The A. H. Hill Library

North Carolina State College

QK484

FG55

NORTH CAROLINA STATE UNIVERSITY LIBRARIES

S00564112 J

QK484

F6S5

Str

48012

This BOOK may be kept out TWO WEEKS ONLY, and is subject to a fine of FIVE CENTS a day thereafter. It is due on the day indicated below:

48012

DATE	
29 Oct '37	
9 Dec '38	
10 Dec '38	
23 Oct '39	
017 30	Bu
11 No 40P	
26 No '41C	
11 De '42E	
6 Dec '51 X	
23 Jan 52 A	
9 May 52 S	
JUN 6 1952	
Library Bureau	Cat.

29 Oct '37

9 Dec '38

23 Oct '39

11 No '41

26 No '41C

11 De '42E

6 Dec '51 X

23 Jan 52 A

9 May 52 S

JUN 2 6 1953

JUN 17 1964

DEC 1 1966

SEP 25 1970

APR 2 1975

APR 1 9 1991

FLORIDA TREES

A HANDBOOK OF THE
NATIVE AND NATURALIZED
TREES OF FLORIDA

BY

JOHN KUNKEL SMALL, PH.D., Sc.D.

HEAD CURATOR OF THE MUSEUMS AND HERBARIUM OF THE NEW YORK BOTANICAL GARDEN

NEW YORK
PUBLISHED BY THE AUTHOR
1913

Copyright, 1913
By JOHN KUNKEL SMALL

THE PRESS OF
THE NEW ERA PRINTING COMPANY
LANCASTER, PA.

PREFACE.

This handbook contains descriptions of all the trees known to the author to grow naturally in Florida.

The peculiar geographic position of Florida and the diversity of its surface, although apparently slight, results in a larger tree-flora than any other area of similar size in North America, at least north of the Tropic of Cancer; in fact, nearly one half of the trees known to occur naturally in North America north of Mexico and the West Indies, grow naturally in the relatively small area of the State of Florida.

The state consists primarily of two major divisions, the first a northern portion, a comparatively narrow strip of territory extending east and west for a distance of nearly four hundred miles. Here trees characteristic of temperate regions predominate. The second division consists of a large peninsula and accompanying islands, and the Florida Keys, extending southward into the eastern part of the Gulf of Mexico, for a distance of over four hundred miles, reaching almost to the Tropic of Cancer. In this portion of the state, trees of temperate regions gradually give place to those characteristic of subtropical regions; and these, in turn, on the Everglade Keys at the southern end of the peninsula, and on the Florida Keys, are replaced by trees of a strictly tropical character. However, this extraordinary arboreous flora is surprising when we take into account the simple topography and the slight diversity of climate in which it apparently was developed and in which it now thrives.

The major divisions already referred to may be subdivided into a score of geographic regions, but on the following pages in connection with the distribution of the species, the northern portion of the state, the first mentioned major division, is subdivided into eastern, middle, and western. The peninsula, with its accompanying islands, is subdivided into a northern portion and a southern portion. Two prominent minor divisions of the southern portion are frequently mentioned, namely, the Everglades, and the Everglade Keys, which are situated in the southern end of the Everglades. The Florida Keys, which support a number of trees not known elsewhere in the state, lie for the most part, south of the mainland of peninsular Florida. At the end of each paragraph devoted to the geographic distribution, the extralimital distribution of a species is indicated, thus "*Ga.*" and "*Ala.*" indicate that outside of the state of Florida the plant is found only in Georgia or Alabama; and "*Cont.*" means that the

plant has a wider distribution and occurs in other parts of the North American mainland, while "*W. I.*" is used to indicate that a plant occurs in the West Indies.

The collections upon which the following study is based are at the New York Botanical Garden, and it is through the exploration carried on in tropical Florida under the auspices of that institution that the record of tropical trees in Florida is now much more complete than heretofore.

J. K. SMALL.

THE NEW YORK BOTANICAL GARDEN,
April 30, 1913.

CONTENTS.

Key to the Orders	vii-ix
Descriptive Flora	1-102
List of Species published in this Flora	102
Index	103

KEY TO THE ORDERS.

- Ovules, and seeds, borne on the face of a bract or a scale: stigmas wanting. Class 1. GYMNOSPERMAE.
 Ovules, and seeds, in a closed cavity (ovary): stigmas present. Class 2. ANGIOSPERMAE.

1. Gymnospermae.

Plants growing by lateral as well as by terminal buds, with scale-like, flat or needle-like leaves not circinate: embryo not prolonged into a spiral. Order PINALES.

2. Angiospermae.

Cotyledon 1: stem endogenous. Subclass 1. MONOCOTYLEDONES.
 Cotyledons normally 2: stem exogenous (with rare exceptions). Subclass 2. DICOTYLEDONES.

1. MONOCOTYLEDONES.

Leaf-blades pinnately or palmately lobed, or compound: ovules solitary in each carpel-cavity. Order ARECALES.
 Leaf-blades narrow, entire or essentially so, simple: ovules many in each carpel-cavity. Order LILIALES.

2. DICOTYLEDONES.

- A. Corolla wanting, except in the pistillate flowers of *Juglans* (Juglandaceae).
 Calyx wanting, at least in the staminate flowers, except sometimes in *Casuarina* (Casuarinaceae).
 Leaves represented by appressed whorled scales: stems or branches loosely jointed. Order CASUARINALES.
 Leaves not appressed scales: stems or branches not loosely jointed.
 Fruit 1-seeded: seeds without tufts of hairs.
 Pistillate flowers without a calyx: ovule erect and orthotropous. Order MYRICALES.
 Pistillate flowers with a calyx: ovule pendulous and anatropous.
 Leaf-blades simple. Oleaceae in Order OLEALES.
 Leaf-blades compound: fruit a samara. Oleaceae in Order OLEALES.
 Fruit many-seeded: seeds each with a tuft of hairs. Order SALICALES.
 Calyx present at least in the staminate or in the perfect flowers.
 Leaves represented by appressed whorled scales: branches loosely jointed. Order CASUARINALES.
 Leaves not appressed scales: branches not loosely jointed.
 Flowers, at least the staminate, in aments, or ament-like spikes.
 Pistillate flowers separate at maturity: fruit a nut or an achene. Order FAGALES.
 Pistillate flowers forming an aggregate fruit: fruits drupe-like. Artocarpaceae in Order URTICALES.
 Flowers at least the staminate, not in aments.
 a. Ovary superior.
 Gynoeclum of 1 or several and distinct carpels: stigma and style solitary.
 Carpel solitary.
 Stamens borne under the gynoeclum. Pisoniaceae in Order CHENOPODIALES.
 Stamens borne on the hypanthium or adnate to the calyx-tube. Order THYMELEALES.
 Carpels several. Families in Order RANALES.
 Gynoeclum of 2 or several united carpels: stigmas or styles 2 or several.
 * Ovary, by abortion, 1-celled and 1-ovuled.
 Leaves with sheathing stipules (ocreae). Order POLYGONALES.
 Leaves estipulate, or if stipules are present they are not sheathing.
 Trees.
 Anthers opening by slits: ovary not seated in a hypanthium. Ulmaceae in Order URTICALES.
 Anthers opening by hinged valves: ovary seated in an accrescent hypanthium. Lauraceae in Order THYMELEALES.
 Vines. Order CHENOPODIALES.

KEY TO THE ORDERS

- ** Ovary several-celled, or with several placentae, several-ovuled.
 - Stamens hypogynous, inserted under the gynoecium in the perfect flowers, not on a disk in the pistillate flowers.
 - Gynoecium 5-carpellary, the carpels nearly distinct.
 - Buettneriaceae in Order MALVALES.
 - Gynoecium 2-4-carpellary, the carpels united.
 - Oleaceae in Order OLEALES.
- Stamens perigynous or epigynous, inserted on the margin of a hypanthium or a disk.
 - Fruit a samara. Families in Order SAPINDALES.
 - Fruit not a samara. Order RHAMNALES.
- b. Ovary inferior.
 - Fruit a berry or a drupe, or nut-like.
 - Calyx deciduous as a lid: stamens numerous.
 - Calyptranthes* in Order MYRTALES.
 - Calyx of valvate or imbricate sepals: stamens few.
 - Ovules mostly on basal placentae, sometimes pendulous: cotyledons not convolute: tree or root-parasites.
 - Order SANTALALES.
 - Ovules not on basal placentae: cotyledons convolute: not parasitic plants. Families in Order MYRTALES.
 - Fruit a capsule. Order MYRTALES.
- B. Corolla present.
 - * Petals distinct, at least at the base.
 - Carpels solitary, or several and distinct, or united only at the base.
 - Stamens at the base of the receptacle, *i. e.*, hypogynous. Order RANALES.
 - Stamens on the margin of a hypanthium.
 - Plants without secreting glands in the bark. Order ROSALES.
 - Plants with secreting glands in the bark.
 - Surianaceae in Order GERANIALES.
 - Carpels several and united.
 - † Ovary superior.
 - ‡ Stamens inserted at the base of the ovary or receptacle.
 - § Stamens numerous.
 - Sepals imbricated.
 - Calyx deciduous. Order PAPAVERALES.
 - Calyx persistent.
 - Leaves glandular or pellucid-punctate.
 - Rutaceae in Order GERANIALES.
 - Leaves not glandular.
 - Capparidaceae in Order PAPAVERALES.
 - Sepals valvate.
 - Stamens with distinct filaments.
 - Ovary 1-celled: placentae parietal.
 - Capparidaceae in Order PAPAVERALES.
 - Ovary 2-several-celled: placentae axile or central.
 - Families in Order MALVALES.
 - Stamens with united filaments.
 - Order MALVALES.
 - §§ Stamens few, not over twice as many as the petals.
 - Stamens as many as in the petals and opposite them.
 - Flowers monoecious. Euphorbiaceae in Order EUPHORBIALES.
 - Flowers perfect.
 - Stamens as many as the petals and alternate with them, or more, sometimes twice as many.
 - Stamens 6: petals 4: sepals 2 or 4.
 - Families in Order PAPAVERALES.
 - Stamens, petals and sepals of the same number, or stamens more, usually twice as many as the sepals or petals.
 - Ovary 1-celled.
 - Stigmas 2-cleft.
 - Anther with an inconspicuous connective.
 - Anther with the conspicuous connective produced beyond the sacs.
 - Papayaceae in Order PASSIFLORALES.
 - Stigmas entire.
 - Stamens with united filaments and no staminodia.
 - Families in Order MALVALES.
 - Stamens with distinct filaments.
 - Families in Order HYPERICALES.
 - Ovary several-celled.
 - Stamens with wholly or partly united filaments.
 - Families in Order GERANIALES.
 - Stamens with distinct filaments.
 - Anthers opening by pores.
 - Families in Order ERICALES.
 - Anthers opening by slits.

- Stigmas or styles distinct and cleft, or foliaceous, or united by pairs.
 Order EUPHORBIALES.
- Stigmas or styles all distinct or all united, neither cleft nor foliaceous.
 Stamens 2. Oleaceae in Order OLEALES.
 Stamens more than 2.
 Leaves with compound blades.
 Families in Order GERANIALES.
 Leaves with simple blades.
 Ovule solitary in each carpel.
 Families in Order GERANIALES.
 Ovules 2 or more in each carpel.
 Tiliaceae in Order MALVALES.
- ‡‡ Stamens inserted on the margin of a disk or hypanthium (perigynous or hypogynous).
 Stamens as many as the petals and opposite them.
 Ovules and seeds numerous.
 Moringaceae in Order PAPAVERALES.
 Ovules and seeds solitary or 2. Order RHAMNALES.
- Stamens as many as the petals and alternate with them, or more or many.
 Styles distinct. Order SAPINDALES.
 Styles united.
 Hypanthium flat or obsolete: disk fleshy.
 Plants without secreting glands in the bark.
 Order SAPINDALES.
 Plants with secreting glands in the bark.
 Families in Order GERANIALES.
- Hypanthium cup-shaped or campanulate: disk obsolete or inconspicuous.
 Order MYRTALES.
- †† Ovary inferior.
 Stamens numerous.
 Styles distinct. Families in Order ROSALES.
 Styles united. Families in Order MYRTALES.
- Stamens not more than twice as many as the petals.
 Styles distinct.
 Ovules several in each cavity of the ovary: fruit a capsule or a fleshy many-seeded berry. Families in Order ROSALES.
 Ovules solitary in each cavity of the ovary: fruit a drupe or 2-5 more or less united achenes. Order AMMIALES.
- Styles united, or single.
 Ovules solitary in each cavity of the ovary. Order AMMIALES.
 Ovules several in each cavity. Families in Order MYRTALES.
- ** Petals more or less united.
 Ovary superior.
 Stamens free from the corolla.
 Gynoecium of a single carpel. Families in Order ROSALES.
 Gynoecium of several united carpels.
 Filaments united. Families in Order ERICALES.
 Filaments distinct.
 Styles wanting or very short: stigma sessile.
 Aquifoliaceae in Order SAPINDALES.
 Styles elongate. Family in Order ERICALES.
- Stamens partially adnate to the corolla.
 Stamens as many as the lobes of the corolla and opposite them, or twice as many or more.
 Ovary 1-celled. Order PRIMULALES.
 Ovary several-celled. Order EBENALES.
- Stamens as many as the lobes of the corolla and alternate with them, or fewer.
 Corolla not scarious, veiny: fruit various, but not a pyxis.
 Gynoecium of 3-6 carpels. Aquifoliaceae in Order SAPINDALES.
 Gynoecium of 2 carpels.
 Carpels distinct, except sometimes at the apex.
 Order ASCLEPIADALES.
- Carpels united.
 Stamens 2 and opposite each other, or 3. Order OLEALES.
 Stamens usually 4 or 5, if 2 by reduction not opposite each other. Order POLEMONIALES.
- Corolla scarious, veinless: fruit a pyxis.
- Ovary inferior.
 Ovary with 2-many fertile cavities and 2-many ovules: calyx unmodified, at least not a pappus.
 Ovules mostly on basal placentae: plants parasitic.
 Order SANTALALES.
- Ovules variously borne, but not on a basal placenta: plants not parasitic.
 Order RUBIALES.
- Ovary with one fertile cavity.
 Order CARDUALES.

TREES OF FLORIDA.

Subkingdom **SPERMATOPHYTA**. SEED PLANTS.

Plants producing flowers and seeds. A seed contains an embryo consisting of a short stem (radicle or caulicle), one, two or several rudimentary leaves (cotyledons), and a terminal bud (plumule).

Ovules, and seeds, borne on the face of a scale : stigma wanting. I. **GYMNOSPERMAE**.
Ovules, and seeds, borne in a closed cavity (ovary) : stigma present. II. **ANGIOSPERMAE**.

CLASS I. **GYMNOSPERMAE**. CONE PLANTS.

Carpel, or pistil, represented by a scale upon the face of which the ovules are borne and the naked seeds are matured.

Order **PINALES**.

Shrubs or trees. Leaves scale-like or narrow, or needle-like and often borne in bundles. Flowers mainly monoecious, the cones of spirally imbricate bracts, or in **TAXACEAE** the ovulate flowers often solitary. Seeds borne in cones of dry or fleshy scales, enclosed, or wholly or partially naked.

Ovulate flowers several, with carpellary scales, these sometimes bracted : cone either dry or fleshy.

Carpellary scales with bracts, not peltate : ovules inverted : buds scaly : wing accompanying the seed a portion of the carpellary scale. Fam. 1. **PINACEAE**.

Carpellary scales with bracts, mostly peltate, or fleshy :
ovules erect : buds naked : wing of the seed, when present, a portion of the testa.

Fam. 2. **JUNIPERACEAE**.

Ovulate flowers solitary or 2, without carpellary scales :
cone drupaceous or baccate.

Fam. 3. **TAXACEAE**.

FAMILY 1. **PINACEAE**. PINE FAMILY.

Mostly evergreen resin-yielding shrubs or trees, typically conic, with flaky or brittle bark, the buds scaly. Leaves narrow and solitary or needle-like and usually several together, each group with a sheath at the base. Ovulate aments with bracted scales. Ovules inverted. Cone of dry scales. Seeds usually 2 on each scale, often samara-like.

1. **PINUS** [Tourn.] L. Trees or rarely shrubs. Leaves needle-like, in 2's or 3's and each with 2 fibro-vascular bundles. Staminate aments elongate, at the ends of branches of the preceding year. Ovulate aments globular or slightly elongate. Cones spreading : scales at length woody and spreading, each with a dorsal usually spine-armed appendage. Seed samara-like. — Winter or spr. — **PINE**.

Resin-ducts of the leaf contiguous to the fibro-vascular bundle.

Cones elongate, of a conic type and over twice as long as thick when closed, slightly umbonate, the scale-appendages flat or slightly elevated, with decidedly recurved or hooked spines.

Cone-scales thin-edged, the appendages flattish, the spines hooked.

1. *P. palustris*.

Cone-scales thick-edged, the appendages turgid, the spines slightly recurved.

2. *P. caribaea*.

Cones short, of an ovoid type and less than twice as long as thick when closed, prominently umbonate, the scale-appendages elevated, often pyramidal, with nearly straight or decurved spines.

3. *P. Elliottii*.

Resin-ducts of the leaf remote from the fibro-vascular bundle.

Cones over 9 cm. long, of an elongate type when open; scales with stout spines.

4. *P. Taeda*.

Cones less than 9 cm. long, of a short type when open; scales with slender minute or obsolete spines.

Cones ovoid or globular-ovoid when closed: leaves 15-25 cm. long, about 2 mm. wide.

5. *P. serotina*.

Cones narrowly conic when closed: leaves 4-12 cm. long, about 1 mm. wide.

Cone-scales readily opening, each with a slender or minute spine towards the front of the appendage, the spine sometimes deciduous or obsolete.

Cones mainly less than 5 cm. long: scales of the staminate aments erose-toothed at the apex; bark of the trunk relatively close and smooth.

6. *P. glabra*.

Cones mainly over 5 cm. long: scales of the staminate aments entire: bark of the trunk very rough and shaggy.

7. *P. echinata*.

Cone-scales tardily opening or permanently closed, each with a firm spine at the middle or towards the back of the appendage.

8. *P. clausa*.

1. ***P. palustris* Mill.** Tree becoming 40 m. tall, irregularly branched above, the bark in large plates: leaves typically in 3's, 20-40 cm. long, bright-green, borne in terminal plumes: staminate aments 5.5-8 cm. long: cones 16-25 cm. long, narrowly conic when closed, broadly conic when open, each scale-appendage with a recurved spine: seeds 12-13 mm. long, the wing 4.5-5 cm. long

The LONG-LEAF PINE forms open forests in sandy soil, usually in dry places, in Florida, except the lower part of the peninsula. The light-red or orange heart-wood is coarse-grained, heavy, hard, strong, and durable. Also known as Yellow-pine. Southern-pine. Georgia-pine. Pitch-pine. (Cont.)

2. ***P. caribaea* Morelet.** A tree usually smaller than *P. palustris*: leaves in 2's or 3's, 18-30 cm. long or shorter, bright-green: staminate aments 2.5-4 cm. long: half mature ovulate aments ascending: cones 8-15 cm. long, cylindric-conic when closed, cylindric or ovoid-cylindric when open: each scale-appendage turgid: seeds 4-7 mm. long, the wing 2-2.5 cm. long, or smaller.

The SLASH-PINE grows in dry sand close to most of the coast line of Florida, and on rock on the Everglade Keys, the lower Florida Keys and a few of the upper keys. The orange-colored heart-wood is coarse-grained, heavy, hard, and often quite durable. Also known as Swamp-pine.

3. ***P. Elliottii* Engelm.** A tree becoming 30 m. tall: leaves in 2's or 3's, deep-green: staminate aments 3.5-5 cm. long: half mature ovulate aments recurved: cones 8-12 cm. long, narrowly ovoid when closed, broadly ovoid when open, each scale-appendage very prominent: seeds 6-8 mm. long, the wing 2-3 cm. long.

The SWAMP-PINE grows in shallow ponds and swamps, and in low grounds which are dry part of the year, in northern Florida and in the peninsula as far south as the Everglade region. The yellowish-brown heart-wood is close-grained, heavy, hard, and tough. Also known as Blue-pine. (Cont.)

4. ***P. Taeda* L.** Tree becoming 46 m. tall, the dark bark deeply furrowed, very rough, exfoliating in coarse plates: leaves in 3's, glaucous, 15-28 cm. long: cones 10-13 cm. long, narrowly conic when closed, cylindric or conic-cylindric when open, the scale-appendages thick, projecting little, if at all, beyond the small spine: seeds 6-7 mm. long, the wing about 2 cm. long.

The OLD-FIELD PINE grows in usually dry sandy soil in Florida, except in the southern half of the peninsula. The brown heart-wood is coarse-grained, brittle, and not durable. Also known as Loblolly-pine. (Cont.)

5. ***P. serotina* Michx.** Tree becoming 25 m. tall, with many short irregular branches near the base, the bark flaky: leaves in 3's, glaucous, 15-25 cm. long,

crowded; sheaths about 15 mm. long; staminate aments 1.5-2 cm. long; cones 4-6 cm. long, ovoid or globular-ovoid when closed, very broad when open, each scale with a thick appendage and a minute spine: seeds 3-4 mm. long, the wing nearly 2 cm. long.

The POND-PINE grows in swamps and shallow ponds in eastern Florida. The orange-colored heart-wood is coarse-grained, soft, heavy, and brittle. Also known as Black-pine or Marsh-pine. (Cont.)

6. *P. glabra* Walt. Tree becoming 40 m. tall, the trunk with a relatively smooth bark and often with spreading branches near the base: leaves in 2's, glaucous, 4-8 cm. long, very slender; sheaths 5-8 mm. long; staminate aments about 1 cm. long; cones 3.5-5 cm. long, conic when closed, ovoid when open, each appendage with a minute or almost obsolete spine: seeds about 4 mm. long, the wing usually 1.5 cm. long.

The SPRUCE-PINE grows in rich soil in river-swamps or hammocks in northern Florida and the upper part of the peninsula. The pale-brown heart-wood is close-grained, light, soft, and brittle. Sometimes known as Cedar-pine or White-pine. (Cont.)

7. *P. echinata* Mill. Tree becoming 40 m. tall, the bark very rough and coarsely furrowed: leaves in 2's or rarely in 3's, deep-green, 8-12 cm. long, slender; sheaths 10-15 mm. long; cones 5-6.5 cm. long, conic when closed, ovoid when open, each scale-appendage armed with a slender spine: seeds 4-5 mm. long, the wing 1.5-2 cm. long.

The SHORT-LEAF PINE grows in sandy soil in northern Florida. The yellowish or orange-colored heart-wood is coarse-grained, hard, heavy, and rather strong. Also known as Yellow-pine. (Cont.)

8. *P. clausa* (Engelm.) Vasey. Tree becoming 24 m. tall, the bark relatively smooth: leaves in 2's, deep-green, 4-8 cm. long, very slender; sheaths 5-7 mm. long; cones 4.5-6 cm. long, conic when closed, ovoid when open, each scale-appendage with a stout spine at the middle or behind it: seeds 4 mm. long, the wing about 1.5 cm. long.

The SAND-PINE grows in sand locally throughout Florida, except the extreme southern part. The yellow or orange heart-wood is rather close-grained, soft, light, and weak. Also known as Spruce-pine. Grows naturally outside of Florida only in adjacent Alabama.

FAMILY 2. JUNIPERACEAE. JUNIPER FAMILY.

Mostly evergreen often slightly resiniferous shrubs or trees, with fibrous, shreddy bark, the buds naked. Leaves mainly appressed scales or sometimes subulate and spreading. Ovulate aments with bractless scales. Ovules erect. Cone of dry often peltate, scales, or baccate or drupaceous. Seed wingless, or winged, the wing a portion of the testa.

Plants monoecious: cones dry: scales merely imbricate.

Staminate aments in drooping spikes or racemes, the scales spiral: seeds angled: leaves deciduous.

1. TAXODIUM.

Staminate aments terminating short erect twigs, the scales decussately opposite: seeds winged: leaves persistent.

2. CHAMAECYPARIS.

Plants mostly dioecious: cones berry-like or drupe-like: scales fleshy, coalescent.

3. SABINA.

1. *TAXODIUM* L. C. Rich. Deciduous-leaved trees, the roots producing erect conic knees. Leaves often almost 2-ranked: blades narrow. Staminate aments in panicked spikes or racemes. Ovulate aments with peltate scales. Cones spreading, globular or obovoid, the scales woody, stalked. Seeds wingless. — Spr. — CYPRESS.

Leaves 2-ranked, widely spreading: branchlets horizontal: bark thin, comparatively smooth.

1. *T. distichum*.

Leaves appressed to the erect branchlets: bark thick, strongly furrowed.

2. *T. ascendens*.

1. **T. distichum** (L.) L. C. Rich. A tree becoming 49 m. tall: trunk straight, the base of trunk conic, narrowly ridged, the bark thin, relatively smooth: leaves often curved; blades 1-1.5 cm. long: cones globular, about 2.5 cm. in diameter: seeds 8-10 mm. long.

The BALD-CYPRESS grows in swamps or on river banks nearly throughout Florida, except on the Keys. The reddish heart-wood is close-grained, soft, light, and rather weak. Also known as Deciduous-cypress. (Cont.)

2. **T. ascendens** Brongn. A tree typically smaller than *T. distichum*, but with very similar inflorescence and fruit, the knees less abundant: trunk more or less sinuous, with a conoidal broadly ridged base: leaves incurved; blades 0.5-1 cm. long.

The POND-CYPRESS grows in pineland ponds, creeks and small rivers throughout Florida, except the southern part of the peninsula and the Florida Keys. The reddish heart-wood is said to be heavier and stronger than that of the Bald-cypress. (Cont.)

2. **CHAMAECYPARIS** Spach. Trees. Leaves scale-like and imbricate, each with a gland on the back, or sometimes subulate on twigs. Staminate aments terminal. Ovulate aments with peltate scales. Cones spreading, globular: scales woody, appendaged. Seeds winged. — CYPRESS.

1. **C. thyoides** (L.) B.S.P. A strong-scented tree becoming 27 m. tall: leaves 1-2 mm. long, appressed, the lateral ones keeled, the vertical merely convex: staminate aments 2-3 mm. long: ovulate aments glaucous, the scales with hyaline appendages: cones globular, 5-7 mm. in diameter: seeds narrowly winged. — Spr.

The WHITE-CEDAR grows in sandy swamps in middle and western Florida. The brown heart-wood is close-grained, light, soft, and rather weak. (Cont.)

3. **SABINA** Haller. Shrubs or trees. Leaves scale-like, except sometimes on twigs, appressed, often imbricate, each with a gland in the back. Staminate aments terminal on branchlets. Ovulate aments with ovules opposite the scales. Cones baccate. Seeds wingless. — Spr. — CEDAR. SAVIN.

Staminate aments 3-4 mm. long: cones 5-6 mm. long.

Staminate aments 4-5 mm. long: cones 3-4 mm. long.

1. *S. virginiana*.

2. *S. barbadensis*.

1. **S. virginiana** (L.) Antoine. A tree becoming 30 m. tall: scale-like leaves opposite, 4-ranked, 1-4 mm. long, acute: staminate aments 3-4 mm. long: cones ovoid, 5-6 mm. long, glaucous: seeds 3-4 mm. long, smooth.

The RED-CEDAR grows in sandy soil and on ridges in northern Florida. The red heart-wood is close-grained, soft and weak. (Cont.)

2. **S. barbadensis** (L.) Small. A shrub or tree similar to *S. virginiana* in habit, but with shorter and rather thicker leaves, the relatively blunt apex closely appressed: staminate aments 4-5 mm. long: cones ovoid or oval-ovoid, 3-4 mm. long.

The SOUTHERN RED-CEDAR grows in low or damp sandy places in Florida, except the southern half of the peninsula. The red heart-wood is similar to that of the Red-cedar. Also known as Barbados-cedar. (Cont. W. I.)

FAMILY 3. TAXACEAE. YEW FAMILY.

Evergreen shrubs or trees, mostly destitute of resin, the buds scaly. Leaves distichously spreading: blades narrow, entire. Staminate aments mostly few-flowered, with scaly involucre. Ovulate aments, mostly 1-flowered, the carpellary scale wanting. Cone baccate or drupaceous, with a wholly or partially enveloping pulpy aril.

Ovulate flowers usually 2 together: ovule borne in a cup: seed enclosed in the accrescent cup: endosperm channeled: pollen-sacs 4.

1. **TUMIX.**

Ovulate flowers usually solitary: ovule borne in a cup: seed surrounded by the accrescent cup: endosperm even: pollen-sacs more than 4.

2. **TAXUS.**

1. TUMION Raf. Trees. Leaves rigid. Staminate aments with 4 pollen-sacs under each scale. Ovulate aments usually with 2 ovules. Seeds baccate the pericarp fleshy. — **TORREYA**.

1. T. taxifolium (Arn.) Greene. A tree becoming 18 m. tall, with a disagreeable odor when bruised: leaf-blades linear, 1.5–3 cm. long, firm-tipped: staminate aments 5–8 mm. long: cones globose-oblong or somewhat obovoid, 3–4 cm. long, glaucous.

The **STINKING-CEDAR** grows on the banks of the Apalachicola river. The yellow heart-wood is close-grained, hard, and durable. (*Endemic.*)

2. TAXUS [Tourn.] L. Shrubs or trees. Leaves leathery. Staminate aments with mostly 6–8 pollen-sacs under each scale. Ovulate aments with 1 ovule each. Seeds nut-like, surrounded by the pulpy aril, except the apex.

1. T. floridana Nutt. A tree becoming 6 m. tall, pleasant-scented when bruised: leaf-blades narrowly linear, 1–2 cm. long, sharply apiculate: cones light-red, 6–10 mm. long, the seed ovoid, 5–7 mm. long.

The **FLORIDA-YEW** grows on the banks of the Apalachicola river. The brown heart-wood is close-grained, hard, and heavy. (*Endemic.*)

CLASS II. **ANGIOSPERMAE.** FRUIT PLANTS.

Carpel or pistil formed by the uniting of the margins of one or of several rudimentary leaves; within the cavity thus formed the ovules are borne and the seeds matured.

Cotyledon 1: leaf-blades with primary or lateral veins parallel: stem endogenous.

Subclass 1. **MONOCOTYLEDONES.**

Cotyledons normally 2: leaf-blades with the veins

netted: stem exogenous (with rare exceptions).

Subclass 2. **DICOTYLEDONES.**

SUBCLASS 1. **MONOCOTYLEDONES.**

Stem consisting of a ground-mass of soft tissue in which bundles of wood-cells are irregularly placed. Early leaves alternate.

Order **ARECALES.**

Shrubs or trees, with a single terminal bud. Leaves at the end of the stem: blades plaited, pinnate or flabellate. Flowers perfect, polygamous or dioecious, on axillary compound spadices. Perianth of 6 fleshy members in 2 series. Androecium of 6, or 9–12, stamens. Gynoecium of 3 distinct or united carpels. Fruit drupaceous or baccate.

FAMILY 1. **ARECACEAE.** PALM FAMILY.

Stem with a terminal crown of leaves. Inflorescence at first included in a large bract (spathe), from which it ultimately protrudes.

Leaf-blades flabellate.

Calyx and corolla united into a 6-lobed or truncate cup, or obsolete.

Endosperm even: drupe with white flesh.

Endosperm channeled: drupe with black flesh.

Calyx and corolla distinct and manifestly in 2 series.

Style or stigma basal on the drupe.

Style or stigma terminating the drupe.

Filaments narrow: anthers elongate: seed elongate.

Filaments dilated: anthers didymous: seed depressed.

Leaf-blades pinnate.

1. **THECAX.**

2. **COCCOTHRINAX.**

3. **SABAL.**

4. **SERENOA.**

5. **PAUROTIS.**

Drupe with style or stigmas nearly basal: stamens exerted: endosperm not enclosing a milky juice.

Drupe violet-blue: branches of the spadix erect or ascending.

Drupe orange-scarlet: branches of the spadix spreading.

Drupe with style or stigmas terminal: stamens included: endosperm hollow, enclosing a milky juice.

6. ROYSTONEA.

7. PSEUDOPHOENIX.

8. Cocos.

1. **THRINAX** L. Unarmed trees. Leaves with flabellate blades pale or silvery-scurfy beneath, and smooth petioles. Spadix relatively long. Stamens mostly 6: filaments united at the base. Style concave or flat. Drupe ivory-white. — Spr. — THATCH-PALM.

The wood of the THATCH-PALMS is brown, hard without and soft within. Flowers slender-pedicelled: sepals and petals united into an obscurely lobed or truncate cup: filaments subulate: stigma oblique.

Flowers on short disk-like pedicels: sepals and petals partially united, acute: filaments nearly triangular: stigma not oblique.

Trunk without a basal enlargement: spadix 3-6 dm. long: drupe 3-4 mm. in diameter.

Trunk with a basal enlargement: spadix nearly 2 m. long: drupe 5-6 mm. in diameter.

1. *T. floridana*.

2. *T. microcarpa*.

3. *T. keyensis*.

1. **T. floridana** Sarg. Slender tree, 9 m. tall. Leaf-blades 9-13 dm. broad, yellowish-green and lustrous above: ligule 5-7 cm. broad: spadix about 10 dm. long: pedicels about 3 mm. long: filaments subulate: drupe 8-12 mm. thick, or rarely smaller.

The FLORIDA THATCH-PALM grows in hammocks and on sandy shores in the lower portion of the western part of the peninsula, and on the upper and the lower Florida Keys. (*Bah., Cuba.*)

2. **T. microcarpa** Sarg. Stout tree 10 m. tall. Leaf-blades about 10 dm. broad, pale-green above: ligule 2-2.5 cm. broad: spadix 3-6 dm. long: pedicels disk-like: filaments triangular: drupe 3-4 mm. thick.

The BRITTLE-THATCH grows in hammocks and on sandy shores at the lower end of peninsular Florida and on several of the lower Florida Keys. (*Bah., Cuba.*)

3. **T. keyensis** Sarg. Relatively stout tree 8 m. tall, the trunk raised on a base of matted roots. Leaf-blades about 10 dm. broad, yellowish-green above: ligule about 2.5 cm. wide: spadix nearly 20 dm. long: pedicels disk-like: drupe 5-6 mm. thick.

The KEY-THATCH grows on sandy shores and in hammocks on a few of the lower Florida Keys. (*Bah.*)

2. **COCCOTHRINAX** Sarg. Unarmed shrubs or trees. Leaves with flabellate blades silvery or pale-scurfy beneath, and smooth petioles. Spadix relatively short. Stamens mostly 9: filaments distinct or nearly so. Style funnelform. Drupe black or purple-black. — SILVER THATCH-PALM.

1. **C. argentea** (Lodd.) Sarg. Small tree or shrub. Leaf-blades 2-7 dm. broad, the ligule 1-1.5 cm. broad: spadix 2-4 dm. long: mature pedicels 1-2 mm. long: drupe 7-10 mm. thick. — Spr.

The SILVER-PALM grows in pinelands, and rarely in hammocks, on the Everglade Keys and Florida Keys. The wood is brown, hard without and soft within. (*W. I.*)

3. **SABAL** Adans. Unarmed shrubs, with horizontal or contorted root-stocks, or trees. Leaves upright or spreading: blades flabellate, glabrous. Spadix upright during anthesis, or spreading. Stamens equal or nearly so: filaments narrow. Drupe globose, spheroidal or obovoid. — PALMETTO.

1. **S. Palmetto** (Walt.) R. & S. Trunk 28 m. tall. Leaf-blades cordate at the base: ligules about 10 cm. long: spadix-branches loosely flowered: anthers obtuse or notched: seeds spheroidal. — Spr.

The CABBAGE-PALMETTO grows in open sandy or rocky soil or in hammocks nearly throughout peninsular Florida, along the western coast to the vicinity of the Apalachicola river, and on the lower Keys. The wood is light-brown and soft, but harder within than near the surface. Also known as Cabbage-palm or Cabbage-tree. (*Cont., Bah.*)

4. **SERENOA** Hook. Armed shrubs or trees. Leaves upright or spreading: blades flabellate, cordate at the base: petioles with recurved spines. Stamens unequal, those opposite the petals with the broader filaments. Drupe and seed oblong.

1. **S. serrulata** (Michx.) Hook. Trunk 9 m. tall or less, or usually horizontal. Leaf-blades suborbicular, green or glaucous, 3-8 dm. broad, cordate at the base: petioles with firm spines: petals 4-4.5 mm. long: drupe 15-25 mm. long. — Spr.

The SAW-PALMETTO grows in pinelands, hammocks and low savannahs nearly throughout northern and peninsular Florida, and also on the lower Florida Keys. The wood is brownish, light, and soft, especially near the center of the trunk. (*Cont.*)

5. **PAUROTIS** O. F. Cook. Armed trees. Leaves spreading: blades flabellate: petiole with upcurved spines. Stamens equal or essentially so, the filaments broad. Stigmas terminal. Drupe globular. Seed depressed.

1. **P. Wrightii** (Griseb.) Britton. Trunks solitary or several, 12 m. tall. Leaf-blades half-orbicular, 5-8 dm. broad, truncate at the base, the segments slenderly attenuate; petioles with flat orange teeth: petals about 1 mm. long: drupe 8-10 mm. thick. — Spr.

The SAW CABBAGE-PALM grows in low savannahs and hammocks near the Chokoloskee River and in the vicinity of Cape Sable in southern peninsular Florida. The wood has not yet been studied. (*Bah., Cuba.*)

6. **ROYSTONEA** O. F. Cook. Unarmed trees. Leaves spreading: blades pinnate: petiole nearly terete above. Spadix pendulous. Petals valvate, deciduous. Drupe sessile. Seeds reniform.

1. **R. regia** (H.B.K.) O. F. Cook. A stately tree 30 m. tall, the trunk often fusiform. Leaf-blades 2.5-3.5 m. long, the larger segments 7-9 dm. long: perianth of the staminate flowers 6-7 mm. long, that of the pistillate barely $\frac{1}{2}$ as large: drupe 12-14 mm. long, violet-blue. — Winter & spr.

The ROYAL-PALM grows in hammocks on the Everglade Keys and in the Everglades of the lower portion of the western coast of Florida. The wood is pale-brown, rather light, very soft within, but hard near the surface. (*Bah., Cuba, Hispania.*)

7. **PSEUDOPHOENIX** H. Wendl. Unarmed trees. Leaves spreading: blades pinnate: petioles concave throughout. Spadix spreading during anthesis. Petals valvate, persistent. Drupe pedicelled. Seeds globular.

1. **P. Sargentii** H. Wendl. A tree 8 m. tall, the trunk often slightly fusiform. Leaf-blades 1-1.5 m. long, the larger segments 4-4.5 dm. long: perianth about 1 cm. wide: petals oblong to oval, yellowish, reflexed in age: drupe globular, or 2-3-lobed, 11-14 mm. long, orange-scarlet. — Spr.

The HOG CABBAGE-PALM grows in hammocks on a few of the Florida Keys from Elliott's Key to Long Key. The wood is brown, light, and soft. Also known as Sargent's-palm. (*Bah., Cuba, Hispania.*)

8. **COCOS** L. Unarmed trees. Leaves spreading: blades pinnate. Spadix ultimately drooping. Sepals and petals of the staminate flowers valvate, those of the pistillate flowers imbricate. Drupe 3-angled, with a fibrous pericarp and a hard endocarp.

1. **C. nucifera** L. A stately tree 30 m. tall. Leaf-blades 3-5 m. long, the numerous segments 5-7 dm. long: perianth of the staminate flower fully 1 cm. long, that of the pistillate larger: drupe oval or ovoid, 2-3 dm. long, sessile: endosperm enclosing a milky juice. — All year.

The COCONUT grows on sandy or rocky shores and in shore hammocks in southern peninsular Florida and on the Florida Keys. Nat. from the tropics. The wood is brown, rather heavy, and hard. Also known as Coco-palm. (*W. I.*)

Order LILIALES.

Herbs, vines or trees. Leaves with narrow or dilated blades. Flowers perfect, polygamous or dioecious, complete, mostly regular. Perianth of 6 members which are usually distinguishable into calyx and corolla, sometimes partially united. Androeceum of 3 or 6 stamens. Gynoeceum 3-carpellary, or rarely 2-carpellary. Ovary superior or essentially so. Fruit capsular or baccate.

FAMILY 1. DRACAENACEAE. YUCCA FAMILY.

. Shrubby plants or trees, with generally copiously leafy caudices. Leaves alternate: blades narrow, firm or rigid, sometimes filiferous. Flowers in racemes or panicles which terminate scape-like stems. Calyx of 3, usually white or pale sepals. Corolla of 3 petals nearly similar to the sepals. Androeceum of 6 stamens. Gynoeceum 3-carpellary. Style stout, sometimes obsolete during anthesis. Fruit a primarily loculicidal capsule, sometimes indehiscent or baccate.

1. **YUCCA** [Rupp.] L. Trunk commonly leafy throughout. Flowers perfect, relatively large, in erect racemes or panicles. Sepals and petals several-nerved, deciduous. Ovary elongate, slightly lobed. Ovules numerous. Capsule dehiscent or baccate. Seeds black. — Spr. & sum.

The wood of the following species is yellowish or brownish, light, soft, and spongy.

Leaf-blades smooth-edged: ovary sessile: fruits soon drying:

seeds flat, margined.

1. *Y. gloriosa*.

Leaf-blades scabro-serrulate: ovary stipitate: fruits permanently

pulpy: seeds turgid, not margined.

2. *Y. aloifolia*.

1. **Y. gloriosa** L. Trunk becoming 5 m. tall, usually simple: leaf-blades with a constricted base, 3–5 dm. long, rigidly pointed, smooth throughout: panicles showy, conic, 5–10 dm. long or longer: perianth white, 4–5 cm. long: sepals and petals lanceolate or oblong-lanceolate, acute: fruits leathery, nodding, nearly oblong, constricted at or near the middle, 5–6 cm. long: seeds lustrous, 6–7 mm. long.

The SPANISH-BAYONET grows on sand-dunes and in hammocks near the coast in northern Florida. (*Cont.*)

2. **Y. aloifolia** L. Trunk becoming 3 m. tall, commonly branching: leaf-blades 3–9 dm. long, rigidly pointed, more or less constricted between the middle and the dilated base: panicle ample, showy, conic, 3–6 dm. long: perianth white, often tinged with purple, 4–6 cm. long: sepals and petals oblong to elliptic: fruits pulpy, oblong, nodding, 7–9 cm. long.

The SPANISH-DAGGER grows in hammocks and on dunes near the coast except on the Florida Keys, and occasionally in pinelands somewhat inland. (*Cont.*, W. I.)

SUBCLASS 2. DICOTYLEDONES.

Stem consisting of pith, wood and bark. Early leaves opposite.

Series 1. CHORIPETALAE.

Petals separate and distinct from each other, or wanting.

Order CASUARINALES.

Shrubs or trees, with loosely jointed branches resembling stems of *Equisetum*. Leaves scale-like, whorled at the nodes and decurrent on the internodes. Flowers monoecious, the staminate in slender terminal spikes with imbricate bracts, often with a posterior and anterior perianth-member, and 1 stamen. Pistillate flowers in dense cones or spikes, the perianth wanting. Ovary 1-celled. Style-branches slender. Fruit an aggregate of winged achenes.

FAMILY 1. CASUARINACEAE. BEEFWOOD FAMILY.

Stems with more or less whorled branches. Staminate spikes long-stalked. Pistillate spikes short-stalked. Gynoecium 2-carpellary.

1. *CASUARINA* Adans. Stem clothed with a smooth or smoothish bark, except when very old. Stamens with long filaments and short anthers. Stigmas elongate. Fruiting spike compact.

1. *C. equisetifolia* Forst. Tree often 10 m. tall, with many slender branches: leaves (scales) 1-3 mm. long, 6-8 in each whorl: staminate spikes 1-4 cm. long: pistillate spikes globular, becoming 1-2 cm. in diameter in fruit: seed-wing nearly thrice as long as the body. — Spr. & sum.

The BEEFWOOD grows on sandy shores in southern Florida, particularly on the Keys. It is native of Oceanica, and was introduced into Florida as a shade tree. The heart-wood is pink, turning dark, close-grained, heavy, hard, and strong. Also known as Australian-pine. (W. I.)

Order JUGLANDALES.

Trees. Leaves alternate: blades pinnate. Flowers monoecious, the staminate in lateral aments on the twigs of the preceding year, with a 2-6-lobed calyx bearing several rows of stamens, or the calyx obsolete. Pistillate flowers terminal, consisting of an involucre 2-4-carpellary gynoecium: calyx partially adnate to the gynoecium. Fruit drupe-like, the nut enclosed in an indehiscent or a dehiscent involucre. Seed oily.

FAMILY 1. JUGLANDACEAE. WALNUT FAMILY.

Aromatic trees, with hard wood. Leaves with unequally pinnate blades. Staminate aments solitary or clustered. Involucre of the fruits dry or juicy.

Staminate aments stout, simple, sessile or short-stalked: husk indehiscent: nut sculptured. 1. JUGLANS.

Staminate aments slender, branched, long-stalked: husk dehiscent: nut not sculptured. 2. HICORIA.

1. *JUGLANS* L. Bark furrowed. Pith in plates. Leaflets conduplicate in vernation. Staminate aments simple. Anther-connective conspicuous. — WALNUT.

1. *J. nigra* L. Tree becoming 50 m. tall, the bark dark-brown in broad ridges: leaflets 15-23; blades 8-10 cm. long, rounded or subcordate at the

base: staminate aments 5-10 cm. long: fruits 5-8 cm. in diameter: nut 4-celled below the middle, sculptured, the ridges thick, firm. — Spr.

The BLACK-WALNUT grows in rich calcareous soil, in company with other deciduous trees, in western Florida. The heart-wood is dark-brown, rather coarse-grained, and durable. (*Cont.*)

2. HICORIA Raf. Bark close or scaly. Pith solid. Leaflets involute in veneration. Staminate aments branched. Anther-connective inconspicuous. — Spr. — HICKORY.

Lateral leaflets mostly falcate: bud-scales valvate.

Leaflets mostly over 9: blades glabrous: nuts corrugated.

Leaflets mostly less than 9: blades pubescent beneath: nuts smooth.

Lateral leaflets not falcate: bud-scales imbricate.

Husk of the fruit freely separating in 4 woody valves at maturity.

Bark of the trunk close, but rough: foliage scurfy or pubescent.

Leaflets scaly beneath: middle calyx-lobe not bearded at the tip.

Leaflets stellate-pubescent beneath: middle calyx-lobe bearded at the tip.

Bark of the trunk shaggy, separating in long plates: foliage glabrous.

Husk of the fruit tardily 4-valved to about the middle, tough.

1. *H. aquatica*.

2. *H. cordiformis*.

3. *H. pallida*.

4. *H. alba*.

5. *H. ovata*.

6. *H. glabra*.

1. *H. aquatica* (Michx. f.) Britton. Tree becoming 30 m. tall, the bark flaky: leaflets 9-13, the blades of the lateral ones lanceolate, 5-15 cm. long, falcate: fruits subglobose, but beaked, 2.5-3 cm. thick, the thin husk tardily 4-valved: nut corrugated, thin-shelled, the seed bitter.

The WATER-HICKORY grows in river swamps in northern Florida and the northern part of the peninsula. The brown heart-wood is relatively soft and brittle. Also known as Swamp-hickory, Water bitter-nut and Bitter-pecan. (*Cont.*)

2. *H. cordiformis* (Wang.) Britton. Tree becoming 30 m. tall, the bark close, with shallow furrows and flat ridges: leaflets 5-9, the blades of the lateral ones lanceolate or oblong-lanceolate, 8-15 cm. long, falcate: fruits subglobose, 2.5-3 cm. long, slightly 6-ridged, the thin husk tardily 4-valved: nut smooth, thin-walled, the seed bitter. [*H. minima* (Marsh.) Britton.]

The BITTER-NUT grows in low grounds in western Florida. The brown heart-wood is hard and tough. Also known as Swamp-hickory. (*Cont.*)

3. *H. pallida* Ashe. Tree becoming 35 m. tall, the pale bark very rough: leaflets 7-9, the blades of the lateral ones lanceolate to ovate-lanceolate, 5-16 cm. long, scaly-scurfy beneath: staminate aments slender, 8-12 cm. long: fruits subglobose, oval, or obovoid-pyriform, 4-5 cm. long, the husk relatively thin: nut smooth, rather thick-shelled.

The PALE-HICKORY grows in dry soil in western Florida. The brown heart-wood is hard and very tough. (*Cont.*)

4. *H. alba* (L.) Britton. Tree becoming 30 m. tall, the bark with flat ridges: leaflets 7-9, the blades of the lateral ones oblong or oblong-lanceolate, 8-15 cm. long: staminate aments stout, 10-15 cm. long: fruits globose-obovoid, 4-6 cm. in diameter, the husk very thick: nut angled, thick-shelled, the seed sweet.

The MOCKER-NUT grows in rich soil in northern Florida and the upper portion of the peninsula. The dark-brown heart-wood is hard and tough. Also known as White-heart hickory. (*Cont.*)

5. *H. ovata* (Mill.) Britton. Tree becoming 40 m. tall, the bark separating in large plates: leaflets 5, or rarely 7, the blades of the lateral ones oval to oblong-lanceolate, 10-15 cm. long: staminate aments slender, 8-12 cm. long: fruits subglobose, 3-5 cm. thick, the husk thick: nut slightly angled, thin-shelled, the seed sweet.

The SHELL-BARK grows in rich soil in western Florida. The light-brown heart-wood hard and very tough. Also known as Shag-bark hickory. (*Cont.*)

6. *H. glabra* (Mill.) Britton. Tree becoming 60 m. tall, the bark close, in flat ridges: leaflets mostly 3-7, the blades of the lateral ones oblong or oblong-lanceolate, 7-15 cm. long, acuminate, green beneath, glabrous: staminate aments 6-10 cm. long: fruits subglobose, obovoid or pyriform, 3.5-5 cm. long. the husk thinnish: nut angled, thick-shelled, the seed astringent.

The *Pig-nut* grows in rich woods and on dunes throughout Florida as far south as the Everglade region. The brown heart-wood is hard and tough. Also known as Broom-hickory. (*Cont.*)

Order LEITNERIALES.

Shrubs or trees, with exceedingly light wood. Leaves alternate. Flowers dioecious, in aments appearing before the leaves, the staminate flowers borne on the base of each bract: perianth wanting: androecium of 3-12 stamens: pistillate flowers each with a minute perianth: gynoeceium a single carpel, the stigma introrse. Ovule solitary. Fruit a collection of drupes each subtended by a bract.

FAMILY 1. LEITNERIACEAE. CORKWOOD FAMILY.

Bark smooth, brown. Leaf-blades entire. Stipules wanting. Aments from the axils of last year's leaves. Staminate aments many-flowered: filaments short: anthers 2-celled. Pistillate aments few-many-flowered: ovary sessile: stigma elongate. Drupes elongate.

1. *LEITNERIA* Chapm. Leaves scattered: blades shining above, petioled. Staminate aments conspicuously bracted: filaments distinct. Pistillate aments inconspicuously bracted: ovary shorter than the stigma. Drupes glabrous, the flesh leathery.

1. *L. floridana* Chapm. Tree becoming 7 m. tall or shrub: leaf-blades narrowly elliptic, oblong, or elliptic-lanceolate, or rarely oval, 10-20 cm. long, pubescent beneath: staminate aments 3-4 cm. long, the bracts acuminate: pistillate aments with acute bracts: drupes elliptic, 15-17 mm. long. — Winter & spr.

The Corkwood grows in salt or brackish swamps near Apalachicola. The pale-yellow wood is close-grained, but soft and very light. It is the lightest wood in North America. (*Cont.*)

Order MYRICALES.

Shrubs or small trees, usually aromatic. Leaves alternate: blades simple, sometimes toothed or pinnatifid. Flowers dioecious or monoecious, the staminate in long aments, each flower consisting of a gynoeceium of 2 united carpels on a bract subtended by 2 bractlets and surrounded by 2-8 scales. Stigmas 2. Ovule solitary. Fruit a nut, the epicarp often waxy.

FAMILY 1. MYRICACEAE. BAYBERRY FAMILY.

Leaves resinous-dotted. Staminate and pistillate flowers in scaly aments. Perianth wanting. Ovary 1-celled.

1. *CEROTHAMNUS* Tidestrom. Trees or shrubs. Leaf-blades entire or merely toothed. Pistillate aments not bristly. Nut globose, drupe-like, with a fleshy-waxy epicarp. — Winter & spr. — BAYBERRY.

Stamens 3 or 4: nuts 2-3 mm. in diameter.
Stamens 9 or 10: nuts 5-7 mm. in diameter.

1. *C. ceriferus*.
2. *C. inodorus*.

1. *C. ceriferus* (L.) Small. Tree becoming 12 m. tall or shrub: leaf-blades oblanceolate to oblong-oblanceolate, 3-10 cm. long, toothed or individually entire: staminate aments 1-1.5 cm. long: nuts 2-3 mm. in diameter. [*Myrica cerifera* L. *Morella cerifera* (L.) Small.]

