or large. NW....*Sassafras officinale*
2. Leaves not mitten-like; taste not spicy; twigs usually brownish.
3. Apex of blade notched broadly or almost straight; leaves all similar, not crowded at twig apex; long-petioled; a stipular ring around twig at each node. Tall. N. Also in KEY R.*Liriodendron tulipifera*
3. Leaves and twigs not both as in *Liriodendron*.
4. Blades unequally and usually doubly fine- and sharp-toothed, irregularly lobed; buds roundish; twigs usually spiny. Pl. 1, f. 4..*Crataegus*, KEY N
4. Leaves and twigs not like those of *Crataegus*.
5. All leaves pinnately veined; some leaves pinnately lobed.
6. Unlobed leaves oval, often at apex of tree; lobed leaves below them, the largest with 4 pairs of pinnately arranged lobes; leaves not crowded; fruit not an acorn. Large to sm. S.....*Stenocarpus sinuatus*
6. Leaves like those of *Stenocarpus* never together on same tree or same kind of tree; leaves crowded at apex of twig, also scattered; petioles usually short; fruit an acorn. Pl. 6, fs. 1, 2, 3, 5..*Quercus*, KEY X 3
5. Lobed leaves basal-veined and basal-lobed; unlobed leaves pinnately veined, untoothed, apex prolonged. Also in KEYS P 2, P 4, U 4.
**Brachychiton populneum*

KEY X 2. GREVILLEA

1. Entire and lobed leaves on same tree; lobes to 2 cm. wide. Large or sm. S.
**G. hilliana*
1. All leaves deeply lobed, ultimate segments less than 2 cm. wide.
2. Some lobes re-lobed or toothed; flowers orange. Large or med. All regions, largest in NW, N. C. Pl. 5, f. 4.**G. robusta*
2. Lobes not re-lobed; flowers red. Sm. or sh. C.S.**G. banksii*

KEY X 3. QUERCUS

1. Blades of mature trees normally varying from unlobed to lobed on same tree or trees of same species; widest above center.....KEY X 3 a
1. Blades often varying in size and shape, but not from unlobed to lobed in mature trees.
 2. Leaves unlobed.
 3. Leaves untoothedKEY X 3 b
 3. Leaves toothedKEY X 3 c
 2. Leaves lobed: the lobes untoothed, or re-lobed.
 3. Apex of lobes rounded or re-lobed, but not toothed or bristled.....KEY X 3 d
 3. Apex of lobes sharp-pointed and sometimes bristle-tipped.....KEY X 3 e

The oaks tend to cross, the resulting hybrid usually resembling in some degree both of its parents. They vary, also, because of age or environment. Since this key includes few hybrids and varieties such specimens will probably not agree with it. The first key, X 3 a, should be consulted if a leaf does not seem to fit into the other divisions, as the tree from which it comes may not show variation.

KEY X 3 a. QUERCUS. VARYING LEAVES

1. Blade base a long slender straight-sided V with its point at the petiole. Large. NW, N. Pl. 6, f. 5.....*Q. nigra*
1. Blade base not as just described.
 2. Almost no petiole; blades usually less than 8 cm. long, very hairy beneath, at least at first; acorn cup rounded at bottom, not stalked; length of nut less than twice its thickness. Med. or sh. NW, N, C.*Q. chapmanii*
(*Q. rolfsii* differs from this in its stalked acorn cup, and nut longer in proportion to its thickness.)
 2. Longest petioles at least 1 cm. in length; largest blades at least 8 cm. long.
 3. Blades somewhat pear-shaped; side margins of base almost straight and parallel; base rounded or lobed; often more than 3 lobes in blades; twigs and leaves hairy even when mature. Tall. NW, N. Pl. 6, f. 3.*Q. marilandica*
 3. Blades triangular rather than pear-shaped; base margins curved; rounded or broad V-shaped at petiole; usually not more than 3 lobes in blade; twigs and leaves almost or quite bare. Med. NW.*Q. arkansana*

KEY X 3 b. QUERCUS, UNTOOTHED, UNLOBED

1. Under surface of mature blade hairy.
 2. Large tree; bark very much furrowed, usually bearing Spanish moss; blade apex not bristled; upper surface typically not wrinkled, showing network; under surface often only slightly hairy; side veins at acute angle to midrib. NW & Pen., not Keys.....*Q. virginiana*
 2. Small or shrubby trees, not mossy; under surface very hairy. NW, N, C.
 3. Upper surface wrinkled, secondary veins depressed, at almost a right angle to midrib; margin rolled; texture very thick and stiff.....*Q. geminata*
 3. Upper surface not wrinkled, showing network, secondary veins rather irregular, not prominent; margin flat; texture not very thick or stiff.....*Q. cinerea*
1. Under surface of mature blade bare of hairs.
 2. Small or shrubby; blades thick, most not longer than 5 cm., length not more than twice greatest width; apical half larger than basal half; only 3-5 pairs of secondary veins; side margins rolled. All regions.....*Q. myrtifolia*
 2. Large tree; largest blades more than 5 cm. long, length usually more than twice greatest width; more than 3-5 pairs of secondary veins.
 3. Blade apex broad, round or notched; blade thence narrowed to a V-shaped base. NW, N.*Q. obtusa*
 3. Blade apex narrowed; blade sometimes widest near or below center.
 4. Most blades not more than 2 cm. wide; apex always pointed and bristle-tipped; side margins often almost parallel. NW, N.*Q. phellos*
 4. Blades often more than 2 cm. wide; side margins curved, not parallel.
 5. Side margins wavy and irregular, unequally divided by midrib; bark not deeply furrowed; usually not much Spanish moss. NW, Pen. Pl. 6, f. 4.*Q. laurifolia*
 5. Side margins usually not irregular, or blade asymmetrical; bark deeply furrowed, us. bearing much Spanish moss. NW, Pen.....*Q. virginiana*

KEY X 3 c. QUERCUS, TOOTHED BUT NOT LOBED

1. Trunk bark corky; blades bearing 4-6 pairs of usually bristle-tipped teeth; blades not longer than 7.5 cm. Large. N.**Q. suber*
1. Trunk bark not corky.
 2. Blades toothed mostly near apex. Sm. N.**Q. acutissima*
 2. Blades toothed almost throughout; trunk bark light-colored, scaly. Large.
 3. Teeth rounded (both sides convex), sometimes bristled, but not incurved. NW, N.*Q. prinus*
 3. Teeth concave or only slightly convex, sometimes incurved. NW.*Q. muhlenbergii*

KEY X 3 d. QUERCUS, ROUNDED LOBES

1. Under surface bare in mature blades.
 2. Three to five lobes, not cut more deeply than half the distance to the midrib. Large. NW, N.*Q. austrina*
 2. Three to nine lobes, often cut almost to midrib. Large. NW.*Q. alba*
1. Under surface hairy in mature blades. NW.
 2. Lobes cut less than halfway to midrib, not usually re-lobed. Sm. or sh.*Q. margaretta*
 2. At least some lobes cut more than halfway to midrib; often re-lobed. Large.
 3. Hairs on under surface us. gray or yellowish; largest side lobes us. divided into 2 almost equal smaller lobes; apical lobe not always re-lobed into 3 parts. Dry places. Pl. 6, f. 2.....*Q. stellata*
 3. Hairs typically white on under surface; largest side lobes unequally divided; apical lobe us. divided into 3 smaller lobes. Wet places.....*Q. lyrata*

KEY X 3 e. QUERCUS, POINTED LOBES

1. Under surface of blades hairy, even in mature leaves. Tall. NW.
 2. Base of apical lobe long, narrow, with almost parallel sides; blade base almost round, broad, a little asym., lobes flaring and sometimes curved; hairs on under surface yellowish-gray. NW, N, C. Dry soil.....*Q. rubra*
 2. Apical lobe not as in *Q. rubra*; hairs not usually yellowish.
 3. Hairs reddish-brown; largest lobes re-lobed, bearing bristled teeth; trunk bark deeply furrowed; inner bark of branches yellow. Dry soil.....*Q. velutina*
 3. Hairs whitish. Moist or wet soil.
 4. Largest side lobes re-lobed; central lobes deeply cut, resulting sinus straight-sided, making a "waist." Pl. 6, f. 1.....*Q. laevis*
 4. Largest side lobes not re-lobed, or with narrow lobes, sometimes merely bristle-toothed; no "waist" near center of blade.....*Q. pagoda*
1. Under surface of mature blades hairless except sometimes in leaf axils.
 2. Petiole to 2 cm. long; midrib of largest lobes usually curving; indentations deep. Med. NW, N. Pl. 6, f. 1.....*Q. laevis*
 2. Petioles (longest) more than 2 cm. Tall.
 3. Side lobes spreading sidewise; trunk bark deeply furrowed; winter buds hairy; inner bark of branches yellow. Large. NW.*Q. velutina*
 3. Side lobes directed upward rather than sidewise; trunk bark scaly, not deeply furrowed; winter buds hairless; inner bark not yellow.
 4. Indentations us. more than halfway from lobe apex to midrib; winter buds stout, not red; petioles not reddish. NW, N.*Q. shumardii*
 4. Indentations us. about halfway from lobe apex to midrib; winter buds slender, sharp-pointed, reddish; petioles often reddish. NW.....*Q. maxima*

KEY Y. COMMONEST CITRUS TREES WITH UNIFOLIATE LEAVES

Most species have rather variable leaves. This fact and the large number of varieties of the most often cultivated species make a definite leaf-key impossible. Fortunately for purposes of identification the fruit is present on the trees for a long time. Most species are found in the central and southern sections of the state; a few in the north.

1. Greatest width of winged petiole 2 cm. or more.
 2. Length of most blades about twice their greatest width; apex blunt, sharp, or prolonged.....Sour Orange. *Citrus aurantium*
 2. Length of most blades less than twice their greatest width; apex usually blunt or notched, not prolonged. Pl. 1, f. 3.....Grapefruit.**Citrus paradisi*
1. Width of winged petiole less than 2 cm.; petiole sometimes almost or quite wingless.
 2. Blades not more than 10 cm. long.
 3. Apex more or less abruptly prolonged.....Mandarin, tangerine. **Citrus nobilis*
 3. Apex not at all or gradually prolonged.
 4. Length of blade usually less than twice its greatest width, to 6.5 cm. long; blade base a wide V.....Calamondin. **Citrus mitis*
 4. Length of most blades about twice their greatest width, or more; sometimes more than 6.5 cm. long.
 5. Base of blade rounded or a wide V.....Lime. *Citrus aurantifolia*
 5. Base a narrow V.....Kumquat. **Fortunella* sp.
 2. Largest blades more than 10 cm. long.
 3. Length of blade three times its greatest width or more.....**Fortunella* sp.
 3. Length of blade less than three times its greatest width.
 4. Sides of blade almost parallel through center of blade; apex and base usually rounded; length more than twice greatest width....Citron. *Citrus medica*
 4. Sides of blade curved.
 5. Winged petiole to 1 cm. wide or more.....Sweet orange. *Citrus sinensis*
 5. Petiole not more than 5 cm. wide, sometimes almost wingless.
 6. Base of blade a narrow V; length more than twice greatest width.
Temple Orange. *Citrus sinensis*, var.
 6. Base a wide V or rounded; length less than twice greatest width.
Citrus limonum



KEY Z. COMPOUND LEAVES WITH MORE THAN ONE LEAFLET

(An apparently compound, but really deeply-lobed simple leaf is that of *Grevillea*, KEY X 2, pl. 5, f. 4. Twigs of *Phyllanthus*, KEY T, resemble compound leaves. Rarely a few apparently simple leaves are present with the compound ones. See pls. 1 and 2 for arrangement of leaves, same as that of simple ones.)

1. Most or all leaves consisting of only three leaflets. Pl. 7, f. 1.....KEY ZA
1. Most or all leaves consisting of 2, 4, 5, or more leaflets.
 2. Rachis (central axis like continuation of petiole) flat, as wide as or wider than the small distant leaflets; leaves really twice-compound, several dm. long, wiry, usually in bunches; spines on wood. Medium or small. N,C,S. Also in KEY B**Parkinsonia aculeata*
 2. Leaves and twigs not entirely as just described; sometimes no rachis.
 3. Leaves once-compound (most or all leaflets simple, although sometimes deeply lobed). Pl. 7.
 4. Leaves digitately compound (leaflets spreading from apex of petiole like fingers). Pl. 7, f. 2.
 5. Leaves opposite on twig (two at a node); usually five leaflets.....KEY ZC
 5. Leaves spiral (one at a node), sometimes crowded at twig apex and so appearing whorled, but shown to be spiral by position of old leaf scars. KEY ZD
 4. Leaves pinnately compound (rachis in middle with leaflets on opposite sides of it, leaflets alternately or oppositely arranged. Pl. 7, fs. 5, 6.
 5. Trees armed with spines (near nodes or apex of twig) or with prickles (irregularly placed, not at nodes).....KEY ZE
 5. Trees unarmed.
 6. Leaves opposite on twig (2 at a node), in 4 vertical rows, or whorled (more than 2 leaves at a node).
 7. Leaves odd-pinnate (one lft. at apex of rachis), remaining lfts. alternate or in pairs. Pl. 7, f. 5.....KEY ZG
 7. Leaves even-pinnate (2 leaflets at rachis apex), remaining lfts. alternate or in pairs. Pl. 7, f. 6.....KEY ZI
 6. Leaves spiral on twig (one at a node); sometimes crowded at twig apex and appearing whorled, but shown to be spiral by position of old leaf scars.
 7. Most or all leaves odd-pinnate (a single lft. at rachis apex). Pl. 7, f. 5.
 8. Leaflet blades entire (margins of expanded part of leaf untoothed and unlobed—not indented), sometimes wavy (not flat).....KEY ZJ
 8. Leaflet blades more or less toothed.....KEY ZN
 7. Most or all leaves even-pinnate (2 lfts. at rachis apex).....Pl. 7, f. 6.
 8. Leaves in two vertical rows on twig.....KEY ZP
 8. Leaves in more than two vertical rows, sometimes crowded. KEY ZR
 3. Most leaves twice-compound (divided into pinnae, and each pinna divided into lfts.), or thrice-compound (lfts. of pinnae compound); sometimes also once-compound leaves, or, rarely, simple leaves present. Pl. 8.
 4. Most or all leaves (also pinnae and leaflets) opposite on twig (or rachis).
 5. Margins of leaflet blades untoothed; leaflet blades less than 3 cm. long. Large or med. C.S.**Jacaranda acutifolia*
 5. Margins of leaflet blades toothed; blades more than 3 cm. long; pinnae compound only near leaf base. Sm. or sh. Pen. Also in ZG. *Sambucus simpsonii*
 4. Leaves spirally arranged on twig.
 5. Trees armed with spines (near nodes or apex of twigs) or with prickles (irregularly placed, not necessarily near nodes).....KEY ZU
 5. Trees unarmed.
 6. Leaves odd-pinnate (a single leaflet at rachis apex). Pl. 8, f. 5. KEY ZX
 6. Leaves even-pinnate (2 leaflets at rachis apex). Pl. 8, fs. 1, 3. KEY ZY

KEY ZA. TRIFOLIATE LEAVES. PL. 7, F. 1.

- (Trees having only a few trifoliate lvs. are keyed according to the majority of lvs.)
1. Lft. blades distinctly pinhole-dotted (seen when held to light); often aromatic.
 2. Lvs. opposite; 3-5 stalked lfts. Med., sm., or sh. S. Also in ZG.. **Amymris**
 3. Length of lft. blade not more than twice its greatest width, us. less; apex often abruptly prolonged; flower ovary bare; fruit round. Quite common in S. Med. or sm. **A. elemifera**
 3. Length of lft. blade often more than twice its greatest width; apex rather gradually prolonged; flower ovary hairy; fruit oblong. Rare. Sm. or sh. S. **A. balsamifera**
 2. Leaves spiral, sometimes crowded at twig apex. Sm. or sh.
 3. One to five lfts., largest more than 12 cm. long. S. Also in KEY ZJ. **Glycosmis citrifolia**
 3. Not more than 3 almost or quite unstalked lfts. not more than 12 cm. long. Not in S.
 4. Petiole winged; twig green, ridged, spiny. N. **Poncirus trifoliata**
 4. Petiole not winged; twig not spiny.
 5. Middle lft. us. much larger than others; blade margin often toothed; apex abruptly tipped; longest petioles more than 5 cm. N. **Ptelia trifoliata**
 5. Lfts. us. about same size; blade margin untoothed, not flat; apex gradually narrowed; petioles not more than 5 cm. long. N.C. ***Toddalia lanceolata**
 1. Leaflet blades not pinhole-dotted.
 2. Petiole distinctly winged; lvs. opp., in 4 rows, or spiral, sometimes several at a node; usually some "simple" leaves. Med. or sm.
 3. Petioles less than 1 cm. wide; lft. blades widest near center, prolonged into an abrupt or gradual tip; margin us. few-toothed; tree unarmed C.S. Pl. 7, f. 1. (A similar, rarer sp., ***Parmentiera edulis**, has spines.) ***Parmentiera cereifera**
 3. Widest petioles 1-2 cm. broad; lft. blades widest near apex; apex us. rounded; margin untoothed. S. ***Crescentia alata**
 2. Petiole unwinged, or barely margined.
 3. Margin of leaflet blade toothed, sometimes also lobed. Large or med.
 4. Leaves spiral; blade margin unlobed, teeth small, regular. C.S. ***Bischofia javanica**
 4. Leaves opposite; blade margin sometimes lobed, teeth coarse, irregular. N. Also in KEY ZG..... **Negundo aceroides**
 3. Margin of leaflet blade untoothed, sometimes with large rounded scallops.
 4. Blade base rounded or straight; tree us. armed on wood and/or leaves. **KEY ZB**
 4. Blade base V-shaped. Trees tall or med.
 5. Leaflets long-pointed; blades and longest petioles each more than 7 cm. long. C.S. ***Hevea brasiliensis**
 5. Leaflets not long-pointed; blades and petioles each less than 7 cm. long. S. **Hypelate trifoliata**

KEY ZB. ERYTHRINA & MICROPTERYX

1. Leaflet blades pinnately veined, general shape oval. Herbaceous or woody. Sm. or sh. N. **Micropteryx crista-galli**
1. Leaflet blades with 3 almost equal veins at base, general shape triangular; base very broad.
2. Twigs and leaves very hairy at first, sometimes becoming almost bare; leaflet apex blunt, not usually prolonged. Sm. S. ***Erythrina velutina**
2. Twigs and leaves bare; lft. apex more or less abruptly prolonged into a tip.
3. Apical half of lft. blade a long tapering tip like a steeple; blade length to about 10 cm. Sm., sh., or a vine. All. **Erythrina arborea**
3. Tip shorter than just described; lft. blades often over 10 cm. long.
4. Length of middle lft. blade usually less than its width; spines black, short. Tall or med. S. ***Erythrina indica**
4. Length of middle leaflet blade usually equal to or more than its width; spines usually tan-colored.
5. Stalks of side leaflets usually less than 1 cm. long; blade base usually rounded. Sm. C. ***Erythrina corallodendron**
5. Longest stalks of side leaflets more than 1 cm. long; blade base often straight. Med. or sm. C.S. ***Micropteryx poeppigiana**

