CONCORD AREA TREES AND SHRUBS

RAY ANGELO



CONCORD FIELD STATION
MUSEUM OF COMPARATIVE ZOOLOGY
HARVARD UNIVERSITY

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"These were the shrines I visited both summer and winter."
- Thoreau

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The Standard Cyclopedia of American Horticulture by Liberty H. Bailey
Blackberries of New England by E. Brainerd & A. Peitersen
An Illustrated Flora of the Northern U.S. and Canada by Nathaniel Britton & Addison Brown
Handbook of the Trees of New England by Lorin Dame & Henry Brooks
Trees and Shrubs of Massachusetts by George Emerson
Vermont Shrubs and Woody Vines by L.R. Jones and F.V. Rand
Field Book of American Trees and Shrubs by F. Schuyler Mathews
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Illustrations of opposite simple leaves (p.5), alternate compound leaves (p.5), Hobblebush (p.44), Nannyberry (p.44), Witherod (p.44), Viburnum (p.44), Smooth Sumac (p.54), European & Japanese Barberry (p.63), Blueberry (p.70), Mountain-holly (p.71), Elaeagnus (p.72), Trumpet Creeper (p.88), and Bittersweet (p.92) have been adapted from *Flora of West Virginia* 2nd Ed. by P.D. Strausbaugh and Earl L. Core (West Virginia University; Morgantown, W.Va., 1970-7). Most of the illustrations from this work were drawn by William A. Lunk.

Numerous other illustrations have been adapted from a variety of sources dating from the turn of the century.

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PREFACE

This is an informal but comprehensive guide to all distinctly woody plants growing wild in Concord, Massachusetts and neighboring townships. It is intended to serve students at Harvard's Concord Field Station, budding naturalists and interested Concord area residents.

The more than 240 species covered in this guide include nearly all the tree, shrub, and woody vine species of eastern Massachusetts that are likely to be encountered growing wild. The additional 50 or so species that would be required to be added to be absolutely complete for eastern Massachusetts are almost all rare or uncommon species that the average user is unlikely ever to encounter. The primary exceptions are INKBERRY (*Ilex glabra*), RUGOSA ROSE (*Rosa rugosa*), BEACH HEATHER (*Hudsonia spp.*), and GROUNDSEL-BUSH (*Baccharis halimifolia*), all of which are coastal shrub species. This guide should also be useful for New England as a whole since the majority of the woody species that are likely to be encountered anywhere in New England also occur in the Concord area.

A number of prostrate or semi-woody species (listed on p.107) have been excluded since most people will not recognize them as woody plants. An exception has been made for dwarf shrubs found in bogs which, therefore, are of special interest. These have been treated in a special section on p.102.

Introduced species (commonly planted in yards) that do not spread to the wild are excluded. Richard Eaton's *A Flora of Concord* (published by Harvard's Museum of Comparative Zoology, the parent institution of the Concord Field Station) has served as a starting point in deciding which species to include. My personal field experience in the Concord area over the past sixteen years and familiarity with the herbarium records upon which Mr. Eaton's work was based has resulted in some corrections to his data that are reflected in this guide.

The present work is essentially a reprinting and combination of my *Concord Area Trees* (1976) and *Concord Area Shrubs* (1978). The former has been out of print for about ten years, and our supply of the latter has just been exhausted. I have made many revisions to the text for the tree species and some revisions to the text for the shrub species. The separation of trees from shrubs, I believe, is a useful one for the amateur. Therefore, each group is treated separately, yielding some duplication.

It has been my experience that the great majority of users (casual botanists, if you will) have little patience with keys to plant species which professional botanists construct and use. Most people prefer to thumb through the illustrations to find a match. The organization of this handbook continues to favor this approach. In this spirit I have omitted the shrub flower key of *Concord Area Shrubs* and placed most of the flower illustrations at the text entries for the species.

A feature that has been added to this guide is the provision of family names in the index. Those who are interested in such plant relationships will be able to determine the family identity of any species treated in this book by using the index.

HOW TO USE THIS GUIDE

STEP A: Determine the plant type and turn to the appropriate section:
TREES - p.10, SHRUBS - p.35, VINES - p.88
Special sections are provided for Blackberries, Raspberries & Dewberries (p.96); Small Bog Species (p.102), and Crabapples & Apples (p.103).

STEP B: Determine the type (needle-like, compound, simple) and arrangement (opposite or alternate) of the leaves. See GLOSSARY (p.108) for definitions.

STEP C: Based upon leaf type and arrangement classify into one of the following categories and locate the category section for the plant type using the bold headings at the top corner of the pages:



NEEDLE-LIKE LEAVES



OPPOSITE COMPOUND LEAVES



OPPOSITE SIMPLE LEAVES



ALTERNATE COMPOUND LEAVES



ALTERNATE SIMPLE LEAVES

STEP D: Thumb through the category section to find the best leaf shape match. Use the subsection headings and species descriptions to rule out alternatives.

IDENTIFICATION NOTES

For the beginner some good advice is to learn the trees first. Start with plants that are clearly trees (taller than two meters and with a single, well-defined trunk). To the botanist the distinction between a tree and a shrub is of relatively minor importance. To the non-botanist the distinction is useful since the number of species that are trees is significantly smaller than the number of shrub species. Also, the distinctions between tree types (genera) are usually more noticeable than between shrub types (genera). Consequently it is easier to master the trees first. By doing so, the process of learning shrubs will be less confusing since tree seedlings and stump growth of trees frequently masquerade as shrubs.

Whereas the tree fruit is usually characteristic of the type (genus) to which the tree belongs, the fruit of shrubs is often not distinctive. Many different types of shrubs have similar berry-like or capsule-like fruit. Together with the fruit type the arrangement of shrub fruit is often significant in distinguishing shrub types (genera) and species.

For both trees and shrubs determination of leaf type and arrangement is usually the easiest and surest first step in identification. In determining leaf arrangement (opposite vs. alternate) strong-growing twigs (sprout growth) should be sought and spur branches (where leaves are crowded, as in birches and apple trees) should be avoided.

Perhaps one of the most difficult skills for the beginner to learn is what differences in leaf shape and texture are significant and what differences are part of the natural variation of the species. One can see some of this variation on a single plant. Before selecting a leaf to use for identification purposes look the plant over to find a typical leaf. In determining the character (shape, texture, size, etc.) of the leaf it is best to use leaves of branchlets where fruit or flowers also occur rather than leaves of sprout growth (or other sterile growth). Leaves of sterile shoots are more likely to be atypical in shape, size and other characters, sometimes markedly so. Leaf vein patterns, which are frequently significant, are clearest on the underside of the leaf.

The best strategy in the identification process is to rule out alternatives. If all alternatives are eliminated, the plant might be out of its known range or, more likely, it is an ornamental species. The latter can usually be diagnosed by the absence of seedlings of the plant in the vicinity. One or more of the books listed in the bibliography should be consulted for problem specimens.

This guide is best used in summer and autumn when leaves and flowers or fruit are present. A hand lens is not essential but is helpful sometimes to see hair, glands and resin dots.

Note: The metric system is used throughout. One meter (100 cm.) is a few inches more than a yard. A scale with divisions as fine as tenths of a centimeter (cm.) is provided on the inside back cover of this guide. These smallest divisions are millimeters (mm.).

LEAF PRINT NOTES

The method and equipment used to produce the leaf prints in this book were in essence very simple.

Basic equipment: Glass plate, soft rubber brayer, roller (or second soft rubber brayer, the longer the better), tweezers, oil-based block printing ink.

Basic method:

1. Using the brayer, spread a dab of ink thinly onto the glass plate over an area larger than the leaf to be printed.
2. Place the leaf (underside up) in the middle of the inked area of the glass plate. Using the brayer, roll the ink onto the exposed underside as evenly as possible.
3. Remove the leaf from the inking area with the tweezers and place the leaf carefully (underside up) inside a piece of paper folded once.
4. Roll the roller once over the sandwich (roller at an angle of about 45° to the fold) on a clean part of the glass plate (or on a second glass plate). Roll from the tip of the leaf toward the stalk.
5. Remove the leaf from the paper with the tweezers. Prints will have been made of the top and underside of the leaf. Usually the underside produces the more detailed print though not infrequently the top side gives a more "artistic" print.

Notes on the method:

To continue producing good top-side prints the inking area should be rolled even using the brayer after each print. Fresh leaves give the best prints. Leaves may be kept suitably fresh for several days or longer by enclosing two or more leaves (without any folding) in a plastic sandwich bag and keeping them pressed flat inside a piece of folded cardboard. A given leaf may consistently yield mishappen prints no matter how the ink is spread. Therefore, it is best to have several alternate leaves at hand. Species with prominent veins beneath generally give the best results most easily. A leaf usually may be reprinted (or attempted) several times in succession (re-inking the leaf each time) before the print quality begins to suffer noticeably. For compound leaves, where stickiness between brayer and individual leaflets is often a problem, diluting the ink somewhat with a few drops of thinner may help.

Notes on equipment:

The piece of equipment most difficult to obtain is the roller. As indicated above, a second brayer can be used. The roller used to make the prints in this book was a gelatin roller 10" long and 1⅜" thick taken from an old hand-operated printing press. Softness and smoothness are desirable qualities for the roller to be able to pick up details of leaf texture. The book *Nature Printing* cited among the references below describes how prints can be made using one's fingers in lieu of a roller. This requires some patience to develop the necessary skill.

The glass plate should be as flat and smooth as possible. The piece used in making the leaf prints for this book was thick and large enough not to require being clamped and provided ample working space.

The rubber brayer was 4" long. A soft rubber brayer is to be preferred in order to spread the ink more thoroughly into the texture of the leaf. The brayer can usually be obtained at an art supply shop.

Oil-based block printing ink (obtainable also at an art supply shop) was used. No more than one half of a modest-sized tube of ink was used to produce all the prints appearing in this book, including multitudinous misprints.

Rather ordinary paper will give good results (e.g., photocopy machine paper). To pick up detail, the grain of the paper simply must be fine. Glossy magazine paper is recommended by one reference.

References:

The method described above is derived primarily from the first reference listed below.

"Making Prints from Leaves" by David Marx in *School Arts*, September 1954.

A Modern American Herbal by David Marx & Chester B. Dugdale (1973); also printed in paperback under the title *Leaf Prints of American Trees and Shrubs* (1974).

Nature Printing by Robert W. Little (1977).

The Leaf Book by Ida Geary (1972); a book about Northern California plants.

TREES
NEEDLE-LIKE OR SCALE-LIKE LEAVES

EASTERN HEMLOCK *Tsuga canadensis*
Flat needles 8-15 mm. long, whitened beneath, round-tipped, attached singly to twigs. Cones 1.5-2.5 cm. long. Moist woods, cool wooded slopes. Common.


HEMLOCK

PINES: NEEDLES IN CLUSTERS OF 2-5

WHITE PINE *Pinus strobus*
Our only tree with 5 needles per cluster. Chiefly dry woods and old fields but tolerates wet ground. Abundant.


WHITE PINE


PINE

PITCH PINE *Pinus rigida*
Our only tree with 3 needles per cluster. Dry gravel, sandy, often barren soil. Common.


PITCH PINE

RED PINE *Pinus resinosa*
Needles 2 per cluster, 7-17 cm. long. Upper trunk not bright orange. Cones about five cm. long. Dry woods. Uncommon except near where planted.


RED PINE

SCOTCH PINE *Pinus sylvestris*
Needles 2 per cluster, 3-7 cm. long. Upper trunk and branches bright orange. Roadsides, fallow fields, dry open woods. Frequent escape from cultivation.

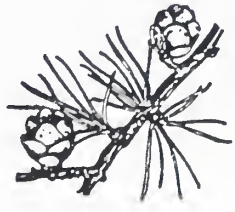

SCOTCH PINE

LARCHES: NEEDLES NUMEROUS ON A WARTY SPUR, ALL DROPPING IN AUTUMN

EUROPEAN LARCH *Larix decidua*
Cones with 30-50 scales. Needles 2.5-3 cm. long. Branchlets sometimes hanging down like tassels. Occasionally escapes cultivation.


EUROPEAN LARCH

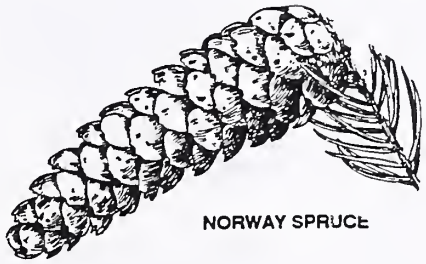
AMERICAN LARCH *Larix laricina*
Cones with fewer than 25 scales. Needles 1-2.5 cm. long. Branchlets never tassel-like Bogs and swamps. Uncommon.


AMERICAN LARCH

TREES
NEEDLE-LIKE OR SCALE-LIKE LEAVES

SPRUCES: NEEDLES ATTACHED SINGLY, USUALLY STIFF, 4-SIDED AND POINTED

NORWAY SPRUCE *Picea abies*
Large cones 10-15 cm. long. Needles dark green. Twigs hairless, or slightly hairy (use hand lens). Branchlets of mature trees sometimes hanging down like tassels. Much planted; occasionally escapes in woods.


NORWAY SPRUCE

BLACK SPRUCE *Picea mariana*
In our area a small tree. Cones 2-3 cm. long, dull grayish brown, remaining on the tree many years. Cone scales with slightly ragged edge. Needles usually bluish green, often somewhat whitened. Twigs hairy. Lengthwise ridges of twigs flattened (use hand lens). Branchlets never tassel-like. Bogs and swamps (and edges of these). Uncommon.



RED SPRUCE *Picea rubens*
Cones 3-4 cm. long, clear or reddish brown, not persistent on the tree. Cone scales with smooth edge. Needles dark or yellowish green. Twigs hairy. Lengthwise ridges of twigs rounded as if inflated (use hand lens). Branchlets never tassel-like. In northern New England an upland tree. In our area presently known from a single swamp. Rare.

BLACK & RED SPRUCE

WHITE SPRUCE *Picea glauca*
Cylindrical cones 3-6 cm. long. Cone scales with smooth edge. Needles bluish-green, usually somewhat whitened. Twigs hairless (use hand lens). A few seedlings have spread from a planted stand around Pickman Pond in Bedford.


WHITE SPRUCE

CEDARS: Scale-like leaves

RED CEDAR *Juniperus virginiana*
Foliage sprays not flattened. Needle-like leaves occasionally present on young trees and vigorous shoots of older trees. Fruit berry-like. Pastures, fields, recent woodland. Common.

ATLANTIC WHITE CEDAR *Chamaecyparis thyoides*
Foliage sprays mildly flattened. No needle-like leaves. Twigs (including foliage) less than 2 mm. wide. Cones small, globular. Wet woods, swamps, bogs. Uncommon.

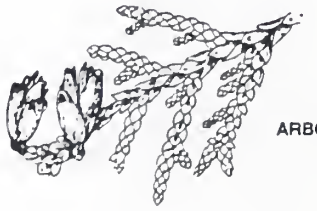
ARBOR VITAE *Thuja occidentalis*
Flat, fan-like foliage sprays. No needle-like leaves. Twigs (including foliage) 2 mm. or more in width. Cones small, more or less bell-shaped. Much planted but escapes only rarely.



RED CEDAR



ATLANTIC WHITE CEDAR



ARBOR VITAE

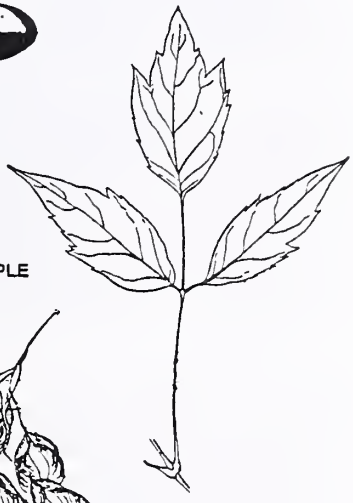
TREES
OPPOSITE COMPOUND LEAVES

HORSECHESTNUT *Aesculus hippocastanum*
Our only tree with leaflets arranged like the spokes of a wheel. Nuts are somewhat poisonous raw. Frequently planted but escapes are rare.



HORSECHESTNUT

ASHLEAF MAPLE *Acer negundo*
Leaflets mostly 3 or 5, toothed or untoothed. End leaflet often somewhat lobed. Small tree with trunk soon dividing into several parts. Fruits are typical maple keys. Roadsides, waste land. Uncommon escape.



ASHLEAF MAPLE

WHITE ASH *Fraxinus americana*
Leaflets 5-9, whitish beneath, toothed or not, on distinct stalklets that are 3-15 mm. long. Twigs hairless. Fruit body (not wing) 2.5-3.5 mm. wide. Rich woods, roadsides. Common.



WHITE ASH

RED ASH *Fraxinus pennsylvanica*
Leaflets 5-9, usually slightly toothed or wavy-edged, on short stalklets 3-6 mm. long. Twigs velvety-hairy. Fruit body (not wing) narrow (1-2.5 mm. wide) and often long. Low woods, streambanks. Uncommon.



RED & GREEN ASH

GREEN ASH
A variety of *F. pennsylvanica* with hairless twigs. Leaflets green (not whitened) beneath. Fruit and habitat as in Red Ash. Uncommon.



ASH

BLACK ASH *Fraxinus nigra*
Leaflets 7-11, toothed, side ones stalkless, with small tufts of rusty hair where they are attached. Fruits squarish-tipped. Twigs hairless. Swamps, streambanks, shores. Uncommon.



BLACK ASH

TREES
ALTERNATE COMPOUND LEAVES

PART A: LEAVES MOSTLY WITH 11 OR MORE LEAFLETS

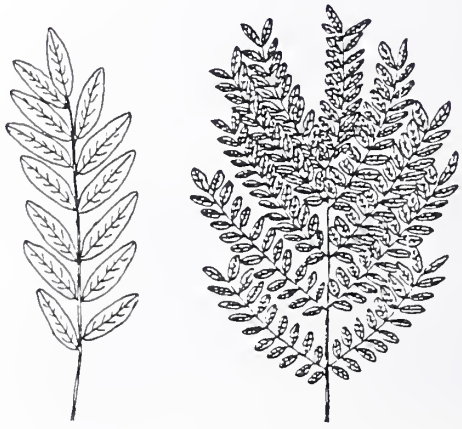
BLACK LOCUST *Robinia pseudo-acacia*
Usually thorny with paired thorns, less than 2.5 cm. long. Leaflets 7-21 with untoothed margins, 2.5-4.5 cm. long. Leaves 15-35 cm. long. Twigs smooth or slightly hairy. Fruit pods 5-15 cm. long. Flowers white. Roadsides, fencerows. Naturalized. Common.

CLAMMY LOCUST *Robinia viscosa*
Small tree or large shrub. Similar to Black Locust but thorns (if any) are not significant; leaflets 13-25; twigs and fruit pods sticky-glandular; flowers rose-tinged. An occasional escape along roadsides.



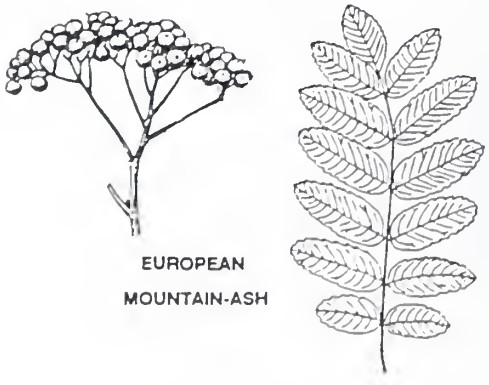
BLACK & CLAMMY LOCUST

HONEY LOCUST *Gleditsia triacanthos*
Often armed with vicious, branched thorns that are frequently much longer than 3 cm. Leaves may be twice-compound with 15-30 leaflets per division. Leaflets are finely toothed, .8-3.5 cm. long. Leaves 15-30 cm. long. Fruit pods large and twisted, 20-45 cm. long. Frequently planted in cities. An occasional roadside escape.

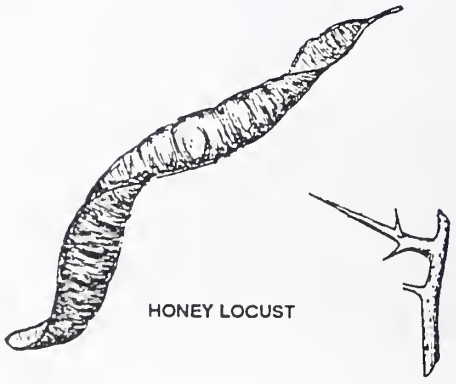


HONEY LOCUST

EUROPEAN MOUNTAIN-ASH
Pyrus (Sorbus) aucuparia
Small tree with loose clusters of unpalatable, berry-like fruit. Leaflets 11-17, toothed, 2-6 cm. long. Leaves mostly 9-15 cm. long. Frequently planted and occasionally escapes to roadsides, thickets, and wood borders.



EUROPEAN MOUNTAIN-ASH



HONEY LOCUST

PART A: LEAVES MOSTLY WITH 11 OR MORE LEAFLETS (CONT.)

BUTTERNUT *Juglans cinerea*
Leaflets 7-19, toothed, 6-12 cm. long, attached to stalk that is densely sticky-hairy. Leaves 30-60 cm. long. Leaf scars with hairy fringe on upper margin. Fruits oblong, sticky-hairy. Kernel is sweet, edible, and very oily. Rich soil. Uncommon.



BUTTERNUT



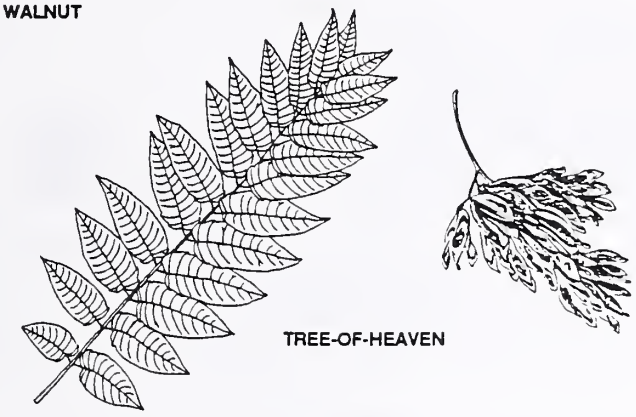
WALNUT & BUTTERNUT

BLACK WALNUT *Juglans nigra*
Leaflets 11-23, toothed, 6-12 cm. long, attached to stalk that is downy (not sticky). Leaves 30-60 cm. long. Leaf scars lacking hairy fringe on upper margin. Fruits spherical, not sticky-hairy. Kernel is sweet, edible. Hedgerows, thickets, roadsides. Occasionally escapes cultivation.



WALNUT

TREE-OF-HEAVEN *Ailanthus altissima*
Leaflets 11-41, untoothed except for one or two pairs of teeth near leaflet base, 7-18 cm. long. Leaves 30-60 cm. long. Waste places, roadsides. Very common weed tree in cities, but presently uncommon in our area.



TREE-OF-HEAVEN

STAGHORN SUMAC *Rhus typhina*
Leaflets 11-31, toothed, 5-12 cm. long. Leaves 30-60 cm. long. Twigs and leaf-stalks densely velvety-hairy. Fruit in dense upright clusters, covered with red hair, used for flavoring. Small tree or, usually, a shrub. Dry thickets, roadsides, open, rocky slopes. Uncommon.

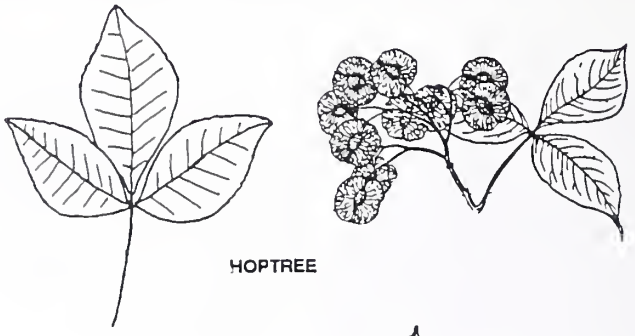


STAGHORN SUMAC

TREES
ALTERNATE COMPOUND LEAVES

PART B: LEAVES MOSTLY WITH FEWER THAN 11 LEAFLETS

HOPTREE *Ptelea trifoliata*
Leaflets three, 6-12 cm. long, resembling Poison Ivy. Fruits wafer-like. A small tree or shrub. Thickets, edges of woods, roadsides. Uncommon escape.



HOPTREE

SHAGBARK HICKORY *Carya ovata*
Leaflets 5-7 (usually 5), with tiny tufts of hair near tips of some teeth (use hand lens). End leaflet becoming 10-20 cm. long, 5-11 cm. wide. Trunk bark very shaggy (except on very young trees). Fruit 3.5-6 cm. long with thick husk (3-12 mm. thick) splitting to the base when mature. Kernel is edible. Woods, roadsides, pastures. Uncommon.



SHAGBARK HICKORY



SHAGBARK HICKORY

PIGNUT HICKORY *Carya glabra*
Leaflets 5-7 (usually 5). End leaflet 8-17 cm. long and mostly 3.5-6 cm wide. Leafstalks not red. Fruit 1.5-3.5 cm. long, dark brown, somewhat shiny. Thin husk generally splitting only partly or not at all in fall. Kernel is bitter or slightly sweet. Catkins 5-8 cm. long. Bark tight, furrowed. Considered a variety of the next species by some botanists. Dry woods, pastures, roadsides. Uncommon.



PIGNUT HICKORY



PIGNUT HICKORY

SWEET PIGNUT HICKORY *Carya ovalis*
Leaflets 5-7. End leaflet 8-17 cm. long and mostly 4-8 cm. wide. Leafstalks often reddened. Fruit 1.5-3.5 cm. long, light brown, dull, scaly-dotted. Thin husk usually splitting freely to base when mature. Kernel is sweet, edible. Catkins 8-17 cm. long. Bark ridged, scaly or somewhat shaggy when mature. Woods, pastures, roadsides. Common.



SWEET PIGNUT HICKORY



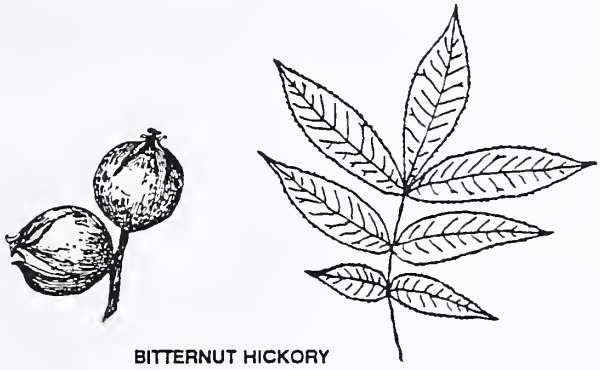
HICKORY FRUITS

PART B: LEAVES MOSTLY WITH FEWER THAN 11 LEAFLETS (CONT.)