The WAX-MYRTLE grows in swamps, wet woods, and hammocks nearly throughout Florida. The brown heart-wood is rather close-grained, but light, soft, and brittle. (*Cont.*, W. I.).

2. *C. inodorus* (Bart.) Small. Tree 6 m. tall or shrub: leaf-blades elliptic-obovate or sometimes spatulate, 4-8 cm. long, entire: staminate aments 1-1.5 cm. long: nuts 5-7 mm. in diameter. [*Morella inodora* (Bartr.) Small.]

The ODORLESS WAX-MYRTLE grows on the edges of pineland ponds and swamps in northern Florida, from Wakulla county westward. The light-brown heart-wood is close-grained, soft, and weak. (*Cont.*)

Order SALICALES.

Shrubs or trees. Leaves alternate: blades simple, entire or toothed. Flowers dioecious, in aments, the staminate consisting of an androecium of 2 or more stamens, the pistillate consisting of a gynoeceium of 2 or 4 united carpels. Ovules numerous. Fruit capsular.

FAMILY 1. SALICACEAE. WILLOW FAMILY.

Shrubs or trees with soft wood. Leaf-blades very narrow to very wide. Aments erect or drooping, the bracts mostly ciliate or toothed. Capsules narrowed to the apex. Seeds usually with a tuft of hairs.

Bracts incised: disk cup-shaped: stamens usually 10 or more, or rarely 7 or 8: stigmas elongated and expanded. 1. *POPULUS*.

Bracts entire: disk reduced to 1 or more axillary glands: stamens less than 10: stigmas short, not expanded. 2. *SALIX*.

1. *POPULUS* [Tourn.] L. Trees, the buds with several scales. Leaf-blades palmately veined, relatively long-petioled. Stamens more than 10, or rarely 7 or 8: anthers purple or red. Ovary sessile: stigmas dilated. — POPLAR.

1. *P. deltoides* Marsh. Tree becoming 45 m. tall, widely branched: leaf-blades ovate to deltoid, 9-19 cm. long, acute or acuminate, serrate or crenate-serrate: staminate aments 8-12 cm. long: stamens numerous: capsules 8-10 cm. long. — Spr.

The COTTONWOOD grows on river banks in western Florida. The brown heart-wood is light, soft, and weak. Also known as Necklace-poplar. (*Cont.*)

2. *SALIX* [Tourn.] L. Shrubs or trees, the buds with a single scale. Leaf-blades pinnately veined, relatively short-petioled. Stamens 2, or rarely 1-7: anthers yellow or reddish. Ovary stipitate: stigmas not dilated. — Winter & spr. — WILLOW.

Leaves with narrow blades: stamens 3-7.

Leaf-blades green beneath.

Bracts of the pistillate aments obtuse: fruiting aments usually dense: capsules 3-4.5 mm. long.

Bracts of the pistillate aments acute or abruptly pointed: fruiting aments usually lax: capsules 4.5-5 mm. long.

Leaf-blades glaucous beneath.

Capsules ovoid in outline, not veined, the body globose to ovoid.

Capsules conic in outline, veiny, the body oblong to oval.

Leaves with broad blades: stamens 2.

1. *S. nigra*.

2. *S. marginata*.

3. *S. longipes*.

4. *S. amphibia*.

5. *S. floridana*.

1. *S. nigra* Marsh. Tree becoming 40 m. tall, the twigs brown: leaf-blades narrowly lanceolate, 6-12 cm. long, acute at both ends, or acuminate at the

apex, pale beneath: staminate aments with finely pubescent, blunt bracts: capsules 4 or 5 times as long as the pedicels.

The BLACK-WILLOW grows on river banks in northern Florida. The reddish-brown heart-wood is light, soft, and weak. (*Cont.*)

2. *S. marginata* Weimer. Small tree or spreading shrub, the twigs reddish: leaf-blades mainly oblong, lanceolate, or ovate-lanceolate, 2-5 cm. long, mostly acute or blunt at the apex, cuneate to truncate at the base: staminate aments with densely pubescent acute or acutish bracts: capsules about twice as long as the pedicels.

The GULF-WILLOW grows in northern Florida. The wood is probably similar to that of the Black-willow. (*Cont.*)

3. *S. longipes* Anders. Tree becoming 10 m. tall or shrub, the twigs gray or gray-brown: leaf-blades narrowly lanceolate, 10-15 cm. long: staminate aments 4-10 cm. long, the bracts finely ciliate: capsules ovoid in outline, 3 or 4 times as long as the pedicels.

WARD'S-WILLOW grows in low grounds, in northern Florida. The reddish-brown heart-wood is rather close-grained, light, and soft. (*Cont.*)

4. *S. amphibia* Small. Small tree or shrub, the twigs purplish or purple: leaf-blades linear-lanceolate, lanceolate, or oblong, 3-13 cm. long: staminate aments 1.5-5 cm. long, the bracts finely pubescent: capsules conic in outline, about 3 times as long as the pedicels.

The AMPHIBIOUS-WILLOW grows in wet grounds and hammocks in peninsular Florida almost as far south as Cape Sable. The brown heart-wood is close-grained, light, and soft. (*Endemic.*)

5. *S. floridana* Chapm. Small tree or shrub, the twigs sparingly pubescent: leaf-blades oblong to oblong-lanceolate, 5-8 cm. long, or larger on twigs, acute, sharply serrulate, dark-green above, glaucous beneath, rounded or truncate at the base: fruiting aments oblong-cylindric, 4-7 cm. long: capsules ovoid-conic, 6-8 mm. long.

The FLORIDA-WILLOW grows on river banks in western Florida. The wood has not yet been studied. Not recently collected in the state, but found in southern Georgia.

Order FAGALES.

Shrubs or trees. Leaves alternate: blades simple. Flowers monoecious or rarely dioecious, at least the staminate borne in aments, the pistillate sometimes with an involucre which becomes a bur or cup in fruit. Calyx usually present. Corolla wanting. Fruit a nut or rarely a samara.

Staminate and pistillate flowers in aments: fruit not with a bur or a cup.

Staminate flowers solitary in the axil of each bract, without a calyx: pistillate flowers with a calyx. Fam. 1. CORYLACEAE.

Staminate flowers 2-3 together in the axil of each bract, each with a calyx: pistillate flowers without a calyx. Fam. 2. BETULACEAE.

Staminate flowers in aments: pistillate often solitary, the involucre becoming a bur or cup. Fam. 3. FAGACEAE.

FAMILY 1. CORYLACEAE. HAZEL-NUT FAMILY.

Shrubs or trees, the wood close-grained. Leaves deciduous: blades mostly doubly toothed. Staminate aments drooping, with each bract subtending one flower, the calyx wanting. Pistillate aments not drooping, each bract bearing 2 or 3 pistils, the involucre of a bract and 2 scales. Fruit consisting of one or more accrescent bracts each subtending or inclosing 1, 2 or 3 nuts.

Fruiting bracts flat, 3-lobed, the terminal lobe toothed.
Fruiting bracts bladder-like.

1. *CARPINUS*.
2. *OSTRYA*.

1. **CARPINUS** [Tourn.] L. Trees or shrubs, the bark smooth. Staminate aments solitary, the bracts acute, ciliate. Pistillate aments with 3-lobed bracts at maturity.

1. **C. caroliniana** Walt. Tree becoming 13 m. tall or shrub, the bark blue-gray: leaf-blades oblong, varying mainly to ovate or ovate-lanceolate, 3-14 cm. long, glabrous above: staminate aments 2-5 cm. long: mature bracts of the pistillate aments hastate, 2-3 cm. long: nuts 5-6 mm. long. — Spr.

The HORNBEAM grows in rich woods and hammocks in northern Florida and in the northern part of the peninsula. The brown heart-wood is close-grained, heavy, and hard. (Cont.)

2. **OSTRYA** [Mich.] Scop. Shrubs or trees, the bark scaly. Staminate aments clustered, the bracts blunt, not ciliate. Pistillate aments with lobeless bracts.

1. **O. virginiana** (Mill.) Willd. Tree becoming 18 m. tall or shrub, the bark rough: leaf-blades mainly oblong, elliptic, or oval, 3-13 cm. long, slightly pubescent or glabrate above: staminate aments 3-8 cm. long: mature bracts of the pistillate aments oblong to ovate, 1.5-2 cm. long: nuts 6-7 mm. long. — Spr.

The HOP-HORNBEAM grows in rich woods and hammocks in northern Florida and in the northern part of the peninsula. The light-brown heart-wood is close-grained, heavy, strong, tough, and durable. (Cont.)

FAMILY 2. BETULACEAE. BIRCH FAMILY.

Shrubs or trees, the wood close-grained. Leaves deciduous: blades with 2-several series of teeth. Staminate aments drooping, with each bract subtending 2 or 3 flowers, the calyx present. Pistillate aments seldom drooping, the bracts thickened and woody, each one bearing 2 or 3 pistils, the calyx wanting. Fruit a cone-like aggregate of the accrescent bracts each of which subtends a nut.

Stamens 2: bracts of the mature pistillate aments membranous, 3-lobed, deciduous with the nuts. 1. **BETULA**.

Stamens 4 (3-6): bracts of the mature pistillate aments thickened and woody, persistent. 2. **ALNUS**.

1. **BETULA** [Tourn.] L. Shrubs or trees, the bark often aromatic. Staminate flowers with 2 stamens, the anther-sacs separated. Bracts of the pistillate aments 3-lobed, thin and appressed or ascending at maturity. — Spr. — BIRCH.

Fruiting aments peduncled: bark not aromatic: leaf-blades dentate-serrate: nut-body ovate to orbicular-ovate. 1. **B. nigra**.

Fruiting aments terminating short branches and sessile: bark aromatic: leaf-blades sharply serrate: nut-body cuneate. 2. **B. lenta**.

1. **B. nigra** L. Tree becoming 30 m. tall, the younger bark silvery or yellow: leaf-blades rhombic-ovate, 3-6 cm. long, broadly cuneate at the base, more or less tomentose beneath except in age: staminate aments with suborbicular bracts: mature pistillate aments 3-4 cm. long, less than 1 cm. thick, the bracts 6-7 mm. long, tomentulose: wings of the fruit reniform-ciliate.

The RED-BIRCH grows in river swamps in northern Florida. The light-brown heart-wood is close-grained and light, but both hard and strong. Also known as River-birch. (Cont.)

2. **B. lenta** L. Tree becoming 25 m. tall, the bark brown: leaf-blades ovate, oblong-ovate, or oblong-lanceolate, 4-12 cm. long, rounded or cordate at the base, silky on the nerves beneath: staminate aments with ovate bracts: mature pistillate aments 1.5-3 cm. long, over 1 cm. thick, the bracts 5-6 mm.

long and quite as wide, glabrous: wings of the fruit rhombic-obovate or cuneate, not ciliate.

The BLACK-BIRCH grows on ridges in western Florida. The reddish-brown heart-wood is close-grained, heavy, hard, and very strong. Also known as Cherry-birch. (*Cont.*)

2. **ALNUS** [Tourn.] L. Shrubs or trees, the bark astringent. Staminate flowers with 3-6 stamens, the anther-sacs connected. Bracts of the pistillate aments not lobed, woody and spreading at maturity. — ALDER.

1. **A. rugosa** (Du Roi) Spreng. Tree becoming 13 m. tall or shrub: leaf-blades thickish, obovate or oval, 4-10 cm. long: mature pistillate aments 1.5-2 cm. long, the bracts 3-lobed: nuts 1.5 mm. long, sharp-margined. — Winter & spr.

The SMOOTH-ALDER grows on stream-banks in northern Florida. The brown heart-wood is close-grained, but soft and light. (*Cont.*)

FAMILY 3. FAGACEAE. OAK FAMILY.

Shrubs or trees, the wood coarse-grained. Leaves sometimes persistent: blades simple, entire, toothed, or lobed. Staminate aments elongate or globular, the calyx of 4-7 partially united sepals. Pistillate flowers solitary or several together, each subtended by a bristly involucre, the sepals thick. Fruit a bur-like, cup-like, or saucer-like involucre enclosing or subtending 1 or more nuts.

Staminate aments globose, drooping on slender bracted peduncles: nuts 3-angled or 3-winged.

Staminate aments elongate, slender.

Staminate aments erect or ascending: nuts 1-3, included in a very spiny involucre.

Staminate aments drooping: nut seated in an involucre of imbricated scales.

1. FAGUS.

2. CASTANEA.

3. QUERCUS.

1. **FAGUS** [Tourn.] L. Shrubs or trees, with close-grained wood. Leaf-blades toothed. Staminate aments globular, pendulous: calyx 4-7-lobed: stamens 8-16. Pistillate flowers 2-4 together: calyx 4-5-lobed. Staminodia none. Ovary 3-celled: stigmas 3, filiform. Mature involucre with fleshy spines, enclosing the nuts. Nuts 2-4, 3-angled or 3-winged.

1. **F. grandifolia** Ehrh. Tree becoming 40 m. tall, the bark smooth, pale: leaf-blades ovate, oval, or oblong-ovate, 5-14 cm. long: staminate aments 1-1.5 cm. in diameter, long-peduncled: ripe involucre ovoid, 1.5-2 cm. long, short-peduncled: nut ovoid, narrowly winged, edible. [*F. americana* Sweet.] — Spr.

The BEECH grows in alluvial soil in middle and western Florida. The red heart-wood is very close-grained, hard, tough, and strong, but not durable on exposure. (*Cont.*)

2. **CASTANEA** [Tourn.] Hill. Shrubs or trees, with porous wood. Leaf-blades toothed, the teeth slender-tipped. Staminate aments elongate, spreading: calyx 6-lobed: stamens 10-20, the filaments greatly elongate. Pistillate flowers several: calyx 6-lobed. Staminodia present. Ovary imperfectly 6-celled. Stigmas 6, slender. Mature involucre with rigid often branching spines, including the nuts. Nuts 2 or 3, or sometimes solitary. — CHESTNUT.

1. **C. pumila** (L.) Mill. Tree becoming 16 m. tall or shrub, the bark smooth: leaf-blades oblong to obovate, 7-14 mm. long, acute or rounded at the apex, white-tomentose beneath, the lateral ribs in 14-20 pairs: neck of the hypan-

thium shorter than the body: ripe involucre 3-4 mm. in diameter: nuts usually solitary, 1-1.5 cm. long. — Spr.

The CHINQUAPIN grows on sandy ridges and swamp-margins in northern Florida. The brown heart-wood is coarse-grained and light, but hard, strong, and durable. (Cont.)

3. QUERCUS [Tourn.] L. Shrubs or trees, with coarse-grained wood. Leaf-blades entire, toothed, or lobed. Staminate aments drooping: calyx 4-7-lobed: stamens 6-12, the filaments relatively short. Pistillate flowers solitary or several: ovary usually 3-celled: stigmas 3, dilated. Mature involucre (cup) saucer-like or deeper, subtending the nut, or rarely enclosing it. — Spr. — OAK.

Fruit maturing the first year: nut glabrous within: leaf-blades not bristle-tipped.

Leaves deciduous: blades lobed or toothed.

I. ALBAE.

Leaves persistent: blades entire, except on shoots.

II. VIRGINIANAE.

Fruit maturing the second year, except sometimes in *Q. myrtifolia*: nut pubescent within: leaf-blades bristle-tipped.

Leaf-blades entire or slightly lobed: nuts of a globose type.

III. LAURIFOLIAE.

Leaf-blades pinnatifid or pinnately lobed: nuts of an ovoid type.

IV. RUBRAE.

I. ALBAE.

Leaf-blades deeply and prominently lobed, lyrate or pinnatifid.

Acorns decidedly longer than wide; nut protruding at least $\frac{1}{2}$ beyond the cup.

Mature leaf-blades glabrous, glaucous beneath: acorn-cup shallow.

1. *Q. alba*.

Mature leaf-blades pubescent beneath: acorn-cup deep.

Leaf-blades with rounded upper lobes: acorn-cup

11-14 mm. wide; nut 12-14 mm. long.

2. *Q. Margaretta*.

Leaf-blades with truncate or emarginate lobes:

acorn-cup 15-20 mm. wide; nut 15-20 mm. long.

3. *Q. stellata*.

Acorns wider than long; nut immersed in the cup or nearly so.

4. *Q. lyrata*.

Leaf-blades coarsely toothed or undulately lobed.

Leaf-blades undulate or undulately lobed, thick-leathery.

5. *Q. Chapmanti*.

Leaf-blades coarsely toothed, membranous or thin-leathery.

Acorns peduncled: leaf-blades mostly broadened upward, copiously white-pubescent beneath.

6. *Q. Michauxii*.

Acorns sessile: leaf-blades mostly narrowed upward, glabrous or inconspicuously pubescent beneath.

7. *Q. Muhlenbergii*.

II. VIRGINIANAE.

Acorn-nut of an ovoid type, much less than $\frac{1}{2}$ included in the cup.

Leaf-blades smooth or nearly so: acorn-cup hemispheric.

8. *Q. virginiana*.

Leaf-blades rugose-reticulate: acorn-cup turbinate.

9. *Q. geminata*.

Acorn-nut of an oblong type, $\frac{1}{2}$ included in the cup.

10. *Q. Rolfii*.

III. LAURIFOLIAE.

Leaf-blades glabrous beneath.

Leaves persistent.

Acorn-cup saucer-shaped: leaf-blades short.

11. *Q. myrtifolia*.

Acorn-cup hemispheric: leaf-blades long.

12. *Q. laurifolia*.

Leaves deciduous.

Leaf-blades acute, narrow.

13. *Q. Phellos*.

Leaf-blades rounded or emarginate, broad.

14. *Q. hybrida*.

Leaf-blades pubescent beneath.

15. *Q. cinerea*.

IV. RUBRAE.

Leaf-blades dilated at the apex.

Acorn-cup saucer-shaped: leaf-blades glabrous, except the vein-axils beneath.

16. *Q. nigra*.

Acorn-cup hemispheric: leaf-blades brown-tomentose.

17. *Q. marylandica*.

Leaf-blades not dilated at the apex.

Leaf-blades pubescent beneath.

Acorn-cup saucer-shaped: leaf-blades gray- or white-pubescent beneath.

18. *Q. triloba*.

Leaf-blades rounded at the base; lobes 3-5.

19. *Q. pagodaefolia*.

Leaf-blades cuneate or truncate at the base; lobes 5-13.

Acorn-cup turbinate or hemispheric-turbinate: leaf-blades brown- or rusty-pubescent beneath.

20. *Q. velutina*.

Leaf-blades glabrous except sometimes in the vein-axis beneath.

Acorn-cup saucer-shaped, the scales narrow, the inner ones not inflexed.

Acorn-cup swollen at the base: leaf-blades with broad rounded sinuses.

Acorn-cup flat at the base: leaf-blades with acute narrow sinuses.

Acorn-cup turbinate, the scales broad, the inner ones inflexed.

21. *Q. Schneekii*.

22. *Q. rubra*.

23. *Q. Catesbaei*.

1. *Q. alba* L. Tree becoming 45 m. tall: leaf-blades obovate in outline, 10-20 cm. long, glaucous and finally glabrous beneath, pinnatifid into 3-9, usually 7, ascending, narrow lobes: acorn short-stalked; cup saucer-shaped or shallowly hemispheric, woody, tuberculate, 15-20 mm. wide; nut oblong-ovoid, 15-25 mm. long.

The WHITE-OAK grows in rich woods in middle and western Florida. The light-brown heart-wood is close-grained, very heavy and hard, strong, tough, and durable. (Cont.)

2. *Q. Margaretta* Ashe. Tree sometimes 10 m. tall or shrub: leaf-blades oval or obovate in outline, 6-9 cm. long, more or less pubescent about the veins beneath, sinuate or shallowly 3-5-lobed: acorn sessile or short-stalked; cup turbinate-hemispheric, 11-14 mm. wide; nut oblong to ovoid-oblong, 12-14 mm. long.

The SMALL POST-OAK grows in dry sandy woods in northern Florida. The brown heart-wood is close-grained, heavy, hard, and durable. (Cont.)

3. *Q. stellata* Wang. Tree becoming 30 m. tall: leaf-blades broadly obovate in outline, 10-20 cm. long, finely tomentose beneath with gray or yellowish hairs, pinnatifid into usually 5 broad diverging lobes: acorns often clustered; cup hemispheric and contracted at the base, 15-20 mm. wide; nut ovoid, 15-20 mm. long. [*Q. minor* (Marsh.) Sarg.]

The POST-OAK grows in dry woods in northern Florida. The brown heart-wood is close-grained, very heavy, hard, strong, and durable. (Cont.)

4. *Q. lyrata* Walt. Tree becoming 35 m. tall: leaf-blades obovate or spatulate in outline, 9-17 cm. long, white-tomentose beneath, or glabrate, lyrate-pinnatifid: acorn short-stalked; cup hemispheric or depressed-globose, 20-40 mm. wide; nut ovoid and exserted or spheroidal and nearly or wholly included in the cup.

The OVERCUP-OAK grows in river swamps in northern Florida. The dark-brown heart-wood is rather close-grained, very heavy, hard, tough, and durable. Also known as Swamp white-oak. (Cont.)

5. *Q. Chapmani* Sarg. Tree becoming 10 m. tall or shrub: leaf-blades obovate or oblong, 5-10 cm. long, 3-lobed near the apex, or merely undulate, sparingly pubescent beneath, lustrous above: acorn sessile or nearly so; cup depressed-hemispheric, 15-20 mm. wide; nut oblong-elliptic, 1.5-2.5 mm. long.

CHAPMAN'S-OAK grows in sandy soil, chiefly near the coast in northern Florida and the northern portion of the peninsula. The yellow-brown heart-wood is rather close-grained, heavy, and rather hard. (Cont.)

6. *Q. Michauxii* Nutt. Tree becoming 35 m. tall, the bark flaky: leaf-blades obovate, varying to oblong, 8-16 cm. long, coarsely serrate, finely tomentose beneath: acorn sessile; cup deeply saucer-shaped or shallow-hemispheric, 25-35 mm. wide; nut oblong or oblong-ovoid, 30-35 mm. long.

The COW-OAK grows in river swamps and damp woods in northern Florida and in the northern part of the peninsula. The brown heart-wood is close-grained, heavy, hard, tough, exceedingly strong, and durable. Also known as Basket-oak. (Cont.)

7. *Q. Muhlenbergii* Engelm. Tree becoming 50 m. tall, the bark scaly: leaf-blades lanceolate to oblong-lanceolate, 5-20 cm. long, coarsely serrate with usually somewhat flaring teeth, minutely pubescent beneath or glabrate:

Trees of Florida 2.

acorn sessile or nearly so; cup hemispheric, about 15 mm. wide; nut ovoid, about 15 mm. long. [*Q. acuminata* (Michx.) Houba.]

The YELLOW-OAK grows in dry woods in western Florida. The light-brown heart-wood is close-grained, very hard, strong, and durable. Sometimes known as Chestnut-oak. (*Cont.*)

8. *Q. virginiana* Mill. Tree becoming 30 m. tall: leaf-blades oval or oblong, varying to obovate or oblanceolate, 3-12 cm. long, entire, smooth: acorns solitary, or spicate on peduncles; cup hemispheric, 15-20 mm. wide; nut ovoid or oblong-ovoid, 20-25 mm. long, twice as long as the cup.

The LIVE-OAK grows in woods and hammocks nearly throughout Florida, except the Keys. The brown or yellow heart-wood is close-grained, heavy, very hard, exceedingly strong, and durable. (*Cont.*, *Cuba.*)

9. *Q. geminata* Small. Tree 10 m. tall or shrub: leaf-blades narrowly oblong, elliptic, or oblong-oblanceolate, 3-6 cm. long, entire, revolute, rugose-reticulate, finely tomentose beneath: acorns usually 2 at the end of a stalk: cup turbinate, about 10 mm. wide; nut ovoid or narrowly oval, 10-17 mm. long.

The TWIN LIVE-OAK grows in sandy hammocks and on sand-ridges in northern Florida and in the peninsula. The wood is nearly similar to that of the Live-oak. (*Cont.*)

10. *Q. Rolfii* Small. Small tree 7 m. tall or rigid shrub: leaf-blades cuneate in outline, leathery, 2.5-6 cm. long, mostly 3-lobed at the apex, or sometimes 5-lobed, bright-green, glabrous and finely reticulate above, pale and thinly stellate-pubescent beneath: acorns usually in pairs at the ends of short peduncles: cup hemispheric above a stout base, about 1.5 cm. broad; nuts oblong, or slightly broadest below the middle, 2-2.5 cm. long, about $\frac{1}{2}$ included in the cup.

ROLF'S-OAK grows in hammocks about Ft. Lauderdale, Florida. The brown heart-wood is close-grained, heavy, and hard. (*Endemic.*)

11. *Q. myrtifolia* Willd. Tree becoming 6 m. tall or shrub: leaf-blades obovate or oval, 2-5 cm. long, entire, shiny above, dull beneath: acorn sessile or nearly so; cup hemispheric, sometimes deeply so, 10-13 mm. wide; nut ovoid or oblong-ovoid, 10-14 mm. long.

The SCRUB-OAK grows in hammocks and on sand-ridges, especially near the coast, nearly throughout Florida. The brown heart-wood is rather close-grained, heavy, hard, and strong. (*Cont.*)

12. *Q. laurifolia* Michx. Tree becoming 30 m. tall: leaves persistent; blades oblong, varying to oval or obovate, 4-13 cm. long, entire, deep-green, glabrous: acorn short-stalked or nearly sessile; cup saucer-shaped, 10-15 mm. wide; nut ovoid or globose-ovoid, 10-15 mm. long.

The LAUREL-OAK grows in sandy hammocks and on river-bluffs throughout northern and peninsular Florida, except the extreme southern portion. The brown or reddish-brown heart-wood is coarse-grained, heavy, hard, and strong. (*Cont.*)

13. *Q. Phellos* L. Tree becoming 25 m. tall: leaves sometimes persistent; blades linear-oblong or narrowly elliptic to lanceolate or oblanceolate, 4-10 cm. long, shining and glabrous at maturity, entire: acorn sessile or nearly so; cup saucer-shaped, 10-15 mm. wide; nut subglobose, often depressed or globose-ovoid, about 1 cm. long.

The WILLOW-OAK grows in swamps, and on margins of streams in northern Florida and the northern portion of the peninsula. The brown heart-wood is rather coarse-grained and heavy, but rather soft, and strong. (*Cont.*)

14. *Q. hybrida* (Chapm.) Small. Tree becoming 25 m. tall: leaves rather persistent; blades oblong to cuneate, 6-12 cm. long, rounded or emarginate at the apex, dark-green: acorn sessile; cup saucer-shaped, very flat, 10-12 mm. wide; nut subglobose or ovoid-globose, 7-9 mm. long.

CHAPMAN'S WATER-OAK grows in moist calcareous soil in western Florida. The wood is said to be similar to that of the Post-oak. (*Cont.*)

15. *Q. cinerea* Michx. Tree becoming 30 m. tall: leaves deciduous; blades oblong, varying to lanceolate or oblanceolate, 5-12 cm. long, mainly entire,

pale-green, gray-tomentose beneath: acorn nearly sessile; cup saucer-shaped, 10-15 mm. wide; nut oblong or subglobose, about 15 mm. long. [*Q. brevifolia* (Lam.) Sarg.]

The BLUE-JACK grows on sand-ridges and in sandy barrens in northern Florida and in the peninsula as far south as the Everglade region. The brown or red-brown heart-wood is close-grained, heavy, hard, and strong. (Cont.)

16. *Q. nigra* L. Tree becoming 30 m. tall, the bark relatively smooth: leaves deciduous; blades oblanceolate to spatulate in outline, 5-15 cm. long, entire and sometimes with a dilated terminal lobe, or 3-lobed at the apex, glabrous beneath or sometimes sparingly tomentose: acorn sessile or short-peduncled; cup saucer-shaped, 12-15 mm. wide; nut subglobose, 10-13 mm. long.

The WATER-OAK grows in sandy soil, swamps, or river-swamps in northern Florida and in the northern portion of the peninsula. The brown heart-wood is close-grained, heavy, hard, and strong. (Cont.)

17. *Q. marylandica* Muench. Tree becoming 20 m. tall, the bark very rough: leaf-blades broadly or narrowly obovate in outline, 9-16 cm. long, 3-5-lobed or with a single dilated terminal lobe, brownish-pubescent beneath: acorn sessile or short-stalked; cup depressed-hemispheric, 15-20 mm. wide; nut subglobose or ovoid, 10-20 mm. long.

The BLACK-JACK grows in dry sandy soil in northern Florida. The brown heart-wood is coarse-grained, heavy, hard, and strong. Also known as Jack-oak. (Cont.)

18. *Q. triloba* Michx. Tree becoming 40 m. tall: leaf-blades ovate or oval in outline, finely tomentose with yellowish-gray hairs beneath, pinnatifid above a rounded base into 3-7 flaring or scythe-shaped lobes: acorn short-stalked; cup flat-turbinate or saucer-shaped above the turbinate base, 15-18 mm. wide; nut subglobose, 10-15 mm. long. [*Q. digitata* (Marsh.) Sudw.]

The SPANISH-OAK grows in dry woods in northern Florida and the adjacent portion of the peninsula. The reddish heart-wood is coarse-grained, hard, and strong, but not durable. (Cont.)

19. *Q. pagodaefolia* (Ell.) Ashe. Tree becoming 32 m. tall: leaf-blades oval to oblong in outline, 15-30 cm. long, persistently white-tomentose, pinnatifid above a cuneate or truncate base into 5-13 lanceolate or narrowly triangular lobes: acorn sessile or nearly so; cup shallow-turbinate, or saucer-shaped above the turbinate base, 12-14 mm. wide; nut subglobose, about 10 mm. long.

The SWAMP SPANISH-OAK grows in river-swamps and low grounds in northern Florida. The reddish-brown heart-wood is rather close-grained, hard, strong, and durable. (Cont.)

20. *Q. velutina* Lam. Tree becoming 50 m. tall: leaf-blades oval or obovate in outline, 10-30 cm. long, usually rusty-pubescent beneath, pinnately lobed, the lobes spreading: acorn sessile or nearly so; cup turbinate or hemispheric-turbinate, 20-25 mm. wide; nut globose-oblong or obovoid, 15-25 mm. long.

The BLACK-OAK grows in dry woods in northern Florida. The brown and red-tinged heart-wood is coarse-grained, heavy, hard, and strong. Also known as Yellow-bark oak. (Cont.)

21. *Q. Schneckii* Britton. Tree becoming 65 m. tall: leaf-blades oval, varying to obovate in outline, 6-20 cm. long, with tufts of hairs in the vein-axils beneath, pinnately 5-7-lobed, the lobes ascending, oblong or triangular, the sinuses rounded: acorn short-stalked or nearly sessile; cup saucer-shaped, 20-30 mm. wide; nut ovoid, 12-25 mm. long.

The LEOPARD-OAK grows in rich soil or river-swamps in middle and western Florida. The red-brown heart-wood is coarse-grained, heavy, hard, and strong. (Cont.)

22. *Q. rubra* L. Tree becoming 50 m. tall: leaf-blades oval, varying from ovate to obovate in outline, 10-20 cm. long, with tufts of hairs in the vein-axils beneath, pinnately 5-7-lobed, the lobes ascending, the sinuses rounded: acorn short-stalked; cup saucer-shaped, 25-35 mm. wide; nut ovoid, 25-30 mm. long.

The RED-OAK grows in dry or rocky woods in middle and western Florida. The reddish-brown heart-wood is close-grained, heavy, hard, and strong. (Cont.)

23. *Q. Catesbaei* Michx. Tree becoming 20 m. tall: leaf-blades oblong to ovate in outline, 9–20 cm. long, glabrous, except the tufted vein-axils beneath, deeply pinnate-lobed, the lobes oblong, ovate or usually lanceolate, often curved: acorn short-stalked; cup broadly turbinate, sometimes rather flat, 25–30 mm. wide; nut ovoid, 20–25 mm. long.

The **TURKEY-OAK** grows on sand-ridges and in pinelands in northern Florida and the northern portion of the peninsula. The brown heart-wood is close-grained, heavy, hard, and strong. (*Cont.*)

Order URTICALES.

Shrubs or trees, or herbs. Leaves alternate, or in the case of herbs often opposite: blades simple, entire, toothed, or divided. Flowers various, not in aments. Calyx present. Corolla wanting. Androeceium often of as many stamens as there are sepals. Gynoeceium of a single carpel or of 2 united carpels. Fruit an achene, a samara, a drupe, a syncarp, or a syconium.

Fruit an achene, the achenes in the fleshy calyxes, on the outside or inside of a receptacle: anthers inflexed. Fam. 1. ARTOCARPACEAE.
Fruit a samara or a drupe, or nut-like: anthers erect. Fam. 2. ULMACEAE.

FAMILY 1. ARTOCARPACEAE. MULBERRY FAMILY.

Shrubs or trees, the sap milky. Leaves mostly alternate: blades equilateral, entire, toothed, or lobed. Flowers monoecious or dioecious, in ament-like spikes or enclosed in a receptacle, the staminate with 3 or 4 stamens, the pistillate with a calyx of 3–5 sepals which greatly enlarge and subtend or envelop the achene: gynoeceium of 1 or 2 united carpels; styles or stigmas 1 or 2. Fruit a syncarp or syconium.

Staminate and pistillate flowers on the outside of the receptacle.

Staminate and pistillate flowers in ament-like spikes.

Staminate flowers in ament-like racemes; pistillate flowers in heads.

Staminate and pistillate flowers on the inside of a closed receptacle.

1. *MORUS*.

2. *PAPYRIUS*.

3. *FICUS*.

1. *MORUS* [Tourn.] L. Shrubs or trees, with scaly bark. Leaves deciduous: blades commonly serrate, sometimes lobed. Staminate flowers in cylindric spikes, with 4 sepals and 4 stamens. Pistillate spikes cylindric: sepals 4, the lateral ones larger than the others: stigmas 2, short. Fruit cylindric, the achenes included in the calyx. — Spr. — **MULBERRY**.

Leaf-blades glabrous beneath or sparingly pubescent on the nerves.

Syncarp white or pinkish.

Syncarp black at maturity.

Leaf-blades softly pubescent beneath.

1. *M. alba*.

2. *M. nigra*.

3. *M. rubra*.

1. *M. alba* L. Tree 5–12 m. tall, with sparingly pubescent twigs: leaf-blades ovate to oval-ovate, 6–15 cm. long, generally pubescent about the veins beneath: staminate spikes 1–2 cm. long: fruits subglobose to oval-oblong, 1–2 cm. long, white or pinkish.

The **WHITE-MULBERRY** grows in woods and on roadsides in northern Florida and the northern portion of the peninsula. Nat. from Europe. The yellowish-brown heart-wood is close-grained, rather light but hard. (*Cont.*)

2. *M. nigra* L. Tree sometimes becoming 8 m. tall, or shrub, with pubescent twigs: leaf-blades ovate, 4–15 cm. long, abruptly short-pointed, becoming glabrous, but usually rough above: staminate spikes 1–2 cm. long: fruits oval-oblong, 1–2 cm. long, black.

The **BLACK-MULBERRY** grows in fields and on roadsides in peninsular Florida. Nat. from Europe. The yellowish-brown heart-wood is close-grained, rather light, and hard. (*Cont.*)

3. *M. rubra* L. Tree becoming 20 m. tall, with early glabrous twigs: leaf-blades ovate to oval-ovate, 6–20 cm. long, softly pubescent beneath: staminate spikes 4–8 cm. long: fruits cylindric, 3–6 cm. long, deep-red or purplish.

The RED-MULBERRY grows in rich woods and hammocks nearly throughout Florida. The dark-yellow or light-orange heart-wood is coarse-grained, light, soft, and rather tough. (Cont.)

2. **PAPYRIUS** Lam. Trees with smoothish bark. Leaves deciduous: blades serrate, often lobed. Staminate flowers in cylindric spikes, with 4 sepals and 4 stamens. Pistillate spikes globose: calyx 4-lobed: stigma 1, elongated. Fruit globular, each achene protruding from the persistent calyx.

1. *P. papyrifera* (L.) Kuntze. Tree, resembling the mulberry, sometimes 15 m. tall, with hirsute-tomentose twigs: leaf-blades ovate, 8–16 cm. long: fruit globular, 2–3 cm. in diameter, the protruding achenes reddish or orange. — Spr.

The PAPER-MULBERRY grows in fields and woods and on roadsides nearly throughout northern and peninsular Florida. Nat. from Asia. The whitish heart-wood is close-grained, light, and soft. (Cont., W. I.)

3. **FICUS** [Tourn.] L. Shrubs, trees, or vines, with smoothish bark. Leaves mainly persistent: blades entire, toothed, or lobed. Flowers in hollow receptacles, the staminate with a calyx of 2–6 sepals, or these obsolete, and 1–2 or rarely 3 stamens. Pistillate flowers numerous: style rather long: stigma clavate, peltate, or 2-lobed. Fruit depressed-globular or elongate, the achenes included. — The trees of the following species flower, more or less, all year. — Fig.

Leaf-blades lobed, very scabrous-pubescent.

Leaf-blades entire, smooth and glabrous.

Receptacles pedunculate: leaf-blades usually broad-based.

Receptacles sessile: leaf-blades usually narrow-based.

1. *F. Carica*.

2. *F. brevifolia*.

3. *F. aurea*.

1. *F. Carica* L. Tree 2–5 m. tall, or shrub, with pubescent twigs: leaf-blades palmately 5–7-lobed; petioles pubescent: fruits obovoid, 2–8 cm. long.

The COMMON-FIG, a native of the Mediterranean region, has escaped from gardens, in many parts of Florida. The light-yellow wood is coarse-grained, spongy, light and soft but somewhat elastic. (Cont., W. I.)

2. *F. brevifolia* Nutt. Tree sometimes 15 m. tall or shrub, with glabrous twigs: leaf-blades ovate-oval or rarely obovate, 3–10 cm. long, mainly rounded or cordate at the base: fruits subglobose, 2–2.5 cm. in diameter.

The WILD-FIG grows in hammocks in tropical peninsular Florida and the Keys. The yellow or yellow-brown wood is close-grained and soft, but rather durable. (W. I.)

3. *F. aurea* Nutt. Tree, often starting as a vine, becoming 20 m. tall, with glabrous twigs: leaf-blades oblong, elliptic, or oval, 3–10 cm. long, acute or short-acuminate at the base: fruits spheroidal or obovoid, about 2 cm. in diameter.

The GOLDEN-FIG grows in hammocks in subtropical and tropical peninsular Florida and the Keys. The light-brown wood is coarse-grained, very light, soft, and weak. (W. I.)

FAMILY 2. ULMACEAE. ELM FAMILY.

Shrubs or trees, the sap watery. Leaves alternate: blades inequilateral, commonly toothed. Flowers perfect, polygamous, or monoecious, variously disposed. Calyx of 4 or 5, or rarely 3–9 partially united sepals. Androecium of usually as many stamens as there are sepals. Gynoecium of 2 united carpels. Fruit a samara or a drupe, or nut-like.

Fruit dry, a samara, or nut-like: embryo straight.

Flowers mostly perfect: fruit a samara winged all around.

Flowers polygamo-monoecious: fruit nut-like, bearing wart-like tubercles.

1. *ULMUS*.

2. *PLANERA*.

Fruit pulpy, a drupe: embryo with conduplicate cotyledons.

Flowers solitary or merely clustered in the axils: drupe solitary.

Flowers in dichotomous cymes: drupes cymosely disposed.

3. *CELTIS*.

4. *TREMA*.

1. **ULMUS** [Tourn.] L. Shrubs or trees, with furrowed bark and sometimes winged branches. Leaves deciduous: blades toothed. Calyx campanulate. Ovary sessile or nearly so, glabrous, sometimes pubescent. Samara orbicular to oblong. — Winter & spr. — ELM.

Flowers long-stalked: samara ciliate: leaves smooth or nearly so.

Branches corky-winged: samaras narrow.

Branches not corky-winged: samaras broad.

Samaras oval or obovate, with narrow converging tips.

Samaras orbicular or orbicular-ovate, with broad erect tips.

Flowers sessile or nearly so: samara eciliate: leaves very rough above.

1. *U. alata*.

2. *U. americana*.

3. *U. floridana*.

4. *U. fulva*.

1. ***U. alata*** Michx. Tree becoming 20 m. tall, the branches often corky-winged: leaf-blades narrowly elliptic or oblong-elliptic, or rarely broader, 2–10 cm. long, typically smooth above; petioles 1.5–3 mm. long: calyx deeply lobed: samara elliptic, 6–8 mm. long, long-stipitate, the wings pubescent and long-ciliate.

The Wahoo grows in rich soil, chiefly near streams in northern Florida and in the peninsula to the Everglade region. The brown heart-wood is close-grained, heavy, hard, and tough but not otherwise strong. Also known as Winged-elm. (Cont.)

2. ***U. floridana*** Chapm. Tree becoming 20 m. tall, the branches not corky-winged, the twigs glabrous: leaf-blades mainly oblong, oval, or ovate, 3–12 cm. long, mostly smooth above; petioles 6–10 mm. long: calyx shallowly lobed: samara ovate, 11–13 mm. long, short-stipitate, the wings merely long-ciliate.

The FLORIDA-ELM grows in swamps and on river-banks in western Florida and in the northern portion of the peninsula. The wood has not yet been studied. (Cont.)

3. ***U. americana*** L. Tree becoming 40 m. tall, the branches not corky-winged, the twigs typically pubescent: leaf-blades oval to ovate, 5–10 cm. long, sometimes rough-pubescent above; petioles 4–7.5 mm. long: flower-clusters lax: calyx shallowly lobed: samara oval or obovate, 10–12 mm. long, the wings merely long-ciliate.

The WHITE-ELM grows in low grounds and on river banks in northern Florida, and in the peninsula to the Everglade region. The brown heart-wood is coarse-grained, heavy, hard, tough, and strong. Also known as American-elm. (Cont.)

4. ***U. fulva*** Michx. Tree becoming 25 m. tall, the twigs densely pubescent, the inner bark mucilaginous: leaf-blades ovate-oval or obovate, 8–19 cm. long, rough-pubescent on both sides: flower-clusters dense: samara suborbicular, 14–17 mm. in diameter, finely pubescent, ciliate.

The SLIPPERY-ELM grows in rich woods in western Florida. The reddish-brown heart-wood is very close-grained, heavy, hard, strong, and durable. Also known as Red-elm. (Cont.)

2. **PLANERA** J. F. Gmel. Trees, with scaly bark. Leaves deciduous: blades toothed. Calyx campanulate. Ovary short-stipitate, tubercular. Nut-like fruit irregularly warty.

1. ***P. aquatica*** (Walt.) J. F. Gmel. Tree becoming 12 m. tall: leaf-blades ovate or elliptic-ovate, 3–8 cm. long, serrate or crenulate-serrate, short-petioled: calyx lobes ovate, obtuse: fruits ovoid, about 1 cm. long, short-stalked, the processes soft. — Spr.

The WATER-ELM grows in river swamps in northern Florida. The light-brown heart-wood is close-grained, light, soft, and weak. (Cont.)

3. **CELTIS** [Tourn.] L. Unarmed shrubs or trees, the bark often warty. Leaves deciduous: blades entire or toothed, very inequilateral. Calyx rotate, the lobes much longer than the tube. Stigmas 2, entire. Drupe subglobose. — Spr.

Leaf-blades of an ovate type.

Leaf-blades of a lanceolate type.

Leaf-blades sharply serrate, thin.

Leaf-blades entire or nearly so, thick.

1. *C. georgiana*.

2. *C. Smallii*.

3. *C. mississippiensis*.

1. ***C. georgiana*** Small. Tree becoming 8 m. tall or shrub, the twigs pubescent: leaf-blades deep-green, ovate, 2-5 cm. long, rough and sometimes sparingly pubescent above, entire or sharply serrate: drupes globose or nearly so, 5-7 mm. in diameter, red-purple or tan-colored.

The GEORGIA-HACKBERRY grows on sandy or rocky river-banks in middle and western Florida. The wood has not yet been studied. (*Cont.*)

2. ***C. Smallii*** Beadle. Tree becoming 20 m. tall, the twigs glabrous: leaf-blades thin, lanceolate to oblong-lanceolate, 5-10 cm. long, acuminate, sometimes with conspicuously elongate tips, sharply and irregularly serrate: drupes subglobose, 5-7 mm. in diameter, purple or purplish.

SMALL'S-HACKBERRY grows on river-bluffs in western Florida. The wood has not yet been studied. (*Cont.*)

3. ***C. mississippiensis*** Bosc. Tree becoming 30 m. tall, the twigs sometimes pubescent: leaf-blades thick, lanceolate, varying to ovate-lanceolate or oblong-lanceolate, 6-12 cm. long, long-acuminate, entire or nearly so: drupes globose or globose-ovoid, 5-7 mm. in diameter, dark-purple or orange-red.

The SUGAR-BERRY grows in rich woods and hammocks nearly throughout Florida. The light-yellow heart-wood is close-grained, but soft and rather weak. Also known as Hackberry. (*Cont., Ber.*)

4. **TREMA** Lour. Unarmed shrubs or trees, the bark smoothish: leaves persistent: blades toothed, more or less inequilateral. Calyx rotate, the lobes much longer than the tube. Stigmas 2, entire. Drupe ovoid or globose.

Leaf-blades cordate at the base: anthers over 1 mm. long: drupes yellow or orange.

1. *T. floridana*.

Leaf-blades obtuse or rounded at the base: anthers less than

1 mm. long: drupes pink.

2. *T. Lamarckiana*.

1. ***T. floridana*** Britton. Tree 6 m. tall or shrub, with copiously pubescent foliage: leaf-blades ovate, oblong-ovate or lanceolate, 4-10 cm. long, softly pubescent beneath: calyx greenish: drupes subglobose, 2.5-3.5 mm. in diameter, yellow or orange. — All year.

The FLORIDA-TREMA grows in burned or cleared hammocks in tropical Florida. The light-brown wood is close-grained, light, soft, and weak. (*Endemic.*)

2. ***T. Lamarckiana*** (R. & S.) Blume. Small tree or shrub, with finely hirsute or velvety twigs: leaf-blades oblong, lanceolate, or narrowly ovate, mostly 1-3 cm. long, finely serrate, scabrous above, veiny-reticulate beneath, obtuse or rounded at the base: calyx whitish or pinkish: drupes ovoid or globose-ovoid, 2-2.5 mm. in diameter, pink.

The WEST-INDIAN TREMA grows in hammocks on the lower Florida Keys. The wood is nearly or quite similar to that of the preceding species. (*W. I.*)

Order POLYGONALES.

Herbs, shrubs, trees, or vines. Leaves alternate, or sometimes opposite or whorled: blades mostly entire: stipules present, usually as a sheath, rarely obsolete. Flowers perfect, monoecious, dioecious, or polygamous, variously disposed. Hypanthium long or short. Calyx of 2-6 sepals, which sometimes develop keels or wings. Corolla wanting. Androeceium of 2-9 stamens. Gynoeceium of 2 or 3 united carpels, the ovary superior. Fruit an achene.

FAMILY 1. **POLYGONACEAE.** BUCKWHEAT FAMILY.

Plants various in habit. Leaves with manifest, usually sheathing stipules, and inflorescence not involucrate, or the stipules obsolete and the inflorescence involucrate.

1. **COCCOLOBIS** P. Br. Shrubs or trees, or rarely vines. Leaves alternate, the ocreae cylindric or funnelform. Flowers borne in spikes or racemes. Sepals 5, surmounting the accrescent hypanthium. Stamens 8. Stigmas 3, entire. Achene 3-angled, included.—The plants of the following species flower, more or less, throughout the year.

Leaf-blades longer than wide, narrowed at the base: fruits about 1 cm. thick.

Leaf-blades wider than long, cordate at the base: fruits 1.5-2 cm. thick.

1. *C. laurifolia*.

2. *C. uvifera*.

1. **C. laurifolia** Jacq. Tree: leaf-blades oblong to ovate or obovate, 5-10 cm. long, narrowed or rounded at the base: panicles less than 1 dm. long during anthesis, the lower flower-clusters usually with 3 or 4 pedicels: sepals 2.5-3.5 mm. long: hypanthium-margin even between the filaments: fruit globose-ovoid.

The PIGEON-PLUM grows on or near the coast of tropical and subtropical Florida, being most common in the hammocks of the Everglade Keys and Florida Keys. The dark-brown or reddish-brown heart-wood is close-grained, very hard, and strong, but brittle. (W. I.)

2. **C. uvifera** (L.) Jacq. Small tree or shrub: leaf-blades suborbicular, 4-20 cm. wide, cordate at the base: panicles over 1 dm. long during anthesis, dense: sepals 2-3 mm. long: fruit subglobose, borne in grape-like clusters.

The SEA-GRAPE grows in hammocks in the coastal regions of tropical and subtropical Florida. The dark-brown or somewhat violet heart-wood is close-grained, very heavy, and hard. (W. I.)

Order **CHENOPODIALES.**

Herbs, often partially woody, or shrubs or trees. Leaves alternate or opposite, occasionally scale-like. Flowers mostly perfect, sometimes monoecious or dioecious. Calyx usually present, the sepals mainly separate. Corolla wanting, or present and of minute or large petals. Androeium of 1-several stamens. Gynoecium of a single carpel or of several united carpels, the ovary mostly superior. Fruit an achene, utricle or a berry, or sometimes an anthocarp.

FAMILY 1. **PISONIACEAE.** PISONIA FAMILY.

Shrubs, trees, or vines. Leaves opposite or alternate: blades simple. Flowers perfect, dioecious or rarely monoecious, cymose. Calyx of 5 united sepals, campanulate, tubular, or funnelform. Corolla wanting. Androeium of 5-30 stamens. Gynoecium 1-carpellary. Ovary 1-celled: style terminal. Fruit an anthocarp.

Fruits angular, with rows of glands: calyx broad.
Fruits terete, glandless: calyx narrow.

1. **PISONIA**.

2. **TORRUBIA**.

1. **PISONIA** [Plum.] L. Armed woody vines, or shrubs or trees. Leaves opposite: blades entire. Flowers in compound cymes. Calyx broadly funnelform or rotate, with a thin undulate recurved edge. Fruits dry, with rows of glands.

1. *P. rotundata* Griseb. Small tree or shrub, the bark pale; leaf-blades thick, broadly oblong or oval, varying to obovate, 2.5–8 cm. long, short-petioled; cymes densely flowered; calyx green or whitish, broadly funnel-form, about 3 mm. long, tomentulose along the edge; fruits broadly or narrowly obovoid, 5–6 mm. long.

The *PISONIA* grows in hammocks on the lower Florida Keys. The yellowish heart-wood is coarse-grained and rather weak. (*Bah., Cuba.*)

2. *TORRUBIA* Vell. Unarmed shrubs or trees. Leaves opposite: blades entire. Flowers in cymes. Calyx narrowly funnel-form to tubular, with an erect nearly or quite even edge. Fruits juicy, without glands.

1. *T. longifolia* (Heimerl) Britton. Small tree or shrub, the bark pale; leaves 3–7 cm. long; blades spatulate to obovate, oblong-spatulate, or oval-spatulate; cymes open; calyx green or greenish, or purplish, narrowly funnel-form, 3–3.5 mm. long, the erect edge glabrous; fruit broadly or narrowly obovoid, 5–6 mm. long. — Spr. & sum.

The *BLOLLY* grows in coastal hammocks, and in those of the Everglade Keys and Florida Keys. The yellow or brownish-yellow heart-wood is coarse-grained and heavy but rather soft and weak. (*W. I.*)

Order RANALES.

Herbs, shrubs, or trees. Leaves mostly without stipules, with entire or dissected blades, in aquatics often various on the same plant. Flowers perfect, monoecious, or dioecious. Calyx and corolla of distinct sepals and petals. Androecium of usually more hypogynous stamens than there are sepals. Gynoecium of 1 or several distinct or united carpels. Ovary superior. Fruit various.

Sepals and petals valvate in the bud: stipules wanting.
Sepals and petals imbricate: stipules present.

Fam. 1. ANNONACEAE.
Fam. 2. MAGNOLIACEAE.

FAMILY 1. ANNONACEAE. CUSTARD-APPLE FAMILY.

Shrubs or trees. Leaves alternate: blades entire. Flowers perfect, monoecious, or dioecious. Calyx of 3, or 2, sepals. Corolla of mostly 6 petals much larger than the sepals, those of the inner series smaller than those of the outer, or wanting. Androecium of many stamens, each anther terminating in a blunt glandular appendage. Gynoecium of few or many distinct carpels. Fruit a simple or aggregate berry.

Carpels distinct, several-ovuled: anther-sacs separated.
Carpels confluent, 1-ovuled: anther-sacs contiguous.

1. ASIMINA.
2. ANNONA.

1. *ASIMINA* Adans. Ill-scented plants. Leaves mostly deciduous: blades broadened upward. Petals 6, much larger than the sepals, spreading. Carpels few: style subulate. Fruit simple.