KEY ZC. LEAVES DIGITATELY COMPOUND, OPPOSITE

1. Margin definitely toothed almost throughout largest leaflets.
2. Base of leaflet blade V-shaped. Sm. or sh. N. *Aesculus pavia*
2. Base of leaflet blade rounded. Sm. S. **Tabebuia guayacan*
1. Blades of leaflets untoothed, sometimes wavy, or with a few irregular teeth.
2. Petiolules (leaflet stalks) less than 3 cm. long; leaflets sometimes aromatic when crushed *Vitex*
3. Leaflet blades less than 3 cm. wide; apex gradually pointed; under surface grayish. Sm. or sh. N,C. Pl. 7, f. 2. *Vitex agnus-castus*
3. Largest leaflet blades more than 3 cm. wide; apex abruptly long-pointed; under surface green. Med. N,C,S. **Vitex quinata*
2. Longest petiolules at least 3 cm. long; lfts. not aromatic. **Tabebuia*
3. Under surface of blades hairy; margin sometimes toothed. Sm. S. **Tabebuia guayacan*
3. Under surface scaly or bare; margin untoothed.
4. Lft. blades silvery-scaly beneath, gray-green above; margins parallel or slightly curved; apex rounded (sometimes bristled). Sm. C,S. **Tabebuia argentea*
4. Lft. blades not silvery, although sometimes pale; margins always curved; apex narrowed or rather abruptly prolonged into a tip. Med. C,S. **Tabebuia pentaphylla*

KEY ZD. DIGITATELY COMPOUND, SPIRAL, SOMETIMES CROWDED AT TWIG APEX

1. Margin of leaflet blade distinctly finely toothed throughout; 5-7 leaflets; trunk and branches sometimes spiny. Med. or sm. C,S. **Chorisia speciosa*
1. Margin of leaflet blade untoothed or incompletely toothed, sometimes wavy.
2. Largest lvs. with 10 or more lfts.; petiolules to 5 cm. long, or more, growing in a circle from disk at petiole apex. Med. C,S. **Schefflera actinophylla*
2. Less than 10 lfts.; petiolules less than 5 cm. long, or lacking.
3. Lft. blades pinhole-dotted (seen when held to light); trunk warty. Large or med. S. (A less common sp., **C. tetrameria*, is very hairy beneath.) **Casimiroa edulis*
3. Lft. blades not pinhole-dotted; trunk sometimes spiny, but not warty.
4. Length of largest lft. blades 3 times greatest width, or more; young apex long and slender.
5. Lfts. unpetioluled, sometimes more than 7; trunk never spiny. Large or med. S. **Sterculia foetida*
5. Lfts. often or always petioluled, us. 5 or 7; trunk often spiny. Large or med. C,S.
6. Us. 7 lfts.; trunk spiny when young, or unarmed and green. **Ceiba pentandra*
6. Us. 5 lfts.; mature trunk very spiny. **Bombax malabaricum*
4. Length of lft. blades less than 3 times their greatest width.
5. Lfts. us. 5, unpetioluled, to 15 cm. long; apex abruptly slender-tipped; trunk large at base, not spiny. Large or med. S. **Adansonia digitata*
5. Lfts. sometimes more than 5, more or less petioluled.
6. A conspicuous disk at petiole apex.
7. Lft. apex rounded or knobbed; blade base rounded, us. with a small V at petiole apex. Med. C,S. **Bombax ellipticum*
7. Lft. apex narrowed, blunt or short-tipped; blade base V-shaped. S. **Bombax album*
6. Petiole thickened at apex, but not disk-like. Med. or sm. S.
7. Flower petals often more than 25 cm. long. **Pachira aquatica*
7. Flower petals not more than 25 cm. long. **Pachira macrocarpa*

(*Pachira* is considered a synonym of *Bombax* by some authorities.)

KEY ZE. TREES ARMED, LEAVES PINNATELY COMPOUND

1. Spines and prickles unbranched.
 2. Leaflet blades pinhole-dotted (seen when held to light), with large translucent dots along margin if toothed, aromatic when crushed; spines typically in pairs at nodes, or only one; leaf sometimes prickly.....**Zanthoxylum**, KEY ZF
 2. Leaflet blades not dotted, not aromatic; spines single in axils and ending twigs; leaf not prickly; side veins of leaflet blade very close. Med. or sm. S.
***Haematoxylon campechianum**
1. At least some spines branched. Pl. 7, f. 3.....**Gleditsia**
2. Largest leaflet blades more than 5 cm. long; leaves not hairy. Med. N,C,S.
***G. sinensis**
2. Leaflet blades less than 5 cm. long. Tree becoming large. Also in KEY ZU.
 3. Leaves white-hairy. Moist or dry soil. N.**G. triacanthos**
 3. Leaves almost or quite hairless. River swamps. NW,N.**G. aquatica**

KEY ZF. XANTHOXYLUM. SOMETIMES CALLED ZANTHOXYLUM OR FAGARA

1. Lvs. even-pinnate (2 lfts. at rachis apex); no large glands; lfts. thick; blades untoothed; apex us. rounded or notched. Sm. or sh. SE. In KEY ZR.
X. coriaceum
1. Lvs. odd-pinnate (one lft. at rachis apex); blades thin; margin untoothed or slightly scalloped; apex usually narrowed, sometimes prolonged.
 2. Petiole and rachis winged; leaflet blades usually to 2.5 cm. long; a translucent gland at each tooth. Med. or sm. C,S.**X. fagara**
 2. Petiole and rachis not winged; mature leaflet blades longer than 2.5 cm.
 3. Twigs spiny; leaves usually prickly; leaflet blades tapering from below center to a long tip; marginal glands conspicuous. Med., sm., or sh. All.
X. clava-herculis
 3. Tree unarmed; leaflet blades not tapering as just described, usually not tipped; marginal glands inconspicuous. Med. S. Rarer than others.
Also in KEYS ZJ and ZN.....**X. flavum**

KEY ZG. TREES UNARMED; LEAVES ODD-PINNATELY COMPOUND, OPPOSITE OR WHORLED

1. Typically three leaves at a node; leaflets stiff; blades toothed or untoothed, the largest 10-15 cm. long. Med. C,S.***Kigelia pinnata**
1. Typically two leaves at a node; leaflets not stiff.
 2. Usually 3-5 leaflets.
 3. Twigs warty; leaflet blades untoothed or finely scalloped, pinhole-dotted (seen when held to light), usually not more than 8 cm. long. Usually sm. or sh. C,S. Key in KEY ZA.....**Amyris**
 3. Twigs waxy; leaflet blades sometimes lobed, coarsely and irregularly toothed, not pinhole-dotted; largest more than 8 cm. long. Large or med. N.
Also in KEY ZA.....**Negundo aceroides**
 2. More than 5 leaflets in largest leaves; largest leaflet blades 8-25 cm. long.
 3. Lowest pair of leaflets almost or quite compound; blade margin toothed except near base; largest leaflets 4 cm. wide or more. Sm. or sh. Pen.
Also in KEY Z**Sambucus simpsonii**†
 3. Leaflets never compound. Trees usually not small when mature.
 4. 11-19 lfts. in largest lvs.; blade margin untoothed. Tall. C,S. (A rare species, **S. nilotica**, has a similar leaf.).....***Spathodea campanulata**
 4. Not more than 11 leaflets; blade margin usually toothed or wavy. Moist or wet places when growing naturally.....**Fraxinus**, KEY ZH

†**Tecoma stans**, a shrub with several trunks, resembles **Sambucus simpsonii**, but has leaflets no wider than 3.5 cm. and always simple.

KEY ZH. FRAXINUS

The leaves of the ashes are much alike. If it is present, a distinguishing character is the fruit; which consists of two woody paddle-shaped parts, each with a small body and a wing.

1. Twigs and under leaflet surface typically hairy; base of leaflet blade rounded or a broad V; margin almost or quite untoothed; each half of fruit 4-7.5x0.7-1.3 cm.; base of wing near center of rounded body. Tall. NW.**F. profunda**
1. Twigs, leaves, and fruit not all as just described.
2. Margin of leaflet blade us. distinctly, regularly, and finely toothed; halves of fruit 3.5-6 cm. long; body long, slender, round in cross section; base of wing near center. Tall or med. NW,N,C.**F. pennsylvanica** var. **lanceolata**
2. Leaflet margin indistinctly or irregularly toothed, or untoothed.
3. Under surface of leaflet blade distinctly pale; margin faintly toothed or untoothed; body of fruit round in cross section.
4. Wing base at apex of body or a little below; fruit halves 1.5-3.5 cm. long; twigs and leaves hairless. Tall. NW,N,C. Rich or moist soil.**F. americana**
4. Wing base below body apex; fruit halves often more than 3.5 cm. long; twigs and leaves more or less hairy. Med. N.**F. smallii**
3. Under surface of leaflet blade not much paler than upper surface; body of fruit flat, entirely surrounded by wing. Med. or sh.
4. Length of leaflet blades usually more than twice greatest width; margin often untoothed; apex typically gradually prolonged; twigs bare; fruit 1-1.5 cm. wide, length 4-6 times width; wing basally veined. N,C,S.**F. pauciflora**
4. Leaflet blades sometimes like above description, but usually coarsely and irregularly toothed; apex often merely sharp (not prolonged); twigs often hairy; some fruits more than 1.5 cm. wide, length less than 4 times width, wing pinnately veined. N,C,S.**F. caroliniana**

KEY ZI.—GUAIAACUM

(Small or shrubby; leaves even-pinnate; basal-veined leaflets. S.)

1. Lfts. 4-6 in number, us. 4; blades to 4-5 cm. long; apex rounded.***G. officinale**
1. More than 4 lfts. in largest lvs.; blades less than 4 cm. long; apex sharp.
2. Largest lft. blades more than 2 cm. long and 0.7 cm. wide.**G. sanctum**
2. Lft. blades not more than 2 cm. long and 0.7 cm. wide.***G. guatemalense**

KEY ZJ. TREES UNARMED; LEAVES SPIRAL, ODD-PINNATELY COMPOUND; LEAFLETS ENTIRE

1. Lft. blades pinhole-dotted (seen with lens when held to light). Sm. or sh. S.
2. 1-5 lfts.; largest blades more than 11 cm. long, length us. about 3 times greatest width; margin untoothed. Also in KEY ZA.**Glycosmis citrifolia**
2. Usually more than 5 lfts.; blades less than 11 cm. long, length less than 3 times width; margin sometimes shallow-scalloped. In KEYS ZF and ZN.

Xanthoxylum flavum

1. Leaflet blades not pinhole-dotted.
2. Petiolules thickened, noticeably larger than midrib, distinct from midrib in color and texture also, sometimes wrinkled or hairy.**KEY ZK**
2. Petiolules often larger than midrib base, but not distinct from it as in ZK. Sometimes lacking.
3. Leaves (as well as leaflets) in two vertical rows, more or less hairy; basal leaflets much smaller and rounder than apical ones. Small. S.***Averrhoa carambola**
3. Leaves in more than two vertical rows, or appearing whorled because crowded.**KEY ZL**

KEY ZK.—TREES UNARMED; LEAVES SPIRAL, ODD-PINNATELY COMPOUND; LEAFLETS ENTIRE, UNDOTTED; PETIOLULES THICKENED

1. Leaves in less than 5 vertical rows on twig.
2. 4 or 5 alternate lfts. on a zigzag rachis; lft. blades almost round except for an abruptly prolonged tip. Becoming large. C,S. Pl. 7, f. 5.***Dalbergia sissoo**
2. Leaflets and rachis not as just described.

3. 15 or more secondary veins in body of largest lft. blades, connecting directly with marginal vein; upper surface dark green, under surface pale, short-hairy at first. Med. S. *Piscidia piscipula*
3. Fewer than 15 secondary veins in body of lft. blades; secondary veins not connecting directly with marginal vein.
4. Under blade surface hairy, at least on veins; secondary veins usually not more than 1.5 cm. apart at midrib. Med. C,S. **Lonchocarpus sericeus*
4. Under surface bare; secondary veins often more than 1.5 cm. apart at midrib. Med. S. **Pongamia pinnata*
1. Leaves in 5 vertical rows on twig.
2. Leaflet blades not more than 7 cm. long.
3. Lft. apex rounded, sometimes with a bristle, or notched; base slightly narrowed, but rounded; lfts. us. alt. Sm. S. Also in ZQ.... **Pterogyne nitens*
3. Leaflet apex narrowed to a point or a tip.
4. Blades widest near base; base rounded. Med. or sh. N. **Sophora japonica*
4. Blades widest near or above center; base V-shaped. Sm. C,S. **Gliricidia sepium*
2. Largest leaflet blades more than 7 cm. long.
3. Sec. veins not more than 1.5 cm. apart at midrib; base almost symmetrical; apex an abrupt slender tip. Med. C,S. **Andira jamaicensis*
3. Some secondary veins more than 1.5 cm. apart; blade base asymmetrical.
4. Blade margins curved; network conspicuous on upper surface. Sm. or sh. S. **Pieramnia pentandra*
4. Margins almost parallel through center and above; network not conspicuous.
5. Forks of secondary veins uniting in loops near margin; margin flat. Med. or sm. S. Also in ZM & ZT. **Khaya senegalensis*
5. Forks of secondary veins not uniting in loops near margin; margin rippling, not flat. Tall. C,S. **Castanospermum australe*

KEY ZL. TREES UNARMED; LEAVES ODD-PINNATELY COMPOUND, SPIRAL IN MORE THAN 2 ROWS; LEAFLETS ENTIRE, NOT DOTTED, PETIOLULES LACKING OR NOT THICKENED

(*Metopium* is poisonous to the touch)

1. Blades of side leaflets more than 7 cm. long. **KEY ZM**
1. Blades of side leaflets not more than 7 cm. long.
2. Not more than 15 leaflets to a leaf.
3. Leaflets unpetioluled; rachis sometimes winged. See pl. 7, f. 6. Sm. or sh. **Schinus terebinthifolius*
4. Lvs. all odd-pinnate, smelling of turpentine when crushed; lfts. 5-13, some slightly toothed. C,S. Also in KEY ZN. **Schinus terebinthifolius*
4. Some lvs. even-pinnate, not fragrant of turpentine; lfts. 6-10, all blades un-toothed. NW. Also in KEY ZR. **Pistacia lentiscus*
3. Leaflets petioluled; rachis not winged; 5-7 leaflets, sometimes more.
4. Base of lft. blade almost symmetrical, rounded or straightish; juice POISONOUS; trunk bark not curling, but scaling off, leaving patches. Med. or sh. C,S. Also in KEY ZM. **Metopium toxiferum*
4. Blade base rounded, but very asymmetrical; trunk bark smooth or peeling off in reddish curls. Becoming large. C,S. *Bursera simaruba*
2. More than 15 leaflets in largest leaves.
3. Rachis not winged; leaves hairy.
4. Leaflets alternate; blades to 2.5 cm. long. Sm. or sh. S. *Alvaradoa amorphoides*
4. Leaflets alternate or opposite; largest blades more than 2.5 cm. long; apex ending in a bristle. Sm. S. KEY in ZN. **Spondias purpurea*
3. Rachis more or less winged. (See pl. 7, f. 6 for a broadly winged rachis.)
4. Width of leaflet blades less than 1 cm., length to 5 cm. Becoming large tree. C. Rare. Also in KEY ZR. **Schinus molle*
4. Largest leaflet blades 1 cm. wide or more, sometimes more than 5 cm. long. Sm. or sh. N,C,S. Also in KEY ZM. *Rhus copallinum*

(A southern form with narrow blades, thin peeling bark, and sometimes more than 21 leaflets, has been named *R. leucantha*. But *R. copallinum* might show all those characters.)

**KEY ZM.—TREES UNARMED; LEAVES ODD-PINNATELY COMPOUND, SPIRAL
IN MORE THAN 2 ROWS; LEAFLETS ENTIRE, UNDOTTED, LARGEST
MORE THAN 7 CM. LONG, PETIOLULES NOT THICKENED**

(*Metopium* and *Toxicodendron* are poisonous to the touch.)

1. Twigs, rachis, and both blade surfaces hairy; 9-13 leaflets in largest leaves; leaflet apex narrowed, but blunt. Tall or med. C,S.....**Pleio gynium solandri*
1. Twigs and leaves not entirely as in *Pleio gynium*.
2. Rachis of at least some leaves winged, especially near apex. Pl. 7, f. 6.
3. Some leaves even-pinnately compound; leaflets sometimes alternate on rachis. Also in KEY ZR, and below.....*Sapindus*
4. Rachis and petiole bearing wings to 5 mm. wide or more, apex of leaflet usually blunt. Pl. 7, f. 6. Sm. or sh. C,S.....*S. saponaria*
4. Rachis and petiole wingless or with narrower wings than above described; apex usually pointed. Med. or sm. Pen.*S. marginatus*
3. All leaves odd-pinnately compound; side leaflets usually opposite on rachis.
4. Leaflet blades gradually narrowed to a long tip, abruptly narrowed at base; end leaflet smaller than those of next pair; rachis wing narrow. Med. or sm. C,S.....**Harpephyllum caffrum*
4. Leaflets not as just described, often merely sharp-pointed; end leaflet about same size as those of next pairs; rachis wing often several mm. wide. Sm. or sh. Pen. Also in KEY ZL.....*Rhus copallinum*
2. Rachis not winged.
3. Not more than 8 leaflets. Med. or sm. C,S.
4. Base of leaflet blade rounded or almost straight; lfts. dark green, blade length less than 3 times width; trunk bark peeling, leaving reddish blotches. Also in KEY ZL. POISONOUS.....*Metopium toxiferum*
4. Base of leaflet blade narrowed; blades yellow-green, but reddish or orange when new; length often 3 times width or more; trunk bark not as just described. Also in KEY ZS.....**Litchi chinensis*
3. More than 8 leaflets in largest leaves.
4. Base of leaflet blade rounded or almost straight or a wide V.
5. Secondary veins at almost a right angle to midrib, about 5 mm. apart. Tall to sm. S. Also in KEY ZN.....**Spondias cytherea*
5. Secondary veins at distinctly less than a right angle to midrib.
6. Secondary veins forking and uniting to form border; often more than 5 mm. apart.
7. Border vein on margin; network prominent, raised on under surface. Not in wet places. Med. S. Also in KEY ZN.**Spondias lutea*
7. Border vein some distance from margin; network not prominent. Wet places. Sm. or sh. N. POISONOUS.*Toxicodendron vernix*
6. No distinct border formed by secondary veins. For KEY see above.*Sapindus*
4. Base of leaflet blade narrowed.
5. Leaflets alternate; their length not more than 10 cm.; apex rounded or very short-tipped; secondary veins less than 1 cm. apart at midrib. Med. C.S.....*Simarouba glauca*
5. Leaflets alternate or opposite; largest more than 10 cm. long; apex decidedly abruptly tipped; secondary veins more than 1 cm. apart at center of midrib. Sm. S. Also in KEYS ZK, ZT.**Khaya senegalensis*

**KEY ZN.—TREES UNARMED; LEAVES ODD-PINNATELY COMPOUND, SPIRAL
ON TWIG, TOOTHED**

1. Leaflet blades conspicuously pinhole-dotted, seen when held to light.
2. Side leaflets alternate or opposite on rachis, shining green; blade margin shallowly scalloped; petiole, rachis, and petiolules rough or yellow-scurfy. Sm. S.**Clausena lansium*
2. Side leaflets always opposite on rachis; twigs, petiole, and rachis hairy, at least when young. Med. S. Also in KEYS ZF, ZJ.....*Xanthoxylum flavum*
1. Leaflet blades not pinhole-dotted.