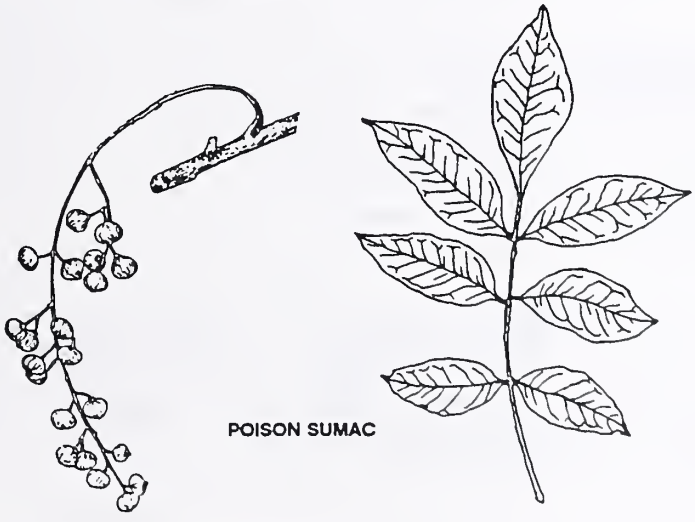
MOCKERNUT HICKORY *Carya tomentosa*
Leaflets 5-9, hairy beneath, larger ones 10-20 cm. long and 5-12 cm. wide. Twigs and central stalk usually hairy. Fruit 3.5-5 cm. long. Nut has disappointingly small kernel which is edible. Bark of young trees and young bark of older trees has distinctive pattern of inter-weaving, smooth, flat-topped ridges. Woods, pastures, roadsides. Uncommon.


MOCKERNUT HICKORY

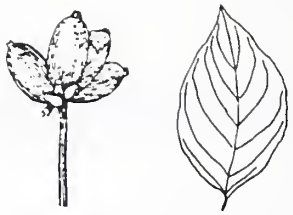
BITTERNUT HICKORY *Carya cordiformis*
Leaflets 5-11 (usually 7-9), somewhat hairy beneath, larger ones 8-15 cm. long and 2-5 cm. wide. Fruit about 2.5 cm. long, much ridged or winged partway along seams. Kernel is bitter. Buds with bright, yellow, powdery surface, elongate. Bark tight with shallow fissures. Various habitats from wet woods to roadsides. Rare.


BITTERNUT HICKORY

POISON SUMAC *Rhus vernix*
Leaflets 7-13, untoothed, 4-10 cm. long. Fruit berry-like, whitish, in elongated clusters. Small tree or (usually) a shrub. All parts of plant irritate the skin of most people. Wooded swamps, bog margins, occasionally in wet woods. Common.

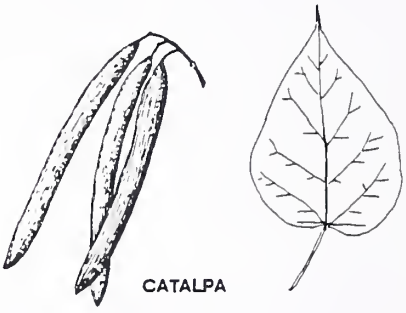

POISON SUMAC

TREES
OPPOSITE SIMPLE LEAVES



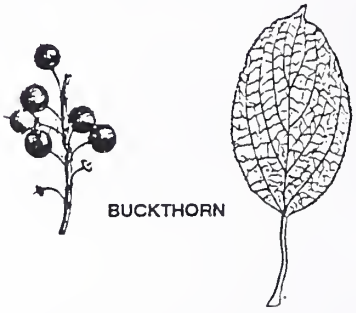
FLOWERING DOGWOOD

FLOWERING DOGWOOD *Cornus florida*
Small tree or large shrub with untoothed leaves. Side veins curving strongly, tending to parallel leaf margin. Mature bark broken into squarish blocks. Fruit red, berry-like, bitter. Frequently cultivated. Acidic woods. Uncommon.



CATALPA

NORTHERN CATALPA *Catalpa speciosa*
Leaves large, 15-30 cm. long, untoothed (occasionally lobed), sometimes in whorls of three. Fruit a long, narrow, bean-like pod. Roadsides, waste places. Uncommon escape.



BUCKTHORN

COMMON BUCKTHORN *Rhamnus cathartica*
Leaves opposite or nearly so, toothed with rounded teeth; main veins reaching strongly forward. Fruits black, berry-like, purgative. Small tree or large shrub. Thickets, roadsides. Naturalized. Common.

BIRCHES *Betula spp.* - Pairs of alternate leaves crowded on spur branches give appearance of opposite arrangement. See p. 29.



TATARIAN MAPLE

TATARIAN MAPLE *Acer tataricum*
Typical leaves unlobed, very irregularly toothed, not whitened but more or less hairy on veins beneath. Fruit mature in late summer or early autumn. Small tree or shrub. Escaped at single site in Concord.



MAPLE FRUIT



SIBERIAN MAPLE

SIBERIAN MAPLE *Acer ginnala*
Leaves typically 3-lobed with central lobe much lengthened, not whitened and essentially hairless beneath. Often a shrub. Fruit mature in late summer or early autumn. Roadsides, woods, thickets. Uncommon escape.



STRIPED MAPLE

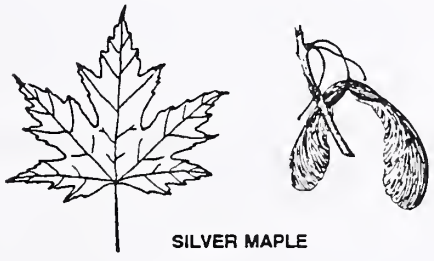
STRIPED MAPLE *Acer pensylvanicum*
Leaves large (up to 20 cm. wide), 3-lobed, and very finely toothed. Bark greenish with white stripes. A small tree. Cool, rocky woods. Rare.

TREES
OPPOSITE SIMPLE LEAVES

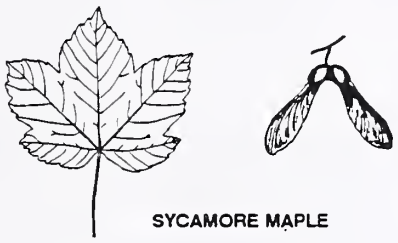
RED MAPLE *Acer rubrum*
Leaves 3-5 lobed (rarely unlobed) with central lobe wide-based, undersides whitened. Fruit mature in late spring or early summer, each half 1.5-2.5 cm. long. Autumn color bright red and yellow. Wet woods, second growth areas. Abundant.


RED MAPLE

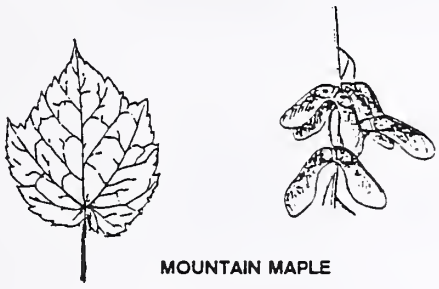
SILVER MAPLE *Acer saccharinum*
Leaves deeply 5-lobed with central lobe narrowed at base, whitened beneath. First native tree to blossom in spring. Fruit mature in late spring, each half 4-8 cm. long. Autumn color yellow. Often planted. Riverbanks, bottomlands. Common.


SILVER MAPLE

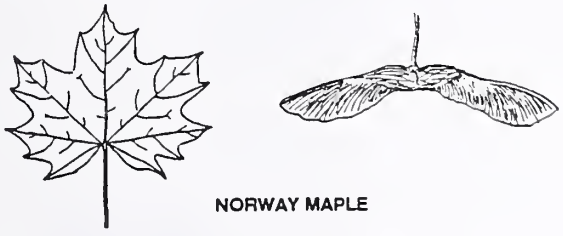
SYCAMORE MAPLE *Acer pseudo-platanus*
Leaves 5-lobed with lobes broader towards the tips than Red Maple. Mature bark flaky, similar to Sycamore bark. Flowers and fruit in elongated hanging clusters. Fruit maturing in midsummer or early autumn, each half 3-5 cm. long. Frequently planted, occasionally escapes.


SYCAMORE MAPLE

MOUNTAIN MAPLE *Acer spicatum*
Leaves similar to Red Maple or Sycamore Maple, hairy beneath. Flowers and fruit borne on upright stalks in spike formation. Fruit maturing in late summer or autumn. Small tree or (usually) a large shrub. Introduced at a single site in Concord.


MOUNTAIN MAPLE

NORWAY MAPLE *Acer platanoides*
Leaves lobed but with few teeth, green beneath. Leafstalk sap milky. Mature bark with many firm, narrow ridges. Autumn color bright yellow, turning late in season. Commonly planted shade tree which sometimes escapes.


NORWAY MAPLE

SUGAR MAPLE *Acer saccharum*
Leaves lobed but with few teeth, paler beneath. Leafstalk sap not milky. Mature bark deeply furrowed or shaggy. Autumn color scarlet, orange, or yellow. In our area mainly an escape near roadside plantings.


SUGAR MAPLE

TREES
ALTERNATE SIMPLE LEAVES

HAWTHORNS: THORNY TREES WITH MOSTLY UNBRANCHED THORNS

Reliable identification in this group may require examination of flowers. Leaf shapes may vary considerably on the same plant. Leaf characters used below apply primarily to mature leaves of fruiting branchlets. For problem specimens consult the illustrations and key in Seymour's *Flora of New England*.

Hawthorns in our area are found in old pastures, thickets, borders of woods and occasionally in woods. The fruits of some species are palatable and sometimes used for making jellies.

SINGLE-SEED HAWTHORN *Crataegus monogyna*
Leaves small, deeply sinused; veins running to sinuses as well as to lobes. Fruit usually with only one nutlet. Small tree, occasionally thornless, which uncommonly spreads from cultivation.



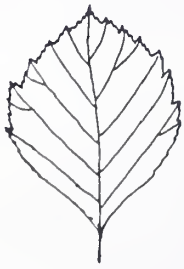
SINGLE-SEED HAWTHORN

COCKSPUR THORN *Crataegus crus-galli*
Leaf base narrow. Leaves essentially unlobed, mostly less than 3 cm. wide, glossy above. Fruit with 1-3 nutlets. Calyx lobes untoothed. Small tree. Uncommon.



COCKSPUR THORN

LONG-SPINED THORN *Crataegus macracantha*
(or C. succulenta var. macracantha)
Leaf base narrowed. Leaves sometimes with small lobes and mostly wider than 3 cm., often glossy above. Fruit with 2-3 nutlets. Calyx lobes toothed. Small tree or stout shrub. Uncommon.

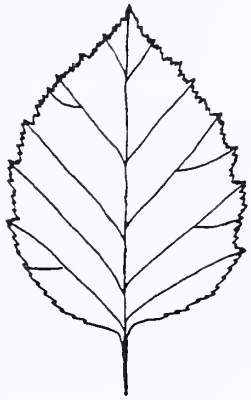


LONG-SPINED THORN

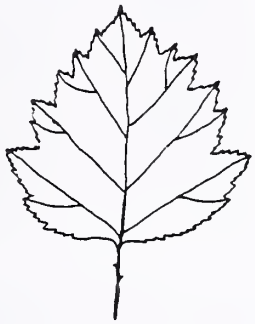


HAWTHORN

SCARLET THORN *Crataegus coccinea*
(including *C. pedicellata, C. holmesiana, and C. pringlei*)
Leaf bases broadly wedge-shaped or rounded. Leaves lobed (but lobes sometimes small), with some straight hairs above (use hand lens), widest near middle. Calyx lobes toothed. Stamens with 5-10 pink or red heads. Small tree or stout shrub. Uncommon.


SCARLET THORN

VARIABLE THORN *Crataegus macrosperma*
Our most common hawthorn. Leaves wide-based with distinct lobes, generally widest below the middle, with some straight hairs above (use hand lens). Leafstalks sometimes with slight glands. Calyx lobes untoothed (or with only one or two pairs of teeth). Stamens with 5-10 red heads (rarely pink). Small tree, sometimes shrubby. Common.

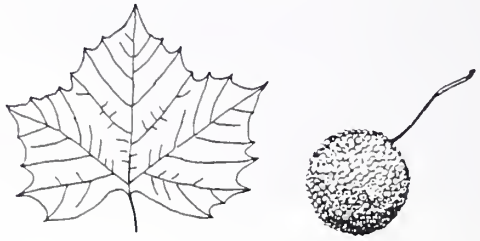

VARIABLE THORN

FROSTED THORN *Crataegus pruinosa*
Fruit whitened dull red (or greenish) with calyx on a raised collar. Calyx lobes untoothed (or with only one or two pairs of teeth). Leaves similar to Scarlet Thorn but hairless above (use hand lens). Stamens 15-20 with pink heads. Small tree or shrub. Rare.

TREES
ALTERNATE SIMPLE LEAVES

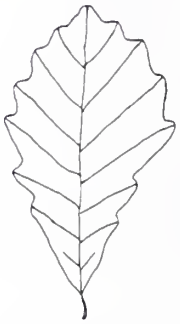
OAKS & SYCAMORE: Every leaf lobed or coarsely round-toothed; 3-5 main veins not meeting at leaf base; thornless

SYCAMORE *Platanus occidentalis*
Bark on upper trunk and branches very characteristic: thin brown flakes coming off in jigsaw-puzzle-like pieces exposing whitish underbark. Ball-like heads of fruit mostly single on long stalks (introduced species with more than one per stalk). Low woods, near streams. Occasionally planted. Uncommon.



SYCAMORE

SWAMP WHITE OAK *Quercus bicolor*
Leaves mostly with ten or fewer pairs of shallow lobes (side veins) usually rounded, usually white-downy beneath. Acorns on long stalks (2.5-6 cm.), sometimes sweetish, edible if properly prepared. Bark flaky or ridged, sometimes deeply so. Mostly bottomlands, margins of streams, swamps. Common.

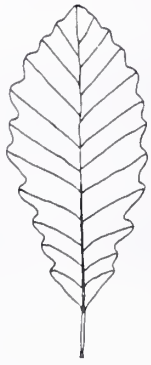


SWAMP WHITE OAK



OAK

CHESTNUT OAK *Quercus prinus*
Leaves mostly with 10-16 pairs of rounded "teeth" (side veins), often slightly white-hairy beneath. Acorns on stalks shorter than leafstalk, or stalkless, sometimes sweetish, edible if properly prepared. Trunk bark deeply furrowed. Dry, often rocky woods. Uncommon.



CHESTNUT OAK

WHITE OAK *Quercus alba*
Leaves with rounded, distinct lobes, hairless when mature. Acorns on short stalks or stalkless, sometimes sweet, edible if properly prepared. Bark usually pale and flaky. Dry woods, roadsides, pastures. Common.



WHITE OAK

ENGLISH OAK *Quercus robur*
Leaves similar to White Oak but lobed at base rather than tapered. Acorns on long stalks. Mature bark deeply furrowed. Infrequently planted; occasionally escapes.



ENGLISH OAK

SCRUB OAK *Quercus ilicifolia*
Srnall tree or usually a shrub. Leaves relatively small (5-12 cm. long), whitish-felted beneath, lustrous dark green above. Acorns small, about 1 cm. long, bitter. Dry, sterile scrub woods, or sandy-gravelly clearings. Common.



SCRUB OAK

SCARLET OAK *Quercus coccinea*
Leaves with wide rounded sinuses reaching close to midrib, usually lustrous above, mostly hairless beneath, turning dark red in autumn. Leafstalk slender (mostly 1 mm. thick or less). Mature acorn cup (1.5 - 2.2 cm. across) enclosing ⅓ or more of acorn; upper scales of cup pressed together (not forming a definite fringe). Acorns bitter. Bark is somewhat intermediate between Red Oak and Black Oak. Dry woods, roadsides. Common.

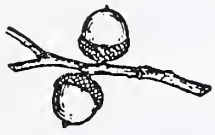


SCARLET OAK



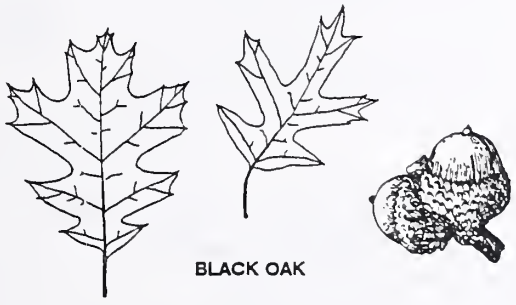
SCARLET & PIN OAK

PIN OAK *Quercus palustris*
Leaves similar to Scarlet Oak, but acorn cups shallow and only 1-1.6 cm. across. Main trunk essentially straight and undivided (like a pin). Main side branches often drooping or horizontal. Frequently planted. Occasionally escapes cultivation.



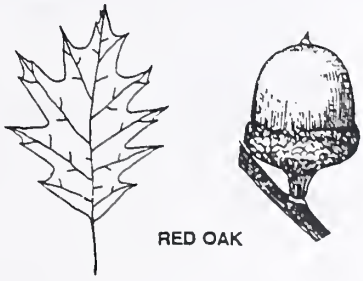
PIN OAK

BLACK OAK *Quercus velutina*
Leaves quite variable in shape, mostly 5-7 lobes, usually dark lustrous green above, somewhat hairy beneath early but becoming mostly hairless. Leafstalk thick, usually distinctly more than 1 mm. thick. Mature acorn cups (1.2-1.9 cm. across) enclosing ⅓ or more of acorn; upper scales somewhat loose, forming a rough fringe. Mature trunk bark dark, broken into short, irregular, block-like strips. Acorns bitter, inedible. Dry woods, roadsides. Abundant.



BLACK OAK

RED OAK *Quercus rubra*
Large, shallow, saucer-like acorn cups are distinctive (1.8-3 cm. wide when mature). Leaves somewhat variable in shape, mostly 7-11 lobes with sinuses usually reaching about halfway to midrib (not more than ¾ of the way), mostly hairless beneath. Trunk bark flat-topped ridges. Acorns bitter. Moist to dry woods, roadsides. Abundant.



RED OAK

TREES
ALTERNATE SIMPLE LEAVES

Some leaves lobed some not

SASSAFRAS *Sassafras albidum*
Leaves untoothed, spicy fragrant when crushed. Fruit berry-like, unpalatable. Dry, open woods and thickets. Uncommon.


SASSAFRAS

WHITE MULBERRY *Morus alba*
Toothed leaves with 3-5 veins meeting at base, smooth above and mostly hairless beneath. Leafstalk sap milky. Fruit berry-like, dark purplish, pink or white, sweet but without flavor. Roadsides, waste lots. Uncommon.

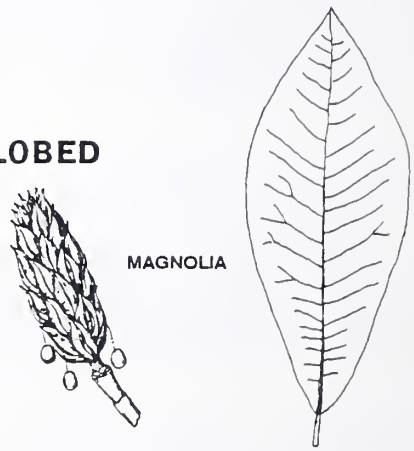

MULBERRY

CRABAPPLES *Pyrus (Malus) spp.*
Sometimes lobed on vigorous shoots of some species. Leaves without 3-5 main veins meeting at base. See pp. 103-106.

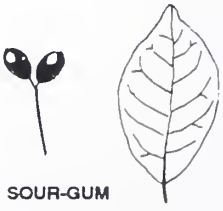

CRABAPPLE

Leaves untoothed and unlobed

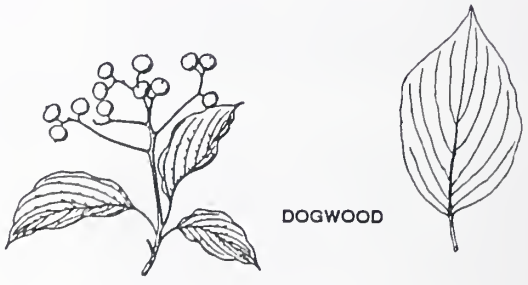
UMBRELLA MAGNOLIA *Magnolia tripetala*
Leaves very large (30-60 cm. long), crowded in an umbrella-like cluster at ends of flowering branches. Low deciduous woods. Escaped cultivation at one site in Concord.


MAGNOLIA

SOUR-GUM (BLACK TUPELO) *Nyssa sylvatica*
Leaves of flowering (fruiting) branchlets 3-15 cm. long; veins not reaching strongly forward. Fruits berry-like, sour, mostly two or three on long stalk. Mature bark blocky, often deeply fissured. Leaves turn scarlet in early autumn. Low woods, swamps, shores. Common.


SOUR-GUM

ALTERNATELEAF DOGWOOD *Cornus alternifolia*
Leaves 6-13 cm. long; main veins reaching strongly forward. Mature bark shallowly fissured. Fruit berry-like, in roundish clusters, unpalatable. Small tree or shrub. Wood borders, thickets, usually dry. Common.

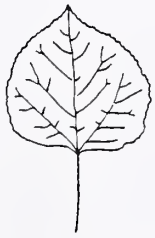

DOGWOOD

PUSSY WILLOW *Salix discolor*
Leaves narrow, sometimes untoothed. See p. 26.

POPLARS: LEAVES WITH 3-5 STOUT VEINS MEETING AT LEAF BASE. LEAFSTALKS USUALLY FLATTENED AND COMPARATIVELY LONG. AT LEAST UPPER TRUNK BARK SMOOTH AND PALE (USUALLY TAN-COLORED).

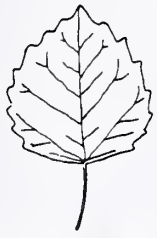
Note: Atypical leaves are not uncommon in this group, particularly late in the season after stripping of first leaves by insects.

QUAKING ASPEN *Populus tremuloides*
Leaves fine-toothed (sometimes obscurely) with 20-40 teeth on each margin. Lower bark usually pale-smooth as well. Name derives from leaves which flutter at the least breeze. A short-lived weed tree. Dry, open woods, recent clearings, poor soil. Common.

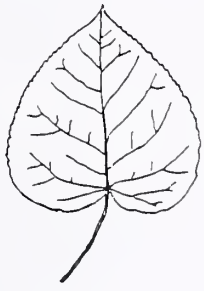

QUAKING ASPEN


ASPEN

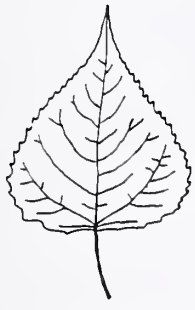
BIGTOOTH ASPEN *Populus grandidentata*
Leaves coarse-toothed with 5-15 teeth on each margin, densely hairy at first, becoming hairless in maturity. Most of bark pale-smooth. Dry, open woods, recent clearings. Common.


BIGTOOTH ASPEN

BALM-OF-GILEAD *Populus X gileadensis*
Leafstalks usually rounded. Leaves fine-toothed (3-4 teeth per cm.), somewhat hairy beneath especially on midrib and principal veins; young ones fragrant when crushed. Roadsides. Rare escape.


BALM-OF-GILEAD

COMMON COTTONWOOD *Populus deltoides*
Leaves somewhat triangular, coarse-toothed; leaf tip tapered. Leafstalk with small glands at leaf base. Mature bark gray, ridged or scaly. Woods, river bottomlands, roadsides. Uncommon escape.


COTTONWOOD


COTTONWOOD

WHITE POPLAR *Populus alba*
Leaves irregularly very coarse-toothed or lobed, white-hairy beneath, very dark green above. Leafstalk usually rounded. Occasionally escapes cultivation.


WHITE POPLAR

TREES
ALTERNATE SIMPLE LEAVES

WILLOWS: LEAVES USUALLY VERY NARROW. LEAFSTALKS USUALLY QUITE SHORT. LEAFY GROWTHS (STIPULES) OFTEN PRESENT ON TWIGS AT BASE OF LEAFSTALKS. BUDS COVERED BY SINGLE SCALE (USUALLY VISIBLE FROM MIDSUMMER ON; EARLIER LOOK FOR DEAD BUDS).

BLACK WILLOW *Salix nigra*
Leaves pure green beneath, .5-1.5 cm. wide, usually 10-14 times as long as wide, fine-toothed. Leaf teeth gland-tipped. Leafstalks without glands. Leafy stipules often prominent. Twigs becoming hairless. Tree or shrub with flaky, dark brown to blackish bark. Riverbanks, meadows, pond shores, occasionally swamps and low, damp ground. Common.



STIPULES



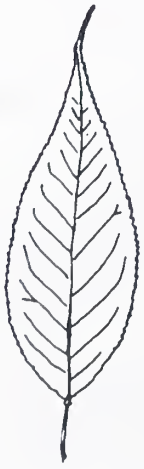
BLACK WILLOW

PUSSY WILLOW *Salix discolor*
Our only wild, tree-like willow blossoming before the appearance of leaves. Leaves sometimes nearly untoothed, 2-4 times as long as wide, whitened and becoming hairless beneath, green above. Leafstalks without glands. Tree or shrub. Damp situations. Common.



PUSSY WILLOW

SHINING WILLOW *Salix lucida*
Mature leaves not distinctly whitened beneath, 5-17 cm. long, 1.5-5 cm. wide, mostly with long-tapered tips. Leafstalk with glands near base. Small tree or large shrub. Meadows, shores, low ground, swamps. Rare.



SHINING WILLOW



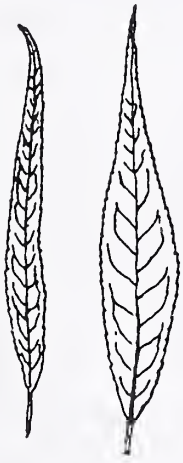
WILLOW FRUIT

WHITE WILLOW *Salix alba*
Leaves 4-6 times as long as wide, usually whitened and silky beneath, fine-toothed (7-12 teeth per cm.), 1-2.5 cm. wide. Leafstalk may bear small glands at leaf base. Branchlets droop somewhat but not conspicuously. Medium-sized or large tree. Frequently planted. An uncommon escape in low ground and along riverbanks.



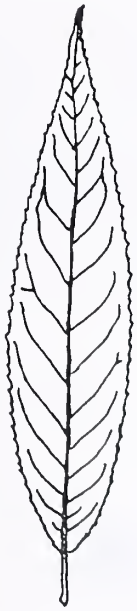
WHITE WILLOW

WEEPING WILLOW *Salix babylonica*
Mature leaves whitened beneath, mostly more than 6 times as long as wide, mostly with less than 8 short teeth per cm., .5-2 cm. wide. Leafstalk may bear small glands at leaf base. Branchlets conspicuously hanging. Medium-sized or large tree. Frequently planted. Rarely escapes cultivation to low ground.



WEEPING WILLOW

CRACK WILLOW *Salix fragilis*
Branchlets very brittle at base (breaking off easily). Mature leaves pale beneath, mostly with less than 8 prominent teeth per cm., 1.5-3 cm. wide. Leafstalks may bear small glands at leaf base. Medium-sized or large tree. Uncommon escape to shores and swamps.

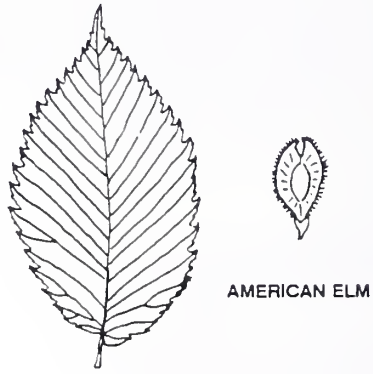


CRACK WILLOW

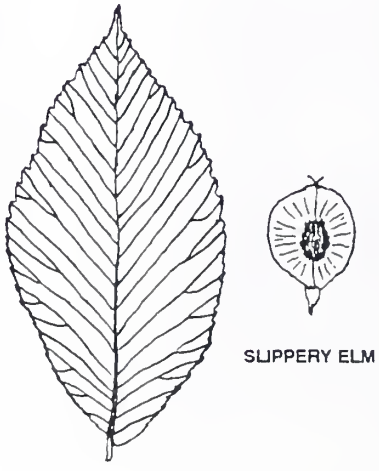
TREES
ALTERNATE SIMPLE LEAVES

ELMS: LEAVES DOUBLE-TOOTHED, WITH UNEVEN, ROUNDED LEAF BASES. OFTEN SANDPAPERY ABOVE.