1. *A. triloba* (L.) Dunal. Tree 3–12 m. tall or shrub: leaf-blades cuneate to obovate-cuneate or oblong-cuneate, or rarely obovate, 10–30 cm. long: pedicels 10–20 mm. long during anthesis: inner petals less than 20 mm. long: seeds 20–25 mm. long. — Spr.

The *PAPAW* grows in rich woods in middle Florida. The yellow or greenish-yellow wood is coarse-grained, light, spongy, and soft. Also known as Custard-apple. (*Cont.*)

2. *ANNONA* L. Pungent-aromatic plants. Leaves persistent: blades oblong, oval, or ovate. Petals larger than the sepals, converging. Carpels numerous; style linear. Fruit aggregate. — Spr.

Petals very broad: fruits not tuberculate.

Sepals over 10 mm. wide: outer and inner petals about equal in length.

Sepals less than 9 mm. wide: outer petals much longer than the inner.

Petals narrow: fruits strongly tuberculate.

1. *A. glabra*.

2. *A. palustris*.

3. *A. squamosa*.

1. *A. glabra* L. Tree becoming 14 m. tall: leaf-blades oblong to oval or ovate, 10–18 cm. long: outer petals 3–3.5 cm. long: filaments 4 mm. long: fruit 8–12 cm. long: seeds 15–20 mm. long.

The POND-APPLE grows in the wet coastal hammocks of tropical and subtropical peninsular Florida, those of the Everglade Keys and the Florida Keys. The brown and yellow-streaked wood is rather coarse-grained, light, soft, and weak. (*Bah., Cuba.*)

2. *A. palustris* L. Small tree or shrub: leaf-blades oblong to ovate or oblong-lanceolate, 3–12 cm. long, or rarely larger: outer petals 1.5–2 cm. long: filaments 3 mm. long: fruit 5–7 cm. long: seeds 9–12 mm. long.

The ALLIGATOR-APPLE grows in the Everglades about the Everglade Keys and on the adjacent hammock islands. Also on the Florida Keys. The wood is nearly similar to that of the Pond-apple. (*W. I.*)

3. *A. squamosa* L. Tree with glabrous or nearly glabrous twigs: leaf-blades mainly oblong or elliptic, varying to oblong-lanceolate, mostly 10–15 cm. long, rather slender-petioled: sepals broadly deltoid, about 2 mm. long, acute: outer petals narrowly oblong to linear-lanceolate, 24–28 mm. long: berries ovoid to globose-ovoid, 6–10 cm. long, tuberculate, yellowish-green.

The SUGAR-APPLE grows in hammocks and cultivated grounds on the Florida Keys. Naturalized from tropical America. The wood has not been studied. (*Cont.*)

FAMILY 2. MAGNOLIACEAE. MAGNOLIA FAMILY.

Shrubs, trees, or vines. Leaves alternate, sometimes apparently whorled: blades entire, toothed, or lobed. Flowers perfect or monocious. Calyx of 3 petaloid sepals or rarely more. Corolla of 5 imbricate petals as large as the sepals or larger, or more. Androeceum of many stamens or rarely few. Gynoeceum of several or many distinct carpels. Fruit a cone of accrescent carpels which become baccate or follicular.

Leaf-blades not lobed: nature carpels berry-like follicles.

1. MAGNOLIA.

Leaf-blades lobed: mature carpels samara-like.

2. LIRIODENDRON.

1. *MAGNOLIA* L. Shrubs or trees. Leaves deciduous or persistent: blades entire or auricled at the base. Flowers perfect, white. Sepals and petals about equal in size. Fruit an echinate cone.—*Spr., or spr. and sum.*

Leaf-blades thick-leathery, very thick, persistent, brown or rusty-tomentose beneath.

1. *M. foetida*.

Leaf-blades membranous, sometimes firm, usually deciduous, glabrous, glaucous or silky beneath.

Leaf-blades not auricled at the base: flowers short.

2. *M. virginiana*.

Leaf-blades auricled at the base: flowers long.

Fruit oblong-conic: carpels with long curved beaks: leaf-blades pale green beneath.

3. *M. pyramidata*.

Fruit subglobose: carpels obtuse or acutish: leaf-blades very glaucous beneath.

4. *M. macrophylla*.

1. *M. foetida* (L.) Sarg. A tree becoming 20 m. tall, the twigs tomentose: leaf-blades elliptic, oval, oblanceolate, or rarely ovate, 10–30 cm. long, shining above: flowers creamy-white, lemon-scented, broadly campanulate, 10–20 cm. wide: petals with suborbicular or orbicular-obovate blades 5–10 cm. wide: fruit oval, 8–10 cm. long: seeds 1.5–2 cm. long.

The MAGNOLIA grows in rich moist soil and hammocks in northern Florida and in the peninsula as far south as the Everglade region. The creamy-white wood is rather close-grained, heavy, and hard. (*Cont.*)

2. *M. virginiana* L. Tree becoming 25 m. tall, the twigs silky: leaf-blades oblong, elliptic, or oval, 5-15 cm. long: flowers white, globose-campanulate, 3-8 cm. wide: petals elliptic, oblong, oval, or obovate: fruit oval or ovoid, 3-5 cm. long: seeds 8-10 mm. long.

The SWEET-BAY grows in swamps, wet woods and hammocks nearly throughout Florida. The brown wood is rather close-grained and heavy, but soft. Also known as Swamp-bay. (*Cont.*)

3. *M. pyramidata* Pursh. A tree becoming 10 m. tall, the twigs glabrous: leaf-blades rhombic-obovate, 10-20 cm. long, the basal lobes diverging: petals lanceolate, 5-8 cm. long: fruit oblong, 6-8 cm. long.

The SOUTHERN CUCUMBER-TREE grows in low woods and on stream-banks in western Florida. The wood has not yet been studied. (*Cont.*)

4. *M. macrophylla* Michx. A tree becoming 15 m. tall, the twigs finely pubescent: leaf-blades obovate to oblong-lanceolate, 30-90 cm. long, the basal lobes broad: petals 12-20 cm. long, or rarely longer: fruit 6-10 cm. in diameter.

The LARGE-LEAVED CUCUMBER-TREE grows in rich woods in middle and western Florida. The brown wood is close-grained, light, and hard but weak. (*Cont.*)

2. *LIRIODENDRON* L. Trees. Leaves deciduous: blades lobed. Flowers perfect, greenish-yellow. Sepals 3, reflexed. Petals 6, broader than the sepals, erect. Fruit a cone of appressed samara-like carpels.

1. *L. tulipifera* L. Tree becoming 60 m. tall, the bark with flat ridges: leaf-blades 6-20 cm. wide, 4-lobed, truncate or notched at the apex: flowers campanulate: sepals oblong to oblong-ovate, 4-5 cm. long: petals oblong, oval, or suborbicular, greenish-yellow and often tinged with orange: fruit conic, 5-7 cm. long, erect, the carpels 3-4 cm. long, indehiscent. — Spr.

The TULIP-TREE grows in rich woods in northern Florida. The yellow or brownish heart-wood is close-grained, light, soft, and brittle. (*Cont.*)

Order PAPAVERALES.

Herbs, shrubs, trees, or vines. Leaves with entire, toothed, dissected, or compound blades. Flowers perfect. Calyx of distinct or nearly distinct sepals. Corolla of distinct or nearly distinct petals, or wanting. Androecium of few or many hypogynous stamens. Gynoecium of 2-several united carpels. Ovary superior, sessile or stipitate. Fruit capsular or baccate.

Gynoecium 2-carpellary: leaf-blades simple or palmately compound.

Gynoecium 3-carpellary: leaf-blades pinnately compound.

Fam. 1. CAPPARIDACEAE.
Fam. 2. MORINGACEAE.

FAMILY 1. CAPPARIDACEAE. CAPER FAMILY.

Herbs, shrubs, trees, or vines. Leaves alternate or rarely opposite: blades simple or compound. Flowers perfect, in racemes or cymes, or solitary. Calyx of 4 or 5 sepals. Corolla of 4 or 5, often unequal, petals. Receptacle often produced into a gland. Androecium of 4-6 stamens or more. Gynoecium of 2-united carpels. Ovary often stipitate. Fruit capsular, sometimes baccate. Seeds conduplicate.

1. *CAPPARIS* [Tourn.] L. Shrubs, trees, or vines. Leaf-blades simple, entire. Sepals 4 or 5, often spreading or reflexed. Petals 4 or 5, sessile. Receptacle unappendaged. Stamens numerous: anthers oblong to linear. Ovary long-stipitate: style wanting. Capsules sometimes baccate, often torulose. — Spr. — CAPER-TREE.

- Leaves scaly; blades not reticulate: sepals valvate: capsule scaly. 1. *C. cynophallophora*.
 Leaves glabrous; blades reticulate: sepals imbricate: capsule glabrous. 2. *C. jamaicensis*.

1. *C. cynophallophora* L. Small tree or a shrub: leaf-blades oblong to oblong-cuneate, mainly 5-8 cm. long: sepals suborbicular: corolla 5.5-7.5 cm. wide: fruit-body mostly 10-20 cm. long.

The BAY-LEAVED CAPER-TREE grows in coastal hammocks along the lower half of the eastern coast, and on the Everglade Keys and Florida Keys. The yellowish or yellowish-white wood is close-grained, heavy, and hard. (W. I.)

2. *C. jamaicensis* Jacq. Small tree or shrub: leaf-blades elliptic, oblong, or oval, mainly 4-10 cm. long: sepals lanceolate to ovate-lanceolate: corolla about 3 cm. wide: fruit-body mostly 20-30 cm. long.

The JAMAICA CAPER-TREE grows in the coastal hammocks of subtropical and tropical peninsular Florida and on the Keys. The yellow or yellowish wood is close-grained, heavy, hard, and strong. (W. I.)

FAMILY 2. MORINGACEAE. HORSERADISH-TREE FAMILY.

Trees. Leaves alternate: blades 2-3-pinnate. Flowers perfect, slightly irregular, paniced. Calyx of 5 unequal sepals borne on the edge of the cup-shaped hypanthium. Corolla of 5 petals resembling the sepals, the lower petal reflexed, the upper one erect-spreading. Androeium of 5 stamens, borne on the hypanthium, and 5 staminodia. Gynoeium 3-carpellary. Ovary stipitate, with 3 parietal placentae. Fruit an elongate capsule. Seeds 3-winged or wingless.

1. *MORINGA* Juss. Trees, with spreading branches. Panicles axillary, long-peduncled. Pods drooping.

1. *M. Moringa* (L.) Millsp. Tree becoming 11 m. tall: leaves 3-6 cm. long: leaflets cuneate to oval or oblong, mostly 1-2 cm. long: panicles many-flowered: sepals linear or oblong-linear, 9-10 mm. long: petals usually white or pinkish, mainly oblong: capsules 2.5-3.5 dm. long: seeds 3-winged, the body fully 1 cm. long.—All year.

The HORSERADISH-TREE, a native of southern Asia, grows in woods and fields, and on roadsides in peninsular Florida. The wood is coarse-grained, soft and light. (W. I.)

Order ROSALES.

Herbs, shrubs, or trees, or rarely aquatic plants or vines. Leaves with simple or compound blades. Flowers mostly perfect. Calyx and corolla present and sometimes irregular, or the latter occasionally, or both rarely, wanting. Androeium of few or many stamens. Gynoeium of 1-several distinct or united carpels. Fruit various.

Flowers regular or nearly so.

Seeds with usually copious endosperm.

Calyx, or calyx and corolla, present: ovule solitary in each carpel, suspended.

Fam. 1. HAMAMELIDACEAE.

Calyx and corolla wanting: ovules several or numerous in each carpel, horizontal.

Fam. 2. ALTINGIACEAE.

Seeds without endosperm.

Flowers monoecious, in dense globular heads.

Fam. 3. PLATANACEAE.

Flowers perfect, or if monoecious or dioecious not in heads.

Carpels several or numerous, or if solitary becoming an achene.

Fam. 4. MALACEAE.

Carpels solitary, not becoming an achene.

Leaf-blades simple: fruit a drupe: ovary 2-ovuled.

Fam. 5. AMYGDALACEAE.

Leaf-blades 2-3-pinnate: fruit a legume:

ovary several-ovuled.

Petals valvate in the bud.

Petals imbricate in the bud.

Fam. 6. MIMOSACEAE.

Fam. 7. CASSIACEAE.

Flowers irregular.

Upper petal enclosed by the lateral ones in the bud:

corolla not papilionaceous.

Fam. 7. CASSIACEAE.

Upper petal enclosing the lateral ones in the bud:

corolla papilionaceous.

Fam. 8. FABACEAE.

FAMILY 1. **HAMAMELIDACEAE.** WITCH-HAZEL FAMILY.

Shrubs or trees. Leaves alternate: blades mostly toothed. Flowers perfect, monoecious, or polygamous, variously clustered or spicate. Calyx of 4 or 5 sepals. Corolla of 4 or 5 narrow petals, or wanting. Androeium of 4-many stamens. Gynoecium 2- or 3-carpellary. Ovary 2- or 3-celled: styles distinct. Fruit a leathery or woody capsule, often elastically dehiscent.

1. HAMAMELIS L. Shrubs or trees with perfect or polygamous flowers, which are borne 3 together on short lateral peduncles. Sepals spreading or reflexed. Stamens 4; filaments short-subulate. Capsule abruptly beaked.

1. H. virginiana L. Small tree or shrub: leaf-blades suborbicular, oval-elliptic or obovate, 4-15 cm. long, coarsely crenate: petals yellow, 1-2 cm. long: capsules ovoid to subglobose, 12-15 mm. long, elastically dehiscent.—Fall.

The WITCH-HAZEL grows in rich or low woods in northern Florida. The brown heart-wood is close-grained, heavy, and hard. (*Cont.*)

FAMILY 2. **ALTINGIACEAE.** SWEET-GUM FAMILY.

Shrubs or trees. Leaves alternate: blades toothed or palmately lobed. Flowers usually monoecious, borne in heads. Calyx and corolla wanting. Androeium of numerous stamens interspersed in scales. Gynoecium of 2 partially united carpels. Stigmas introrse. Fruit a head of many concreted capsules.

1. LIQUIDAMBAR L. Trees with balsamic sap and corky-winged branches. Leaf-blades palmately lobed. Staminate flowers in racemes or paniced heads. Pistillate flowers in solitary heads. Fruiting head drooping. Fertile seeds winged at one end.

1. L. Styraciflua L. Tree becoming 45 m. tall: leaf-blades 5-lobed, the lobes triangular or lanceolate: fruiting heads 3-4 cm. in diameter, persistent: fertile seeds about 1 cm. long.—Spr.

The SWEET-GUM grows in swamps and low hammocks in northern Florida and in the peninsula as far south as the Everglade region. The brown and often red-tinged heart-wood is close-grained, heavy and hard but weak. Also known as Bilsted. (*Cont.*)

FAMILY 3. **PLATANACEAE.** PLANE-TREE FAMILY.

Trees. Leaves alternate: blades palmately lobed. Flowers monoecious, minute, borne on globose receptacles, the heads dense, solitary, spicate, or racemose. Perianth obsolete. Staminate flowers very numerous: stamens 3-8: filaments nearly obsolete: anthers elongate, each surmounted by a dilated connective. Pistillate flowers less numerous than the staminate: carpels 2-9, 1-celled, mingled with staminodia which are pilose at the apex, surrounded by long-jointed persistent hairs: styles terminal: stigma 1-sided. Fruit a head of elongate achenes, each surrounded by rigid hairs.

1. **PLATANUS** [Tourn.] L. Trees with smooth bark and stout irregular branches from which are suspended the usually numerous long-peduncled fruit-heads.

1. **P. occidentalis** L. Tree becoming 55 m. tall, the bark pale: leaf-blades 3-5-lobed, 10-20 cm. broad, permanently woolly-pubescent on the veins beneath: fruiting heads subglobose, 2-4 cm. in diameter, drooping. — Spr.

The BUTTONWOOD grows on the banks of streams in northern Florida. The brown heart-wood is rather coarse-grained, heavy and hard but weak. Also known as Sycamore or Buttonball. (Cont.)

FAMILY 4. MALACEAE. APPLE FAMILY.

Trees or shrubs. Leaves alternate: blades simple and pinnately veined, or pinnately compound. Flowers perfect, regular. Hypanthium adnate to the ovary. Calyx of mostly 5 sepals. Corolla of mostly 5 petals. Androecium of numerous, or rarely few, stamens. Gynoecium of 2-5 wholly or partially united carpels, or rarely of 1 carpel. Fruit a more or less fleshy pome, being the thickened hypanthium enclosing the carpels.

Carpels papery or leathery at maturity.

Cavities of the ovary as many as the styles.

Styles distinct: hypanthium-mouth more or less closed with a disk.

Styles united at the base: hypanthium mouth without a disk.

Cavities of the ovary becoming twice as many as the styles.

Carpels bony at maturity.

1. PYRUS.

2. MALUS.

3. AMELANCHIER.

4. CRATAEGUS.

1. **PYRUS** [Tourn.] L. Leaf-blades simple, usually toothed. Cymes simple. Pome usually tapering to the base, the flesh with grit-cells.

1. **P. communis** L. Tree, usually thorny: leaf-blades ovate, elliptic, or obovate, slender-petioled, 3-8 cm. long, acute or acuminate, glabrous or nearly so in age, the base usually rounded: cymes few-several-flowered: pedicels 1.8-5 cm. long: sepals about as long as the hypanthium: corolla white, about 2.5 cm. broad: pome, in the wild form, seldom over 5 cm. long, in the numerous cultivated forms often much larger. — Spr.

The PEAR, a native of Europe and Asia, grows in thickets and woods and on roadsides nearly throughout Florida. The reddish-brown heart-wood is close-grained, heavy, and hard. (Cont.)

2. **MALUS** [Tourn.] L. Leaf-blades simple, toothed or lobed. Cymes simple. Pome depressed at both ends, the flesh without grit-cells. — Spr.

1. **M. coronaria** (L.) Mill. Small tree: leaf-blades thick, shining and dark-green above, dentate or often entire, narrowed at the base, 2.5-5 cm. long: cymes few-flowered: pedicels 2.5-4 cm. long, slender: flowers fragrant: sepals glabrous: corolla pink, mostly less than 2.5 cm. broad: styles nearly separate: pome about 2.5 cm. in diameter.

The CRAB-APPLE grows in open woods and thickets in middle and western Florida. The light-brown heart-wood is close-grained, heavy, and hard. (Cont.)

3. **AMELANCHIER** Medic. Leaf-blades simple, toothed or rarely entire. Cymes simple. Pomes berry-like, globular. — Winter & spr. — SERVICE-BERRY. MAY-CHERRY. — The heart-wood of the following species is close-grained, heavy, hard, and strong. It is brown or red-brown.

Leaf-blades rounded or cordate at the base, glabrous, at least at maturity.

Leaf-blades narrowed at the base, permanently pubescent.

1. *A. canadensis*.

2. *A. oblongifolia*.

1. **A. canadensis** (L.) Medic. Tree becoming 17 m. tall: leaf-blades rounded or cordate at the base, sharply and finely serrate, sometimes sparingly pubes-

cent when young, but early glabrous, 2.5-7.5 cm. long: pedicels slender: petals linear, linear-spatulate or linear-oblong, 12-18 mm. long, 3-4 times the length of the nearly or quite glabrous calyx and hypanthium: pomes globose, red or purple, sweet, about 6 mm. in diameter.

The JUNE-BERRY grows in dry woods in middle and western Florida. (Cont.)

2. *A. oblongifolia* (T. & G.) Roemer. Small tree or shrub, the foliage and inflorescence densely white-woolly when young, often nearly or quite glabrous when old: leaf-blades rounded, or sometimes narrowed or subcordate at the base, finely and sharply serrate nearly all around: pedicels short, seldom over 2.5 cm. long: petals spatulate or linear-spatulate, 6-14 mm. long, twice or thrice as long as the calyx and hypanthium: pomes 6-8 mm. in diameter.

The SHAD-BUSH grows in sandy woods in northern Florida. (Cont.)

4. *CRATAEGUS* L.¹ Small trees or shrubs, usually armed with thorns or spines. Leaves alternate: blades simple, petioled. Flowers terminal, cymose or corymbose. Hypanthium cup-shaped or campanulate, adnate to the carpels. Sepals 5, reflexed after anthesis. Corolla white or pink. Petals 5, spreading, rounded, inserted on the margin of the disk in the throat of the hypanthium. Stamens 5-25, inserted in 1-3 rows on the edge of the hypanthium: filaments slender, incurved: anthers oblong or suborbicular, white, yellow, pink or purple. Ovary inferior, or its summit free, composed of 1-5 carpels: styles 1-5, not united, persistent: stigmas terminal. Pome globose, pyriform or oval, yellow, orange-red, blue or black, containing 1-5 bony carpels, each usually 1-seeded. Seed erect, the testa membranous. — HAW. — The plants bloom in the spring.

Hypostyle short and broad, upwardly and dorsally extended over the apex of the nutlets. I. CORDATAE.

Hypostyle confined to the ventral or lateral surface of the nutlets, abruptly terminated at the apex.

a. Corymbs simple, 2-5-flowered, glabrous, expanding in February and early March: fruit globose, red or orange-red, ripening from May to July.

II. AESTIVALES.

b. Corymbs compound, many-flowered, usually glabrous (pilose in nos. 13 and 16), stamens normally 20: fruit red or yellow, less than 1 cm. in diameter.

III. VIRIDES.

c. Corymbs 4-10-flowered, glabrous or very nearly so: stamens 20: fruit glabrous, 15 mm. in diameter or less, at maturity yellow, orange, green or red, the flesh firm: leaf-blades glabrous when grown, ovate, lanceolate, elliptic or sometimes obovate, serrate and shallowly incised (deeply incised in no. 40).

IV. SARGENTIANAE.

d. Corymbs similar to those of the next preceding section: fruit small, oval, subpyriform or globose: leaf-blades deeply and acutely incised or with numerous serrate rounded lobe-like incisions.

V. PULCHERRIMAE.

e. Corymbs 1-, 2- or 3-flowered, or frequently 5-7-flowered, the pedicels and hypanthium either glabrous, pubescent or tomentose: fruit glabrous, yellow, green, orange or red, the flesh usually soft, and pleasant to the taste: leaf-blades various in outline, serrate, crenate, dentate or entire, pubescent or glabrous: branches often pendulous.

Flowers produced in few-flowered, mostly 5-7-flowered corymbs: pedicels and hypanthium pubescent or glabrous (densely white-tomentose in no. 78): leaf-blades serrate, dentate or crenate, pubescent or glabrous: branches spreading or ascending or occasionally drooping as in the VISENDAE.

Leaf-blades serrate or coarsely and irregularly dentate.

VI. SORORIAE.

Leaf-blades finely dentate or glandular-dentate, usually with several tooth-like lobes.

VII. VISENDAE.

¹ Descriptions and keys taken from the monograph of *Crataegus* by Mr. C. D. Beadle, published in my Flora of the Southeastern United States (1903).

Flowers produced in few-flowered, mostly 3-5-flowered corymbs: pedicels and hypanthium tomentose or pubescent: leaf-blades dentate, crenate or entire, either tomentose, pubescent or glabrous: branches mostly drooping.

Mature fruit globose, subglobose or oval.

Fruit averaging 1 cm. in diameter or more.

Leaf-blades entire or nearly so.

Leaf-blades toothed, often lobed.

Fruit averaging less than 1 cm. in diameter.

Mature fruit pyriform.

Fruits 1.5-2 cm. long, over 1 cm. thick.

Fruits smaller.

Flowers solitary, 2 or 3 together (usually more in no. 132): pedicels and hypanthium glabrous or pubescent: leaves small; blades cuneate or spatulate, or sometimes with abruptly contracted bases: spines usually numerous: sepals narrow.

f. Corymbs with a single flower each, or 2 or 3 flowers, or occasionally more: sepals long and usually conspicuously incised: fruit globose or pyriform, at maturity red, yellow or greenish, the flesh firm: leaves relatively small; blades spatulate, elliptic or ovate: spines usually numerous, long and slender.

g. Corymbs several-many-flowered, glabrous: stamens 7-20: fruit red, green and red or yellow, the flesh firm or succulent: leaf-blades mostly shining, obovate, spatulate, oval or elliptic, glabrous or nearly so when fully grown: branches frequently armed with numerous large spines, or occasionally unarmed.

VIII. INTEGRÆ.

IX. DENTATÆ.

X. ANISOPHYLLÆ.

XI. COLONICÆ.

XII. RECURVÆ.

XIII. LEPIDÆ.

XIV. UNIFLORÆ.

XV. CRUS-GALLI.

I. CORDATÆ.

Leaf-blades broadly ovate, cordate, truncate or abruptly contracted at the base.

Leaf-blades spatulate or oblanceolate, narrowed or cuneate at the base.

1. *C. apifolia*.

2. *C. spathulata*.

II. AESTIVALES.

Shoots, petioles, and lower surfaces of the leaf-blades rufous-tomentose.

Shoots, petioles, and leaves glabrous or nearly so.

Leaf-blades with abruptly contracted bases.

Leaf-blades with cuneate or narrowed bases.

3. *C. aestivalis*.

4. *C. maleoides*.

5. *C. luculenta*.

III. VIRIDES.

Leaf-blades coarsely and irregularly serrate, often with blunt or acute shallow lobes.

Leaf-blades ample, 2-4 cm. wide.

Leaf-blades (exclusive of those on the shoots) 1-2 cm. wide: twigs very spiny.

Leaf-blades all sharply serrate and incisely lobed.

6. *C. viridis*.

7. *C. paludosa*.

8. *C. subviridis*.

IV. SARGENTIANÆ.

Mature fruit yellow, orange-yellow, or green sometimes checked with red: anthers dark-purple: leaf-blades not conspicuously elongate.

9. *C. contrita*.

V. PULCHERRIMÆ.

Fruit oval at maturity, the flesh attenuate with the pedicels. Fruit 6-8 mm. long.

Fruit 10-12 mm. long.

Fruit globose or nearly so, the flesh not attenuate with the pedicel.

Leaves more than 2 cm. wide.

Leaf-borders with round, usually sharp-pointed, lobes.

Leaf-borders with acute lobes.

Leaves (exclusive of those on the shoots) mostly less than 2 cm. wide.

10. *C. pulcherrima*.

11. *C. abstrusa*.

12. *C. assimilis*.

13. *C. robur*.

14. *C. concinna*.

VI. SORORIAE.

Anthers yellow, white, or cream-color.

Fruit yellow and red, or orange-red with ruddy cheeks.

- Fruit deep- or bright-red.
 Pedicels short, pubescent, at least in anthesis.
 Pedicels 1 cm. or more long, white-tomentose.
 Anthers purple or purplish.
15. *C. galbana*.
 16. *C. abdita*.
 17. *C. consanguinea*.

VII. VISENDAE.

- Fruit pyriform, yellow or orange-yellow, often flushed or
 cheeked with red.
 Fruit subglobose or oval.
 Leaf-blades with large blunt or rounded lobes.
 Leaf-blades with numerous small, tooth-like lobes.
 Anthers pink or pale-purple: inflorescence pubescent.
 Anthers white: inflorescence densely white woolly.
18. *C. visenda*.
 19. *C. cgregia*.
 20. *C. quacsita*.
 21. *C. cgens*.

VIII. INTEGRAE.

- Fruit red.
 Anthers light-yellow: calyx deciduous.
 Anthers pale-purple: calyx persistent.
 Fruit yellow, orange, or orange-red, the cheeks often flushed.
 Pubescence of the corymbs copious but thin.
 Pubescence of the corymbs densely white-woolly.
 Vernal leaves bright-green: pedicels at maturity 1
 cm. long or more.
 Vernal leaves gray-green: pedicels very short.
22. *C. integra*.
 23. *C. adunca*.
 24. *C. panda*.
 25. *C. dapsilis*.
 26. *C. rava*.

IX. DENTATAE.

- Fruit red at maturity.
 Fruit yellow, orange or orange-red, the cheeks often red.
 Pedicels clothed with white spreading hairs: flowers
 2-2.5 cm. wide.
 Pedicels white-woolly.
27. *C. compitalis*.
 28. *C. clara*.
 29. *C. amica*.

X. ANISOPHYLLAE.

- Fruit orange, often with flushed cheeks: leaf-blades lobed
 at the apex.
 Fruit red or reddish: leaf-blades lobed and toothed.
30. *C. anisophylla*.
 31. *C. viaria*.

XI. COLONICAE.

- Leaf-blades dentate, slightly glandular-margined.
32. *C. vicana*.

XII. RECURVAE.

- Leaf-blades (exclusive of those on the shoots) less than 2
 cm. wide.
 Fruit red.
 Fruit yellow, orange, or orange-red, cheeked or spotted
 with red.
 Prevailing leaves with the blades abruptly contracted
 at the base.
 Fruit 8-12 mm. thick: spines mostly 1-2 cm. long.
 Leaf-blades conspicuously dentate and glandular.
 Leaf-blades subentire, the glands less con-
 spicuous.
 Blades obovate or suborbicular.
 Blades much more elongate.
 Fruit smaller: spines numerous, 1.5-3.5 cm. long.
 Prevailing leaves with the blades cuneate at the base,
 or with long-winged petioles.
 Mature leaves more than 1 cm. wide.
 Vernal leaves long, conspicuously overreaching
 the flowers.
 Petioles mostly short, never as long as the
 blades.
 Petioles mostly elongate, sometimes as
 long as the blades.
 Flowers large: sepals 4-5 mm. long.
 Flowers small: sepals very small.
 Vernal leaves less than 2 cm. long, the petioles
 white-woolly.
 Mature leaves less than 1 cm. wide.
 Some or all of the leaves (exclusive of those on the shoots)
 2 cm. wide; pubescence of the inflorescence copious but thin.
33. *C. recurva*.
 34. *C. rimosa*.
 35. *C. inopina*.
 36. *C. villaris*.
 37. *C. curva*.
 38. *C. adusta*.
 39. *C. illudens*.
 40. *C. vcrsuta*.
 41. *C. incana*.
 42. *C. crocca*.
 43. *C. audens*.

Trees of Florida 3.

XIII. LEPIDAE.

Fruit globose at maturity.

Inflorescence tomentose: leaf-blades abruptly contracted below.

Inflorescence glabrous: leaf-blades cuneate or spatulate.

Fruit pyriform or nearly so.

44. *C. lepidæ.*

45. *C. lacrimata.*

46. *C. condigna.*

XIV. UNIFLORAE.

Mature fruit pyriform: sepals narrow.

47. *C. Earlei.*

XV. CRUS-GALLI.

Ripe fruits bright, shining, red: spines slender.

48. *C. pyracanthoides.*

1. *C. apiifolia* (Marsh.) Michx. A shrub, or a small tree, 2-6 m. tall, with smooth gray bark, usually with several crooked stems. Leaf-blades broadly ovate or orbicular, 2-4 cm. long, 2-4 cm. wide, acute at the apex, mostly truncate or cordate at the base, pubescent, at least when young, pinnately and deeply 5-7-cleft, the lobes sharply serrate: corymbs subsimple, 3-10-flowered: pedicels and hypanthium pilose-pubescent: sepals lanceolate, usually glandular-serrate and colored at the tips: corolla 10-12 mm. broad: stamens about 20, the anthers pink or purplish: fruit oblong or oval, 4-7 mm. long, scarlet: nutlets 1-3, the hypostyle upwardly and dorsally extended over the apex.

The PARSLEY-HAW grows in low rich soil and swamps, and on banks in northern Florida. (*Cont.*)

2. *C. spathulata* Michx. A shrub or small tree, sometimes 6-8 m. tall, with gray or brown smooth or minutely scaly bark and usually several stems. Leaf-blades spatulate or oblanceolate, 1-4 cm. long, 5-20 mm. wide, narrowed into winged petioles, obtuse or subacute at the apex, the borders crenate or crenate-serrate and frequently incisedly 2-3-lobed, glabrous or very nearly so, shining above: corymbs compound, many-flowered, glabrous: pedicels, hypanthium and short triangular sepals glabrous: corolla 7-10 mm. broad: stamens about 20: fruit globose, red at maturity, 4-6 mm. in diameter: nutlets 3-5, the hypostyle upwardly and dorsally extended over the apex.

The SMALL-FRUITED HAW grows in moist rich soil and on banks of streams in northern Florida. (*Cont.*)

3. *C. aestivalis* (Walt.) T. & G. A tree 5-9 m. tall, or a large shrub with several stems, the bark dark reddish brown, fissured and scaly. Leaf-blades elliptic, oblong, oblong-cuneate or obovate, 2-7 cm. long, 1.5-3 cm. wide, either acute or rounded at the apex, narrowed or contracted below into winged petioles, dentate, sinuate or crenate-serrate, tomentose with a pale or rufous covering when young, becoming in age glabrate or glabrous above, below rufous-tomentose, especially along the midrib and veins: corymbs 2-5-flowered, simple: pedicels and hypanthium glabrous: sepals triangular, usually colored near the tips, minutely serrate or entire: stamens about 20, the anthers purple: fruit depressed-globose, red at maturity, punctate, 12-15 mm. in diameter: nutlets 3-5, the hypostyle confined to the lateral faces and terminated at the ventral apex.

The MAY-HAW grows in shallow ponds and on banks of streams in northern Florida. (*Cont.*)

4. *C. maleoides* Sarg. A small tree 4-5 m. tall, or more frequently a large shrub with several stems. Leaf-blades oval, obovate or nearly orbicular, those of the shoots usually ovate, 1.5-5 cm. long, 1-4 cm. broad, glabrous or with tufts of hairs in the axils of the veins beneath, acute or rounded at the apex, narrowed or contracted below into short winged petioles, serrate, and at least on the shoots shallowly incised: corymbs simple, 3-5-flowered: pedicels and hypanthium glabrous: sepals lanceolate, usually colored: stamens 15-20, the anthers purple: fruit subglobose or slightly oval, at maturity red, 8-12 mm. thick: nutlets 3-5, the hypostyle confined to the lateral surfaces.

In wet or moist soil bordering streams, Volusia County. (*Endemic.*)

5. *C. luculenta* Sarg. A slender tree 4-5 m. tall, with ashy gray or dark reddish brown bark. Leaf-blades spatulate or cuneiform, frequently ovate or obovate on the shoots, 2-4 cm. long, 1-3 cm. broad or larger on vigorous branches, cuneate or contracted at the base into margined petioles, acute or bluntly pointed at the apex, irregularly serrate and incised, glabrous when fully grown, or with tufts of pale hairs in the axils of the principal veins beneath: corymbs 2-5-flowered, simple: pedicels, hypanthium and lanceolate sepals glabrous: corolla 15-18 mm. broad: stamens 15-20, the anthers purple: fruit globose or subglobose, 8-10 mm. in diameter, orange-red when ripe: nutlets 3-5, 4-6 mm. long, the hypostyle 3-4 mm. long.

In swampy woods, Volusia County. (*Endemic.*)

6. *C. viridis* L. A tree often 6-10 m. tall, with gray or reddish brown fissured and frequently exfoliating bark. Leaf-blades ovate-lanceolate, elliptic or oblong-obovate, rarely ovate, 2-7 cm. long, 2-4 cm. wide, or larger on the shoots, acute or bluntly pointed at the apex, narrowed or abruptly contracted at the base, irregularly serrate and often with acute or blunt shallow lobes, glabrous or with tufts of pale hairs in the axils of the veins beneath: corymbs compound, many-flowered, glabrous: corolla 10-14 mm. wide: stamens normally 20: fruit globose or subglobose, 4-7 mm. in diameter, red or orange-red when ripe: nutlets usually 5, the hypostyle three-fourths as long as the ventral angle.

In low ground and moist woods in northern Florida. (*Cont.*)

7. *C. paludosa* Sarg. A small tree 4-5 m. tall, with gray or reddish brown bark, or more frequently a large shrub with several stems and spiny branches. Leaf-blades oval, elliptic, obovate or oblanceolate, or on the shoots ovate, 2-4 cm. long, 7-30 mm. wide, mostly acute at the apex, cuneate, contracted or on the shoots rounded at the base, glabrous or with tufts of pale hairs in the axils of the veins beneath, serrate, occasionally cleft or incised, especially on vigorous shoots: corymbs several-many-flowered: stamens about 20, the anthers purple: fruit subglobose or short-oval, 5-8 mm. in diameter, red or orange-red at maturity: nutlets 3-5, the hypostyle three-fourths the length of the ventral angle.

In low grounds and on banks of streams, Volusia County. (*Endemic.*)

8. *C. subviridis* Beadle. A tree 6-8 m. tall, with gray bark. Leaf-blades ovate, obovate or oval, 2.5-6 cm. long, 1-4 cm. wide, or larger on the shoots, acute or acuminate, rarely rounded at the apex, contracted or narrowed at the base, or on the shoots rounded and truncate, glabrous or glabrate when fully grown, the borders serrate and incisely lobed: corymbs compound, many-flowered, pilose-pubescent: pedicels and hypanthium sparsely pilose: sepals narrowly lanceolate, entire or minutely serrate, pubescent on the inner surface, at least at flowering time: corolla 12-15 mm. wide: stamens normally 20: fruit globose, 5-7 mm. in diameter: nutlets 3-5, about 5 mm. long, the hypostyle three-fourths as long as the nutlet.

In low woods and on banks of streams, near Chattahoochee. (*Endemic.*)

9. *C. contrita* Beadle. A tree sometimes 6-7 m. tall, with ashy gray or brownish scaly bark, or more frequently a large shrub with spreading branches. Leaf-blades ovate, oval or oblong, rarely short-obovate or suborbicular, 2-5 cm. long, 1.5-5 cm. broad, glabrous at maturity, acute or bluntly terminated at the apex, rounded or contracted at the base, the borders serrate and incised: petioles 5-20 mm. long, margined: corymbs simple, glandular-bracteate, 3-7-flowered: pedicels and hypanthium glabrous: sepals 3-5 mm. long, glandular-serrate: corolla 12-17 mm. wide: stamens 20, the anthers dark purple: fruit subglobose, 7-9 mm. in diameter, at maturity yellow-green or orange, often with ruddy cheeks, the flesh firm: nutlets 2-3, rarely 3-5, about 6 mm. long, the hypostyle occupying a trifle more than half of the ventral angle.

In dry woods and on uplands, middle Florida. Also occurs in adjacent Georgia.

10. *C. pulcherrima* Ashe. A small tree 4-6 m. tall, with dark rough or scaly bark, or oftener a large shrub with one or several stems. Leaf-blades ovate, oval or slightly obovate, 2-5 cm. long, 1.5-4 cm. wide, glabrous at maturity, mostly acute at the apex, narrowed or contracted, or on leading shoots rounded or truncate at the base, the borders serrate and deeply incised or 3-7-lobed; petioles slender, 5-20 mm. long, margined: corymbs simple, glandular-bracteate, 3-7-flowered: pedicels and hypanthium glabrous: sepals 3-4 mm. long, entire or glandular-serrate: corolla 15-18 mm. wide: stamens 20, the anthers dark purple: fruit oval, 5-7 mm. thick, 6-8 mm. long, at maturity yellow-green, sometimes with flushed cheeks, the flesh thin and firm: nutlets usually 2-3, rarely more, 4-5 mm. long, the hypostyle about half the length of the ventral angle.

In woods and on banks, middle Florida. Also occurs in adjacent Georgia.

11. *C. abstrusa* Beadle. A shrub or small tree 2-5 m. tall, with gray or brownish scaly bark. Leaf-blades oval, ovate, obovate or orbicular, 2-4.5 cm. long, 1.5-3.5 cm. broad, glabrous, obtuse or slightly pointed at the apex, contracted at the base, borders serrate and with shallow rounded, lobe-like incisions; petioles 5-20 mm. long, margined, remotely glandular: corymbs glandular-bracteate, simple, 3-7-flowered: pedicels 5-12 mm. long, glabrous, as is the hypanthium: sepals triangular-lanceolate, 3-4 mm. long, serrate or entire: corolla 15-20 mm. wide: stamens 20, the anthers dark purple: fruit oval or short-pyriform, 7-9 mm. thick, 10-12 mm. long: the flesh firm: nutlets usually 2-3, rarely more, about 6 mm. long, the hypostyle occupying about half of the ventral angle.

In woods, especially in sandy soil, near Tallahassee. (*Endemic.*)

12. *C. assimilis* Beadle. A small tree or large shrub 3-6 m. tall, with dark gray or brownish scaly bark. Leaf-blades ovate or oval, 2-5 cm. long, 1.5-4 cm. wide, glabrous, acute at the apex, contracted or rounded at the base, the borders serrate and with rounded, lobe-like incisions; petioles 7-20 mm. long, margined: corymbs simple, 3-6-flowered: pedicels and hypanthium glabrous: sepals triangular-lanceolate, 3-4 mm. long, serrate or nearly entire: corolla 15-18 mm. wide: stamens 20, the anthers pale purple: fruit globose, 7-9 mm. wide, the flesh firm: nutlets 3-5, about 6 mm. long, the hypostyle occupying a trifle more than half the ventral angle.

In dry woods and on hills, near Chattahoochee. (*Endemic.*)

13. *C. robur* Beadle. A tree, sometimes 7-8 m. tall, with a trunk 1-1.5 dm. in diameter, clothed with gray or brownish scaly bark, or more often a large shrub with one or more stems. Leaf-blades ovate, oval or short obovate, 3-6 cm. long, 1.5-4 cm. broad, or wider on leading shoots, glabrous, acute at the apex, narrowed or contracted, or on vigorous shoots rounded or subtruncate at the base, the borders serrate and incisely lobed or acutely cleft: corymbs simple or subsimple, 3-10-flowered, glandular-bracteate: pedicels 1-2 cm. long, like the hypanthium, glabrous: sepals lanceolate, 3-4 mm. long, entire or sparingly serrate: corolla 15-18 mm. wide: stamens 20, the anthers pale purple: fruit subglobose, 7-9 mm. wide, the flesh firm: nutlets 3-5, 5-6 mm. long, the hypostyle about 4 mm. long.

In woods and on borders of fields, near Tallahassee. (*Endemic.*)

14. *C. concinna* Beadle. A shrub 2-4 m. tall, with dark gray scaly bark. Leaf-blades ovate-lanceolate, oblong or elliptic, those of the shoots ovate, 2-5 cm. long, 7 mm.-2 cm. wide or on the shoots 3-4 cm. wide, glabrous, acute or bluntly pointed at the apex, narrowed or contracted or on leading shoots, rounded at the base, the borders serrate and more or less incised, the lobes or incisions rounded or on the larger leaves, acutely notched: corymbs simple, glandular-bracteate, 3-6-flowered: pedicels and hypanthium glabrous: sepals triangular-lanceolate, mostly serrate, 3-4 mm. long: corolla 15-18 mm. wide: stamens 20, the anthers purple: fruit subglobose, 7-8 mm. thick, the flesh firm:

nutlets 3-5, about 5 mm. long, the hypostyle about half the length of the ventral angle.

In woods and on borders of swamps, western Florida. (*Endemic.*)

15. *C. galbana* Beadle. A small tree 5-6 m. tall, with a short trunk sometimes 1-1.5 dm. in diameter, clothed with dark gray or brownish black bark, or more frequently a large shrub with one or more stems. Leaf-blades oval, obovate or round-ovate, 1-4 cm. long, 1-3 cm. wide, glabrous at maturity, acute or rounded at the apex, rounded or contracted at the base, the margins irregularly dentate: corymbs simple, 1-5-flowered: pedicels short, like the hypanthium, pubescent: sepals 3-5 mm. long, serrate and glandular: corolla 15-20 mm. wide: stamens 20, the anthers light yellow or nearly white: fruit globose, 9-13 mm. in diameter, at maturity red, the flesh orange-yellow, succulent: nutlets 3-5, about 8 mm. long, 3.5-4.5 mm. deep, the hypostyle about half the length of the ventral angle.

In woods and on borders of swamps, near River Junction. (*Endemic.*)

16. *C. abdita* Beadle. A shrub or small tree 3-6 m. tall, with dark ashy gray or brownish bark. Leaf-blades obovate, oval or suborbicular, or on leading shoots sometimes broadly ovate, 1.5-3.5 cm. long, 1-3 cm. wide, glabrous or glabrate at maturity, rounded or abruptly pointed at the apex, narrowed or contracted, or occasionally rounded at the base, the margins irregularly dentate: corymbs simple, 3-5-flowered: pedicels mostly 10-15 mm. long, like the hypanthium, white tomentose: sepals 5-6 mm. long, serrate and glandular: corolla 15-20 mm. wide: fruit globose, 10-15 mm. in diameter, at maturity red, the flesh orange or orange-yellow, succulent: nutlets 3-5, 7-9 mm. long, 3.5-5 mm. deep, the hypostyle 5-6 mm. long.

In woods, mostly in sandy soil, River Junction. (*Endemic.*)

17. *C. consanguinea* Beadle. A tree 5-7 m. tall, with a trunk 1-2 dm. in diameter, clothed with ashy gray or brownish black, scaly bark, or often a large shrub with one or more stems. Leaf-blades obovate, round-ovate or nearly orbicular, 1-4.5 cm. long, 1-4 cm. broad, or larger on the shoots, glabrous at maturity, acute or abruptly pointed at the apex, contracted or rounded at the base, the margins serrate or serrate-dentate and shallowly incised; petioles 1-2 cm. long, margined, glandular: corymbs simple, 1-5-flowered: petioles and hypanthium pubescent: sepals 4-5 mm. long, glandular: corolla about 2 cm. wide: stamens 20, the anthers purplish: fruit globose, 9-12 mm. broad, at maturity red or orange flushed with red, the flesh succulent: nutlets 3-5, 7-8 mm. long, the hypostyle 4-5 mm. long.

In woods, mostly in sandy soil, middle Florida. (*Endemic.*)

18. *C. visenda* Beadle. A tree sometimes 10 m. tall, with a trunk 2.5-3 dm. in diameter, clothed with dark gray or brownish rough bark. Leaf-blades ovate, obovate or orbicular, 2-4 cm. long, 1-3.5 cm. broad, glabrous in age, acute or abruptly pointed or occasionally rounded at the apex, contracted at the base, the borders finely dentate and usually with several acute tooth-like lobes; petioles 5-15 mm. long, margined, glandular: corymbs simple, 3-6-flowered: pedicels and hypanthium pubescent: sepals 4-5 mm. long, glandular, serrate: corolla 16-20 mm. broad: stamens 20, the anthers pale purple: fruit pyriform, 10-12 mm. thick, 12-15 mm. long, at maturity orange, diffused or cheeked with red, the flesh yellow or orange-yellow, soft: nutlets 3-5, mostly 3, 7-8.5 mm. long, the hypostyle two-thirds as long as the ventral angle.

In sandy soil, near Bristol. (*Endemic.*)

19. *C. egregia* Beadle. A small tree 4-6 m. tall, with dark and very rough bark. Leaf-blades ovate, oval or obovate, 1.5-3.5 cm. long, 7 mm.-3 cm. broad, glabrous at maturity, acute at the apex, narrowed or contracted at the base, the borders glandular, broken by several large, shallow, blunt, or rounded lobes; petioles 5-15 mm. long, margined, glandular: flowers produced in simple few-flowered corymbs: pedicels and hypanthium sparsely pilose-pubescent:

sepals about 3 mm. long, entire or sparingly serrate, glandular: stamens 15-20: fruit subglobose, 10-12 mm. in diameter, at maturity yellow or orange, sometimes flushed with red, the flesh orange-yellow, soft: nutlets 3-5, about 8 mm. long, 4-5 mm. deep, the hypostyle about 5 mm. long.

In sandy soil, near Bristol. (*Endemic.*)

20. *C. quaesita* Beadle. A tree occasionally 5-7 m. tall, with a short trunk 1-1.5 dm. in diameter, clothed with ashy gray or brownish black rough bark, the branches drooping, or oftener a large shrub with one or more stems. Leaf-blades obovate or cuneiform, 1.5-5 cm. long, 1-3 cm. wide, or larger on leading shoots, glabrous or glabrate at maturity, abruptly pointed at the apex, cuneate or more abruptly contracted at the base, the borders dentate, serrate-dentate or crenate-dentate and with tooth-like lobes; petioles 5 mm.-2 cm. long, margined, glandular: corymbs simple, 3-5-flowered: pedicels and hypanthium pubescent: sepals 3.5-5 mm. long, glandular-serrate: corolla 15-20 mm. wide: stamens 20, the anthers light purple: fruit subglobose, 8-11 mm. in diameter, at maturity orange-red, often with deeper colored cheeks, the flesh soft: nutlets 3-5, about 7 mm. long, the hypostyle occupying about two-thirds of the ventral angle.

In sandy uplands, Apalachicola river basin. (*Endemic.*)

21. *C. egens* Beadle. A tree 4-7 m. tall, with a trunk sometimes 2 dm. in diameter, covered with dark rough bark, the branches crooked and recurved. Leaf-blades obovate, cuneate or spatulate, 1-3 cm. long, 5 mm.-2.5 cm. wide, glabrate at maturity, abruptly pointed at the apex, narrowed or contracted at the base, the borders dentate, glandular and with tooth-like lobes above the middle; petioles 3-15 mm. long, glandular: corymbs simple, 2-4-flowered or flowers solitary: pedicels and hypanthium densely white-woolly: sepals 3-4 mm. long, glandular-serrate: corolla 14-18 mm. wide: stamens 20, the anthers almost white: fruit subglobose or slightly oval, 9-11 mm. thick, at maturity orange-red with ruddy cheeks, the flesh succulent: nutlets 3-5, about 7 mm. long, the hypostyle about 5 mm. long.

In sandy soil, near Bristol. (*Endemic.*)

22. *C. integra* (Nash) Beadle. A small tree 4-5 m. tall, with a trunk 1-2 dm. in diameter, ashy gray or dark rough bark and drooping branches. Leaf-blades obovate or cuneate, 1.5-4 cm. long, 7 mm.-2.5 cm. wide, pubescent on the lower surface, pointed or occasionally rounded at the apex, contracted or narrowed at the base, the margins glandular, bluntly or undulately lobed; petioles 5 mm.-2 cm. long, margined, glandular, pubescent: corymbs simple, 3-5-flowered: pedicels and hypanthium densely white-tomentose: sepals 4-5 mm. long, glandular-serrate: corolla 15-20 mm. wide: stamens 20, the anthers light yellow: fruit globose, 10-15 mm. in diameter, at maturity red, the flesh soft: nutlets 3-5, about 8 mm. long, the hypostyle 5-6 mm. long.

In sandy woods and old fields, central peninsular Florida. (*Endemic.*)

23. *C. adunca* Beadle. A large shrub or small tree 2-5 m. tall, with ashy gray or dark scaly or rough bark. Leaf-blades obovate, 2-3 cm. long, 7 mm.-2.5 cm. wide, or larger on leading shoots, glabrous or glabrate at maturity, abruptly pointed or rounded at the apex and with a small tooth-like point, contracted or narrowed at the base, the borders minutely dentate or nearly entire, glandular, sometimes with shallow tooth-like lobes; petioles 5-15 mm. long, margined, glandular: corymbs simple, 3-5-flowered: pedicels and hypanthium tomentose-pubescent: sepals 4-5 mm. long, serrate, glandular: corolla 15-20 mm. wide: stamens 20, the anthers pale purple: fruit globose, 12-15 mm. in diameter, red at maturity, the flesh orange, soft: nutlets 3-5, 7-8 mm. long, the hypostyle 4-5 mm. long.

In sandy woods, about Tallahassee. (*Endemic.*)

24. *C. panda* Beadle. A tree sometimes 6-7 m. tall, with dark rough bark and crooked recurved branches. Leaf-blades obovate or cuneate, 2-4 cm. long, 1-2.5 cm. wide, or broader on leading shoots, glabrous or glabrate at maturity.

pointed or rounded and with an abrupt sharp point at the apex, contracted or narrowed at the base, the borders nearly entire, glandular; petioles 5–15 mm. long, margined, glandular: corymbs simple, 3–5-flowered: pedicels and hypanthium pubescent: sepals 4–5 mm. long, serrate, glandular: corolla 15–20 mm. wide: stamens 20, the anthers almost white: fruit globose or depressed globose, 10–15 mm. in diameter, at maturity orange-yellow, often tinged or cheeked with red, the flesh orange-yellow, soft: nutlets 3–5, about 7 mm. long, the hypostyle about 5 mm. long.

In dry sandy soil, about Tallahassee. (*Endemic.*)

25. *C. dapsilis* Beadle. A shrub or small tree 2–5 m. tall, with ashy gray rough bark and drooping or recurved branches. Leaf-blades obovate or cuneate, 1.5–4 cm. long, 7 mm.–2.5 cm. wide, or larger on the shoots, more or less pubescent at maturity, especially on the lower surface along the midrib and in the axils of the veins, rounded or slightly and abruptly pointed at the apex, contracted or narrowed, or on leading shoots sometimes rounded at the base, the borders entire, glandular; petioles 5–15 mm. long, margined, glandular: corymbs 2–4-flowered or flowers solitary: pedicels and hypanthium densely white-tomentose: sepals 4–5 mm. long, glandular, slightly serrate: corolla 15–20 mm. wide: stamens 20, the anthers light yellow: fruit globose or subglobose, 10–15 mm. in diameter, yellow or orange, cheeked with red, the flesh soft: nutlets 3–5, 8–9 mm. long, the hypostyle 5–6 mm. long.