2. Blade margin sharp-toothed almost throughout.
3. Juice milky; under surface pale, bare. Sm. or sh. N.....**Rhus glabra**
3. Juice watery or not visible; under surface not pale if bare. Tall or med. **Carya, KEY ZO**
2. Blade margin toothed partially, slightly, or irregularly.
3. Two to four coarse teeth near base of leaflet blade; odor of crushed leaves unpleasant; trunk bark smoothish. Tall, med. N.....**Ailanthus altissima**
3. Blade margin toothed elsewhere than only at base of leaflet.
4. Sometimes not more than 9 leaflets; odorous of turpentine when crushed. Sm. or sh. C.S. Also in KEY ZL.....***Schinus terebinthifolius**
4. More than 9 leaflets; not odorous of turpentine.
5. Leaflets alternate on rachis; blade apex blunt or sharp, not prolonged; no continuous marginal vein. Rare, on Fla. Keys.....**Cupania glabra**
5. Lfts. alt. or opp. on rachis; blade apex bristled or prolonged into a tip; a continuous marginal vein on or just inside margin.....***Spondias**
6. Lft. blades not more than 5 cm. long; apex not prolonged, although sometimes bristled. Sm. or sh. S. Also in KEY ZL....***S. purpurea**
6. Most leaflet blades more than 5 cm. long; apex prolonged into a tip.
7. Side margins partly parallel; sec. veins at almost a right angle to midrib, about 5 mm. apart. To tall. S. Also in KEY ZM. ***S. cytherea**
7. Side margins curved; sec. veins at less than a right angle, often more than 5 mm. apart. Large or med. S. Also in KEY ZM. ***S. lutea**

KEY ZO.—JUGLANDACEAE

(*Carya* is called *Hicoria*; and *Wallia*, *Juglans* by some writers.)

1. Rachis winged; 11-23 lfts. Large. N,C. Also in ZR....***Pterocarya stenoptera**
1. Rachis not winged.
2. At least some leaflets distinctly petioluled; largest leaves with 11 or more leaflets. Tall to sm. Native to other states. N.***Carya pecan**
2. Leaflets unpetioluled or with very short petiolules.
3. More than 15 lfts. in largest lvs.; under blade surface hairy; trunk bark dark, furrowed, with close scales. Large. N. Also in KEY ZT. **Wallia nigra**
3. Not more than 15 leaflets.
4. Trunk bark loose, shaggy, sometimes peeling off in strips.
5. 7-15 leaflets; blades less than 3.5 cm. wide; margin not hairy. Tall. N,C. River swamps and banks.....**C. aquatica**
5. Usually 5-7 lfts.; blades more than 3.5 cm. wide, some margins hairy. Tall. NW. Woods and rich soil, moist but not wet.....**C. ovata**
4. Trunk bark not loose and peeling, but close or scaly, sometimes furrowed.
5. Mature leaves bare of hairs.
6. Usually 3-5 leaflets; marginal teeth concave; end bud less than 1 cm. long; leaves rusty-hairy when young. Med. or sh. NW, N, C, S. Sandy soil, or scrub.....**C. floridana**
6. Usually 5-7 leaflets.
7. Marginal teeth hooked; bud at apex of twig at least 1.5 cm. long. Med. NW, N, C. Hammocks.....**C. megacarpa**
7. Marginal teeth convex, but not hooked; end buds usually less than 1.5 cm. long. Tall. Dry soil.....**C. glabra**
5. Mature leaves hairy on under surface, rachis, and petiole; 7-11 lfts.
6. Largest leaflets more than 6 cm. wide; end bud 1.5-2 cm. long, round. Large. N, C. Rich soil.....**C. alba**
6. Leaflets less than 6 cm. wide; end bud smaller than above, or else flat.
7. Under surface pale, sometimes silver-scaly; end bud round, not yellow. Med. NW, N.....**C. pallida**
7. Under surface not very pale; end bud flat, yellow-scurfy. Tall. NW.**C. cordiformis**

KEY ZP. TREES UNARMED; LEAVES EVEN-PINNATELY COMPOUND, IN 2 VERTICAL ROWS ON TWIG; LEAFLETS ALTERNATE OR OPPOSITE IN 2 ROWS ON RACHIS

1. Apex of largest leaflets abruptly prolonged.
2. Base of leaflet blade rounded, almost symmetrical; apex rounded, then abruptly long- and slender-tipped; more than 5 pairs of leaflets in largest leaves. Sm. or sh. C.**Brownea grandiceps*
2. Base of leaflet blade V-shaped, very asymmetrical; apex bent sideways, short-tipped; 3-5 pairs of leaflets. Med. or sm. C.S.**Phyllocarpus septentrionalis*
1. Leaflet apex sometimes prolonged, but not abruptly.
2. Apex narrowed to a point; largest blades more than 10 cm. long, greatest width near base. Sm. or sh. C.S. In KEY ZQ.**Cassia fistula*
2. Apex rounded rather than narrowed.
3. A prominent basal vein running up narrow side of leaflet blade more than halfway to apex; 9-20 pairs of leaflets with blades less than 3 cm. long. Large or sm. C.S.**Tamarindus indica*
3. No such long basal vein.
4. Largest leaflet blades more than 10 cm. long; 1-3 pairs of leaflets; under blade surface grayish. Sm. or sh. S.**Alectryon subcinereum*
4. Leaflet blades less than 10 cm. long.
5. Leaflet blades less than 1 cm. wide. Sm. or sh.
6. Under surface of leaflet blade often reddish-stained; 8-10 pairs of leaflets; rachis slender; leaves often on spurs (pl. 2, f. 1). S.**Sabinea carinalis*
6. Under blade surface not stained; 6-21 pairs of leaflets; rachis stout; spurs not evident. N, C, S. Also in KEY ZQ.**Daubentonia punicea*
5. Largest leaflet blades 1 cm. wide or more.
6. Leaves more or less hairy.....**Cassia*, KEY ZQ
6. Leaves bare of hairs. Sm. or sh.
7. More than 16 pairs of leaflets in largest leaves; leaflet blades less than 2 cm. wide; rachis not winged. S.**Sesbania grandiflora*
7. Less than 10 pairs of leaflets; largest leaflet blades more than 2 cm. wide; rachis sometimes winged. C.S.**Schotia*
8. Leaflet blades not wider than 2.5 cm.; not more than 4 pairs of leaflets. Also in KEY ZR.....**S. latifolia*
8. Largest leaflet blades wider than 2.5 cm., sometimes more than 4 pairs of leaflets; rarer than above species.....**S. brachypetala*

KEY ZQ. MOSTLY CASSIA

Of the many species of *Cassia* the following are the most likely to be seen. Some have been given different genus names.

1. Leaves in 2 vertical rows on twig; leaflets in 2 rows on rachis.
2. Largest leaflet blades more than 10 cm. long, tapering from base to apex, almost or quite hairless. Sm. or sh. C.S. Also in KEY ZP.....**C. fistula*
2. Lft. blades not more than 10 cm. long, somewhat hairy beneath and on rachis.
3. Leaflet blades not more than 4 cm. long.
4. Largest leaflet blades more than 1 cm. wide; branches long, drooping. Med. or sm. S.**C. roxburghii*
4. Leaflet blades less than 1 cm. wide; branches not long and drooping. Sm. or sh. N, C, S. Also in KEY ZP.....**Daubentonia punicea*
3. Largest leaflet blades longer than 4 cm. Sm. C.S.
4. Length of leaflet blade more than twice width; rachis and under surface very hairy; sometimes more than 12 pairs of lfts.**C. grandis*
4. Length of leaflet blade not more than twice greatest width; under surface not very hairy; not more than 12 pairs of lfts.**C. nodosa*
1. Leaves in more than 2 vertical rows on twig; leaflets in 2 rows on rachis.
2. Length of largest leaflet blades usually 3 times greatest width, or more.
3. Width of leaflet blades more than 1 cm.; blades purplish-green, dull above, 6-14 pairs; apex narrowed, but rounded. Sm. C.S.**C. siamea*
3. Leaflet width less than 1 cm.; blades green, sometimes more than 14 pairs; apex rounded, but not much narrowed. (See above.).....**Daubentonia punicea*
2. Length of leaflet blades less than 3 times width.

3. More than 10 pairs of lfts. in largest lvs.; very hairy; apex long-bristled.
 4. 10-15 pairs of leaflets in largest leaves; hairs yellowish. Sm. S.
 - **C. timoriensis*
 4. More than 15 pairs of leaflets in largest leaves; hairs whitish. Sm. C.
 - **C. multijuga*
3. Not more than 10 pairs of leaflets; apex usually not bristled.
 4. Rachis and under surface of leaflet blade very hairy; apical leaflets widest near their apex; spurs noticeable. Sm. S....**Psilorhegma suffruticosa*
 4. Leaves almost or quite hairless.
 5. Most leaflet blades not longer than 4 cm. Sm. or sh. C,S.
 - **C. beareana*
 5. Largest blades more than 4 cm. long.
 6. Leaflet blades not narrowed at apex; upper surface not shiny; under surface pale. Sm. or sh. C,S.**C. surattensis*
 6. Lft. blades narrowed at apex; upper surface shiny; under surface not much paler than upper one. Sm. S. Also in KEY ZK.
 - **Pterogyne nitens*

KEY ZR. TREES UNARMED; LEAVES EVEN-PINNATELY COMPOUND, IN MORE THAN 2 ROWS ON TWIG; LEAFLETS ALTERNATE OR OPPOSITE IN 2 ROWS ON RACHIS

1. Petiole and/or rachis perceptibly winged in at least some leaves.
 2. Leaves made up of 2-4 pairs of leaflets. C,S.
 3. Leaves consisting of 2 pairs of leaflets, the upper pair the larger; leaflet apex prolonged into a tip. Med. or large.....**Melicocca bijuga*
 3. Usually 3-4 pairs of leaflets, the apical pair sometimes smaller than the next pair; apex not prolonged, but blunt or notched. Sm. or sh. Also in KEY ZM. Pl. 7, f. 6.....**Sapindus saponaria*
 2. Largest leaves made up of more than 4 pairs of leaflets.
 3. Leaflet blades not more than 5 cm. long. Rare. Also in KEY ZL.
 4. Less than 7 pairs of leaflets; leaflet apex blunt or bristle-tipped. Sm. or sh. N. Also in KEY ZL.....**Pistacia lentiscus*
 4. More than 7 pairs of leaflets in largest leaves. Tall or sm. C. Also in KEY ZL.....**Schinus molle*
 3. Largest leaflet blades more than 5 cm. long.
 4. Margin of leaflet blades toothed: 5-12 pairs of leaflets. Tall. C. Also in KEY ZO.....**Pterocarya stenoptera*
 4. Margin of leaflet blades untoothed.
 5. Leaflets tapering into a long tip; blade length usually more than 3 times width. Med. or sm. Pen. Also in KEY ZM.
 - **Sapindus marginatus*
 5. Leaflets tapering only slightly; blade length less than 3 times width. Sm. or sh. C,S. Also in KEY ZP.....**Schotia latifolia*
 1. Petiole and rachis wingless, although rachis sometimes grooved or ridged.
 2. Most or all leaves consisting of 1-3 pairs of leaflets.
 3. Apex rather abruptly prolonged into a slender tip; 2-3 pairs of leaflets. Sm. S. Rare**Talisia pedicellaris*
 3. Apex gradually narrowed, blunt; sometimes only 1 pair of leaflets. Med. or sh. C,S.**Exothea paniculata*
 2. Most or all leaves consisting of more than 3 pairs of leaflets.
 3. Apex of leaflet blades prolonged into a tip.....KEY ZS
 3. Apex of lft. blades not prolonged, but rounded (sometimes bristled) or notched.
 4. Largest leaflet blades more than 10 cm. long; upper surface shiny; secondary veins noticeably parallel. Med. or sm. C,S. Also in KEY ZS.
 - **Euphoria longana*
 4. Leaflet blades not more than 10 cm. long.
 5. Base of leaflet blades rounded; most blades thin.....KEY ZQ
 5. Base of leaflet blades narrowed into a wide V; blades leathery.
 6. Largest leaflet blades more than 3 cm. wide, often at least 7 cm. long; not aromatic; secondary veins at an acute angle to midrib. Med. or sh. N,C.**Ceratonia siliqua*
 6. Lft. blades less than 3 cm. wide; aromatic; secondary veins at almost a right angle to midrib. Sm. or sh. S. KEY in ZF.
 - Xanthoxylum coriaceum*

KEY ZS. TREES UNARMED; LEAVES EVEN-PINNATELY COMPOUND, IN MORE THAN 2 ROWS ON TWIG, WINGLESS; MORE THAN 3 PAIRS OF LEAFLETS, APEX PROLONGED INTO A TIP

1. Largest leaflets consisting of more than 6 pairs of leaflets.....KEY ZT
1. Not more than 6 pairs of leaflets.
 2. Base of leaflet blade almost or quite symmetrical, V-shaped.
 3. Base a narrow V; leaflets drooping; reddish or orange when young; length more than 3 times greatest width; width less than 5 cm.; apex rather gradually long-pointed. Med. or sm. C,S. Also in KEY ZM. **Litchi chinensis*
 3. Base a wide V; leaflets not colored as above described; length less than 3 times width; width sometimes more than 5 cm.; apex abruptly short-pointed. Sm. S. **Blighia sapida*
 2. Base of leaflet blade asymmetrical in most or all leaves.
 3. Midrib straight; apex slightly prolonged; blade not very asymmetrical. Med. or sm. C,S. Also in KEY ZR..... **Euphoria longana*
 3. Midrib curved; apex usually much prolonged and slender when young; leaflet blade strikingly asymmetrical..... *Swietenia*
 4. Leaflet blades not more than 8 cm. long; midrib reddish. Med. or sm. C,S. Popular street tree. Pl. 7, f. 4..... *S. mahagoni*
 4. Largest leaflet blades more than 8 cm. long; midrib not noticeably reddish.
 5. Lfts. distinctly petioluled. Tall or med. S. **S. macrophylla*
 5. Lfts. unpetioluled or with very short petiolules.
 6. Lfts. not more than 3.5 cm. wide. Sm. S. **S. humilis*
 6. Largest lfts. more than 3.5 cm. wide. Med. or sm. **S. cirrhata*

KEY ZT. TREES UNARMED; LEAVES EVEN-PINNATELY COMPOUND, IN MORE THAN 2 VERTICAL ROWS, WINGLESS; MORE THAN 6 PAIRS OF LEAFLETS, APEX PROLONGED INTO A TIP

1. Margin of leaflet blade toothed.
 2. A vein on extreme margin; teeth rounded..... **Spondias*, KEY in ZN
 2. No extreme-marginal vein; teeth sharp. Large. N. Also in KEY ZO. *Wallia nigra*
1. Margin of leaflet blade untoothed.
 2. Blades not more than 2.5 cm. wide. Med. or sm. N,C..... **Pistacia chinensis*
 2. Largest blades more than 2.5 cm. wide.
 3. Apex rather gradually narrowed to a long tip. Tall or med. S. **Cedrela odorata*
 3. Apex rounded, then abruptly narrowed to a short tip..... **Khaya*
 4. Largest blades 5.5 cm. wide, or more; length less than 3 times greatest width. Med. or sm. C,S. **K. nyassica*
 4. Blades usually less than 5.5 cm. wide; length of largest at least 3 times greatest width; base V-shaped rather than round. Sm. S. Also in KEYS ZK, ZM..... **K. senegalensis*

**KEY ZU. TREE ARMED; LEAVES TWICE-COMPOUND (PL. 8, F. 1), SPIRAL
(SOMETIMES CROWDED)**

1. Margins of leaflet blade toothed; blades 5-8 cm. long; trunk and sometimes leaves bearing irregularly-placed prickles. Sm. or sh. N. **Aralia spinosa**
1. Leaflet blades untoothed; often less than 5 cm. long; wood usually armed with spines near nodes and/or terminating twigs (including spurs).
 2. At least some spines branched above base, not merely forked (pl. 7, f. 3); once-compound leaves often present also. Trees becoming large. NW, N. Also in KEY ZE..... **Gleditsia**
 3. Rachis and lfts. more or less white-hairy. Moist or dry soil..... **G. triacanthos**
 3. Leaves almost or quite hairless. River swamps..... **G. aquatica**
2. Spines forked at base or unforked, single or in pairs.
 3. Leaf petiole ending in one pair of pinnae, each consisting of a petiolule and two unpetioluled leaflets. Pl. 8, f. 3..... **Pithecellobium**, KEY ZV
 3. More than one pair of pinnae and two pairs of leaflets.
 4. Two pairs of pinnae; 3-5 pairs of leaflets on each apical pinna, more on basal pinnae; leaves often apparently in bunches; twigs zigzag. Sm. S. ***Ebenopsis flexicaulis**
 4. More than two pairs of pinnae in largest leaves.
 5. Leaflet blades less than 1.5 cm. long..... **KEY ZW**
 5. Blades of largest leaflets more than 1.5 cm. long
 6. Blades of largest leaflets more than 3 cm. long; apex and base both rounded; leaflets unpetioluled. Sm. or sh. S..... ***Tara spinosa**†
 6. Lft. blades less than 3 cm. long; lfts. with short or no petiolules.
 7. Base almost straight, attached to rachis at corner where midrib is; more than 12 pairs of lfts. in largest pinnae; prickles on young wood. Sm. S. Also in KEY ZY. Pl. 8, f. 4. ***Biancaea sappan**†
 7. Base curved, sometimes narrowed; blade attached near middle of base; not more than 12 pairs of lfts. to a pinna; 1 or 2 small spines at base of pinna and/or lft. Sm. or sh. C.S. Also in KEY ZY. **Poinciana pulcherrima**†

†Considered by some authorities still to form a part of the genus **Caesalpinia**.

KEY ZV. PITHECELLOBIUM (ALSO SPELLED PITHECOLOBIUM)

1. More than one pair of pinnae.
 2. Trees unarmed; 2 prs. of pinnae, each with 2-5 pairs of lfts. more than 2.5 cm. wide, rusty-hairy beneath. Med. or sm. S..... ***P. junghuhnianum**
 2. Trees armed; more than 2 pairs of pinnae, each with more than 5 pairs of lfts. only a few mm. wide. Sm. or sh. S. Pl. 8 f. 1. Also in KEY ZW. ***P. brevifolium**
1. One pair of pinnae; usually only two pairs of leaflets in all.
 2. Petioles of leaves not longer than petiolules of pinnae; tree unarmed. Sm. or sh. S. **P. guadelupense**
 2. Petioles of leaves longer than petiolules of pinnae; trees sometimes armed.
 3. Spines, if present, small; length of leaflets seldom twice greatest width. Sm. or sh. S. **P. unguis-cati**
 3. Spines, if present, stout, to 1.6 cm. long or more; length of largest leaflets at least twice their greatest width.
 4. Largest leaflets more than 5 cm. long. Med. C.S..... ***P. lanceolatum**
 4. Leaflets less than 5 cm. long. Sm. or sh. C.S. Avenue tree. Pl. 8, f. 3. ***P. dulce**

KEY ZW. MOSTLY ACACIA RELATIVES

1. Spines and leaves gray-hairy. Sm. or sh. S.**Acacia scorpioides*
1. Spines and leaves not gray-hairy.
 2. Leaflets less than 5 mm. long; large spines often present on trunk. Sm. C.S.**Acacia macracantha*
 2. Largest leaflets at least 5 mm. long.
 3. Spines long, hollow, often twisted. Sm. or sh. S.**Tauroceras cornigerum*
(Probably other species of Bull-horn Acacias are present, also.)
 3. Spines not as just described.
 4. Spines to 4 cm. long; trunk bark reddish-brown, furrowed and scaling off when old. Sm. or sh. Pen.**Vachellia farnesiana*
 4. Spines to 1.5 cm.; trunk bark smooth, grayish with a reddish tinge. Sm. S. Pl. 8, f. 1. Also in KEY ZV.....**Pithecellobium brevifolium*

Other less common Acacias are likely to be seen. For apparently simple forms see KEY P 6; and for an unarmed species, KEY ZY.