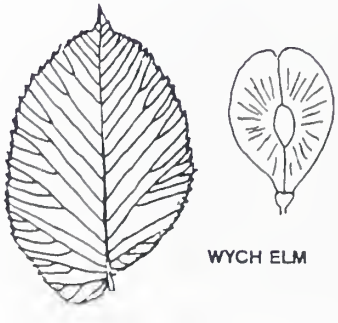
AMERICAN ELM *Ulmus americana*
When growing in the open, vase-shaped form of tree is distinctive. Leaves deeply coarse-toothed; main side veins fork a few times at most. Fruit wafer-like, fringed along the edge. Rich soils, especially along streams, roadsides. Common (most often as young trees because of Dutch Elm disease).


AMERICAN ELM

SLIPPERY ELM *Ulmus rubra*
Leaves 10-20 cm. long, shallowly toothed, hairy beneath (especially on veins); main side veins frequently forked. Twigs sandpapery rough. Fruit wafer-like, hairy at center, not fringed along edge. Common name derives from slimy inner bark. Rich woods, bluffs. Rare.


SLIPPERY ELM

WYCH ELM *Ulmus glabra*
Leaves mostly 8-16 cm. long, prominently toothed, sometimes slightly 3-lobed toward tip; main side veins frequently forked. Twigs hairy. Fruit wafer-like, hairless, not fringed along edge, comparatively large (1.5 cm. or more in width). Rarely escapes cultivation to roadsides.


WYCH ELM


ELM FRUIT

BIRCHES: Upper trunk bark marked by numerous cross-streaks, sometimes peeling in papery curls. Main side veins generally running directly to leaf edge. Spur branches two-leaved.

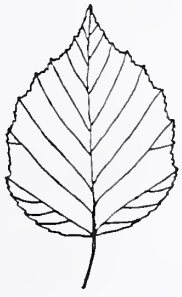
GRAY BIRCH *Betula populifolia*
A shrub-like weed tree. Typical mature bark dingy white, often not peeling. Leaves hairless, often shiny, with tail-like tip and straight-cut (or nearly so) leaf base. Male catkins (or catkin buds) mostly solitary or occasionally in 2's. Dry to wet soils, especially old fields and roadsides. Common.


GRAY BIRCH


MALE CATKINS


FEMALE CATKINS

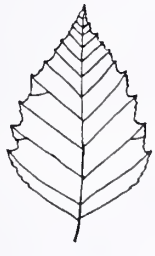
PAPER BIRCH *Betula papyrifera*
Mature trunk bark usually clear white, often peeling. Bark of saplings and young branches brown. Leaves broadly wedge-based or round-based, usually with some tufts of hair beneath in leaf vein angles. Male catkins (or catkin buds) mostly in clusters of 2-3. Mostly north-facing wooded slopes, rich woods. Common.


PAPER BIRCH

EUROPEAN WEEPING BIRCH *Betula pendula*
Mature bark white, more or less peeling. Young bark brown. Branchlets hanging. Leaves generally smaller than two preceding species (3-7 cm. long on fruiting branchlets). Leaf bases wedge-shaped or straight-cut. Twigs hairless. Male catkins clustered 1-3. Escapes cultivation rarely.

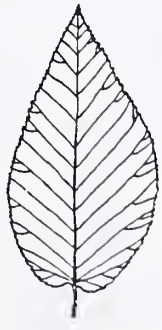

EUROPEAN WEEPING BIRCH

RIVER BIRCH *Betula nigra*
Young bark reddish brown to whitish cinnamon, much peeling and shaggy. Mature trunk bark dark and furrowed. Leaves broadly wedge-based. Twigs hairy. Stream borders. Uncommon.


RIVER BIRCH

BLACK BIRCH *Betula lenta*
Bark dark brown, usually not peeling, furrowed when mature. Broken twigs very wintergreen fragrant. Mostly rich, well-drained (dryish) woods. Common.

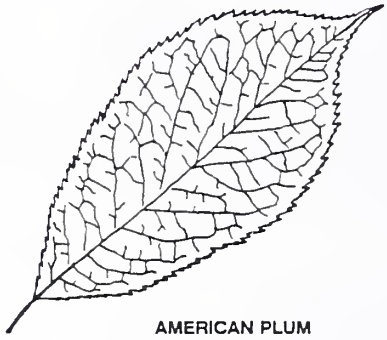
YELLOW BIRCH *Betula alleghaniensis*
Young bark yellowish- or silver-gray (often drab) and peeling. Broken twigs somewhat wintergreen fragrant. Rich moist woods or swamps. Uncommon.


BLACK & YELLOW BIRCH

TREES
ALTERNATE SIMPLE LEAVES

CHERRIES & PLUMS: LEAFSTALKS AND LEAF TEETH USUALLY BEARING GLANDS. MAIN SIDE VEINS GENERALLY NOT REACHING LEAF TEETH. UPPER TRUNK BARK OFTEN MARKED WITH CROSS-STREAKS. FRUIT WITH 1 SEED.

AMERICAN PLUM *Prunus americana*
Fruit (flowers) not in elongated clusters. Leaf teeth sharp and not bearing glands. Leafstalk glands sometimes present. Spur branches often spiny and sharp. Mature fruit more or less spherical, about 2.5 cm. long, with a groove or line running from base to tip, red or yellow, juicy, usually a bit sour but edible. Often a shrub. Thickets, roadsides, wood borders. Uncommon.

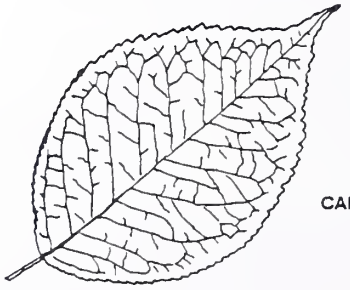


AMERICAN PLUM



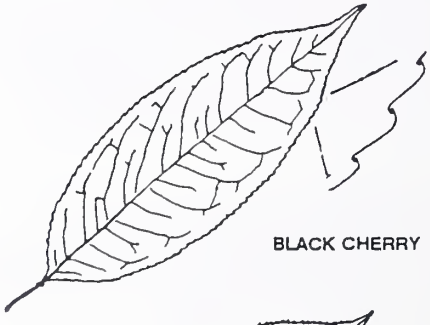
PLUM

CANADA PLUM *Prunus nigra*
Fruit (flowers) not in elongated clusters. Leaf teeth rounded. Spur branches often spiny sharp. Mature fruit oblong, 2.5 cm. long, with a groove or line running from base to tip, orange-red to yellowish, edible. A small tree or shrub. Thickets, fencerows, wood borders. Rare.



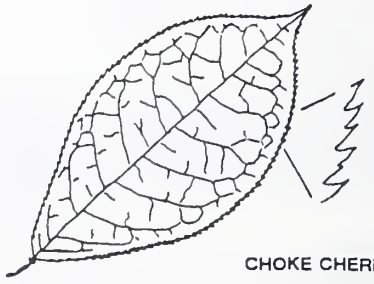
CANADA PLUM

BLACK CHERRY *Prunus serotina*
Fruit (flowers) in elongated clusters. Leaf teeth blunt. Leaves often with midrib hairy beneath; tips not abruptly tapered. Dark purple or black cherries have bitter-sweet pulp, edible when fully ripe. Woods, roadsides. Abundant.

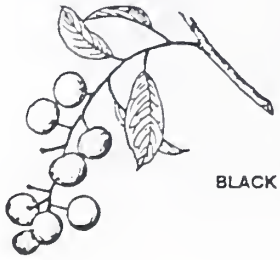


BLACK CHERRY

CHOKE CHERRY *Prunus virginiana*
Fruit (flowers) in elongated clusters. Leaf teeth sharp. Leaves with mostly hairless midribs; tips abruptly tapered. Purplish red or pale yellow fruit is tart, scarcely palatable raw, but used in jellies and pies. Usually a shrub, occasionally a small tree. Roadsides, thickets, wood borders. Common.



CHOKE CHERRY



BLACK & CHOKE CHERRIES

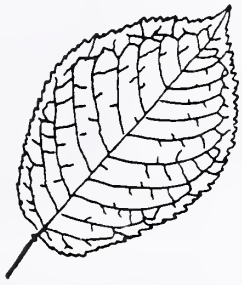
PIN (FIRE) CHERRY *Prunus pensylvanica*
Fruit (flowers) not in elongated clusters. Leaves finely toothed (10-18 teeth per cm.), hairless or nearly so beneath. Mature fruit small, only 5-7 mm. thick, red, without a groove or line from base to tip, edible and used in jellies. A small tree or shrub. Dry, open woods, roadsides, recent burns. Common.



PIN CHERRY

SWEET CHERRY *Prunus avium*
Fruit (flowers) not in elongated clusters. Leaves more coarsely toothed (5-10 teeth per cm.), hairy on veins beneath, inclined to droop, up to 15 cm. long. Mature fruit 1.5-2.5 cm. thick, variable in color, without a groove or line from base to tip, sweetish and edible. Old house sites, roadsides, woods. Uncommon escape.

SOUR CHERRY *Prunus cerasus*
Fruit (flowers) not in elongated clusters. Leaves more coarsely toothed (5-10 teeth per cm.), hairless, more or less erect, up to 10 cm. long. Mature fruit 1.5-2.5 cm. thick, red, without a groove or line from base to tip, sour. Roadsides, thickets. Rare escape.



SWEET & SOUR CHERRIES



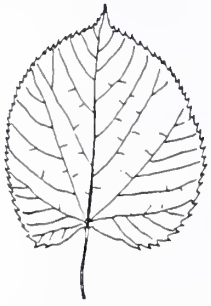
CHERRY

TREES
ALTERNATE SIMPLE LEAVES

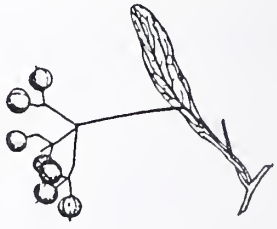
MISCELLANEOUS SPECIES (ALL LEAVES TOOTHED, UNLOBED)

PART A: 3-5 MAIN VEINS MEETING AT LEAF BASE

AMERICAN LINDEN (BASSWOOD)
Tilia americana
Leaves large (on fruiting branchlets mostly 7-20 cm. long), hairless beneath; leaf tips abruptly tapered; teeth slender-tipped. Leafstalks 3-5 cm. long. Rich woods, riverbanks. Sometimes planted. Uncommon.

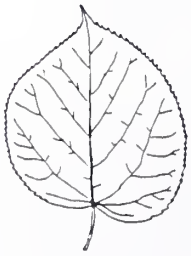


AMERICAN LINDEN



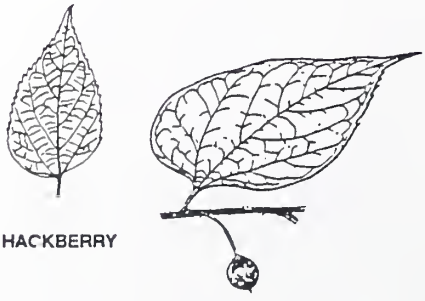
LINDEN

EUROPEAN LINDEN *Tilia europaea*
Leaves on fruiting branchlest mostly 5-10 cm. long, hairless beneath; leaf tips abruptly tapered; teeth short-pointed. Leafstalks 3-5 cm. long. Lower branches usually drooping. Sometimes escapes from roadside plantings.



EUROPEAN LINDEN

AMERICAN HACKBERRY *Celtis occidentalis*
Leaf tips gradually tapered. Leafstalks 1-1.5 cm. long. Mature bark often with corky warts or ridges. Fruit berry-like, edible. Open places, wood borders, roadsides. Rare.

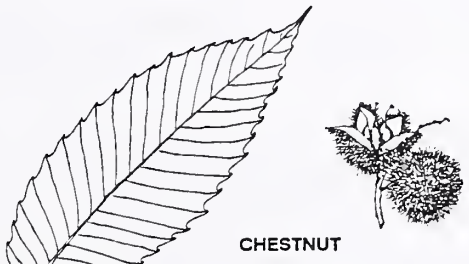


HACKBERRY

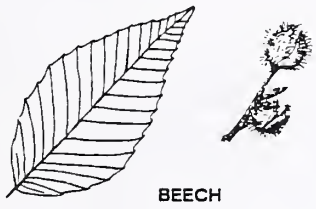
MISCELLANEOUS SPECIES (ALL LEAVES TOOTHED, UNLOBED)

PART B: MAIN SIDE VEINS (3-5 NOT MEETING AT BASE) PROMINENT, RUNNING DIRECTLY TO LEAF EDGE

AMERICAN CHESTNUT *Castanea dentata*
Leaves coarsely single-toothed, long (13-23 cm.). Leaf teeth sharp and prominent. Dry, gravelly, mostly acid soil. Once abundant, now common as sprouts from roots and stumps of blight victims. Occasionally maturing enough to bear fruit before dying.


CHESTNUT

AMERICAN BEECH *Fagus grandifolia*
Leaves coarsely and distinctly single-toothed, 6-12 cm. long, mostly with 12-16 pairs of side veins (introduced species with 9 or fewer and with indistinct teeth). Smooth, gray bark often subjected to initials carving. Rich woods. Uncommon.


BEECH

IRONWOOD (AMERICAN HORNBEAM) *Carpinus caroliniana*
Small tree or shrub with distinctive smooth, sinewy-muscular-like bark. Leaves double-toothed, main veins seldom fork. Wood very hard and tough, used (at least formerly) for axe handles. Low or wet woods, stream banks. Uncommon.


IRONWOOD

HOP-HORNBEAM *Ostrya virginiana*
Mature bark scaly or shreddy with rectangular scales; young bark brown, resembling cherry or birch. Leaves double-toothed; main veins frequently fork. Wood very hard and tough, used (at least formerly) for axe handles. Woods, mostly rich and dry. Uncommon.


HOP-HORNBEAM

TREES
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES (ALL LEAVES TOOTHED, UNLOBED)

PART C: MAIN SIDE VEINS (3-5 NOT MEETING AT BASE) NOT RUNNING DIRECTLY TO LEAF EDGE.

APPLE, PEAR, CRABAPPLES: FRUIT (FLOWER) CLUSTERS NOT TREE-LIKE; STALKS JOINED NEAR ONE POINT.

COMMON APPLE *Pyrus malus (Malus pumila)*
Leaves single-toothed, hairy beneath, 4.5-10 cm. long; leaf teeth rounded. Branches with many spur branches. Fruit of wild trees usually small and often "crippled". Roadsides, old pastures, wood borders. Uncommon escape.


APPLE

COMMON PEAR *Pyrus communis*
Leaves single-toothed, hairless beneath, 2-8 cm. long; leaf teeth rounded. Spur branches often spiny. Fruit of wild trees usually small (seldom longer than 5 cm.), greenish, rather dry and gritty. Rarely escapes cultivation.


APPLE & PEAR

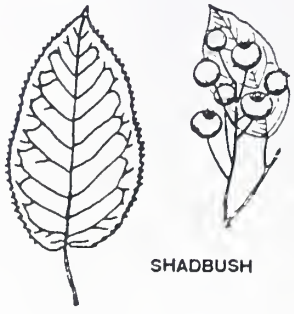

PEAR

CRABAPPLES *Pyrus (Malus) spp.*
Leaves mostly with fewer than 8 main side vein pairs. Fruits mostly less than 3 cm. thick. See pp. 103-106.

SHADBUSHES: FLOWERS (FRUIT) ARRANGED (OUR SPECIES) IN TREE-LIKE CLUSTERS. TRUNK BARK USUALLY SMOOTH WITH INTERLACING STRIPES OR RIDGES. SMALL TREES OR SHRUBS. OUR SPECIES WITH 9 OR MORE SIDE VEIN PAIRS.

SMOOTH SHADBUSH *Amelanchier laevis*
Leaves hairless beneath (nearly so at flowering time) with reddish or purplish cast in spring; teeth with sinuses sometimes rounded. Fruit dark purplish, juicy, sweet. Open woods, thickets, roadsides. Uncommon.

DOWNY SHADBUSH *Amelanchier arborea*
Leaves hairy beneath at flowering time and remaining somewhat hairy near base and on stalk; teeth long and wide-spreading. Fruit reddish-purple, dry, tasteless. Dry, often rich, woods, thickets. Rare.


SHADBUSH

AMERICAN YEW *Taxus canadensis*
Needles flat and pointed. Fruit fleshy, cup-like, red; pulp edible; seeds poisonous. Low shrub, usually less than 1 meter high (rarely tree-like and up to 2 meters high). Cool, moist woods. Rare.

COMMON JUNIPER *Juniperus communis*
Needles 3-sided, in whorls of 3. Fruit berry-like, bluish, used for flavoring. Common form usually less than 1 meter high and known as Ground Juniper (var. *depressa*). Tree form rare. Dry pastures, open rocky woods, roadside banks. Common.

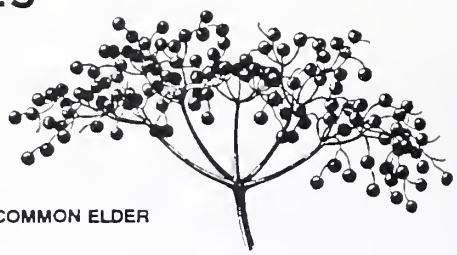


JUNIPER



YEW

SHRUBS
OPPOSITE COMPOUND LEAVES



COMMON ELDER

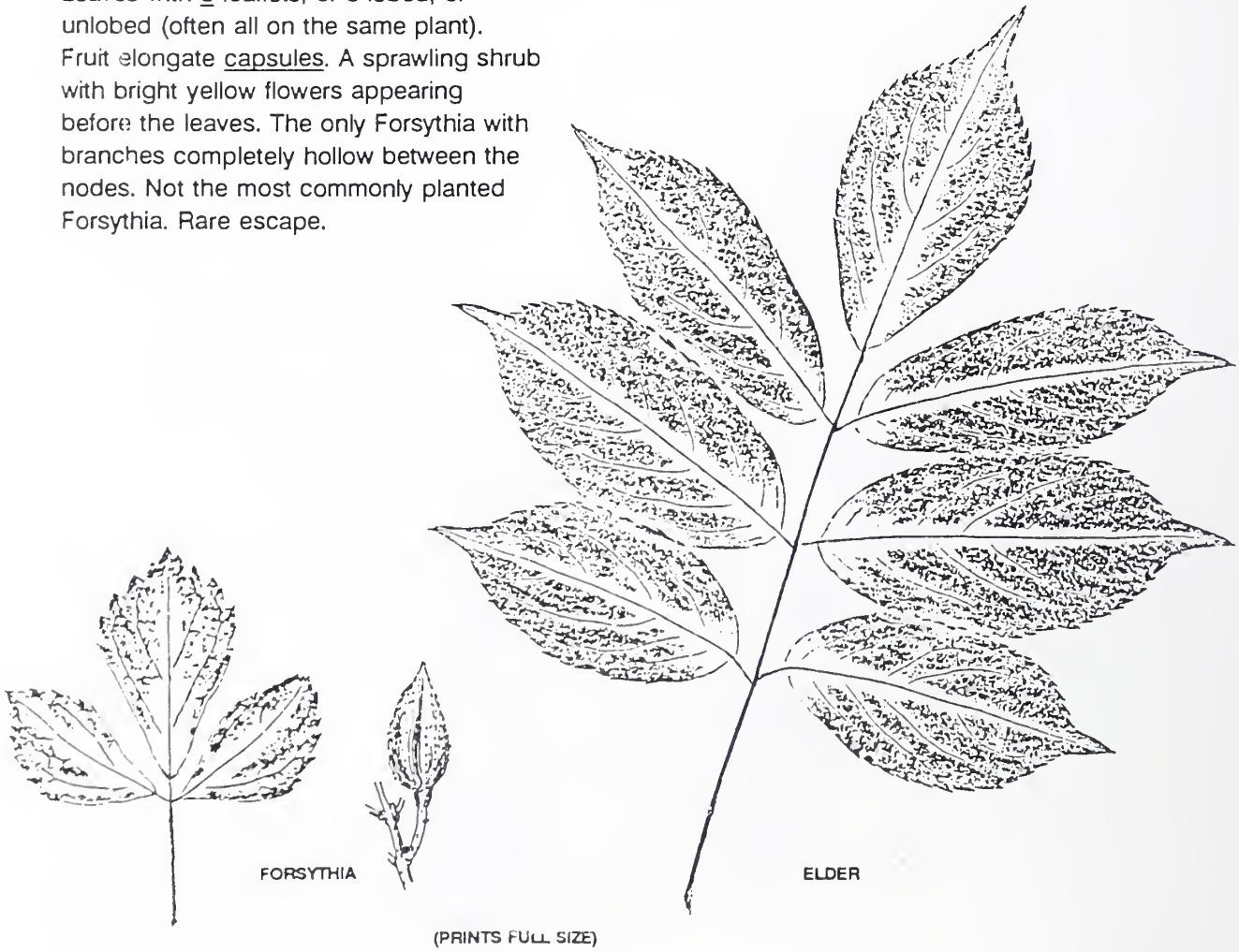
COMMON ELDER *Sambucus canadensis*
Leaves with 5-11 leaflets. Fruit (flowers) in flattish or broadly rounded clusters. Berry-like fruit purple-black, bitter-tasting, used in wine, jelly, etc. New growth scarcely woody. Moist thickets, wet woods, swamps, meadows, roadsides. Cornmon.



RED-BERRIED ELDER

RED-BERRIED ELDER *Sambucus pubens*
Leaves with 5-7 leaflets. Fruit (flowers) in cone-shaped clusters. Berry-like fruit red (rarely whitish or yellow), unpalatable. Woods, hillsides. Rare.

WEEPING FORSYTHIA *Forsythia suspensa*
Leaves with 3 leaflets, or 3-lobed, or unlobed (often all on the same plant). Fruit elongate capsules. A sprawling shrub with bright yellow flowers appearing before the leaves. The only Forsythia with branches completely hollow between the nodes. Not the most commonly planted Forsythia. Rare escape.



FORSYTHIA

ELDER

(PRINTS FULL SIZE)

SHRUBS
OPPOSITE LOBED LEAVES

Note: Maples generally have much longer leafstalks than the following two maple-like Viburnums.

MAPLELEAF VIBURNUM *Viburnum acerifolium*
Leaves 3-lobed (occasional leaf unlobed). Leafstalks hairy, glandless. Berry-like fruit purple-black or red, unpalatable. Dry or rocky woods. Common.

CRANBERRY VIBURNUM *Viburnum opulus* including *V. trilobum*
Leaves 3-lobed (some leaves unlobed). Leafstalks hairless and with glands. Berry-like fruit red, with tart flavor, used in preserves and jelly. Cool woods, moist thickets, shores, roadsides. Uncommon.

SIBERIAN MAPLE *Acer ginnala*
Leaves 3-lobed (occasional leaf unlobed) with central lobe much lengthened. Maple keys maturing in late summer or early autumn. Sometimes a small tree. Roadsides, woods, thickets. Uncommon escape.

MOUNTAIN MAPLE *Acer spicatum*
Leaves 3-5 lobed. Sometimes a small tree. Introduced at a single site in Concord.
See p. 19.

WEEPING FORSYTHIA *Forsythia suspensa*
Leaves sometimes 3-lobed, but also may be unlobed or compound (3 leaflets). Rare escape.

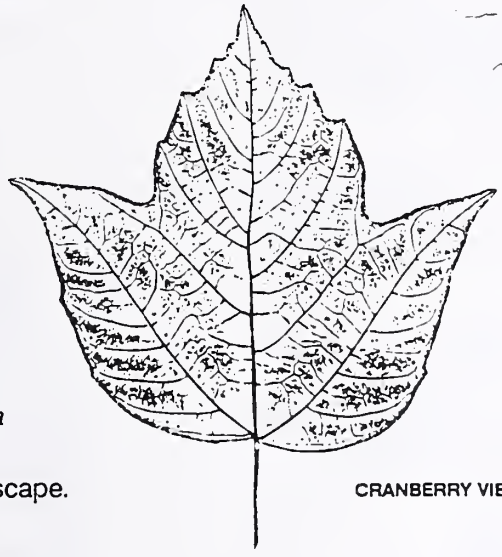
COMMON SNOWBERRY *Symphoricarpos albus*
Leaves sometimes irregularly round-lobed but usually are unlobed. Berry-like fruit white. Rare escape. See p. 42.



MAPLELEAF VIBURNUM



VIBURNUM



CRANBERRY VIBURNUM

(PRINTS 2/3 SIZE)



SNOWBERRY



FORSYTHIA





SIBERIAN MAPLE

SHRUBS
OPPOSITE WHORLED LEAVES

Leaves often 3 or more at a node

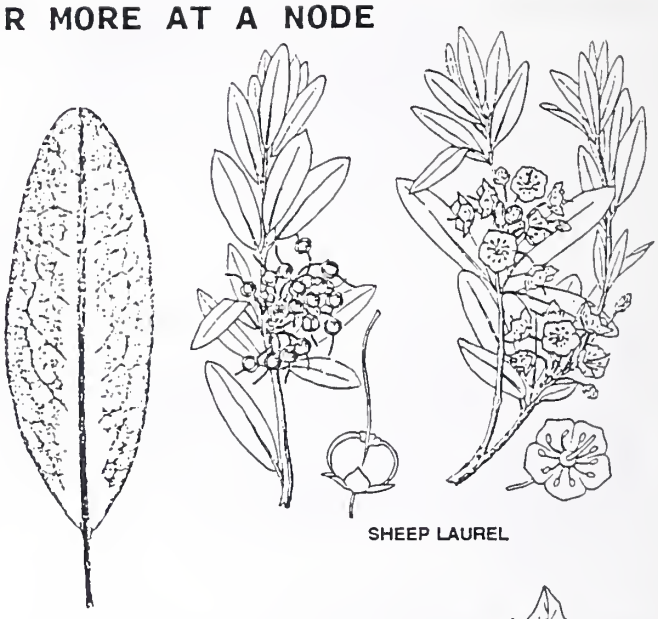
SHEEP LAUREL *Kalmia angustifolia*
Leaves 2-6 cm. long, untoothed, evergreen. Fruit globular capsules. Small shrub up to about 1 meter high. Mostly acid soils in the open (scrub woods, old fields, bogs, etc.). Common.

BUTTONBUSH *Cephalanthus occidentalis*
Leaves 6-15 cm. long, untoothed. Fruit (flowers) in dense, spherical heads. Large spreading shrub. Riverbanks, pond shores, swamps. Common.

SHRUBBY ST. JOHN'S-WORT
Hypericum spathulatum
Leaves mostly 3-7 cm. long, untoothed; two larger leaves often with smaller leaves attached at same node. Fruit elongated capsules. Fields, roadsides. Rare escape.