In sandy soil, central peninsular Florida. (*Endemic.*)

26. *C. rava* Beadle. A shrub or small tree 2–5 m. tall, with ashy gray rough or scaly bark and crooked, slightly drooping branches. Leaf-blades obovate, cuneate or spatulate, 1–3 cm. long, 7 mm.–2.5 cm. wide, pubescent or glabrate at maturity, rounded and mostly with a short abrupt point at the apex, narrowed or contracted at the base, the borders glandular and nearly entire; petioles 5–15 mm. long, margined, glandular: corymbs 2–4-flowered or flowers solitary: pedicels very short, like the hypanthium densely tomentose: sepals 4–5 mm. long, serrate, glandular: corolla 15–20 mm. wide: stamens 20, the anthers light yellow or almost white: fruit globose or subglobose, 10–12 mm. in diameter, when ripe yellow or orange-yellow cheeked or spotted with red, the flesh soft: nutlets 3–5, about 7 mm. long, the hypostyle about 5 mm. long.

In open, mostly in sandy soil, about Tallahassee. (*Endemic.*)

27. *C. compitalis* Beadle. A small tree, or oftener a large shrub, 2–5 m. tall, with dark gray or brownish rough bark and recurved branches. Leaf-blades obovate or obovate-cuneiform, 2–4 cm. long, 1–3 cm. wide, nearly or quite glabrous in age, rounded or with a small abrupt point at the apex, usually contracted at the base, the borders dentate or serrate-dentate; petioles 5–15 mm. long, margined, glandular: corymbs simple, 3–5-flowered: pedicels and hypanthium densely tomentose: sepals 4–5 mm. long, serrate, glandular: corolla 15–18 mm. wide: stamens 20, the anthers light yellow or nearly white: fruit subglobose or oval, 10–13 mm. thick, red when fully ripe, the flesh soft: nutlets 3–5, 8–9 mm. long, the hypostyle 6–7 mm. long.

On roadsides, near Gainesville. (*Endemic.*)

28. *C. clara* Beadle. A small tree 4–6 m. tall, with dark gray or brownish rough bark, or oftener a large much-branched shrub. Leaf-blades obovate or obovate-cuneate, 2–4 cm. long, 1–2 cm. broad, or larger on vigorous shoots, shining above, slightly pubescent below, even in age, rounded or pointed at the apex, narrowed or sometimes more abruptly contracted at the base, the borders dentate or crenate-dentate; petioles 5–15 mm. long, margined, glandular: corymbs simple, 3–5-flowered: pedicels and hypanthium pubescent: sepals 4–5 mm. long, serrate, glandular: corolla 15–18 mm. wide: stamens 20, the anthers faintly tinged with purple: fruit globose, 9–12 mm. in diameter, orange-red when ripe: nutlets 3–5, about 7 mm. long, the hypostyle about 5 mm. long.

In sandy soil in oak woods, Apalachicola river basin. (*Endemic.*)

29. *C. amica* Beadle. A small tree, or a large shrub 3-6 m. tall, with dark rough or rimose bark and recurved branches. Leaf-blades cuneate or oblong-cuneiform, or on leading shoots broadly ovate, 1.5-3.5 cm. long, 7 mm.-2.5 cm. broad, or wider on the shoots, mostly pointed or lobed at the apex, narrowed or contracted at the base, the borders glandular, dentate above the middle; petioles 5 mm.-2.5 cm. long, margined, glandular: corymbs simple, 3-5-flowered: pedicels and hypanthium densely tomentose: sepals about 5 mm. long, glandular-serrate: corolla about 2 cm. wide: stamens 20, the anthers light yellow: fruit subglobose, 10-13 mm. thick, at maturity orange blotched or cheeked with red, the flesh soft: nutlets 3-5, 6-7 mm. long, the hypostyle occupying three-fourths of the ventral angle.

In sandy woods and along roads, Ocala. (*Endemic.*)

30. *C. anisophylla* Beadle. A large shrub, or a tree sometimes 6 m. tall, with a short trunk 1.5-2 dm. in diameter, clothed with dark brown rough or rimose bark, the branches drooping. Leaf-blades spatulate or cuneate, 2-4 cm. long, 5 mm.-1.5 cm. wide, or a little broader on the shoots, glabrous in age, rounded, pointed or lobed at the apex, wedge-shaped at the base; petioles 5 mm.-3 cm. long, winged, remotely glandular: corymbs simple, 2-4-flowered or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4 mm. long, glandular-serrate: corolla about 15 mm. wide: stamens about 20, the anthers yellow: fruit globose or subglobose, 6-8 mm. in diameter, orange flushed or cheeked with red when fully ripe, the flesh soft: nutlets 3-5, 4.5-5.5 mm. long, the hypostyle about 3 mm. long.

In sandy soil and on the banks of the St. Johns river. (*Endemic.*)

31. *C. viaria* Beadle. A large shrub, or a small tree 2-5 m. tall, with dark rough bark and drooping branches. Leaf-blades spatulate, cuneate or obovate-cuneiform, 1.5-3.5 cm. long, 1-2 cm. wide, glabrate or pubescent along the midrib and in the axils of the principal veins beneath at maturity, pointed or lobed at the apex, wedge-shaped or more abruptly contracted at the base, the borders dentate, glandular, and usually shallowly lobed above the middle; petioles 7 mm.-2 cm. long, winged, glandular: corymbs simple, 2-4-flowered or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4 mm. long, glandular-serrate or nearly entire: corolla 10-13 mm. wide: stamens 20, the anthers yellow: fruit globose, 7-9 mm. in diameter, red at maturity: nutlets 3-5, 6-7 mm. long, the hypostyle 4-5 mm. long.

In sandy soil, northeastern Florida. (*Endemic.*)

32. *C. vicana* Beadle. A large shrub, or a small tree 2-4 m. tall, with ashy gray or brownish, rough or rimose bark and drooping branches. Leaf-blades cuneate or oblong- or obovate-cuneiform, 1.5-3.5 cm. long, 7 mm.-2 cm. wide, or on leading shoots sometimes 4.5 cm. wide, glabrate or somewhat pubescent beneath at maturity, either pointed or rounded, occasionally truncate at the apex, narrowed or contracted at the base, the margins dentate or shallowly lobed near the apex; petioles 7 mm.-2.5 cm. long, margined, glandular: corymbs simple, 3-5-flowered: pedicels and hypanthium tomentose: sepals 4-5 mm. long, glandular-serrate: corolla 15-20 mm. wide: stamens 20, the anthers light yellow: fruit pyriform or oblong-pyriform, 10-14 mm. thick, about 1.5 cm. long, yellow or orange at maturity, blotched or cheeked with red, the flesh soft: nutlets mostly 3, 8-10 mm. long, the hypostyle 6-7 mm. long.

In sandy soil, near Travers. (*Endemic.*)

33. *C. recurva* Beadle. A shrub, or a small tree 3-5 m. tall, with ashy gray or brownish, rough or rimose bark and pendulous branches. Leaf-blades cuneate or spatulate or on leading shoots obovate-cuneiform, 1.5-3 cm. long, 5-15 mm. wide, or broader on the shoots, glabrous or glabrate at maturity, wedge-shaped or more abruptly contracted at the base, pointed or rounded at the apex, the margins glandular, dentate or lobed; petioles 5-15 mm. long, margined, glandular: corymbs simple, 2-3-flowered or flowers solitary: pedicels

and hypanthium tomentose: sepals 4-5 mm. long, glandular-serrate: corolla 12-15 mm. wide: stamens about 20, the anthers light yellow: fruit pyriform or short-pyriform, 7-9 mm. thick, red at maturity, the flesh soft: nutlets 3-5, 6-7 mm. long, the hypostyle about 5 mm. long.

In sandy soil, near Ocala. (*Endemic.*)

34. *C. rimosa* Beadle. A small tree, or a large shrub 2-4 m. tall, with rimose bark and slender drooping branches. Leaf-blades cuneate, spatulate or oblong-cuneiform, 1-2.5 cm. long, 7 mm.-2 cm. wide, or broader on leading shoots, glabrate or pubescent on the lower surface, especially along the midrib and in the axils of the principal veins, usually abruptly contracted, but occasionally wedge-shaped at the base, either rounded, abruptly pointed or lobed at the apex, the borders glandular, dentate above the middle; petioles 5 mm.-2 cm. long, margined, glandular: corymbs simple, 3-4-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4 mm. long, glandular-serrate: corolla 12-15 mm. wide: stamens 20, the anthers light yellow: fruit short-pyriform, 9-12 mm. thick, at maturity yellow or orange-yellow flushed or cheeked with red, the flesh soft: nutlets 3-5, 6-7 mm. long, the hypostyle 4-5 mm. long, 1.5-2 mm. wide on each side of the ventral angle.

In sandy soil, near Citra. (*Endemic.*)

35. *C. inopina* Beadle. A small tree, or a large shrub 3-5 m. tall, with dark rough or rimose bark and recurved branches. Leaf-blades obovate-cuneiform, sometimes suborbicular, 1.5-2.5 cm. long, 1-2 cm. wide, or larger on leading shoots, glabrate at maturity or with some pubescence on the lower surface and in the axils of the large veins, usually abruptly contracted, but occasionally wedge-shaped at the base, either rounded, pointed or lobed at the apex, the borders entire or denticulate; petioles 5 mm.-2 cm. long, margined, glandular, mostly scurfy-tomentose: corymbs simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4.5 mm. long, glandular-serrate: corolla 12-15 mm. wide: stamens 20, the anthers light yellow or almost white: fruit pyriform, 8-11 mm. thick, 12-14 mm. long, at maturity yellow or orange-yellow, sometimes cheeked with red, the flesh soft: nutlets 3-5, 6-7 mm. long, the hypostyle 4-5 mm. long.

In sandy soil, near Ocala. (*Endemic.*)

36. *C. villaris* Beadle. A small tree, or a large shrub 3-5 m. tall, with dark rough or rimose bark and drooping branches. Leaf-blades cuneate or oblong-cuneiform, 1.5-3.5 cm. long, 5 mm.-2 cm. wide or broader on leading shoots, glabrous or glabrate at maturity, usually abruptly contracted, but occasionally wedge-shaped at the base, rounded or abruptly pointed at the apex, the borders glandular, entire or nearly so; petioles 5 mm.-2 cm. long, margined, glandular: corymbs simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4 mm. long, glandular-serrate: corolla 12-16 mm. wide: fruit pyriform, 8-11 mm. thick, at maturity yellow or orange-yellow, cheeked or flushed with red, the flesh soft: nutlets mostly 3-4, 6-7 mm. long, the hypostyle 4-5 mm. long.

In sandy soil, near Citra. (*Endemic.*)

37. *C. curva* Beadle. A shrub, or a very small tree 2-4 m. tall, usually with several trunks clothed with dark rough bark, and crooked, drooping, very spiny branches. Leaf-blades obovate or obovate-cuneiform, 1-2 cm. long, 5 mm.-2 cm. wide, glabrate at maturity or with some conspicuous pubescence along the midrib in the axils of the prominent veins beneath, rounded or abruptly pointed at the apex, abruptly contracted at the base, the borders subentire or denticulate and shallowly lobed; petioles 5-15 mm. long, margined, glandular: corymbs simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4 mm. long, serrate, glandular: corolla 12-15 mm. wide: stamens 20, the anthers light yellow: fruit pyriform, 6-9 mm. thick, at maturity orange-red or orange with red cheeks, the flesh very thin: nutlets usually 3-4,

6-7 mm. long, the hypostyle 4-5 mm. long, 2-2.5 mm. wide near the top of each lateral surface.

In sandy soil, northeastern Florida. (*Endemic.*)

38. *C. adusta* Beadle. A large shrub, or a small tree 2-5 m. tall, with dark gray or brownish rough bark and drooping branches. Leaf-blades cuneiform, 1.5-3 cm. long, 7 mm.-2 cm. wide or larger and obovate-cuneiform on the leading shoots, glabrate at maturity, rounded or with a short, abrupt point at the apex, the borders glandular, sub-entire, or dentate near the apex; petioles 5-15 mm. long, margined, glandular: corymbs simple, 2-4-flowered or flowers solitary: pedicels and hypanthium tomentose: sepals 3-5 mm. long, glandular-serrate: corolla 14-18 mm. wide: stamens 20, the anthers almost white: fruit short-pyriform, 9-11 mm. thick, at maturity orange-red, usually spotted and streaked with red, the flesh soft: nutlets 3-5, about 8 mm. long, the hypostyle 5-6 mm. long.

In sandy woods, near Gainesville. (*Endemic.*)

39. *C. illudens* Beadle. A small tree, or a large shrub with dark gray or brownish rough bark and drooping branches. Leaf-blades cuneiform, 1.5-3.5 cm. long, 7 mm.-2 cm. wide, or broader on vigorous shoots, glabrous or glabrate at maturity, rounded, pointed or lobed at the apex, the borders entire or denticulate, glandular, sometimes lobed above the middle, especially on leading shoots; petioles 7 mm.-3 cm. long, winged, glandular: corymbs 2-4-flowered, or flowers occasionally solitary: pedicels and hypanthium tomentose: sepals 3.5-5 mm. long, glandular-serrate: corolla 14-18 mm. wide: fruit pyriform, 8-11 mm. thick, yellow at maturity, the flesh soft: nutlets mostly 3, about 7 mm. long, the hypostyle about 5 mm. long.

In sandy soil, near Citra. (*Endemic.*)

40. *C. incana* Beadle. A large shrub 2-4 m. tall, with dark gray or brownish, rough or scaly bark and crooked recurved branches. Leaf-blades cuneate or obovate-cuneate, 1-2.5 cm. long, 7 mm.-2 cm. wide, pubescent, abruptly pointed or rounded at the apex, wedge-shaped or more abruptly contracted at the base, the margins glandular, sub-entire or shallowly lobed; petioles 5-15 mm. long, margined, densely white-tomentose when young, glandular: corymbs simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium densely white-tomentose: sepals 4-5 mm. long, glandular: corolla about 15 mm. wide: stamens 20, the anthers nearly white: fruit pyriform, 8-9 mm. thick, at maturity orange-yellow, flushed or cheeked with red: nutlets 3-5, about 7 mm. long, the hypostyle about 5 mm. long.

In woods and on banks, middle Florida. Also occurs in adjacent Georgia.

41. *C. versuta* Beadle. A shrub, or a small tree 3-6 m. tall, with dark rough bark and drooping branches. Leaf-blades cuneiform, 1-3 cm. long, 5 mm.-2 cm. wide, or broader on leading shoots, pubescent or tomentose at maturity, at least on the lower surface along the midrib and in the axils of the principal veins, rounded, pointed or lobed at the apex, the borders glandular, dentate or lobed above the middle; petioles 5 mm.-3 cm. long, winged, glandular, pubescent: corymbs simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 2-3 mm. long, glandular: corolla 10-12 mm. wide: stamens 20, the anthers light yellow: fruit short-pyriform, 6-9 mm. thick, at maturity orange or greenish yellow with ruddy cheeks: nutlets 3-5, about 6 mm. long, the hypostyle 3-4 mm. long.

In sandy oak woods, Apalachicola river basin. (*Endemic.*)

42. *C. crocea* Beadle. A small tree, or a large shrub 3-6 m. tall, with dark rough bark and slender drooping branches. Leaf-blades cuneiform, 1-2.5 cm. long, 5-15 mm. wide, or broader on leading shoots, at maturity smooth above, more or less pubescent beneath, especially along the midrib, either pointed or rounded at the apex, the borders glandular, denticulate above the middle; petioles 7 mm.-2 cm. long, margined, glandular, pubescent or glabrate: corymbs

simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 3-4 mm. long, glandular-serrate: corolla 15 mm. wide: stamens 15-20, the anthers nearly white: fruit pyriform, 9-12 mm. thick, at maturity yellow or orange-yellow, rarely cheeked with russet-red, the flesh soft: nutlets 3-5, about 6 mm. long, the hypostyle 4-5 mm. long.

In sandy soil, near Citra. (*Endemic.*)

43. *C. audens* Beadle. A large shrub, or a small tree, with dark gray or brownish rough or scaly bark. Leaf-blades obovate or obovate-cuneiform, 1.5-3.5 cm. long, 1-3.5 cm. wide, at maturity glabrate and shining on the upper surface, pubescent beneath especially along the midrib and principal veins, abruptly pointed, rounded or lobed at the apex, contracted or narrowed at the base, the margins dentate and shallowly lobed; petioles 5-15 mm. long, margined, glandular, pubescent: corymbs simple, 2-5-flowered, or flowers occasionally solitary: pedicels and hypanthium pubescent: sepals 4-5 mm. long, glandular-serrate: corolla 15-16 mm. wide: stamens 20, the anthers almost white: fruit pyriform, 9-12 mm. thick, at maturity orange-yellow, flushed or cheeked with red, the flesh soft: nutlets mostly 3, 7-8 mm. long, the hypostyle 4-5 mm. long.

On dry hills, near Chattahoochee. (*Endemic.*)

44. *C. lepida* Beadle. A small very spiny shrub, seldom more than 1-1.5 m. tall, with drooping branches. Leaf-blades obovate, round-ovate, suborbicular or spatulate, 5 mm.-2 cm. long, 4 mm.-2 cm. wide, at maturity glabrous and lustrous above, more or less pubescent beneath, especially along the principal veins and in their axils, rounded, truncate or short-pointed at the apex, abruptly contracted at the base, or sometimes cuneate, the margins denticulate or crenate-dentate, glandular; petioles 2 mm.-1 cm. long, margined, glandular: corymbs 2-3-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 2-3 mm. long, glandular-serrate: stamens 20; fruit subglobose, 7-11 mm. in diameter, at maturity orange or orange-red: nutlets 3-5, 6-7 mm. long, 3-4 mm. deep, the hypostyle 4-5 mm. long.

In sandy soil and open woods, eastern Florida. Also occurs in adjacent Georgia.

45. *C. lacrimata* Small. A small tree, sometimes 4-5 m. tall, or more frequently a large shrub with several stems clothed with ashy gray often scaly bark, the branches drooping. Leaf-blades cuneate-spatulate, 1-2.5 cm. long, 7-15 mm. wide, or broader on vigorous leading shoots, glabrous in age, rounded, truncate or pointed at the apex, wedge-shaped at the base, the borders dentate above the middle, glandular: petioles 5-15 mm. long, pubescent, glandular: corymbs simple, 2-4-flowered, or flowers solitary: pedicels and hypanthium glabrous: sepals 2.5-3 mm. long, entire or nearly so, glabrous: stamens 20, the anthers light yellow: fruit globose, or subglobose, at maturity yellow or orange, mostly with ruddy cheeks, the flesh soft: nutlets 3-5, 5-6 mm. long, the hypostyle occupying about two-thirds of the ventral angle.

In sandy woods and on borders of streams, western Florida. (*Endemic.*)

46. *C. condigna* Beadle. A large shrub, with one or more stems, or sometimes a small tree 5 m. tall, with ashy gray or brownish scaly bark. Leaf-blades cuneate, obovate-cuneate or on vigorous shoots broadly obovate, 1-3 cm. long, 7 mm.-2.5 cm. broad, glabrate in age, rounded or abruptly pointed at the apex, wedge-shaped or more abruptly narrowed at the base, the borders crenate or crenate-dentate; petioles 3 mm.-1 cm. long: corymbs simple, mostly 2-3-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals 3.5-5 mm. long, serrate, glandular: corolla about 16 mm. wide: stamens 20, the anthers almost white: fruit pyriform or nearly so, 7-9 mm. wide, 8-11 mm. long, at maturity yellow-green or orange, flushed with red: nutlets 3-5, 5-6 mm. long, about 4 mm. deep, the hypostyle about 4 mm. long.

In sandy soil, middle Florida. Also occurs in adjacent Georgia.

47. **C. Earlei** Ashe. A shrub 1-3 m. tall. Leaf-blades cuneate or obovate, or oblong-cuneiform, 1-2.5 cm. long, 5-15 mm. wide, or broader on leading shoots, pubescent on the lower surface at maturity, especially along the midrib and veins, either rounded or pointed at the apex, wedge-shaped at the base, the borders serrate, at least above the middle; petioles 1-10 mm. long, pubescent: corymbs 2-3-flowered, or flowers solitary: pedicels and hypanthium tomentose: sepals narrow, 5-7 mm. long, serrate or entire: corolla about 15 mm. wide: stamens 20, the anthers nearly white: fruit pyriform, 7-9 mm. wide, 8-11 mm. long: nutlets 3-5, 5-7 mm. long, the hypostyle occupying about three-fourths of the ventral angle.

On dry hills and in sandy soil, northern Florida. Also occurs in adjacent Alabama.

48. **C. pyracanthoides** Beadle. A shrub, or a small tree 2-5 m. tall, with ashy gray or brownish smooth or scaly bark. Leaf-blades obovate, oblanceolate or elliptic, 1.5-5 cm. long, 7 mm.-3 cm. wide, glabrous, acute or rounded at the apex, cuneate at the base, the margins serrate above the middle; petioles 2-10 mm. long, margined: corymbs compound, glabrous, many-flowered: pedicels and hypanthium glabrous: sepals 2.5-4 cm. long, entire or remotely serrate: stamens 7-12, the anthers purplish: fruit globose or nearly so, 5-8 mm. in diameter, bright red at maturity: nutlets mostly 2, 5-6 mm. long, the hypostyle about half the length of the nutlet.

On banks of the Chipola river. (*Endemic.*)

FAMILY 5. AMYGDALACEAE. PLUM FAMILY.

Shrubs or trees, commonly with prussic acid in the tissues. Leaves alternate, with free, often early deciduous stipules: blades simple, mostly toothed. Flowers perfect, in corymbs, cymes, racemes, or panicles, sometimes clustered. Calyx of 5 sepals, borne on the edge of the hypanthium, deciduous. Corolla of 5 petals. Androecium of many stamens. Gynoecium of a single carpel, or rarely of 2 or 3 carpels. Ovary 1-celled: style entire. Fruit a drupe.

Style basal: ovules erect.

Style terminal: ovules pendulous.

Drupe with a pulpy exocarp: leaves deciduous: flowers in clusters or terminal racemes.

Calyx sessile or nearly so: stone coarsely wrinkled and pitted.

Calyx manifestly pedicelled: stone neither wrinkled nor grooved.

Flowers in corymbs from scaly buds of the branches of the preceding year, before the leaves.

Flowers in racemes terminating branches of the year, after the leaves.

Drupe with a dry exocarp: leaves persistent: flowers in axillary racemes.

1. **CHRYSOBALANUS.**

2. **AMYGDALUS.**

3. **PRUNUS.**

4. **PADUS.**

5. **LAUROCERASUS.**

1. **CHRYSOBALANUS** L. Shrubs or trees. Leaf-blades of an orbicular or obovate type. Cymes axillary. Petals clawed. Filaments distinct or nearly so. Stone of the fruit pointed at the base, ridged. — All year.

Drupe globular or spheroidal: petals cuneate.

Drupe obovoid or oblong-obovoid: petals spatulate.

1. *C. Icaco.*

2. *C. pellocarpus.*

1. **C. Icaco** L. Tree sometimes 10 m. tall or shrub, and when growing on the beach, with radially creeping branches: leaf-blades broadly obovate to orbicular-obovate, mostly 4-8.5 cm. long, typically retuse: sepals about 2.5 mm. long: drupes globose or spheroidal, 3-4 cm. long, yellow, red, or purple: stone broadly obovoid, blunt-ridged.

The COCOA-PLUM grows on sandy shores and sand-dunes and in coastal hammocks in the southern half of peninsular Florida and the Keys. The brown or reddish heart-wood is close-grained, heavy, hard, and strong. (*W. I.*)

2. **C. pellocarpus** Mey. Small tree or shrub: leaf-blades oval, obovate, or orbicular, mostly 2-6 cm. long, typically rounded or abruptly pointed: sepals about 2 mm. long: drupes obovoid or oblong-obovoid, 1.5-2 cm. long, purple: stone oblong or oblong-obovoid, sharp-ridged.

The SMALL-FRUITED COCOA-PLUM grows in hammocks on the Everglade Keys and on hammock islands in the Everglades. The wood is nearly or quite similar to that of the preceding species. (W. I.)

2. **AMYGDALUS** [Tourn.] L. Shrubs or trees. Leaves very strongly impregnated with prussic acid. Flowers short-pedicelled or sessile. Corolla mostly pink. Drupe velvety-pubescent, the stone wrinkled and pitted.

1. **A. Persica** L. Tree: leaf-blades narrowly elliptic to lanceolate, or rarely oblong-obovate, shining, sharply serrate: petals pink, 8-20 mm. long: drupes subglobose or oblong, 4-10 cm. long, grooved on one side, velvety. — Spr.

The PEACH, a native of western Asia, grows in old fields, thickets and woods in northern Florida. The light-brown heart-wood is coarse-grained, rather light, and soft. (Cont., W. I.)

3. **PRUNUS** [Tourn.] L. Shrubs or trees. Leaves sometimes slightly impregnated with prussic acid. Flowers in corymbose or umbel-like clusters, relatively long-pedicelled. Corolla mostly white. Drupes usually glabrous and glaucous, the stone smooth or nearly so. — Spr. — PLUM.

Drupe purple or nearly black beneath the bloom, 15 mm. in diameter, or less.

Drupe red or orange, without a bloom or nearly so, over 15 mm. in diameter.

Petals about 0.5 cm. long: sepals glandular-ciliate.

Petals about 1 cm. long: sepals not glandular-ciliate.

1. *P. umbellata*.

2. *P. angustifolia*.

3. *P. oncocercana*.

1. **P. umbellata** Ell. Small tree or shrub: leaf-blades thinnish, oblong, elliptic, or nearly oval, sometimes broadest above or below the middle, short-acuminate, or merely acute, serrate, rounded or acute at the base, glabrous: flowers mostly expanding before the leaves, in lateral clusters: sepals pubescent within: petals 4-7 mm. long: drupes globose or nearly so, 12-15 mm. in diameter, nearly black beneath the bloom, with an acid flesh; stone plump, acute at both ends.

The BLACK-SLOE grows in dry woods and hammocks in northern Florida and in the peninsula as far south as the Everglade region. The reddish-brown heart-wood is close-grained, heavy, and hard. (Cont.)

2. **P. angustifolia** Marsh. Sparingly spiny small tree or shrub, often forming thickets: leaf-blades rather thin, oblong or oblong-lanceolate, 3-10 cm. long, acute or slightly acuminate at the apex, serrulate, acute or rounded at the base, short-petioled: flowers in lateral clusters, appearing before the leaves: sepals ovate: petals with mainly orbicular or reniform blades: drupes oval-globose, 22-26 mm. long, red or yellowish, with a slight bloom; stone ovoid, hardly flattened, acute, one of the rounded edges slightly grooved.

The CHICKSAW-PLUM grows in old fields and thickets in northern Florida, and the northern part of the peninsula. The brown heart-wood is close-grained and heavy, but soft and weak. (Cont.)

3. **P. americana** Marsh. Small somewhat spiny tree: leaf-blades elliptic to oval or oval-obovate, 4-10 cm. long, acuminate, sharply singly or doubly serrate, pubescent beneath, especially near the veins, acute or rounded at the slightly inequilateral base; petioles usually glandless: flowers 2-5 in lateral clusters appearing before the leaves: sepals entire: petals 7-10 mm. long: drupes subglobose or barely elongate, 18-25 mm. long, sometimes with a slight bloom; stone ovoid or oval, flattened, not crested along the ventral suture.

The WILD-PLUM grows in open woods and thickets in middle and western Florida. The deep-brown or red-tinged heart-wood is close-grained, heavy, hard, and strong. (Cont.)

4. **PADUS** Borekl. Shrubs or trees. Leaves deciduous, manifestly impregnated with prussic acid. Flower in terminal racemes. Hypanthium green. Sepals relatively large. Petals not angulate. Drupe with a juicy exocarp.—**WILD-CHERRY.**

1. **P. virginiana** (L.) Mill. Tree with spreading branches, becoming 35 m. tall, the bark aromatic and bitter: leaf-blades firm, oblong or elliptic, varying to obovate or lanceolate, 5–15 cm. long, acuminate or acute at both ends, or rounded at the base, finely serrate with callous teeth, glabrous or nearly so: sepals ovate, longer than broad: corolla 8–10 mm. broad: drupes globose, 8–10 mm. in diameter, dark purple or nearly black, sweet but slightly astringent. [*P. serotina* (Ehrh.) Agardh.] — Spr.

The **WILD BLACK-CHERRY** grows in woods and river swamps in northern Florida and the peninsula to near the Everglade region. The light-brown or red heart-wood is close-grained, light, rather hard, and strong. Also known as Rum-cherry. (Cont.)

5. **LAUROCERASUS** Reichenb. Shrubs or trees. Leaves persistent, copiously impregnated with prussic acid. Flowers in axillary racemes. Hypanthium white. Sepals minute. Petals more or less angulate. Drupe with a dry exocarp.

Petals larger than the sepals: drupe subglobose.

1. *L. myrtifolia*.

Petals smaller than the sepals: drupe oblong or oval.

2. *L. caroliniana*.

1. **L. myrtifolia** (L.) Britton. Tree becoming 16 m. tall: leaf-blades elliptic: racemes loosely flowered, the pedicels slender: petals slightly angled: drupes 8–12 mm. in diameter: stone sphaeroidal. [*L. sphaerocarpa* (Sw.) Roem.] — Fall.

The **WEST-INDIAN CHERRY** grows in hammocks on the Everglade Keys and the Florida Keys. The usually red heart-wood is close-grained, heavy, and hard. (W. I.)

2. **L. caroliniana** (Mill.) Roem. Tree becoming 12 m. tall: leaf-blades narrowly elliptic to oblong-oblancoate: racemes densely flowered, the pedicels stout: petals saliently angled: drupes 10–13 mm. long: stone ovoid. — Winter & spr.

The **MOCK-ORANGE** grows in woods, usually on river banks nearly throughout Florida. The red-brown or dark-brown heart-wood is close-grained, heavy, hard, and strong. (Cont., Ber.)

FAMILY 6. MIMOSACEAE. MIMOSA FAMILY.

Herbs, shrubs, or trees. Leaves alternate: blades compound, usually 2–3-pinnate: stipules sometimes spine-like. Flowers mostly perfect, borne in capitate or elongate usually dense spikes or racemes. Calyx of 3–6 partially united sepals. Corolla of 3–6 equal, distinct or partially united, petals. Androecium of 3–6 or many stamens which are usually conspicuously exerted. Gynoecium 1-carpellary. Fruit a legume.

Stamens numerous, more than 10: petals united.

Filaments partially united into a tube: corolla and calyx, unlike.

Pod valves not separating from the margin.

Pods contorted and spiral: seeds arillate: leaves few-foliolate.

Pods straight: seeds not arillate: leaves many-foliolate.

Pod-valves separating from the continuous margins.

Filaments distinct: corolla like the calyx, but longer.

Stamens as many as the petals: petals distinct.

1. **PITHECOLOBIUM.**

2. **ALBIZZIA.**

3. **LYSILOMA.**

4. **VACHELLIA.**

5. **LEUCAENA.**

1. **PITHECOLOBIUM** Mart. Shrubs or trees. Leaves 2-pinnate: leaflets few, often 4. Spikes capitate. Calyx-lobes minute. Corolla prominently lobed. Pods narrow, often pulpy within. Seeds with colored arils.—All year.

Ovary glabrous, shorter than the stipe: petioles longer than the petiolules.

Ovary pubescent, longer than the stipe: petioles shorter than the petiolules.

1. *P. Unguis-cati*.

2. *P. guadelupense*.

1. **P. Unguis-Cati** (L.) Benth. Small tree or unarmed shrub: blades of the leaflets thinnish, broadly obovate, oval, or suborbicular, 1-4.5 cm. long: calyx 1.5-2 mm. long; lobes wider than long, blunt: corolla 3.5-4.5 mm. long: pods long-stipitate.

The CAT'S-CLAW grows in hammocks on the Everglade Keys, the lower portion of the western coast of the peninsula and on the Florida Keys. The red or purplish heart-wood is close-grained, heavy, and very hard. (W. I.)

2. **P. guadelupense** Chapm. Armed small tree or low shrub: blades of the leaflets leathery, oblong to cuneate, oval, or suborbicular, 3-7 cm. long: calyx 2.5-3 mm. long; lobes longer than wide, acute: corolla 5-6 mm. long: pods short-stipitate.

The BLACK-BEAD grows in pinelands and hammocks on the Everglade Keys and the Florida Keys. The dark-brown or purple heart-wood is close-grained, heavy, and hard. (W. I.)

2. **ALBIZZIA** Durazz. Shrubs or trees. Leaves 2-pinnate: leaflets numerous. Spikes capitate. Calyx-lobes relatively short and small. Corolla about twice as long as the calyx. Pod linear, flat. — Spr.

Blades of the leaflets acute, the midrib nearly marginal: pod-valves veiny all over.

1. *A. Julibrissin*.

Blades of the leaflets rounded at the apex, the midrib not lateral:

pod-valves veiny only over the seeds.

2. *A. Lebbek*.

1. **A. Julibrissin** (Willd.) Durazz. Tree becoming 10 m. tall or shrub: leaves with 16-24 pinnae; leaflets 50-70, the blades falcate-lanceolate, 7-16 mm. long, obliquely acute: calyx about 2 mm. long: corolla 6-8 mm. long; larger lobes ovate: pods broadly linear, 10-15 cm. long: seeds oblong, 3.5-4.5 mm. wide.

The JULIBRISSIN, a native of Asia, grows in woods and fields nearly throughout Florida. The brown heart-wood is close-grained, rather heavy, and hard. (Cont., W. I.)

2. **A. Lebbek** (Willd.) Benth. Tall tree: leaves with 4-8 pinnae; leaflets 10-22, the blades oblong to oblong-obovate, 2-5.5 cm. long, acute: calyx about 4 mm. long: corolla 9-11 mm. long; larger lobes lanceolate: pods linear, 15-40 cm. long: seeds oval, 6-7 mm. wide.

The WOMAN'S-TONGUE TREE, a native of Africa, grows in hammocks and about gardens on the lower Florida Keys. The brown heart-wood is close-grained and rather heavy. (W. I.)

3. **LYSILOMA** Benth. Shrubs or trees. Leaves 2-pinnate: leaflets numerous (or few). Spikes capitate (or cylindric). Calyx-lobes relatively long. Corolla slightly longer than the calyx. Pod oblong to linear.

1. **L. bahamensis** Benth. Tree becoming 20 m. tall, with spreading branches: leaves with 4-8 pinnae; leaflets 20-40, the blades oblong to oblong-lanceolate, 8-11 mm. long: calyx about 2 mm. long: corolla 2.5-3 mm. long; lobes ovate: pods oblong, 8-15 cm. long, long-stipitate. — Spr.

The WILD-TAMARIND grows in hammocks on the Everglade Keys and the Florida Keys. The dark-brown and often red-tinged heart-wood is close-grained, heavy, hard, and tough. (Bah., Cuba.)

4. **VACHELLIA** Wight & Arn. Shrubs or small trees. Leaves 2-pinnate: leaflets numerous, small. Spikes globose. Calyx-lobes minute and relatively short. Corolla about twice as long as the calyx, the lobes short. Filaments distinct. Pod very turgid.

1. **V. Farnesiana** (L.) Wight & Arn. Small tree or shrub: leaf-pinnæ 8-16; leaflets 20-25, the blades linear-oblong, 2-4 mm. long: calyx about 1.5 mm. long: corolla 2-2.5 mm. long: pods 3-7.5 cm. long. — All year.

The **YELLOW-OPOPANAX** grows in woods and thickets in upper peninsular Florida, where it is apparently naturalized and in hammocks and pinelands on the Everglade Keys where it is mostly native, and on the Florida Keys. The reddish-brown heart-wood is close-grained, heavy, and hard. (W. I.)

5. **LEUCAENA** Benth. Shrubs or trees. Leaves mostly 2-pinnate: leaflets often small and numerous. Spikes capitate. Calyx-lobes minute. Petals distinct or rarely slightly coherent. Filaments distinct or nearly so. Pod linear, flat.

1. **L. glauca** (L.) Benth. Tree becoming 10 m. tall: leaflets 6-12 mm. long; blades narrowly oblong to lanceolate, over 1.5 mm. broad: calyx 2-2.5 mm. long or rarely shorter: petals 4-4.5 mm. long: pods 15-25 cm. long. — Spr.

The **LEAD-TREE** grows in hammocks on the Everglade Keys and on the Florida Keys. The brown and red-streaked heart-wood is close-grained, heavy, and hard. (W. I.)

FAMILY 7. CASSIACEAE. SENNA FAMILY.

Trees, shrubs, or herbs. Leaves alternate: blades compound, 1-2-pinnate, rarely 1-foliolate. Flowers perfect, polygamous, monoecious, or dioecious, more or less irregular. Calyx of 3-5, usually slightly united, sepals, sometimes borne on the edge of a well developed hypanthium. Corolla of 3-5 unequal distinct petals. Androecium of 6-10 distinct or nearly distinct stamens. Gynoecium 1-carpellary. Fruit a legume.

Corolla apparently papilionaceous: leaves with 1-foliolate blades 1. **CERCIS**.
Corolla irregular, but not papilionaceous.

Leaves with 2-pinnate blades: stamens 6-10.

Flowers dioecious or polygamous: petals nearly equal. 2. **GLEDITSIA**.

Flowers perfect: petals very unequal.

Leaf with a very short petiole which ends in a spine,
each division with a long, flat phyllode-like rachis. 3. **PARKINSONIA**.

Leaf with a relatively long petiole, the rachises of the
divisions not phyllode-like.

Calyx-lobes valvate. 4. **DELONIX**.

Calyx-lobes imbricate. 5. **POINCIANA**.

Leaves with 1-pinnate blades: stamens 3. 6. **TAMARINDUS**.

1. **CERCIS** L. Shrubs or trees. Leaves 1-foliolate: leaflet broad. Calyx shallowly lobed: tube gibbous. Corolla pink-purple: keel-petals of the apparently papilionaceous corolla longer than the others. Anthers short, opening lengthwise. Pod very flat.

1. **C. canadensis** L. Tree or shrub: leaf-blades broadly ovate to reniform: petioles mostly less than 1.5 cm. long: sinuses of the calyx nearly as broad as the lobes: larger petals 12-13 mm. long; blades ovate: pods linear-oblong, 6-9 cm. long. — Spr.

The **REDBUD** grows in rich woods in northern Florida and the upper half of the peninsula. The reddish-brown heart-wood is rather coarse-grained and heavy, but hard and weak. Also known as Judas-tree. (Cont.)

2. **GLEDITSIA** L. Trees with simple or branched thorns. Leaves relatively small, 2-pinnate: stipules present. Calyx-lobes obtuse, about as long as the petals. Pod flat. Spr.

Ovary glabrous: style manifest: pods oval or elliptic, 1-seeded or rarely 2-seeded.

1. *G. aquatica*.

Ovary pubescent: style obscure: pods linear, many-seeded.

2. *G. triacanthos*.

1. *G. aquatica* Marsh. Tree becoming 20 m. tall: leaflets 2-4.5 cm. long: blades oblong to ovate or oblong-lanceolate: sepals lanceolate to oblong-lanceolate: pods oblique, 3-5 cm. long, not pulpy within.

The WATER-LOCUST grows in river swamps in northern Florida and in the northern part of the peninsula. The reddish-brown heart-wood is rather coarse-grained, heavy, hard, and strong. (*Cont.*)

2. *G. triacanthos* L. Tree becoming 40 m. tall: leaflets 1-2.5 cm. long; blades ovate-lanceolate varying to elliptic: sepals narrowly oblong to lanceolate: pods black and lustrous, pulpy within.

The HONEY-LOCUST grows in rich woods in northern Florida. The light reddish-brown heart-wood is coarse-grained, heavy, hard, and durable. Probably introduced. (*Cont.*)

3. *PARKINSONIA* [Plum.] L. Shrubs or trees, with simple or branching thorns. Leaflets numerous, borne on the phyllode-like rachises. Blades of the short-clawed petals mainly of an ovate type. Pod markedly tortulose, the swollen portions nearly terete.

1. *P. aculeata* L. Small tree or shrub: leaves 2-4 dm. long, the rachis winged; leaflets numerous, distant, the blades linear to linear-oblong, 1-10 mm. long: sepals oblong, 8-10 mm. long: petals 10-17 mm. long; blades except that of the standard, oval or ovate: pods 5-10 cm. long, acuminate. — All year.

The HORSEBEAN, a native of tropical America, is naturalized in peninsular Florida and the Keys. The light brown heart-wood is close-grained, rather light, but hard. (*Cont.*, W. I.)

4. *DELONIX* Raf. Unarmed trees with smooth bark. Leaflets relatively small and numerous: blades narrow. Sepals much shorter than the petals. Blades of the petals mainly flabellate, all long-clawed. Pod elongate-linear, flat, the valves woody.

1. *D. regia* (Boj.) Raf. Tree or shrub with a wide top: larger leaves with 20-50 pinnae; leaflets numerous, the blades linear-oblong, 4-10 mm. long: sepals 22-26 mm. long: petals 5-7 cm. long, red or orange; blades broader than long, crisped: pods linear, commonly 3-5 dm. long. — Spr.

The ROYAL-POINCIANA grows in hammocks and pinelands in southern peninsular Florida and the Keys. It is native of Madagascar. The whitish or yellowish wood is close-grained and heavy, but soft and weak. Also known as Flame-tree. (W. I.)

5. *POINCIANA* [Tourn.] L. Erect mostly unarmed shrubs or trees. Leaflets usually few and relatively large: blades rather broad. Sepals much shorter than the petals. Blades of the short-clawed petals not flabellate. Pod flat, narrow, the valves leathery. Seeds flattened.

1. *P. pulcherrima* L. Small tree or shrub: leaflets numerous; blades oblong to cuneate, 15-25 mm. long: sepals 15-16 mm. long: corolla mainly red; standard 25-27 mm. long: filaments 40-45 mm. long: pods 9-13 cm. long. — All year.

The BARBADOS-FLOWER, a native of the West Indies, grows in hammocks and pinelands in southern peninsular Florida and the Keys. The wood has not yet been studied. (W. I.)

6. *TAMARINDUS* [Tourn.] L. Unarmed trees. Leaves relatively small: leaflets numerous: blades rather narrow. Sepals 4. Petals 5, but 2 of them rudimentary. Stamens 3, the filaments united to about the middle, alternating with 3 minute staminodia. Ovary elongate. Pod indehiscent, succulent within.

1. *T. indica* L. Tree with spreading branches: leaflets 18-36, 1-2 cm. long, the blades oblong to linear-oblong, reticulate: sepals 10-12 mm. long: petals

Trees of Florida 4.

yellowish or reddish, 13-16 mm. long, crisped: pod thick, 6-13 cm. long, curved, the edges rounded. — Spr.

The TAMARIND, a native of the East Indies, grows in hammocks on the Everglade Keys and on the Florida Keys. The yellow or brown heart-wood is close-grained, heavy, and hard. (W. I.)

FAMILY 8. FABACEAE. PEA FAMILY.

Herbs, shrubs, trees, or vines. Leaves alternate: blades 1-compound, sometimes 1-foliolate, or rarely simple. Flowers mostly perfect, irregular. Calyx of 5 more or less unequal partially united sepals. Corolla of 5 (or of 1 petal in *Amorpha*) unequal distinct or nearly distinct petals which are, 2 keel-petals, 2 wings and 1 standard which surrounds the others. Androeceum of 10 monadelphous, diadelphous, or rarely distinct stamens, or rarely 9 or 5. Gynoeceum 1-carpellary. Ovary superior. Fruit a dehiscent or indehiscent legume or a loment.

Corolla with wings and keel-petals nearly or quite as long as the standard: standard clawed, the blade very broad.

Calyx obscurely lobed: pods not winged, dehiscent.

Calyx prominently lobed: pods broadly winged, indehiscent.

Corolla with very small wings and keel-petals: standard sessile, the blade narrow.

1. AGATI.

2. ICHTHYOMETHIA.

3. ERYTHRINA.

1. **AGATI** Adans. Trees or shrubs, but short-lived. Leaflets numerous. Racemes 2-4-flowered. Calyx slightly 2-lipped, but usually with obscure, very broad lobes. Corolla large, pinkish or red: standard with an oblong or ovate blade: wings not auricled: keel-petals merely angular at the base of the blade. Pods greatly elongate, straight or nearly so.

1. **A. grandiflora** (L.) Desv. Small tree or shrub: leaves 1-3 dm. long; leaflets numerous, the blades oblong to linear-oblong, 2-4 cm. long: calyx 2-2.5 cm. long: standard 6-10 cm. long, the blade ovate: pods elongate-linear, 2-4 dm. long. — Spr. & sum.

The AUSTRALIAN CORKWOOD-TREE, a native of the East Indies, grows in southern peninsular Florida and on Key West. The white or nearly white wood is coarse-grained, light, and soft. (W. I.)

2. **ICHTHYOMETHIA** P. Br. Trees. Leaflets several, pinnate. Panicles thyrsoïd. Calyx slightly 2-lipped: the upper lip notched: lower lip of 3 broad lobes about equal in length. Corolla white or partially colored: standard with a broad blade cordate at the base and a short claw. Pod narrow, 4-winged.

1. **I. piscipula** (L.) A. Hitchc. Tree: leaflets 7-9; blades thickish, oval or obovate, or rarely ovate, 2-10 cm. long, undulate or shallowly toothed: calyx campanulate, 6-7 mm. long: petals white and partially striped with red: standard 14-16 mm. long, the blade suborbicular: pods 5-10 cm. long, the twigs undulate or incised. — Spr.

The JAMAICA-DOGWOOD grows in the coastal hammocks of southern peninsular Florida, particularly on the Everglade Keys and in the hammocks of the Florida Keys. The yellow-brown heart-wood is close-grained, heavy, hard, and durable. (W. I.)

3. **ERYTHRINA** L. Herbs, shrubs, or trees. Leaflets 3. Racemes several-many-flowered. Calyx obliquely truncate. Corolla red, scarlet or crimson: standard conspicuous, erect, narrowed upward: wings and the keel-petals very small, nearly equal in size, the blades short-clawed. Androeceum exerted: filaments united to about the middle and slightly above it. Ovary long-stipitate. Pod tortulose.

1. *E. arborea* (Chapm.) Small. Tree 3-8 m. tall or shrub: leaflets 3.5-10 cm. long; blades deltoid to hastately 3-lobed: racemes few-flowered: calyx cylindric: standard 35-40 mm. long; blade about 1 cm. wide: wing-petals 11-12 mm. long: pods drooping, 8-15 cm. long. — All year.

The CORAL-BEAN TREE grows in hammocks on the Everglade Keys and the Florida Keys. The yellowish heart-wood is close-grained, but neither very heavy nor hard. (*Endemic.*)

Order GERANIALES.

Herbs, shrubs, or trees. Leaves alternate or opposite: blades simple or compound. Flowers perfect, monoecious, or dioecious, mostly regular. Calyx of distinct sepals. Corolla of distinct, or nearly distinct petals, or rarely wanting. Androecium of as many stamens as there are sepals or twice as many, or rarely more. Gynoecium of 2 or several united carpels. Ovary superior. Fruit various.

Plants destitute of secreting glands or cells in the tissues.

Flowers regular: sepals without dorsal glands.

Fam. 1. ZYGOPHYLLACEAE.

Flowers irregular: sepals with dorsal glands.

Fam. 2. MALPIGHIACEAE.

Plants with secreting glands, these often in the leaves, or only in the bark.

Filaments distinct, nearly or quite to the base.

Fam. 3. RUTACEAE.

Leaf-blades punctate by oil-glands.

Leaf-blades not punctate.

Fam. 4. SURIANACEAE.

Gynoecium of distinct carpels.

Gynoecium of more or less united carpels.

Bitter-barked shrubs or trees with oil-sacs in the bark.

Fam. 5. SIMAROUBACEAE.

Resiniferous shrubs or trees.

Fam. 6. BURSERACEAE.

Filaments united into a cup or tube, wholly or in part.

Fam. 7. MELIACEAE.

FAMILY 1. ZYGOPHYLLACEAE. CALTROP FAMILY.

Shrubs, trees, or perennial herbs. Leaves opposite or alternate by the suppression of one of each pair: blades compound. Flowers perfect. Calyx of 4-6, mostly 5, sepals. Corolla of 4-6, mostly 5, petals or rarely wanting. Androecium of twice as many stamens as there are sepals. Gynoecium of 2-4-united carpels. Fruit capsular, sometimes baccate at maturity, sometimes separating into nut-like carpels.

1. *GUAIACUM* [Plum.] L. Shrubs or trees. Leaves relatively large, persistent, the leaflets but little longer than wide. Sepals 5 or rarely 4, unequal. Petals blue or purple. Filaments unappendaged. Fruit angled or winged.

1. *G. sanctum* L. Tree sometimes 10 m. tall or shrub, the bark pale: leaves 5-10 cm. long; leaflets 6-8, the blades broadly oblong to obovate, 2-3 cm. long; sepals obovate to oblong-obovate, 6-7 mm. long: corolla about 2.5 cm. wide; petals broadly obovate: fruit obovoid, 15-17 mm. long, orange. — Spr.

The LIGNUM-VITAE grows in hammocks on the Florida Keys. The dark-green or yellowish-brown heart-wood is close-grained, very heavy, hard, and durable. (*W. I.*)

FAMILY 2. MALPIGHIACEAE. MALPIGHIA FAMILY.

Shrubs or trees, or partially woody herbs or vines. Leaves opposite: blades simple. Flowers usually perfect, sometimes cleistogamous. Calyx of 5 often gland-bearing sepals. Corolla of 5 usually clawed petals, or wanting. Androecium of 5-10 perfect or partly sterile stamens. Gynoecium of 2-4, usually 3, distinct or united carpels. Fruit drupaceous, capsular, or nut-like.

1. **BYRSONIMA** L. C. Rich. Shrubs or trees. Flowers in terminal racemes or panicles. Petals white, reddish, or purplish, reflexed. Stigmas acute. Carpels permanently united. Cotyledons circinate-coiled.

1. **B. lucida** (Sw.) DC. Evergreen small tree, or shrub, mostly 3-18 dm. tall: leaf-blades spatulate to obovate-spatulate, 2-4 cm. long, lustrous above: racemes 2-4 cm. long: petals white, turning yellow or rose, 7 mm. long, the blades reniform: drupes 4-6 mm. in diameter. — All year.

The LOCUST-BERRY grows in hammocks on the Everglade Keys and on the Florida Keys. The wood is close-grained, heavy, and hard. (W. I.)

FAMILY 3. RUTACEAE. RUE FAMILY.

Shrubs or trees or rarely herbs, often prickly armed, with glandular-punctate tissues. Leaves alternate or opposite: blades simple or pinnately compound, sometimes 1-foliate. Flowers perfect or polygamous, mostly regular. Calyx of 3-5, or rarely more, sepals, or wanting. Corolla of 3-5, or rarely more, petals. Androecium of as many stamens as there are sepals or petals or rarely thrice as many. Gynoecium of 2-5 distinct or united carpels. Fruit capsular, samaroid, drupaceous or baccate.

Fruit dry, follicular or samaroid.

Fruit dehiscent, a follicle.

Fruit indehiscent, a samara.

Fruit fleshy, drupaceous or baccate.

Fruit a drupe: ovary 1-celled.

Fruit a berry: ovary 2- or 9-celled.

Stamens 8 or 10: carpels 1-ovuled.

Stamens 20 or more: carpels several-ovuled.

1. **ZANTHOXYLUM**.

2. **PTELEA**.

3. **AMYRIS**.

4. **GLYCOSMIS**.

5. **CITRUS**.

1. **ZANTHOXYLUM** [Catesby] L. Shrubs or trees. Leaf-blades pinnate, sometimes 1-foliate. Flowers polygamous, in axillary spikes or terminal corymb-like or cyme-like panicles. Sepals present or wanting. Petals 4 or 5, mostly erect. Mature carpels solitary, or 2-5 together. — Spr. & sum., or all year.

Flowers in small axillary spikes: sepals, petals and stamens 4.

Flowers in large terminal cyme-like or corymb-like panicles:

sepals, petals and stamens 3 or 5.

Sepals, and petals, 5: leaflets herbaceous.

Sepals triangular or deltoid, partially united, persistent.

Sepals ovate or ovate-lanceolate, distinct, deciduous.

Sepals, and petals, 3: leaflets leathery.

1. **Z. Fagara**.

2. **Z. flavum**.

3. **Z. Clava-Herculis**.

4. **Z. coriaceum**.

1. **Z. Fagara** (L.) Sarg. Tree sometimes 10 m. tall, the trunk slender, often inclining, or shrub: leaves 2.5-11 cm. long, the rachis winged: blades of the lateral leaflets mostly obovate to oval, 1-2.5 cm. long, shallowly crenate: mature carpels subglobose, 3.5-4 mm. long.

The WILD-LIME grows in hammocks, on the southern two-thirds of the eastern coast of peninsular Florida and on the lower half of the western coast. Also in the hammocks of the Everglade Keys and the Florida Keys. The brown and red-tinged heart-wood is close-grained, heavy, and hard. (W. I.)