KEY ZX. TREES UNARMED; LEAVES TWICE- OR THRICE-COMPOUND, SPIRAL ON TWIG

1. Margin of leaflet blades toothed; blades sometimes lobed, or irregularly re-compound with one or two small basal leaflets. Pl. 8, f. 7.
 2. Leaflets usually alternate on rachis of pinna; more than 7 to a pinna in largest leaves; end leaflet not the largest. Med. or sm. Pen. Also in KEY ZY. Pl. 8, f. 7. Rare.....**Koelreuteria formosana*
 2. Leaflets usually opposite on rachis; 7 to a pinna; end leaflet as large as, or larger than others. Med. or sm. Pen. Common, especially a variety shaped like an umbrella**Melia azedarach*
1. Margin of lft. blade untoothed; lvs. occasionally definitely thrice-compound.
 2. Leaflets alternate on rachis of pinna; largest leaflet blades more than 3 cm. long; leaves not more than twice-compound. Med. S. Also in KEY ZY.**Adenanthera pavonina*
 2. Leaflets opposite on rachis of pinna; blades less than 3 cm. long; leaves sometimes thrice-compound. Sm. Pen. Pl. 8, f. 5.....**Moringa oleifera*

KEY ZY. TREE UNARMED; LEAVES TWICE-COMPOUND, SPIRAL, EVEN-PINNATELY COMPOUND. PL. 8, F. 1.

1. One or two pairs of pinnae. Pl. 8, f. 3.....**Pithecellobium*, KEY ZV
1. More than two pairs of pinnae in largest leaves.
 2. Leaflet blades not more than 6 mm. wide.
 3. Midrib almost in center of leaflet blade, although base sometimes slightly asymmetrical.
 4. Leaflet blades not longer than 8 mm.
 5. Under surface or leaflet blades white-hairy; more than 25 pairs of leaflets. Med. or sm. C.**Acacia dealbata*
 5. Under surface of leaflet blades becoming hairless; less than 25 pairs of leaflets.
 6. Number of pinnae usually greater than number of leaflets on a pinna; leaflet apex rounded, usually without a point; under surface sometimes black-dotted. Sm. or sh. S.**Erythrostemon gillesii*
 6. Number of leaflets on a pinna greater than number of pinnae; leaflet apex bearing a point. Sm. or sh. S.**Libidibia coriaria*
 4. Largest leaflet blades longer than 8 mm.
 5. Three to five pairs of pinnae; one or more basal veins on wider side of leaflet blade. Large or med. S.....**Lysiloma bahamensis*
 5. More than five pairs of pinnae.
 6. Leaflet blades less than 15 mm. x 5 mm.; apex slightly narrowed; midrib usually only visible vein. To large. S. Smooth-barked tree much planted. Becoming almost bare in winter.....**Delonix regia*
 6. Largest leaflet blades at least 15 mm. x 5 mm.; apex very round; secondary veins visible. Med. or sm. C.S. Rare.**Colvillea racemosa*
 3. Midrib of leaflet blade much nearer to one side margin than to the other.

4. Compound leaves in 5 vertical rows on twig.....KEY ZZ
4. Compound leaves in 2 vertical rows on twig.
 5. More than 5 pairs of pinnae in largest leaves; leaflet blades tapering rather gradually to a sharp point. Sm. or sh. S. *Leucaena glauca*
 5. Not more than 5 pairs of pinnae; leaflet apex rounded, sometimes with a tiny point. Large, med. S. *Lysiloma bahamensis*
2. Largest leaflet blades more than 6 mm. wide.
 3. Margin toothed; at least some blades lobed. Pl. 8, f. 7. Med. or sm. N, C, S. Also in KEY ZX..... *Koelreuteria formosana*
 3. Margin untoothed; blades unlobed.
 4. Largest leaflet blades more than 2.5 cm. wide.
 5. Apex not prolonged, at first ending in a bristle; rachis bearing round gland between opposite pinnae. To large. S. *Samanea saman*
 5. Apex prolonged.
 6. Apex abruptly prolonged into a slender pointed tip; base almost symmetrical; midrib straight; usually some simple leaflets instead of basal pinnae. To large. N,C. Native to more northern states *Gymnocladus dioica*
 6. Apex rather gradually prolonged, thick; base asymmetrical; midrib curved; pinnae all compound. Med. or sm. S. In KEY ZZ. *Albizia brownii*
4. Leaflet blades less than 2.5 cm. wide.
 5. Midrib almost in center of leaflet, although base may be slightly asymmetrical.
 6. Petiole very sticky; more than 10 pairs of leaflets in largest leaves. Large to sm. S. Trunk almost unbranched. Also in GENERAL KEY..... *Schizolobium parahybum*
 6. Petiole not sticky; not more than 10 pairs of leaflets.
 7. Leaflets usually opposite on rachis; blades less than 3 cm. long. Sm. or sh. C, S. Also in KEY ZU..... *Poinciana pulcherrima*
 7. Leaflets usually alternate on rachis; blades 3 cm. long or more. Med. or sm. S. Also in KEY ZX..... *Adenanthera pavonina*
 5. Midrib, at least at base or tip, much nearer to one side or leaflet than to other. Pl. 8, f. 6.
 6. Twigs and leaves rusty-hairy. To large. C.S.... *Peltophorum inerme*
 6. Twigs and leaves sometimes slightly hairy, but not rusty.
 7. Leaflets pinhole-dotted, seen when held to light; base straight; blade attached to rachis by one corner; length less than twice width. Sm. S. Also in KEY ZU. Pl. 8, f. 4..... *Biancaea sappan*
 7. Leaflets not pinhole-dotted; base usually rounded; blade length twice greatest width.....KEY ZZ

KEY ZZ. MOSTLY ALBIZZIA

1. Leaflet blades less than 2 cm. long.
 2. Midrib almost on one side margin; largest leaves made up of more than 8 pairs of pinnae. Sm. or sh. All. Pl. 8, f. 2..... *A. julibrissin*
 2. Midrib a little distance from side margin; not more than 8 pairs of pinnae.
 3. Leaflet blades to 1.5 cm. long; rachis bare. To large. C.S. *Enterolobium cyclocarpum*
 3. Largest leaflets more than 1.5 cm. long; rachis hairy. Sm. S. *A. lebbekoides*
1. Largest leaflet blades at least 2 cm. long.
 2. Largest leaflet blades at least 5 cm. long; midrib curved; apex prolonged. Med. or sm. S. Also in KEY ZY..... *A. brownii*
 2. Leaflet blades not more than 5 cm. long; midrib straight.
 3. One basal vein on narrow side of leaflet. To tall. S. *A. procera*
 3. A few basal veins on wide side of leaflet. Pl. 8, f. 6.
 4. Midrib close to margin of leaflet blade; blades not more than 3 cm. long. To tall. S. Rare..... *A. odoratissima*
 4. Midrib not close to margin; largest leaflet blades more than 3 cm. long. Large, spreading. C.S. Common tree, usually with large pods. Pl. 8, f. 6..... *A. lebbek*

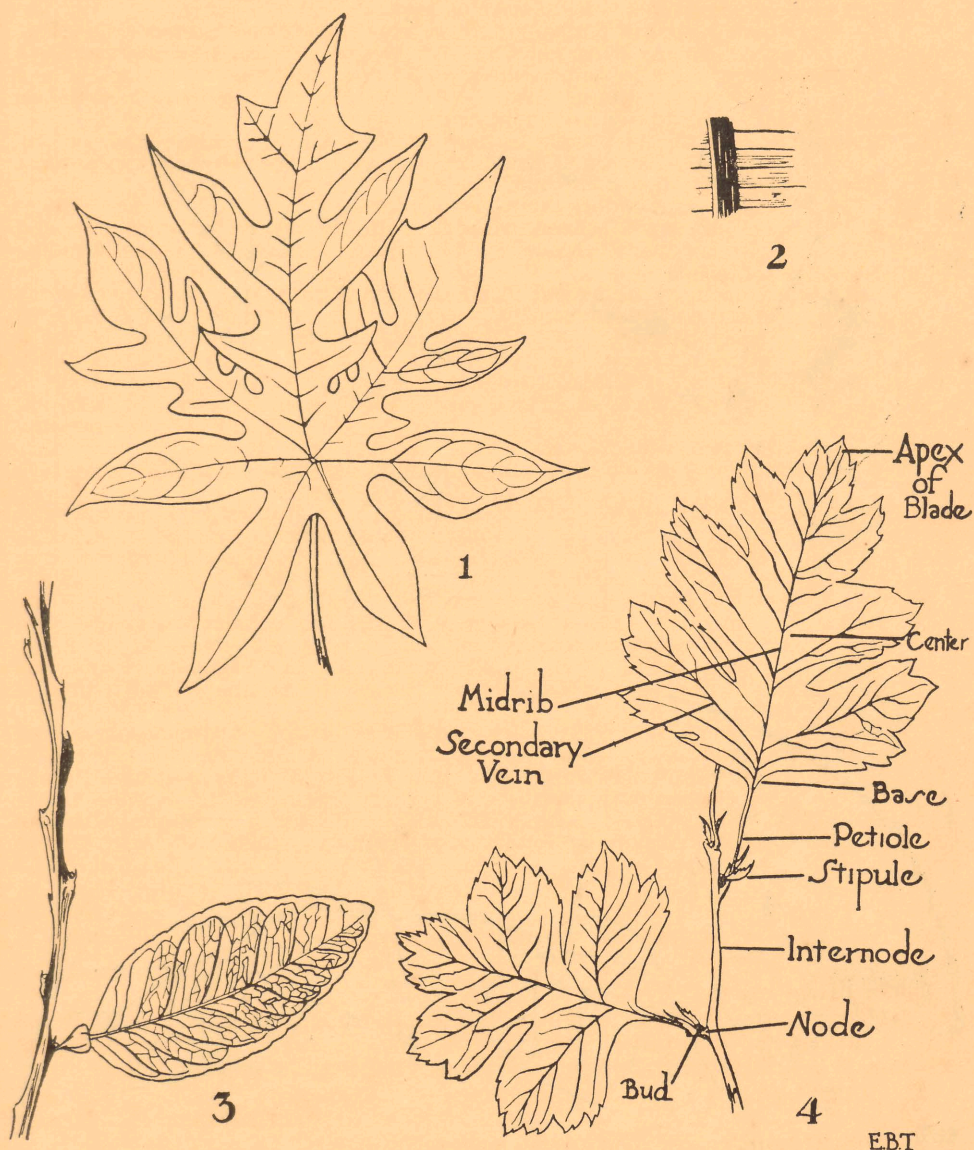


PLATE 1

1. *Carica papaya*. Simple leaf: basal-veined; digitately lobed and pinnately re-lobed, the lobes pinnately veined and long-pointed.
2. Part of a pinnately veined leaf, showing midrib, and secondary veins at right angle to midrib, with smallest visible veins parallel to secondary ones.
3. *Citrus paradisi*. Twig ridged, twisted, and spiny, with nodes in 5 vertical rows; leaf compound with one leaflet, as shown by division between winged petiole and blade; blade faintly scalloped, base almost round, apex sharp but not prolonged, secondary veins at acute angle to midrib, smallest visible veins forming network.
4. *Crataegus* sp. Twig with nodes and internodes; and leaves, each with a bud in its axil; leaf consisting of blade with toothed lobes, petiole and two stipules; basal half of blade larger than apical half.



EBI.

PLATE 2

1. *Ginkgo biloba*. Basally parallel veined leaves crowded at apex of spur; spur showing leaf-scars; blades fan-shaped, margin irregular, slightly notched or lobed.
2. *Tetrazygia bicolor*. Leaves opposite on twig; blades basal-veined with secondary veins at right angle; base a wide V; apex rather gradually prolonged, notched.
3. *Krugiodendron ferreum*. Opposite leaves, each with two hair-like stipules; blade margin entire, base round, apex abruptly prolonged; veining pinnate.
4. *Casuarina glauca*. (a). Needle-like twig with tiny leaves in a whorl at each node. (b). A whorl of leaves opened out and magnified.
5. *Catalpa bignonioides* var. *nana*. Twig showing two whorls of three leaves each; blades heart-shaped with lobed base, basally veined.



EBT

PLATE 3

1. *Calyptanthus zuzygium*. Twig with opposite leaves; a secondary twig growing from one leaf axil; blades pinhole-dotted, apex a short blunt snout.
2. *Bauhinia tomentosa*. Basally netted veined blade, divided at apex into two lobes.
3. *Terminalia arjuna*. Pinnately veined; side margins and secondary veins almost parallel, margin faintly scalloped (entire in some leaves).
4. *Melaleuca leucadendra*. Leaves in 5 vertical rows, basally netted veined.
5. *Firmiana simplex*. Blade basal-veined with entire long-pointed lobes, under surface slightly hairy.
6. *Ilex cumulicola*. Leaves pinnately veined, spiny-margined; spiral in 5 rows.
7. *Cordia myxa*. Blade base round, apex abruptly tipped, side margins with distant rounded teeth.



PLATE 4. FICUS

1. *F. nitida*. Base a narrow V, apex a short blunt snout, blade pinnately veined, but with two prominent basal secondary veins, tertiary veins almost as heavy as secondary, apical half of blade larger than basal half.
2. *F. sycomorus*. Blade somewhat heart-shaped, base roundish or lobed, 2 basal veins, apex not prolonged.
3. *F. brevifolia*. Twig showing 5 rows of leaf-scars, fig, conical end bud, and blade with round base, abrupt short tip, inconspicuous tertiary veins, and checkerboard of network.
4. *F. benjamina*. Tertiary veins almost as heavy as secondary ones, blade widest below center, length less than 3 times width, apex abruptly slender tipped.
5. *F. macrophylla*. Long petiole; basal and tertiary veins and network checkerboard; apex gradually pointed.
6. *Ficus* sp. from Philippines. Length of blade more than 3 times width.
7. *F. religiosa*. Lash-like tip, herringbone network, milk opening at petiole apex.
8. *F. aurea*. Round base, distant secondary veins, abrupt tip.



PLATE 5

1. *Eucalyptus robusta*. Length of blade less than 4 times width, side margins curved, base a wide V or rounded, basal half larger than apical half.
2. *Mangifera indica*. Length of blade 4 times width or more, base a narrow V, apex gradually prolonged, margin entire, blade widest near center.
3. *Terminalia catappa*. Apex a short abrupt tip, base abruptly narrowed, then rounded, apical half larger than basal half.
4. *Grevillea robusta*. Not a compound leaf because lobes are cut not quite to midrib; lobes re-lobed.
5. *Trema lamarekiana*. Twig with leaves in 2 vertical rows; blades basal-veined, margin toothed.



PLATE 6, QUERCUS

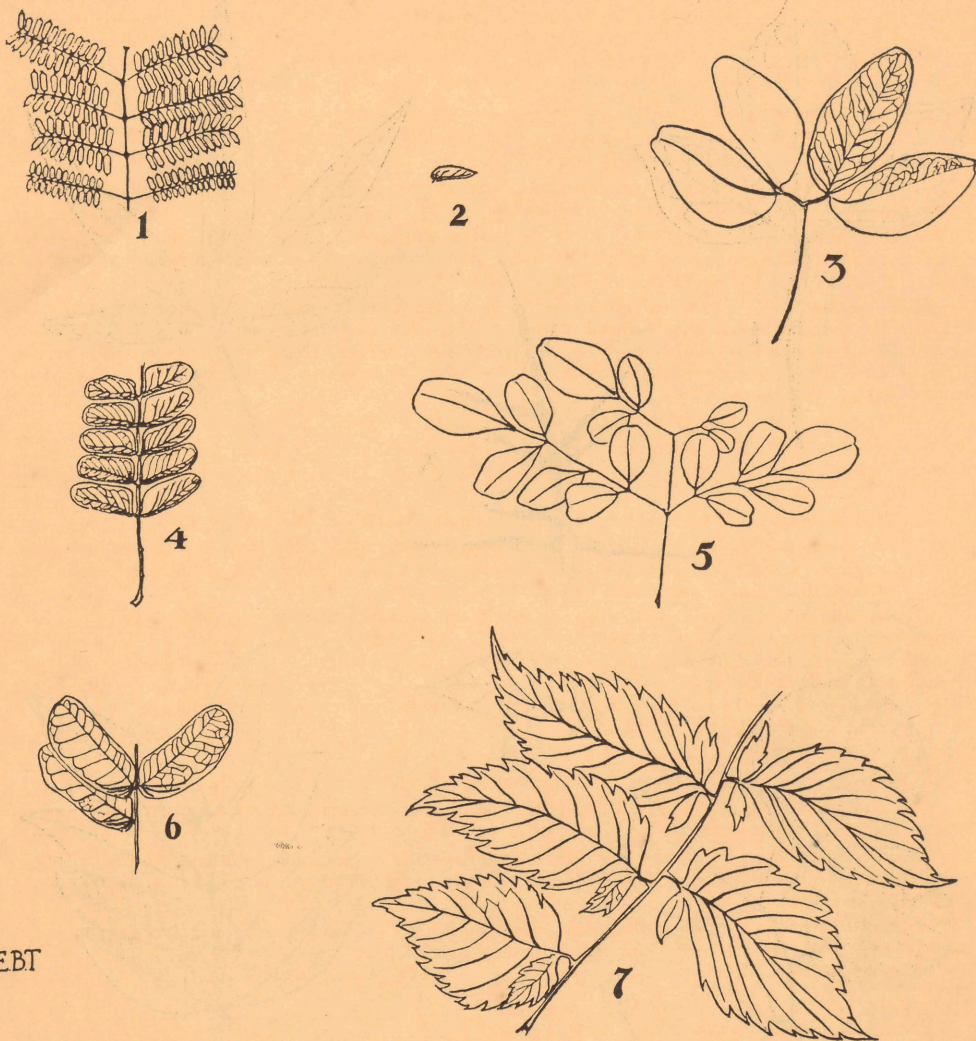
1. *Q. laevis*. Pointed bristled lobes, deeply cut; base a narrow V; midrib of lobes curving; petiole short.
2. *Q. stellata*. Rounded lobes cut more than halfway to midrib; largest lobes re-lobed.
3. *Q. marilandica*. Blade somewhat pear-shaped; often more or less lobed than figure.
4. *Q. laurifolia*. Young twig showing 5 vertical rows of leaves; blades asymmetrical, entire; apex blunt, although narrowed.
5. *Q. nigra*. Blades varying from unlobed to lobed on same twig; base a narrow V; leaves crowded at twig apex.



EBT

PLATE 7. ONCE-COMPOUND LEAVES

1. *Parmentiera cereifera*. Trifoliate leaf with winged petiole. Blade apex abruptly short-tipped, base a narrow V, margin irregularly distant-toothed.
2. *Vitex agnus-castus*. Digitately compound leaf with 5 leaflets, petiole unwinged. Blade base V-shaped, apex gradually narrowed to a point, margin entire.
3. Branched spine of *Gleditsia triacanthos*.
4. *Swietenia mahagoni* leaflet. Asymmetrical, with larger part toward apex of leaf; apex abruptly long-pointed.
5. *Dalbergia sissoo*. Odd-pinnately compound leaf with zigzag rachis and alternate leaflets. Petioles thickened as compared with rachis; blades almost round except for tip.
6. *Sapindus saponaria*. Rachis and petiole winged. Leaf even-pinnately compound with opposite leaflets.