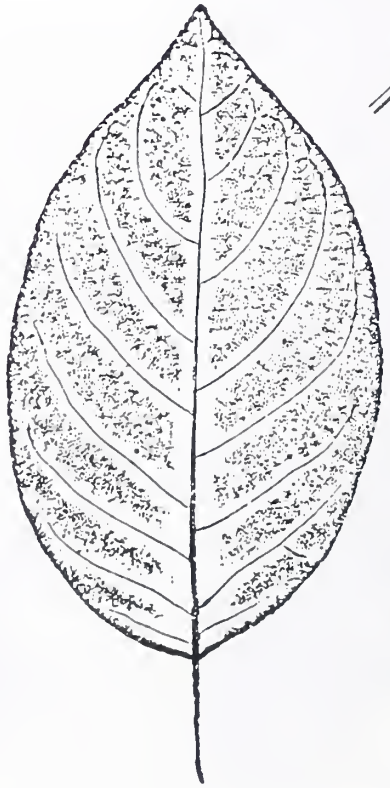
PANICLE HYDRANGEA *Hydrangea paniculata*
Toothed leaves, occasionally in whorls of 3. Rare escape. See p. 46.

MOUNTAIN LAUREL *Kalmia latifolia*
Dark green, leathery-evergreen, untoothed leaves sometimes in whorls, but mostly alternate. See p. 74.

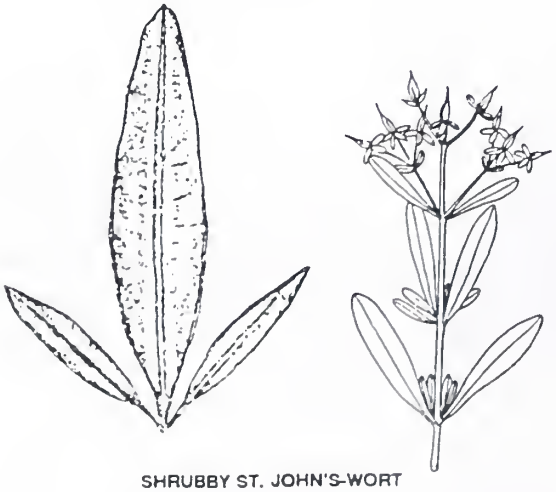

SHEEP LAUREL

SHEEP LAUREL


BUTTONBUSH


BUTTONBUSH

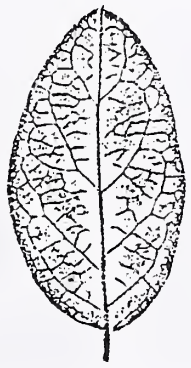

BUTTONBUSH


SHRUBBY ST. JOHN'S-WORT

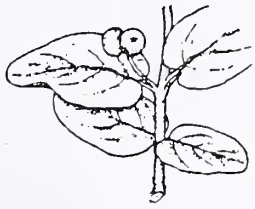
(PRINTS FULL SIZE)

HONEYSUCKLES (IN PART): BERRY-LIKE FRUIT (FLOWERS) IN PAIRS (OR "BERRIES" 2-EYED) AT ENDS OF STALKS. "BERRIES" USUALLY RED, BITTER. BUNDLE SCARS 3.

MORROW HONEYSUCKLE *Lonicera morrowi*
Leaves hairy beneath. Fruit (flower) stalks somewhat short (.5-1.5 cm. long) and hairy. Flowers white turning yellow. Roadsides, thickets, low woods. Abundantly naturalized.



MORROW HONEYSUCKLE



HONEYSUCKLE

BELLE HONEYSUCKLE *Lonicera X bella*
Leaves sparsely hairy or hairless beneath. Fruit (flower) stalks somewhat short (.5-1.5 cm. long) and sparsely hairy or hairless. Flowers pink turning yellow. A hybrid between preceding and following species. Roadsides, thickets. Uncommon escape.



HONEYSUCKLE

TATARIAN HONEYSUCKLE *Lonicera tatarica*
Leaves hairless beneath. Fruit (flower) stalks somewhat long (1.5-2 cm. long) and hairless. Flowers pink or white, not turning yellow. Roadsides, thickets. Uncommon escape.



EUROPEAN FLY HONEYSUCKLE

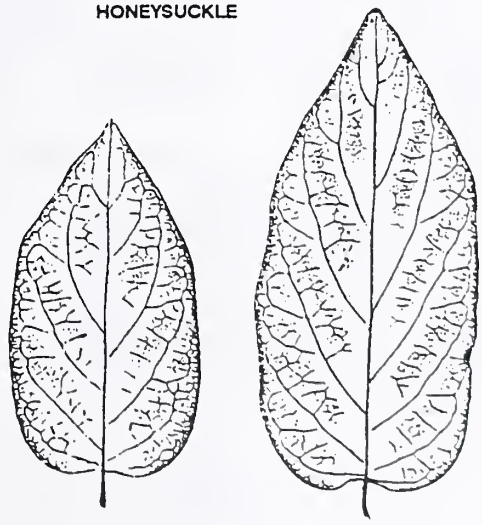
[**EUROPEAN FLY HONEYSUCKLE** *Lonicera xylosteum*
Flowers 2-lipped. An escape reported from scattered New England localities, possibly in our area.]

[**MOUNTAIN FLY HONEYSUCKLE** *Lonicera villosa*
"Berries" blue; pairs united into 2-eyed "berries". Swamps, bogs. Recorded in Sherborn, possibly in our area.]

(PRINTS FULL SIZE)



2-EYED BERRY



BELLE & TATARIAN HONEYSUCKLE

SHRUBS
OPPOSITE UNTOOTHED LEAVES

DOGWOODS (IN PART): MAIN LEAF VEINS REACHING FORWARD. BERRY-LIKE FRUIT USUALLY WHITE OR BLUE, BITTER. BUNDLE SCARS 3.

FLOWERING DOGWOOD *Cornus florida*
"Berries" in a tight bunch, becoming red (occasionally yellow). Flowers with large, petal-like bracts. A large shrub or small tree. Acidic woods. Uncommon.

GRAY DOGWOOD *Cornus racemosa*
Fruit (flowers) in more or less cone-like clusters, not flattish or broadly rounded. Leaves narrow (1-4 cm. wide). "Berries" white, usually on red stalks. Thickets, openings. Common.



FLOWERING DOGWOOD

SILKY DOGWOOD *Cornus amomum*
Branchlet pith brown or grayish. Leaves green (or rusty with brownish hairs) beneath. "Berries" blue or bluish-white. Form with leaves wedge-based and pale beneath often treated as separate species *(C. obliqua)*. Damp (occasionally dry) thickets, shores, river meadows. Common.



GRAY DOGWOOD

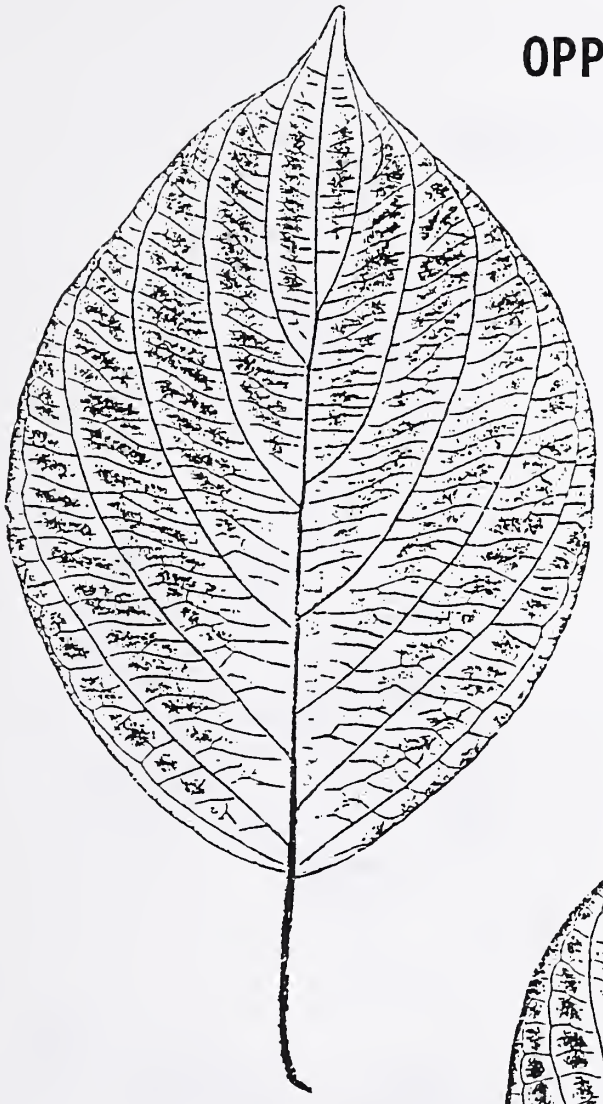
RED-OSIER DOGWOOD *Cornus stolonifera*
Branchlet pith white. New branchlets and twigs deep red. Leaves with 5-7 pairs of main side veins and pale beneath. "Berries" whitish (occasionally with blue flush). Shores, damp thickets. Uncommon.

ROUNDLEAF DOGWOOD *Cornus stolonifera*
Branchlet pith white. New branchlets greenish, usually blotched with purple. Leaves with 6-9 pairs of main side veins, sometimes nearly round. "Berries" light blue (rarely white). Rich wood borders, thickets in sweet soil. Uncommon.



SILKY, RED-OSIER, & ROUNDLEAF DOGWOOD

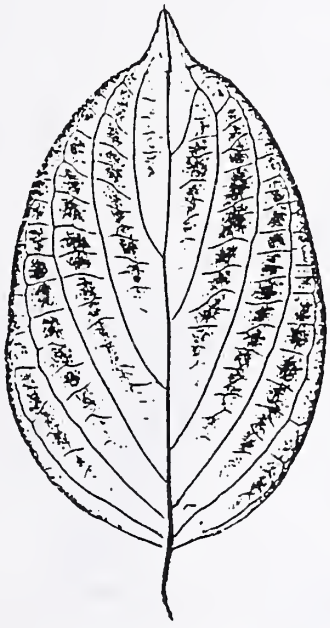
SHRUBS
OPPOSITE UNTOOTHED LEAVES



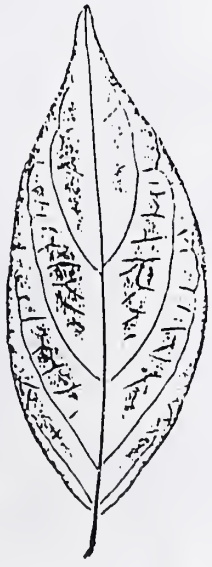
ROUNDLEAF DOGWOOD



FLOWERING DOGWOOD



SILKY DOGWOOD



GRAY
DOGWOOD



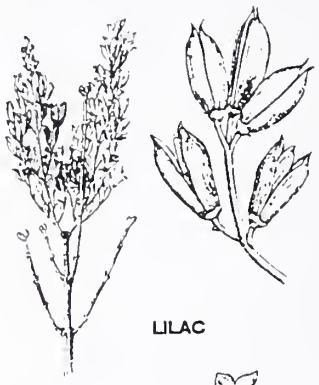
RED-OSIER
DOGWOOD

(PRINTS FULL SIZE)

SHRUBS
OPPOSITE UNTOOTHED LEAVES

Miscellaneous species.

COMMON LILAC *Syringa vulgaris*
Leaves more or less heart-shaped. Flowers in cone-shaped clusters. Fruit elongate capsules. Near former dwellings, roadsides. Uncommon escape.


LILAC

WHITE FRINGE-TREE *Chionanthus virginicus*
Leaves 8-20 cm. long. Berry-like fruit purple or dark blue, 1-1.8 cm. long; edibility unknown. Large shrub or small tree. Thickets, roadsides. Rare escape.

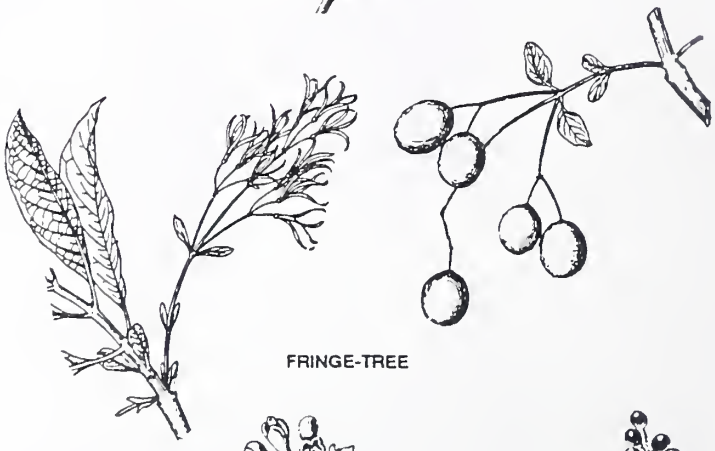
COMMON SNOWBERRY *Symphoricarpos albus*
Leaves 1-5 cm. long, occasionally irregularly lobed. Berry-like fruit white, inedible. Near former dwellings, roadsides. Rare escape.

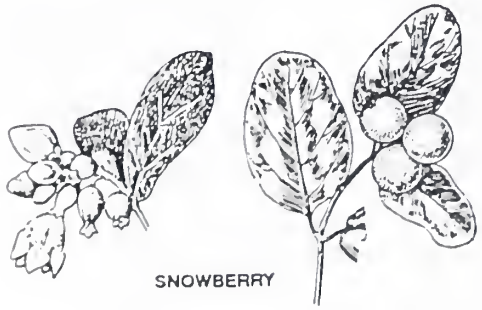

LILAC

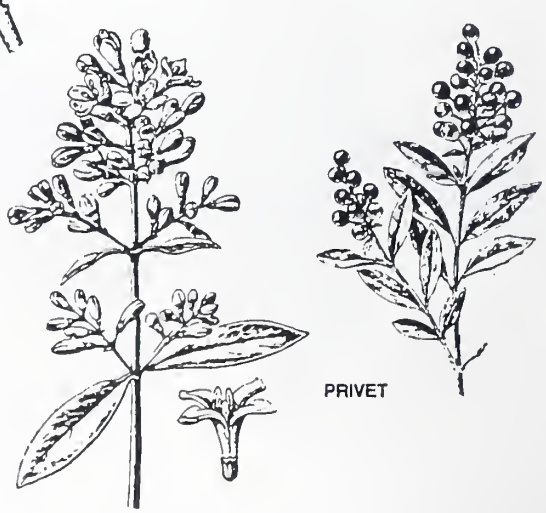
EUROPEAN PRIVET *Ligustrum vulgare*
Leaves 3-6 cm. long. Berry-like fruit black, 6-8 mm. long, somewhat poisonous. Often planted for hedges. Sometimes escapes to thickets and roadsides.

WITHEROD *Viburnum cassinoides*
Sometimes with untoothed leaves. Bundle scars 3. See p. 44.

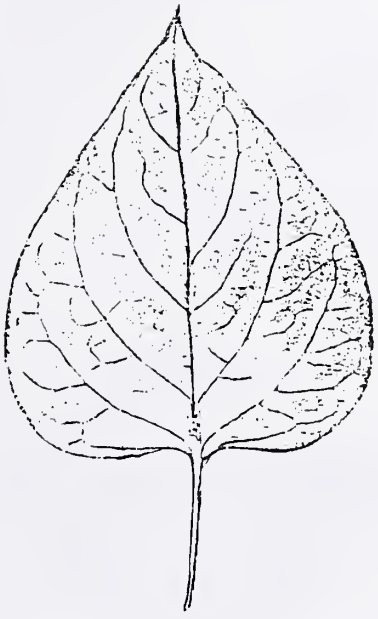
PALE LAUREL *Kalmia polifolia*
Small bog shrub. See p. 102.


FRINGE-TREE

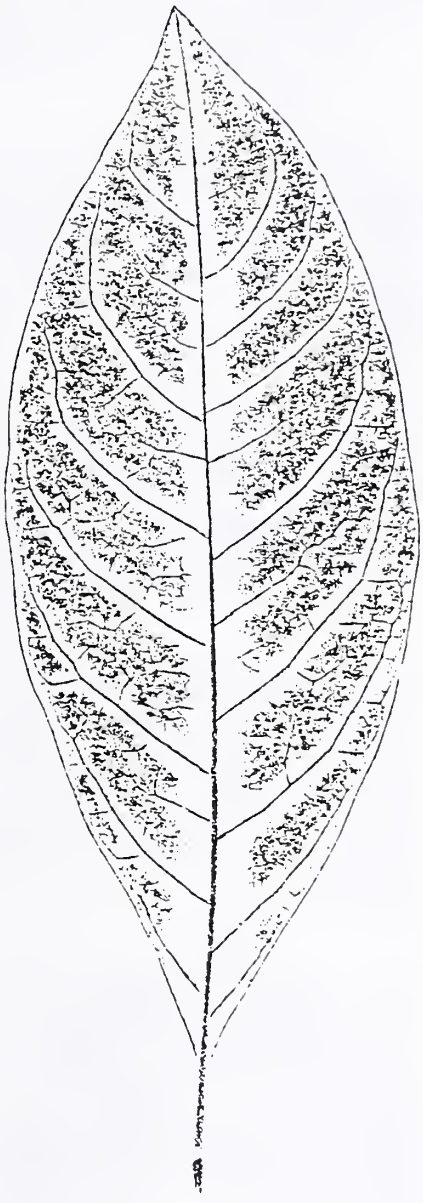

SNOWBERRY


PRIVET

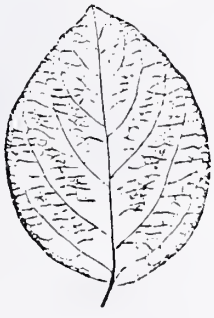
SHRUBS
OPPOSITE UNTOOTHED LEAVES



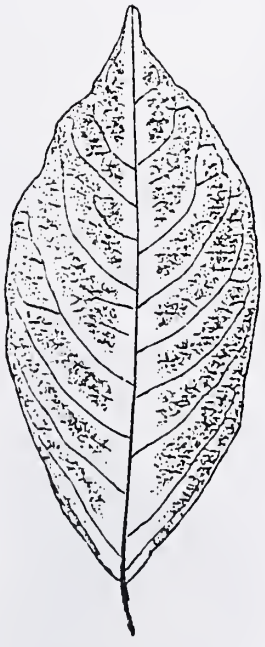
LILAC



FRINGE-TREE



SNOWBERRY



WITHEROD



PRIVET

(PRINTS FULL SIZE)

SHRUBS
OPPOSITE TOOTHED LEAVES

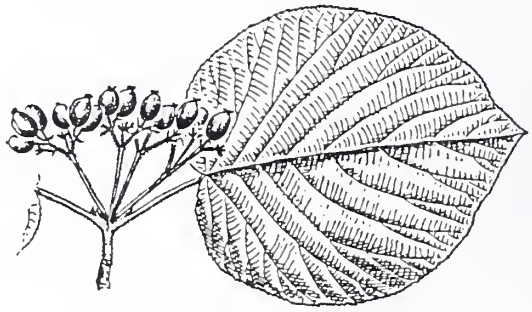
VIBURNUMS (IN PART): FRUIT CLUSTERS OF 1-SEEDED "BERRIES". FLOWERS 5-PETALED, FORMING BROAD CLUSTERS.

NORTHERN ARROWWOOD *Viburnum recognitum*
Leaf teeth large. Main side veins prominent, running directly to leaf edge. "Berries" blue, dry and "puckery". Damp thickets, borders of woods (occasionally in woods). Common.



ARROWWOOD

HOBBLEBUSH *Viburnum alnifolium*
Leaves large (10-20 cm. long) and nearly as wide as long, fine-toothed. Fruit (flower) clusters essentially stalkless. "Berries" red turning nearly to black, edible when thoroughly ripe. Woods. Rare.



HOBBLEBUSH

NANNYBERRY *Viburnum lentago*
Leafstalks warty-edged. Leaves sharply fine-toothed. Fruit (flower) clusters essentially stalkless. "Berries" dark blue, edible. Occasionally a small tree. Borders of woods, moist thickets, roadsides. Uncommon.



NANNYBERRY

WITHEROD *Viburnum cassinoides*
Often toothed and untoothed leaves on same plant. Leaf teeth not sharp or large. Fruit (flower) clusters on stalks. "Berries" turning dark blue, covered with bloom, edible when fully ripe. Thickets, swamps, borders of woods. Common.



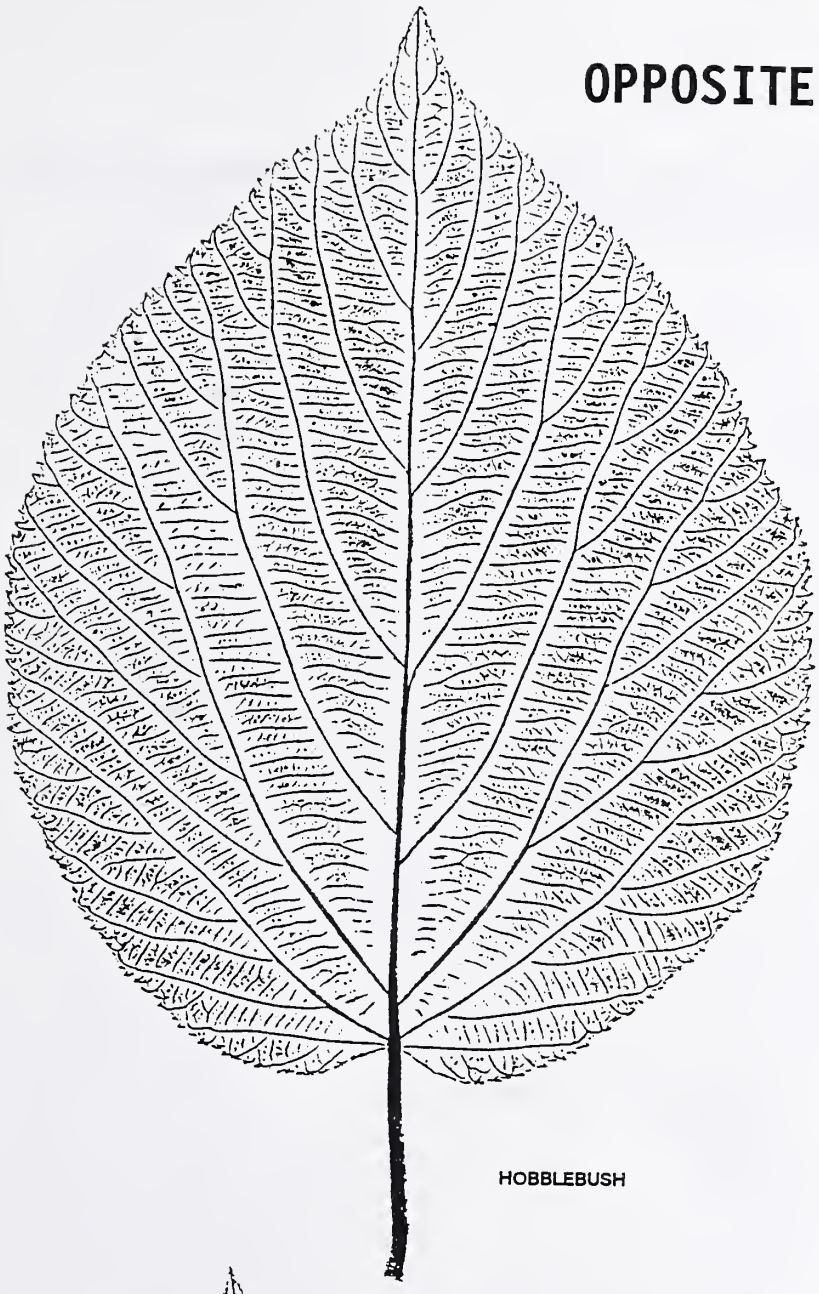


VIBURNUM FLOWERS

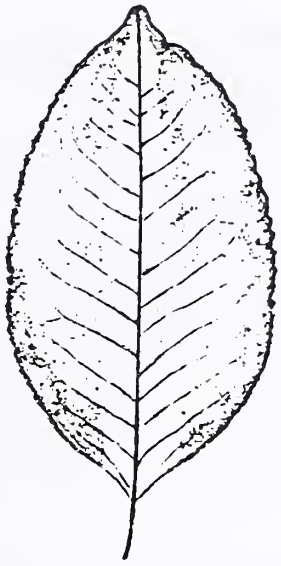


WITHEROD

SHRUBS
OPPOSITE TOOTHED LEAVES



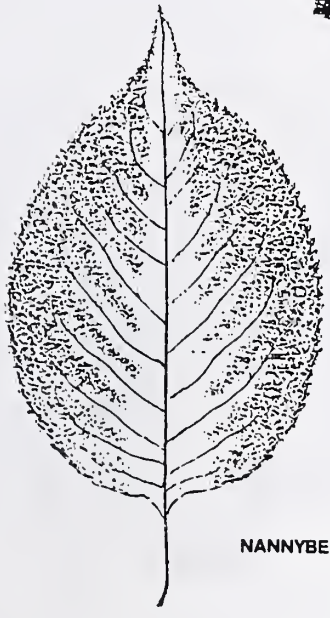
HOBBLEBUSH



WITHEROD



ARROWWOOD



NANNYBERRY

(PRINTS FULL SIZE)

SHRUBS
OPPOSITE TOOTHED LEAVES

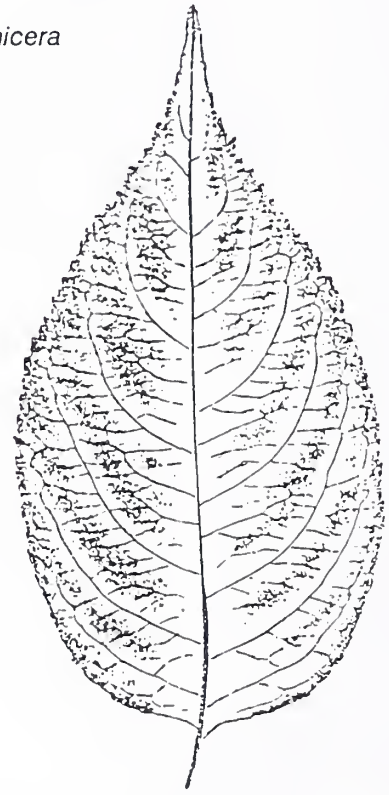
MISCELLANEOUS SPECIES: FRUIT CAPSULE-LIKE. OPPOSING LEAF SCARS CONNECTED BY LINES.

COMMON BUSH-HONEYSUCKLE *Diervilla lonicera*
Leaves with long-tapered tips. Fruit (flowers) mostly in 3's. Fruit long-pointed capsules. Low shrub up to 1 meter high. Dry, open woods, roadsides. Uncommon.

PANICLE HYDRANGEA
Hydrangea paniculata
Leaves hairy on veins beneath. Flowers in showy, cone-shaped clusters appearing in late summer. Fruit small capsules. Sometimes a small tree. Wet woods. Rare escape.

[MOCK-ORANGES *Philadelphus spp.*
Leaves coarse-toothed, with main veins reaching strongly towards tip. Fruit a 4-valved capsule. A few species might escape in our area though none are yet recorded; often persistent near old house sites.]