2. **Z. flavum** Vahl. Tree sometimes 12 m. tall or shrub, unarmed, the twigs stellate-canescens: leaves 9-25 cm. long, the rachis terete: blades of the lateral leaflets mostly oblong or ovate, 3.5-10 cm. long: mature carpels obovoid, 5-9 mm. long.

The YELLOW-WOOD grows in hammocks on the lower Florida Keys. The yellow- or light-orange heart-wood is close-grained, very heavy, and hard but brittle. Also known as Satinwood. (W. I.)

3. **Z. Clava-Herculis** L. Tree sometimes 17 m. tall or shrub, the prickles raised on corky bases: leaves 1-3 dm. long; blades of the lateral leaflets ovate,

4-5 cm. long, appressed-serrate: mature carpels mostly 2-5 together, about 4-6 mm. long.

The TOOTHACHE-TREE grows in woods and hammocks nearly throughout Florida. The light-brown heart-wood is close-grained but light and soft. Also known as Prickly-ash. (Cont.)

4. *Z. coriaceum* Rich. Tree becoming 7 m. tall or shrub: leaves 6-15 cm. long; blades of the leaflets leathery, rigid, obovate to cuneate or oblong with acuminate base, 2-6 cm. long: mature carpels 5-6 mm. long.

The HERCULES'-CLUB grows in the coastal hammocks of the lower portion of the east coast and on the Florida Keys. The light-brown heart-wood is close-grained, rather heavy, and hard. (W. I.)

2. *PTELEA* L. Shrubs or trees. Leaf-blades 3-foliolate or rarely 5-foliolate. Flowers polygamous, in corymbose or paniced cymes. Sepals 4 or 5. Petals 4 or 5, narrow. Ovary 2-3-celled. Ovules 2 in each cavity, superposed. Samara winged all around. SHRUBBY TREFOIL.

1. *P. trifoliata* L. Tree sometimes 8 m. tall or shrub: blades of the leaflets broad or narrow, glabrous: samaras suborbicular or oval-orbicular, 2-2.5 cm. long. — Spr.

The HOP-TREE grows in rich woods or on rocky river banks in northern Florida. The yellowish-brown heart-wood is close-grained, heavy and hard. Also known as Wafer-ash. (Cont.)

3. *AMYRIS* [P. Br.] L. Shrubs or trees. Leaf-blades pinnate, or 1-foliolate, the petiole wingless. Flowers perfect or polygamous, paniculate. Sepals 4 or 5. Petals 4 or 5, broad. Ovary 1-celled: style short or wanting. Ovules 2. Drupe with a single seed. — All year. The following species have yellow or deep-yellow, very resinous, close-grained, heavy, hard, and strong heart-wood.

Fruits globose: ovary glabrous: leaflets shining beneath.

1. *A. elemifera*.

Fruits obovoid to oblong-obovoid: ovary pubescent: leaflets dull beneath.

2. *A. balsamifera*.

1. *A. elemifera* L. Tree becoming 17 m. tall or shrub: leaflets 3 or 5; blades ovate to rhombic-ovate, 2-8 cm. long: petals 2.5-3.5 mm. long: drupes 4-8 mm. long, black beneath the bloom.

The TORCHWOOD grows in coastal hammocks along the lower two-thirds of the east coast, and on the Everglade Keys and adjacent west coast and on the Florida Keys. (W. I.)

2. *A. balsamifera* L. Small tree sometimes 10 m. tall or shrub: leaflets 3-5; blades ovate to rhombic-ovate, 5-13 cm. long, dull beneath: drupes obovoid-oblong to obovoid, 6-14 mm. long.

The BALSAM-TORCHWOOD grows in hammocks along the southern end of the eastern coast of peninsular Florida. (W. I.)

4. *GLYCOSMIS* Correa. Shrubs or trees. Leaf-blades 1-several-foliolate: leaflets mostly entire. Flowers perfect, relatively small. Sepals nearly distinct. Petals 5, elongate. Ovary 2-5-celled: styles very short. Ovules solitary in each cavity. Berry globular, the pulp very thin.

1. *G. pentaphylla* (Retz.) DC. Small tree or shrub 1-4 m. tall: leaves 1-5-foliolate; leaflets elliptic to oblong, or broadest above the middle, 8-16 cm. long, glabrous: sepals orbicular to oval, 1-2 mm. long: petals oblong sometimes broadly so, 3-4 mm. long: filaments clavate: berries 7-10 mm. in diameter, white or pink.

The GLYCOSMIS, a native of tropical Asia, grows in hammocks on Key West. The wood has not yet been studied. (W. I.)

5. **CITRUS** L. Shrubs or trees. Leaf-blades 1-foliolate, the petiole often winged. Flowers perfect, axillary. Sepals united. Petals 5, or 4-8, mostly wax-like. Ovary several-celled: styles united, deciduous. Ovules several. Berry several-seeded.

The wood of the several species of *Citrus* is yellow or yellowish-white, close-grained, hard, and heavy. The following species of *Citrus* were introduced in Florida from tropical and temperate countries, some of them at a very early date. The different species are also extensively cultivated.

Berry of a globose or spheroidal type, not mamillate at the apex.

Wings of the petioles usually broad: pulp of the berry bitter and sour.

Wings of the petioles usually narrow: pulp of the berry sweet or sour.

Berry of an elongate type, commonly mamillate at the apex.

Berry relatively small, with a relatively thin rind, the pulp well developed, with abundant juice, and very acid.

Corolla 2-2.5 cm. wide: leaflets with a rounded apex.

Corolla 3-5 cm. wide: leaflets with an acute apex.

Berry relatively large, with a thick rind, the pulp only slightly developed, with little juice, and not very acid.

1. *C. vulgaris*.

2. *C. Aurantium*.

3. *C. Lima*.

4. *C. Limonum*.

5. *C. Medica*.

1. **C. vulgaris** Risso. Small tree with sharp thorns: leaflets ovate to oblong, 6-12 cm. long, often acuminate, the petioles usually broadly winged: flowers in small cymes: sepals often obtusish: berries dark-orange or reddish, the rind thick, the pulp sour and bitter.

The BITTER-SWEET ORANGE grows in woods and hammocks in peninsular Florida and on the Florida Keys. (W. I.)

2. **C. Aurantium** L. Small tree with short sharp thorns: leaflets oval, oblong-ovate, or ovate, 6.5-13 cm. long, often acute or rounded, the petioles usually narrowly winged: flowers in axillary clusters: sepals often acute: berries mostly yellow, the rind usually thin, the pulp sour or sweet.

The SWEET-ORANGE grows in woods and hammocks in peninsular Florida and on the Florida Keys. (W. I.)

3. **C. Lima** Lunan. Small tree or straggling shrub, with numerous sharp thorns: leaflets oval to oblong-elliptic, 6.5-9 cm. long, commonly rounded at the apex, crenulate: petioles narrowly winged: flowers in clusters of 3-10: petals white without and within: berries small, mostly less than 6 cm. long, the rind very thin, the pulp greenish.

The LIME grows in woods, thickets, and hammocks in peninsular Florida and on the Florida Keys. (W. I.)

4. **C. Limonum** (L.) Risso. Small tree or spreading shrub, less thorny than *C. Lima*: leaflets oblong-elliptic or ovate-oval, 5-11 cm. long, commonly acute or acuminate at the apex, crenate: petioles broadly winged: flowers solitary or 2 together: petals purplish without, white within: berries large, mostly over 6 cm. long, the rind relatively thin, the pulp yellowish.

The LEMON grows in woods and hammocks in peninsular Florida and on the Florida Keys. (W. I.)

5. **C. Medica** L. Small tree or shrub, sometimes with stout thorns: leaflets oblong to elliptic, or slightly broadened upward, 12-20 cm. long, rounded and often emarginate at the apex, serrulate-crenate, dull-green: flowers in clusters of 3-10: petals purple-tinged without, white within: berries oblong or oval, usually very large, mostly 12-20 cm. long, often coarsely wrinkled, the rind very thick.

The CITRON grows in hammocks and woods in peninsular Florida and on the Florida Keys. (W. I.)

FAMILY 3. SURIANACEAE. BAY-CEDAR FAMILY.

Shrubs or trees of coastal sands. Leaves alternate: blades entire. Flowers perfect, solitary, or few in terminal clusters. Calyx of 5 persistent sepals. Corolla of 5 clawed petals. Androeceum of 10 stamens.

those opposite the petals more or less reduced. Gynoecium of 5 distinct carpels opposite the petals. Ovules 2, side by side. Fruit achene-like.

1. **SURIANA** [Plum.] L. Shrubs with erect stems or trees with wide-spreading branches, the bark flaky. Leaves numerous, fleshy. Fruits seated in the persistent calyx.

1. **S. maritima** L. Shrub or tree 8 dm. tall, the wood very hard and heavy: leaves fleshy, appressed-pubescent, approximate; blades linear-spatulate, 1.5–4 cm. long: sepals ovate, 6–8 mm. long: petals yellow, about as long as the sepals: mature carpels 4–4.5 mm. long. — All year.

The BAY-CEDAR grows on sand dunes and in coastal hammocks in southern peninsular Florida and on the Florida Keys. The reddish-brown heart-wood is close-grained, heavy, and hard. (W. I.)

FAMILY 4. SIMAROUBACEAE. QUASSIA FAMILY.

Shrubs, trees, or rarely herbs. Leaves alternate or rarely opposite: blades pinnately compound, 1–3-foliolate or rarely simple. Flowers polygamous, deciduous, or rarely perfect, solitary, spicate, racemose or paniculate. Calyx of 3–5 sepals. Corolla of 3–5 petals or wanting. Androecium of as many stamens as there are sepals or twice as many, or rarely very many. Gynoecium of 2–5 more or less united carpels. Ovary usually lobed. Stigmas mostly introrse. Fruit a drupe or a samara, or baccate.

Fruits drupaceous or baccate.

Carpels becoming distinct, forming simple fruits: leaf-blades equally pinnate.

1. **SIMAROUBA**.

Carpels permanently united, forming a compound fruit: leaf-blades unequally pinnate.

2. **PICRAMNIA**.

Fruits samaroid.

Petals present: stamens 10: mature carpels separate.

3. **AILANTHUS**.

Petals wanting: stamens 5: mature carpels united.

4. **ALVARADOA**.

1. **SIMAROUBA** Aubl. Trees. Leaf-blades abruptly pinnate, the leaflets thick. Flowers monoecious or dioecious, paniculate. Sepals 4 or 5, short. Petals 4 or 5, imbricate, much larger than the sepals. Stamens 8 or 10, each with a fringed appendage at the base. Ovary 4–5-celled, lobed at the apex: style very short. Fruit a cluster of 5, or fewer drupes, with the style-base lateral.

1. **S. glauca** DC. Tree sometimes 16 dm. tall: leaflets 6–12; blades oblong or nearly so, 4–8 cm. long, entire: drupes oval, about 2 cm. long, scarlet or dark-purple. — Spr.

The PARADISE-TREE grows in coastal hammocks in the lower half of the peninsula, on the Everglade Keys and on the Florida Keys. The light-brown heart-wood is close-grained, but light, soft, and weak. Also known as Bitterwood. (W. I.)

2. **PICRAMNIA** Sw. Shrubs or trees. Leaf-blades unequally pinnate, the leaflets thickish. Flowers dioecious, spicate or racemose. Sepals 3–5, short. Petals 3–5, imbricate or wanting. Stamens 3–5, unappendaged. Ovary 2–3-celled, not lobed: style very short. Fruit a berry.

1. **P. pentandra** Sw. Small tree or shrub: leaflets 5–7; blades elliptic to oblong-elliptic, or rarely ovate, 5–10 cm. long, lustrous above: berries oblong, 10–15 mm. long. — Spr.

The BITTER-BUSH grows in hammocks on the Everglade Keys and on the Florida Keys. The brown heart-wood is close-grained, heavy, and hard. (W. I.)

3. **AILANTHUS** Desf. Trees. Leaf-blades unequally pinnate, the leaflets thin. Flowers polygamo-dioecious, paniculate. Sepals 5, short. Petals 5,

valvate, much larger than the sepals. Stamens 10, unappendaged at the base. Ovary 2-5-celled, deeply lobed at the apex: style columnar. Fruit a cluster of 5, or fewer, samaras, with the style-base lateral.

1. **A. glandulosus** L. Tree becoming 30 m. tall: leaflets 13-41; blades lanceolate to deeply-lanceolate, 7-18 cm. long: samaras 4-5 cm. long, linear-elliptic, the seed in the middle. — Spr.

The TREE-OF-HEAVEN, a native of China, grows in northern Florida and the northern portion of the peninsula. The white or nearly white heart-wood is rather close-grained, but light, soft, and weak. (*Cont.*)

4. **ALVARADOA** Liebm. Shrubs or trees. Leaf-blades unequally pinnate, the leaflets thinnish. Flowers dioecious, borne in spreading or drooping racemes. Sepals 5, short. Petals wanting. Stamens 5, alternating with 5 staminodia. Ovary flattened or 3-angled, 2-3-celled, notched at the apex. Fruit samaroid.

1. **A. amorphoides** Liebm. Shrub or small tree: leaves approximate at the ends of the branches; leaflets numerous, the blades 1-2 cm. long, those of the lateral leaflets mostly oblong or oval: flowers numerous, slender-pedicelled: sepals ovate, about 1.5 mm. long: filaments pubescent: capsules oblong or ovate-oblong, 12-14 mm. long, ciliate, notched. — All year.

The ALVARADOA grows in hammocks on the Everglade Keys. The brown or reddish-brown heart-wood is close-grained, heavy, hard, and strong. (*Bah., Cuba.*)

FAMILY 5. BURSERACEAE. TORCHWOOD FAMILY.

Trees with a resinous sap. Leaves alternate: blades pinnate, rarely 1-3-foliate. Flowers perfect or polygamo-dioecious, racemose or paniculate. Calyx of 3-6 sepals. Corolla of 3-6 petals. Androecium of 6-12 stamens. Gynoecium of 2-5 united carpels. Fruit drupaceous, the epicarp sometimes valvate.

1. **ELAPHRIUM** Jacq. Trees. Leaves approximate at the ends of the branches: leaflets thick. Sepals 4-6, imbricate. Petals 4-6, mostly valvate. Stamens 8-12, erect. Ovary 3-5-celled. Drupe with a valvate epicarp.

1. **E. Simaruba** (L.) Rose. Tree becoming 20 m. tall: leaflets 3-7; blades oval or elliptic, varying to ovate or obovate, 3-5 cm. long, entire: racemes 5-10 cm. long: petals 2-2.5 mm. long: drupes oblong, 8-11 mm. long or rarely smaller, the epicarp 3-valved. — Winter & spr.

The GUMBO-LIMBO grows in coastal hammocks along the lower half of the east coast and on the Everglade Keys and the Florida Keys. The light-brown heart-wood is close-grained, but spongy, soft, and weak. Also known as West-Indian birch. (*W. I.*)

FAMILY 6. MELIACEAE. MAHOGANY FAMILY.

Shrubs or trees, or partially woody herbs. Leaves alternate: blades pinnately 1-3-compound. Flowers perfect or polygamo-dioecious, paniculate. Calyx of 3-5 sepals. Corolla of 3-5 petals. Androecium of 8-10, or rarely fewer or more, stamens with the filaments united into a tube. Gynoecium of 3-5 united carpels. Ovary 3-5-celled. Fruit a berry, a capsule or a drupe.

Fruits drupaceous, clustered, drooping: androecium and style elongate. 1. MELIA.
Fruits capsular, solitary erect: androecium and style short. 2. SWIETENIA.

1. **MELIA** L. Trees with variegated wood. Leaf-blades thrice unequally pinnate. Sepals 5 or 6. Petals 5 or 6. Staminal tube elongate, the lobes cleft. Anthers sagittate. Stigma 3-6-lobed. Drupe leathery-fleshy.

1. *M. Azedarach* L. Tree becoming 15 m. tall (in *M. Azedarach umbraculifera* with an umbrella-like top): leaflets numerous; blades herbaceous, 3-7 cm. long, incised-serrate or lobed; petals about 1 cm. long; drupes subglobose, 1.5-2 cm. in diameter. — Spr.

The CHINA-TREE, a native of eastern Asia, grows nearly throughout Florida. The brown-streaked heart-wood is rather coarse-grained, but hard and durable. Also known as China-berry. (*Cont.*, W. I.)

2. *SWIETENIA* Jacq. Trees with dark-red wood. Leaf-blades equally once pinnate. Sepals 5. Petals 5. Staminal tube short, the lobes entire. Anthers oval or globular. Stigma discoid. Capsule woody.

1. *S. Mahagoni* Jacq. Tree becoming 25 m. tall: leaflets 4-8; blades leathery, 3-8 cm. long, entire; petals usually 3-4 mm. long; capsules ovoid, 12 cm. long or less. — Sum.

The MAHOGANY grows in hammocks on the Everglade Keys and the Florida Keys, and at the southern tip of the peninsula. The red-brown heart-wood is close-grained, heavy, very hard, durable, and strong. Also known as Madeira-redwood. (W. I.)

Order 16. EUPHORBIALES.

Herbs, shrubs, or trees. Leaves various, sometimes reduced to scales or almost wanting. Flowers mainly monoecious or dioecious, regular. Calyx of several sepals. Corolla of several petals, or often wanting. Androecium of more than one stamen, except when the staminate flowers are scattered over the inside of an involucre. Filaments distinct or united. Anthers opening by longitudinal or transverse valves. Gynoecium 2-several-carpellary or 1-carpellary, superior. Styles or stigmas usually distinct and cleft, or foliaceous. Ovules 1, 2 or 3 in each cavity. Fruit capsular, sometimes achene-like, drupaceous or baccate. Seeds often carunculate.

FAMILY 1. EUPHORBIACEAE. SPURGE FAMILY.

Herbs, shrubs, or trees, often with milky sap. Leaves opposite, whorled, or alternate: blades simple and entire, toothed or lobed, or compound. Flowers monoecious or dioecious, solitary or variously clustered, or much reduced and in an involucre (*Euphorbia* and related genera). Calyx of 2-several sepals or obsolete. Corolla of 2-several petals or wanting. Androecium of few-many stamens. Fruit usually depressed or slightly elongate.

Ovules, and seeds, 2 in each ovary-cavity.

Stamens 5: corolla present.

Stamens 2 or 3: corolla wanting.

Plants monoecious: ovary 3-celled: fruit baccate.

Plants dioecious: ovary 1-2-celled: fruit drupaceous.

Ovules, and seeds, solitary in each ovary-cavity.

Stamens 1-5: leaf-blades not peltate.

Styles 2 or 3: ovary 2- or 3-celled.

Pistillate flowers long-pedicelled: styles distinct or nearly so.

Pistillate flowers sessile: styles united.

Capsules fleshy: styles long: stigmas linear.

Capsules dry: style short: stigmas subulate.

Styles 6-8: ovary 6-8-celled.

Stamens numerous: leaf-blades peltate.

1 SAVIA.

2. CICCA.

3. DRYPETES.

4. GYMNANTHES.

5. TRIADICA.

6. SAPIUM.

7. HIPPOMANE.

8. RICINUS.

1. *SAVIA* Willd. Shrubs or trees. Leaves alternate: blades thick, entire. Flowers dioecious; the staminate densely clustered, with 5 broad rounded sepals

and 5 thin petals broadened upward: stamens 5, exserted. Pistillate flowers solitary or few together, with 5 broad sepals and 5 nearly similar petals: ovary 3-lobed; styles 2-parted. Capsule depressed.

1. *S. bahamensis* Britton. Small tree or shrub, the bark pale-gray or whitish: leaf-blades typically obovate, varying to narrowly obovate or oval-obovate, 2-5 cm. long, rounded at the apex, or rarely retuse or acutish, pale-green, shining above, glabrous, short-petioled: staminate flowers with orbicular-ovate sepals about 2 mm. long and cuneate or flabellate thin petals shorter than the sepals: pistillate flowers with suborbicular sepals and petals about 2 mm. long: capsules spheroidal, 5-6 mm. long: seeds 4-5 mm. long.

The SAVIA grows in hammocks or palmlands on the lower Florida Keys. The wood has not yet been studied. (*Bah., Cuba.*)

2. *CICCA* L. Shrubs or trees. Leaf-blades entire. Flowers apetalous. Staminate flowers with 5 or 6 sepals and usually 3 stamens, the anthers opening vertically. Pistillate flowers with 5 or 6 sepals and a 3-celled ovary. Fruit baccate.

1. *C. disticha* L. Small tree or shrub, the branchlets spreading or drooping, glabrous: leaves various, those near the base of the branchlets with suborbicular to orbicular-ovate blades 1.5-3 cm. long, those above them with larger ovate to oblong-lanceolate blades: larger sepals suborbicular to orbicular-obovate, 1.5-2 mm. long: berries depressed, 1.5-2 cm. broad. — All year.

The OTAHEITE-GOOSEBERRY, a native of the E. Indies, grows in pinelands and on roadsides in southern peninsular Florida. The wood has not yet been studied. (*W. I.*)

3. *DRYPETES* Vahl. Shrubs or trees. Leaf-blades entire or undulate-toothed. Flowers apetalous. Staminate flowers in rather dense clusters, with 4-8 sepals and 4-16 stamens. Pistillate flowers few in a cluster, with 4-8 sepals and a 1-2-celled ovary. Fruit a berry or a drupe.

Sepals 4: gynoecium 2-carpellary: drupe subglobose, less than 15 mm. long.

Sepals 5: gynoecium 1-carpellary: drupe elongate, over 15 mm. long.

1. *D. lateriflora*.

2. *D. diversifolia*.

1. *D. lateriflora* (Sw.) Krug & Urban. Tree becoming 10 m. tall or shrub: leaf-blades oblong or elliptic: stamens 4: drupes 9-11 mm. in diameter, ripe in spring or summer. — Fall & winter.

The GUIANA-PLUM grows in hammocks on the Everglade Keys and Florida Keys. The dark-brown heart-wood is close-grained, heavy, hard, and brittle. (*W. I.*)

2. *D. diversifolia* Krug & Urban. Tree becoming 12 m. tall or shrub: leaf-blades long, elliptic or oval: stamens 8: drupes 2-2.5 cm. long, ripe in fall. [*D. keyensis* Krug & Urban.] — Spr.

The WHITEWOOD grows in hammocks on the Florida Keys. The brown and yellow-streaked heart-wood is close-grained, heavy, hard, and brittle. (*W. I.*)

4. *GYMNANTHES* Sw. Shrubs or trees. Leaf-blades entire or toothed. Flowers, monoecious or rarely dioecious, apetalous. Staminate flowers with a rudimentary or obsolete calyx and 2 or 3 stamens. Pistillate flowers with a rudimentary calyx and a 3-celled ovary. Fruit a capsule.

1. *G. lucida* Sw. Tree becoming 10 m. tall or shrub: leaf-blades cuneate to oblong-spatulate, or nearly oblong, 4-10 cm. long, undulate or obscurely toothed near the apex: spikes shorter than the leaves: capsules depressed, about 1 cm. wide: seeds ovoid, 6-8 mm. long. — Fall.

The CRABWOOD grows in hammocks on the Everglade Keys and the Florida Keys. The dark-brown and yellow-streaked heart-wood is close-grained, very heavy, and hard. (*W. I.*)

5. **TRIADICA** Lour. Shrubs or trees. Leaf-blades entire, usually broad. Flowers monoecious, in dense spike-like panicles, apetalous. Staminate flowers with 2 or rarely 3 sepals and 2 or 3 stamens. Pistillate flowers with 2 or 3 sepals and a 2- or 3-celled ovary. Fruit a fleshy capsule.

1. **T. sebifera** (L.) Small. Tree resembling a poplar: leaf-blades acuminate, 4-8 cm. long, entire, long-petioled: capsules about 1.5 cm. broad: seeds 8-9 mm. long. [*Croton sebiferum* L.] — Spr.

The CHINESE TALLOW-TREE, a native of eastern Asia, grows in northern Florida and the northern portion of the peninsula. The white heart-wood is close-grained, and rather light, but hard. (Cont., W. I.)

6. **SAPIUM** P. Br. Shrubs or trees. Leaf-blades toothed, usually narrow. Flowers monoecious, in narrow spike-like panicles, apetalous. Staminate flowers with 2 or 3 sepals and 2 or 3 stamens. Pistillate flowers with 2 or 3 sepals and a 2- or 3-celled ovary. Fruit a dry capsule.

1. **S. glandulosum** (L.) Morong. Small tree or shrub, resembling a willow: leaf-blades acute, 16 cm. long, serrulate, short-petioled: capsules about 1 cm. broad: seeds 6-7 mm. long. — Spr.

The MILK-TREE, a native of South America, grows about Pensacola. The wood has not yet been studied. (W. I.)

7. **HIPPOMANE** L. Trees. Leaf-blades entire or toothed. Flowers monoecious, apetalous. Staminate flowers with 2 or 3 sepals and 2 or 3 stamens. Pistillate flowers with 3 sepals and a 6-8-celled ovary. Fruit a drupe.

1. **H. Mancinella** L. Tree becoming 18 m. tall: leaf-blades ovate, oblong, or oval, 4-10 cm. long: spikes 4-8 cm. long: drupes spheroidal, 2.5-3.5 cm. broad. — Spr.

The MANCHINEEL grows in hammocks on the Everglade Keys and Florida Keys. The dark-brown heart-wood is close-grained, but light and soft. (W. I.)

8. **RICINUS** [Tourn.] L. Herbs, shrubs or trees. Leaf-blades peltate, palmately lobed. Flowers monoecious, apetalous. Staminate flowers with 3-5 sepals and numerous stamens. Pistillate flowers with caducous sepals and a 3-celled ovary. Fruit a capsule.

1. **R. communis** L. Small tree or shrub, 1-5 m. tall, the stem widely branched: leaf-blades nearly orbicular, 6-11-lobed: capsules 12-16 mm. in diameter. — All year.

The CASTOR-OIL PLANT, a native of the Old World tropics, grows in waste places, fields and hammocks nearly throughout Florida. The wood is rather close-grained, but light and soft. (Cont., W. I.)

Order SAPINDALES.

Shrubs or trees. Leaves various: blades simple and entire or toothed or compound. Calyx of distinct sepals. Corolla of distinct petals, regular or rarely irregular, or wanting. Androecium of as many stamens as there are petals, or of twice as many, or rarely of more, or fewer. Filaments distinct. Gynoecium a single carpel, or of several united carpels. Ovary superior. Ovules 1 or 2, or several, in each cavity of the ovary, pendulous, with the raphe away from the axis of the ovary, or erect or ascending. Fruit various.

Plants with resin-bearing tissues.

Fam. 1. SPONDIACEAE.

Plants not resin-bearing.

Leaf-blades simple, pinnately veined.

Each cavity of the ovary with a single ovule.

Flowers in racemes: fruit capsular or leathery.

Fam. 2. CYRILLACEAE.

Flowers not racemose: fruit a drupe.

Fam. 3. AQUIFOLIACEAE.

Each cavity of the ovary with 2 or more ovules.

Fam. 4. CELASTRACEAE.

Leaf-blades simple and palmately veined or compound.

Leaves opposite.

Fruit capsular.

Fam. 5. AESCULACEAE.

Fruit a samara.

Fam. 6. ACERACEAE.

Leaves alternate.

Fam. 7. SAPINDACEAE.

FAMILY 1. SPONDIACEAE. SUMAC FAMILY.

Shrubs, trees, or vines, with milky, resinous, often acid or caustic sap. Leaves alternate: blades simple or pinnately compound. Flowers monoecious, dioecious, or polygamous. Calyx of 3-5 sepals. Corolla of 3-5 petals, larger than the sepals. Androecium of 3-6, or rarely more, stamens. Gynoecium of 1, or of 3-5, more or less united carpels. Fruit a drupe or a berry.

Leaf-blades simple: ovary on a swollen receptacle.

1. MANGIFERA.

Leaf-blades compound: ovary not on a swollen receptacle.

Drupe somewhat elongate, the coats permanently united.

2. METOPIUM.

Drupe depressed, the coats ultimately separating.

Drupe with a glabrous outer coat: stone ribbed.

3. TOXICODENDRON.

Drupe with a pubescent outer coat: stone smooth.

4. RHUS.

1. MANGIFERA L. Trees. Leaf-blades simple, relatively narrow. Flowers polygamo-dioecious, in stiff panicles, the branches not plumose. Sepals 4 or 5. Petals 4 or 5. Ovary oblique. Style 1, lateral. Drupe ovoid to somewhat reniform, smooth: seeds tenaciously fibrous.

1. M. indica L. Tree: leaf-blades leathery, oblong to linear-oblong or linear-lanceolate, mostly 1-3.5 dm. long, reticulate: panicles 1-4 dm. long: sepals ovate: petals oblong or nearly so, 3.5-4 mm. long: drupes 5-10 cm. long, aromatic. — Winter & spr.

The MANGO, a native of the East Indies, grows in fields and hammocks in southern peninsular Florida and on the Keys. The brownish heart-wood is rather coarse-grained, light, and soft. (W. I.)

2. METOPIUM P. Br. Trees. Leaf-blades pinnately compound. Flowers dioecious, in open panicles. Sepals 5. Petals 5. Ovary equilateral. Styles united: stigma 3-lobed. Drupe not oblique.

1. M. toxiferum (L.) Krug. & Urban. Tree becoming 14 m. tall or shrub, with a very poisonous sap: leaflets 3-7; blades leathery, ovate, 3-9 cm. long: panicles 1-2 dm. long: sepals reniform or suborbicular: petals oblong to ovate: drupes 10-15 mm. long. — Spr. or all year.

The POISONWOOD grows in hammocks and pinelands on the Everglade Keys and on the Florida Keys. Also on coastal sand-dunes at the lower end of the peninsula. The dark-brown and red-streaked heart-wood is close-grained, heavy and hard, but weak. Also known as Doctor-gum. (W. I.)

3. TOXICODENDRON [Tourn.] Mill. Shrubs, trees, or vines, with poisonous sap. Leaf-blades pinnately compound. Flowers polygamous or dioecious, in rather dense panicles. Sepals 4-6. Petals 4-6. Ovary glabrous. Styles short. Drupe mostly glabrous, the sarcocarp wax-secreting. Seed ribbed.

1. T. Vernix (L.) Kuntze. Small tree or shrub: blades of the lateral leaflets oblong, elliptic, or oval, 4-15 cm. long, undulate: petals linear-oblong, about

2 mm. long: drupes subglobose, about 5 mm. broad, in drooping panicles. — Spr.

The POISON-SUMAC grows in swamps in northern Florida. The yellow and brown-streaked heart-wood is coarse-grained, light, and soft. Also known as Thunderwood. (Cont.)

4. **RHUS** L. Shrubs or trees. Leaf-blades pinnately compound, several-foliolate. Flowers polygamous or dioecious, borne in terminal usually compact panicles. Sepals commonly 5. Petals commonly 5. Ovary pubescent. Style short. Drupe pubescent. Seed smooth and even. — Spr.

Bark dark gray or gray-brown, dull: leaflets mostly 7-11.
Bark red, shining: leaflets mostly 13-33.

1. *R. copallina*.
2. *R. leucantha*.

1. **R. copallina** L. Tree becoming 10 m. tall or a tall shrub, the bark thick, hard, scaly: leaflets 9-21: blades oblong to oblong-lanceolate or sometimes oval, 3-10 cm. long: stone of the drupe 2.5-3 mm. long.

The SUMAC grows in open woods or thickets in northern Florida and in the upper part of the peninsula. The brown and green-streaked heart-wood is coarse-grained, light, and soft. (Cont.)

2. **R. leucantha** Jacq. Tree becoming 9 m. tall, the bark thin, soft, smooth, peeling, or shrub: leaflets 15-33; blades narrowly oblong to linear-lanceolate, 3-9 cm. long: stone of the drupe about 3 mm. long.

The SOUTHERN-SUMAC grows in hammocks on the Everglade Keys. The brownish-white and green-streaked heart-wood is rather close-grained, light, and soft. (Cuba.)

FAMILY 2. CYRILLACEAE. TITI FAMILY.

Shrubs or trees. Leaves alternate: blades simple, entire. Flowers perfect, racemose. Calyx of mostly 5 sepals. Corolla of mostly 5 petals. Androecium of 5-10 stamens. Gynoecium of 2-5 united carpels. Fruit dehiscent or indehiscent.

Racemes lateral: sepals 5, equal: petals contorted, acute: stamens 5: ovary 2-celled: ovules 2-3: fruit dehiscent, not winged.

1. CYRILLA.

Racemes terminal: sepals 5-8, unequal: petals imbricated, obtuse:

stamens 10: ovary 3-4-celled: ovule 1: fruit indehiscent, winged. 2. CLIFTONIA.

1. **CYRILLA** Gaertn. Shrubs or trees, with pale close bark. Sepals nearly equal. Petals clawless. Stamens equal: filaments winged. Style short. Fruit erect or ascending.

1. **C. racemiflora** L. Tree becoming 10 m. tall or shrub: leaf-blades oblanceolate to obovate or nearly oblong, 2-10 cm. long: racemes mostly over 8 cm. long: sepals acuminate: petals 2.5-3 mm. long: filaments over 2 mm. long: capsules ovoid, about 2.5 mm. long. — Spr.

The LEATHERWOOD grows in swamps and ponds in the pinelands in northern Florida. The brown and red-tinged heart-wood is close-grained, heavy, and hard, but weak. Also known as Titi. (Cont.)

2. **CLIFTONIA** Gaertn. Shrubs or trees, with dark scaly bark. Sepals unequal. Petals clawless. Stamens unequal: filaments appendaged below. Style wanting. Fruit drooping.

1. **C. monophylla** (Lam.) Britton. Small tree becoming 8 m. tall or shrub: leaf-blades narrowly elliptic to elliptic-oblanceolate, 4-6 cm. long: racemes 2-6 cm. long: petals 3-3.5 mm. long: fruit ovoid, 6-7 mm. long. — Winter & spr.

The TITI grows in pineland swamps and bays in northern Florida. The brown and red-tinged heart-wood is close-grained, heavy, and rather hard, but weak. (Cont.)

FAMILY 3. **AQUIFOLIACEAE.** HOLLY FAMILY.

Shrubs or trees. Leaves alternate: blades simple. Flowers perfect or polygamous. Calyx of 4-6 persistent sepals. Corolla of 4-6 petals, often united at the base. Androecium of 4-6 stamens. Gynoecium of 4-8 united carpels. Fruit drupaceous.

1. **ILEX** L. Shrubs or trees. Leaves mostly persistent: blades entire or toothed. Flowers sometimes nearly dioecious. Sepals persistent. Corolla deciduous. Drupe with 4-8 nutlets.

Fruits with smooth nutlets.

Berries black: leaves persistent; blades leathery.

Berries red or scarlet: leaves deciduous; blades herbaceous.

Fruits with ribbed nutlets.

Leaves deciduous: blades herbaceous.

Leaf-blades broadest above the middle, blunt-toothed: drupes nearly sessile.

Leaf-blades not broadest above the middle, sharp-toothed: drupes decidedly pedicelled.

Leaves persistent: blades leathery.

Leaf-blades entire or with a few appressed teeth near the apex.

Leaf-blades linear, 1-4 cm. long.

Leaf-blades oblong or oblanceolate, 4-10 cm. long.

Leaf-blades toothed

Teeth crenate.

Teeth spine-like and spreading, rarely only the terminal one present.

1. *I. Krugiana*.

2. *I. verticillata*.

3. *I. decidua*.

4. *I. ambigua*.

5. *I. myrtifolia*.

6. *I. Cassine*.

7. *I. vomitoria*.

8. *I. opaca*.

1. **I. Krugiana** Loesener. Tree 11 m. tall or shrub, with glabrous twigs: leaf-blades oblong, elliptic, or ovate, 4-7.5 cm. long, acuminate, mostly entire, deep-green and lustrous above, slender-petioled: staminate calyx about 3 mm. wide: staminate corolla 5-5.5 mm. wide: drupes 5.5-6.5 mm. in diameter, about as long as the stalk. — All year.

KRUG'S-HOLLY grows in hammocks, and as a shrub in pinelands on the Everglade Keys. The wood has not yet been studied. (W. I.)

2. **I. verticillata** (L.) A. Gray. Small tree sometimes 7 m. tall or shrub, with glabrous or slightly pubescent twigs: leaf-blades thickish, elliptic or oval, varying to ovate or obovate, 2-8 cm. long, acute or acuminate at both ends, more or less pubescent beneath, often strongly reticulate, serrate: staminate calyx about 2.5 mm. wide: staminate corolla 6-7 mm. wide: drupes 6-8 mm. in diameter, red. — Spr. & sum.

The **BLACK-ALDER** grows in swamps or low woods in northern Florida. The yellowish-white heart-wood is close-grained, rather heavy, and moderately hard. (Cont.)

3. **I. decidua** Walt. Small tree 10 m. tall or shrub, the twigs glabrous or nearly so: leaf-blades thickish, mainly spatulate, oblanceolate, or elliptic, 2-6 cm. long, obtuse or retuse at the apex, crenate-serrate, dark-green and glabrous above, paler and usually pubescent beneath: staminate calyx 2.5-3 mm. wide: staminate corolla 4.5-6 mm. wide: drupes globose, 7-9 mm. in diameter, orange or nearly scarlet. — Spr.

The **DECIDUOUS-HOLLY** grows in swamps and along streams in northern Florida. The yellowish-white heart-wood is close-grained, heavy, and hard. (Cont.)

4. **I. ambigua** (Michx.) Chapm. Small tree rarely 6 m. tall, or shrub, with glabrous or nearly glabrous twigs: leaf-blades thin, broadly oval varying to ovate or obovate, 4-7 cm. long, acute or short-acuminate, serrate at least above the middle with appressed bristle-tipped teeth, glabrous or nearly so: staminate calyx 2-2.5 mm. wide: staminate corolla 4-5 mm. wide: drupes globose-oblong, 6-7 mm. in diameter. — Spr.

The **CAROLINA-HOLLY** grows on the margins of swamps in northern Florida. The wood has not yet been studied. (Cont.)

5. **I. myrtifolia** Walt. Small tree or shrub, with very rigid branches: leaf-blades leathery, narrowly oblong or linear, or broader on shoots 1-4 cm. long,

apiculate, more or less revolute, dark-green and glabrous above, pale and usually glabrous beneath, short-petioled: calyx 1-1.5 mm. broad: corolla 4-5 mm. broad: drupes globose, about 6 mm. in diameter, red. — Spr.

The MYRTLE-LEAVED HOLLY grows about pineland ponds and in cypress swamps in northern Florida. The pale-brown heart-wood is rather close-grained, light, and soft. (Cont.)

6. **I. Cassine** L. Small tree, 12 m. tall or shrub, with usually pubescent twigs: leaf-blades leathery, oblanceolate or oblong, or rarely obovate, 4-10 cm. long, obtuse, acute, or rarely retuse at the apex, more or less revolute, dark-green and glabrous above, pale and more or less pubescent beneath, or sometimes glabrous, rather slender-petioled: calyx 1.5-2 mm. broad: corolla 4-4.5 mm. broad: drupes globose, 6-8 mm. in diameter, red or sometimes nearly yellow. — Spr. or all year.

The DATOON grows on the margins of swamps and in hammocks nearly throughout northern and peninsular Florida. The white or yellowish heart-wood is close-grained, heavy, and hard. Also known as Yaupon. (Cont., Bah., Cuba.)

7. **I. vomitoria** Ait. Small tree, 8 m. tall or shrub: leaf-blades leathery, oblong, oval, or elliptic, sometimes oblong-lanceolate on shoots, 1-2.5 cm. long, obtuse, crenate-serrate, deep-green and lustrous above, pale-green beneath: calyx 2 mm. broad: corolla 5-5.5 mm. broad: drupes globose, red, 5-6 mm. in diameter, longer than their pedicels. — Spr.

The CASSENA grows on the margins of swamps and on sand ridges especially near the coast in northern Florida and the upper part of the peninsula. The light-brown heart-wood is close-grained, light, soft, and weak. (Cont.)

8. **I. opaca** Ait. Tree reaching a height of 15 m., the bark white or pale-gray: leaf-blades parchment-like, oval, elliptic, or obovate, 4-10 cm. long, spine-toothed or sometimes entire, lustrous and dark-green above, pale and dull beneath: corolla 5.5-6.5 mm. broad: drupes globose or globose-ovoid, about 1 cm. in diameter, red or rarely yellow, longer than the pedicels. — Spr.

The HOLLY grows in sandy woods and in hammocks in northern Florida and the upper part of the peninsula. The white heart-wood is close-grained, light, hard, and weak. Also known as American-holly. (Cont.)

FAMILY 4. CELASTRACEAE. STAFF-TREE FAMILY.

Shrubs or trees, or vines. Leaves alternate, opposite, or whorled: blades simple. Flowers perfect, polygamous or dioecious, variously borne. Calyx of 3-5 sepals. Corolla of 3-5 petals. Androeium of 3-5 stamens borne on or under the disk. Gynoeium of 3-6 united carpels. Fruit a capsule, a drupe, or a berry. Seed often arillate.

Fruits capsular, dehiscent.

Leaves opposite: fruit-clusters drooping: capsules depressed at the apex.

Leaves alternate: fruit-clusters not drooping: capsules pointed.

Fruits drupaceous: indehiscent.

Flowers perfect: ovary 4-celled: fruits oblique.

Flowers dioecious: ovary 2-celled: fruits not oblique.

Leaves opposite: flower-clusters peduncled: calyx deciduous: drupe not lobed.

Leaves alternate: flower-clusters sessile: calyx persistent: drupe lobed.

1. EUONYMUS.

2. MAYTENUS.

3. RHACOMA.

4. GYMINDA.

5. SCHAEFFERIA.

1. **EUONYMUS** [Tourn.] L. Shrubs, trees, or rarely vines. Leaves opposite: entire or toothed. Flowers perfect. Sepals 4 or 5. Petals 4 or 5. Stamens 4 or 5, borne on the lobes of the disk: filaments very short: anthers diverging. Stigmas 3-5. STRAWBERRY-BUSH.

1. **E. atropurpureus** Jacq. Tree becoming 8 m. tall or shrub: leaf-blades 5-16 cm. long, serrate: petals dark-purple, orbicular-ovate or suborbicular, 2-4 mm. long: capsules depressed: seeds 8-10 mm. long. — Spr.

The BURNING-BUSH grows on river banks in western Florida. The whitish and often yellow-tinged heart-wood is close-grained, heavy, and hard. (Cont.)

2. **MAYTENUS** Molina. Shrubs or trees. Leaves alternate, persistent: blades leathery, entire or toothed. Flowers polygamous or dioecious, solitary or clustered. Sepals 5. Petals 5. Stamens 5, borne beneath the disk. Capsules erect.

1. **M. phyllanthoides** Benth. Small tree or shrub: leaf-blades obovate to oblong-oblancoate, 2-4 cm. long: hypanthium broadly turbinate: corolla 2-3 mm. broad: capsules obovoid, 8-12 mm. in diameter, red. — All year.

The **MAYTENUS** grows in hammocks along the lower portion of the eastern coast of Florida and on the Florida Keys. The wood has not yet been studied. (*Cuba*.)

3. **RHACOMA** L. Shrubs or small trees. Leaves alternate, opposite, or whorled, persistent: blades entire or toothed. Flowers perfect, few together or solitary in axillary peduncled cymes. Sepals 4 or 5. Petals 4 or 5. Stamens 4 or 5, borne between the lobes of the disk. Drupe smooth.

1. **R. Crossopetalum** L. Small tree or shrub, with glabrous twigs: leaf-blades obovate or rarely somewhat elliptic, 1-4 cm. long, shallowly crenate or entire: cymes long-peduncled: petals oval or orbicular, 1 mm. long or less: drupes obovoid, 5-6 mm. long, red. — All year.

The **RHACOMA** grows in hammocks on the southern portion of the eastern coast of Florida and on the Florida Keys. The wood has not yet been studied. (*W. I.*)

4. **GYMINDA** Sarg. Shrubs or trees, the twigs 4-angled. Leaves opposite, persistent: blades mostly entire. Flowers dioecious, in axillary cymes. Sepals 4, or rarely 3. Petals 4, or rarely 3. Stamens 4, borne without a disk. Stigmas disk-like. Drupe smooth.

1. **G. latifolia** (Sw.) Urban. Small tree or shrub: leaf-blades obovate to elliptic-obovate, 2-4 cm. long, bright-green, (or glaucous above in *G. latifolia glaucifolia*): petals oblong to obovate-oblong, 1.5-2 mm. long: drupes oblong to ovoid, 7-8 mm. long, bluish-black. — All year.

The **FALSE-BOXWOOD** grows in hammocks on the Florida Keys. The dark-brown or nearly black heart-wood is close-grained, very heavy, and hard. (*W. I.*)

5. **SCHAEFFERIA** Jacq. Shrubs or trees, the twigs terete. Leaves alternate, persistent: blades entire. Flowers dioecious, in axillary clusters. Sepals 4. Petals 4. Stamens 4, borne without the disk. Stigmas recurved. Drupes tuberculate.

1. **S. frutescens** Jacq. Small tree or shrub: leaves not clustered; blades elliptic, oval, elliptic-obovate or elliptic-oblancoate, 4-6 cm. long, shining above: flowers manifestly pedicelled: drupes about 5 mm. in diameter. — All year.

The **BOXWOOD** grows in hammocks along the lower portion of the eastern coast of Florida, and on the Everglade Keys and Florida Keys. The yellow heart-wood is close-grained, heavy, and hard. Also known as Yellow-wood. (*W. I.*)

FAMILY 5. AESCULACEAE. BUCKEYE FAMILY.

Shrubs or trees. Leaves opposite: blades palmately compound. Flowers polygamous, in terminal racemes or panicles. Calyx of 5 partially united sepals. Corolla of 4 or 5 unequal clawed petals. Androecium of 5-8 stamens. Gynoecium of 3 united carpels. Fruit a leathery loculicidal capsule.

1. **AESCULUS** L. Shrubs or trees. Leaf-blades palmately 5-9-foliolate. Petals with their claws mostly in the calyx-tube. Filaments slender. Capsule smooth or echinate. — **BUCKEYE. HORSE-CHESTNUT.**

1. *Ae. Pavia* L. Small tree or shrub: leaflets 5-7; blades oblanceolate or elliptic-oblanceolate: calyx 15-17 mm. long: corolla red; lateral petals 2-3 cm. long, with suborbicular blades: capsules 3-5 cm. in diameter. — Spr.

The RED-BUCKEYE grows in rich woods in northern Florida. The wood is pale, often whitish, close-grained, but light and soft. (Cont.)

FAMILY 6. ACERACEAE. MAPLE FAMILY.

Shrubs or trees. Leaves opposite: blades simple or compound. Flowers perfect or polygamous, in cymes, racemes, or panicles, often in congested clusters. Calyx of 4 or 5, or rarely more, deciduous sepals. Corolla of 4 or 5, or rarely more, petals, or wanting. Androeium of as many stamens as there are sepals. Gynoeium of 2 more or less united carpels. Fruit 2 nutlets with wings (samaras).

Leaves with simple or rarely digitately compound blades: flowers polygamo-dioecious, with a disk. 1. ACER.

Leaves with pinnately compound blades: flowers dioecious, without a disk. 2. RULAC.

1. *ACER* [Tourn.] L. Shrubs or trees. Leaf-blades simple or digitately compound. Flowers polygamous-dioecious. Stamens mostly 8. Samaras 2 together. — Spr. — MAPLE.

Flower-clusters expanding before the leaves, not drooping.

Petals wanting or obsolete: ovary pubescent.

1. *A. saccharinum*.

Petals present: ovary glabrous.

Leaf-blades prominently and sharply lobed, the lobes prominently toothed: samaras mostly less than 3 cm. long.

2. *A. rubrum*.

Leaf-blades shallowly lobed, the lobes shallowly toothed: samaras mostly over 3 cm. long.

3. *A. carolinianum*.

4. *A. floridanum*.

Flower-clusters expanding with the leaves, drooping.

1. *A. saccharinum* L. Tree rarely 36 m. tall, the bark flaky at maturity, gray, or that of the twigs reddish-brown: leaf-blades about as long as broad, 10-15 cm. long, with 3-5 prominent incised lobes longer than the body, silky when young, glabrate, bright-green above, glaucous or silvery-white beneath, truncate or cordate at the base: calyx greenish or yellowish: samaras 5-6 cm. long, tomentose, or glabrate at maturity, green, at length widely spreading.

The SILVER-MAPLE grows in the Apalachicola river swamps in northern Florida. The pale-brown heart-wood is close-grained, rather light, and brittle. Also known as Soft-maple. (Cont.)

2. *A. rubrum* L. Tree sometimes 35 m. tall, the bark dark-gray and fissured on the trunk, smooth and pale or white-gray on the branches: leaf-blades commonly broader than long, bright-green above, light-green or pale beneath, shallowly but prominently 5-lobed, rather evenly serrate, cordate at the base: flower-clusters red or yellowish: sepals nearly distinct: petals narrower than the sepals: samara-wings diverging at about 45 degrees, commonly red, 1.5-2.5 cm. long.

The RED-MAPLE grows in swamps in northern Florida and the adjacent parts of the peninsula. The light-brown heart-wood is close-grained, heavy, and hard, but weak. (Cont.)

3. *A. carolinianum* Walt. Tree usually smaller than *A. rubrum*, the bark often shaggy in age: leaf-blades commonly longer than broad, dark-green above, glaucous or white beneath, shallowly and bluntly 3-lobed near the apex, or merely coarsely toothed: samara-wings converging or slightly diverging, larger than those of *A. rubrum*, commonly 3-4 cm. long.

The CAROLINA-MAPLE grows in river-swamps and low grounds in northern Florida and the upper half of the peninsula. The wood is similar to that of *A. rubrum*. (Cont.)

4. *A. floridanum* (Chapm.) Pax. Tree rarely over 18 m. tall, the bark rather close, but rough in age, chalky-white: leaf-blades rather broader than long, 5-6 cm. broad, with 3-5 blunt few-toothed lobes about as long as the body,

Trees of Florida 5.

deep-green above, glaucous and more or less pubescent beneath, truncate and shallowly cordate at the base: pedicels sparingly pubescent at least until the fruit matures: calyx campanulate, 1-1.5 mm. long: samaras green, 1.5-2 cm. long, sparingly pubescent near the base; wings rather widely spreading.

The FLORIDA SUGAR-MAPLE grows in rich woods and hammocks in middle and western Florida. The light-brown heart-wood is close-grained, heavy, and hard. (Cont.)

2. NEGUNDO [Ray] Ludwig-Boehmer. Trees. Leaf-blades pinnately compound. Flowers dioecious. Stamens mostly 5 or 4. Fruit resembling that of *Acer*.

1. N. Negundo (L.) Karst. Tree becoming 25 m. tall: leaflets 3-9; blades oval, ovate, or ovate-lanceolate, often 5-12 cm. long, coarsely toothed: samaras 2.5-3.5 cm. long. — Spr.

The BOX-ELDER grows in rich woods or on river banks in northern Florida and in the northern portion of the peninsula. The yellowish-white heart-wood is close-grained, light, soft, and weak. Also known as Ash-leaved maple. (Cont.)

FAMILY 7. SAPINDACEAE. SOAPBERRY FAMILY.

Shrubs, trees, or vines. Leaves opposite or alternate: blades simple or pinnate, sometimes 1-foliolate. Flowers dioecious, polygamous, or polygamo-dioecious, or rarely perfect, borne in racemes, panicles, or corymbs. Calyx of 4 or 5 sepals. Corolla of 4 or 5 petals or wanting. Disk sometimes gland-bearing. Androeceum mostly of 5 or more stamens. Gynoeceum of 2-4 more or less united carpels. Fruit capsular or baccate.

Fruits indehiscent, baccate.

Petals appendaged, longer than the calyx.

Fruits lobed, the carpels nearly distinct: androeceum and gynoeceum glabrous.

1. *SAPINDUS*.

Fruits not lobed, the carpels united: androeceum and gynoeceum usually pubescent.

2. *TALISIA*.

Petals unappendaged, about as long as the calyx.

Ovary 2-celled: leaflets 2, 4 or 6: calyx persistent.

3. *EXOTHEA*.

Ovary 3-celled: leaflets 3: calyx deciduous.

4. *HYPELATE*.

Fruits dehiscent, capsular.

5. *CUPANIA*.

1. SAPINDUS [Tourn.] L. Shrubs or trees. Leaves alternate: blades pinnate. Flowers polygamous, regular. Sepals 4 or 5. Petals 4 or 5, appendaged. Stamens 8-10. Baccate fruit not elongate, lobed. — Winter & spr.

Leaf-rachis winged: blades of the leaflets obtuse, at least not acuminate: petals short-clawed.

1. *S. Saponaria*.

Leaf-rachis wingless, blades of the leaflets acuminate: petals long-clawed.

Mature carpels globose: seed globose or spheroidal.

2. *S. marginatus*.

Mature carpels oval or obovoid: seed somewhat elongate.