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PLATE 8. TWICE- OR THRICE-COMPOUND LEAVES

1. *Pithecellobium brevifolium*. Even-pinnately twice-compound. Pinnae originally in 5 pairs; more than 5 pairs of leaflets.
2. *Albizzia julibrissin* leaflet with rounded base, gradually long-pointed tip, midrib almost on side margin, hairy. (Magnification greater than in other figures.)
3. *Pithecellobium dulce*. A pair of petioluled pinnae at apex of petiole; two unpetioluled leaflets at apex of each pinna petiolule. Leaflets asymmetrical, base and apex rounded.
4. *Biancaea sappan*. Base of leaflets almost straight, attached to rachis by corner; no petiolules.
5. *Moringa oleifera*. Odd-pinnately twice- or thrice-compound leaf. Leaflets opposite on rachis of pinna, apex rounded or notched.
6. *Albizzia lebbek*. Several basal veins on wide side of leaflet, midrib not close to margin.
7. *Koelreuteria formosana*. Leaflets toothed, sometimes doubly; their base often lobed or compound.

INDEX

The following index, which in a booklet of this kind must be brief, is intended to furnish information both to those who are interested in the botanical nomenclature and the place in the plant kingdom of Florida trees, and to those who prefer to use English or common names. It contains several kinds of names for each tree in the Key. Ex. *Biancaea sappan* (L.) Todaro. Cassi-. (Caesalpini-) (Caesalpinia sappan L.) Biancaea. Pl. 8, f. 4. ZU, ZY.

1. The botanical name, usually Latin in form, is made up of:
 - a. The genus name, beginning with a capital, sometimes abbreviated to its initial if it has just been mentioned (ex. *Biancaea*);
 - b. The species name (ex. *sappan*), similarly abbreviated, occasionally followed by another name, that of a variety (subdivision of a species).
 - c. The usually abbreviated name of the person who first, legally, published the combination of generic and specific names; sometimes preceded by the abbreviated name of an earlier author who used either name in a less accurate combination. Ex. B.s. (L.) Todaro.
2. The name of the family to which the tree belongs. This is usually Latin in form; and since it generally ends in -aceae, is sometimes abbreviated in this index in order to save space. If it has an often-used synonym the latter is placed in a parenthesis following the family name. Ex. Cassi-. (Caesalpini-), for Cassiaceae (Caesalpinaceae). If several species of a genus are indexed the family name is stated with the first only.
3. Often-used synonyms of the botanical name. Ex. (Caesalpinia sappan L.)
4. One or more English or common names. If none is listed the tree may be called by its genus name. If English names are numerous not all can be given. They are apt to be inaccurate and to vary with the locality.
5. The numbers of the plate and figure, if the tree is illustrated. Ex. Pl. 8, f. 4.
6. The division of the Key where the tree is listed. Ex. ZU, ZY. The single letters and numbers from A and through Y represent simple or apparently simple leaves. Those from Y through ZZ signify divisions containing compound leaves.

The determination of the botanical names has been according to the published rules and recommendations of the International Botanical Congress of 1930, except in the case of the initial letter of specific names. A close adherence to the above principles probably would change more names than is done by a uniform system of small letters, such as is employed in The garden dictionary, edited by Norman Taylor, and in publications of the United States Department of Agriculture.

Questioned names have been traced to their sources, whenever this was possible, in the Library of the New York Botanical Garden.

Full names of many authors are stated in Rehder, Manual of cultivated trees and shrubs.

The family names are as given in Small, Manual of the southeastern flora, except for a few families not therein represented.

The common names of native and naturalized trees have been obtained largely from Small's Manual; those of the cultivated ones from other sources mentioned in the list following the Introduction to this booklet.

Helps in the pronunciation of botanical names may be found in The garden dictionary, Rehder's Manual, and the Standard cyclopedia of horticulture, edited by L. H. Bailey.

<i>Acacia auriculiformis</i> A. Cunn. Mimosaceae.....	P 6
<i>A. confusa</i> Merr. (A. richii Forbes & Hemsl.)	P 6
<i>A. dealbata</i> Link. White wattle. Silver wattle.....	ZY
<i>A. macracantha</i> H. & B. Giant-thorn acacia	ZW
<i>A. richii</i> A. Gray	P 6
<i>A. scopioides</i> (L.) W. F. Wight. Gum arabic tree.....	ZW
<i>Acer</i> ; see <i>Argentacer</i> , <i>Negundo</i> , <i>Rufacer</i> , <i>Saccharodendron</i>	E 2
<i>Adansonia digitata</i> L. Bombacaceae. Baobab. Monkey's bread.....	ZD
<i>Adenanthera pavonina</i> L. Mimosaceae. Red sandalwood tree. Circassian bean.....	ZX, ZY
<i>Æsculus pavia</i> L. Æsculaceae. Firecracker plant. Red, or scarlet buckeye.....	ZC
<i>Allanthus altissima</i> Swingle. Simaroub-. (A. glandulosa Desf.) Tree of heaven.....	ZN
<i>Albizzia brownii</i> (Walp.) Oliv. Mimosaceae.....	ZY, ZZ
<i>A. julibrissin</i> (Willd.) Durazz. Mimosa. Julibrissin. Silk tree. Pl. 8, f. 2.....	ZZ
<i>A. lebbek</i> (Willd.) Benth. Woman's tongue tree. Lebbek. Pl. 8, f. 6.....	ZZ
<i>A. lebbekoides</i> (DC.) Benth.	ZZ
<i>A. odoratissima</i> (Willd.) Benth.	ZZ
<i>A. procera</i> (Roxb.) Benth. (Mimosa procera Roxb.).....	ZZ
<i>Alectryon subcinereum</i> (A. Gray) Radlk. Sapindaceae. (Cupania s. A. Gray).....	ZP
<i>Aleurites cordata</i> (Thunb.) R. Br. Euphorbiaceae. [A. montana (Lour.) Wils.]	
Tung-oil tree. Wood-oil tree. Mu-oil tree.....	O 5

<i>A. fordii</i> Hemsl. Tung-oil tree. China wood-oil tree.....	O 5
<i>A. moluccana</i> (L.) Willd. (<i>A. triloba</i> Forst.) Candlenut tree. Kukui.....	O 5
<i>A. trisperma</i> Blanco. (<i>A. saponaria</i> Blanco). Banucalag.....	O 5
<i>Alnus rugosa</i> (Du Roi) Spreng. Betul-. Smooth, red, green, or speckled alder.....	V
<i>Alvaradoa amorphoides</i> Liebm. Simaroubaceae. Alvaradoa.....	ZL
<i>Amarolea americana</i> (L.) Small. Oleaceae. [<i>Osmanthus americana</i> (L.) Benth. & Hook.]	
Devilwood. Wild olive. Florida Olea.....	I, K, L
<i>A. megacarpa</i> Small. (<i>Osmanthus megacarpa</i> Small)	I, K, L
<i>Amygdalus persica</i> L. Amygdalaceae. [<i>Prunus p.</i> (L.) Batsch.] Peach.....	W 5
<i>Amyris balsamifera</i> L. Rutaceae. Balsam torchwood.....	ZA, ZG
<i>A. elemifera</i> L. (<i>A. maritima</i> Jacq.) Torchwood.....	ZA, ZG
<i>Anacardium occidentale</i> L. Spondiaceae (Anacardiaceae). Cashew. Cashew nut.....	O
<i>Ananomis dierana</i> (Berg) Brit. Myrtaceae. <i>Eugenia dierana</i> (Berg). (<i>Eugenia</i>	
<i>dichotoma</i> DC.) Spice tree. Naked stopper.....	H 2
<i>A. simpsonii</i> Small. (<i>Eugenia simpsonii</i> Sarg.) Florida myrtle. Naked stopper.....	H 2
<i>Andira jamaicensis</i> (W. Wright) Urban. Fabaceae. (<i>A. inermis</i> H. B. K.) Cabbage tree.	
Angelen tree. Angelin	ZK
<i>Annona cherimola</i> Mill. Annonaceae. Chirimoya. Cherimoya.....	S 2
<i>A. diversifolia</i> Safford. White Annona. Ilama.....	S 2
<i>A. glabra</i> L. (<i>A. palustris</i> L.) Pond, monkey, custard, alligator apple.....	S 2
<i>A. montana</i> Macfad. Mountain soursop.....	S 2
<i>A. muricata</i> L. Soursop. Guanabana	S 2
<i>A. reticulata</i> L. Bullock's heart. Custard apple.....	S 2
<i>A. squamosa</i> L. Sugar apple. Sweetsop.....	S 2
<i>Antidesma bunius</i> L. Euphorbi-. Salamander tree. Chinese laurel. Nigger's cord.....	T
<i>Aralia spinosa</i> L. Hederaceae (Araliaceae). Hercules' club. Prickly ash.....	ZU
<i>Ardisia pickeringia</i> Torr. & Gray. Ardisiaceae (Myrsinaceae). [<i>Icacorea paniculata</i>	
(Nutt.) Sudw.] Marlberry	S 6
<i>Argentacer saccharinum</i> (L.) Small. Acer-. (<i>Acer s. L.</i>) Silver, white maple.....	E 2
<i>Artocarpus communis</i> Forst. Artocarpaceae (Moraceae). [<i>Artocarpus incisa</i> (Thumb.) L. f.]	
Breadfruit	O 6
<i>A. integra</i> (Thunb.) Merrill. (<i>A. integrifolia</i> L. f.) Jak fruit. Jack tree.....	O 6
<i>Asimina triloba</i> (L.) Dunal. Annonaceae. Papaw. Pawpaw. Custard apple.....	S 2
<i>Averrhoa carambola</i> L. Oxalidaceae. Carambola	ZJ
<i>Avicennia nitida</i> Jacq. Avicenni-. (Verben-.) Black mangrove. Blackwood.....	I
<i>Batodendron arboreum</i> (Marsh.) Nutt. Vacciniaceae (Ericaceae). (<i>Vaccinium arboreum</i>	
Marsh.) Farkleberry. Tree huckleberry. Sparkleberry	U 2, W 3
<i>Bauhinia purpurea</i> L. Cassiaceae (Caesalpinaceae). Orchid tree. Mountain ebony.....	P 5
<i>B. tomentosa</i> L. [<i>Alvisia tomentosa</i> (L.) Brit.] Pl. 3. f. 2.....	P 5
<i>B. variegata</i> L. Orchid tree. Mountain ebony. Buddhist Bauhinia.....	P 5
<i>B. variegata candida</i> Roxb. (<i>B. purpurea alba</i> Buch.-Ham.) Names as above.	P 5
<i>Betula nigra</i> L. Betulaceae. (<i>B. rubra</i> Michx.) Red, river, or water birch.....	V
<i>Biancaea sappan</i> (L.) Todaro. Cassiaceae (Caesalpinaceae). (<i>Caesalpinia sappan</i> L.)	
Pl. 8, f. 4.....	ZU, ZY
<i>Bischofia javanica</i> Blume. Euphorbiaceae. [<i>B. trifoliata</i> (Roxb.) Hook.] Toog.....	ZA
<i>Bixa orellana</i> L. Bixaceae. Anatto tree.....	P 2, P 3
<i>Blighia sapida</i> Koenig. Sapindaceae. (<i>Cupania sapida</i> Voight.) Akee tree.....	ZS
<i>Bombax album</i> (Loddig.) Bakh. Bombacaceae. [<i>Pachira alba</i> (Loddig.) Walp.].....	ZD
<i>B. ellipticum</i> H. B. K. [<i>Pachira fastuosa</i> (DC.) Dec.] Shaving-brush tree.....	ZD
<i>B. malabaricum</i> DC. (<i>B. ceiba</i> L.) Red cotton tree.....	ZD
<i>Bourreria</i> (or <i>Beurreria</i>) <i>ovata</i> Miers. Ehretiaceae (Boraginaceae). [<i>B. havenensis</i>	
(Chapm. Fl.) Small] Strongback.....	U 2, U 4
<i>B. revoluta</i> H. B. K. [<i>B. radula</i> (Chapm. Fl.) Small] Rough strongback.....	U 2, U 3
<i>Brachychiton acerifolium</i> (A. Cunn.) (A. Cunn.) Muell. Buettneriaceae (Sterculiaceae).	
(<i>Sterculia acerifolium</i> A. Cunn.) Flame tree.....	P 4
<i>B. bidwillii</i> Hook. (<i>Sterculia bidwillii</i> Hook.).....	P 4
<i>B. populneum</i> (Sch. & Endl.) R. Br. (<i>Sterculia diversifolium</i> G. Don). Black Kurrajong.	
Bottle tree.....	P 2, P 4, U 4, X
<i>Bridelia monoica</i> (Lour.) Merrill. Euphorbiaceae. (<i>Clusia monoica</i> Lour.).....	T
<i>Broussonetia papyrifera</i> (L.) Vent. Artocarpaceae (Moraceae). [<i>Papyrus papyrifera</i> (L.) Ktze.]	
Paper mulberry	O 4
<i>Brownea grandiceps</i> Jacq. Cassiaceae (Caesalpinaceae).....	ZP
<i>Bucida buceras</i> L. Terminalaceae (Combretaceae). Black olive.....	N
<i>Bumelia angustifolia</i> Nutt. Sapotaceae. Saffron plum.....	N 2
<i>B. lanuginosa</i> (Michx.) Pers. Gum elastic. Chittam wood. Woolly buckthorn.....	N 2
<i>B. lycioides</i> (L.) Gaertn. Southern buckthorn. Shittamwood. Ironwood.....	N 2
<i>B. tenax</i> (L.) Willd. Tough buckthorn. Ironwood.....	N 2
<i>Bunchosia glandulifera</i> (Jacq.) H. B. K. Malpighiaceae.....	L
<i>Bursera simaruba</i> (L.) Sarg. Burseraceae. [<i>Elaphrium simaruba</i> (L.) Rose.] Gumbo-limbo.....	ZL
<i>Buxus sempervirens</i> L. Buxaceae. Box. Boxwood.....	J

<i>Byrsonima lucida</i> (Sw.) DC. Malpighiaceae. Locust berry.....	J
<i>Caesalpinia</i> ; see <i>Biancaea</i> , <i>Libidibia</i> , <i>Poinciana</i> , <i>Tara</i> .	
<i>Callistemon acuminatus</i> Cheel. Myrtaceae. Bottle brush.....	S 3
<i>C. coccineus</i> Muell. Bottle brush.....	S 3
<i>C. lanceolatus</i> Sw. [<i>C. citrinus</i> (Curtis) Skeels]. Lemon bottle brush.....	S 3
<i>C. linearis</i> (Schrud. & Wendl.) DC. Bottle brush.....	S 3
<i>C. rigidus</i> R. Br. (<i>C. linearifolius</i> DC.) Bottle brush.....	S 3
<i>C. salignus</i> Sw. Bottle brush.....	S 3
<i>Calocarpum mammosum</i> (L.) Pierre. Sapotaceae. (<i>Achras zapota</i> L.)	
(<i>Achras mammosam</i> L.) Sapote.....	O 8
<i>C. viride</i> Pittier. Green sapote. White sapote.....	O 8
<i>Calodendrum capense</i> Thunb. Rutaceae. Cape chestnut.....	H
<i>Calophyllum antillanum</i> Brit. Clusiaceae (Hypericaceae). (<i>C. calaba</i> Jacq.)	
(<i>C. brasiliense antillanum</i> Brit.) Calaba. Santa Maria tree.....	F
<i>C. inophyllum</i> L. Alexandrian laurel.....	F
<i>Calyptanthus pallens</i> (Poir.) Griseb. Myrtaceae. White spicewood.....	H 3
<i>C. zuzygium</i> L. Sw. Spicewood. Myrtle-of-the-river. Pl. 3, f. 1.....	H 3
<i>Camphora officinarum</i> Nees. Lauraceae. [<i>Camphora camphora</i> (L.) Karst.]	
(<i>Cinnamomum camphora</i> Nees & Eberm.) Camphor tree.....	P 2, S 5
<i>Canarium odoratum</i> (Lam.) King. Annonaceae. Ylang-ylang. Ilangilang.....	S 2
<i>Canella winterana</i> (L.) Gaertn. Canell. (<i>C. alba</i> Murr.) Wild cinnamon.....	S
<i>Capparis cynophallophora</i> L. Sp. Pl. ed. I. Capparidaceae. (<i>C. jamaicensis</i> Jacq.)	
Jamaica caper tree. Bay-leaved caper tree.....	U 2
<i>C. flexuosa</i> L. (<i>C. cynophallophora</i> L. Sp. Pl. ed. II.) Whitewood. Bay-leaved caper tree.....	U 4
<i>Carica papaya</i> L. Caricaceae. Papaya. Pawpaw. Pl. 1, f. 1.....	Gen. Key
<i>Carpinus caroliniana</i> Walt. Corylaceae. Hornbeam. Blue Beech. Water beech.....	V
<i>Carya</i> Juglandaceae. (<i>Hicoria</i>). Hickory.....	ZO
<i>C. alba</i> (L.) K. Koch. [H. a. (L.) Brit.] Mockernut. White-heart, or big-bud H.	
<i>C. aquatica</i> (Michx. f.) Nutt. [H. a. (Michx. f.) Brit.] Water or swamp h.	
<i>C. cordiformis</i> (Wang.) K. Koch. [H. c. (Wang.) Brit.] Bitternut. White h.	
<i>C. floridana</i> Sarg. [H. f. (Sarg.) Small] Florida hickory. Scrub hickory.	
<i>C. glabra</i> (Mill.) Sweet. [H. g. (Mill.) Brit.] Pignut. Broom, or brown h.	
<i>C. megacarpa</i> Sarg. (<i>Hicoria austrina</i> Small).	
<i>C. ovata</i> (Mill.) K. Koch. [H. o. (Mill.) Brit.] Shellbark or shagbark h.	
<i>C. pallida</i> Engl. & Graegn. (H. p. Ashe). Pale hickory. Paleleaf.	
<i>C. pecan</i> (Marsh.) K. Koch. [H. p. (Marsh.) Brit.] Pecan.	
<i>Casasia clusiifolia</i> (Jacq.) Urban. Rubiaceae. Seven-year apple.....	G
<i>Casimiroa edulis</i> Llave & Lex. Rutaceae. White sapote. Mexican apple.....	ZD
<i>C. tetrameria</i> Millsp.	ZD
<i>Cassia beareana</i> Holmes. Cassiaceae (Caesalpinaceae).....	ZQ
<i>C. fistula</i> L. Golden shower. Pudding-pipe tree.....	ZP, ZQ
<i>C. grandis</i> L. Pink shower. Carao.....	ZQ
<i>C. multijuga</i> Rich.	ZQ
<i>C. nodosa</i> Buch.-Ham. Pink-and-white shower.....	ZQ
<i>C. roxburghii</i> DC. (<i>Cassia marginata</i> Roxb.).....	ZQ
<i>C. siamea</i> Lam. Kassod tree.....	ZQ
<i>C. surattensis</i> Burm. f. (<i>C. glauca</i> Lam.).....	ZQ
<i>C. timoriensis</i> DC.....	ZQ
<i>Castanea ashei</i> Sudw. Fagaceae. Ashe's chestnut.....	V 3
<i>C. crenata</i> Sieb. & Zucc. Japanese chestnut.....	V 3
<i>C. pumila</i> (L.) Mill. Chinquapin.....	V 3
<i>Castanospermum australe</i> A. Cunn. Fabaceae. Moreton Bay, or Australian chestnut.....	ZK
<i>Casuarina cunninghamiana</i> Miq. Casuarinaceae. (<i>C. lepidophloia</i> Muell.) Australian river oak...C	
<i>C. equisetifolia</i> Forst. Beefwood. Australian pine. She-oak.....	C
<i>C. glauca</i> Sieb. Australian pine. Pl. 2, f. 4.....	C
<i>C. stricta</i> Dry. Australian pine.....	C
<i>Catalpa bignonioides</i> Walt. Bignoniaceae. [<i>C. catalpa</i> (L.) Karst.] Indian bean. Catalpa.	
Pl. 2, f. 5.....	E
<i>Cecropia mexicana</i> Hemsl. Artocarpaceae (Moraceae).....	O 3
<i>C. palmata</i> Willd. Trumpet tree. Snakewood.....	O 3
<i>C. peltata</i> L. Trumpet tree. Bois trompette.....	O 3
<i>Cedrela odorata</i> L. Meliaceae. West Indian, Spanish, or cigar-box cedar.....	ZT
<i>Ceiba pentandra</i> (L.) Gaertn. Bombacaceae. Kapok. Silk-cotton tree. Ceiba.....	ZD
<i>Celtis australis</i> L. Ulmaceae. Hackberry.....	Q 7
<i>C. georgiana</i> Small. [<i>C. pumila georgiana</i> (Small) Sarg.] Georgia hackberry.....	Q 7
<i>C. mississippiensis</i> Bosc. (<i>C. laevigata</i> Willd.) Sugarberry. Mississippi h.....	Q 7
<i>C. sinensis</i> Pers. Chinese hackberry.....	Q 7
<i>C. smallii</i> Beadle. (<i>C. laevigata smallii</i> Sarg.) Small's hackberry.....	Q 7
<i>Cercis canadensis</i> L. Cassiaceae (Caesalpinaceae). Redbud. Judas tree.....	P 7
<i>C. chinensis</i> Bge. (<i>C. japonica</i> Sieb. ex Planch.).....	P 7