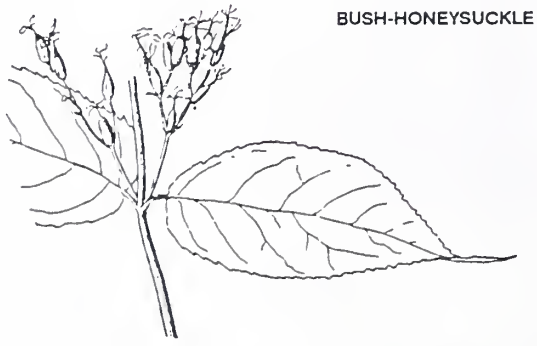




BUSH-HONEYSUCKLE

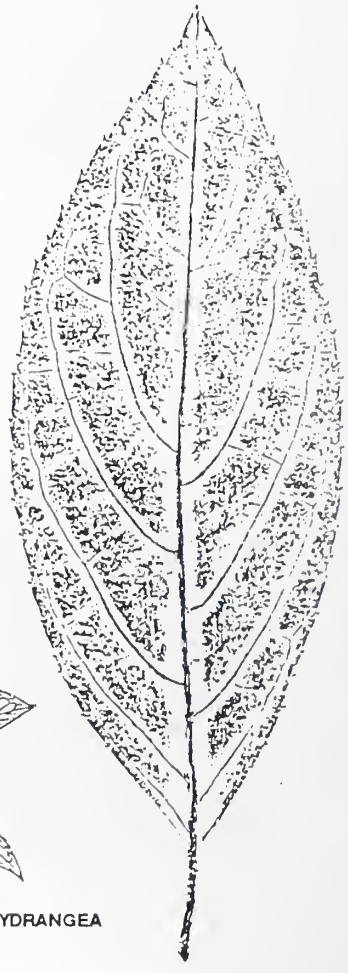


BUSH-HONEYSUCKLE



BUSH-HONEYSUCKLE







(PRINTS FULL SIZE)



MOCK-ORANGE



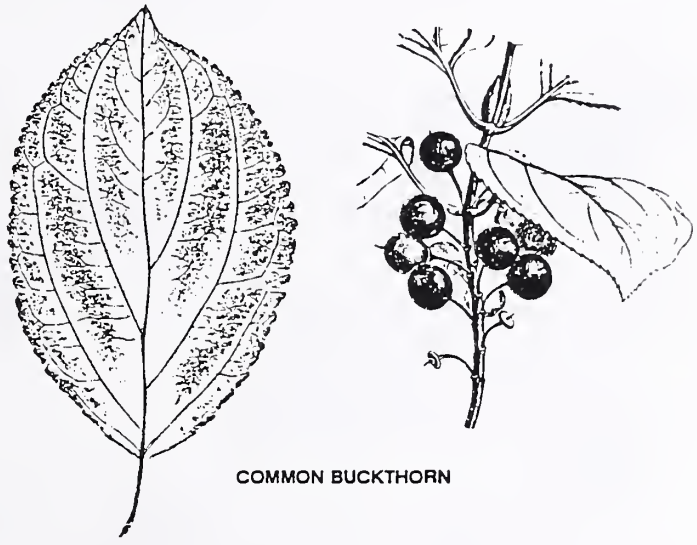
HYDRANGEA CAPSULE



HYDRANGEA

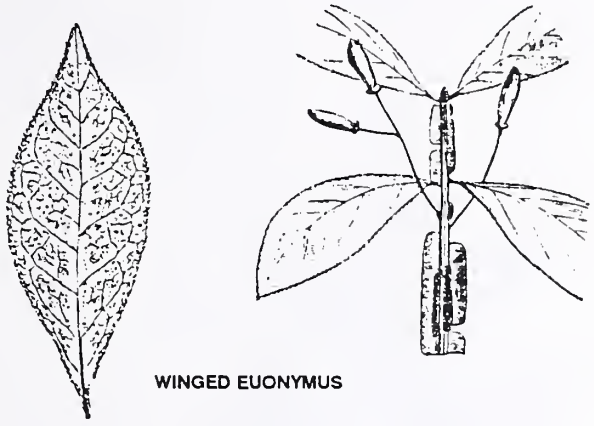
MISCELLANEOUS SPECIES: FRUIT IF BERRY-LIKE, NOT 1-SEEDED. OPPOSING LEAF SCARS NOT CONNECTED BY LINES.

COMMON BUCKTHORN *Rhamnus cathartica*
Leaves essentially but not quite opposite; main veins reaching strongly forward. "Berries" black, 3-4 seeded, nauseous and purgative. Often a small tree. Naturalized in thickets and roadsides. Common.



COMMON BUCKTHORN

WINGED EUONYMUS *Euonymus alatus*
Twigs and branchlets usually with corky wings. Leafstalks very short (1-3 mm. long). Fruit orange and red on long stalks, somewhat poisonous. Roadsides, woods. An occasional escape.

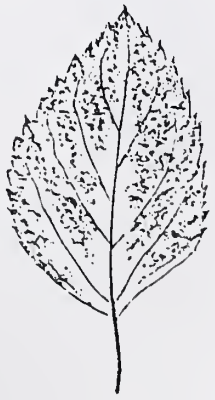


WINGED EUONYMUS

EUROPEAN EUONYMUS *Euonymus europaeus*
Leafstalks 6-12 mm. long. Leaves hairless. Fruit fleshy, pink to red, 4-lobed, on a long stalk, somewhat poisonous. Flowers usually in clusters of 3-5. Sometimes a small tree. Roadsides, waste places. An occasional escape.

WEEPING FORSYTHIA *Forsythia suspensa*
Usually also with some 3-lobed and 3-compound leaves. Fruit elongate capsules. Rare escape. See p. 36.

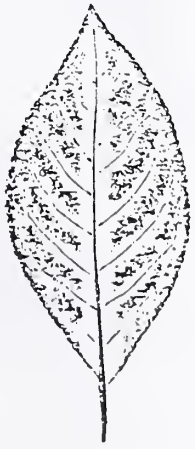
PURPLE-OSIER WILLOW *Salix purpurea*
Usually with alternate leaves at least on sprout growth. Buds with single scale. Occasional escape. See p. 64.



(PRINTS FULL SIZE)

FORSYTHIA







EUROPEAN EUONYMUS

SHRUBS
ALTERNATE COMPOUND LEAVES

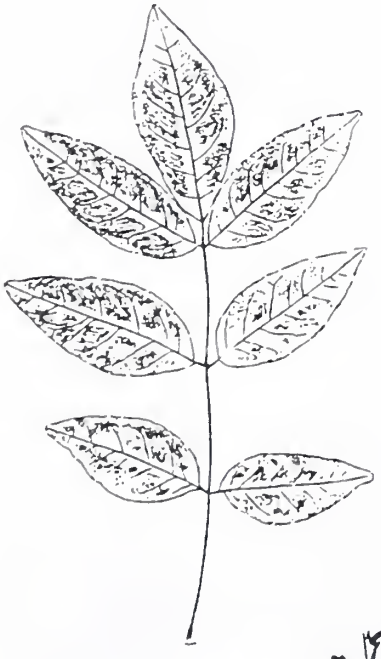
SHRUBS THORNY OR BRISTLY; LEAVES UNTOOTHED OR OBSCURELY TOOTHED

BRISTLY LOCUST *Robinia hispida*
Twigs bristly. Leaflets 7-13, untoothed, bristle-tipped. Fruit bristly pods. Roadsides, dry slopes. Uncommon escape.



BRISTLY LOCUST

COMMON PRICKLY-ASH *Zanthoxylum americanum*
Stems with paired prickles. Leaflets 5-11, aromatic when crushed. Fruit small, 1-2 seeded pods (without bristles). Occasionally a small tree. Rich woods, rocky pastures, stream banks. Rare escape.



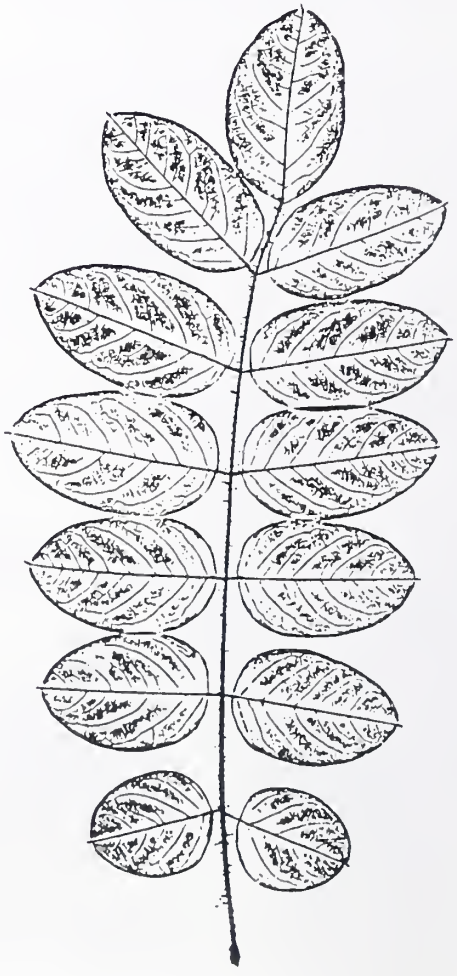
PRICKLY-ASH



PRICKLY-ASH



PRICKLY-ASH



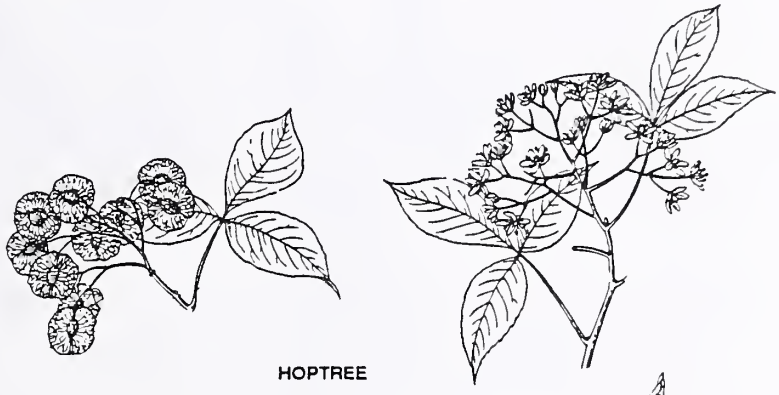
BRISTLY LOCUST

(PRINTS 2/3 SIZE)

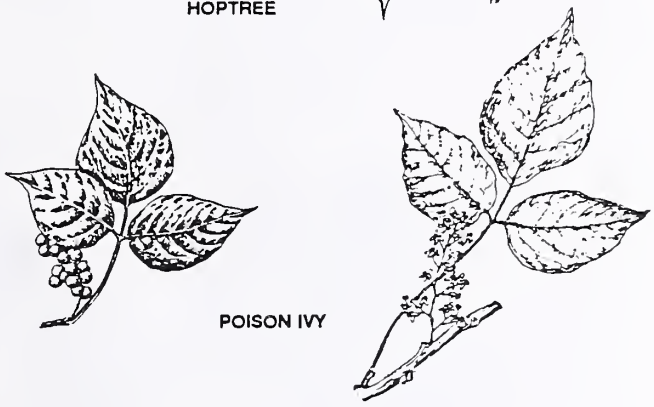
LEAFLETS 3; SHRUBS THORNLESS AND WITHOUT BRISTLES

HOPTREE *Ptelea trifoliata*
End leaflet very short-stalked. Fruits wafer-like. Sometimes a small tree. Thickets, edges of woods, roadsides. Uncommon escape.

POISON IVY *Rhus radicans*
End leaflet stalked (longer than stalks of side leaflets). Berry-like fruit whitish. All parts of this plant irritate the skin of most people. Often a trailing or climbing plant. Dry or damp open woods, thickets, roadsides, fencerows. Very common.



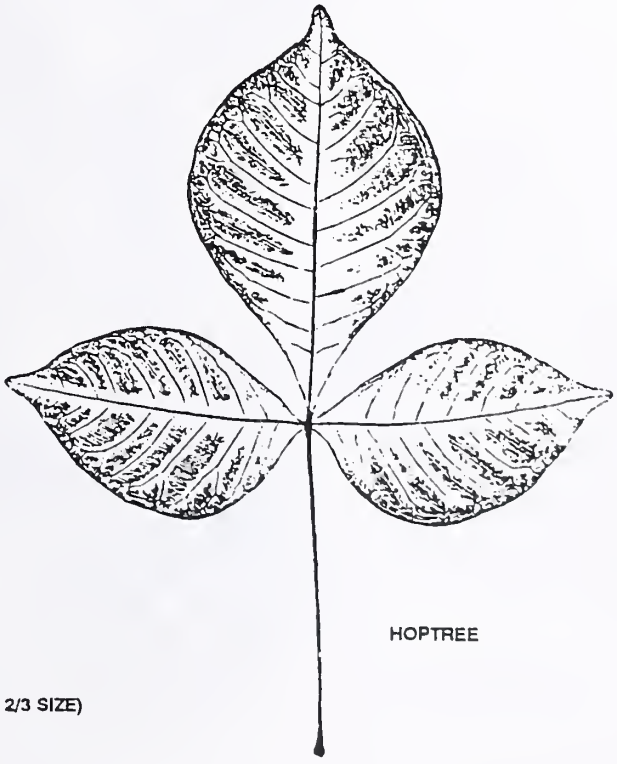
HOPTREE



POISON IVY



POISON IVY



HOPTREE

(PRINTS 2/3 SIZE)

SHRUBS
ALTERNATE COMPOUND LEAVES

ROSES: Shrubs thorny; leaflets toothed; leafstalk base with "wings". Fruit berry-like, sometimes bristly.

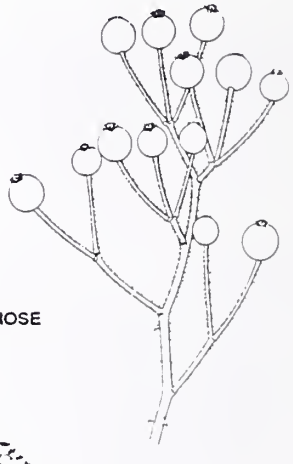
MULTIFLORA ROSE *Rosa multiflora*
Leafstalk "wings" feathery or comb-like. Fruit (flowers) many per cluster. Flowers small (2-4 cm. across), mostly white. Naturalized along roadsides, borders of woods, thickets, clearings. Common.

SWEET-BRIER *Rosa eglanteria*
Leaflets glandular, often nearly round-shaped, aromatic when crushed. Flowers 3-5 cm. across. Thickets, clearings, roadsides. Uncommon escape.

SHINING ROSE *Rosa nitida*
New stems densely bristly with bristles usually purplish or reddish. Leafstalk "wings" wide, not curled under. Leaflets fine-toothed, shiny dark green above, mostly only 4-12 mm. wide on flowering (fruiting) shoots. Swamps, meadows, bogs, pond shores. Common.



MULTIFLORA ROSE





(PRINTS FULL SIZE)

MULTIFLORA ROSE



SWEET-BRIER



SHINING ROSE



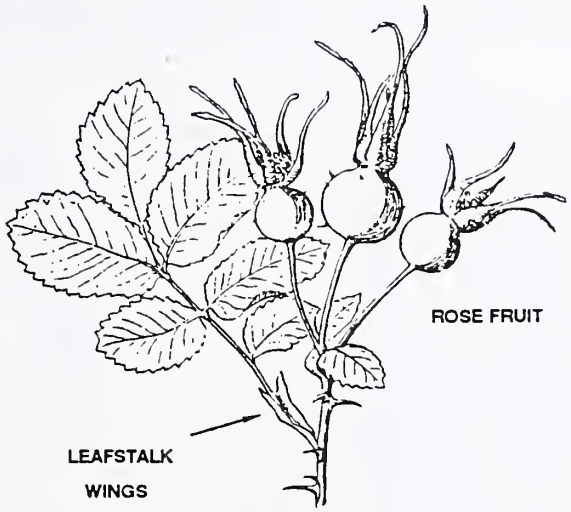
MULTIFLORA ROSE

SWAMP ROSE *Rosa palustris*
Leafstalk "wings" narrow, curled under
Leaflets quite fine-toothed, dull green above. Prickles stout-based. Swamps, wet meadows, shores. Common.

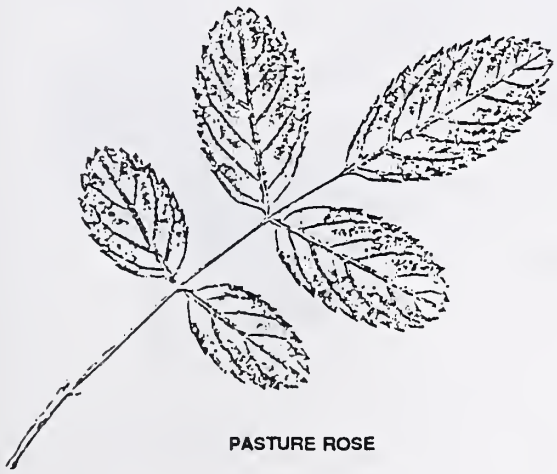
PASTURE ROSE *Rosa carolina*
Leafstalk "wings" narrow, sometimes curled under. Prickles needle-like. Leaflets coarse-toothed, dull or only slightly shiny above. Fruit (flowers) mostly solitary. A low (less than 1 meter high) and slender (less than 8 mm. thick at base) shrub. Dry sandy, rocky or open habitats, or thin woods. Common.

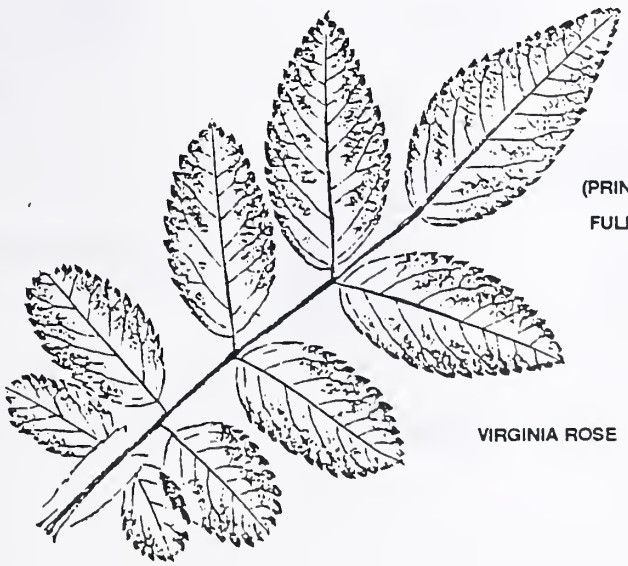
VIRGINIA ROSE *Rosa virginiana*
Leafstalk "wings" wide-spreading, not curled under. New stems with broad-based, straight or curved prickles, not densely bristly, sometimes prickleless. Leaflets usually shiny above. Fruit (flowers) mostly solitary. Meadows, damp to dry thickets, roadsides, clearings. Common.

BLACKBERRIES, RASPBERRIES, DEWBERRIES *Rubus spp.*
Leaflets 3-5. Thorny or bristly. Not truly woody. See p. 96.









SHRUBS
ALTERNATE COMPOUND LEAVES

SHRUBS THORNLESS, WITHOUT BRISTLES. LEAFLETS MORE THAN 3, UNTOOTHED OR WITH A FEW COARSE TEETH.

SHRUBBY CINQUEFOIL *Potentilla fruticosa*
Leaflets mostly 5-7 and quite small (1-3 cm. long, 2-9 mm. wide). Fruits small, dry, hairy. Open ground, old pastures, meadows, usually in sweet soil. Rare.



SHRUBBY CINQUEFOIL



SHRUBBY CINQUEFOIL

POISON SUMAC *Rhus vernix*
Leaflets 7-13, 4-10 cm. long. Fruit (flowers) in elongated clusters. Berry-like fruit whitish. Sometimes a small tree. All parts of this plant irritate the skin of most people. Wooded swamps, bog margins, occasionally in wet woods. Common.

SHINING SUMAC *Rhus copallina*
Leaflets 11-23, 4-10 cm. long., sometimes with some teeth towards the tips, shiny above. Midrib of the compound leaves winged. Fruit (flowers) in more or less cone-like clusters. Berry-like fruit red, hairy, used for flavoring. Dry fields, roadsides, openings in dry woods. Uncommon.



POISON SUMAC

INDIGOBUSH *Amorpha fruticosa*
Leaflets 13-35 (or more), small (1-6 cm. long). Fruit (flowers) in erect, elongated clusters. Fruit small resin-dotted pods. Roadsides, thickets, waste land. Uncommon escape.



SHINING SUMAC



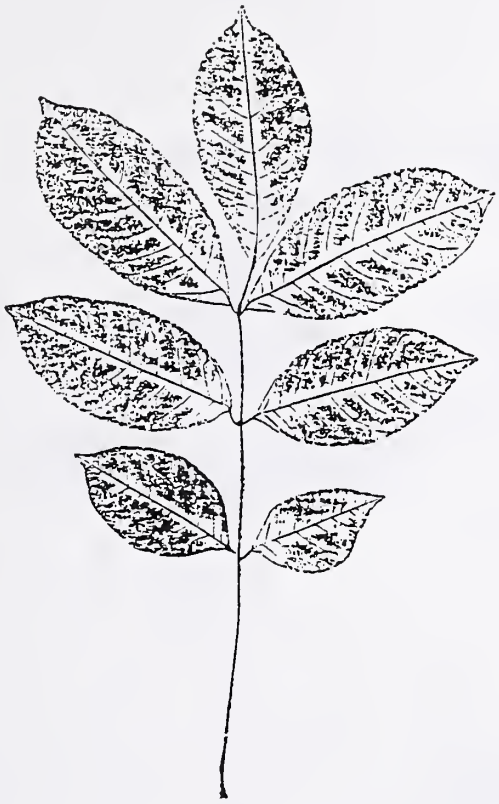


INDIGOBUSH

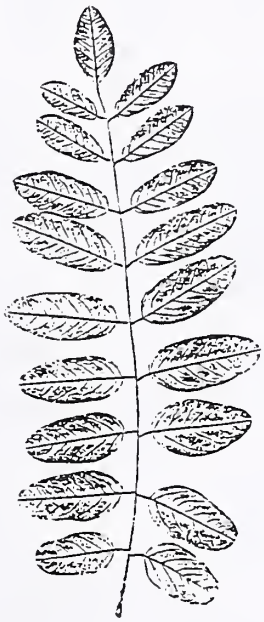


SHINING SUMAC

SHRUBS
ALTERNATE COMPOUND LEAVES



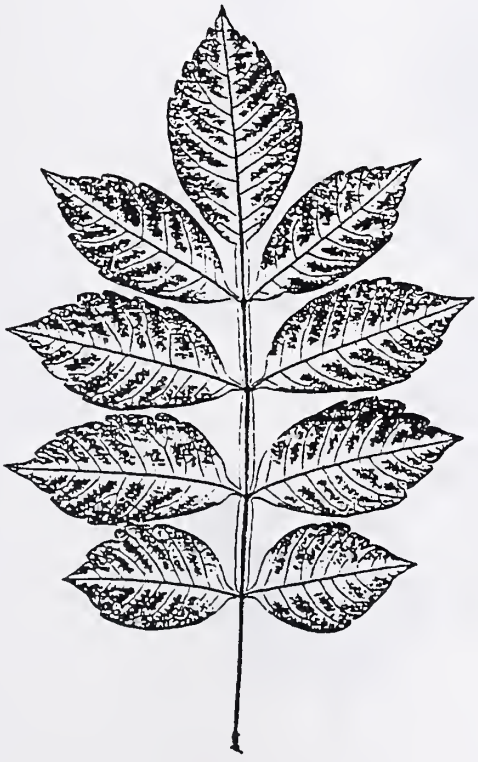
POISON SUMAC



INDIGOBUSH

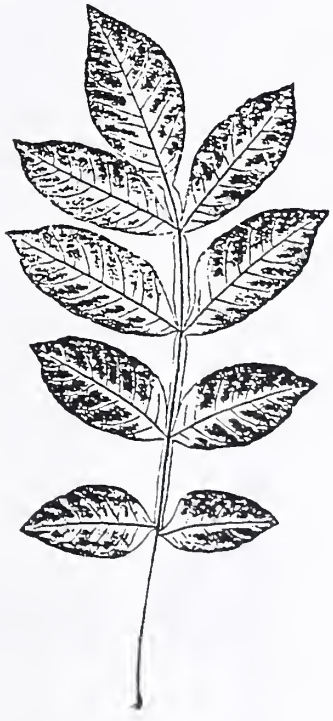


SHRUBBY CINQUEFOIL



SHINING SUMAC

(PRINTS 1/3 TO 1/2
SIZE EXCEPT CINQUEFOIL
FULL SIZE)

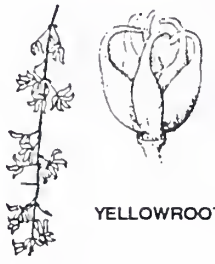


SHINING SUMAC

SHRUBS
ALTERNATE COMPOUND LEAVES

SHRUBS THORNLESS, WITHOUT BRISTLES. LEAFLETS MORE THAN 3, MANY- (OR DEEPLY SHARP-) TOOTHED.

YELLOWROOT *Xanthorhiza simplicissima*
Leaflets usually 5-7, deeply sharp-toothed, often lobed, 3-7 cm. long. Fruit (flowers) in stringy, drooping clusters. Fruit small capsules. A low shrub (up to .6 meters high). Moist ground. Rare escape.


YELLOWROOT


YELLOWROOT

FALSE-SPIREA *Sorbaria sorbifolia*
Leaflets 13-23, finely double-toothed, 5-10 cm. long. Fruit (flowers) in erect, cone-like clusters. Fruit small capsules. Roadsides, waste land. Uncommon escape.

STAGHORN SUMAC *Rhus typhina*
Twigs and leafstalks densely velvety-hairy. Leaflets 11-31, 5-12 cm. long. Fruit in dense, cone-shaped clusters. Berry-like fruit red, velvety-hairy, used for flavoring Sometimes a small tree. Dry thickets, roadsides, open rocky slopes. Uncommon.

SMOOTH SUMAC *Rhus glabra*
Like Staghorn Sumac but twigs and leafstalks hairless. Berry-like fruit not quite so fuzzy, also used for flavoring. Fruit clusters not so compact. Dry fields, roadsides. Common.