3. *S. manatensis*.

1. S. Saponaria L. Tree becoming 10 m. tall or shrub: leaflets 4-7; blades oblong, oval, or obovate, 3-12 cm. long; leaf-rachis winged: mature carpels globose, 14-18 mm. in diameter.

The SOAPBERRY grows in hammocks on the Everglade Keys and adjacent parts of peninsular Florida and on the Florida Keys. The brown and yellow-tinged heart-wood is close-grained, heavy, and hard. (W. I.)

2. S. marginatus Willd. Tree 10-15 m. tall, the twigs and inflorescence pubescent: leaflets 7-13; blades lanceolate to oblong-lanceolate, 5-15 cm. long: leaf-rachis margined above: mature carpels globose, 10-15 mm. in diameter.

The WILD CHINA-TREE grows in hammocks nearly throughout peninsular Florida. The light-brown and yellow-tinged heart-wood in close-grained, heavy, and hard. (Cont.)

3. *S. manatensis* Radlk. Tree becoming 10 m. tall or shrub, the twigs and inflorescence glabrous: leaflets 7-13; blades oblong-lanceolate: leaf-rachis wingless: mature carpels oval or obovoid, 20-23 mm. long.

The MANATEE WILD CHINA-TREE grows in hammocks on islands about the mouth of the Manatee River. The wood is nearly similar to that of the next preceding species. (*Endemic.*)

2. *TALISIA* Aubl. Shrubs or trees. Leaves alternate, the rachis wingless: blades pinnate, the leaflet-blades slightly inequilateral. Flowers polygamodioecious, regular. Sepals 5. Petals 5, appendaged. Stamens 5-7, or usually 8. Baccate fruit somewhat elongate, not lobed.

1. *T. pedicellaris* Radlk. Small tree with puberulent twigs: leaflets 4-6; blades elliptic to elliptic-ovate, 5-9 cm. long, acuminate, short-petioluled: panicle small, the branches pubescent: petals ovate to ovate-lanceolate, 4-5 mm. long: fruits ovoid, 1.5-2 cm. long, papillose.

The *TALISIA* grows in Brickell hammock on the Everglade Keys, below Miami. The wood has not been studied. (*N. S. Am.*)

3. *EXOTHEA* Macfadyen. Shrubs or trees. Leaves alternate: blades equally pinnate. Flowers mostly polygamous, irregular. Sepals 5. Petals unappendaged, short-clawed. Stamens mostly 8. Baccate fruit not lobed.

1. *E. paniculata* (Juss.) Radlk. Tree: leaflets 2-4, or rarely 6; blades oblong or elliptic, 5-13 cm. long, entire: buds clove-shaped: sepals 3-4 mm. long: petals white, resembling the sepals: fruits subglobose, 10-12 mm. in diameter, orange, turning purple. — Winter & spr.

The *INKWOOD* grows in hammocks along the lower two-thirds of the eastern coast of Florida and on the Everglade Keys and the Florida Keys. The reddish-brown heart-wood is close-grained, very heavy, hard, and strong. Also known as Ironwood. (*W. I.*)

4. *HYPELATE* P. Br. Shrubs or trees. Leaves alternate: blades 3-foliate. Flowers polygamodioecious. Sepals 5. Petals 5, unappendaged, clawless. Stamens 8-10. Baccate fruit not lobed.

1. *H. trifoliata* Sw. Tree: leaflets 3; blades spatulate to narrowly obovate, 2.5-4.5 cm. long: petals white, suborbicular, obovate, or oval, the larger ones 3.5-4 mm. long: fruits ovoid, 5-7 mm. long, black. — Winter & spr.

The *WHITE-IRONWOOD* grows in hammocks on the Florida Keys. The dark-brown heart-wood is close-grained, very heavy and hard, and durable. (*W. I.*)

5. *CUPANIA* [Plum.] L. Shrubs or trees. Leaves alternate: blades pinnate. Flowers polygamodioecious, regular. Sepals 4 or 5, rarely 3 or 6. Petals 4 or 5, sometimes appendaged, or wanting. Stamens 8, or 5, 6, 10, or 12. Capsule 2-4-lobed.

1. *C. glabra* Sw. Tree: leaflets 6-12; blades oblong with a cuneate base, 6-11 cm. long, crenate or crenate-serrate above the middle: sepals ovate, 2-2.5 mm. long: petals cuneate-flabellate, 2-2.5 mm. long: capsules turbinate, 11-14 mm. broad, stipitate. — Fall & winter.

The *CUPANIA* grows in hammocks on Pine Key. The wood has not yet been studied. Specimens of this tree have not been collected in Florida in recent years. (*W. I.*)

Order RHAMNALES.

Shrubs, trees, or vines. Leaves typically alternate. Flowers regular, sometimes imperfect or incomplete. Calyx present. Corolla present or wanting. Androecium of as many stamens as there are sepals. Gynoe-

cium of 2 or more united carpels. Ovary superior or nearly so. Fruit a capsule or a berry, or drupaceous.

FAMILY 1. **FRANGULACEAE.** BUCKTHORN FAMILY.

Shrubs, trees, or vines. Leaf-blades simple, pinnately veined. Flowers perfect or polygamous, or sometimes dioecious. Calyx of 4 or 5 sepals. Corolla of 4 or 5 petals, or wanting. Androecium of 4 or 5 stamens opposite the petals. Gynoecium of 2 or 3 united carpels. Fruit capsular or drupaceous, sometimes separating into nutlets.

Fruits drupaceous, pulpy, the stone 1-3-celled.

Sepals crested.

Sepals crestless.

1. **KRUGIODENDRON.**

2. **REYNOSIA.**

Fruits dry or baccate, with 2-4 separating nutlets.

Fruit fleshy: disk forming a hypanthium with the ovary seated in the bottom of it.

3. **RHAMNUS.**

Fruit dry: disk annular, the ovary immersed in it.

4. **COLUBRINA.**

1. **KRUGIODENDRON** Urban. Shrubs or trees. Leaves nearly opposite: blades entire. Flowers perfect. Sepals 5, crested within. Petals wanting. Stamens 5: filaments longer than the anthers. Drupe apiculate.

1. **K. ferreum** (Vahl) Urban. Tree becoming 9 m. tall, the bark ridged, or shrub: leaf-blades ovate or oval, 3-6 cm. long: sepals ovate: drupes subglobose or oval, 5-8 mm. long, black. [*Rhamnidium ferreum* (Vahl) Sarg.] — Spr.

The BLACK-IRONWOOD grows in hammocks along the lower half of the east coast and on the Everglade Keys and the Florida Keys. The orange-brown heart-wood is close-grained, heavy, hard, and brittle. (W. I.)

2. **REYNOSIA** Griseb. Shrubs or trees. Leaves opposite: blades entire. Flowers perfect. Sepals 5, crestless. Petals wanting. Stamens 5: filaments longer than the anthers. Drupe apiculate.

1. **R. septentrionalis** Urban. Tree becoming 9 m. tall, the bark scaly: leaf-blades oblong, varying to ovate or obovate: sepals deltoid or ovate-deltoid: drupes subglobose, oval, or obovoid, 1.5-2 cm. long, purple or nearly black. [*R. latifolia* Sarg. Not Griseb.] — Spr. & sum.

The RED-IRONWOOD grows in hammocks on the Everglade Keys and the Florida Keys. The dark-brown heart-wood is close-grained, heavy and very hard. Also known as Darling-plum. (Bah.)

3. **RHAMNUS** [Tourn.] L. Shrubs or trees. Leaves alternate: blades entire or toothed, many-ribbed. Flowers perfect or polygamo-dioecious. Sepals 4 or 5, keeled within. Petals 4 or 5, commonly concave, clawless, shorter than the sepals, or wanting. Stamens 4 or 5, included anthers acute. Drupe berry-like, not lobed, with 3 or 4 nutlets. — BUCKTHORN.

1. **R. caroliniana** Walt. Tree becoming 11 m. tall, or a shrub: leaf-blades oblong or elliptic, or slightly obovate, 5-12 cm. long: calyx about 4 mm. broad: petals about $\frac{1}{2}$ as long as the sepals: drupes black, 10-11 mm. in diameter. — Spr.

The INDIAN-CHERRY grows in rich woods in middle and western Florida. The light-brown heart-wood is close-grained, light, and hard. (Cont.)

4. **COLUBRINA** L. C. Rich. Shrubs or trees. Leaves alternate: blades entire or toothed, sometimes 3-nerved at the base. Flowers perfect. Sepals 5, spreading, keeled within. Petals 5, folded around the stamens, clawless. Stamens 5: anthers notched. Drupe slightly 3-lobed, the carpels separating at least at the top. — Fall-spr.

Young foliage glabrous or inconspicuously pubescent: calyx 3.5–4.5 mm. wide.

Young foliage conspicuously red-tomentose: calyx 7–8 mm. wide. 1. *C. reclinata*.
2. *C. Colubrina*.

1. *C. reclinata* (L'Her.) Brongn. Small tree becoming 20 m. tall, or a shrub, with puberulent twigs: leaf-blades ovate-oblong or rarely oval or obovate, 3–8 cm. long: sepals about 2 mm. long: petals about 1.5 mm. long: drupe slender-pedicelled, seated on the shallow hypanthium.

The NAKEDWOOD grows in hammocks on the Everglade Keys and the Florida Keys. The brown and often yellow-tinged heart-wood is close-grained, heavy, hard, and strong. (W. I.)

2. *C. Colubrina* (Jacq.) Millsp. Small tree or shrub, with rusty-tomentose twigs: leaf-blades ovate, oblong, elliptic, or rarely oblanceolate, 5–15 cm. long: sepals about 2.5 mm. long: petals somewhat longer than those of *C. reclinata*: drupe stout-pedicelled, partly immersed in the deep hypanthium.

The WILD-COFFEE grows in hammocks on the Everglade Keys and the Florida Keys. The brownish heart-wood is close-grained, hard, and rather strong. (W. I.)

Order MALVALES.

Herbs, shrubs, or trees. Leaves alternate or opposite: blades simple, often lobed and toothed. Flowers mostly perfect, regular and involucrate. Calyx of distinct or partially united sepals. Corolla of distinct petals. Androecium of numerous monadelphous or grouped stamens, or few in Buettneriaceae. Gynoecium of several distinct or united carpels. Fruit capsular, follicular, berry-like, or nut-like.

Stamens numerous (in our genera).

Stamens distinct or in several groups: anthers 2-celled.

Stamens monadelphous: anthers 1-celled.

Stamens as many as the sepals.

Fam. 1. TILIACEAE.

Fam. 2. MALVACEAE.

Fam. 3. BUETTNERIACEAE.

FAMILY 1. TILIACEAE. LINDEN FAMILY.

Shrubs or trees, or rarely herbs. Leaves mostly alternate: blades simple. Flowers usually perfect. Calyx of 4 or 5 sepals. Corolla of 4 or 5 petals, each of which sometimes bears a petaloid scale at the base. Androecium of usually numerous stamens, sometimes of as many or twice as many as the sepals. Gynoecium of 2–several united carpels. Fruit capsular, nut-like, or berry-like.

1. *TILIA* [Tourn.] L. Trees. Leaf-blades oblique, toothed. Flowers in long-peduncled cymes, the peduncle adnate to a long bract. Sepals 5. Petals 5, longer than the sepals. Stamens sometimes in groups opposite the petals and accompanied by staminodia. Anther-sacs separated. Berry 1–2-seeded. — Late spr. and sum. — BASSWOOD. LINN. LIME-TREE. BEE-TREE.

The wood of the following species is close-grained, light, and soft. It is light-brown.

Leaf-blades glaucous beneath: bracts not decurrent to the base of the peduncle: calyx velvety. 1. *T. floridana*.

Leaf-blades densely pubescent beneath: bracts decurrent to the base of the peduncle: calyx tomentose. 2. *T. pubescens*.

1. *T. floridana* Small. Tree becoming 9 m. tall: leaf-blades ovate to oval-ovate, glaucous beneath: bracts relatively small, mostly much less than 2 cm. wide, decurrent to within 0.5 or 1.5 cm. of the base of the peduncle, somewhat pubescent: peduncle pubescent, the free portion 0.5–1.5 cm. long: sepals lanceolate to linear-lanceolate, 3–3.5 mm. long: petals 4.5–5.5 mm. long: staminodia nearly linear or linear-spatulate: berries globular.

The FLORIDA-LINDEN grows in rich woods in western Florida. (Endemic.)

2. **T. pubescens** Ait. Tree becoming 14 m. tall: leaf-blades broadly ovate to oblong-ovate, 8–17 cm. long, copiously brown- or rusty-pubescent beneath: bracts oblong to oblong-spatulate, decurrent to the base of the peduncle, copiously pubescent beneath: sepals 3.5–4.5 mm. long: petals 6–7.5 mm. long: berries globular.

The RUSTY-LINDEN grows in hammocks near the coast in northern Florida, and in the northern portion of the peninsula. (Cont.)

FAMILY 2. MALVACEAE. MALLOW FAMILY.

Herbs, shrubs, or trees. Leaves alternate: blades simple, palmately veined. Flowers perfect. Calyx of 5 more or less united valvate sepals. Corolla of 5 convolute petals. Androecium of numerous monadelphous stamens. Gynoecium of several united carpels. Fruit capsular or sometimes baccate.

Styles distinct: seeds reniform.

Bractlets of the involucrel distinct.

Bractlets of the involucrel united into a lobed cup.

Styles united: seeds not reniform.

Bractlets of the involucrel entire: seeds short-hairy.

Bractlets of the involucrel lacinate: seeds long-hairy.

1. HIBISCUS.

2. PARITIUM.

3. THESPESIA.

4. GOSSYPIUM.

1. **HIBISCUS** L. Herbs, shrubs, or trees. Leaf-blades entire, lobed, or parted. Involucre of several, rarely 3, distinct bractlets. Sepals 5, more or less united. Petals 5, white, colored or variegated. Carpels forming a 5-valved capsule.

Corolla mainly red or salmon: calyx-lobes lanceolate or triangular-lanceolate.

Corolla mainly pink or white: calyx-lobes triangular-ovate.

1. *H. Rosa-Sinensis*.

2. *H. syriacus*.

1. **H. Rosa-Sinensis** L. Small tree or shrub, usually sparingly pubescent: leaf-blades ovate to ovate-lanceolate, rounded or abruptly narrowed at the base, coarsely and unequally toothed: bractlets narrowly linear: calyx-lobes lanceolate, more pubescent within than without: petals rose-red, or rarely of other colors: capsules 2–2.5 cm. long.—All year.

The SHOE-BLACK PLANT or CHINESE ROSE, a native of China, grows in fields and waste places and on roadsides in peninsular Florida. The wood has not been studied. (W. I.)

2. **H. syriacus** L. Small tree or shrub, minutely pubescent when young: leaf-blades 3-lobed, coarsely crenate, 3–12 cm. long: bractlets linear or linear-spatulate, 10–20 mm. long: calyx-lobes triangular-ovate: petals deep-pink, or white with crimson blotches at the base: capsules oblong-ovoid, 2–2.5 cm. long.—Sum. & fall.

The SHRUBBY ALTHAEA, a native of western Asia, grows in fields and on roadsides in northern Florida and the northern part of the peninsula. The wood has not been studied. Also known as Rose-of-Sharon. (Cont.)

2. **PARITIUM** St. Hil. Shrubs or trees, resembling *Hibiscus* in habit, but with the bractlets of the involucrel united into a lobed cup.

1. **P. tiliaceum** (L.) Juss. Small tree or shrub, the young parts velvety-tomentose: leaf-blades suborbicular to ovate, 1–2 dm. long, shallowly toothed, prominently veined beneath: calyx-lobes lanceolate or triangular-lanceolate: petals yellow, 5–6 cm. long: capsule 2.5–3.5 cm. long, abruptly pointed.—Spr. & sum.

The MAHOE, probably a native of the Old World tropics, grows on the shores of the Everglade Keys and the Florida Keys. The wood has not been studied. (W. I.)

3. **THESPESIA** Soland. Shrubs or trees, resembling species of *Hibiscus*. Leaf-blades entire or angulate-lobed. Involucrel of 3–5 narrow deciduous

bractlets. Sepals 5, partially or wholly united. Petals 5, showy. Carpels united into a mostly indehiscient capsule.

1. **T. populnea** (L.) Soland. Low tree or shrub: leaf-blades ovate, 5–12 cm. long: calyx cup-like: petals 5–7 cm. long, yellow and purple: capsules depressed, 3–4.5 cm. broad. — Sum. & fall.

The SEASIDE-MAHOE, probably a native of the Old World tropics, grows in hammocks on the shores of the Everglade Keys and the Florida Keys. The brown or light-red heart-wood is close-grained, heavy, hard, and strong. (W. I.)

4. **GOSSYPIMUM** L. Herbs, shrubs, or trees. Leaf-blades palmately lobed or rarely entire. Involucre of 3 large bracts. Sepals 5, united into a cup-like calyx. Petals 5, usually dark-colored at the base. Capsule 5-valved. — COTTON.

1. **G. hirsutum** L. Small tree or shrub, with usually hirsute twigs: leaf-blades 4–11 cm. wide, sometimes pubescent, 3-lobed, the lobes ovate to deltoid, as long as the body of the leaf or very short: calyx becoming 1–1.5 cm. wide: corolla creamy-white except the purplish base, becoming pink; petals 3–5 cm. long: capsules ovoid, 2.5–3 cm. long. — All year.

The WILD-COTTON grows in hammocks on the Florida Keys. The wood has not yet been studied. (W. I.)

FAMILY 3. BUETTNERIACEAE. CHOCOLATE FAMILY.

Shrubs or trees, or herbs often resembling Malvaceae. Leaves alternate: blades simple. Flowers mostly perfect. Calyx of 5, or rarely fewer, sepals. Corolla of 5, or rarely fewer, petals, or wanting. Androecium of as many stamens as there are sepals, or more. Staminodia sometimes present. Gynoecium of 5 more or less united carpels or fewer. Fruit capsular or follicular.

1. **FIRMIANA** Marsigli. Shrubs or trees. Leaf-blades entire or lobed. Flowers unisexual or polygamous. Sepals 5, or rarely 4, often petaloid. Petals wanting. Staminal column broad. Carpels nearly distinct. Stigmas peltate. Capsule opening before maturity, the carpels stellately spreading.

1. **F. platanifolia** (L.) R. Br. Tree becoming 12 m. tall, or a shrub: leaf-blades 1–3 dm. broad, palmately 3–5-lobed: panicle commonly 2–3 dm. long: sepals linear: carpels 6–9 cm. long. — Spr. & sum.

The CHINA PARASOL-TREE, a native of eastern Asia, grows in fields and thickets and on roadsides in northern Florida and the northern portion of the peninsula. The white or whitish wood is rather close-grained, but light and soft. (Cont.)

Order HYPERICALES.

Herbs, shrubs, or trees. Leaves various. Flowers mostly perfect, complete and regular (irregular in Violaceae), sometimes involucre. Calyx of distinct or essentially distinct sepals. Corolla of distinct petals (partially united in Fouquieriaceae), rarely wanting. Androecium of several united carpels. Ovary superior, mostly with parietal placentae. Fruit capsular, baccate, or drupaceous.

Stamens united into a tube which surrounds or encloses the gynoecium.

Placentae parietal: style short-columnar.

Placentae axile: style lobed.

Stamens distinct.

Styles wanting: stigmas introrse.

Styles present, distinct or united: stigmas terminal.

Fam. 1. CANELLACEAE.

Fam. 2. CLUSIACEAE.

Fam. 3. TAMARICACEAE.

Fam. 4. THEACEAE.

FAMILY 1. **CANELLACEAE.** WILD-CINNAMON FAMILY.

Trees. Leaves alternate: blades entire, pellucid-punctate. Flowers perfect. Calyx of 3 thick imbricate sepals. Corolla of 4 to 12 narrow petals, or wanting. Androecium of numerous stamens, the filaments united into a tube around the pistil. Gynoeceium of 2-5 united carpels. Fruit a berry.

1. **CANELLA** P. Br. Trees with gray bark. Leaf-blades leathery. Flowers in cymes. Petals 5. Stamens mostly 15-20, the tube projecting beyond the anthers. Ovary 1-celled. Berry subglobose.

1. **C. Winteriana** (L.) Gaertn. Tree 5-15 m. tall: leaf-blades oblanceolate, spatulate, or oblong-spatulate, 3-10 cm. long: sepals 2.5-3 mm. broad: petals 5, oblong, 4.5-5 mm. long, purple: berry about 10 mm. in diameter, crimson. — Fall.

The WILD-CINNAMON grows in hammocks on the Florida Keys. The dark reddish-brown heart-wood is close-grained, very heavy, and hard. (W. I.)

FAMILY 2. **CLUSIACEAE.** BALSAM-TREE FAMILY.

Shrubs or trees. Leaves opposite: blades entire. Flowers mostly dioecious or polygamous. Calyx of 2-6 imbricate sepals. Corolla of 4-9 petals. Androecium of numerous stamens, the filaments wholly or partially united. Gynoeceium of 2 or more united carpels. Fruit baccate, drupaceous, or capsular.

1. **CLUSIA** [Plum.] L. Shrubs or trees, often epiphytic. Leaf-blades leathery. Flowers solitary or few together. Petals 4-9. Ovary 8-10-celled. Capsule leathery.

Fruits slightly elongate or globular: stigmas 12-14.

Fruits depressed: stigmas 6-8.

1. *C. flava*.

2. *C. rosea*.

1. **C. flava** Jacq. Tree sometimes 20 m. tall: young plants starting and growing for some time as tree-parasites: leaf-blades cuneate-obovate, 1-2.5 dm. long, many-ribbed: sepals suborbicular: petals yellow, obovate, 2.5-3 mm. long: capsule pyriform or globular: seeds in pulp. — Sum. & fall.

The BALSAM-TREE was collected in the hammocks on Key West many years ago. It has not been observed in recent years. The wood has not been studied. (W. I.)

2. **C. rosea** L. Tree similar to *C. flava* in habit, but leaves rather larger: capsule depressed.

The FAT-PORK was collected in hammocks on Big Pine Key many years ago. It has not been observed in recent years. The wood has not been studied. Also known as Monkey-apple. (W. I.)

FAMILY 3. **TAMARICACEAE.** TAMARISK FAMILY.

Shrubs or trees, or partially herbaceous plants. Leaves alternate: blades entire, often scale-like. Flowers mainly perfect, sometimes in profuse panicles. Calyx of 5, or 4 or 6, sepals. Corolla of 5, or 4 or 6, petals. Androecium of 5 or many stamens. Gynoeceium of 2-5 united carpels. Ovary 1-celled. Fruit a capsule.

1. **TAMARIX** L. Irregularly branching shrubs or trees. Leaves scale-like, clasping or sheathing. Flowers borne in plume-like panicles. Capsule many-seeded.

1. **T. gallica** L. Small tree or shrub, with weak branches, the branchlets clothed with the imbricate leaves: panicles with numerous spikes: sepals about

0.5 mm. long: petals white or pinkish: capsules about 1 mm. long.—Sum. & fall.

The TAMARISK, a native of southern Europe, grows on roadsides and in thickets in northern and peninsular Florida. The reddish heart-wood is coarse-grained, rather heavy, hard, and strong. (*Cont.*)

FAMILY 4. **THEACEAE.** CAMELLIA FAMILY.

Shrubs, trees, or vines. Leaves alternate. Flowers perfect and showy. Calyx of 5, or rarely 4–7, imbricate sepals. Corolla of 5, or rarely of 4–7, petals. Androecium of numerous, or rarely few, stamens. Gynoecium of 3–5 partially or wholly united carpels. Fruit mostly capsular, sometimes indehiscent.

1. **GORDONIA** Ellis. Trees. Leaves persistent. Flowers long-pedicelled. Sepals, and petals, 5, concave. Stamens borne on a 5-lobed disk. Style terete. Capsule loculicidal.

1. **G. Lasianthus** (L.) Ellis. Large tree: leaf-blades narrowly elliptic or oblanceolate, 5–15 cm. long, appressed-serrate: sepals 8–10 mm. in diameter: corolla 5–7 cm. broad: capsules ovoid, 15–18 mm. long.—Sum.

The LOBLOLLY-BAY grows in swamps and hammocks in northern Florida and the northern half of the peninsula. The red heart-wood is close-grained, light, and soft. (*Cont.*)

Order **PASSIFLOALES.**

Herbs, trees, or shrubby plants, or succulent trees with milky sap. Leaves alternate: blades entire or lobed. Flowers perfect or dioecious. Calyx of 4 or 5 more or less united sepals. Corolla of 4 or 5 distinct or united petals, sometimes accompanied by a fringed crown, or rarely wanting. Androecium of 5 stamens, or of 10 stamens in 2 equal rows. Gynoecium of 3–5 united carpels. Ovary superior. Fruit a berry or a capsule.

FAMILY 1. **PAPAYACEAE.** PAPAW FAMILY.

Shrubs or trees. Leaves with ample lobed blades. Corolla salver-shaped. Stamens 10: filaments adnate to the corolla-tube. Anthers erect. Fruit baccate, borne near the top of the stem.

1. **CARICA** L. Plants with milky juice, the stems rather tender, simple or branched. Leaf-blades palmately or pinnately lobed. Staminate flowers in long-peduncled cymes: pistillate flowers in short-peduncled cymes. Berries nearly sessile, many-seeded.

1. **C. Papaya** L. Tree 3–8 m. tall, leafy at the top: leaf-blades suborbicular in outline, mostly 2–8 dm. in diameter, long-petioled: staminate flowers with obtuse calyx-lobes and a corolla over 2.5 cm. long: pistillate flowers with deltoid or ovate calyx-lobes and corolla-lobes 25–40 mm. long: berries oblong to subglobose, 7–32 cm. long.—All year.

The PAPAW, a native of tropical America, grows in woods, hammocks and waste places in peninsular Florida and on the Florida Keys. The whitish wood is coarse-grained, light, soft, and spongy. (*W. I.*)

Order **PROTEALES.**

Perennial herbs, or shrubs or trees. Leaves alternate or rarely opposite: blades simple or compound. Flowers perfect, or occasionally polyg-

amous or dioecious. Perianth of 4 valvate distinct or partially united sepals. Androecium of 4 stamens, one borne on each sepal. Gynoecium a single carpel. Ovary superior, often oblique. Fruit indehiscant, or often follicular or capsular.

FAMILY 1. **PROTEACEAE**. PROTEA FAMILY.

Leaf-blades simple, entire, toothed, or divided. Flowers borne in spikes, racemes, or panicles, which are commonly congested. Calyx, androecium, and gynoecium, various, often very irregular.

1. **GREVILLEA** R. Br. Shrubs or trees. Leaf-blades often pinnately parted. Flowers borne in racemes or panicles, sometimes irregular. Ovary stipitate. Style often protruding from the cleft of the calyx. Fruit follicular or 1- or 2-valved. Seeds flat, often winged.

1. **G. robusta** A. Cunn. Tree becoming 20 m. tall: leaf-blades 2-4 dm. long: panicle showy: the racemes 1-2 dm. long, many-flowered: sepals 9-11 mm. long: follicles recurved, the bodies 1.5-2 cm. long, slender-beaked. — Spr.

The **SILK-OAK**, a native of Australia, grows in waste places and on roadsides in northern Florida and the northern part of the peninsula. The wood is close-grained, hard, and tough. (W. I.)

Order **THYMELEALES**.

Shrubs or trees, or partially herbaceous plants. Leaves opposite or alternate, the blades simple, rarely mere scales, or obsolete. Flowers perfect, polygamous, or dioecious, regular or nearly so. Calyx of 5 or fewer sepals. Corolla wanting (in our species). Androecium of as many stamens as there are sepals or of twice as many. Anthers opening by slits or hinged valves. Gynoecium a single carpel. Ovary inferior. Ovules mostly solitary. Fruit usually baccate or drupaceous.

FAMILY 1. **LAURACEAE**. LAUREL FAMILY.

Aromatic shrubs or trees. Leaves alternate or opposite: blades entire or lobed. Flowers in open or congested cymes. Calyx of 5 (or rarely 4-10) sepals in 2 series. Corolla wanting. Androecium of usually more stamens than there are sepals, in 2-4 series, those of the third series usually glandular-appendaged, those of the fourth series mostly mere staminodia. Gynoecium a single carpel. Ovary 1-celled. Fruit drupaceous.

Leaves persistent; blades not lobed: flower clusters branched.

Leaf-blades several-ribbed.

Leaf-blades pinnately veined.

Three rows of stamens with perfect anthers: calyx deciduous, or persistent and appressed to the fruit.

Calyx persistent: fruit seated on the calyx.

Calyx deciduous: fruit seated on the hypanthium.

Fruit oblique: hypanthium not fleshy.

Fruit not oblique: hypanthium fleshy.

One row of stamens only perfect: calyx persistent as a lateral flange on the hypanthium.

Leaves deciduous; blades lobed: flower-clusters umbel-like.

1. **CAMPHORA**.

2. **TAMALA**.

3. **PERSEA**.

4. **OCOTEA**.

5. **MISANTECA**.

6. **SASSAFRAS**.

1. **CAMPHORA** [Gronov.] L. Trees or shrubs. Leaves alternate or opposite, persistent: blades entire. Flowers in panicles axillary cymes. Style slender. Stigma minute. Drupe equilateral, as broad as long, or nearly so.

1. *C. Camphora* (L.) Karst. Small tree or shrub: leaf-blades elliptic to ovate, 4–12 cm. long, short-acuminate, pale beneath, long-petioled: panicles slender-peduncled: sepals 1–1.5 mm. long: drupes globose to oval-globose, 6–9 mm. in diameter.—Spr. & sum.

The CAMPHOR-TREE, a native of China and Japan, grows in woods and thickets in peninsular Florida. The brown heart-wood is coarse-grained, light, and weak. (W. I.)

2. *TAMALA* Raf. Shrubs or trees. Leaves alternate, persistent: blades entire. Flowers in axillary peduncled cymes. Sepals 6, dissimilar. Style long-columnar: stigma capitate. Drupe equilateral.—Spr.

Peduncles, pedicels and petioles glabrous or appressed-pubescent: fruit over 1 cm. thick.

Leaf-blades glabrous or nearly so, except sometimes the nerves beneath.

Leaf-blades finely reticulated beneath, mainly over thrice as long as wide.

Leaf-blades not reticulated beneath, mainly about twice as long as wide.

Leaf-blades lustrous-pubescent beneath.

Peduncles, pedicels and petioles tomentose: fruit less than 1 cm. thick.

1. *T. Borbonia*.

2. *T. littoralis*.

3. *T. humilis*.

4. *T. pubescens*.

1. *T. Borbonia* (L.) Small. Large tree, the bark broken into flat ridges: leaf-blades elliptic or elliptic-oblong, 5–15 cm. long, often acuminate at both ends, bright-green and lustrous above, glaucescent and finely reticulate beneath: sepals ascending, the inner ovate, 2–3 times longer than the outer, acutish: fruit obovoid or globose-obovoid, 1–1.5 cm. long, dark-blue or nearly black, lustrous. [*Laurus Borbonia* L. *Persea Borbonia* (L.) Sarg.]

The RED-BAY grows in swamps and low hammocks nearly throughout peninsular Florida. The red heart-wood is close-grained, heavy, and strong, but brittle. Also known as Sweet-bay and Florida-mahogany. (Cont.)

2. *T. littoralis* Small. Tree or shrub: leaf-blades elliptic or oblong-elliptic, 2–5.5 cm. long, mostly obtuse at the apex, bright-green and lustrous above, pale and glabrous beneath, not reticulate, the lateral veins inconspicuous: fruits globular, 12–14 mm. long, purple-black under the bloom. [*Persea littoralis* Small.]

The SHORE-BAY grows in coastal hammocks along the lower two-thirds of the eastern coast. The wood has not yet been studied. (Endemic.)

3. *T. humilis* (Nash) Small. Small tree or shrub, the twigs, lower leaf-surfaces and the inflorescence silky-pubescent: leaf-blades elliptic or oblong, 4–10 cm. long, more or less revolute, glabrous and shining above, lustrous beneath: sepals erect, obtuse, the inner oblong, 5 mm. long: fruits globular, about 1.5 cm. long, purplish-black under the bloom. [*Persea humilis* Nash.]

The SILK-BAY grows in scrublands in central peninsular Florida. The wood has not yet been studied. (Endemic.)

4. *T. pubescens* (Pursh) Small. Shrub or small tree, the twigs, lower leaf-surfaces and inflorescence tomentose: leaf-blades narrowly elliptic or elliptic-lanceolate, or rarely oval, 5–20 cm. long, usually obtuse, often acuminate at the apex, slightly revolute: sepals erect, acutish, the inner oblong-obovate, about twice as long as the outer: fruits oval, 8–11 mm. long, dark-blue with a thin bloom. [*Persea pubescens* (Pursh) Sarg.]

The SWAMP-BAY grows in hammocks or swamps nearly throughout Florida. The orange and brown-streaked heart-wood is close-grained, heavy, and soft, but strong. Also known as Swamp red-bay. (Cont., Bah.)

3. *PERSEA* [Plum.] Gaertn. Trees. Leaves alternate, persistent: blades entire. Flowers in terminal paniced cymes. Sepals 6, similar, united at the base. Style subulate: stigma minute. Drupe inequilateral.

1. *P. Persea* (L.) Cockerell. Tree with wide-spreading branches: leaf-blades elliptic or oval or nearly so, 8–15 cm. long, short-petioled (relatively small and

with long and slender petioles in *P. Persea mexicana*): inner sepal 4–5 mm. long, somewhat surpassing the outer: fruits slightly elongate, often pyriform, 8–18 cm. long, the flesh butter-like. — Spr. & sum.

The AVOCADO, a native of tropical America, grows in woods and hammocks in southern peninsular Florida and on the Florida Keys. The brown heart-wood is rather coarse-grained, light, and soft. Also known as Alligator-pear. (*Cont.*)

4. **OCOTEA** Aubl. Shrubs or trees. Leaves alternate, persistent: blades entire. Flowers in paniced cymes. Sepals 6, nearly similar, somewhat elongate, spreading. Style cylindric: stigma capitate. Drupe somewhat elongate, seated in the cup-like hypanthium from which the calyx has fallen away.

1. **O. Catesbyana** (Michx.) Sarg. Small tree or shrub: leaf-blades narrowly elliptic or elliptic-lanceolate, 5–12 cm. long, lustrous above: calyx creamy-white, 8–9 mm. broad; sepals obtuse: drupes subglobose or oval, 10–15 mm. long, dark blue or black, seated in the red or yellow hypanthium. — Spr.

The LANCEWOOD grows in hammocks mostly near the coast in the lower half of peninsular Florida and on the Everglade Keys and the Florida Keys. The dark-brown heart-wood is close-grained, heavy, and hard. (*W. I.*)

4. **MISANTECA** Cham. & Schlecht. Shrubs or trees. Leaves alternate, persistent: blades entire. Flowers inconspicuous, in paniced cymes. Sepals 6, nearly similar, short, erect, about as long as the enlarged portion of the hypanthium. Style columnar: stigma minute, surrounded by the 3 erect stamens. Drupe slightly elongate, seated in the cup-like hypanthium which is bordered by the persistent calyx.

1. **M. triandra** (Sw.) Mez. Tree with somewhat flaky bark: leaf-blades elliptic-oblong or oval, 4.5–11 cm. long, abruptly acuminate, but often blunt, lustrous above: calyx whitish, 2–2.5 mm. broad; sepals obtuse: fruits acorn-like, the drupe ovoid or oblong-ovoid, 2–2.5 cm. long, green, the hypanthium reddish.

The MISANTECA grows in Brickell hammock on the Everglade Keys, below Miami. The wood has not been studied. (*Cuba, Jamaica.*)

6. **SASSAFRAS** Nees. Trees. Leaves alternate, deciduous: blades lobed or partially entire. Flowers in axillary clustered cymes. Style columnar: stigma depressed. Drupe somewhat elongate.

1. **S. Sassafras** (L.) Karst. Large tree with ridged bark: leaf-blades 3-lobed, or rarely entire or 2-lobed: flowers greenish-yellow: sepals 6, narrowly oblong, 2.5–3 mm. long: drupes oval, 8–10 mm. long, red or orange. — Spr.

The SASSAFRAS grows in woods and fields in middle Florida. The orange-brown heart-wood is coarse-grained, rather light, weak, and brittle, but durable. (*Cont.*)

Order MYRTALES.

Herbs, shrubs, or trees, sometimes aquatic or amphibious. Leaves alternate or opposite. Flowers regular or irregular, complete or much reduced. Hypanthium merely enclosing the ovary or adnate to it. Androe-cium of few or many stamens: anthers opening by slits or pores. Gynoe-cium 1–several-carpellary. Fruit capsular, baccate, or achene-like.

Anthers opening by pores.

Fam. 1. MELASTOMACEAE.

Anthers opening by longitudinal valves.

Hypanthium merely enclosing the ovary.

Fam. 2. LYTHRACEAE.

Hypanthium adnate to the ovary or mainly so.

Cotyledons spirally convolute in the embryo.

Ovary several-celled: ovules numerous, not

pendulous.

Fam. 3. PUNICACEAE.

Ovary 1-celled: ovules 2–5, pendulous.

Fam. 4. TERMINALIACEAE.

Cotyledons not spirally convolute.

Sepals imbricated or united and the calyx falling away as a cap: leaves without stipules.

Sepals valvate: leaves with stipules.

Fam. 5. MYRTACEAE.

Fam. 6. RHIZOPHORACEAE.

FAMILY 1. MELASTOMACEAE. MEADOW-BEAUTY FAMILY.

Herbs, shrubs, or trees. Leaves opposite: blades with 3-several ribs. Flowers perfect. Calyx of 3-6 sepals surmounting the hypanthium. Corolla of 3-6 oblique petals. Androeceium of 6-12 stamens, those opposite the petals sometimes abortive. Gynoeceium of 3-5 united carpels. Ovary enclosed in or adnate to the hypanthium. Fruit baccate or capsular.

1. **TETRAZYGIA** L. C. Rich. Shrubs or trees. Leaf-blades 3-5-ribbed, mostly scurfy or tomentose beneath. Sepals, and petals, 4 or 5. Ovary 4- or 5-celled. Berry included, the hypanthium-neck short.

1. **T. bicolor** (Mill.) Cogn. Small tree with scaly bark or shrub: leaf-blades lanceolate to oblong-lanceolate, 8-20 cm. long, silvery beneath, stout-petioled: panicle 1-2 dm. long: calyx about 1 mm. long: petals white, 7-8 mm. long, cuneate: anthers lanceolate, 5-6 mm. long: berries purple or black, the body 8-10 mm. long. — Winter & spr.

The **TETRAZYGIA** grows in hammocks and pinelands on the Everglade Keys. The white heart-wood is close-grained and rather heavy. (*Bah., Cuba.*)

FAMILY 2. LYTHRACEAE. LOOSESTRIPE FAMILY.

Herbs, shrubs, or trees. Leaves mostly opposite: blades usually entire. Flowers perfect. Calyx of 4 or 5 sepals, commonly accompanied by accessory teeth. Corolla of 4 or 5 petals, or wanting. Androeceium of few or many stamens: anthers versatile. Gynoeceium of mostly 2-6 united carpels. Ovary 2-6-celled, or rarely 1-celled, free from the hypanthium. Fruit a capsule, included in the hypanthium.

1. **LAGERSTROEMIA** L. Shrubs or trees. Leaves persistent: blades short. Flowers in terminal panicles. Sepals 6. Petals 6, the blades crisped. Stamens numerous. Capsule loculicidally 3-6-valved.

1. **L. indica** L. Small tree or shrub: leaf-blades obovate or oval, 1-2.5 cm. long, entire: sepals shorter than the hypanthium: petals purple, pink, or nearly white, the blades crisped: capsules oval-globose, 8-9 mm. long.

The **CRAPE-MYRTLE**, a native of the East Indies, grows in fields and on roadsides throughout Florida, except the southern part. (*Cont., W. I.*)

FAMILY 3. PUNICACEAE. POMEGRANATE FAMILY.

Shrubs or trees. Leaves opposite or nearly so, persistent: blades simple. Flowers perfect, solitary or in short-peduncled axillary clusters. Hypanthium leathery. Calyx of 5-7 sepals. Corolla of 5-7 wrinkled petals. Androeceium of numerous stamens in several series: anthers versatile. Gynoeceium of several united carpels. Ovary inferior. Fruit a several-celled berry crowned with the calyx, the seeds in a watery pulp.

1. **PUNICA** [Tourn.] L. Leaf-blades entire. Flowers showy. Sepals persistent on the fruit. Petals deciduous. Berry pendulous.

1. **P. Granatum** L. Small tree or shrub: leaf-blades oval, elliptic, or oblong, varying to broadest above or below the middle, 1-8 cm. long: sepals triangular

to triangular-lanceolate: petals scarlet, 1.5-2.5 cm. long: berries subglobose or spheroidal, 5-10 cm. in diameter. — All year.

The POMEGRANATE, a native of southern Europe, grows in woods and waste places nearly throughout Florida. The light-yellow wood is close-grained and heavy. (W. I.)

FAMILY 4. **TERMINALIACEAE.** WHITE-MANGROVE FAMILY.

Shrubs or trees, or woody vines. Leaves alternate or opposite: blades simple, leathery. Flowers often apetalous, regular, perfect or polygamous, racemose or capitate. Calyx of 4-5 valvate deciduous or rarely persistent sepals. Corolla of 4-5 petals, or wanting. Androecium of twice, or rarely thrice, as many stamens as the sepals. Filaments distinct. Gynoecium a single carpel. Ovary 1-celled. Style terminal. Stigma entire or nearly so. Fruit drupaceous or berry-like, indehiscent, often crowned with the accrescent calyx.

Sepals deciduous: corolla wanting.

Flowers in heads: hypanthium flattened: fruits small, in a cone-like head.

Flowers in spikes: hypanthium terete: fruits separate, large.

Sepals persistent.

Corolla wanting: leaves alternate.

Corolla present: leaves opposite.

1. **CONOCARPUS.**

2. **TERMINALIA.**

3. **BUCIDA.**

4. **LAGUNCULARIA**

1. **CONOCARPUS** L. Shrubs or trees. Leaves alternate. Flowers perfect, in spicate or paniced heads. Hypanthium not ribbed. Stamens 5. Fruit capitate.

1. **C. erecta** L. Tree sometimes 20 m. tall or shrub, with glabrous or fine-silky foliage: leaf-blades elliptic to oval, 2-5 cm. long, entire: heads 9-14 mm. in diameter at maturity: drupes 2-winged, 4-7 mm. long. — All year.

The **BUTTONWOOD** grows in coastal hammocks and on sandy shores in peninsular Florida, and on the Everglade Keys and the Florida Keys. The yellow-brown heart-wood is close-grained, very heavy, and hard. (W. I.)

2. **TERMINALIA** L. Shrubs or trees. Leaves large, clustered near the ends of the branches. Flowers in simple or branched spikes. Hypanthium not ribbed. Calyx deciduous. Stamens 10. Fruits spicate.

1. **T. Catappa** L. Tree sometimes 17 m. tall or more with spreading, often whorled branches: leaf-blades cuneate or oblanceolate: spikes 5-15 cm. long: hypanthium and calyx 8-11 mm. long: calyx-lobes longer than the tube: drupes elliptic or nearly so, glabrous. — All year.

The **INDIAN-ALMOND**, a native of the East Indies, grows in peninsular Florida and the Keys. The red-brown heart-wood is close-grained, heavy, and hard. (W. I.)

3. **BUCIDA** L. Shrubs or trees. Leaves small, clustered. Flowers in clustered spikes. Hypanthium swollen. Calyx persistent. Stamens 10. Fruits spicate.

1. **B. buceras** L. Tree sometimes 15 m. tall: leaf-blades spatulate to obovate, oval, or elliptic: spikes 3-10 cm. long: hypanthium and calyx 4-5 mm. long: calyx-lobes shorter than the tube: drupes ovoid-conic or flask-shaped, pubescent. — Spr.

The **BLACK-OLIVE** grows in hammocks on Elliotts Key. The yellow-brown heart-wood is close-grained, very heavy, and hard. (W. I.)

4. **LAGUNCULARIA** Gaertn. f. Shrubs or trees. Leaves opposite. Flowers polygamous, in simple or branched spikes. Hypanthium ribbed. Petals mostly shorter than the sepals. Stamens 10. Fruit spicate or paniculate.

1. *L. racemosa* (L.) Gaertn. f. Tree sometimes 20 m. tall or shrub: leaf-blades oblong, varying to oval or obovate, 2-5 cm. long, entire: spikes 3-6 cm. long: drupes oblong-obovoid, 2 cm. long.—All year.

The WHITE-MANGROVE grows on sandy shores and in coastal hammocks of peninsular Florida, and on the Everglade Keys and the Florida Keys. The yellow-brown heart-wood is close-grained, heavy, and hard. Also known as White-button-wood. (W. I.)

FAMILY 5. MYRTACEAE. MYRTLE FAMILY.

Shrubs or trees, or rarely herbs, abounding in pungent and aromatic volatile oil. Leaves opposite, or rarely alternate or whorled: blades often simple, pellucid-punctate, flat, terete or semiterete, often with nerves parallel with the margins. Flowers perfect, regular. Calyx of 4 or 5, or many, valvate or imbricate, persistent sepals, or cap-like and deciduous. Petals borne on the margin of a hypanthium or wanting. Androecium of numerous stamens, or very rarely of as many as the sepals. Gynoecium compound. Ovary inferior or partly so, 1-many-celled. Styles united. Fruit sometimes dehiscent, often crowned with the calyx.

Calyx of several persistent valvate sepals: petals present.

Calyx of regularly separating sepals.

Inflorescence centripetal: flowers in raceme-like, umbel-like or contracted clusters.

Inflorescence centrifugal: flowers in cymes.

Calyx of irregularly separating sepals.

Calyx lid-like, deciduous: petals wanting.

1. *EUGENIA*.

2. *ANAMOMIS*.

3. *PSIDIUM*.

4. *CALYPTRANTHES*.

1. *EUGENIA* [Mich.] L. Shrubs or trees. Leaf-blades not prominently ribbed. Flower-clusters short-peduncled or sessile. Berry crowned with the persistent calyx. Seeds 1-4.—STOPPER.

Flowers in very short racemes.

Leaf-blades broadest above the middle: fruit longer than broad.

Leaf-blades broadest below the middle: fruit broader than long.

Flowers solitary in the axils, or in umbel-like clusters.

Leaf-blades acute or slightly acuminate: corolla about 10 mm.

broad: fruit much broader than long.

Leaf-blades abruptly and conspicuously acuminate: corolla

about 6 mm. broad: fruit as long as broad.

1. *E. buxifolia*.

2. *E. axillaris*.

3. *E. procera*.

4. *E. confusa*.

1. *E. buxifolia* (Sw.) Willd. Small tree, the bark scaly, or shrub: leaf-blades cuneate to nearly oblong, 2-4 cm. long, much paler beneath than above: corolla 4-5 mm. broad; petals longer than wide: fruits oval or oblong-oval, 6-7 mm. broad, black.—Sum.

The SPANISH-STOPPER grows in coastal hammocks in the lower half of peninsular Florida or further north on the eastern coast, and those of the Everglade Keys and Florida Keys. The brown and red-tinged heart-wood is close-grained, very heavy, and hard. (W. I.)

2. *E. axillaris* (Sw.) Willd. Small tree, the bark fissured, or shrub: leaf-blades elliptic-ovate to nearly elliptic, 3-5 cm. long, slightly paler beneath than above: corolla 5-6 mm. broad; petals mostly wider than long: fruits spheroidal, 10-12 mm. broad, black.—Sum.

The WHITE-STOPPER grows in the coastal hammocks of the lower eastern coast and those of the Everglade Keys and the Florida Keys. The brown and red-tinged heart-wood is close-grained, heavy, and hard. (W. I.)

3. *E. procera* (Sw.) Poir. Tree, the bark smooth: leaf-blades ovate to elliptic, 3-6 cm. long, slightly acuminate: corolla 12-14 mm. broad; petals slightly longer than the sepals: fruits spheroidal, 16-22 mm. broad, orange tinged with red, or black at maturity.—Spr.

The RED-STOPPER grows in hammocks on the lower Florida Keys. The pale-brown heart-wood is close-grained, heavy, and hard. (W. I.)

4. *E. confusa* DC. Tree, the bark scaly: leaf-blades ovate, oval-ovate, or oblong-ovate, 3-5 cm. long, markedly acuminate: corolla 4-6 mm. broad;

petals about twice as long as the sepals: fruits subglobose or globose-obovoid, 5-6 mm. broad, scarlet. [*E. Garberi* Sarg.] — Fall.

The IRONWOOD grows in hammocks on the Everglade Keys and the Florida Keys. The red-brown heart-wood is close-grained, very heavy, and hard. (W. I.)

2. ANAMOMIS Griseb. Shrubs or trees. Leaf-blades not ribbed. Cymes sessile or long-peduncled, sometimes 1-flowered. Berry crowned with the persistent calyx. Seeds 1 or 2 or many.

Cymes markedly peduncled and several-flowered: seapls suborbicular or reniform: petals 3-4 mm. long: seeds 1 or 2, large. 1. *A. dicrana*.

Cymes usually sessile and 1-flowered: sepals oblong to ovate:

petals 6-8 mm. long: seeds numerous, small.

Petals 4-5 mm. long: calyx less than 1 cm. wide.

2. *A. longipes*.

Petals 6-7 mm. long: calyx over 1 cm. wide.

3. *A. bahamensis*.

1. *A. dicrana* (Berg.) Britton. Small tree becoming 8 m. tall or shrub: leaf-blades oblong to cuneate or obovate-cuneate, 2-4 cm. long: terminal flowers of each cyme sessile: corolla 8-9 mm. wide; petals white, fully twice as long as the sepals: fruits 6-7 mm. in diameter: seeds dull.

The NAKED-STOPPER grows in hammocks in the coastal region of the lower half of peninsular Florida, somewhat further north on the eastern coast, and on the Everglade Keys and the Florida Keys. The light-brown or red heart-wood is close-grained, heavy, and hard. (W. I.)

2. *A. longipes* (Berg) Britton. Small tree or shrub with prostrate-diffuse or sometimes erect stems: leaf-blades mainly ovate or oval, 1-3.5 cm. long, finely reticulate: terminal flower of each cyme long-stalked: corolla 12-14 mm. wide; petals white or pink, much longer than the sepals: fruits 6-9 mm. in diameter. [*Eugenia longipes* Berg.]

The LONG-STALKED STOPPER grows in pinelands and about hammocks on the Everglade Keys and Florida Keys. The wood has not been studied. (W. I.)

3. *A. bahamensis* (Kiaersk) Britton. Shrub with diffuse branches, or a small tree: leaf-blades orbicular, oval, or elliptic, or somewhat ovate, mostly 2-4 cm. long, very thick, shining above, obscurely reticulate beneath: peduncles and pedicels strongly flattened: corolla about 1.5 cm. wide; petals white or nearly so: fruits about 1 cm. in diameter.

The BAHAMAN-STOPPER grows in pineland on Big Pine Key. The wood has not yet been studied. (W. I.)

3. PSIDIUM L. Shrubs or trees. Leaf-blades prominently many-ribbed. Flowers solitary or few together. Fruit crowned with the persistent calyx. Seeds very numerous.

1. *P. Guajava* Raddi. Tree sometimes 8 m. tall, with roughish bark, or a shrub: leaf-blades oblong or nearly so, 4-8 cm. long, pubescent beneath: sepals 9-15 mm. long: petals 15-20 mm. long: berries globular or pyriform, 3-6 cm. in diameter. — All year.

The GUAVA, a native of tropical America, grows in hammocks, pinelands, thickets and fields in many parts of peninsular Florida and on the Keys. The brown or reddish heart-wood is close-grained, heavy, hard, and strong. (W. I.)

4. CALYPTRANTHES Sw. Shrubs or trees. Leaf-blades not ribbed. Flowers in terminal panicles. Calyx cap-like, deciduous. Berry crowned with the top of the hypanthium. Seeds 1 or 2.

Calyx-lid not mammillate. hypanthium pubescent: leaf-blades manifestly petioled.

1. *C. pallens*.

Calyx-lid mammillate: hypanthium glabrous: leaf-blades sessile or nearly so.

2. *C. Zuzygium*.

1. *C. pallens* (Poir.) Griseb. Tree becoming 9 m. tall, the bark light gray or nearly white, smooth or ultimately scaly, the branchlets 2-edged, or a shrub: leaf-blades elliptic or oval, varying to broader above or below the middle, 3-5

cm. long, or rarely larger, mostly short-acuminate, pubescent beneath, at least when young, manifestly petioled: inflorescence pubescent: hypanthium about 2 mm. wide during anthesis: calyx pubescent, less than 2 mm. in diameter: fruits subglobose or oval, 5-7 mm. in diameter, pubescent: seeds about 4 mm. long. [*Chytraculia Chytraculia* (L.) Millsp.]

The SPICEWOOD grows in hammocks of the lower eastern coast, and on the Everglade Keys and the Florida Keys. The brown or red-tinged heart-wood is close-grained, very heavy, and hard. (W. I.)