<i>Cephalanthus occidentalis</i> L. Rubiaceae. Buttonbush. Spanish pincushion.....	G
<i>Ceratonia siliqua</i> L. Cassi-. (Ceasalpini-.). Carob. St. John's bread. Algaroba.....	ZR
<i>Cerothamnus ceriferus</i> (L.) Small. Myricaceae. (Myrica c-a L.) Waxberry.....	W 3, W 4
<i>C. inodorus</i> (Bartr.) Small. (Myrica inodora Bartr.) Oderless wax-myrtle.....	U 2, U 4
<i>Chilopsis linearis</i> (Cav.) Sweet. Bignoniaceae. Desert, or flowering willow.....	F
<i>Chionanthus virginica</i> L. Oleaceae. White fringe tree. Old man's beard.....	I, K, L
<i>Chorisia speciosa</i> St. Hil. Bombacaceae. Floss silk tree.....	ZD
<i>Chrysobalanus icaco</i> L. Amygdalaceae. Cocoa plum. Icaco. Gopher plum.....	T 2
<i>C. interior</i> Small. (C. pellocarpus Small.) Small-fruited, or everglade plum.....	T 2
<i>Chrysophyllum cainito</i> L. Sapotaceae. Caimito. Star apple.....	O 8
<i>C. oliviforme</i> L. (C. monopyrenum Sw.) Satinleaf.....	O 8
<i>Cinnamomum cassia</i> Blume. Lauraceae. Cassia-bark tree.....	E
<i>Citharexylum fruticosum</i> L. Verbenaceae. (C. cinereum L.) Fiddlewood.....	I, K, L, M
<i>Citrus aurantifolia</i> (Christmas) Swingle. Rutaceae. (C. lima Lunan.) Lime.....	Y
<i>C. aurantium</i> L. (C. vulgaris Risso) Bittersweet orange. Sour orange.....	Y
<i>C. limonum</i> (L.) Risso. Lemon.....	Y
<i>C. medica</i> L. Citron.....	Y
<i>C. mitis</i> Blanco. Calamondin.....	Y
<i>C. nobilis</i> Lour. Mandarin. Tangerine.....	Y
<i>C. paradisi</i> Macf. (C. maxima Merr.) Grapefruit. Pomelo. Pl. 1, f. 3.....	Y
<i>C. sinensis</i> Osbeck. Sweet orange. Seville orange.....	Y
<i>Clausa lansium</i> Skeels. Rutaceae. Yellow-skin.....	ZN
<i>Cliftonia monophylla</i> (Lam.) Brit. Cyrillaceae. Titi. Black titi. Ironwood.....	U 2
<i>Clusia flava</i> Jacq. Clusiaceae (Hypericaceae). Balsam tree.....	F
<i>C. rosea</i> L. Fat pork. Monkey apple.....	F
<i>Coccolobis laurifolia</i> Jacq. Polygonaceae. (C. floridana Meisn.) Pigeon plum.....	R 2
<i>C. pubescens</i> L. (C. grandifolia Jacq.).....	Gen. Key, P 3, R 2
<i>C. uvifera</i> (L.) Jacq. Sea grape. Platter leaf. Shore grape.....	P 3, R 2
<i>Colubrina arborescens</i> (Mill.) Sarg. Frangulaceae (Rhamnaceae). (C. ferruginosa Brongn.)	
[C. colubrina (Jacq.) Millsp.] Wild coffee.....	P 2, U 6
<i>C. cubensis</i> (Jacq.) Brongn. Cuban nakedwood.....	P 2, U 3
<i>C. reclinata</i> (L'Her.) Brongn. Nakedwood. Soldierwood.....	P 2, U 6
<i>Colvillea racemosa</i> Bojer. Cassiaceae (Caesalpinaceae).....	ZY
<i>Conocarpus erecta</i> L. Terminali-. (Combret-.). Button mangrove. Buttonwood.....	U 7
<i>Cordia alba</i> (Jacq.) Roem. & Schult. Ehretiaceae (Borraginaceae).....	Q 3, W 4, W 7
<i>C. glabra</i> Cham.	U 7, W 7
<i>C. leucosebestena</i> Griseb.	U 4, W 7
<i>C. myxa</i> L. (C. obliqua Willd.) Pl. 3, f. 7.....	W 4, W 7
<i>C. sebestena</i> L. [Sebesten sebestena (L.) Brit.] Geiger tree.....	U 3, W 4, W 7
<i>Cormonema ovalifolium</i> Donn. Smith. Frangul-. (Rham-.). Shade-for-coffee.....	T
<i>Cornus</i> ; see <i>Cynoxylon</i> , <i>Svida</i> .	
<i>Couroupita guianensis</i> Aubl. Lecythidaceae. Cannonball tree.....	U, U 6, U 7, W 4
<i>Crataegus</i> spp. Malaceae. Hawthorn. Pl. 1, f. 4.....	N, W, X
<i>Crescentia alata</i> H. B. K. Bignoniaceae. Winged-leaved calabash tree.....	ZA
<i>C. eujete</i> L. Calabash tree.....	U 7
<i>Cupania glabra</i> Sw. Sapindaceae. (See also <i>Alectryon</i>).	ZN
<i>Cynoxylon floridum</i> (L.) Raf. Nyss-. (Corn-.). (Cornus f-a L.) Flowering dogwood.....	L 2
<i>Cyrilla arida</i> Small. Cyrillaceae.....	U 2
<i>C. racemiflora</i> L. Leatherwood. He-huckleberry. Black titi. Ironwood.....	U 2, U 4
<i>Dalbergia sissoo</i> Roxb. Fabaceae. Sissoo tree. Pl. 7, f. 5.....	ZK
<i>Daubentonia punicea</i> (Cav.) DC. Fabaceae. (Sesbania p. Benth.) Purple Sesban.....	ZP, ZQ
<i>Delonix regia</i> (Bojer) Raf. Cassiaceae (Caesalpinaceae). (Poinciana regia Bojer).	
Royal Poinciana. Flamboyant. Peacock flower. Flame tree.....	ZY
<i>Dillenia indica</i> L. Dilleniaceae.....	W 4
<i>Diospyros kaki</i> L. f. Ebenaceae. Japanese, Chinese, or Kaki persimmon.....	T 3, U 6
<i>D. lotus</i> L. Date plum.....	T 3, U 6
<i>D. mosieri</i> Small. (D. virginiana mosieri Sarg.) Persimmon.....	T 3, U 6
<i>D. virginiana</i> L. Persimmon. Date plum. Possumwood.....	T 3, U 6
<i>Dipholis salicifolia</i> (L.) A. DC. Sapotaceae. Bustic. Cassada.....	O 8
<i>Dodonaea microcarya</i> Small. Dodonaeaceae. Varnish leaf.....	U 2
<i>Dombeya wallachii</i> (Lind.) Benth. & Hook. Buettneriaceae (Sterculiaceae).....	Q 3
<i>Dovyalis caffra</i> (Harv. & Sond.) Warb. Flacourtiaceae. (Aberia c. H. & S.) Kei apple.....	N
<i>D. hebecarpa</i> (Gardn.) Warb. (Aberia gardneri Clos.) Ceylon gooseberry. Ketembilla.....	N
<i>Drypetes diversifolia</i> Krug & Urban. Euphorbi-. (D. keyensis K. & C.) Whitewood.....	T
<i>D. lateriflora</i> (Sw.) Krug & Urban. (D. crocea Poit.) Guiana plum. Whitewood.....	T
<i>Duranta repens</i> L. Verbenaceae. (D. plumieri Jacq.) Golden Dewdrop.....	M

<i>Ebenopsis flexicaulis</i> (Benth.) Brit. & Rose. (<i>Siderocarpus flexicaulis</i> Small.).....	ZU
<i>Ehretia acuminata</i> R. Br. Ehreti-. (Boragin-) (<i>E. serrata</i> Roxb.) Heliotrope tree	V
<i>Enallagma latifolia</i> (Mill.) Small. Bignoniaceae. Black calabash.....	U7
<i>Enterolobium cyclocarpum</i> (Sw.) Griseb. Mimosaceae. Elephant's ear, or ear tree.....	ZZ
<i>Eriobotrya japonica</i> Lindl. Malaceae. Loquat. Japan plum. Medlar plum.....	W4
<i>Erythrina arborea</i> (Chapm.) Small. Fabaceae. Cherokee bean. Coral bean tree.....	ZB
<i>E. corallodendron</i> L. Coral tree.....	ZB
<i>E. indica</i> Lam.	ZB
<i>E. velutina</i> Willd.	ZB
<i>Erythrostemon gillesii</i> (Hook.) Link, Klotzsch, & Otto. Cassi- (Caesalpini-).....	ZY
<i>Eucalyptus globulus</i> Labill. Myrtaceae. Blue gum.....	S4
<i>E. polyanthemus</i> Schau. Red box. Australian beech.....	S4
<i>E. resinifera</i> Smith. Red mahogany. Kino Eucalypt.....	S4
<i>E. robusta</i> Smith. Swamp mahogany. Brown gum. Mahogany gum. Pl. 5, f. 1.....	S4
<i>E. rostrata</i> Schlecht. Red gum. Crook gum.....	S4
<i>E. rudis</i> Endl. Desert gum. Flooded gum.....	S4
<i>E. saligna</i> Smith.	S4
<i>E. tereticornis</i> Smith. Gray gum. Slaty gum.....	S4
<i>E. viminalis</i> Labill. Manna gum.....	S4
<i>Eugenia anthera</i> Small. Myrtaceae.....	H2
<i>E. axillaris</i> (Sw.) Willd. White stopper.....	H3
<i>E. brasiliensis</i> Lam. (<i>E. dombeyi</i> Skeels). Grumichama.....	H2
<i>E. buxifolia</i> (Sw.) Willd. Spanish stopper. Gurgeon stopper.....	H2
<i>E. confusa</i> DC. (<i>E. garberi</i> Sarg.) Ironwood.....	H3
<i>E. edulis</i> Vell. (<i>Phyllocalyx edulis</i> Berg).....	H2
<i>E. eucalyptoides</i> Muell.	H2
<i>E. myrcianthes</i> (Berg) Niedenz. (<i>Myrcianthes edulis</i> Berg).	H2
<i>E. rhombea</i> (Berg) Krug & Urban. Red stopper.....	H3
<i>Euphorbia tirucalli</i> L. Euphorbiaceae. Milk bush. Indian tree spurge.....	Gen. Key
<i>Euphorbia longana</i> Lam. Sapindaceae. Longan. Lungan.....	ZR, ZS
<i>Exostema caribaeum</i> (Jacq.) Reg. & Schmalh. Rubiaceae. Princewood.....	G
<i>Exothea paniculata</i> (Juss.) Radlk. Sapindaceae. (Hypelate p. Don). Inkwood.....	ZR
<i>Fagus grandifolia</i> Ehrh. Fagaceae. (<i>F. americana</i> Sweet). American, white beech.....	V
<i>Ficus altissima</i> Blume. Artocarpaceae (Moraceae) Lofty fig.....	O2
<i>F. aurea</i> Nutt. Golden fig. Strangler fig. Pl. 4, f. 8.....	O2
<i>F. benghalensis</i> L. Banyan tree.....	O2
<i>F. benjamina</i> L. Java fig. Weeping fig. Weeping rubber tree. Pl. 4, f. 4.....	O2
<i>F. brevifolia</i> Nutt. [<i>F. populnea brevifolia</i> (Nutt.) Warb.] Wild poplar-leaved fig. Wild banyan. Wild fig. Pl. 4, f. 3.....	O2
<i>F. bussei</i> Warb. ex Mildbr. & Burret.....	O2
<i>F. capensis</i> Thunb.	O2
<i>F. carica</i> L. Common fig.....	O2
<i>F. cunninghamii</i> Miq.	O2
<i>F. elastica</i> Roxb. India rubber tree. Rubber plant.....	O2
<i>F. glabella</i> Blume.....	O2
<i>F. glomerata</i> Roxb. Cluster fig. Cluster rubber tree.....	O2
<i>F. hispida</i> L. f. (<i>F. oppositifolia</i> Willd.) Opposite-leaved fig.....	E. G, M, O2
<i>F. infectoria</i> Roxb. (<i>F. lacer</i> Buch.-Ham.) Indian dotted fig.....	O2
<i>F. lyrata</i> Warb. (<i>F. pandurata</i> Hort. not Hance). Fiddle-leaf fig.....	O2
<i>F. macrophylla</i> Desf. Moreton Bay fig. Moreton Bay rubber tree. Pl. 4, f. 5.....	O2
<i>F. mysorensis</i> Heyne ex Roth.	O2
<i>F. nitida</i> Thunb. (<i>F. retusa</i> L. var. <i>nitida</i> King). Indian laurel. Laurel fig. Pl. 4, f. 1.....	O2
<i>F. nymphaeifolia</i> Mill. Caracas fig.....	O2
<i>F. platyphylla</i> Delile.....	O2
<i>F. pseudopalma</i> Blanco. Long-leaved fig.....	Gen. Key
<i>F. religiosa</i> L. Peepul. Bo tree. Pl. 4, f. 7.....	O2
<i>F. rubiginosa</i> Vent. (<i>F. australis</i> Willd.) Rusty fig. Port Jackson fig.....	O2
<i>F. sycomorus</i> L. Sycamore fig. Pharaoh's fig. Pl. 4, f. 2.....	O2
<i>F. tinctoria</i> Forst. f.	O2
<i>F. nekbudu</i> Warb. (<i>F. utilis</i> Sims). Zulu fig. Kaffir fig.....	O2
<i>F. vogelii</i> Miq. (Perhaps a synonym of <i>F. nekbudu</i> .).....	O2
<i>F. sp.</i> from Philippines. Pl. 4, f. 6.....	O2
<i>Firmiana barteri</i> (Mast.) Schum. Buettneriaceae (Sterculiaceae). (<i>Sterculia b.</i> Mast.).....	P3
<i>F. simplex</i> (L.) Wight. [<i>F. platanifolia</i> (L. f.) R. Br.] Pl. 3, f. 5.....	P4

<i>Flacourtia indica</i> (Burm. f.) Merr. Flacourtiaceae. (F. ramontchi L'Her.)	
Governor's or Batoko plum. Ramontchi.	N, W 3
<i>Forestiera acuminata</i> (Michx.) Poir. Oleaceae. (Adelia a. Michx.) Swamp privet.	M
F. porulosa (Michx.) Poir. [F. segregata (Jacq.) Krug & Urban]. Florida privet.	H
<i>Fortunella</i> spp. Rutaceae. Kumquat.	Y
<i>Fraxinus americana</i> L. Oleaceae. White ash. American ash	ZH
F. caroliniana Mill. (F. platycarpa Michx.) Water, pop, or poppy ash.	ZH
F. pauciflora Nutt. Swamp ash. Water ash.	ZH
F. pennsylvanica lanceolata Sarg. (F. lanceolata Borkh.) Green, or swamp ash.	ZH
F. profunda Bush. Pumpkin ash.	ZH
F. smallii Brit. Small's ash.	ZH
<i>Garcinia livingstonei</i> T. Anders. Guttiferae (Hypericaceae). Imbe.	H, K 2
G. spicata (Wight & Arn.) Hook. f.	H, K, K 2
G. tinctoria (DC) W. F. Wight. (G. xanthochymus Hook. f.)	H, K 2, L
<i>Ginkgo biloba</i> L. Ginkgoaceae. Ginkgo. Maidenhair fern tree. Pl. 2, f. 1.	A
<i>Gleditsia aquatica</i> Marsh. Cassiaceae (Caesalpiniaceae). Water, or swamp locust.	ZE, ZU
G. sinensis Lam. Chinese locust.	ZE
G. triacanthos L. Honey locust. 3-thorned acacia. Pl. 7, f. 3.	ZE, ZU
<i>Gliricidia sepium</i> (Jacq.) Steud. (G. maculata H. B. K.) Madre de cacao.	ZK
<i>Glycosmis citrifolia</i> (Willd.) Lindl. Rutaceae. [G. pentaphylla (Retz.) DC.]	ZA, ZJ
<i>Gordonia lasianthus</i> (L.) Ellis. Theaceae. Loblolly, tan, or red bay. Black laurel.	W 4
<i>Gossypium hirsutum</i> L. Malvaceae. Wild cotton. Upland cotton.	P 4
<i>Grevillea banksii</i> R. Br. Proteaceae. Bank's silk oak.	X 2
G. hilliana Muell. Hill's silk oak.	X 2
G. robusta A. Cunn. Silk oak. Pl. 5, f. 4.	X 2
<i>Gualacum guatemalense</i> Planch. Zygophyllaceae. Guatemalan lignum vitae.	ZI
G. officinale L. Lignum vitae.	ZI
G. sanctum L. Lignum vitae.	ZI
<i>Guettarda elliptica</i> Sw. Rubiaceae. Velvetseed.	G
G. scabra (L.) Lam. Velvetseed.	G
<i>Gyminda latifolia</i> (Sw.) Urban. Celastraceae. [Myginda l. (Sw.) Smith.] False boxwood.	J, M
<i>Gymnanthes lucida</i> Sw. Euphorbiaceae. Crabwood. Poisonwood.	W 3, W 4
<i>Gymnocladus dioica</i> K. Koch. Cassi-. (Caesalpini-.) Kentucky coffee tree. Luck bean.	ZY
Gymnospermae. Gymnosperms. Pine relatives, as pine, cedar, cypress, etc.	B
<i>Haematoxylon campechianum</i> L. Cassi-. (Caesalpini-.) Logwood. Bloodwood tree.	ZE
<i>Halesia carolina</i> L. Styracaceae. (H. tetraptera L.) [Mohrodendron carolinum (L.) Brit.]	
Silverbell tree. Wild olive tree. Opossumwood. Rattlebox. Calicewood.	W 8
H. diptera Ellis. Mohrodendron dipterum (Ellis) Brit. Two-wing silverbell.	
Snowdrop tree. Cowlicks.	W 8
H. parviflora Michx. [Mohrodendron parviflorum (Michx.) Brit.]	W 8
<i>Hamamelis virginiana</i> L. Hamamelidaceae. Witch hazel. Snappy hazel. Winter bloom.	V
<i>Hamella patens</i> Jacq. Rubiaceae. (H. erecta Jacq.) Firebush. Rat-poison plant.	G
<i>Harpephyllum caffrum</i> Bernh. Spondiaceae (Anacardiaceae). Kaffir plum.	ZM
<i>Hernandia sonora</i> L. Hernandiaceae.	P 2
<i>Hevea brasiliensis</i> Muell. Arg. Euphorbiaceae. Brazil, or South American rubber tree.	
Caoutchouc tree	ZA
<i>Hibiscus rosa-sinensis</i> L. Malvaceae. Shoe-black plant. Chinese rose. Hibiscus.	Q 3
H. syriacus L. Rose of Sharon. Shrubby Althea.	Q 3
<i>Hippomane mancinella</i> L. Euphorbiaceae. Manchineel. Manzanillo.	O
<i>Hura crepitans</i> L. Euphorbiaceae. Sandbox. Monkey dinnerbell.	N
<i>Hypelate trifoliata</i> Sw. Sapindaceae. White ironwood.	ZA
<i>Ilex ambigua</i> (Michx.) Torr. Aquifoliaceae. [I. caroliniana (Walt.) Trel.] Carolina holly.	W 6
I. cassine L. (I. dahoon Walt.) (I. caroliniana Mill.) Dahoon. Cassena. Yaupon.	U 4, W 6
I. cornuta Lindl. & Paxt. Chinese holly.	W 6
I. cumulicola Small. (I. arenicola Ashe). Sand dune holly. Pl. 3, f. 6.	W 6
I. curtissii (Fern.) Small. (I. decidua curtissii Fern.) Winterberry.	W 6
I. cuthbertii Small. Cuthbert's holly.	W 6
I. decidua Walt. (I. prinoides Ait.) Deciduous holly. Possum haw. Bearberry.	W 6
I. krugiana Loes. Krug's holly. Black-fruited, or black-berried Ilex.	W 3, W 6
I. longipes Chapm.	W 6
I. myrtifolia Walt. (I. dahoon myrtifolia Chapm.) Myrtle-leaved holly.	U 2, W 6
I. opaca Ait. American holly. White holly.	W 6
I. verticillata (L.) A. Gray. Black alder. Winterberry. Feverbush.	W 4, W 6
I. vomitoria Ait. (I. cassine Walt.) (I. caroliniana Loes.) Yaupon. Cassena.	
Emetic holly	W 3, W 6
<i>Jacaranda acutifolia</i> H. B. (Bignoniaceae). (J. mimosifolia D. Don.) Jacaranda.	Z