FALSE-SPIREA




SMOOTH SUMAC

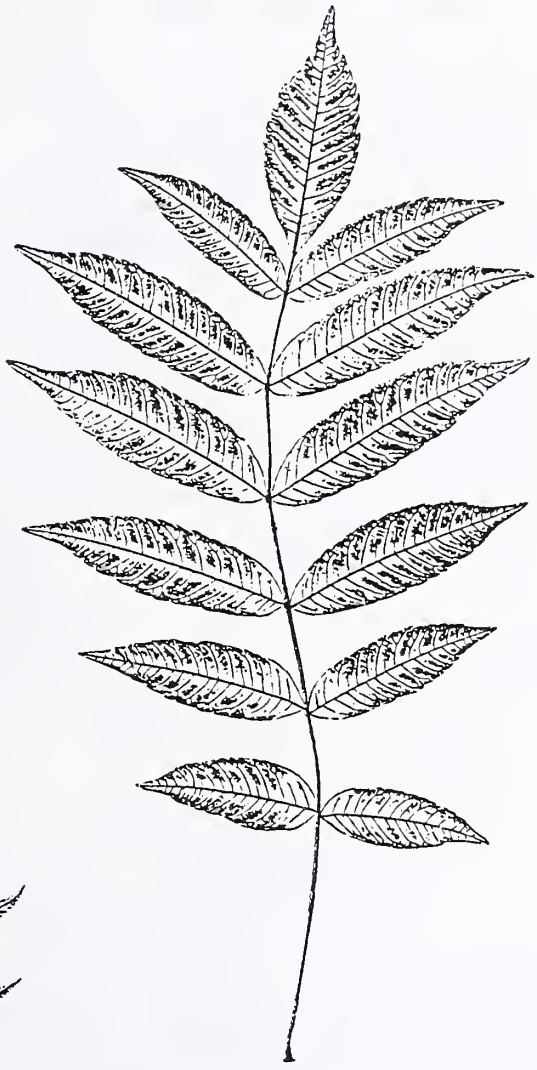

SUMAC


STAGHORN SUMAC

SHRUBS
ALTERNATE COMPOUND LEAVES



YELLOWROOT



STAGHORN & SMOOTH SUMAC



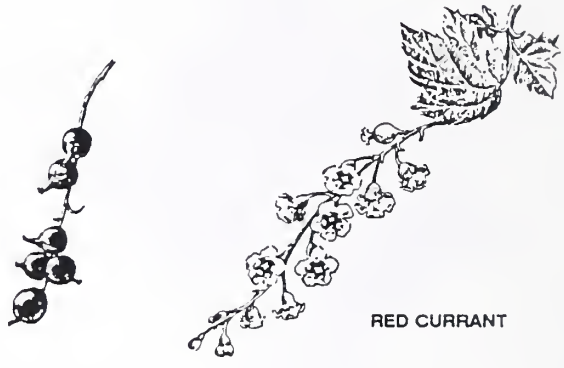
FALSE-SPIREA

(PRINTS 1/3 TO 1/2 SIZE)

SHRUBS
ALTERNATE SIMPLE LEAVES

Leaves fan-lobed (3-5 veins meeting at leaf base)

GARDEN RED CURRANT *Ribes sativum*
Leaves mostly heart-shaped at base, not resin-dotted. Fruit (flowers) in elongated clusters. Flowers cup-shaped, not tubular. Berries red, hairless, edible. Open woods, thickets. Uncommon escape.



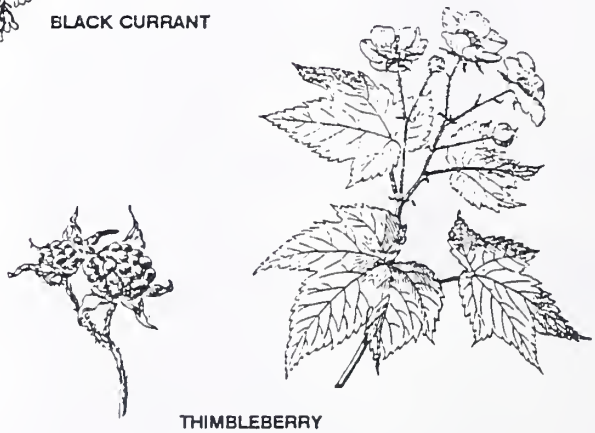
BUFFALO CURRANT *Ribes odoratum*
Leaves wedge-based or straight-cut at base, not resin-dotted. Fruit (flowers) in elongated clusters. Flowers tubular. Berries black or yellow, tasteless. Old house sites, moist open ground. Occasionally escapes cultivation.



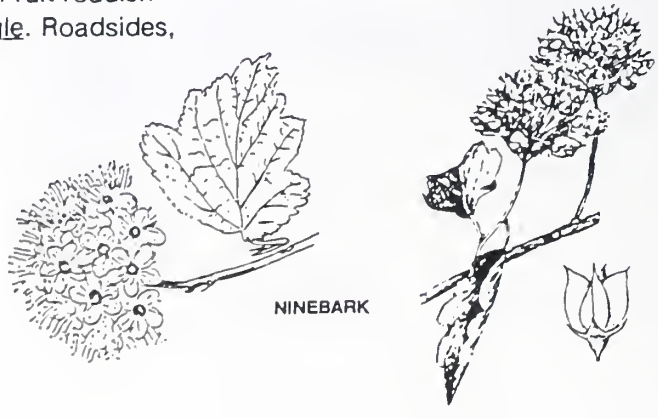
AMERICAN BLACK CURRANT
Ribes americanum
Leaves with yellow resin dots beneath. Fruit (flowers) in elongated clusters with persistent bracts longer than individual fruit (flower) stalks. Berries black, somewhat musky in flavor but used in pies. Wet thickets. Rare.



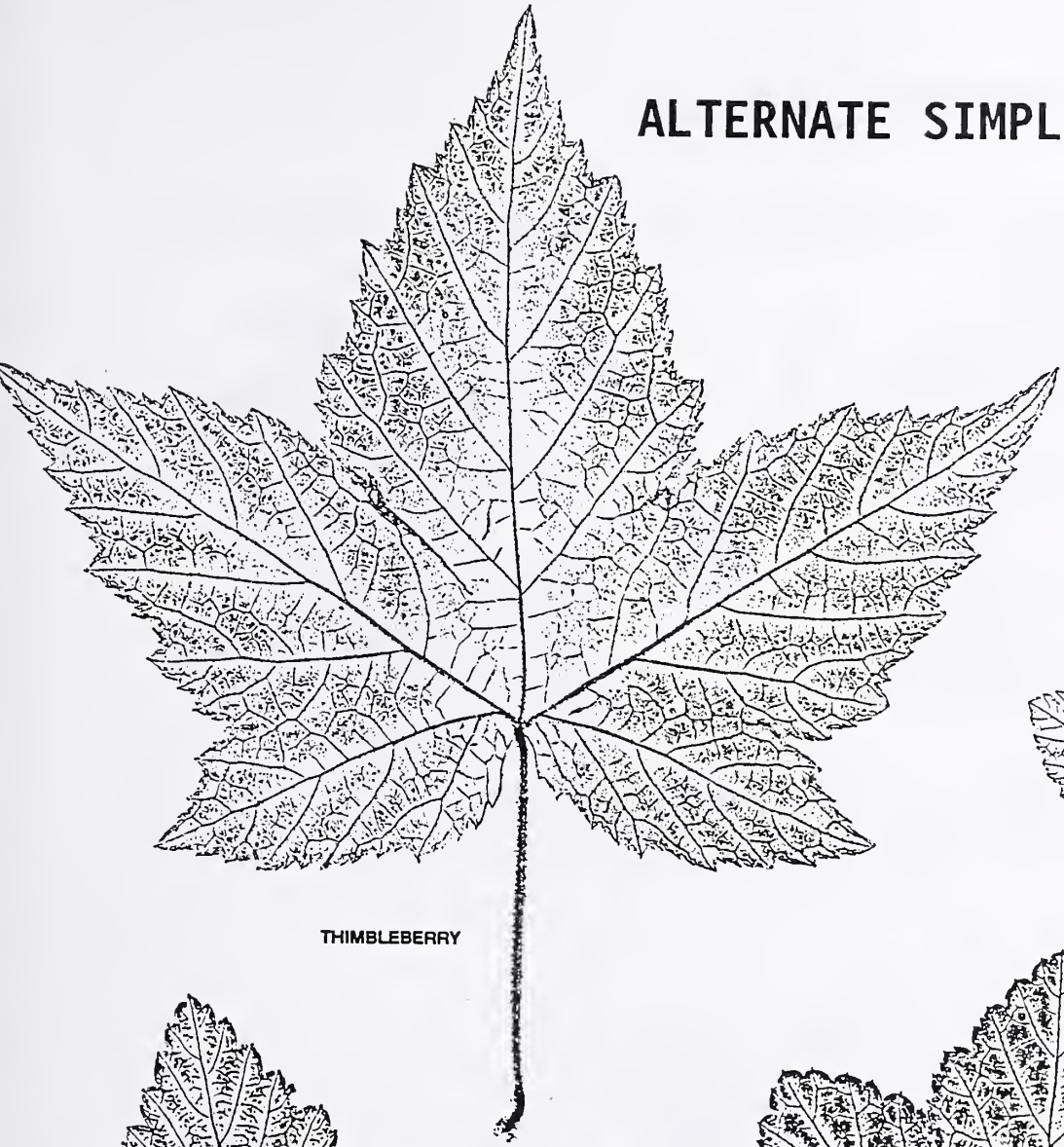
FRAGRANT THIMBLEBERRY
Rubus odoratus
Leafstalk and twigs sticky-hairy. Leaves large, mostly 10-30 cm. wide. Flowers showy, 3-6 cm. wide. Fruit similar to raspberry, but dry and tasteless. Thickets, borders of woods, roadsides. Rare escape.



NINEBARK *Physocarpus opulifolius*
Leaves somewhat 3-lobed. Fruit (flowers) bunched in rounded clusters. Fruit reddish purple or brown papery capsule. Roadsides, old house sites. Rare escape.



SHRUBS
ALTERNATE SIMPLE LEAVES



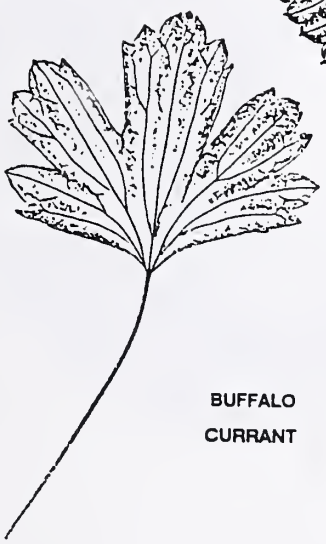
THIMBLEBERRY



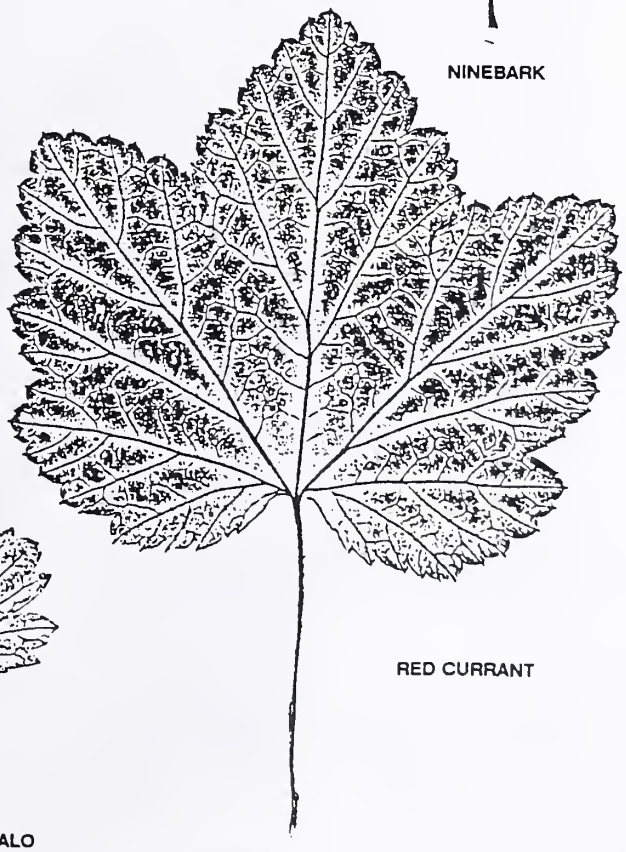
NINEBARK



BLACK CURRANT



BUFFALO CURRANT



RED CURRANT

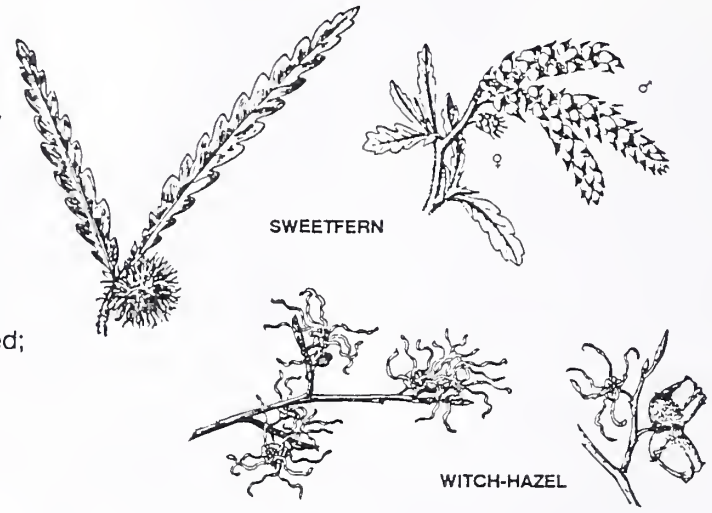
(PRINTS FULL SIZE)

SHRUBS
ALTERNATE SIMPLE LEAVES

LEAVES LOBED OR SCALLOPED, NOT FAN-LOBED; FRUIT NOT BERRY-LIKE

SWEETFERN *Comptonia peregrina*
Fernlike shrub with narrow distinctively scalloped, aromatic leaves. Fruit burr-like. Dry, sterile soil, clearings, scrub land, gravel banks. Common.

WITCH-HAZEL *Hamamelis virginiana*
Leaves broad, scalloped or mildly lobed; leaf bases uneven. Flowers autumnal, stringy, yellow. Fruit capsule bursts expelling seeds. Dry or moist woods, clearings. Common.



Note: Distinguish the following two oak species from seedlings of similar tree species by the presence of fruit (flowers) on the shrub species. Tree species are generally not fertile until a height greater than 4 meters is attained. Also, the leaves and leafstalks of the shrub species are smaller.

SCRUB OAK *Quercus ilicifolia*
Leaves with bristle-tipped lobes, whitish-felted beneath, dark green above. Acorns small, about 1 cm. long, bitter. Sometimes a small tree. Dry, sterile scrub woods, sandy-gravelly clearings. Common.

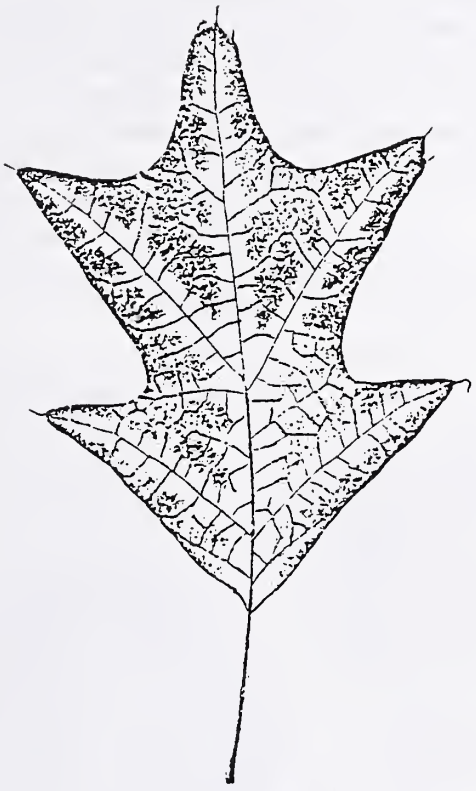
DWARF CHINQUAPIN OAK
Quercus prinoides
Leaves with 3-8 shallow lobes or coarse teeth on each margin, not bristle-toothed, evenly taper-based. Acorns 1-1.5 cm. long, edible. Dry, sterile woods, gravel plains. Uncommon.



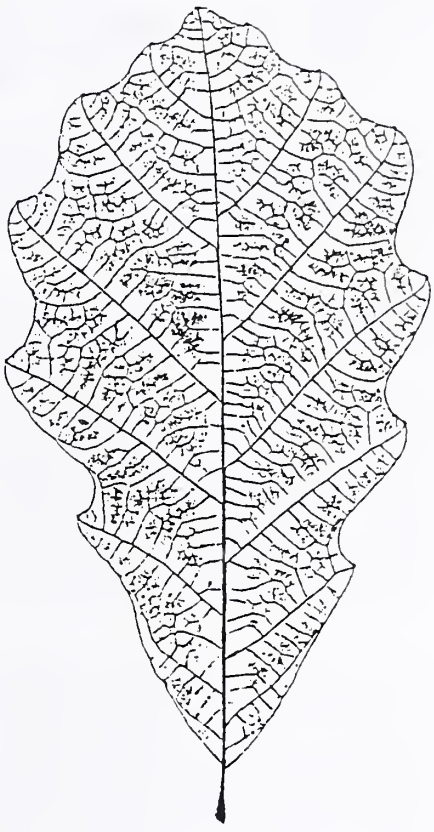
SPECKLED ALDER *Alnus rugosa*
Leaves fine-toothed, sometimes mildly lobed. See p. 82.

CRABAPPLES *Pyrus (Malus) spp.*
Seedlings of some species with some lobed leaves. Leaves fine-toothed. See p. 103.

SHRUBS
ALTERNATE SIMPLE LEAVES



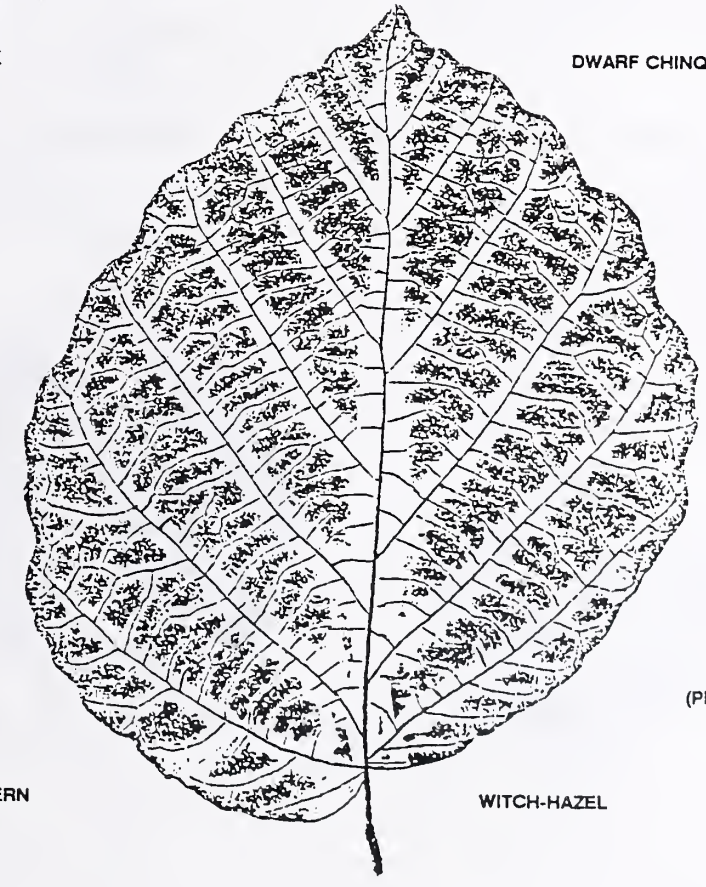
SCRUB OAK



DWARF CHINQUAPIN OAK



SWEETFERN



WITCH-HAZEL

(PRINTS FULL SIZE)

SHRUBS
ALTERNATE SIMPLE LEAVES

HAWTHORNS: THORNY WITH THORNS MOSTLY UNBRANCHED AND MOSTLY LONGER THAN 2 CM. LEAVES TOOTHED OR LOBED.

Reliable identification in this group may require examination of flowers. Leaf shapes may vary considerably on the same plant. Leaf characters used below apply primarily to mature leaves of fruiting branchlets. For problem specimens consult the illustrations and key in Seymour's *Flora of New England*.

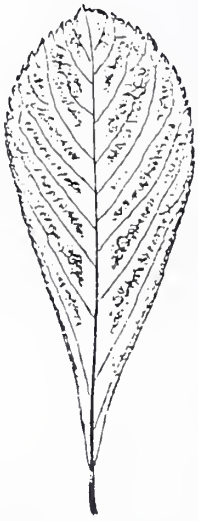
Hawthorns in our area are found in old pastures, thickets, borders of woods and occasionally in woods. The fruits of some species are palatable and sometimes used for making jellies.

COCKSPUR THORN *Crataegus crus-galli*
Leaf base narrow. Leaves essentially unlobed, mostly less than 3 cm. wide, glossy above. Fruit with 1-3 nutlets. Calyx lobes untoothed. Usually a tree. Uncommon.

LONG-SPINED THORN *Crataegus macracantha (or C. succulenta var. macracantha)*
Leaf base narrowed. Leaves sometimes with small lobes, mostly wider than 3 cm., often glossy above. Fruit with 2-3 nutlets. Calyx lobes toothed. Sometimes a small tree. Uncommon.

ROUNDLEAF THORN *Crataegus chrysocarpa* including *C. dodgei*
Leaves wedge-based, distinctly lobed, sometimes nearly circular in shape. Leafstalks glandular only near leaf base. Flowerstalks hairy. Flower clusters with conspicuously glandular bracts at first. Stamens with white or yellow heads. Calyx lobes toothed. Sometimes a tree. Uncommon.

(PRINTS FULL SIZE)



COCKSPUR THORN



LONG-SPINED THORN



ROUNDLEAF THORN



HAWTHORN



HAWTHORN

ALLEGHENY THORN *Crataegus intricata*
Leaves gradually or abruptly narrowed at broad base. Leafstalks with glands along length. Flowerstalks essentially hairless. Flower clusters nearly unbranched, with conspicuous glandular bracts. Stamen heads white or pale yellow (rarely pink). Fruit usually oblong. Uncommon.

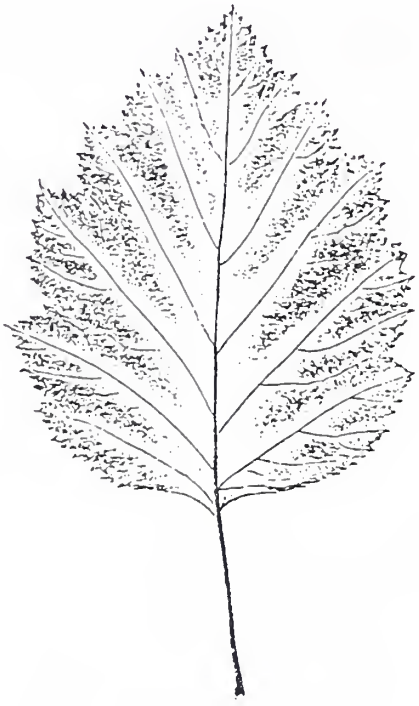
SCARLET THORN *Crataegus coccinea*
including *C. pedicellata, C. holmesiana, and C. pringlei*
Leaf bases broadly wedge-based or rounded. Leaves lobed (but lobes sometimes small), widest near middle, with some straight hairs above (use hand lens). Calyx lobes toothed. Stamens 5-10 with pink or red heads. Often a tree. Uncommon.

VARIABLE THORN *Crataegus macrosperma*
Our most common hawthorn. Leaves wide-based with distinct lobes, generally widest below the middle, with some straight hairs above (use hand lens). Leafstalks sometimes with slight glands. Calyx lobes untoothed (or with only one or two pairs of teeth). Flower clusters without glandular bracts. Flowerstalks hairless. Stamens 5-10 with red (rarely pink) heads. Often a tree. Common.

FROSTED THORN *Crataegus pruinosa*
Fruit whitened dull red (or greenish) with calyx on a raised collar. Calyx lobes untoothed (or with only one or two pairs of teeth). Leaves similar to Scarlet Thorn but hairless above (use hand lens). Stamens 15-20 with pink heads. Small tree or shrub. Rare.

(LEAF ILLUSTRATIONS ON NEXT PAGE)

SHRUBS
ALTERNATE SIMPLE LEAVES



ALLEGHENY THORN



SCARLET THORN



VARIABLE THORN

(PRINTS FULL SIZE)

THORNY SHRUBS; THORNS SMALL (LESS THAN 2 CM.) OR BRANCHED

SMOOTH GOOSEBERRY *Ribes hirtellum*
Leaves lobed with 3-5 main veins meeting at the base. Usually sparsely thorny. Berries purplish to blackish, used in preserves. Rocky or swampy woods and clearings. Uncommon.





GOOSEBERRY

EUROPEAN BARBERRY *Berberis vulgaris*
Mature leaves bristle-toothed. Thorns branched. Fruit (flowers) in elongated clusters. Berries red or purple, edible, tart. Pastures, roadsides. Naturalized. Common.

JAPANESE BARBERRY *Berberis thunbergii*
Leaves untoothed. Berries red, perhaps too tart to eat raw. Moist, low woods, old orchards, pastures. Common escape.

AUTUMN ELAEAGNUS *Elaeagnus umbellata*
Leaves untoothed and silvery beneath. Sometimes thorny. See p. 72.

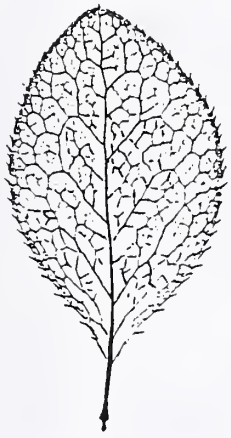
COMMON MATRIMONY-VINE *Lycium halimifolium*
Leaves untoothed, 2-6 cm. long. Sprawling shrub often sparingly thorny. See p. 71.

AMERICAN PLUM *Prunus americana*
Leaves sharply fine-toothed. Fruit red or yellow, 2-3 cm. thick. Spur branches often thornlike. See p. 78.

COMMON BUCKTHORN *Rhamnus cathartica*
Leaves nearly opposite in arrangement. Usually somewhat spiny. See p. 47.

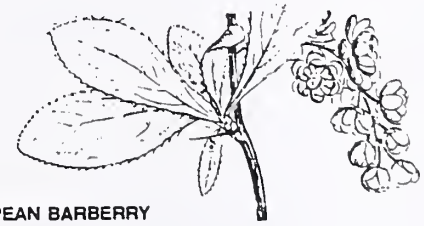


SMOOTH GOOSEBERRY



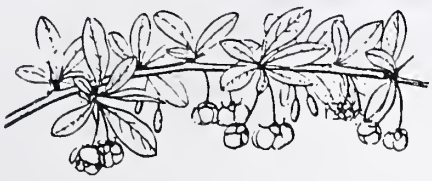
EUROPEAN BARBERRY





EUROPEAN BARBERRY





JAPANESE BARBERRY



(PRINTS FULL SIZE)

SHRUBS
ALTERNATE SIMPLE LEAVES

WILLOWS: BUDS COVERED BY SINGLE SCALE (IN LATE SPRING OR EARLY SUMMER LOOK FOR WINTER KILLED BUDS). LEAVES USUALLY NARROW. LEAFY GROWTH (STIPULES) OFTEN PRESENT ON TWIG AT BASE OF LEAFSTALKS. FRUIT ELONGATE CAPSULES IN DENSE CLUSTERS.

PURPLE-OSIER WILLOW *Salix purpurea*
Leaves, flower (fruit) clusters often nearly opposite in arrangement. Alternate leaf arrangement clearest on sprout growth. Leaves minutely toothed or untoothed, 1-2 cm. wide, often purple-tinged. Stipules absent. Rare escape.


STIPULES

WAND WILLOW *Salix rigida*
(S. eriocephala)
Leaf bases typically somewhat heart-shaped or broadly rounded. Stipules usually present and large (5-15 mm. long). Larger leaves 1.5-3.5 cm. wide, 3-6 times as long as wide, distinctly fine-toothed. Expanding leaves often purplish or reddish tipped. Fruit capsules hairless. Low thickets, shores. Common.