2. C. Zuzygium (L.) Sw. Tree becoming 12 m. tall, the bark pale gray, smooth, the branchlets terete, or a shrub: leaf-blades oval or elliptic, varying to ovate or obovate, 4-6 cm. long, obtuse or abruptly blunt-tipped, glabrous, sessile or nearly so: inflorescence glabrous: hypanthium about 4 mm. wide during anthesis: calyx glabrous, 3.5-4 mm. wide: fruits subglobose or spheroidal, 8-10 mm. in diameter, glabrous: seeds about 5 mm. long.

The MYRTLE-OF-THE-RIVER grows in hammocks on the Everglade Keys. The wood has not been studied. (W. I.)

FAMILY 6. RHIZOPHORACEAE. MANGROVE FAMILY.

Maritime shrubs or trees. Leaves usually opposite: blades entire or toothed. Flowers perfect, solitary or variously clustered. Calyx of 3 or 4 valvate sepals. Corolla of 3 or 4 petals. Androecium of twice, or thrice as many stamens as sepals, or of 4 times as many. Gynoecium of 2-5 united carpels. Ovary inferior, at least partly so. Styles united. Fruit a leathery berry crowned with or surrounded by the calyx.

1. RHIZOPHORA L. Evergreen trees. Leaf-blades leathery, entire. Flowers 2-several in peduncled clusters. Sepals 4, leathery. Petals 4, leathery. Stamens 4-12. Ovary 2-celled, provided with a fleshy cone at maturity. Fruits pendulous, the seed germinating and sending out a long radicle before the fruits fall.

1. R. Mangle L. Tree becoming 10 m. tall, with a pale ultimately furrowed bark, or shrub, forming impenetrable thickets on salt and brackish shores: leaf-blades elliptic to elliptic-obovate, 5-15 cm. long: sepals lanceolate, about 10 mm. long: petals pale yellow, linear or nearly so: fruits 2-3 cm. long, the radicle becoming several dm. long.—All year.

The MANGROVE grows along the coasts of southern peninsular Florida and on the shores of creeks and rivers to the limit of salt or brackish water, and on the Florida Keys. The reddish-brown and often streaked heart-wood is close-grained, very heavy, and hard. (W. I.)

Order AMMIALES.

Herbs, shrubs, trees, or vines. Leaves alternate or opposite: blades simple or compound. Flowers perfect, polygamous, or dioecious, often borne in umbels. Calyx of typically 5 small sepals surmounting the hypanthium. Corolla typically of 5 petals, or wanting. Androecium of as many stamens as the sepals. Gynoecium 2-carpellary or rarely several-1-carpellary. Ovary inferior. Fruit drupaceous or baccate, or dry and then a cremocarp.

Style single: leaves opposite.
Styles several: leaves alternate.

Fam. 1. NYSSACEAE.
Fam. 2. HEDERACEAE.

Trees of Florida 6.

FAMILY 1. NYSSACEAE. DOGWOOD FAMILY.

Shrubs or trees, or rarely partly herbaceous plants. Leaves opposite or alternate: blades usually entire. Flowers perfect or unisexual, borne in naked or involucre open or congested cymes. Calyx of mostly 4 or 5 sepals. Corolla of 4 or 5, or rarely more, petals, or wanting. Androecium of usually as many stamens as the sepals. Gynoecium of 1 or of 2-4 united carpels. Styles united. Fruit mostly a drupe.

Flowers dioecious or polygamo-dioecious: stigmas lateral.

1. NYSSA.

Flowers perfect: stigmas terminal.

Flowers in open cymes, not subtended by an involucre: fruit surmounted by the style.

2. SVIDA.

Flowers in a head subtended by a large involucre: fruit surmounted by the calyx.

3. CYNOKYLON.

1. **NYSSA** L. Shrubs or trees, with terete branches. Leaves alternate, deciduous. Flowers polygamo-dioecious, the staminate with 5-several sepals and 5-many stamens, the pistillate with 5 sepals and a 1-celled pistil. Drupe somewhat elongate. — Spr.

Pistillate flowers 2-several together: drupes 1-2 cm. long, the stone with rounded ridges.

Pistillate flowers usually 2: stone of the drupe prominently ridged.

1. *N. biflora*.

Pistillate flowers 3 or more: stone of the drupe indistinctly ribbed.

2. *N. sylvatica*.

Pistillate flowers solitary: drupes 3-4 cm. long, the stone with acute or winged angles.

Leaf-blades abruptly pointed: pedicel shorter than the fruit.

3. *N. Ogeche*.

Leaf-blades acuminate: pedicel longer than the fruit.

4. *N. aquatica*.

1. ***N. biflora*** Walt. Tree becoming 40 m. tall, with longitudinally ridged bark: leaf-blades oblanceolate, oblong, elliptic, oval, or rarely obovate, 5-15 cm. long: drupes oval or elliptic, 10-13 mm. long.

The WATER-GUM grows in swamps or shallow ponds in northern Florida and the northern half of the peninsula. The white or yellowish heart-wood is close-grained, heavy, and soft, but tough. Also known as Black-gum. (*Cont.*)

2. ***N. sylvatica*** Marsh. Tree becoming 50 m. tall, with angular-checked bark: leaf-blades oval or obovate, or rarely oblanceolate, 5-15 cm. long: drupes oval, 15-17 mm. long.

The BLACK-GUM grows in rich woods and hammocks in northern Florida and the northern half of the peninsula. The white or yellowish heart-wood is close-grained, heavy, and soft, but very tough. Also known as Sour-gum. (*Cont.*)

3. ***N. Ogeche*** Marsh. Tree becoming 20 m. tall: leaf-blades oblong, varying to oblanceolate or lanceolate, or rarely oval, 5-20 cm. long; petioles about 1 cm. long: drupes 3-4 cm. long, red; stone papery-winged.

The OGEECHEE-LIME grows in river-swamps in northern Florida. The white heart-wood is rather close-grained, light, and soft, but tough. (*Cont.*)

4. ***N. aquatica*** L. Tree becoming 35 m. tall: leaf-blades ovate to elliptic, 9-30 cm. long; petioles 2-5 cm. long: drupes nearly 3 cm. long, dark-purple; stone sharp-ridged.

The TUPELO-GUM grows in river-swamps in northern Florida. The whitish or pale-brown heart-wood is close-grained, light, and soft, but tough. (*Cont.*)

2. **SVIDA** Opiz. Shrubs or trees. Leaves opposite or rarely alternate. Flowers in naked corymb-like cymes. Sepals 4, minute. Petals 4, white, spreading. Stamens 4. Drupe globular or depressed.

1. ***S. stricta*** (Lam.) Small. Small tree with smoothish bark or shrub: leaf-blades elliptic, oval, or ovate, 4-12 cm. long: petals linear-oblong to linear-lanceolate: drupes 5-6 mm. in diameter, pale-blue. — Spr.

The CORNEL grows in swamps in northern Florida and the adjacent parts of the peninsula. The brownish heart-wood is close-grained, heavy, and hard. (*Cont.*)

3. **CYNOXYLON** Raf. Trees. Leaves opposite. Flowers perfect, borne in involucrate heads. Sepals 4, broadly ovate to oblong. Petals 4, greenish or yellow-green, recurving. Stamens 4. Drupe elongate. — Dogwood.

1. **C. floridum** (L.) Raf. Tree sometimes 15 m. tall, with rough black bark, or shrub: leaf-blades elliptic to oval, 5–18 cm. long, pale beneath: involucrel bracts white or pink, obovate, 4–6 cm. long: petals linear, 3–4.5 mm. long: drupes oblong to oval, about 15 mm. long, red. — Spr.

The FLOWERING-DOGWOOD grows in woods in northern Florida, and in the peninsula to the lake region. The pale-brown heart-wood is very close-grained, heavy, hard, and strong. (*Cont.*)

FAMILY 2. **hederaceae**. IVY FAMILY.

Herbs, shrubs, trees, or vines. Leaves alternate: blades simple or compound. Flowers perfect or polygamous, often umbellate. Calyx of 5 sepals, or obsolete. Corolla of 5 or 10 petals. Gynoecium of 2–5 united carpels. Styles often distinct. Fruit a berry or a drupe.

1. **ARALIA** [Tourn.] L. Perennial herbs, or shrubs or trees, sometimes prickly-armed or spiny. Leaves alternate: blades pinnately or ternately compound. Umbel compound. Ovary mostly 5-celled. Styles distinct. Fruit black.

1. **A. spinosa** L. Small tree or shrub, prickly-armed: blades of the leaflets leathery: hypanthium broad-turbinate: petals longer than the hypanthium: berries 6–7 mm. in diameter: seeds about 4 mm. long. — Sum.

The PRICKLY-ASH grows in rich woods and swamps in northern Florida. The brown heart-wood is close-grained, light, soft, and weak. Also known as Hercules' club. (*Cont.*)

Series 2. **GAMOPETALAE**.

Petals more or less united, or occasionally distinct, or very rarely wanting.

Order **ERICALES**.

Herbs, undershrubs, shrubs, or trees, sometimes humus-plants or saprophytes. Leaves alternate, often evergreen: blades simple. Flowers mainly perfect and complete. Calyx of 2–8, usually 5, partially united sepals. Corolla of 2–8, usually 5, mostly united petals. Androecium of as many or twice as many stamens as petals, sometimes partially reduced to staminodia: filaments mostly free. Gynoecium of several united carpels. Fruit capsular, baccate, or drupaceous.

Gynoecium with a superior ovary: fruit capsular.

Fam. 1. **ERICACEAE**.

Gynoecium with an inferior ovary: fruit baccate or drupaceous.

Fam. 2. **VACCINIACEAE**.

FAMILY 1. **ericaceae**. HEATH FAMILY.

Shrubs, trees, or undershrubs. Leaves often persistent: blades commonly leathery. Flowers typically perfect. Calyx of 4–7 distinct or partially united sepals. Corolla of 4–7 distinct or partially united petals, sometimes slightly 2-lipped. Androecium of as many or twice as many stamens as there are petals: anthers opening by pores, chinks or valves. Gynoecium of 2–7 united carpels. Fruit a capsule.

Corolla rotate: capsule septicidal.

Corolla not rotate: capsule loculicidal.

Anther-sacs opening by pores: capsules very short, sometimes depressed.

Anther-sacs opening lengthwise: capsules elongate.

1. *KALMIA*.

2. *XOLISMA*.

3. *OXYDENDRON*.

1. *KALMIA* L. Evergreen shrubs or trees. Leaves alternate, opposite, or whorled: blades entire. Calyx persistent: lobes 5, leathery. Corolla regular, white or pink, rotate, the lobes obtuse: tube short, with 10 sacs. Stamens 10: filaments elastically straightening at maturity: anthers short, attached near the top. Capsule spheroidal.

1. *K. latifolia* L. Tree becoming 12 m. tall or shrub, the twigs often fuzzy when young: leaf-blades elliptic to oval, 5-12 cm. long, glabrous: sepals oblong to oblong-ovate, about 2 mm. long: corolla white or pink, 20-25 mm. wide: capsules 5-7 mm. wide. — Spr. & sum.

The CALICO-BUSH grows in woods or on shaded banks in western Florida. The brown and red-tinged heart-wood is close-grained, heavy, hard, and strong. Also known as Laurel or Mountain-laurel. (Cont.)

2. *XOLISMA* Raf. Evergreen or deciduous-leaved shrubs or trees. Leaves alternate: blades entire or nearly so. Flowers in racemes, panicles, or clusters. Calyx-lobes typically 5- (4-6-)lobed. Filaments unappendaged: anthers awnless. Capsule erect on an erect pedicel, with thick valve-margins.

1. *X. ferruginea* (Walt.) Heller. Evergreen tree sometimes 5 m. tall or shrub: leaves not much reduced in size at the ends of the branches; blades elliptic, oval, obovate, or oblanceolate, 2.5-7 cm. long, scarcely reticulate: corolla 2.5-3 mm. long, angled at the base: capsules 4.5-5 mm. long. — Spr.

The *XOLISMA* grows in hammocks and scrublands in northern Florida and in the peninsula as far south as the Everglade region. The brown and red-tinged heart-wood is close-grained, heavy, and hard, but weak. (Cont.)

3. *OXYDENDRON* DC. Deciduous-leaved shrubs or trees. Leaves alternate: blades serrate. Flowers drooping in horizontally expanded panicles. Calyx-lobes 5, persistent. Corolla white, ovoid or conic, 5-lobed. Filaments dilated, pubescent all over: anthers linear, awnless, narrower than the filaments. Stigma entire. Capsule ovoid, erect on a recurved pedicel, the valve-margins thickened.

1. *O. arboreum* (L.) DC. Tree becoming 20 m. tall or shrub: leaf-blades oblong, elliptic, or oblong-lanceolate, 8-20 cm. long, acuminate: panicles 1-2 dm. long, the pedicels strongly curved at maturity: calyx-lobes ovate: corolla 6-7 mm. long, pubescent like the calyx: capsules 4-6 mm. long, pubescent. — Sum.

The SOUR-WOOD grows in open woods in western Florida. The brown and red-tinged heart-wood is very close-grained, heavy, and hard, but rather weak. Also known as Sorrel-tree. (Cont.)

FAMILY 2. VACCINIACEAE. HUCKLEBERRY FAMILY.

Shrubs or trees. Leaves alternate: blades simple. Flowers perfect, regular, solitary or variously clustered, drooping. Calyx of 4 or 5 sepals. Corolla of 4 or 5 usually partially united petals. Androecium of twice as many stamens as there are corolla-lobes. Gynoecium of several united carpels, the ovary wholly or $\frac{1}{2}$ inferior. Fruit a berry or a drupe.

1. *BATODENDRON* Nutt. Shrubs or trees. Leaves somewhat persistent: blades firm, sometimes glandular-denticulate. Flowers in leafy-bracted racemes or panicles. Sepals 5. Corolla campanulate or globular-campanulate. Stamens

included: anthers tubular at the top, appendaged. Berry globular, rather astringent, many-seeded.

1. B. arboreum (Marsh.) Nutt. Small tree or shrub: leaf-blades oval or obovate, 2.5–5 cm. long, lustrous above: racemes usually proliferous: corolla white or pinkish, 5.5–6 mm. long: berries 5–6 mm. in diameter, black.—Spr.

The SPARKLEBERRY grows in sandy woods in northern Florida and in the northern portion of the peninsula. The brown and red-tinged heart-wood is close-grained, heavy, and hard. Also known as Farkleberry. (*Cont.*)

Order PRIMULALES.

Herbs, shrubs, trees, or vines. Leaves alternate or opposite, sometimes all basal. Flowers perfect or polygamo-dioecious, variously disposed. Calyx of 2–several partially united sepals. Corolla of 2–several distinct or partially united petals. Androecium of as many stamens as there are sepals or petals, and sometimes accompanied by staminodia. Gynoecium of 4–6 united carpels, or rarely more. Fruit capsular or drupaceous, or rarely an achene or a utricle.

Staminodia at the corolla-sinuses: fruit few-many-seeded.

Fam. 1. THEOPHRASTACEAE.
Fam. 2. ARDISIACEAE.

FAMILY 1. THEOPHRASTACEAE. JOE-WOOD FAMILY.

Shrubs or trees. Leaves opposite, persistent: blades leathery, entire. Flowers perfect, in racemes, corymbs, or panicles. Calyx of 5 imbricate sepals. Corolla campanulate or rotate-salverform, of 5 partially united petals. Androecium of 5 stamens partially adnate to the corolla-tube, and 5 staminodia. Gynoecium of 5 united carpels. Fruit a drupe-like berry.

1. JACQUINIA [Jacq.] L. Leaves usually numerous: blades thick and very brittle. Flowers erect. Calyx persistent. Corolla deciduous. Anthers extrorse. Staminodia very broad. Berries erect.

1. J. keyensis Mez. Tree becoming 5 m. tall or shrub, the bark pale: leaf-blades cuneate-spatulate or oblong-obovate, 1–5 cm. long, shining: calyx-lobes 2–3 mm. long, orbicular-ovate: corolla straw-colored; lobes longer than the tube: staminodia oblong, erose: berry subglobose, 8–10 mm. in diameter.—All year.

The JOE-WOOD grows in hammocks along the lower portion of the western coast of Florida, and on the Everglade Keys and the Florida Keys. The brown heart-wood is very close-grained, heavy, and hard. (*W. I.*)

FAMILY 2. ARDISIACEAE. MYRSINE FAMILY.

Shrubs or trees. Leaves mostly alternate, ours persistent: blades leathery, entire. Flowers perfect or polygamo-dioecious, in racemes, corymbs, or cymes, sometimes clustered on scaly spurs. Calyx of usually 4–6 sepals. Corolla of usually 4–6 partially united petals, short-salverform or rotate, often streaked or dotted. Androecium of mostly 4–6 stamens, partially adnate to the corolla-tube. Gynoecium of mostly 4–6 united carpels. Fruit a drupe-like berry.

Flowers on scattered spurs: corolla-lobes not reflexed: stigma lobed. 1. RAPANEA. Flowers in terminal panicles: corolla-lobes reflexed: stigma entire. 2. ICACOREA.

1. RAPANEA Aubl. Shrubs or small trees. Flower inconspicuous, clustered on scaly spurs, stout-pedicelled. Corolla white or nearly so: lobes ascend-

ing or spreading. Stamens with ascending or spreading anthers. Style very short: stigma lobed.

1. *R. guianensis* Aubl. Small tree or shrub, with grayish bark: leaves mostly near the ends of the branchlets: blades obovate-oblong or nearly oblong, 4-10 cm. long: flower-clusters scattered along the branchlets: sepals broadly ovate: corolla-lobes oblong, unequal: fruit about 4 mm. in diameter. — All year.

The MYRSINE grows in the coastal hammocks of the northern portion of peninsular Florida, as far north as Volusia county on the eastern coast, on hammock islands in the Everglades, and on the Everglade Keys and the Florida Keys. The yellowish-brown heart-wood is close-grained, heavy, and hard. (W. I.)

2. *ICACOREA* Aubl. Shrubs or trees. Flowers conspicuous, in panicles, cymes, or clusters, slender-pedicelled. Corolla white or pink, and often purple-streaked: lobes recurved. Stamens with converging anthers. Style elongate: stigma minute, entire.

1. *I. paniculata* (Nutt.) Sudw. Small tree or shrub, with white or whitish bark: leaves scattered; blades oblanceolate to elliptic, 4-18 cm. long: panicles terminal: calyx-lobes ovate to obovate: corolla-lobes oblong: fruit 7-8 mm. in diameter. — Sum. & fall.

The MARLBERRY grows in coastal hammocks along the southern two-thirds of the eastern side of peninsular Florida and the southern half of the western side, and in hammocks, and as a shrub in pinelands, on the Everglade Keys and on the Florida Keys. The deep-brown heart-wood is close-grained, heavy, and hard. Also known as Cherry. (W. I.)

Order EBENALES.

Shrubs or trees. Leaves alternate, opposite, or whorled: blades simple. Flowers perfect, monoecious, or dioecious. Calyx of 3-12 partially united sepals. Corolla of 3-12 partially united petals. Androeceium of as many stamens as there are corolla-lobes or twice as many or more, sometimes accompanied by staminodia. Gynoeceium of 3-several united carpels. Fruit capsular or baccate.

Styles or stigmas distinct: flowers mostly monoecious or dioecious.

Fam. 1. EBENACEAE.

Styles and stigmas united: flowers mostly perfect.

Stamens as many as the corolla-lobes, at least in our representatives.

Fam. 2. SAPOTACEAE.

Stamens twice as many as the corolla-lobes or more.

Stamens in several series.

Fam. 3. SYMPLOCACEAE.

Stamens in 1 series.

Fam. 4. STYRACACEAE.

FAMILY 1. EBENACEAE. EBONY FAMILY.

Shrubs or trees. Leaves mostly alternate: blades entire. Flowers solitary or in cymes. Calyx of 3-7 partially united sepals, persistent, accrescent. Corolla of 3-7 partially united petals, often urceolate. Androeceium of 3 or 4 times as many stamens as there are corolla-lobes. Gynoeceium of 3-several united carpels. Fruit a berry or sometimes capsular.

1. *DIOSPYROS* L. Shrubs or trees. Leaves scattered: blades entire. Calyx 3-7-lobed. Stamens with pubescent filaments and anthers opening lengthwise. Berry spheroidal or elongated.

1. *D. virginiana* L. Tree becoming 35 m. tall, the bark very rough, or shrub: leaf-blades ovate, oval, or elliptic, 8-20 cm. long, acute or acuminate: corolla 8-13 mm. long; lobes reniform: berries 3-4 cm. in diameter, astringent when green. — Spr.

The PERSIMMON grows in sandy woods, nearly throughout the Florida mainland, and in the Everglades. The dark-brown or nearly black heart-wood is close-grained, heavy, and very hard. Also known as Date-plum. (Cont.)

FAMILY 2. **SAPOTACEAE.** SAPODILLA FAMILY.

Shrubs or trees, with milky sap, sometimes thorny. Leaves mostly alternate: blades entire. Flowers perfect or rarely polygamous, clustered. Calyx of 4-12 slightly united sepals. Corolla of 4-12 partially united petals, with or without appendages at the sinuses of the lobes. Androecium of usually as many stamens as there are corolla-lobes, commonly accompanied by staminodia. Gynoecium of several united carpels. Fruit a several-celled berry, or by suppression 1-celled.

Corolla-lobes without dorsal appendages.

Staminodia wanting.

Staminodia present.

Ovary 10-12-celled.

Ovary 2-5-celled.

Corolla-lobes entire.

Seeds with endosperm.

Seeds without endosperm.

Corolla-lobes with a large median lobe and 2 smaller lateral lobes.

Ovary glabrous: endosperm copious.

Ovary pubescent: endosperm wanting or scant.

Corolla lobes with dorsal appendages.

1. **CHRYSOPHYLLUM.**

2. **SAPOTA.**

3. **SIDEROXYLON.**

4. **LUCUMA.**

5. **DIPHOLIS.**

6. **BUMELIA.**

7. **MIMUSOPS.**

1. CHRYSOPHYLLUM L. Shrubs or trees. Leaf-blades commonly lustrous-pubescent beneath. Calyx-lobes mostly 5. Corolla, like the calyx, often pubescent: lobes mostly 5, entire. Anthers emarginate and apiculate. Style wanting: stigma lobed.

1. C. olivaeforme L. Evergreen tree, becoming 10 m. tall, the twigs closely pubescent: leaf-blades leathery, oblong, elliptic, or oval, 3-10 cm. long, lustrous-pubescent beneath: calyx-lobes suborbicular, 1.5 mm. long: corolla white, about 5 mm. wide; lobes suborbicular: berries oval, about 2 cm. long, dark-purple. — All year.

The **SATINLEAF** grows in hammocks along the lower two-thirds of the eastern coast of peninsular Florida and along the lower portion of the western coast, and in the hammocks of the Everglade Keys and the Florida Keys. The brown and red-tinged heart-wood is close-grained, heavy, and hard. (*W. I.*)

2. SAPOTA Mill. Trees. Leaf-blades glabrous. Calyx-lobes 6, or rarely 5, pubescent. Corolla glabrous: lobes 6, or rarely 5, toothed. Anthers blunt. Staminodia nearly as long as the corolla-lobes. Style elongate: stigma minute. Berry spheroidal or elongate, rough.

1. S. Achras Mill. Tree with rusty-tomentose twigs: leaves and flowers approximately at the ends of branchlets: blades oblong to elliptic, varying to broadest above or below the middle, 5-12 cm. long: pedicels rusty-tomentose, about as long as the petioles: calyx-lobes 8-10 mm. long: corolla 8-10 mm. long: lobes about $\frac{1}{2}$ as long as the tube: berries ovoid or depressed, 4-8 cm. in diameter. — Spr. & sum.

The **SAPODILLA**, a native of the West Indies, grows in hammocks in southern peninsular Florida and the Keys. The red-striped wood is close-grained, heavy, and hard. (*W. I.*)

3. SIDEROXYLON [Dill.] L. Shrubs or trees. Leaf-blades not lustrous-pubescent. Calyx-lobes 5-6. Corolla glabrous: lobes 5-6, entire. Anthers notched. Staminodia much shorter than the corolla-lobes. Style columnar: stigma truncate.

1. S. foetidissimum Jacq. Evergreen tree becoming 25 m. tall: leaf-blades thin-leathery, oblong to oval or rarely ovate, 4-15 cm. long, glabrous at maturity: calyx-lobes suborbicular, about 2 mm. long: corolla light-yellow, 6-7

mm. wide; lobes oblong to ovate-oblong: staminodia lanceolate: drupes oval, 2–2.5 cm. long, yellow. — All year.

The **MASTIC** grows in hammocks along the coast of the lower half of peninsular Florida, and on the Everglade Keys and the Florida Keys. The orange-colored heart-wood is close-grained heavy, hard, and strong. Also known as Wild-olive. (W. I.)

4. **LUCUMA** Juss. Trees. Leaf-blades more or less elongate, usually broadened upward. Calyx-lobes 5, in 1 or 2 series. Corolla white or pale: lobes 5, entire or nearly so. Staminodia slender, shorter than the corolla-lobes. Ovary 5-celled, or sometimes 4–6-celled: style columnar: stigma slightly dilated. Berry globular, or slightly elongated, smooth.

1. **L. nervosa** A. DC. Small tree with spreading branches; leaf-blades oblong to elliptic, 10–20 cm. long, acute or acutish: calyx-lobes 5, the inner ones rounded at the apex: corolla 7–9 mm. long; lobes ovate: staminodia subulate: fruits globose-ovoid, 5–7 cm. long, smooth, usually 2- or 3-seeded.

The **EGG-FRUIT**, a native of northern South America, grows in hammocks on the upper Florida Keys. The wood has not been studied. (W. I.)

5. **DIPHOLIS** A. DC. Shrubs or small trees. Leaf-blades mostly glabrous. Calyx-lobes 5, pubescent. Corolla-lobes 5, each 3-lobed, shorter than the tube. Staminodia petaloid. Endosperm copious.

1. **D. salicifolia** (L.) A. DC. Evergreen tree becoming 16 m. tall or shrub: leaf-blades elliptic to elliptic-ob lanceolate, 5–12 cm. long: calyx-lobes ovate to oblong, 1.5 mm. long: corolla 4 mm. wide; lobes oblong or oval: staminodia ovate to ovate-lanceolate, lacinate-toothed: berries oval or subglobose, about 8 mm. in diameter, black. — All year.

The **BUSTIC** grows in hammocks on the Everglade Keys and the Florida Keys. The red or dark-brown heart-wood is close-grained, very heavy, and hard. Also known as Cassada. (W. I.)

6. **BUMELIA** Sw. Shrubs or trees. Leaf-blades mostly pubescent beneath. Calyx-lobes 5. Corolla-lobes 5, each 3-lobed, the middle lobe suborbicular, longer than the tube. Staminodia petaloid. Endosperm wanting or very scant.

Leaf-blades glabrous.

Berries oblong-cylindric: leaf-blades leathery, smooth, shining. 1. *B. angustifolia*.

Berries oval: leaf-blades herbaceous, reticulate, dull. 2. *B. lycioides*.

Leaf-blades copiously pubescent beneath.

Leaf-blades woolly, the pubescence red or brown, dull. 3. *B. lanuginosa*.

Leaf-blades silky, the pubescence white, becoming tawny or coppery, lustrous. 4. *B. tcnar*.

1. **B. angustifolia** Nutt. Evergreen tree becoming 8 m. tall or shrub, the twigs glabrous: leaves relatively few and not crowded; blades oblanceolate to oblanceolate-spatulate, 2–4 cm. long, smooth and glabrous: calyx-lobes ovate, 2 mm. long: corolla about 4 mm. wide; lateral divisions of the lobes narrowly lanceolate, irregularly toothed: staminodia 2.5 mm. long, lacerate: berries 17–20 mm. long. — All year.

The **SAFFRON-PLUM** grows in the coastal hammocks of the lower half of peninsular Florida and on the Everglade Keys and Florida Keys. The brown or orange-colored heart-wood is very close-grained, heavy, and hard. (W. I.)

2. **B. lycioides** (L.) Gaertn. Deciduous-leaved small tree, or shrub, the twigs glabrous: leaf-blades elliptic, oblong, or rarely oblanceolate, 4–12 cm. long, dull and prominently reticulate on both sides: calyx-lobes oval or orbicular-ovate, 2 mm. long: corolla about 5 mm. wide; lateral divisions of the lobes lanceolate or broadly lanceolate, 1.5 mm. long, entire: staminodia ovate, 2–2.5 mm. long, entire: berries oval, fully 10 mm. long. — Sum.

The **BUCKTHORN** grows in rich woods and along rivers in northern Florida and the northern portion of the peninsula. The yellow or brown heart-wood is close-grained, heavy, and hard. (Cont.)

3. *B. lanuginosa* (Michx.) Pers. Deciduous-leaved tree becoming 2 m. tall, or shrub, the twigs dull-tomentose: leaf-blades oblong-ob lanceolate, oblong-obovate, or elliptic, 3-8 cm. long, dull-tomentose beneath: calyx-lobes sub-orbicular or orbicular-ovate, about 3 mm. long: corolla about 5 mm. wide; lateral divisions of the lobes lanceolate, fully 1.5 mm. long: undulate: staminodia ovate, 2 mm. long, acute or acutish: berries oval or obovoid-oblong, 10-15 mm. long. — Sum.

The GUM-ELASTIC grows in sandy woods and near streams in northern Florida and the adjacent portion of the peninsula. The light-brown or yellow heart-wood is close-grained, heavy, and rather soft. (Cont.)

4. *B. tenax* (L.) Willd. Deciduous-leaved tree becoming 9 m. tall, or shrub, the twigs lustrous-silky, the hairs white, becoming tawny or copper-colored: leaf-blades oblanceolate, obovate-spatulate, or obovate, 2-7 cm. long, lustrous-silky beneath: calyx-lobes suborbicular, 1-1.5 mm. long: corolla about 5 mm. wide; lateral divisions of the lobes ovate or ovate-lanceolate, fully 1.5 mm. long, undulate: staminodia ovate, 2 mm. long, obtuse: berries obovoid or oblong-obovoid, 10-14 mm. long. — Spr.

The TOUGH-BUCKTHORN grows in sandy woods mostly near the coast in northern Florida and the northern portion of the peninsula. The brown and white-streaked heart-wood is close-grained, heavy, and hard. (Cont.)

7. *MIMUSOPS* L. Shrubs or trees. Leaf-blades leathery, finely many-veined. Calyx-lobes 6 or 8, the outer ones valvate. Corolla with dorsal appendages; lobes 6 or 8, each with 2 very small lateral lobes. Staminodia petaloid.

1. *M. emarginata* (L.) Britton. Evergreen tree becoming 10 m. tall: leaves clustered at the ends of the branchlets; blades oblong, 3-10 cm. long: calyx, like the pedicels, red-tomentose; lobes lanceolate to ovate-lanceolate: corolla light-yellow, 1.5-2 cm. wide: staminodia triangular: berries spheroidal, nearly 3 cm. thick. — Spr.

The WILD-DILLY grows in hammocks on the Florida Keys. The dark-brown heart-wood is close-grained, heavy, and hard. (W. I.)

FAMILY 3. SYMPLOCOCACEAE. SWEETLEAF FAMILY.

Shrubs or trees, the hairs, when present, simple. Leaves alternate: blades usually leathery, entire or toothed. Flowers polygamo-dioecious or perfect, in close or open clusters. Calyx of 5 partially united sepals. Corolla of 5 more or less united petals. Androecium of numerous stamens in several series, partially adnate to the corolla-tube. Gynoecium of 2-5 carpels, the ovary superior. Fruit baccate or drupaceous.

1. *SYMPLOCOS* Jacq. Leaves often persistent: blades thick. Inflorescence congested or open. Calyx often persistent. Corolla-deciduous. Stamens conspicuous. Style columnar. Fruits often crowned with the calyx.

1. *S. tinctoria* (L.) L'Her. Evergreen tree or small shrub: leaf-blades elliptic, oblong, or oblong-ob lanceolate, 4-15 cm. long, undulate or shallowly toothed, tomentose beneath: flowers densely clustered: calyx 2-2.5 mm. long; lobes shorter than the tube: corolla yellowish; lobes obovate or obovate-spatulate, 6-8 mm. long: stamens exserted: drupe 10-14 mm. long. — Spr.

The SWEETLEAF grows in rich or sandy woods in northern Florida and the adjacent portion of the peninsula? The brown or whitish wood is close-grained, rather light and soft. Also known as Horse-sugar. (Cont.)

FAMILY 4. STYRACACEAE. STORAX FAMILY.

Shrubs or trees, the hairs when present branched or scurfy. Leaves alternate: blades entire or shallowly toothed. Flowers perfect, in racemes,

panicles, cymes, or clusters. Calyx of 5, or 4-8, partially united sepals. Corolla of 5, or 4-8, distinct or partially united petals. Androecium of 8-16 stamens in one series, partially adnate to the corolla. Gynoecium of 2-5 united carpels, the ovary sometimes inferior. Fruit drupaceous or capsular.

1. **HALESIA** Ellis. Shrubs or trees. Leaves with thinnish blades, deciduous. Inflorescence not leafy-bracted. Calyx with relatively large lobes. Corolla with nearly erect lobes or petals. Anthers oblong. Ovules 4 in each cavity, 1 pair ascending, 1 pair drooping. [*Morodendron* Britton.] — Spr.

The light brown heart-wood of the following species is close-grained, light, and soft.

Corolla-lobes longer than the tube: fruits 2-winged, the stipe wholly included in the wings. 1. *H. diptera*.

Corolla-lobes shorter than the tube: fruits 4-winged, the base of the stipe free. 2. *H. carolina*.

1. **H. diptera** Ellis. Tree becoming 15 m. tall or shrub, the twigs copiously pubescent: leaf-blades oval, oblong, or obovate, 4-15 cm. long, coarsely toothed: calyx 6-7 mm. long, densely pubescent: corolla 20-30 mm. long; lobes pubescent without: filaments and style pubescent: fruits 2-winged.

The SNOWDROP-TREE grows in woods and on banks of streams in northern Florida. (*Cont.*)

2. **H. carolina** L. Tree becoming 25 m. tall or shrub, the twigs sparingly pubescent or glabrous: leaf-blades oblong, oval, or obovate, 5-17 cm. long, finely serrate: calyx 5-6 mm. long, glabrous: corolla 20-25 mm. long; lobes glabrous without: filaments and style glabrous: fruits 4-winged.

The SILVERBELL-TREE grows in woods in northern Florida and the adjacent portion of the peninsula. (*Cont.*)

Order OLEALES.

Shrubs, trees, undershrubs, or partially herbaceous plants. Leaves opposite, or rarely alternate or whorled: blades simple or compound. Flowers perfect, polygamous, or dioecious. Calyx of 4 or more partially united sepals, or wanting. Corolla of 2-6 distinct or partially united petals, or wanting. Androecium of 2-4 stamens partially adnate to the corolla when it is present. Gynoecium of 2 united carpels, the ovary superior. Fruit a capsule, a samara, or a berry, usually 1-celled by suppression.

FAMILY 1. OLEACEAE. OLIVE FAMILY.

Woody or partially woody plants with erect or climbing stems. Leaves predominantly opposite: blades simple and entire or toothed, or pinnately compound.

Fruit dry, a samara: leaf-blades pinnately compound.

Fruit fleshy, drupe or berry: leaf-blades simple.

Corolla wanting or obsolete: style slender.

Corolla present: style stout.

Corolla rotate, white; lobes elongate.

Corolla salverform, greenish; lobes short.

1. **FRAXINUS**.

2. **FORESTIERA**.

3. **CHIONANTHUS**.

4. **OSMANTHUS**.

1. **FRAXINUS** [Tourn.] L. Shrubs or trees. Leaves opposite: blades unequally pinnate. Flowers polygamous, dioecious, or rarely perfect, in clusters or panicles. Calyx unequally 4-lobed, or obsolete. Corolla of 2-4 petals,

or wanting. Stamens 2 or rarely 3 or 4. Stigma 2-lobed. Samara winged at the tip or all around. — Spr. — ASH.

Samara-body flat, the wing extending to its base or around it.

Samara spatulate or oblong-spatulate.

Samara elliptic to ovate or obovate.

Samara-body terete, the wing terminal or partly decurrent.

Wing of the samara extending along the sides of the body.

Samara-body stout, not clearly defined from the wing: twigs, petioles and pedicels velvety-pubescent.

Samara-body slender, clearly defined from the wing: twigs, petioles and pedicels glabrous.

Wing of the samara terminal or nearly so.

1. *F. pauciflora*.

2. *F. caroliniana*.

3. *F. profunda*.

4. *F. pennsylvanica*.

5. *F. americana*.

1. *F. pauciflora* Nutt. Tree becoming 10 m. tall or shrub, the twigs glabrous: leaflets 5-7; blades of the lateral ones lanceolate, elliptic, or oblong or some of them ovate, 4-15 cm. long, undulate or repand: samaras 4-6 cm. long, the wing oblong to spatulate, longitudinally veined.

The SWAMP-ASH grows in river-swamps in northern Florida and the northern portion of the peninsula. The whitish heart-wood is close-grained but light and soft. (Cont.)

2. *F. caroliniana* Mill. Tree sometimes 12 m. tall or shrub, the twigs often pubescent: leaflets 5-9, usually 5-7; blades of the lateral ones elliptic-lanceolate, 4-12 cm. long, shallowly serrate or nearly entire: samaras 4-5 cm. long, the wings elliptic, or nearly so, varying to ovate or obovate, pinnately veined.

The WATER-ASH grows in river-swamps in northern Florida and the adjacent part of the peninsula. The white or yellow-tinged heart-wood is close-grained, light, and soft. (Cont.)

3. *F. profunda* Bush. Tree sometimes 35 m. tall, the twigs pubescent: leaflets 7-9; blades of the lateral ones lanceolate-ovate, elliptic or rarely oblong, 6-12 cm. long, entire or undulate: samaras 4-5 cm. long, the wing linear-oblong or oblong-spatulate.

The PUMPKIN-ASH grows in deep river-swamps in middle and western Florida. The wood has not yet been studied. (Cont.)

4. *F. pennsylvanica* Marsh. Tree sometimes 20 m. tall, the twigs mainly glabrous: leaflets 5-7; blades of the lateral ones lanceolate or sometimes elliptic, 5-20 cm. long, entire, or serrate, especially near the apex: samaras 3.5-6 cm. long, the wing spatulate, decurrent to the middle of the linear body or near it.

The RED-ASH grows on banks of streams in middle and western Florida. The light-brown heart-wood is coarse-grained, heavy, and hard. (Cont.)

5. *F. americana* L. Tree becoming 40 m. tall, the twigs glabrous: leaflets 5-9; blades of the lateral ones lanceolate, oblong, or elliptic, 5-15 cm. long, relatively thin, entire or shallowly toothed: samaras 2.5-3.5 cm. long, the wing linear-spatulate or oblong-spatulate, terminal or nearly so on the oblong-cylindric body.

The WHITE-ASH grows in rich woods in middle and western Florida. The brown heart-wood is close-grained, heavy, and hard. Also known as American-ash. (Cont.)

2. **FORESTIERA** Poir. Shrubs or trees. Leaves opposite: blades simple. Flowers mostly polygamo-dioecious, in lateral clusters. Calyx minute, 4-6-lobed, or obsolete. Corolla wanting, or rarely of 1-2 deciduous petals. Stamens 2-4. Stigma 2-lobed. Drupe oblong to globular. [*Adelia* P. Br.]

Leaf-blades entire, obtuse: drupes slightly longer than thick, straight. 1. *F. porulosa*.

Leaf-blades toothed, acuminate: drupes much longer than thick, curved. 2. *F. acuminata*.

1. *F. porulosa* (Michx.) Poir. Small tree or shrub 1-3 m. tall, the twigs glabrous or nearly so: leaf-blades 1.5-5 cm. long, oblong-lanceolate to spatulate, entire: bracts oval or suborbicular, about 1.5 mm. long, ciliate: drupes oblong, 7-8 mm. long. — All year.

The FLORIDA-PRIVET grows in coastal hammocks of peninsular Florida and the adjacent parts. The wood has not yet been studied.

2. *F. acuminata* (Michx.) Poir. Tree sometimes 10 m. tall or shrub, the twigs glabrous: leaf-blades 3-10 cm. long, elliptic-oval to ovate-elliptic, slightly serrate: bracts rhombic, 5-6 cm. long: drupes narrowly oblong, 12-15 mm. long. — Spr.

The FORESTIERA grows on river banks in northern Florida. The yellowish-brown heart-wood is close-grained and rather heavy, but soft. (Cont.)

3. *CHIONANTHUS* L. Shrubs or trees. Leaves opposite, deciduous: blades simple. Flowers perfect or polygamous, in drooping festoon-like panicles. Calyx deeply 4-lobed. Corolla white: lobes narrow, many times longer than the tube. Stamens 2: filaments adnate to the corolla-tube. Stigma notched or 2-lobed. Drupe oval to subglobose.

1. *C. virginica* L. Tree rarely 10 m. tall or shrub: leaf-blades oval, oblong, or elliptic, varying to obovate, 5-15 cm. long: panicles 5-20 cm. long: calyx-lobes ovate to lanceolate, acute: petals linear, 1.5-2.5 cm. long: drupes 1.5-2 cm. long, deep-purple or nearly black. — Spr.

The FRINGE-TREE grows in rich woods or on banks of streams in northern Florida and in the peninsula as far south as the Everglade region. The light brown heart-wood is close-grained, heavy, and hard. Also known as Old-man's beard. (Cont.)

4. *OSMANTHUS* Lour. Shrubs or trees. Leaves opposite, persistent: blades simple. Flowers polygamous, in axillary racemes or panicles. Calyx prominently 4-lobed. Corolla greenish or white, funnelform: lobes broad, about as long as the tube, or longer. Stamens 2: filaments partially adnate to the corolla-tube. Stigma entire or 2-lobed. Drupe ovoid or globose. — Spr.

Inflorescence-branches glabrous: drupes dark-purple.
Inflorescence-branches pubescent: drupes yellowish-green.

1. *O. americana*.

2. *O. floridana*.

1. *O. americana* (L.) B. & H. Tree becoming 15 m. tall or shrub, the bark pale: leaf-blades narrowly elliptic, varying to oblanceolate or lanceolate, 5-20 cm. long, entire, lustrous above: inflorescence-branches and calyx glabrous: corolla 3-4 mm. long: drupes 10-14 mm. long.

The DEVILWOOD grows in hammocks in northern Florida and the peninsula to the Everglade region. The dark-brown heart-wood is close-grained, heavy, hard, and very tough. Also known as Wild-olive. (Cont.)

2. *O. floridana* Chapm. Similar to the preceding species, but relatively larger throughout: leaf-blades relatively broader: inflorescence-branches and calyx pubescent: corolla 4-5 mm. long: drupes 16-20 mm. long.

The FLORIDA DEVILWOOD grows in pinelands and on sand-dunes in peninsular Florida. The wood has not yet been studied. (Endemic.)

Order ASCLEPIADALES.

Herbs, shrubs or trees, commonly with a milky juice. Leaves alternate or opposite: blades entire. Inflorescence cymose, sometimes umbellate. Calyx of usually 5, partially united, sepals. Corolla of usually 5 partially united petals. Androecium of 5 distinct or monadelphous stamens. Pollen granular, or in waxy masses. Gynoecium of usually 2 carpels sometimes only united at the apex. Stigma terminal. Fruit a pair of follicles, or drupaceous.

FAMILY 1. APOCYNACEAE. DOGBANE FAMILY.

Perennial herbs, vines, shrubs or trees, mostly with a milky acrid juice. Leaf-blades simple. Androecium of 5 stamens with the anthers

converging around the stigma or partly adhering to it. Filaments partially adnate to the corolla-tube. Pollen-grains simple. Gynoecium of 2 distinct carpels or 2 united carpels. Styles united. Stigmas simple. Fruit usually of 2 follicles or drupes. Seed often appendaged.

1. **NERIUM** [Tourn.] L. Shrubs or trees. Leaves opposite: blades relatively narrow. Corolla salverform, the throat campanulate, with toothed scales at the mouth, the lobes spreading, broad. Follicles elongate.

1. **N. Oleander** L. Tree becoming 10 m. tall, or shrub: leaf-blades narrowly elliptic to linear-elliptic, 6–15 cm. long, many-veined: calyx-lobes lanceolate, 4.5–6 mm. long: corolla white to rose-purple; limb 3–4.5 cm. wide, the lobes obliquely apiculate: follicles 1–2 dm. long.

The **OLEANDER**, a native of the Levant, grows on roadsides and in fields. (W. I.)

Order POLEMONIALES.

Herbs, or sometimes shrubs or trees, the plants of some groups parasitic. Leaves with dilated blades or scale-like. Flowers mainly perfect. Calyx of partially united sepals. Corolla of partially united petals, regular or irregular. Androecium of as many stamens as there are corolla-lobes, or fewer, sometimes partially represented by staminodia, or partially obsolete. Gynoecium of 2 distinct or several united carpels. Ovary superior. Fruit a capsule, a berry or a drupe, or a group of nuts or utricle-like.

Stamens 5.

Fruits baccate: styles wholly united: anthers opening by pores.

Fam. 1. SOLANACEAE.

Fruits drupaceous: styles partially united: anthers opening lengthwise.

Fam. 2. EHRETIACEAE.

Stamens 4.

Corolla not 2-lipped.

Fruits drupaceous: sepals united.

Fam. 3. VEREENACEAE.

Fruits capsular: sepals nearly distinct.

Fam. 4. AVICENNIACEAE.

Corolla 2-lipped.

Placenta of the ovary axile: calyx 5-lobed.

Fam. 5. RHINANTHACEAE.

Placenta of the ovary parietal: calyx 2-lobed.

Fam. 6. BIGNONIACEAE.

FAMILY 1. SOLANACEAE. POTATO FAMILY.

Herbs, shrubs, trees, or vines. Leaves alternate: blades entire, toothed, or lobed. Calyx of 5, (4–6), more or less united sepals. Corolla of 5, (4–6), more or less united petals. Androecium of 5, (4–6), stamens, the filaments partially adnate to the corolla-tube. Gynoecium 2-carpellary or 3–5-carpellary. Fruit a berry or a capsule.

1. **SOLANUM** [Tourn.] L. Annual or perennial herbs, or vines or trees. Leaf-blades entire, toothed, or lobed. Flowers variously clustered. Calyx sometimes accrescent. Corolla rotate, of various colors: lobes longer than the tube. Anthers narrow, converging or united, much longer than the filaments.

1. **S. verbascifolium** L. Small tree or shrub: leaf-blades oblong to oblong-ovate or ovate, 10–30 cm. long, velvety-tomentose, entire: calyx-lobes ovate, ciliate, obtuse: corolla white, 15–18 mm. wide: lobes ovate to oval-ovate, acutish, ciliate: anthers oblong: ovary pubescent: berries globular, 10–20 mm. in diameter, yellow. — All year.

The **POTATO-TREE** grows in hammocks, or rarely in pinelands in southern peninsular Florida, and on the Everglade Keys and Florida Keys. The yellow heart-wood is close-grained, rather light, and hard. (W. I.)

FAMILY 2. **EHRETIACEAE.** EHRETIA FAMILY.

Shrubs, trees, or sometimes herbs. Leaves mainly alternate: blades mostly entire. Flowers perfect, cymose. Calyx of 5, (4-6), partially united sepals. Corolla of 5, (4-6), partially united petals. Androecium of 5, (4-6), stamens, the filaments more or less adnate to the corolla-tube. Gynoecium 2-4-carpellary: styles 2 and distinct or partially united, or united by pairs. Fruit drupaceous or of 4 nutlets.

Styles 4, unequally united by pairs: calyx accrescent: fruits enclosed.

1. SEBESTEN.

Styles 2: calyx not accrescent: fruits not enclosed.

2. BOURRERIA.

1. **SEBESTEN** Adans. Shrubs or trees. Flowers in open clusters. Sepals usually united to above the middle. Corolla bright-colored, shallowly or deeply lobed. Filaments adnate to above or below the middle of the corolla-tube. Fruits included, adnate to the accrescent calyx.

1. **S. Sebestena** (L.) Britton. Small tree or shrub, the twigs strigose: leaf-blades ovate or oblong-ovate, 8-12 cm. long, undulate or repand: calyx 14-19 mm. long; tube cylindric: corolla-lobes much shorter than the tube. — All year.

The **GEIGER-TREE** grows in hammocks on the Everglade Keys and the Florida Keys. The dark-brown heart-wood is close-grained, heavy, and hard. (W. I.)

2. **BOURRERIA** P. Br. Shrubs or trees. Flowers in corymbose cymes. Sepals united to above the middle. Corolla white or colored, prominently lobed. Filaments adnate to above or below the middle of the corolla-tube.

Anthers about as long as the free portion of the filaments: leaf-blades short-petioled.

1. *B. revoluta*.

Anthers much shorter than the free portion of the filaments: leaf-blades slender-petioled.

2. *B. ovata*.

1. **B. revoluta** H.B.K. Small tree or shrub, with pubescent twigs: leaf-blades oblong to obovate, mostly 2-7 cm. long, abruptly pointed, rounded or notched, permanently rough-pubescent and ciliate, or sometimes smooth: cymes several-flowered: calyx 6-7 mm. long; lobes ovate, mostly less than $\frac{1}{2}$ as long as the tube: corolla white; tube much exceeding the calyx; larger lobes 5-6 mm. wide: anthers about 2.5 mm. long: drupes orange, slightly depressed, 9-11 mm. wide.

The **ROUGH-STRONGBACK** grows in hammocks and pinelands on the Everglade Keys and the Florida Keys. The wood has not yet been studied. (W. I.)

2. **B. ovata** Miers. Small tree or shrub, with glabrous twigs: leaf-blades obovate to oblong-obovate or oval-obovate, 4-12 cm. long, smooth: calyx 6-7 cm. long; lobes triangular, fully $\frac{1}{2}$ as long as the tube: corolla white; tube rather short; lobes slightly shorter than the tube: stamens exserted; anthers about 2 mm. long: drupe orange, about 1 cm. wide.

The **STRONGBACK** grows in hammocks on the Florida Keys. The brown and orange-streaked heart-wood is close-grained, heavy, and hard. (W. I.)

FAMILY 3. **VERBENACEAE.** Vervain FAMILY.

Herbs, shrubs, or trees. Stems commonly angled. Leaves alternate, opposite, or whorled: blades simple or rarely compound. Calyx of 4 or 5 partially or wholly united sepals. Corolla of 4 or 5 partially united petals, sometimes 2-lipped. Androecium of 2 or 4 stamens, the filaments more or less adnate to the corolla-tube. Gynoecium 2-4-carpellary, the style terminal. Fruit baccate or drupaceous or an aggregate of 2 or 4 nutlets.

1. **CITHAREXYLUM** L. Shrubs or trees, sometimes spiny. Leaf-blades mainly entire. Flowers in clusters or long spikes. Calyx obscurely 5-lobed.

Corolla mainly white: tube straight or nearly so: limb slightly oblique, nearly equally 5-lobed. Staminiodium present. Stigma 2-lobed. Nutlets 2.

1. *C. fruticosum* L. Small tree or shrub, with softly pubescent twigs: leaves 5-15 cm. long; blades elliptic, oblong, or oblong-obovate, veiny: flowers in spikes or racemes: fruits 9-10 mm. in diameter. [*C. villosum* Chapm. Not Jacq.]

The FIDDLEWOOD grows in hammocks and pinelands along the southern half of the eastern coast of Florida, on the Everglade Keys and the Florida Keys. The light-red heart-wood is close-grained, heavy, and very hard. (W. I.)

FAMILY 4. AVICENNIACEAE. BLACK-MANGROVE FAMILY.

Shrubs or trees of maritime regions, the branches terete, nodose. Leaves opposite, persistent: blades entire. Flowers in axillary small cymes. Calyx of 5 nearly distinct sepals. Corolla of 4 partially united petals, campanulate-rotate. Androecium of 4 stamens, the filaments adnate to the lower part of the corolla-tube. Gynoeceium of 2 united carpels. Fruit a compressed oblique capsule.

1. *AVICENNIA* L. Leaf-blades thick. Cymes peduncled. Calyx subtended by small bracts. Corolla inconspicuous, the tube and spreading lobes about equal in length. Stamens erect. Stigmas 2. Capsule thick-walled.

1. *A. nitida* Jacq. Tree sometimes 25 m. tall or shrub: leaf-blades leathery, oblong or nearly so, 3-8 cm. long, dark-green above, pale, minutely canescent beneath: calyx 3-4 mm. long: corolla white; lobes longer than the tube, broadly rounded or retuse: fruit oblong or elliptic, 3-5 cm. long, acutish. — All year.

The BLACK-MANGROVE grows on sandy shores and in coastal hammocks on both sides of peninsular Florida, and on the Everglade Keys and Florida Keys. The dark-brown or blackish heart-wood is rather coarse-grained, heavy, and hard. (W. I.)

FAMILY 5. RHINANTHACEAE. FIGWORT FAMILY.