<i>Jacquinia keyensis</i> Mez. Theophrastaceae. Joe wood. Cudjoe wood. Sea myrtle.....	J
<i>Jambosa grandis</i> Blume. Myrtaceae. (<i>Eugenia grandis</i> Wight).....	H 3
<i>J. jambos</i> (L.) Millsp. (<i>Eugenia jambos</i> L.) (<i>J. vulgaris</i> DC.) Rose apple.....	H, H 2
<i>J. malaccensis</i> (L.) DC. (<i>Eugenia malaccensis</i> L.) Malay apple. Pomerack. Ohia.....	H 3
<i>Jatropha curcas</i> L. Euphorbiaceae. Mexican, purging, physic, or barbados nut.....	O 5
<i>Kalmia latifolia</i> L. Ericaceae. Calico Bush. Mountain laurel. Spoonwood.....	U 7
<i>Khaya nyassica</i> Stapf ex Baker. Meliaceae. Red mahogany.....	Z T
<i>K. senegalensis</i> Juss.	ZK, ZM, ZT
<i>Kigelia pinnata</i> DC. Bignoniaceae. Sausage tree. Fetish tree.....	ZG
<i>Kleinhovia hospita</i> L. Buettneriaceae (Sterculiaceae).....	P 2, P 3
<i>Koelreuteria formosana</i> Hayata. Sapindaceae. Pl. 8, f. 7.....	ZX, ZY
<i>Kopsia arborea</i> Blume. Apocynaceae.....	F
<i>Krugiodendron ferreum</i> (Vahl) Urban. Rhamnaceae. Black ironwood. Pl. 2, f. 3.....	G
<i>Lagerstroemia indica</i> L. Lythraceae. Crape myrtle. Ladies' streamer.....	J, L
<i>L. speciosa</i> (L.) Pers. (<i>L. flos-reginae</i> Retz.) Queen's crape myrtle.....	L
<i>Laguncularia racemosa</i> (L.) Gaertn. Terminaliaceae (Combretaceae). White mangrove.	
White buttonwood	J, K
<i>Laurocerasus caroliniana</i> (Mill.) Roem. Amygdalaceae. (<i>Prunus</i> l. L.) Cherry laurel.....	T 4, V
<i>L. myrtifolia</i> (L.) Brit. [<i>L. sphaerocarpa</i> (Sw.) Roem.] West Indian cherry.	
Myrtle-leaved cherry laurel.....	T 4, V
<i>Laurus nobilis</i> L. Lauraceae. Bay.....	S 5
<i>Leitneria floridana</i> Chapm. Leitneriaceae. Corkwood.....	U 3, U 4, U 7
<i>Leucaena glauca</i> (L.) Benth. Mimosaceae. Lead tree. White popinac.....	ZY
<i>Libidibia coriaria</i> (Jacq.) Schlecht. Cassi-. (Caesalpini-) [<i>Caesalpinia</i> c. (Jacq.) Willd.]	
Divi-divi	ZY
<i>Ligustrum lucidum</i> Ait. Oleaceae. Glossy privet.....	L
<i>Liquidambar formosana</i> Hance. Altingiaceae.....	Q 3
<i>L. styraciflua</i> L. Sweet, red, or star-leaved gum. Bilsted. Alligator tree.....	Q 3
<i>Liriodendron tulipifera</i> L. Magnoliaceae. Tulip tree.....	R, X
<i>Litchi chinensis</i> Sonn. Sapindaceae. [<i>L. litchi</i> (Lour.) Brit.] Lychee. Lecchee.....	ZM, ZS
<i>Lonchocarpus sericeus</i> (Poir.) H. B. K. Fabaceae. [<i>L. domingensis</i> (Pers.) DC.].....	ZK
<i>Lucuma nervosa</i> A. DC. Sapotaceae. Egg fruit. Canistel. Ti-es.....	O 8
<i>Lyonia ferruginea</i> (Walt.) Nutt. Ericaceae. [<i>Xolisma</i> f. (Walt.) Heller]. Titi. Xolisma.....	U 2
<i>Lysiloma bahamensis</i> Benth. Mimosaceae. [<i>L. latisiliqua</i> (L.) Benth.] Wild tamarind.....	ZY
<i>Macadamia ternifolia</i> Muell. Protaceae. Queensland nut.....	M
<i>Maclura pomifera</i> (Raf.) Schneid. Artocarp-. (Mor-) (<i>Toxylon p-um</i> Raf.) Osage orange.....	N
<i>Maga cubensis</i> Brit. & P. Wilson. Malvaceae. [<i>Montezuma</i> c. (Brit. & P. Wilson) Urban].....	P 3
<i>Magnolia ashei</i> Weatherby. Magnoliaceae. Ashe's magnolia.....	R 3
<i>M. grandiflora</i> L. [<i>M. foetida</i> (L.) Sarg.] Southern, or loblolly magnolia. Bull bay.....	R 3
<i>M. macrophylla</i> Michx. Large-leaved cucumber tree.....	R 3
<i>M. pyramidata</i> Pursh. Southern cucumber tree. Wood oread.....	R 3
<i>X M. soulangeana</i> Soul.....	R 3
<i>M. stellata</i> Maxim. Starry magnolia.....	R 3
<i>M. virginiana</i> L. (<i>M. glauca</i> L.) Sweet, white, or swamp bay. Beaver tree.....	R 3
<i>Malus angustifolia</i> (Ait.) Michx. Malaceae. (<i>Pyrus</i> a. Ait.) Southern crabapple.....	W 5
<i>M. bracteata</i> (Bailey) Rehd. Crabapple.....	W 5
<i>Mammea americana</i> L. Guttiferae (Hypericaceae). Mamey. Mammee apple.....	H
<i>Mangifera indica</i> L. Spondiaceae. Mango. Pl. 5, f. 2.....	O 8, U, U 4
<i>Maximiliana vitifolia</i> (Willd.) Krug & Urban. Bixaceae. (<i>Cochlospermum hibiscoides</i> Kunth.....	Q 3
<i>Maytenus boaria</i> Molin. Celastraceae. Mayten.....	W 3
<i>M. phyllanthoides</i> Benth.....	U 3
<i>Melaleuca leucadendra</i> L. Myrtaceae. Cajuput tree. Punk tree. Pl. 3, f. 4.....	P 2
<i>M. stypheloides</i> Smith.....	B, Q 2
<i>Melia azedarach</i> L. Meliaceae. Pride of India. China tree. China berry.....	ZX
<i>Melicocca bijuga</i> L. Sapindaceae. Spanish lime. Mamon. Mamoncillo. Genip.....	ZR
<i>Metopium toxiferum</i> (L.) Krug & Urban. Spondiaceae. Poisonwood. Doctor, or hog gum.....	ZL, ZM
<i>Michelia champaca</i> L.....	R 3
<i>Michelia fuscata</i> (Andr.) Hance. Magnoliaceae. (<i>Magnolia</i> f. Andr.) Banana shrub.....	R 3
<i>Micropteryx cristagalli</i> (L.) Walp. Fabaceae. (<i>Erythrina</i> c. L.) Cockspur coral tree.....	ZB
<i>M. poeppigiana</i> Walp. [<i>Erythrina</i> p. (Walp.) Cook]. Coral tree. Bucare.....	ZB
<i>Mimusops emarginata</i> (L.) Brit. Sapotaceae. Wild dilly. Wild sapodilla.....	O 8
<i>Misanteca triandra</i> (Sw.) Mez. Lauraceae.....	S 5
<i>Moringa oleifera</i> Lam. Moringaceae. [<i>M. moringa</i> (L.) Millsp.] Horseradish tree. Pl. 8, f. 5.....	ZX
<i>Morus nigra</i> L. Artocarpaceae (Moraceae). Black mulberry.....	O 4
<i>M. rubra</i> L. Red mulberry.....	O 4
<i>Mosiera bahamensis</i> (Kiaersk.) Small. Myrtaceae. (<i>Eugenia</i> b. Kiaersk.) Bahaman stopper.....	H 2
<i>Musa</i> spp. Musaceae. Banana.....	Gen. Key
<i>Myrciaria cauliflora</i> (Mart.) Berg. Myrtaceae. (<i>Eugenia</i> c. DC.).....	H 2

<i>Nectandra coriacea</i> (Sw.) Griseb. Lauraceae. [<i>Ocotea catesbyana</i> (Michx.) Sarg.]	
Lancewood. Florida laurel.....	S 5
<i>Negundo aceroides</i> L. Aceraceae. [<i>N. negundo</i> (L.) Karst.] (<i>Acer negundo</i> L.)	
Box elder. Ash-leaved maple.....	ZA, ZG
<i>Nerium oleander</i> L. Apocynaceae. Oleander.....	F
<i>Nyssa aquatica</i> L. Nyssaceae. Tupelo, cotton, or sour gum. Large tupelo.....	W 4
<i>N. biflora</i> Walt. (<i>N. sylvatica biflora</i> Sarg.) (<i>N. aquatica</i> Curtis). Water, or southern	
tupelo. Water, or swamp black gum.....	U 4
<i>N. ogeche</i> Marsh. Ogeche lime. Ogeechee plum. Tupelo gum. Sour tupelo.....	U 3, U 4
<i>N. sylvatica</i> Marsh. Black, sour, or yellow gum. Tupelo. Pepperidge.....	U 7
<i>N. ursina</i> Small. Bear gum.....	U 2, U 4
<i>Olea europaea</i> L. Oleaceae. Olive.....	I
<i>Onchoba spinosa</i> Forsk. Flacourtiaceae.....	N
<i>Osmanthus floridana</i> Chapm. Oleaceae.....	K
<i>O. fragrans</i> (Thunb.) Lour. (<i>Olea fragrans</i> Thunb.) Sweet, or tea olive. Sweet Osmanthus..	M
<i>Ostrya virginiana</i> (Mill.) K. Koch. Corylaceae (<i>Betulaceae</i>). Hop hornbeam. Ironwood.....	V
<i>Oxydendrum arboreum</i> (L.) DC. Ericaceae. Sourwood. Sorrel tree. Arrow-wood.....	W 4
<i>Pachira aquatica</i> Aubl. Bombacaceae. [<i>Bombax aquaticum</i> (Aubl.) K. Schum.]	
Gulana chestnut.....	ZD
<i>P. macrocarpa</i> (Cham. & Schlecht.) Walp. [<i>Bombax macrocarpum</i> (Cham. & Schlecht.)	
K. Schum.].....	ZD
<i>Padus cuthbertii</i> Small. Amygdalaceae. Cuthbert's cherry.....	W 5
<i>P. virginiana</i> (L.) Mill. [<i>P. serotina</i> (Ehrh.) Agardh.] Wild black cherry. Rum cherry..	W 5
Palmae. Palms.....	Gen. Key
<i>Pariti elatum</i> (Sw.) D. Don. Malvaceae. (<i>Hibiscus elatus</i> Sw.) Mt. mahoe. Cuban bast..	P 8, Q 3
<i>P. grande</i> Brit.	P 8, Q 3
<i>P. tiliaceum</i> (L.) A. Juss. in St. Hil. (<i>Hibiscus tiliaceus</i> L.) Mahoe.....	P 8, Q 3
<i>Parkinsonia aculeata</i> L. Cassiaceae (<i>Caesalpinaceae</i>). Horsebean. Jerusalem thorn.....	B, Z
<i>Parmentiera cereifera</i> Seem. Bignoniaceae. Candletree. Pl. 7, f. 1.....	ZA
<i>P. edulis</i> DC.	ZA
<i>Paulownia tomentosa</i> (Thunb.) Steud. Rhinanthaceae (<i>Scrophulariaceae</i>) Empress tree.....	E
<i>Peltophorum inerme</i> Naves in Blanco. Cassi-. (<i>Caesalpin-</i>) (<i>Baryxylum ferrugineum</i>	
F. M. Williams.)	ZY
<i>Persea americana</i> Mill. Lauraceae. [<i>P. persea</i> (L.) Cockerell]. Alligator pear. Avocado.....	S 5
<i>P. borbonia</i> (L.) Pax. [<i>Tamala b.</i> (L.) Raf.] Red, or sweet bay. Tisswood.	
Florida mahogany. Laurel tree.....	S 5
<i>P. humilis</i> Nash. [<i>Tamala h.</i> (Nash) Small] Silk, or scrub bay.....	S 5
<i>P. indica</i> (L.) Spreng. English bay.....	S 5
<i>P. littoralis</i> Small. (<i>Tamala l.</i> Small). Shore bay. Dune red bay.....	S 5
<i>P. pubescens</i> (Pursh.) Sarg. [<i>Tamala p.</i> (Pursh.) Small]. (<i>P. palustris</i> Sarg.)	
Swamp red bay	S 5
<i>Phyllanthus acidus</i> (L.) Skeels. Euphorbiaceae. (<i>Cicca disticha</i> L.)	
Otaheite, or star gooseberry.....	T
<i>P. emblica</i> L.	T
<i>Phyllocarpus septentrionalis</i> Donn. Smith. Cassiaceae (<i>Caesalpinaceae</i>) Monkey flower.....	ZP
<i>Pteramnia pentandra</i> Sw. Simaroubaceae. Bitter bush.....	ZK
<i>Pinckneya pubens</i> Michx. Rubiaceae. Fever tree. Georgia, or bitter bark.....	G
<i>Piscidia piscipula</i> L. Fabaceae. [<i>Ichthyomethia p.</i> (L.) A. S. Hitchc.]	
Jamaica dogwood. Fish-poison tree.....	ZK
<i>Pisonia rotundata</i> Griseb. Pisoniaceae.....	I, J
<i>Pistacia chinensis</i> Bunge. Spondiaceae (<i>Anacardiaceae</i>). Chinese pistache (<i>pistacio</i>).	ZT
<i>P. lentiscus</i> L.	ZL, ZR
<i>Pithecellobium brevifolium</i> Benth. Mimosaceae. Pl. 8, f. 1.	ZV, ZW
<i>P. dulce</i> (Roxb.) Benth. Madras thorn. Manila tamarind. Pl. 8, f. 3.....	ZV
<i>P. guadelupense</i> (Pers.) Chapm. (<i>P. keyense</i> Brit.) Black bead.....	ZV
<i>P. junghuhnianum</i> Benth.	ZV
<i>P. lanceolatum</i> (H. B.) Benth.	ZV
<i>P. unguis-cati</i> (L.) Benth. Cat's claw. Long pod. Black bean. Bread and cheeses.....	ZV
<i>Pittosporum undulatum</i> Vent. Pittosporaceae. Victorian box. Orange pittosporum.	
Mock orange	U 4, U 7
<i>P. viridiflorum</i> Sims.	U 4
<i>Planera aquatica</i> (Walt.) J. F. Gmel. Ulmaceae. Water elm. Planer tree.....	V 2
<i>Platanus occidentalis</i> L. Plantanaceae. Buttonwood. Sycamore. Buttonball.....	Q 4
<i>P. orientalis</i> L. Oriental plane tree. Sycamore.....	Q 4
<i>Ptelegyium solandri</i> Engl. Spondiaceae (<i>Anacardiaceae</i>). Burdekin plum.....	ZM