WILLOW FRUIT


WILLOW GALL

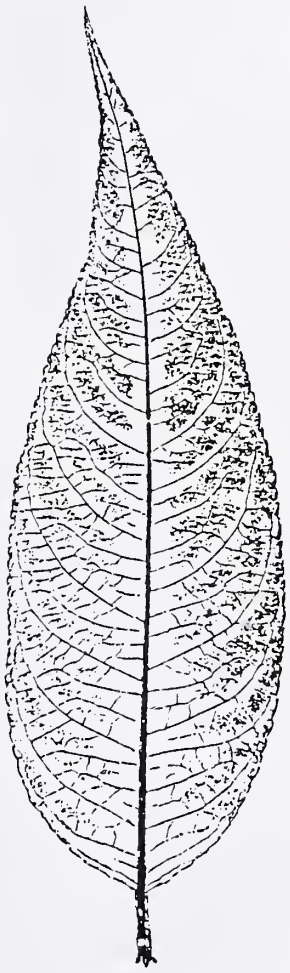
BLACK WILLOW *Salix nigra*
Leaves pure green beneath, mostly .5-1.5 cm. wide, usually 10-14 times as long as wide, fine-toothed. Stipules often prominent. Often a tree. Shores, meadows, occasionally swamps and low damp ground. Common.

SHINING WILLOW *Salix lucida*
Leafstalk with distinct glands near leaf base. Leaves not whitened beneath, fine-toothed, 1.5-5 cm. wide, often with long-tapered tips. Sometimes a tree. Shores, meadows, swamps. low ground. Rare.

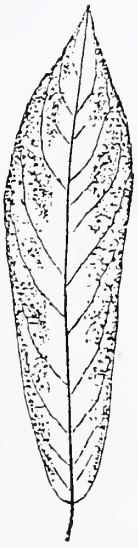


WILLOW FLOWERS

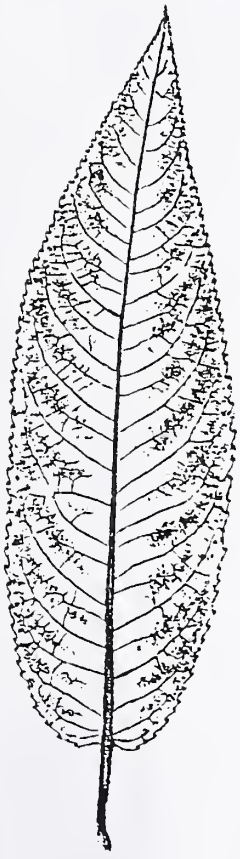
SHRUBS
ALTERNATE SIMPLE LEAVES



SHINING WILLOW



PURPLE-OSIER WILLOW



WAND WILLOW



BLACK WILLOW

(PRINTS FULL SIZE)

(WILLOWS CONTINUED ON NEXT PAGE)

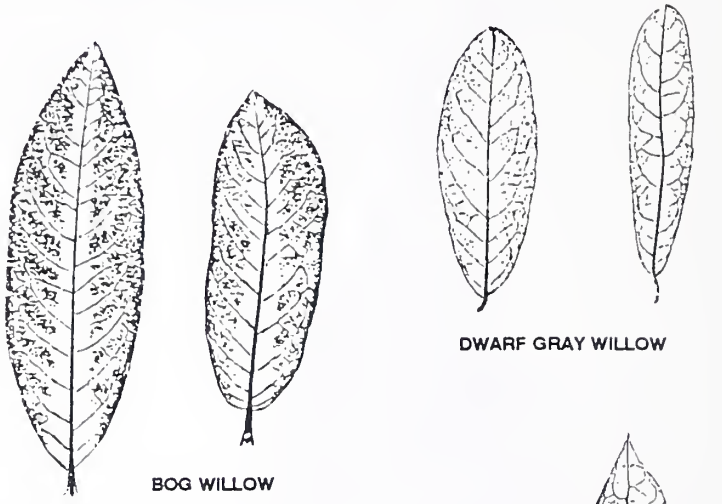
WILLOWS (CONT.): SPECIES WITH LEAVES WHITENED BENEATH

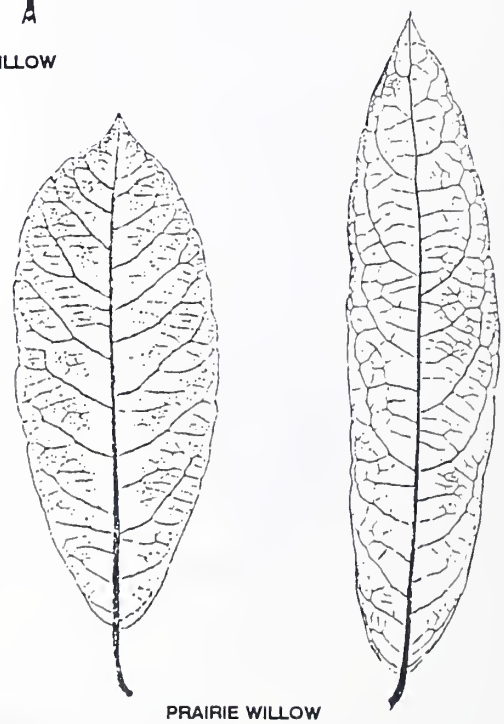
BOG WILLOW *Salix pedicellaris*
Leaves untoothed, hairless, 5 cm. or less in length. Low shrub less than 1 meter high, spreading by underground stems. Stipules absent. Meadows, bogs, low acid ground. Uncommon.

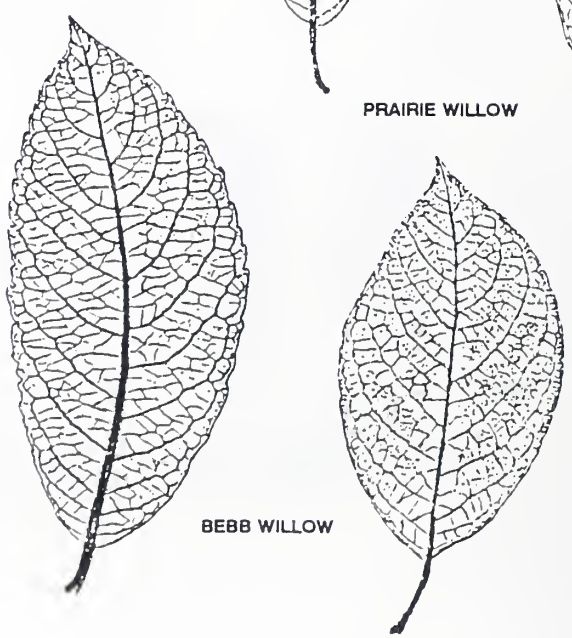
DWARF GRAY WILLOW *Salix tristis (or S. humilis var. microphylla)*
Leaves mostly untoothed, hairy beneath, .5-1.5 cm. wide, 1.5-5 cm. long. Stipules absent or very small. Low shrub 1 meter high or less. Dry thickets, sterile ground, roadsides. Uncommon.

PRAIRIE WILLOW *Salix humilis*
Leaves obscurely coarse-toothed or untoothed, hairy and moderately veiny beneath, mostly 1-2.5 cm. wide and mostly 3-5 times as long as wide. Leaf-stalks rarely longer than 1 cm. Flowers blooming well before appearance of leaves. Male (with stamens) catkins .7-1.5 cm. long. Fruiting catkins 1.5-4 cm. long. Dry thickets, sterile ground. Common.

BEBB WILLOW *Salix bebbiana*
Leaves usually quite wrinkled-veiny beneath, coarse-toothed or untoothed, hairy or somewhat hairless beneath, 1-3.5 cm. wide, mostly 2-3.5 times as long as wide. Stipules small or absent. Flowers opening with appearance of new leaves. Moist or dry thickets, meadows, roadsides. Common.







(PRINTS FULL SIZE)

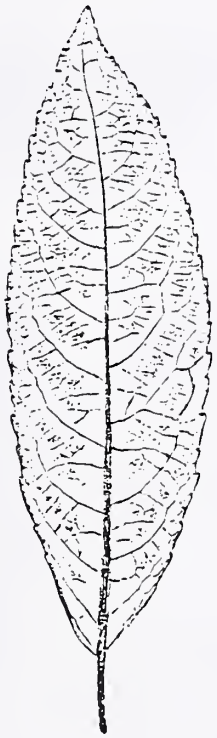
SHRUBS
ALTERNATE SIMPLE LEAVES

PUSSY WILLOW *Salix discolor*
Leaves coarsely toothed to nearly untoothed, 1-5 cm. wide, mostly 3-4 times as long as wide. Leafstalks often 1 cm. long or more. Stipules usually evident. Flowers bloomimg well before appearance of leaves. Male (with stamens) catkins 2-3.5 cm. long. Fruit catkins 4-7 cm. long. Sometimes a small tree. Low acid ground, meadows, wet situations. Common.

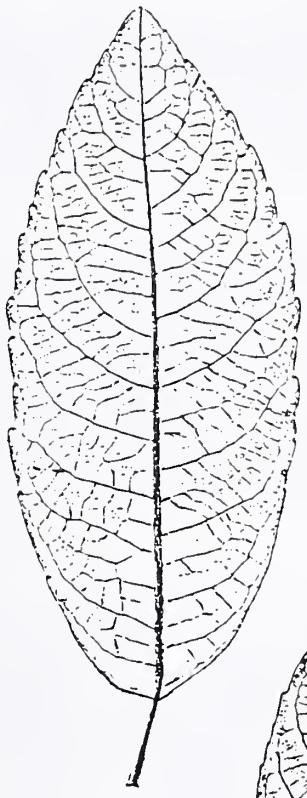
SLENDER WILLOW *Salix petiolaris (or S. gracilis)*
Leaves 5-9 times as long as wide, up to 2 cm. wide, fine-toothed (or nearly untoothed in an uncommon form). Twigs hairless or becoming so. Branchlets not brittle-based. Stipules essentially absent. Swamps, bogs, low ground, meadows, river thickets. Common.

SILKY WILLOW *Salix sericea*
Leaves shiny beneath with silky hairs, 3-6 times as long as wide, 1-2.5 cm. wide, fine-toothed. Branchlets brittle-based. Twigs hairless or becoming so. Stipules distinct but shedding. Riverbanks, low thickets, brook meadows. Uncommon.

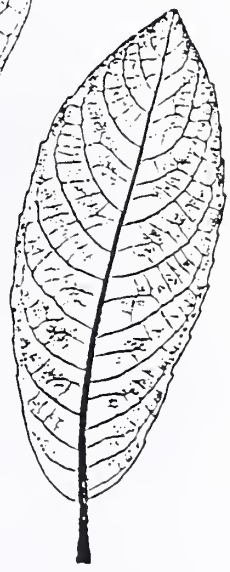
(PRINTS FULL SIZE)



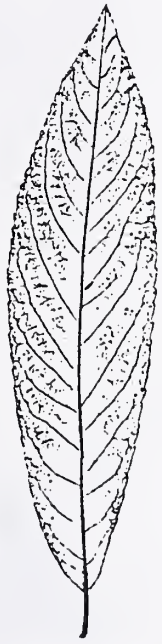
PUSSY WILLOW



PUSSY WILLOW



PUSSY WILLOW



SILKY WILLOW



SLENDER WILLOW

Note: Seedlings of the tree species Weeping Willow and White Willow are very unlikely to be encountered and confused with the above shrub species.
Purple-osier, Dwarf Gray, Prairie, Pussy and Silky Willows flower before the appearance of leaves and exhibit the characteristic "pussies" of spring.

SHRUBS
ALTERNATE SIMPLE LEAVES

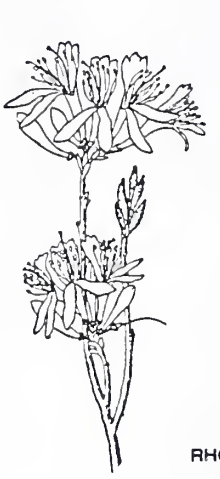
AZALEAS: LEAVES FRINGED WITH TINY HAIRS OR BRISTLES, UNTOOTHED (OR MINUTELY FINE-TOOTHED), CLUSTERED NEAR TWIG TIPS. FRUIT (FLOWERS) ALSO CLUSTERED AT TWIG TIPS. FRUIT ELONGATE CAPSULES.

RHODORA *Rhododendron canadense*
Leaves dull or bluish green above, more or less hairy beneath, 2-6 cm. long. Capsules .7-1.5 cm. long, whitened, somewhat hairy with few if any glandular hairs. Flowers with 10 stamens, appearing before or with the new leaves. Branches reaching strongly upward. Peaty shores, bogs, swamps, low, moist, open, acid soil. Uncommon.

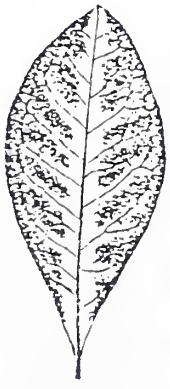
SWAMP AZALEA *Rhododendron viscosum*
Leaves hairless beneath except for bristly midrib. Capsules 1-2 cm. long, bristly. Flowers with 5 stamens, typically white with a small amount of pink, blossoming no earlier than June (after the leaves appear), spicy-fragrant. Bogs, pond shores, swampy thickets, edges of damp clearings. Common.

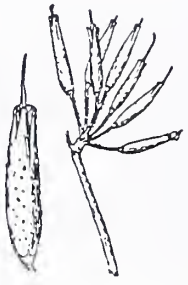
ROSESHELL AZALEA *Rhododendron prinophyllum (or R. roseum)*
Leaves dull above, gray-hairy beneath, mostly 5-8 cm. long. Capsules 1.5-2 cm. long, glandular-bristly. Flowers with 5 stamens, appearing with the new leaves, fragrant. Moist or dry woods, damp thickets. Rare.

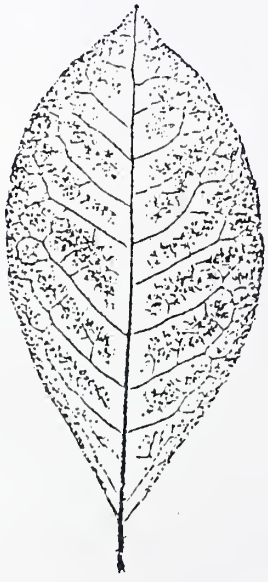
[**PINXTER-FLOWER** *Rhododendron periclymenoides (or R. nudiflorum)*
Like the preceding but flowers essentially odorless, appearing before the leaves. Leaves hairless beneath except for bristly midrib. Capsules bristly but essentially glandless. Recorded in adjacent counties to the west and south in bogs and wet woods.]

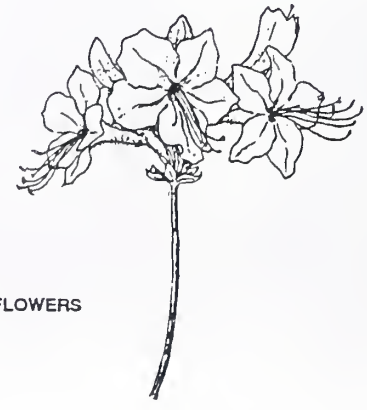

RHODORA


AZALEA LEAVES


SWAMP AZALEA


AZALEA FRUIT

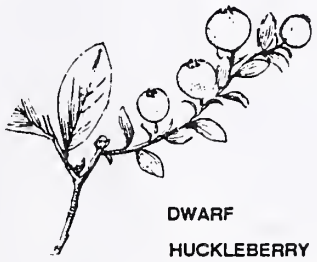

ROSESHELL AZALEA


AZALEA FLOWERS

(PRINTS FULL SIZE)

HUCKLEBERRIES: LEAVES UNTOOTHED, RESIN-DOTTED BENEATH (HAND LENS WILL PROVE HELPFUL). LEAFSTALKS VERY SHORT. BERRY-LIKE FRUIT WITH 10 NUTLETS.

DWARF HUCKLEBERRY *Gaylussacia dumosa*
Leaves dark green, shiny above, 5 cm. or less in length, with tiny-pointed tips. Fruit (flowers) in elongated, leafy clusters. "Berries" glandular-hairy, tasteless. Bogs, swamps. Rare.

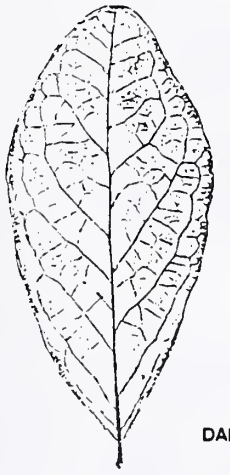


DWARF HUCKLEBERRY



DWARF HUCKLEBERRY

DANGLEBERRY *Gaylussacia frondosa*
Leaves pale, resin-dotted beneath only. Fruit (flowers) on long stalks mostly 1-2.5 cm. long. "Berries" dark blue with pale bloom, edible. Bogs, moist woods, thickets. Common.

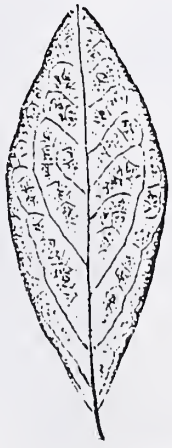




DANGLEBERRY

BLACK HUCKLEBERRY *Gaylussacia baccata*
Small shrub 1 meter high or less. Leaves with resin dots above and below. Fruit (flowers) short-stalked in short clusters. "Berries" black, edible. Woods, thickets, clearings. Abundant.

(PRINTS FULL SIZE)

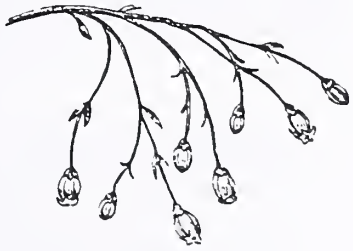




BLACK HUCKLEBERRY



BLACK HUCKLEBERRY



DANGLEBERRY

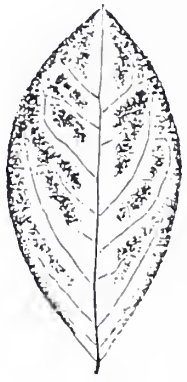
Note: Untoothed Bayberry leaves might be mistaken for Huckleberry since they are resin-dotted, but they are very spicy-fragrant when crushed, unlike Huckleberry.

SHRUBS
ALTERNATE SIMPLE LEAVES

BLUEBERRIES: Leaves untoothed or very fine-toothed, typically arranged in sprays of increasing leaf size. Leafstalks very short. Berry-like fruit crown-tipped, many-seeded, edible.

BLACK HIGHBUSH BLUEBERRY
Vaccinium atrococcum

Leaves hairy beneath, untoothed, usually dark green above. Flowers opening before appearance of leaves. "Berries" polished black (or occasionally whitish), 5-8 mm. thick. Shrub up to 3 meters high. Bogs, swamps, shores, low woods. Common.



HIGHBUSH BLUEBERRY

COMMON HIGHBUSH BLUEBERRY
Vaccinium corymbosum

Leaves untoothed or very finely toothed, sometimes hairy-fringed, hairless (or hairy along main veins) beneath. "Berries" blue to blue-black, with bloom, 6-12 mm. thick. Shrub up to 3 meters high. Bogs, swamps, shores, low woods. Common.



BLUEBERRY

DRYLAND BLUEBERRY
Vaccinium vacillans

Leaves untoothed or finely toothed, pale green above, hairless, up to 5 cm. long and 3.5 cm. wide, typically somewhat roundish. "Berries" dark blue, with bloom, very sweet. Shrub less than 1 meter high. Dry, often sterile, open woods and clearings, old pastures. Common.



BLUEBERRY



DRYLAND BLUEBERRY

LOWBUSH BLUEBERRY
Vaccinium angustifolium var. laevifolium

Leaves very finely toothed, small (1.5-3.5 cm. long) and narrow (8-15 mm. wide). "Berries" usually blue and with bloom, sweet. Shrub less than .6 meters high, often growing in crowded colonies. Dry, rocky or sandy soil, woods, or damp peaty open places. Abundant.

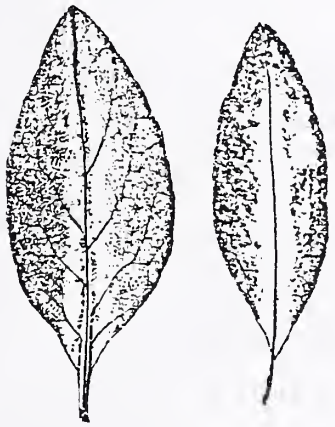


LOWBUSH BLUEBERRY

(PRINTS FULL SIZE)

MISCELLANEOUS SPECIES: LEAVES UNTOOTHED (OR OBSCURELY TOOTHED). FRUIT BERRY-LIKE.

COMMON MATRIMONY-VINE
Lycium halimifolium
Sprawling shrub, often sparingly thorny. Leaves usually somewhat narrow. Fruit (flower) stalks 1-2.3 cm. long. Berries orange-red or scarlet, many-seeded, 1-2 cm. long, somewhat oblong, edible but possibly not palatable. Roadsides, waste places. Rare escape.



MATRIMONY-VINE



MATRIMONY-VINE

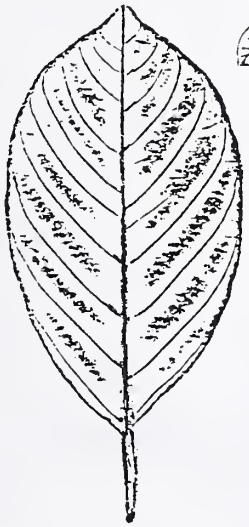
GLOSSY BUCKTHORN *Rhamnus frangula*
Leaves with prominent side veins (mostly 8-10 pairs). Mature bark usually speckled. Fruit (flower) stalks .8-1.2 cm. long. "Berries" red turning nearly to black, 2-seeded, inedible. Rarely a small tree. Roadsides, thickets, woods, swamps. Abundantly naturalized.



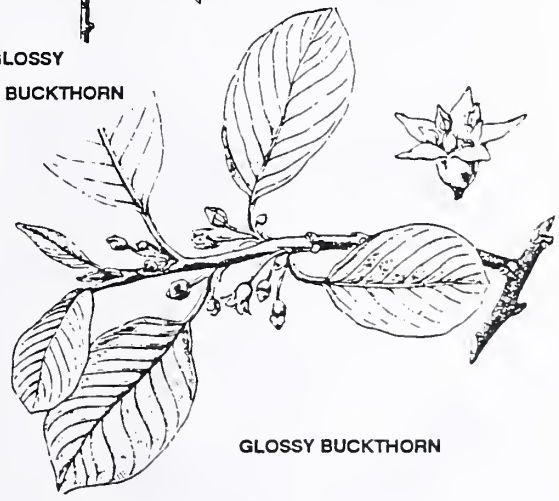
GLOSSY BUCKTHORN



MATRIMONY-VINE

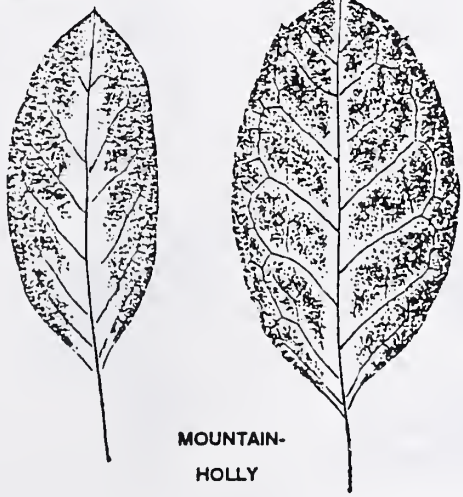


GLOSSY BUCKTHORN



GLOSSY BUCKTHORN

MOUNTAIN-HOLLY
Nemopanthus mucronatus
Leaves often with tiny-pointed tips. Fruit (flower) stalks 1-3 cm. long. "Berries" red or pale yellow, 4-5 nutlets, edible but possibly not palatable. Bogs, swamps, pond margins. Uncommon.



MOUNTAIN-HOLLY

(PRINTS FULL SIZE)



MOUNTAIN-HOLLY



(CONTINUED ON NEXT PAGE)

SHRUBS
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES (CONT.): LEAVES UNTOOTHED. FRUIT BERRY-LIKE.

AUTUMN ELAEAGNUS
Elaeagnus umbellata
Leaves silvery beneath. "Berries" becoming red, juicy, edible. Often somewhat thorny. Thickets, roadsides. Occasional escape.


ELAEAGNUS


ELAEAGNUS

COMMON SPICEBUSH *Lindera benzoin*
Leaves spicy-fragrant when crushed, 7-12 cm. long. "Berries" oblong red or yellow, 1-seeded, spicy. Damp woods, brooksides. Common.

ALTERNATELEAF DOGWOOD
Cornus alternifolia
Leaves with veins reaching strongly forward; arrangement of leaves sometimes almost opposite. Fruit (flowers) in broad clusters. "Berries" blue-black (or occasionally yellow), bitter. Sometimes a small tree. Wood borders, thickets (usually dry). Common.


SPICEBUSH

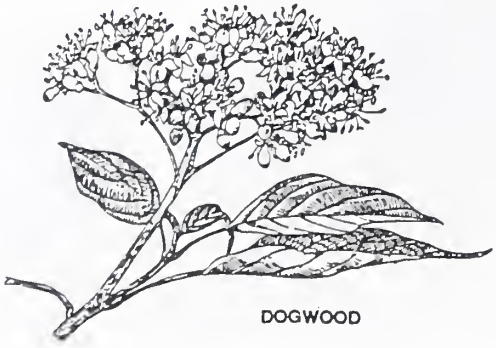

SPICEBUSH

EARLY DAPHNE *Daphne mezereum*
Leaves taper-based. Fruit (flowers) stalkless, in lateral clusters along branchlets. "Berries" red, 1-seeded, poisonous. Small shrub 1 meter high or less. Thickets, roadsides, old lime quarries. Rare escape.


DOGWOOD

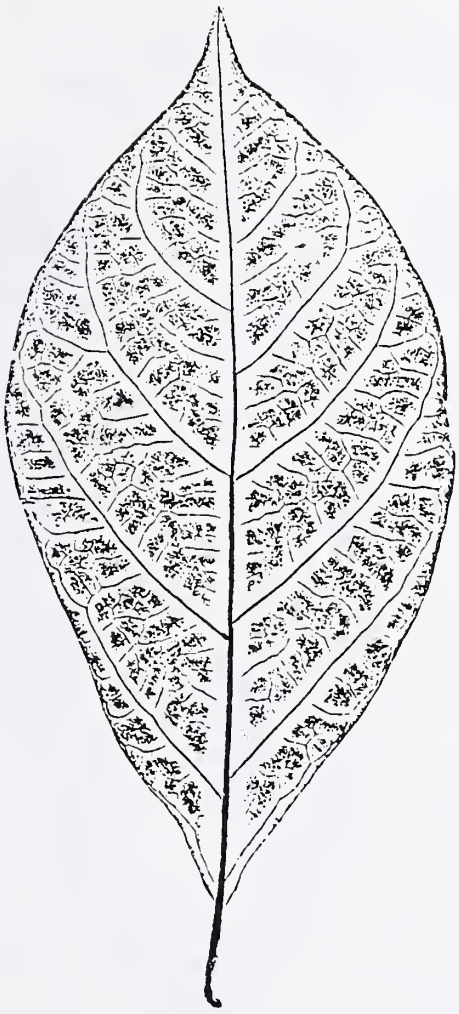

DAPHNE


DAPHNE

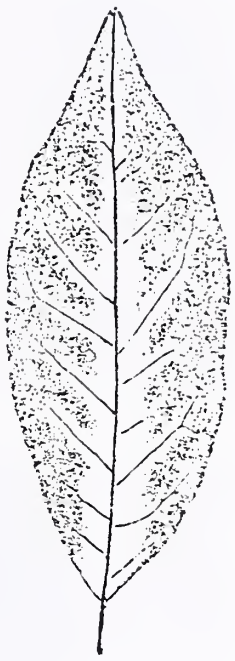

DOGWOOD

SHRUBS
ALTERNATE SIMPLE LEAVES

(PRINTS FULL SIZE)



SPICEBUSH



ELAEAGNUS



DAPHNE



ALTERNATELEAF DOGWOOD

SHRUBS
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES: LEAVES UNTOOTHED (OR OBSCURELY FINE-TOOTHED). FRUIT NOT BERRY-LIKE. LEAVES LEATHERY EVERGREEN.