Herbs, shrubs, or trees. Stems commonly terete. Leaves opposite or whorled, or alternate: blades entire, toothed, or divided. Flowers perfect, axillary, or spicate or racemose. Calyx regular or rarely 2-lipped, of 4 or 5 more or less united sepals. Corolla mostly irregular, of 4 or 5 partially united petals. Androecium of 4, usually didynamous stamens, the fifth one sometimes represented by a staminodium. Gynoeceium 2-carpellary. Ovary 2-celled. Fruit capsular or rarely baccate.

1. *PAULOWNIA* Sieb. & Zucc. Trees resembling *Catalpa*. Leaf-blades ample, entire or 3-lobed. Flowers in large panicle cymes. Calyx-lobes 5, shorter than the tube. Corolla slightly 2-lipped, both lips spreading. Stamens 4: filaments about equally adnate to the corolla. Staminiodium wanting. Capsule exceeding the calyx.

1. *P. tomentosa* (Thunb.) Baill. Large tree: leaf-blades ovate to suborbicular, 1.5-4 dm. long, densely pubescent beneath, cordate, long-petioled: calyx 10-14 mm. long: corolla violet, 4.5-5.5 cm. long, pubescent; lobes rounded: capsules ovoid, 3-4 cm. long, acute. — Spr. & sum.

The KARRI, a native of Japan, grows in fields and on roadsides in northern Florida and the northern part of the peninsula. The yellowish-white wood is coarse-grained, light, and soft. (Cont.)

FAMILY 6. **BIGNONIACEAE.** TRUMPET-CREEPER FAMILY.

Shrubs, trees, woody vines, or rarely herbs. Leaves opposite, or rarely alternate or whorled, often tendril-bearing: blades simple or pinnately compound. Flowers perfect, usually showy. Calyx of usually 2 more or less united sepals. Corolla 5-lobed, irregular, or 2-lipped. Androecium of 5 stamens with 1 or 3 of them reduced to staminodia, or of 4 didynamous stamens. Anthers with mostly divaricate sacs. Gynoecium of 2 united carpels. Ovary 1-celled or 2-celled by the meeting of the placentae. Ovules numerous. Fruit a capsule. Seeds winged or appendaged.

Capsules long and slender, dehiscent: anther-bearing stamens 2: leaves opposite.

1. **CATALPA.**

Capsules short and thick, indehiscent: anther-bearing stamens 4:

leaves alternate, sometimes clustered on spurs.

Leaves clustered on spurs: blades of a spatulate or oblanceolate type: fruit rounded at the apex, with fleshy placentae.

2. **CRESCENTIA.**

Leaves alternate; blades of a broad type: fruit umbonate at the apex, with dry placentae.

3. **ENALLAGMA.**

1. **CATALPA** L. Shrubs or trees, with scaly bark. Leaves deciduous: blades broad, membranous. Flowers paniculate. Calyx 2-lobed. Corolla mainly white or yellow, the tube abruptly expanded into the throat. Capsule slender and elongate. Seeds fimbriate-winged.

1. **C. Catalpa** (L.) Karst. Tree becoming 20 m. tall: leaf-blades ovate, 1-3 dm. long: calyx 8-12 mm. long; lobes abruptly pointed: corolla 4-5 cm. long; throat campanulate: capsules 1.5-4 dm. long. — Spr. & sum.

The **CATALPA** grows on river-banks in middle and western Florida. The light-brown heart-wood is coarse-grained, light, soft, and weak, but durable. Also known as Indian-bean. (*Cont.*)

2. **CRESCENTIA** L. Trees with scaly bark. Leaves clustered on spurs: blades of a spatulate or oblanceolate type. Flowers in clusters or solitary, on the spurs, pedicelled. Calyx 2-lobed, leathery. Corolla mainly yellowish-green and magenta-streaked, with a fold between the tube and the campanulate throat: lobes 5, unequal. Anthers mostly included. Fruit relatively large, rounded at the apex, with a thick, hard pericarp: placentae fleshy. Seeds flat, obovate.

1. **C. Cujete** L. Tree becoming 12 m. tall: leaf-blades 8-15 cm. long, abruptly acuminate or obtuse, narrow-based: calyx 2-3 cm. long: corolla yellowish-green and magenta-streaked; lobes undulate: capsules subglobose, oval, or oblong, 15-30 cm. long. — Spr.

The **CALABASH-TREE** grows in hammocks on the lower Florida Keys. The brown or green-brown heart-wood is rather close-grained, but light and rather soft. (*W. I.*)

3. **ENALLAGMA** Baill. Trees with scaly bark. Leaves alternate: blades of an oblong, oval, or obovate type. Flowers solitary or clustered at the ends of the branchlets, long-pedicelled. Calyx 2-lobed, leathery. Corolla mainly whitish, purplish or greenish-yellow, with a fold between the tube and the campanulate throat: lobes 5, unequal. Anthers mostly exserted. Fruit relatively small, umbonate at the apex, with a thin brittle pericarp: placentae dry, pithy. Seeds convex, notched at both ends.

1. **E. latifolia** (Mill.) Small. Tree becoming 8 m. tall: leaf-blades 7-15 cm. long, abruptly pointed, broad-based: calyx 2.5-4 cm. long: corolla 5-6 cm. long,

pale-purple to yellowish-white; lobes toothed: capsules oblong or oval, 5-11.5 cm. long. — All year.

The BLACK-CALABASH grows in low hammocks, often in shore-hammocks on the Everglade Keys and on the Florida Keys. The pale-brown or orange heart-wood is close-grained, heavy and hard. (W. I.)

Order SANTALALES.

Herbs, shrubs, or trees, mostly root- or tree-parasites. Leaves with expanded blades or scale-like. Flowers inconspicuous, perfect or imperfect. Calyx present but often a mere border. Corolla present or wanting. Androecium of as many stamens as there are sepals, or petals, or twice as many. Gynoecium of several united carpels. Ovary more or less inferior. Fruit a drupe, a nut, or a berry.

FAMILY 1. OLACACEAE. XIMENIA FAMILY.

Shrubs, trees, or vines. Leaves usually alternate: blades entire or rarely toothed. Flowers perfect or polygamous, regular, in dichotomous or raceme-like cymes. Calyx of 4-6 small sepals, surmounting the hypanthium. Corolla of 4-6 distinct or united petals. Androecium of 4-12 stamens. Gynoecium 3-4-carpellary. Fruit a drupe.

Petals united to above the middle: stamens as many as the corolla-lobes and opposite them: drupe nearly enclosed in the disk. 1. SCHOEPPFIA.

Petals nearly distinct: stamens twice as many as the petals: drupe naked. 2. XIMENIA.

1. **SCHOEPPFIA** Schreb. Unarmed shrubs or trees. Leaf-blades thick. Hypanthium filled with an elevated disk. Sepals broad. Petals united to above the middle. Filaments adnate to about the middle of the corolla-tube. Anthers oval or ovoid. Ovary about $\frac{1}{2}$ inferior.

1. **S. chrysophylloides** (A. Rich.) Planch. Small tree or shrub, with pale branches: leaf-blades ovate to oblong-ovate, 2-6 cm. long: corolla about 4 mm. long; lobes ovate, glabrous: drupes ovoid or oval-ovoid, 10-12 mm. long. [*S. Schreberi* Small. Not J. F. Gmel.] — All year.

The WHITEWOOD grows in the coastal hammocks of southern peninsular Florida and the Florida Keys, and in the hammocks of the Everglade Keys. The light-brown or yellowish heart-wood is close-grained, rather heavy, and hard. (W. I.)

2. **XIMENIA** [Plum.] L. Thorny shrubs or trees. Leaf-blades thinnish. Hypanthium without an elevated disk. Sepals minute. Petals nearly distinct. Anthers linear. Ovary nearly superior.

1. **X. americana** L. Small tree or shrub, with dark branches: leaf-blades oblong to elliptic or nearly so, 3-7 cm. long: corolla about 10 mm. long; lobes linear, densely pubescent within: drupes subglobose or broadly oval, 14-17 mm. long. — All year.

The TALLOW-WOOD grows in hammocks of peninsular Florida, and in hammocks and pinelands on the Everglade Keys and the Florida Keys. The yellow or brown heart-wood is close-grained, heavy, and hard. (W. I.)

Order RUBIALES.

Herbs, shrubs, or trees. Leaves opposite, sometimes whorled. Flowers perfect or polygamous, axillary or cymose. Hypanthium perfect. Calyx of 2 or more often small sepals. Corolla of 3 or more partially

Trees of Florida 7.

united petals. Androecium of as many stamens as there are petals or twice as many. Gynoecium 2-several carpellary. Ovary wholly or partially inferior. Fruit a capsule, a berry, or a drupe.

Leaves with stipules adnate to the stem between the leaf-bases.

Fam. 1. RUBIACEAE.

Leaves without stipules, or if present these adnate to the petiole.

Fam. 2. CAPRIFOLIACEAE.

FAMILY 1. RUBIACEAE. Madder Family.

Herbs, shrubs, trees, or vines. Leaves opposite or whorled, with interpetiolar or foliaceous stipules. Flower perfect or polygamous, regular or nearly so. Calyx of 2-6, or more, sepals surmounting the hypanthium, or obsolete. Corolla of 3-6, or more, more or less united petals. Androecium of as many stamens as there are petals and alternate with them. Gynoecium 2-several-carpellary. Fruit a capsule, a drupe, or a berry.

Ovary-cavities several-many-ovuled: seeds several or many.

Fruits dry, capsular.

Seeds wingless: sepals long and narrow, some in the

outer flowers foliaceous: anthers short and thick.

1. PINCKNEYA.

Seeds winged: sepals minute: anthers long and slender.

2. EXOSTEMA.

Fruits pulpy, baccate.

Berry 2-celled: sepals prominent: corolla salverform; lobes large: filaments short or wanting.

3. CASASIA.

Berry 5-celled: sepals minute or obsolete: corolla tubular; lobes minute: filaments long.

4. HAMELIA.

Ovary-cavities 1-ovuled: seeds solitary.

Flowers in dense heads.

5. CEPHALANTHUS.

Flowers in open cymes.

Ovule pendulous: corolla-tube much longer than the lobes: anthers narrow.

6. GUETTARDA.

Ovule not pendulous: corolla-tube as long as the lobes or slightly longer: anthers broad.

7. PSYCHOTRIA.

1. **PINCKNEYA** Michx. Shrubs or trees. Leaves with broad entire blades. Flowers in corymbose cymes. Sepals 5, 1 or 2 of them, at least in the outer flowers, transformed into leaf-like members. Corolla with a stout tube and 5 rather broad lobes. Stamens 5: filaments adnate to the lower part of the corolla-tube, glabrous: anthers oblong, exserted. Capsule as wide as long. Seeds wingless.

1. **P. pubens** Michx. Small tree or shrub, with pubescent foliage: leaf-blades oblong, oval, or ovate, 5-20 cm. long, short-petioled: foliaceous sepals like the leaves in shape, but smaller and pink: unchanged sepals linear to linear-lanceolate, 1-1.5 cm. long: corolla greenish, mottled with brown or purple: tube 1.5-2 cm. long; lobes as long as the tube or shorter: capsule subglobose, nearly 2 cm. in diameter. — Spr. & sum.

The FEVER-TREE grows in sandy swamps and along streams in middle and western Florida. The brown wood is close-grained, light, soft, and weak. (*Cont.*)

2. **EXOSTEMA** L. C. Rich. Shrubs or trees. Leaf-blades leathery. Flowers axillary or in paniculate cymes. Sepals 5, short. Corolla with slender tube and 5 narrow lobes. Stamens 5: filaments adnate to the base of the corolla-tube, pubescent below: anthers narrowly linear, exserted. Capsule elongate. Seeds winged.

1. **E. caribaeum** (Jacq.) R. & S. Small tree or shrub, the foliage glabrous: leaf-blades oblong to elliptic, 2-6 cm. long: sepals 1-2 mm. long: corolla white

or rose-tinged, the tube 3.5-4 cm. long; lobes narrowly linear: capsules elliptic, 10-12 mm. long. — Spr.

The PRINCEWOOD grows in hammocks on the Everglade Keys and the Florida Keys. The brown and yellow-streaked heart-wood is close-grained, very heavy, hard, and strong. (W. I.)

3. **CASASIA** A. Rich. Unarmed shrubs or trees. Leaf-blades leathery. Flowers in axillary cymes. Sepals 5, broad or narrow. Corolla with a stout tube and 5 relatively broad lobes. Stamens 5: filaments adnate to the lower part of the corolla-tube: anthers elongated, linear-sagittate, included. Berry thick. Seeds angled.

1. **C. clusiifolia** (Jacq.) Urban. Small tree or shrub, the bark pale: leaves clustered at the branch-tips; blades cuneate to obovate, 5-15 cm. long: hypanthium turbinate: sepals subulate: corolla white: tube 16-20 mm. long; lobes acuminate, shorter than the tube: berries mainly obovoid, 5-7 cm. long. [*Genipa clusiifolia* Jacq.] — Spr.

The SEVEN-YEAR-APPLE grows on sand-dunes and in coastal hammocks of southern peninsular Florida, and on the Everglade Keys and the Florida Keys. The dark-brown or reddish heart-wood is close-grained, very heavy, and hard. (W. I.)

4. **HAMELIA** Jacq. Unarmed shrubs or trees. Leaf-blades membranous. Flowers in dichotomous cymes. Sepals 5, minute. Corolla with a narrow fluted tube and 5 very short lobes. Stamens 5: filaments adnate to the base of the corolla-tube: anthers linear, included. Berry thick.

1. **H. patens** Jacq. Small tree or shrub: leaf-blades elliptic, oblong or elliptic-ovate, 8-15 cm. long: hypanthium turbinate: sepals about 1 mm. long: corolla crimson, 1.5-2.3 cm. long; lobes 2-3 mm. long: berries oval or ovoid, 5-7 mm. long, black. [*H. erecta* Jacq.?]

The HAMELIA grows in hammocks in the lower two-thirds of peninsular Florida and on the Florida Keys. The wood has not yet been studied. (W. I.)

5. **CEPHALANTHUS** L. Shrubs or trees. Leaf-blades thinnish. Flowers in capitate cymes. Sepals usually 4, rounded. Corolla with a long tube and usually 4 short lobes. Stamens usually 4: filaments adnate to the throat of the corolla: anthers oblong or nearly so. Nut-like fruit obpyramidal.

1. **C. occidentalis** L. Small tree or shrub: leaf-blades oblong, lanceolate, or ovate-lanceolate, 5-20 cm. long, short-petioled: flower-heads globose, 2.5-3.5 cm. thick: sepals about 0.5 mm. long: corolla white, about 10 mm. long; lobes ovate to oblong-ovate: nutlets 7-8 mm. long. — All year.

The BUTTONEUSH grows in swamps and along streams and ponds nearly throughout northern and peninsular Florida. The yellowish or yellow-brown heart-wood is close-grained heavy, and hard. (Cont.)

6. **GUETTARDA** L. Shrubs or trees. Leaf-blades thin or thickish. Flowers in axillary peduncled cymes. Sepals 2-4 or more, short, or obsolete. Corolla with a long tube and 4, or more, shorter lobes. Stamens 4-9: filaments adnate to near the top of the corolla-tube: anthers narrow, but short. Drupe globular. — All year.

Corolla 6-8 mm. long: leaf-blades strigillose or glabrate, not rugose. 1. *G. elliptica*.
Corolla 20-25 mm. long: leaf-blades scabro-pubescent, rugose. 2. *G. scabra*.

1. **G. elliptica** Sw. Small tree or shrub: leaf-blades thin, mainly oblong, oval, or obovate, 2-4 cm. long: corolla-lobes mostly 4: style glabrous: drupes 8-11 mm. in diameter.

The VELVET-SEED grows in hammocks on the Everglade Keys and the Florida Keys, and as a shrub in pinelands on the Everglade Keys. The heart-wood is very close-grained, heavy, and hard. (W. I.)

2. *G. scabra* Vent. Small tree or shrub: leaf-blades thick, mainly oblong, oval, or oblong-ovate, 4.5–8 cm. long, or rarely smaller: corolla-lobes mostly 6 or 7: style pubescent: drupes about 6 mm. in diameter.

The ROUGH VELVET-SEED grows in hammocks in the coastal hammocks of southern peninsular Florida and the hammocks of the Everglade Keys and the Florida Keys, and as a shrub in pinelands on the Everglade Keys. The wood has not yet been studied. (W. I.)

7. **PSYCHOTRIA** L. Shrubs or trees. Leaf-blades thinnish. Flowers in terminal or axillary cymes. Sepals 4–6, short and broad. Corolla with a relatively short tube and 4–6 usually somewhat shorter lobes. Stamens 4–6: filaments adnate to near the top of the corolla-tube: anthers oblong to oval. Drupe thick, often berry-like. — All year.

Cymes sessile: sepals very low.
Cymes peduncled: sepals deltoid.

1. *P. undata*.
2. *P. bahamensis*.

1. *P. undata* Jacq. Small tree or shrub, the twigs glabrous: leaf-blades oval, elliptic, or elliptic-lanceolate, 6–15 cm. long: corolla white; tube 2.5–3 mm. long: anthers oval: drupes 5–6.5 mm. long, red.

The WILD-COFFEE grows in hammocks in the lower two-thirds of peninsular Florida, and on the Everglade Keys and the Florida Keys. The wood has not yet been studied. (W. I.)

2. *P. bahamensis* Millsp. Small tree or shrub, the twigs glabrous: leaf-blades lanceolate, elliptic, or oblanceolate, 3–12 cm. long: corolla white; tube 3–4 mm. long: anthers oblong: drupes oval or globular, 4–5 mm. long, bright-orange.

The BAHAMAN WILD-COFFEE grows in hammocks on the Florida Keys. The wood has not yet been studied. (W. I.)

FAMILY 2. CAPRIFOLIACEAE. HONEYSUCKLE FAMILY.

Shrubs, trees, vines, or perennial herbs. Leaves opposite: blades entire, toothed, or pinnate. Flowers mostly perfect, in terminal or axillary cymes, or axillary. Calyx of mostly 4 or 5 minute or foliaceous sepals. Corolla of 4 or 5 partially united petals, often irregular. Androe-cium of 4 or 5 stamens: filaments partially adnate to the corolla-tube. Gynoeceium 2–5-carpellary. Ovary inferior. Fruit baccate, drupaceous, or capsular.

Leaf-blades pinnate: drupelets with 3–5 nut-like stones.
Leaf-blades entire or toothed: drupelets with a single stone.

1. **SAMBUCUS**.
2. **VIBURNUM**.

1. **SAMBUCUS** [Tourn.] L. Shrubs or trees, with pithy stems. Leaf-blades pinnate. Flowers in thyrsoid or flat-topped cymes. Sepals minute. Anthers oblong or oval. Ovary 3–5-celled. Drupelets with 3–5 stones. — ELDER.

1. *S. intermedia* Carr. Small tree or shrub: leaflets 5–11, the blades oblong to ovate or oval, 3–14 cm. long, serrate with incurved teeth: cymes merely convex: corolla 5–6 mm. wide: drupes nearly black, 4–6 mm. in diameter. — Spr.

The FLORIDA-ELDER grows in low swamps, woods and hammocks nearly throughout the Florida mainland. The brown wood is close-grained but light and soft. (Cont., W. I.)

2. **VIBURNUM** [Tourn.] L. Shrubs or trees, the stems not pithy. Leaf-blades simple. Flowers in round-topped cymes. Sepals minute. Anthers oblong. Ovary 1-celled. Drupelets with a single stone. — Spr. & sum. — ARROW-WOOD.

Filaments as long as the corolla or longer: leaves with manifest distinction between blade and petiole; blades toothed all around. 1. *V. rufidulum*.

Filaments much shorter than the corolla: leaves without distinction between blade and petiole; blades entire or somewhat crenate near the apex.

Drupelets less than 9 mm. long, the stone turgid-suborbicular: leaf-blades narrow. 2. *V. obovatum*.

Drupelets over 9 mm. long, the stone flat, oblong-obovate: leaf-blades broad. 3. *V. Nashii*.

1. *V. rufidulum* Raf. Small tree or shrub: leaf-blades thick, oblong or elliptic, or nearly so, serrate, 4-10 cm. long: corolla 7-10 mm. wide: drupes broadly oblong, 10-14 mm. long, deep-blue under the bloom.

The SOUTHERN BLACK-HAW grows in woods and thickets in northern Florida and the adjacent part of the peninsula. The brown or red-tinged wood is close-grained, heavy, and hard. (*Cont.*)

2. *V. obovatum* Walt. Small tree or shrub: leaf-blades oblanceolate, cuneate, or obovate, 1.5-6 cm. long, entire or slightly toothed near the apex: corolla 5-6 mm. wide: filaments scarcely equalling the corolla-tube: drupes oval, 6-8 mm. long, black.

The SMALL-VIBURNUM grows in river-swamps in northern Florida and in the peninsula as far south as the Everglade region. The brownish wood is close-grained, rather heavy, and hard. (*Cont.*)

3. *V. Nashii* Small. Small tree or shrub: leaf-blades suborbicular or broadly obovate to spatulate, 4-5 cm. long, more or less crenate: drupes oblong, 10-12 mm. long, black.

NASH'S-VIBURNUM grows in river-swamps in western Florida. The wood has not yet been studied. (*Endemic.*)

Order CARDUALES.

Herbs, shrubs, or rarely trees. Leaves mainly alternate: blades entire, toothed, or divided. Flowers perfect, monoecious, or dioecious, few or many aggregated on a receptacle and surrounded with an involucre, or the involucre rarely obsolete. Calyx one or two rows of bristles, scales, a mere border or crown, or obsolete, or wanting. Corolla of several more or less united petals, or wanting. Androeceium of usually 5 stamens, the anthers converging, or united. Gynoeceium mostly of 2 united carpels. Ovary inferior. Styles or stigmas mostly 2. Fruit an achene.

FAMILY 1. CARDUACEAE. THISTLE FAMILY.

Herbs or rarely shrubs or trees. Flowers borne in heads, the marginal ones commonly differing from the central ones in having a 1-sided, more or less elongate corolla limb. Pappus usually present and often conspicuous.

1. *BACCHARIS* L. Shrubs. Leaves alternate: blades leathery, entire or toothed. Heads dioecious, often clustered, discoid. Involucres ovoid to campanulate, many-flowered: bracts of the staminate involucre smaller than those of the pistillate. Corollas various, those of the staminate with a funnellform throat and a long tube, the lobes lanceolate: those of the pistillate flowers filiform. Pappus of the staminate flowers shorter than that of the pistillate.

Heads in peduncled paniced clusters: inner bracts of the pistillate involucre acute. 1. *B. halimifolia*.

Heads in sessile or nearly sessile axillary clusters: inner bracts of the pistillate involucre obtuse. 2. *B. glomeruliflora*.

1. *B. halimifolia* L. Plants 9-40 dm. tall, resinous: leaf-blades suborbicular to oblong or linear-elliptic, some of them, at least, coarsely toothed: pistillate involucre about 6 mm. long; inner bracts linear.

The GROUNDSEL-TREE grows in costal hammocks and on sand-dunes nearly throughout Florida. The wood has not been studied. (*Cont., W. I.*)

2. *B. glomeruliflora* Pers. Plants 8-30 dm. tall, barely resinous: leaf-blades spatulate to cuneate-obovate, 2-5 cm. long, often sharply toothed: pistillate involucre 5-6 mm. long; inner bracts oblong-spatulate.

The CLUSTERED GROUNDSEL-TREE grows in hammocks nearly throughout Florida. The wood has not been studied. (*Cont., W. I.*)

SPECIES PUBLISHED IN THIS FLORA.

Cerothamnus inodorus (Bart.) Small. *Myrica inodora* Bart.

Triadica sebifera (L.) Small. *Croton sebiferum* L.

Library
N. C. State College

INDEX.

- Acer, 65
 ACERACEAE, 65
 AESCULACEAE, 64
 Aesculus, 64
 Agati, 50
 Ailanthus, 55
 Albizzia, 47
 Alder, 15
 Black, 62
 Smooth, 15
 Alligator-apple, 26
 Alligator-pear, 75
 Alnus, 15
 ALTINGIACEAE, 29
 Alvaradoa, 56
 Amelanchier, 30
 American-elm, 22
 American-holly, 63
 AMMALES, 81
 Amphibious-willow, 13
 AMYGDALACEAE, 44
 Amygdalus, 45
 Amyris, 53
 Anamomi, 80
 ANGIOSPERMAE, 5
 Annona, 25
 ANNONACEAE, 25
 APOCYNACEAE, 92
 APPLE FAMILY, 30
 AQUIFOLIACEAE, 62
 Aralia, 83
 ARDISIACEAE, 85
 AREACEAE, 5
 ARECALES, 5
 Arrow-wood, 100
 ARTOCARPACEAE, 20
 ASCLEPIADALES, 92
 Ash, 91
 American, 91
 Prickly, 83
 Pumpkin, 91
 Red, 91
 Swamp, 91
 Wafer, 53
 Water, 91
 White, 91
 Ash-leaved maple, 66
 Asimina, 25
 Australian-corkwood tree, 50
 Australian-pine, 9
 AVICENNIACEAE, 95
 Avocado, 75
 Baccharis, 101
 Bahaman wild-coffee, 100
 Balsam-torchwood, 53
 Balsam-tree, 72
 BALSAM-TREE FAMILY, 72
 Barbados-cedar, 4
 Barbados-flower, 49
 Basswood, 69
 Batodendron, 84
 Bay,
 Loblolly, 75
 Red, 75
 Shore, 75
 Silk, 75
 Swamp, 75
 Swamp red, 75
 Sweet, 27, 75
 Bayberry, 11
 BAYBERRY FAMILY, 11
 Bay-cedar, 55
 BAY-CEDAR FAMILY, 54
 Bay-leaved caper-tree, 28
 Beech, 15
 Beef-wood, 9
 BEEF-WOOD FAMILY, 9
 Bee-tree, 69
 BETULACEAE, 14
 BIGNONIACEAE, 96
 Bilsted, 29
 Birch, 14
 Black, 15
 Cherry, 15
 Red, 14
 River, 14
 West-Indian, 56
 BIRCH FAMILY, 14
 Bitter-bush, 55
 Bitter-nut, 10
 Bitter-pecan, 10
 Bitter-sweet orange, 54
 Bitterwood, 55
 Black-alder, 62
 Black-head, 47
 Black-birch, 15
 Black-calabash, 97
 Black-gum, 82
 Black-jack oak, 19
 Black-mangrove, 95
 BLACK-MANGROVE FAMILY, 95
 Black-mulberry, 20
 Black-olive, 78
 Black-pine, 3
 Black-sloe, 45
 Black-walnut, 10
 Black-willow, 13
 Bolloy, 25
 Blue-jack oak, 19
 Blue-pine, 2
 Box-elder, 66
 Boxwood, 64
 False, 64
 Brittle-thatch, 6
 Broom-hickory, 11
 Bucida, 78
 Buckeye, 64
 Red, 65
 BUCKEYE FAMILY, 64
 Buckthorn, 68, 88
 Tough, 89
 BUCKTHORN FAMILY, 68
 BUCKWHEAT FAMILY, 24
 BUETTNERIACEAE, 71
 Bumelia, 88
 Burning-bush, 63
 BURSERACEAE, 56
 Bustic, 88
 Buttonball, 30
 Buttonbush, 99
 Buttonwood, 30, 78
 White, 79
 Byrsonima, 51
 Cabbage-palm, 6
 Hog, 7
 Saw, 7
 Cabbage-tree, 6
 Calabash-tree, 96
 Calico-bush, 84
 CALTROP FAMILY, 51
 Calyptranthes, 80
 CAMELLIA FAMILY, 73
 Camphor-tree, 75
 Camphora, 74
 Canella, 72
 CANELLACEAE, 72
 CAPER FAMILY, 27
 Caper-tree, 27
 Bay-leaved, 28
 Jamaica, 28
 CAPPARIDACEAE, 27
 Capparis, 27
 CAPRIFOLIACEAE, 100
 CARDUALES, 101
 Carica, 73
 Carolina-holly, 62
 Carolina-maple, 65
 Carpinus, 14
 Cassia, 99
 Cassada, 88
 Cassine, 63
 CASSIACEAE, 48
 Castanea, 15
 Casuarina, 9
 CASUARINACEAE, 9
 CASTRINALES, 9
 Castor-oil plant, 59
 Catalpa, 96
 Cat's-claw, 47
 Cedar, 4
 Barbados, 4
 Red, 4
 Southern red, 4
 Stinking, 4
 White, 4
 Cedar-pine, 3
 CELASTRACEAE, 63
 Celtis, 22
 Cephalanthus, 99
 Cercis, 48
 Cerothamnus, 11
 Chamaecyparis, 4
 Chapman's-oak, 17
 Chapman's water-oak, 18
 CHENOPODIALES, 24
 Cherry, 86
 Indian, 68
 May, 30
 West-Indian, 46
 Wild, 46
 Cherry-birch, 15
 Chestnut, 15
 Horse, 64
 Chestnut-oak, 18
 Chickasaw-plum, 45
 China-berry, 57
 China parasol-tree, 71
 China-tree, 57
 Chinese-rose, 70
 Chinese tallow-tree, 59
 Chinquapin, 16
 Chionanthus, 92
 CHOCOLATE FAMILY, 71
 CHORIPETALAE, 8
 Chrysobalanus, 44
 Chrysophyllum, 87
 Cicca, 58
 Citharexylum, 94

- Citron, 54
 Citrus, 54
 Cliftonia, 61
 Clusia, 72
 CLUSIA CEAE, 72
 Clustered groundsel-tree, 102
 Coccolobis, 24
 Coccolrinax, 6
 Cocconut, 7
 Cocoa-plum, 44
 Small-fruited, 45
 Coco-palm, 7
 Colubrina, 68
 Common-fig, 21
 Cone Plants, 1
 Conocarpus, 78
 Coral-bean, 51
 Corkwood, 11
 CORKWOOD FAMILY, 11
 Cornel, 82
 CORYLACEAE, 13
 Cotton, 71
 Wild, 71
 Cottonwood, 12
 Cow-oak, 17
 Crab-apple, 30
 Crabwood, 58
 Crape-myrtle, 77
 Crataegus, 31
 Crescentia, 96
 Cupania, 67
 Custard-apple, 25
 CUSTARD-APPLE FAMILY, 25
 Cynoxylon, 83
 Cypress, 3, 4
 Bald, 3
 Deciduous, 3
 Pond, 4
 Cyrilla, 61
 CYRILLACEAE, 61

 Dahoon, 63
 Darling-plum, 68
 Date-plum, 86
 Deciduous-holly, 62
 Delonix, 49
 Devil-wood, 92
 Florida, 92
 DICOEYLEDONES, 8
 Diospyros, 86
 Dipholis, 88
 Doctor-gum, 60
 DOGBANE FAMILY, 92
 Dogwood,
 Flowering, 83
 Jamaica, 50
 DOGWOOD FAMILY, 82
 DRACAENACEAE, 8
 Drypetes, 58

 EBENACEAE, 86
 EBENALES, 86
 EBONY FAMILY, 86
 Egg-fruit, 88
 EHRETTIACEAE, 94
 EHRETTIA FAMILY, 94
 Elaphrium, 56
 Elder, 100
 Box, 66
 Florida, 100
 Elm, 22
 American, 22
 Florida, 22
 Red, 22
 Slippery, 22
 Water, 22
 White, 22
 Winged, 22
 ELM FAMILY, 21

 Enallagma, 96
 ERICACEAE, 83
 ERICALES, 83
 Erythrina, 50
 Eugenia, 79
 Euonymus, 63
 EUPHORBIACEAE, 57
 EUPHORBIALES, 57
 Exostema, 98
 Exothea, 67

 Fabaceae, 50
 FAGACEAE, 15
 FAGALES, 13
 Fagus, 15
 False-boxwood, 64
 Farkleberry, 85
 Fat-pork, 72
 Fever-tree, 98
 Ficus, 21
 Fiddlewood, 95
 Fig, 21
 Common, 21
 Golden, 21
 Wild, 21
 FIGWORT FAMILY, 95
 Firmiana, 71
 Flame-tree, 49
 Florida-devilwood, 92
 Florida-elder, 100
 Florida-elm, 22
 Florida-linden, 69
 Florida-mahogany, 75
 Florida-privet, 91
 Florida-sugar-maple, 66
 Florida-thatch-palm, 6
 Florida-trema, 23
 Florida-willow, 13
 Florida-yew, 5
 Flowering-dogwood, 83
 Forestiera, 91
 FRANGULACEAE, 68
 Fraxinus, 90
 Fringe-tree, 92
 Fruit Plants, 5

 GAMOPETALAE, 83
 Geiger-tree, 44
 Georgia-hackberry, 23
 Georgia-pine, 2
 GERANIALES, 51
 Gleditsia, 48
 Glycosmis, 53
 Golden-fig, 21
 Gordonia, 73
 Gossypium, 71
 Grevillea, 74
 Groundsel-tree, 102
 Clustered, 102
 Guaiacum, 51
 Guava, 80
 Guettarda, 99
 Guiana-plum, 58
 Gulf-willow, 13
 Gum,
 Black, 82
 Doctor, 60
 Sour, 82
 Sweet, 29
 Tupelo, 82
 Water, 82
 Gum-elastic, 89
 Gumbo-limbo, 56
 Gyminda, 64
 Gymnanthes, 58
 GYMNOSPERMAE, 1

 Hackberry,
 Georgia, 23

 Hackberry,
 Small's, 23
 Halesia, 90
 HAMAMELIDACEAE, 29
 Hamamelis, 29
 Hamelia, 99
 Haw, 31
 May, 34
 Parsley, 34
 Small-fruited, 34
 HAZEL-NUT FAMILY, 14
 HEATH FAMILY, 83
 HEDERACEAE, 83
 Hercules-club, 53, 83
 Hibiscus, 70
 Hickory, 10
 Broom, 11
 Pale, 10
 Shag-bark, 10
 Swamp, 10
 Water, 10
 White-heart, 10
 Hicoria, 10
 Hippomane, 59
 Holly, 63
 American, 63
 Carolina, 62
 Deciduous, 62
 Krug's, 62
 Myrtle-leaved, 62
 HOLLY FAMILY, 62
 Honey-locust, 49
 HONEYSUCKLE FAMILY, 100
 Hop-hornbeam, 14
 Hop-tree, 53
 Hornbeam, 14
 Hop, 14
 Horsebean, 49
 Horse-chestnut, 64
 Horseradish-tree, 28
 HORSERADISH-TREE FAMILY, 28
 Horse-sugar, 89
 HUCKLEBERRY FAMILY, 84
 Hypelate, 67
 HYPERICALES, 71

 Icacorea, 86
 Ichthyomethia, 50
 Ilex, 62
 Indian-almond, 78
 Indian-bean, 96
 Indian-cherry, 68
 Inkwood, 67
 Ironwood, 67, 80
 Red, 68
 IVY FAMILY, 83

 Jacquinia, 85
 Jamaica caper-tree, 28
 Jamaica-dogwood, 50
 Joe-wood, 85
 JOE-WOOD FAMILY, 85
 Judas-tree, 48
 JUGLANDACEAE
 JUGLANDALES, 9
 Juglans, 9
 Julibrissin, 47
 June-berry, 31
 JUNIPERACEAE, 3
 JUNIPER FAMILY, 3

 Kalmia, 84
 Karri, 95
 Key-thatch, 6
 Krugiodendron, 68
 Krug's-holly, 62

 Lagerstroemia, 77
 Laguncularia, 78

- Lancewood, 76
 Large-leaves cucumber-tree, 27
 LAURACEAE, 74
 Laurel, 8
 Mountain, 84
 LAUREL FAMILY, 74
 Laurel-oak, 18
 Laurocerasus, 46
 Lead-tree, 48
 Leatherwood, 61
 LEITNERIACEAE, 11
 LEITNERIALES, 11
 Lemon, 54
 Leopard-oak, 19
 Leucaena, 48
 Lignum-vitae, 51
 LILIALES, 8
 Lime, 54
 Wild, 52
 Ogeechee, 82
 Lime-tree, 69
 Linden, 69
 Florida, 69
 Rusty, 70
 Linden Family, 69
 Linn, 69
 Liquidambar, 29
 Live-oak, 18
 Loblolly-bay, 73
 Loblolly-pine, 2
 Locust,
 Honey, 49
 Water, 49
 Locust-berry, 52
 Long-leaf pine, 2
 LOOSESTRIPE FAMILY, 77
 Lucuma, 88
 Lysiloma, 47
 LYTHRACEAE, 77

 MADDER FAMILY, 98
 Madeira-redwood, 57
 Magnolia, 26
 MAGNOLIACEAE, 26
 Magnolia Family, 26
 Mahoe, 70
 Seaside, 71
 Mahogany, 57
 Florida, 75
 MAHOGANY FAMILY, 56
 MALACEAE, 30
 MALLOW FAMILY, 70
 MALPIGHIACEAE, 51
 MALPIGHIA FAMILY, 51
 Malus, 30
 MALVACEAE, 70
 MALVALES, 69
 Manatee wild china-tree, 67
 Manchineel, 59
 Mangifera, 60
 Mango, 60
 Mangrove, 81
 Black, 95
 White, 79
 MANGROVE FAMILY, 81
 Maple, 65
 Ash-leaved, 66
 Carolina, 65
 Florida sugar, 66
 Red, 65
 Silver, 65
 MAPLE FAMILY, 65
 Marberry, 86
 Marsh-pine, 3
 Mastic, 88
 May-cherry, 30
 May-haw, 34
 Maytenus, 64
 MEADOW-BEAUTY FAMILY, 77

 Melastomaceae, 77
 Melia, 56
 MELIACEAE, 56
 Metopium, 60
 Milk-tree, 59
 MIMOSACEAE, 46
 MIMOSA FAMILY, 46
 Mimusops, 89
 Misanteca, 76
 Mockers-nuts, 10
 Mock-orange, 46
 Monkey-apple, 72
 MONOCOTYLEDONES, 5
 Moringa, 28
 MORINGACEAE, 28
 Morus, 20
 Mountain-laurel, 84
 Mulberry, 20
 Black, 20
 Paper, 21
 Red, 21
 White, 20
 Mulberry Family, 20
 MYRICACEAE, 11
 MYRICALES, 11
 Myrsine, 86
 MYRSINE FAMILY, 85
 MYRTACEAE, 79
 MYRTALES, 76
 Myrtle,
 Crape, 77
 Wax, 12
 MYRTLE FAMILY, 79
 Myrtle-leaved holly, 63
 Myrtle-of-the-river, 81

 Nakedwood, 69
 Nash's-viburnum, 101
 Necklace-poplar, 12
 Negundo, 66
 Nerium, 93
 Nyssa, 82
 NYSSACEAE, 82

 Oak, 16
 Black-jack, 19
 Blue-jack, 19
 Chapman's, 17
 Chapman's water, 18
 Chestnut, 18
 Cow, 17
 Laurel, 18
 Leopard, 19
 Live, 18
 Overcup, 17
 Post, 17
 Red, 19
 Rolf's, 18
 Scrub, 18
 Silk, 74
 Small post, 17
 Spanish, 19
 Swamp Spanish, 19
 Swamp-white, 17
 Turkey, 20
 Twin-live, 18
 Water, 19
 White, 17
 Willow, 18
 Yellow, 18
 OAK FAMILY, 15
 Ocotea, 76
 Odorless wax-myrtle, 12
 Ogeechee-lime, 82
 OLACACEAE, 97
 OLEACEAE, 90
 OLEALES, 90
 Oleander, 93
 Old-field pine, 2

 Old-man's beard, 92
 Olive
 Black, 78
 Wild, 88
 OLIVE FAMILY, 90
 Orange,
 Bitter-sweet, 54
 Mock, 46
 Sweet, 54
 Osmanthus, 92
 Ostrya, 14
 Otaheite-gooseberry, 58
 Overcup-oak, 17
 Oxydendron, 84

 Padus, 46
 Pale-hickory, 10
 Palmetto, 6
 Cabbage, 6
 Saw, 6
 PALM FAMILY, 5
 PAPAVERALES, 27
 Papaw, 25, 73
 PAPAW FAMILY, 73
 PAPAYACEAE, 73
 Paper-mulberry, 21
 Papyrus, 21
 Paradise-tree, 55
 Paritium, 70
 Parkinsonia, 49
 Parsley-haw, 34
 PASSIFLORALES, 73
 Paulownia, 95
 Paurotis, 7
 Peach, 45
 PEA FAMILY, 50
 Pear, 30
 Alligator, 75
 Persea, 75
 Persimmon, 86
 Piermania, 55
 Pigeon-plum, 24
 Pig-nut, 11
 PINACEAE, 1
 PINALES, 1
 Pinckneya, 98
 Pine, 1
 Australian, 9
 Black, 3
 Blue, 3
 Cedar, 3
 Georgia, 2
 Loblolly, 2
 Long-leaf, 2
 Marsh, 3
 Old-field, 2
 Pitch, 2
 Pond, 3
 Sand, 3
 Short-leaf, 3
 Slash, 2
 Southern, 2
 Spruce, 3
 Swamp, 2
 White, 3
 Yellow, 3
 PINE FAMILY, 1
 Pinus, 1
 Pisonia, 24, 25
 PISONIACEAE, 24
 PISONIA FAMILY, 24
 Pitch-pine, 2
 Pithecolobium, 46
 Planera, 22
 PLATANACEAE, 29
 Platanus, 30
 Plum, 45
 Chickasaw, 45
 Darling, 68

- Plum, 45
 Date, 86
 Pigeon, 24
 Saffron, 88
 Wild, 45
 PLUN FAMILY, 44
 Poinciana, 49
 Royal, 49
 Poison-sumac, 61
 Poisonwood, 60
 POLEMONIALES, 93
 POLYGONACEAE, 24
 POLYGONALES, 23
 Pomegranate, 78
 POMEGRANATE FAMILY, 77
 Pond-apple, 26
 Pond-pine, 3
 Poplar, 12
 Necklace, 12
 Populus, 12
 Post-oak, 17
 POTATO FAMILY, 93
 Potato-tree, 93
 Prickly-ash, 53, 83
 PRIMULALES, 85
 Princewood, 99
 PROTEACEAE, 74
 PROTEA FAMILY, 74
 PROTEALES, 73
 Prunus, 45
 Pseudophoenix, 7
 Psidium, 80
 Psychotria, 100
 Ptelea, 53
 Pumpkin-ash, 91
 Punica, 77
 PUNICACEAE, 77
 Pyrus, 30

 QUASSIA FAMILY, 55
 Quercus, 16

 RANALES, 25
 RAPANEA, 85
 Red-ash, 91
 Red-bay, 75
 Red-birch, 14
 Red-buckeye, 65
 Red-bud, 48
 Red-cedar, 4
 Red-elm, 22
 Red-ironwood, 68
 Red-maple, 65
 Red-mulberry, 21
 Red-oak, 19
 Red-stopper, 79
 Reynosia, 68
 Rhacoma, 64
 RHAMNALES, 67
 Rhamnidium, 68
 Rhamnus, 68
 RHINANTHACEAE, 95
 Rhizophora, 81
 RHIZOPHORACEAE, 81
 Rhus, 61
 Ricinus, 59
 River-birch, 14
 Rolf's-oak, 18
 ROSALES, 28
 Rose-of-Sharon, 70
 Rough-strongback, 94
 Rough velvet-seed, 100
 Royal-palm, 7
 Royal-poinciana, 49
 Roystonea, 7
 RUBIACEAE, 98
 RUBIALES, 97
 RUE FAMILY, 52
 Rusty-linden, 69

 RUTACEAE, 52

 Sabal, 6
 Sabina, 4
 Saffron-plum, 88
 SALICACEAE, 12
 SALICALES, 12
 Salix, 12
 Sambucus, 100
 Sand-pine, 3
 SANTALALES, 97
 SAPINDACEAE, 66
 SAPINDALES, 59
 Sapindus, 66
 Sapium, 59
 Sapodilla, 87
 SAPODILLA FAMILY, 87
 Sapota, 87
 Sapotaceae, 87
 Sargent's-palm, 7
 Sassafras, 76
 Satinleaf, 87
 Satinwood, 52
 Savia, 57
 Savin, 4
 Schaefferia, 64
 Schoepfia, 97
 Scrub-oak, 18
 Sea-grape, 24
 Seaside-mahoe, 71
 Sebesten, 94
 SEED PLANTS, 1
 SENNA FAMILY, 48
 Serenoa, 6
 Service-berry, 30
 Seven-year-apple, 99
 Shad-bush, 31
 Shag-bark hickory, 10
 Shell-bark, 10
 Shoe-black plant, 70
 Shore-bay, 75
 Short-leaf pine, 3
 Shrubby-althaea, 70
 Sideroxylon, 87
 Silk-bay, 75
 Silk-oak, 74
 Silverbell-tree, 90
 Silver-maple, 65
 Silver-palm, 6
 Silver thatch-palm, 6
 Simarouba, 55
 SIMAROUBACEAE, 55
 Slash-pine, 2
 Slippery-elm, 22
 Small-fruited cocoa-plum, 46
 Small-fruited haw, 34
 Small post-oak, 17
 Small-viburnum, 101
 Small's-hackberry, 23
 Smooth-alder, 15
 Snowdrop-tree, 90
 Soapberry, 66
 SOAPBERRY FAMILY, 66
 SOLANACEAE, 93
 Solanum, 93
 Sorrel-tree, 84
 Sour-gum, 82
 Sour-wood, 84
 Southern black-haw, 101
 Southern cucumber-tree, 27
 Southern-pine, 2
 Southern red-cedar, 4
 Southern-sumac, 61
 Spanish-bayonet, 8
 Spanish-dagger, 8
 Spanish-oak, 19
 Spanish-stopper, 79
 Sparkleberry, 85
 SPERMATOPHYTA, 1

 Spicewood, 81
 SPONDIACEAE, 60
 Spruce-pine, 3
 SPURGE FAMILY, 57
 STAFF-TREE FAMILY, 63
 Stinking-cedar, 4
 Stopper, 79
 Bahaman, 80
 Long-stalked, 80
 Naked, 80
 Red, 79
 Spanish, 79
 White, 79
 STORAX FAMILY, 89
 Strawberry-bush, 63
 Strongback, 94
 Rough, 94
 STYRACACEAE, 89
 Sugar-apple, 26
 Sugar-berry, 23
 Sumac, 61
 Poison, 61
 Southern, 61
 SUMAC FAMILY, 60
 Suriana, 55
 SURIANACEAE, 54
 Svida, 82
 Swamp-ash, 91
 Swamp-bay, 27, 75
 Swamp-hickory, 10
 Swamp-pine, 2
 Swamp red-bay, 75
 Swamp Spanish-oak, 19
 Swamp white-oak, 17
 Sweet-bay, 27, 75
 Sweet-gum, 29
 SWEET-GUM FAMILY, 29
 Sweet-leaf, 89
 SWEET-LEAF FAMILY, 89
 Sweet-orange, 54
 Swietenia, 57
 Sycamore, 30
 SYMPOCOACEAE, 89
 Symplocos, 89

 Talisia, 67
 Tallow-wood, 97
 Tamala, 75
 TAMARICACEAE, 72
 Tamarind, 50
 Wild, 47
 Tamarindus, 49
 Tamarisk, 73
 TAMARISK FAMILY, 72
 Tamarix, 72
 TAXACEAE, 4
 Taxodium, 3
 Taxus, 5
 Terminalia, 78
 TERMINALIAACEAE, 78
 Tetragyia, 77
 Thatch, 6
 Brittle, 6
 Key, 6
 Thatch-palm, 5
 Florida, 6
 Silver, 6
 THEACEAE, 73
 Thespesia, 70
 THEOPHRASTACEAE, 85
 THISTLE FAMILY, 101
 Thrinax, 5
 Thunderwood, 61
 THYMELAEALS, 74
 Tilia, 69
 TILIACEAE, 69
 TITI FAMILY, 61
 Toothache-tree, 53
 Torchwood, 53

- Torchwood,
 Balsam, 53
 TORCHWOOD FAMILY, 56
 Torreya, 4
 Torruba, 25
 Tough-buckthorn, 89
 Toxicodendron, 60
 Tree-of-heaven, 55
 Trema, 23
 Florida, 23
 West Indian, 23
 Triadica, 59
 TRUMPET-CREEPER FAMILY, 96
 Tulip-tree, 27
 Tumion, 4
 Tupelo-gum, 82
 Turkey-oak, 20
 Twin live-oak, 18
 ULMACEAE, 21
 Ulmus, 22
 URTICALES, 20

 VACCINIACEAE, 84
 Vachellia, 47
 Velvet-seed, 99
 Rough, 100
 VERBENACEAE, 94
 VERVAIN FAMILY, 94
 Viburnum, 100

 Wafer-ash, 53
 Wahoo, 22
 Walnut, 9
 Black, 10

 Ward's-willow, 13
 Water-ash, 91
 Water bitter-nut, 10
 Water-elm, 22
 Water-gum, 82
 Water-hickory, 10
 Water-locust, 49
 Water-oak, 19
 Wax-myrtle, 12
 Odorless, 12
 West-Indian birch, 56
 West-Indian cherry, 46
 West-Indian trema, 23
 White-ash, 91
 White-buttonwood, 79
 White-cedar, 4
 White-elm, 22
 White-heart hickory, 10
 White-ironwood, 67
 White-mangrove, 79
 WHITE-MANGROVE FAMILY, 78
 White-mulberry, 20
 White-oak, 17
 White-pine, 3
 White-stopper, 79
 Whitewood, 58, 97
 Wild black-cherry, 46
 Wild-cherry, 46
 Wild china-tree, 66
 Manatee, 67
 Wild-cinnamon, 72
 WILD-CINNAMON FAMILY, 72
 Wild-coffee, 69, 100
 Bahaman, 100
 Wild-cotton, 71

 Wild-dilly, 89
 Wild-fig, 21
 Wild-lime, 52
 Wild-olive, 88
 Wild-plum, 45
 Wild-tamarind, 47
 Willow, 12
 Amphibious, 13
 Black, 13
 Florida, 13
 Gulf, 13
 Ward's, 13
 WILLOW FAMILY, 12
 Willow-oak, 18
 Winged-elm, 22
 Witch-hazel, 29
 WITCH-HAZEL FAMILY, 29
 Woman's-tongue tree, 47

 Ximenia, 97
 XIMENIA FAMILY, 97
 Xolisma, 84

 Yaupon, 63
 Yellow-oak, 18
 Yellow-opopanax, 48
 Yellow-pine, 2, 3
 Yellow-wood, 52, 64
 YEW FAMILY, 4
 Yucca, 8
 Yucca Family, 8

 Zanthoxylum, 52
 ZYGOPHYLLACEAE, 51

ANNOUNCEMENT

DESCRIPTIVE FLORAS

BY JOHN KUNKEL SMALL, PH.D., SC.D.

Flora of the Southeastern United States. First Edition. . . \$5.00
Prepaid Expressage (Special rate) 52 cents extra

Contains descriptions of the seed-plants, ferns and fern-allies growing naturally in North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, and the Indian Territory, and in Oklahoma and Texas east of the one-hundredth meridian. With analytical keys to the species and higher plant-groups, habitats, and general geographical distribution.

Flora of the Southeastern United States. Second Edition,
revised and enlarged. \$4.00
Prepaid Expressage (Special rate) 52 cents extra

Flora of Miami \$2.15

Contains descriptions of the seed-plants growing naturally in the Everglades, southern peninsular Florida, with analytical keys to the species and higher plant-groups. Habitats and extra-limital geographical distribution for the Florida Keys and West Indies are given.

Flora of Lancaster County \$2.25

Contains descriptions of the seed-plants growing naturally in Lancaster County, Pennsylvania. A field-book with analytical keys to the species and higher plant-groups, habitats, and geographical and geological distribution of species. (In collaboration with J. J. CARTER.)

Florida Trees \$1.10

A hand book of the native and naturalized trees of Florida, with analytical keys to the species and higher plant-groups, notes on the habitats, and geographical distribution within the state, and reference to the continental and West Indian distribution of the species.

Flora of the Florida Keys \$2.15

Contains descriptions of the seed-plants growing naturally on the islands of the Florida reef, from Virginia Key to Tortugas, with analytical keys to the species and higher plant-groups, habitats of the species, and geographical distribution, and reference to the occurrence of the species on the Everglade Keys and in the West Indies.

Shrubs of Florida \$1.10

A hand-book containing descriptions of the native and naturalized shrubs of Florida, with analytical keys to the species and higher plant-groups, also habitats and geographical distribution of the species within the state, and reference to the occurrence of the species on continental North America and in the West Indies.

**A Monograph of the North American Species of the
Genus Polygonum** \$6.00

Contains descriptions of the species of the genus Polygonum growing naturally in North America, with analytical keys. Quarto, with 178 pages, and 84 full page plates, 69 plates illustrating the species, and 15 plates illustrating the comparative anatomy of the stem.

Remit by P. O. or Express Money Order, or Draft on N. Y.

Subscriptions may be sent to

JOHN K. SMALL

Perry Avenue and 207th Street
Bedford Park, New York City