<i>Plumeria</i> (or <i>Plumiera</i>) <i>acuminata</i> Ait. Apocynaceae. (<i>P. acutifolia</i> Poir.)	
(<i>P. obtusifolia</i> Steud.) (<i>P. obtusa</i> Lour.) Frangipani. Temple, or pagoda tree.	O 7
<i>P. alba</i> L. White frangipani.	O 7
<i>P. emarginata</i> Griseb. Frangipani. Temple tree.	O 7
<i>P. obtusa</i> L. Frangipani. Temple tree.	O 7
<i>P. rubra</i> L. Red frangipani.	O 7
<i>P. sericifolia</i> Wright ex Griseb.	O 7
<i>Poinciana pulcherrima</i> L. Cassi. (Caesalpini.) Barbados flower. Dwarf Poinciana.	ZU, ZY
<i>Poncirus trifoliata</i> (L.) Raf. Rutaceae. (<i>Pseudaegle sepiaria</i> Miq.) Hardy, or trifoliolate orange.	ZA
<i>Pongamia pinnata</i> (L.) Pierre. Fabaceae. Pongam Nut. Poonga, or Kurum oil tree.	ZK
<i>Populus alba</i> L. Salicaceae. White poplar. Silver-leaved poplar.	Q 8
<i>P. balsamifera missouriensis</i> Rehd. (<i>P. deltoides</i> Marsh.) in part. Cottonwood.	Q 8
<i>P. heterophylla</i> L. Swamp, or black cottonwood. Downy poplar.	Q 8
<i>P. italica</i> Moench. (<i>P. nigra italica</i> Dur.) Lombardy poplar.	Q 8, W 3
<i>P. simonii</i> Carr.	Q 8
<i>Portlandia grandiflora</i> L. Rubiaceae.	G
<i>Posoqueria latifolia</i> (Rudge) Roem. & Schult. Rubiaceae.	G
<i>Prunus americana</i> Marsh. Amygdalaceae. Red, wild yellow, river, or thorn plum.	W 5
<i>P. angustifolia</i> Marsh. (<i>P. chicens</i> Michx.) Chickasaw, or sand plum. Mt. cherry.	W 5
<i>P. avium</i> L. (<i>Cerasus avium</i> Moench.) Sweet cherry. Mazzard.	W 5
<i>P. cerasus</i> L. (<i>Cerasus vulgaris</i> Mill.) Sour cherry. Morello cherry.	W 5
<i>P. umbellata</i> Ell. Sloe. Black sloe. Hog plum.	W 5
<i>Psidium guajava</i> Raddi. Myrtaceae. Guava.	H
<i>Psilorhagma suffruticosa</i> (Koenig) Brit. Cassi. (Caesalpini.) (<i>Cassia s.</i> Koenig).	ZQ
<i>Psychotria bahamensis</i> Millsp. Rubiaceae. Bahaman wild coffee.	G
<i>P. nervosa</i> Sw. (<i>P. undata</i> Jacq.) Wild coffee.	G
<i>Ptelea trifoliata</i> L. Rutaceae. Hop tree. Wafer ash.	ZA
<i>Pterocarya stenoptera</i> DC. Juglandaceae. Chinese wing-nut.	ZO, ZR
<i>Pterogyne nitens</i> Tul. Cassiaceae (Caesalpinaceae). Ibiraro. Palo amargo.	ZK, ZQ
<i>Pterospermum acerifolium</i> Willd. Buettneriaceae (Sterculiaceae).	Q 2
<i>Punica granatum</i> L. Punicaceae. Pomegranate.	J
<i>Pyrus communis</i> L. Malaceae. Pear.	W 5
<i>Quercus acutissima</i> Carruthers. Fagaceae. (<i>Q. serrata</i> Sieb. & Zucc.)	X 3 c
<i>Q. alba</i> L. White oak. Stave oak.	X 3 d
<i>Q. arkansana</i> Sarg. (<i>Q. caput-rivuli</i> Ashe). Arkansas oak.	X 3 a
<i>Q. austrina</i> Small. Pin oak. Bastard white oak.	X 3 d
<i>Q. chapmanii</i> Sarg. (<i>Q. stellata</i> parvifolia Chapm.) Chapman's oak. Scrub oak.	X 3 a
<i>Q. cinerea</i> Michx. Blue jack. Turkey, upland willow, or high-ground oak. Sand jack.	X 3 b
<i>Q. geminata</i> Small. (<i>Q. virens</i> maritima Chapm.) Twin live, or scrub live oak.	U 2, X 3 b
<i>Q. laevis</i> Walt. (<i>Q. catesbaei</i> Michx.) Turkey, scrub, or forked-leaf oak.	
Sand blackjack. Pl. 6, f. 1.	X 3 c
<i>Q. laurifolia</i> Michx. (<i>Q. phellos</i> laurifolia Chapm.) Laurel oak. Pl. 6, f. 4.	U 4, Z 3 b
<i>Q. lyrata</i> Walt. Overcup, swamp white, swamp post, or water white oak.	X 3 d
<i>Q. margareta</i> Ashe. [<i>Q. stellata</i> margareta (Ashe) Sarg.]	X 3 d
<i>Q. marilandica</i> Muench. (<i>Q. nigra</i> Wangh.) Black jack. Iron oak. Pl. 6, f. 3.	X 3 a
<i>Q. maxima</i> (Marsh.) Ashe. <i>Q. rubra</i> Du Roi. Red oak.	X 3 e
<i>Q. muhlenbergii</i> Engelm. [<i>Q. acuminata</i> (Michx.) Houba.] Yellow, or chinquapin oak.	X 3 c
<i>Q. myrtifolia</i> Willd. (<i>Q. phellos</i> arenaria Chapm.) Scrub, or myrtle oak.	U 2, X 3 b
<i>Q. nigra</i> L. (<i>Q. aquatica</i> Walt.) Water, pin, duck, spotted, or possum oak. Pl. 6, f. 5.	X 3 a
<i>Q. obtusa</i> Willd.) Pursh. [<i>Q. hybrida</i> (Michx.) Small].	X 3 b
<i>Q. pagoda</i> Raf. [<i>Q. pagodifolia</i> (Ell.) Ashe]. (<i>Q. falcata</i> p. Ell.) Spanish oak.	X 3 e
<i>Q. phellos</i> L. Willow oak.	X 3 b
<i>Q. prinus</i> L. (<i>Q. michauxii</i> Nutt.) Cow, basket, swamp chestnut, or swamp white oak.	X 3 c
<i>Q. rolfii</i> Small. Rolf's oak. Scrub oak.	X 3 a
<i>Q. rubra</i> L. (<i>Q. triloba</i> Michx.) (<i>Q. falcata</i> Michx.) Spanish, or red oak.	X 3 e
<i>Q. shumardii</i> Buckl. Leopard oak. Spanish oak.	X 3 e
<i>Q. stellata</i> Wangh. [<i>Q. minor</i> (Marsh.) Sarg.] Post, or iron oak. Pl. 6, f. 2.	X 3 d
<i>Q. suber</i> L. Cork oak.	W 3, X 3 c
<i>Q. velutina</i> Lam. (<i>Q. tinctoria</i> Bartr.) Black, or yellow-barked oak. Quercitron.	X 3 e
<i>Q. virginiana</i> Mill. (<i>Q. virens</i> Ait.) Live oak.	X 3 b
<i>Rapanea guayanensis</i> Aubl. Ardisiaceae (Myrsinaceae). (<i>Myrsine rapanea</i> Reg. & Schmalh.)	
<i>Myrsine</i>	S 6
<i>Ravenala madagascariensis</i> Sonn. Musaceae. Traveler's tree.	Gen. Key
<i>Reynosa septentrionalis</i> Urban. Frangulaceae (Rhamnaceae). (<i>R. latifolia</i> Griseb.)	J
<i>Rhamnus caroliniana</i> Walt. Frangulaceae (Rhamnaceae). Indian cherry. Yellowwood.	U 6, W 4
<i>Rhizophora mangle</i> L. Rhizophoraceae. Mangrove. Red mangrove.	K

<i>Rhus copallinum</i> L. Spondiaceae (Anacardiaceae). Dwarf, mountain. or shining sumac.....	ZL, ZM
<i>R. glabra</i> L. Smooth, scarlet, or red sumac.....	ZN
<i>R. leucantha</i> Jacq. Southern sumac.....	ZL
<i>Ricinus communis</i> L. Euphorbiaceae. Castor oil plant. Castor bean.....	Q
<i>Rufacer carolinianum</i> (Walt.) Small. Aceraceae. (Acer c. Walt.) Carolina, or southern red maple.....	E 2
<i>R. drummondii</i> (Hook. & Arn.) Small. (Acer d. Hook. & Arn.) (A. rubrum d. Sarg.) Red maple.....	E 2
<i>R. rubrum</i> (L.) Small. (Acer r. L.) Red, swamp, or scarlet maple.....	E 2
<i>Sabinea carinalis</i> Griseb. Fabaceae. Bois Charibe.....	ZP
<i>Saccharodendron floridanum</i> (Chapm.) Nieuwl. Aceraceae. [Acer f. (Chapm.) Pax.] Florida sugar, southern sugar, or hammock maple.....	E 2
<i>Salix babylonica</i> L. Salicaceae. Weeping, drooping, or Napoleon's willow.....	W 2
<i>S. longipes</i> Shuttlw. ex Anders. (S. floridana Chapm.) Willow.....	W 2
<i>S. nigra</i> Marsh. Black, or swamp willow.....	W 2
<i>Samanea saman</i> (Jacq.) Merr. Mimosaceae. Monkey pod. Rain tree. Saman.....	ZY
<i>Sambucus simpsonii</i> Rehd. Caprifoliaceae. Florida, gulf, or southern elder.....	Z, ZG
<i>Sapindus marginatus</i> Willd. Sapindaceae. (S. manatensis Radlk.) Soapberry. Wild china tree.....	ZM, ZR
<i>S. saponaria</i> L. Soapberry. Soap tree. False dogwood. Pl. 7, f. 6.....	ZM, ZR
<i>Sapium biglandulosum lanceolatum</i> Muell. Arg. Euphorbiaceae.....	W
<i>Sapota achras</i> Mill. Sapotaceae. (Achras sapota L.) Sapodilla. Dilly. Chicle tree.....	O 8
<i>Sassafras officinale</i> Nees & Eberm. Lauraceae. [S. sassafras (L.) Karst.] Sassafras. Ague tree.....	X
<i>Savia bahamensis</i> Brit. Euphorbiaceae. Maiden bush.....	U 2
<i>Schefflera frutescens</i> Jacq. Celastraceae. Florida boxwood. Yellow-wood. False box.....	U 2
<i>Schefflera actinophylla</i> (Endl.) Harms. Araliaceae. (Brassaia a. Endl.).....	ZD
<i>Schinus molle</i> L. Spondiaceae (Anacardiaceae). California pepper tree. Peruvian mastic tree.....	ZL, ZR
<i>S. terebinthifolius</i> Radd. Brazilian pepper tree.....	ZL, ZN
<i>Schizolobium parahybum</i> (Vell.) Blake. Cassiaceae (Caesalpiniaceae). (S. excelsum Vogel).....	Gen. Key, ZY
<i>Schoepfia chrysophylloides</i> (A. Rich.) Planch. Olacaceae. (S. schreberi Small). Whitewood.....	U 2
<i>Schotia brachypetala</i> Sond. Fabaceae.....	ZP
<i>S. latifolia</i> Jacq. Kaffir bean tree.....	ZP, ZR
<i>Sesbania grandiflora</i> (L.) Pers. Fabaceae. [Agati g. (L.) Desv.] Australian cork tree.....	ZP
<i>Sideroxylon foetidissimum</i> Jacq. Sapotaceae. (S. mastichodendron Jacq.) Mastic. Wild olive.....	O 8
<i>Simarouba glauca</i> DC. Simaroubaceae. Paradise tree. Bitterwood.....	ZM
<i>Solanum verbascifolium</i> L. Solanaceae. Potato tree.....	U 3
<i>Sophora japonica</i> L. Fabaceae. Japan pagoda tree. Chinese scholar tree.....	ZK
<i>Spathodea campanulata</i> Beauv. Bignoniaceae. African tulip tree. Fountain tree.....	ZG
<i>S. nilotica</i> Seem.	ZG
<i>Spondias cytherea</i> Sonn. Spondiaceae (Anacardi-) Ambarella. Otaheite apple.....	ZM, ZN
<i>S. lutea</i> L. (S. mombin Jacq.) [Poupartia axillaris (Roxb.) King & Prain]. Yellow mombin. Hog plum. Golden apple. Jamaica plum. Jobo. Caja.....	ZM, ZN
<i>S. purpurea</i> L. (S. mombin L.) Spanish, or hog plum. Red, or purple mombin.....	ZL, ZN
<i>Stenocarpus sinuatus</i> Endl. Proteaceae.....	X
<i>Sterculia carthaginensis</i> Cav. Buettneriaceae (Sterculi-) [S. apetala (Jacq.) Karst].....	P 4
<i>S. foetida</i> L.	ZD
<i>Strelitzia nicolai</i> Reg. & K. Koch. Musaceae. Bird of Paradise flower.....	Gen. Key
<i>Strychnos spinosa</i> Lam. Loganiaceae. Strychnine apple. Natal orange.....	E
<i>Suriana maritima</i> L. Surianaceae. Bay cedar. Thatch-leaf.....	U 2
<i>Svida alternifolia</i> (L.) Small. Nyssaceae (Corn-) (Cornus a. L.) Alternate-leaved dogwood. Blue dogwood. Pigeonberry.....	L 2, U 6
<i>S. stricta</i> (Lam.) Small. (Cornus stricta Lam.) Cornel.....	L 2
<i>Swietenia cirrhata</i> Blake. Meliaceae.....	ZS
<i>S. humilis</i> Zucc.	ZS
<i>S. macrophylla</i> G. King.....	ZS
<i>S. mahagoni</i> Jacq. Mahogany. Madeira redwood. Pl. 7, f. 4.....	ZS
<i>Symplocos tinctoria</i> (L. f.) L'Her. Symplococaceae. Sweetleaf. Horse sugar. Yellow-wood.....	U 7, W 4
<i>Syzygium cumini</i> (L.) Skeels. Myrtaceae. (Eugenia jambolana Lam.) Jambolan. Java plum.....	H 2, H 3
<i>S. paniculatum</i> Banks. (Eugenia paniculata Banks). (E. hookeriana Hort.) Bush cherry.....	H 3
<i>S. smithii</i> (Spreng.) Niedenzu. (Eugenia s. Spreng.).....	H 3
<i>Tabebuia argentea</i> (Bur. & K. Schum.) Brit. Bignoniaceae. (Tecoma a. Bur. & K. Schum.).....	ZC
<i>T. guayacan</i> (Seem.) Hemsl.	ZC
<i>T. pentaphylla</i> (L.) Hemsl. (T. pallida Miers.) White cedar.....	ZC

<i>Talisia pedicellaris</i> Radlk. Sapindaceae.....	ZR
<i>Tamarindus indica</i> L. Cassiaceae (Caesalpiniaceae). Tamarind.....	ZP
<i>Tamarix gallica</i> L. Tamaricaceae. French tamarisk.....	B
<i>Tara spinosa</i> (Mol.) Brit. & Rose. Mimosaceae. [Caesalpinia s. (Mol.) Kuntze.].....	ZU
<i>Tauroceras cornigerum</i> (L.) Brit. & Rose. Mimosaceae. [Vachellia c-a. (L.) Small]. Bullhorn acacia	W
<i>Tecoma stans</i> Juss. Bignoniaceae. (Stenolobium s. Seem.) Yellow elder. Yellow trumpet flower	ZG
<i>Terminalia angustifolia</i> Jacq. Terminaliaceae (Combretaceae). (T. benzoe Pers.).....	U 4, U 5
<i>T. arjuna</i> Bedd. Pl. 3, f. 3.....	I, K, L, M, U 5
<i>T. catappa</i> L. Tropical almond. West Indian almond. Pl. 5, f. 3.....	U, U 5
<i>T. muelleri</i> Benth.	U 5
<i>T. saffordii</i> Merr.	U 5
<i>Tetrapanax papyriferum</i> (Hook.) Koch. Araliaceae. (Fatsia p-a. Benth. & Hook. f.) Rice-paper plant	Gen Key, Q
<i>Tetrazygia bicolor</i> (Mill.) Cogn. Melastomaceae. Rib-leaf. Tetrazygia. Pl. 2, f. 2.....	E
<i>Thespesia populnea</i> (L.) Soland. Malvaceae. Seaside mahoe.....	P 3
<i>Tilia caroliniana</i> Mill. Tiliaceae. (T. pubescens Ait.) Rusty linden.....	Q 5
<i>T. eburnea</i> Ashe. Linden.....	Q 5
<i>T. floridana</i> Small. (T. crenoserrata Sarg.) (T. alabamensis oblongifolia Sarg.) Florida linden	Q 5
<i>T. georgiana</i> Sarg. Georgia linden.....	Q 5
<i>T. heterophylla</i> Vent. (T. tenera Ashe). Wahoo. White basswood. Silver-leaf linden.....	Q 5
<i>T. lasioclada</i> Sarg. Linden.....	Q 5
<i>T. porracea</i> Ashe. Linden.....	Q 5
<i>Toddalia lanceolata</i> Lam. Rutaceae. (Vepris lanceolata A. Juss.).....	ZA
<i>Torrubia bracteata</i> Brit. Pisoniaceae (Nyctaginaceae). Blolly.....	J 2
<i>T. globosa</i> Small. Blolly.....	J 2
<i>T. longifolia</i> (Heimerl.) Brit. Blolly.....	J 2
<i>Toxicodendron vernix</i> (L.) Kuntze. Spondi-. (Anacardi-) (Rhus v. L.) Poison, or swamp sumac. Thunderwood	ZM
<i>Trema floridana</i> Brit. Ulmaceae. Florida Trema.....	Q 6
<i>T. lamarkiana</i> (Reg. & Schmalh.) Blume. West Indian Trema. Pl. 5, f. 5.....	Q 6
<i>T. orientalis</i> (L.) Blume. Oriental Trema.....	Q 6
<i>Triadica sebifera</i> (L.) Small. Euphorbiaceae. (Sapium s-um Roxb.) Chinese tallow tree.....	O
<i>Triplaris americana</i> L. Polygonaceae.....	R
<i>Ulmus alata</i> Michx. Ulmaceae. Wahoo. Winged elm. Cork elm.....	V 2
<i>U. americana</i> L. (U. alba Raf.) American, common, white, or rock elm.....	V 2
<i>U. floridana</i> Chapm. Florida elm.....	V 2
<i>U. fulva</i> Michx. Slippery, sweet, red, rock, or Indian elm.....	V 2
<i>U. parviflora</i> Jacq. Chinese elm.....	V 2
<i>U. pumila</i> L. Dwarf elm.....	V 2
<i>Vachellia farnesiana</i> (L.) Wight & Arn. Mimosaceae. [Acacia f. (L.) Willd.] Yellow opopanax. Poponack. Sweet acacia. Sponge tree. Huisache.....	ZW
<i>Vangueria infausta</i> Burch. Rutaceae. (V. tomentosa K. Schum.).....	G
<i>Viburnum nashii</i> Small. Caprifoliaceae. Nash's Viburnum.....	M 2
<i>V. obovatum</i> Walt. Small Viburnum.....	I, M 2
<i>V. rufidulum</i> Raf. [V. ferrugineum (Torr. & Gray) Small] Southern black haw.....	M 2
<i>Vitex agnus-castus</i> L. Verbenaceae. Chaste tree. Hemp tree. Monk's pepper tree. Pl. 7, f. 2.....	ZC
<i>V. quinata</i> (Lour.) F. N. Williams.....	ZC
<i>Wallenia laurifolia</i> (Jacq.) Sw. Ardisiaceae (Myrsinaceae).....	S 6
<i>Wallia nigra</i> (L.) Alef. Juglandaceae. (Juglans n. L.) Black walnut.....	ZO, ZT
<i>Xanthoxylum clava-herculis</i> L. Rutaceae. Toothache tree. Prickly ash. Hercules' club.....	ZF
<i>X. coriaceum</i> Rich. Hercules' club.....	ZF, ZR
<i>X. fagara</i> L. Sarg. Wild lime.....	ZF
<i>X. flavum</i> Vahl. (X. caribaeum Lam.) Yellow-wood. Satinwood.....	ZF, ZJ, ZN
<i>Ximenia americana</i> L. Olacaceae. Tallow-wood. Hog, mountain, or seaside plum.....	N
<i>Yucca aloifolia</i> L. Dracaenaceae. Spanish dagger. Spanish bayonet.....	A
<i>Y. gloriosa</i> L. Spanish bayonet. Spanish dagger.....	A
<i>Zelkova serrata</i> Makino. Ulmaceae. (Z. acuminata Planch.).....	V 2
<i>Zizyphus jujuba</i> Mill. Frangulaceae (Rhamnaceae). (Rhamnus zizyphus L.) [Z. zizyphus (L.) Karst.] (Z. sativa Gaertn.) (Z. vulgaris Lam.) Common jujube...N 3	
<i>Z. mauritiana</i> Lam. [Z. jujuba (L.) Lam.] (Rhamnus jujuba L.) Indian jujube. Chinese date. Malay jujube.....	N 3
<i>Z. mistol</i> Griseb.....	N 3

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