LABRADOR TEA *Ledum groenlandicum*
Leaves 2-5 cm. long, white or rusty woolly beneath, fragrant when crushed; margins curled under. Fruit elongate capsules. Small shrub 1 meter high or less. Bogs, peaty swamps. Rare.



LABRADOR TEA



LABRADOR TEA

SWEETBAY MAGNOLIA *Magnolia virginiana*
Leaves 8-15 cm. long, whitened and hairless beneath. Fruits in cone-like clusters, 3-5 cm. long. Swamps, low woods. Rare escape.

MOUNTAIN LAUREL *Kalmia latifolia*
Leaves 5-10 cm. long, sometimes arranged in irregular whorls, hairless and not whitened beneath. Fruit spherical capsules. Woods, clearings, rocky banks on acid soil; also frequently planted. Uncommon.

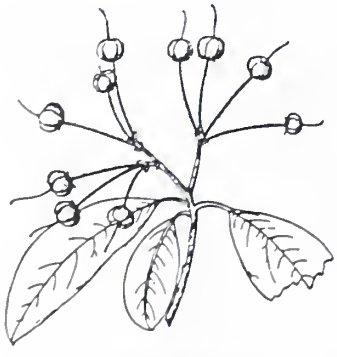


MAGNOLIA

DOWNY BOG-ROSEMARY
Andromeda glaucophylla
Low bog shrub with very narrow leaves, white beneath. See p. 104.



MAGNOLIA

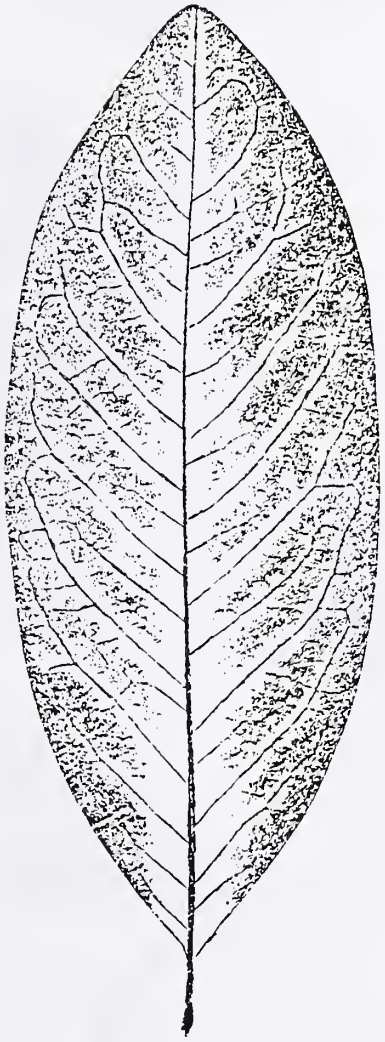


MOUNTAIN LAUREL



MOUNTAIN LAUREL

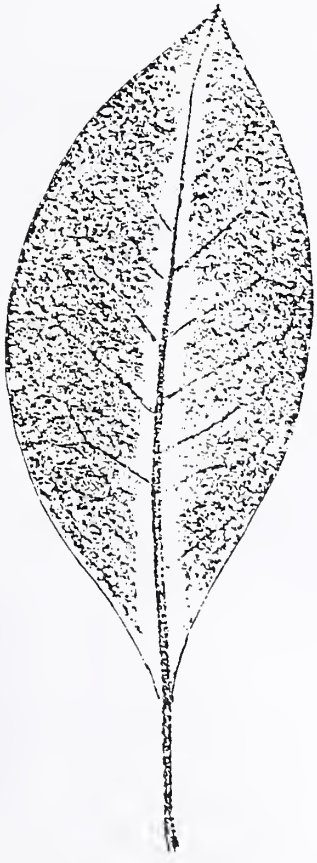
SHRUBS
ALTERNATE SIMPLE LEAVES



SWEETBAY MAGNOLIA



LABRADOR TEA



MOUNTAIN LAUREL

(PRINTS FULL SIZE)

(CONTINUED ON NEXT PAGE)

SHRUBS
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES (CONT.): LEAVES UNTOOTHED (OR OBSCURELY FINE-TOOTHED). FRUIT NOT BERRY-LIKE.

DYER'S GREENWEED *Genista tinctoria*
Leaves 1-2.5 cm. long, hairy-fringed, practically stalkless. Fruit bean-like pods. Small shrub 1 meter high or less. Dry fields, roadsides. Rare escape.


GREENWEED


GREENWEED

LEATHERLEAF *Chamaedaphne calyculata*
Leaves 2.5-5 cm. long, scaly-dotted beneath. Fruit (flowers) in elongated, leafy clusters. Fruit spherical capsules. Small shrub 1 meter high or less. Swamps, bogs, pond shores, peaty river meadows. Common.


LEATHERLEAF

MALEBERRY *Lyonia ligustrina*
Leaves 3-7 cm. long, resembling blueberry leaves but with a much finer meshed network of veins beneath (not visible in leaf print). Fruit (flowers) forming tree-like clusters. Fruit spherical capsules. Moist thickets, bogs, peaty swamps. Common.

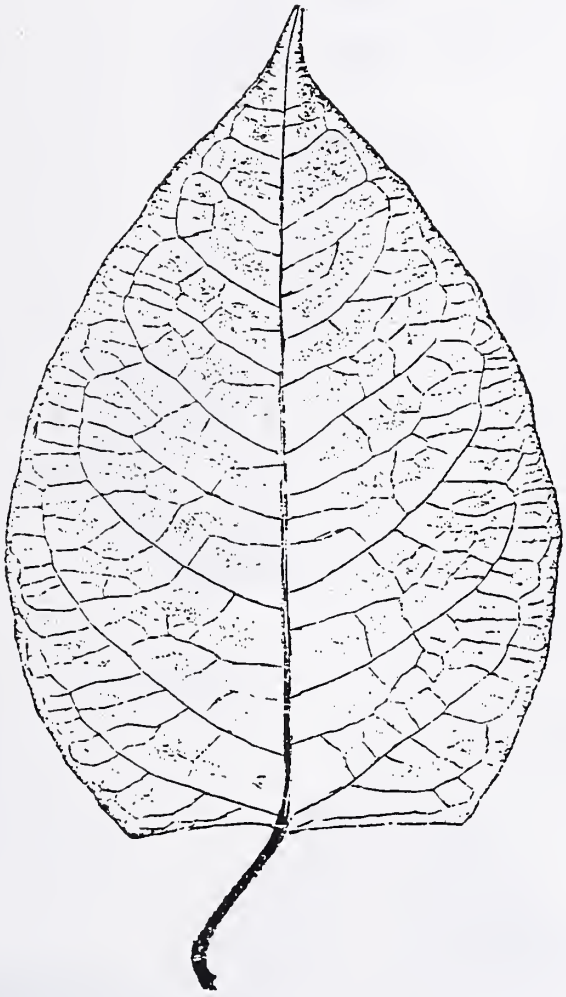

LEATHERLEAF

JAPANESE KNOTWEED
Polygonum cuspidatum
Leaf with unique shape. Fruit tiny wafers in stringy clusters. This is not woody but will commonly be mistaken for a shrub. Roadsides, waste areas. Naturalized. Common.


MALEBERRY


MALEBERRY

SHRUBS
ALTERNATE SIMPLE LEAVES



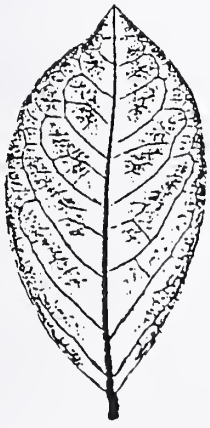
JAPANESE KNOTWEED



GREENWEED



LEATHERLEAF



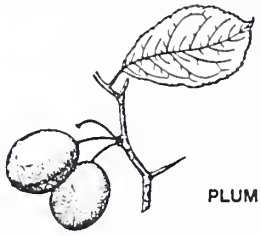
MALEBERRY

(PRINTS FULL SIZE)

SHRUBS
ALTERNATE SIMPLE LEAVES

CHERRIES & PLUMS: LEAVES TOOTHED, MAIN SIDE VEINS NOT RUNNING DIRECTLY TO LEAF EDGE. LEAFSTALKS OFTEN BEARING GLANDS NEAR LEAF BASE. FRUIT WITH SINGLE SEED. PLUM FRUIT SLIGHTLY LINED OR FURROWED LENGTHWISE; CHERRY FRUIT NOT LINED.

BEACH PLUM *Prunus maritima*
Leaves 3-6 cm. long, soft-hairy beneath. Fruit 1.3-2.5 cm. thick, purple or bluish (occasionally yellowish), sweetish, edible. Sandy soil, roadsides. Rare (mostly as escape).


PLUM

AMERICAN PLUM *Prunus americana*
Leaves 5-12 cm. long. Fruit red to yellow, 2-3 cm. thick, sour but edible. Spur branches often spiny. Sometimes a small tree. Thickets, roadsides, wood borders. Uncommon.


PLUM & CHERRY

CHOKE CHERRY *Prunus virginiana*
Leaves sharp-toothed, 5-12 cm. long. Fruit (flowers) in elongated clusters. Fruit pulp scarcely palatable but used in jellies and pies. Roadsides, thickets, borders of woods. Common.


CHOKE CHERRY

APPALACHIAN SAND CHERRY
Prunus susquehanae
Small shrub less than 1 meter high. Leaves sparsely or not toothed along bottom third, 2-3 cm. wide, hairless. Fruit 1-1.5 cm. thick; pulp edible. Sandy or open acid situations, dry woods. Uncommon.


SAND CHERRY

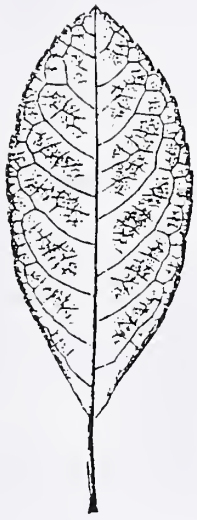

CHOKE CHERRY

PIN (FIRE) CHERRY *Prunus pensylvanica*
Leaves finely toothed, with tapered or gradually narrowed tips. Fruit small, 5-7 mm. thick, red; pulp edible. Often a small tree. Roadsides, recent burns, dry, open woods. Common.

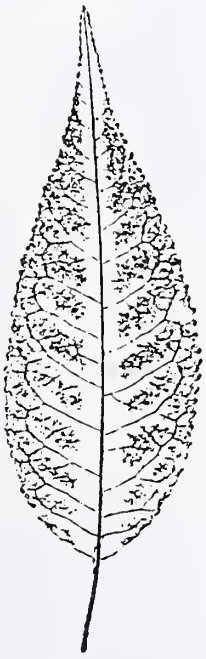

PIN CHERRY

SHRUBS
ALTERNATE SIMPLE LEAVES

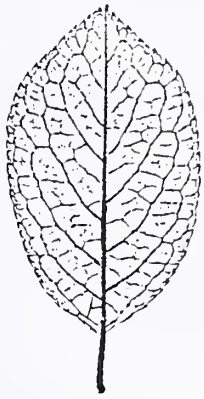
(PRINTS FULL SIZE)



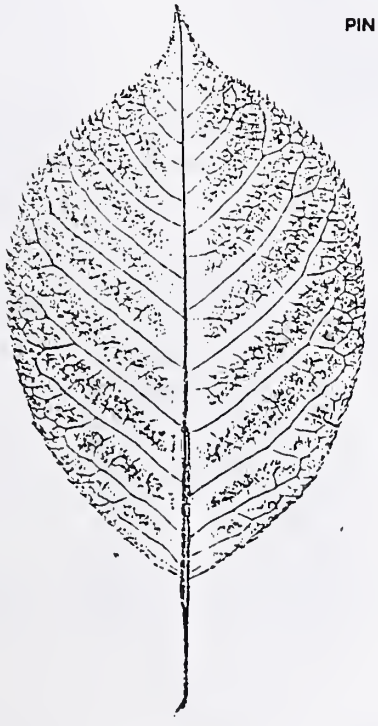
SAND CHERRY



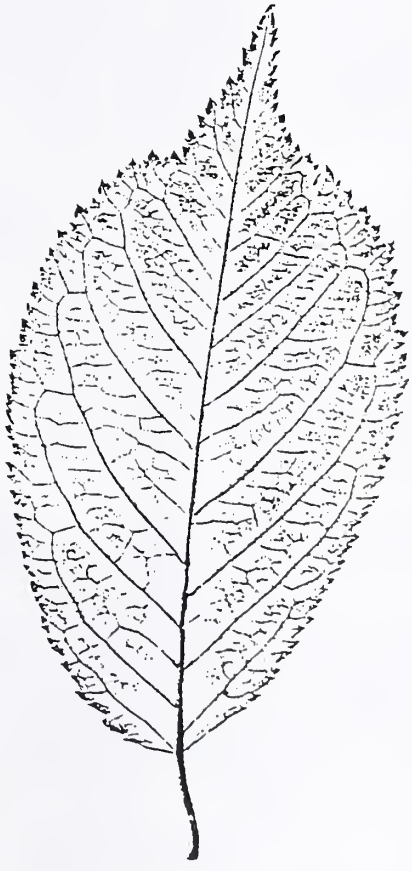
PIN CHERRY



BEACH PLUM



CHOKE CHERRY



AMERICAN PLUM

SHRUBS
ALTERNATE SIMPLE LEAVES

SHADBUSHES: LEAVES TOOTHED, WITH ROUNDED OR HEART-SHAPED BASES. LEAFSTALKS WELL DEVELOPED. BARK OF LARGER SPECIMENS OFTEN WITH INTERLACING STRIPES. FRUIT BERRY-LIKE, IN TREE-LIKE CLUSTERS, 10-SEEDED, EDIBLE.

RUNNING SHADBUSH
Amelanchier stolonifera

Leaves becoming hairless, sometimes almost circular, mostly with only 5-7 pairs of main side veins. Small upright shrub up to 1.5 meters high, forming colonies by underground runners. Dry, sterile, open ground. Uncommon.

THICKET SHADBUSH
Amelanchier canadensis

Leaves often blunt-tipped, very hairy beneath at flowering time but becoming mostly hairless, rounded (not distinctly heart-shaped) at base. Flower petals only 6-10 mm. long. Thickets, shores, swampy or low open places. Common.

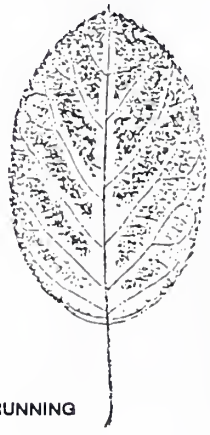
SMOOTH SHADBUSH *Amelanchier laevis*

Leaves with short-tapered tips, hairless beneath (nearly so at flowering time), rounded or somewhat heart-shaped at base. New leaves often with reddish or purplish cast. Flower petals 1-2 cm. long. Sometimes a small tree. Open woods, thickets, roadsides. Uncommon.

DOWNY SHADBUSH *Amelanchier arborea*

Leaves with short-tapered tips, hairy beneath even after flowering time at least near base, heart-shaped or rounded at base. Leaf teeth long and wide-spreading. Flower petals 1-1.4 cm. long. Fruit dry, tasteless. Sometimes a tree. Dry, often rich, woods, thickets. Rare.

(PRINTS FULL SIZE)



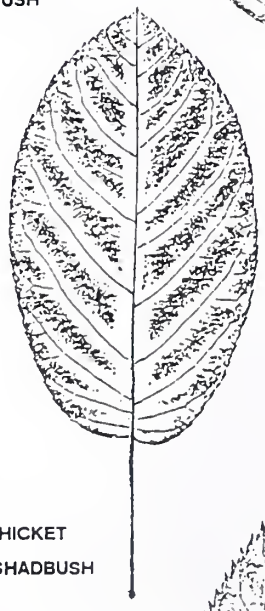
RUNNING SHADBUSH



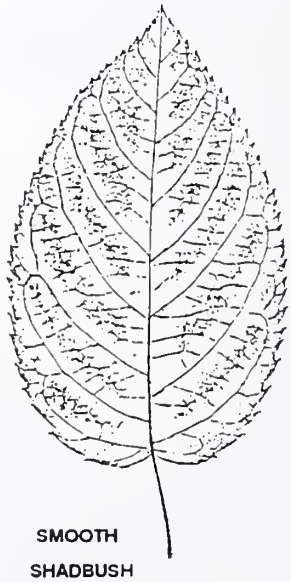
SHADBUSH



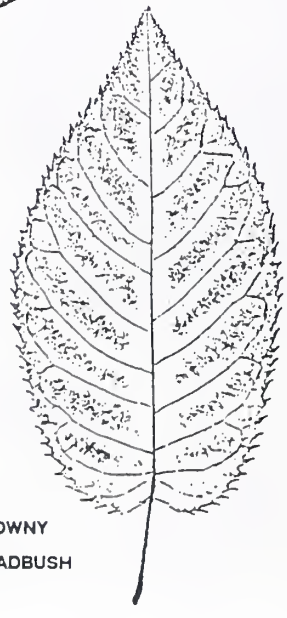
RUNNING SHADBUSH



THICKET SHADBUSH



SMOOTH SHADBUSH



DOWNY SHADBUSH



SHADBUSH

MISCELLANEOUS SPECIES: LEAVES TOOTHED. FRUIT BERRY-LIKE OR FLESHY (NOT 1-SEEDED).

COMMON BUCKTHORN *Rhamnus cathartica*
Leaves nearly opposite in arrangement (except on sprout growth). Main veins reaching strongly forward. See p. 47.

CHOKEBERRY *Aronia arbutifolia (or Pyrus melanocarpa + P. floribunda)*
Leaves with small dark glands on midrib above. Fruit (flowers) in stalked clusters. Berry-like fruit red or black, puckery, used in jellies. Thickets, wet woods, bogs. Common.

COMMON WINTERBERRY *Ilex verticillata*
Leaves sharply toothed, turning brown or dark in autumn. Flowers mostly in groups of 3 or more. Calyx lobes fringed even in fruit. "Berries" red (rarely yellow) on stalks 2-4 mm. long, somewhat poisonous. Swamps, wet woods, meadow thickets, pond margins. Common.

SMOOTH WINTERBERRY *Ilex laevigata*
Leaves obscurely toothed, shiny above, turning yellow in autumn. Flowers in groups of 1-2. Calyx lobes not or scarcely fringed. "Berries" orange-red on stalks 4-6 mm. long, somewhat poisonous. Swamps, wet woods. Uncommon.

CRABAPPLES *Pyrus (Malus) spp.*
Fruit of our species on well developed stalks that are joined near a single point. See p. 103.

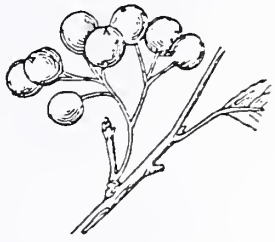
MOUNTAIN-HOLLY *Nemopanthus mucronata*
Leaves sometimes sparsely toothed. See p. 71.

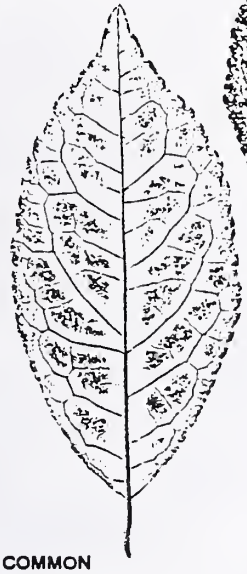

COMMON BUCKTHORN

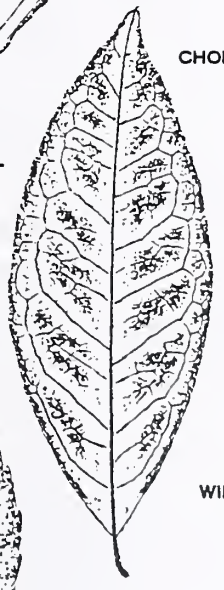

BUCKTHORN


CHOKEBERRY

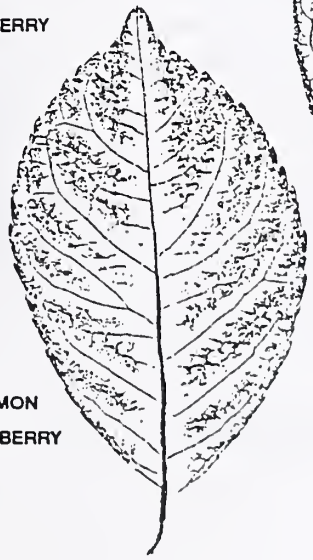

CHOKE-BERRY


CHOKEBERRY


COMMON WINTERBERRY


SMOOTH WINTERBERRY


WINTERBERRY


COMMON WINTERBERRY


WINTERBERRY

(PRINTS FULL SIZE)

SHRUBS
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES: Leaves toothed. Fruit not berry-like. Main side veins prominent and running directly to leaf edge.

AMERICAN HAZELNUT
Corylus americana
Leaves roundish, heart-shaped at base. Twigs and leafstalks usually glandular-hairy. Fruit husk ruffled; nuts edible. Woods, thickets, borders of woods. Common.


AMERICAN HAZELNUT

BEAKED HAZELNUT *Corylus cornuta*
Leaves typically less round than preceding species, heart-shaped at base. Twigs and leafstalk not glandular. Fruit husk with long beak; nut edible. Woods, thickets, borders of woods. Common.


BEAKED HAZELNUT



HAZELNUT

SPECKLED ALDER *Alnus rugosa*
Leaves widest at or below middle, often wavy-margined or irregularly double-toothed, broadly wedge-based or rounded at leaf base. Bark with whitish, narrow, horizontal speckles. Fruit cone-like, persistent. Swamps, stream borders, pond shores, marshes, low ground. Common.

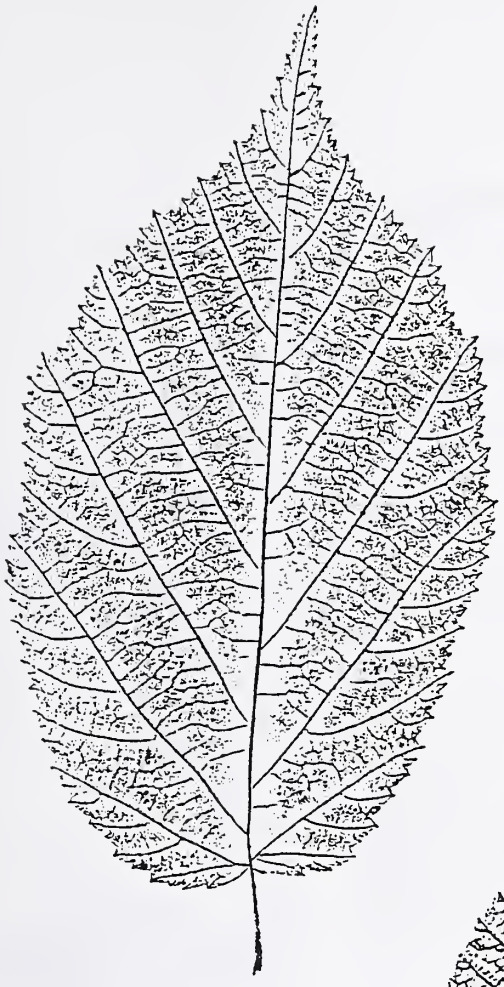
SMOOTH ALDER *Alnus serrulata*
Leaves widest at or above middle, nearly evenly single-toothed, only rarely much wavy-margined, wedge-based (often broadly). Bark somewhat speckled or essentially unspeckled. Fruit cone-like, persistent. Swamps, stream borders, pond shores, marshes, low ground. Common.


ALDER

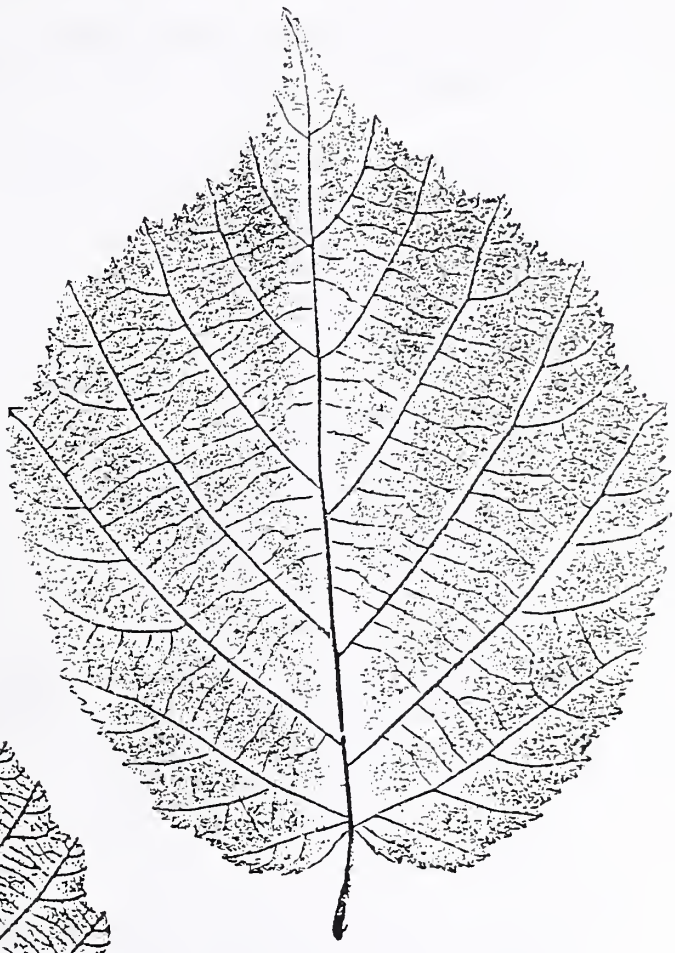


ALDER

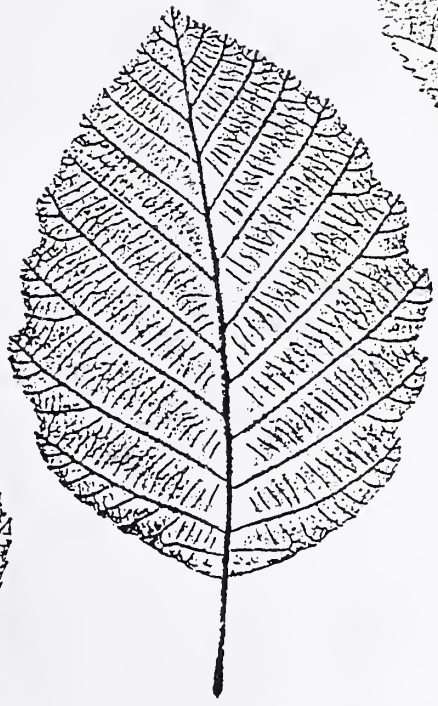
SHRUBS
ALTERNATE SIMPLE LEAVES



BEAKED HAZELNUT



AMERICAN HAZELNUT



SPECKLED ALDER



SMOOTH ALDER

(PRINTS FULL SIZE)



SMOOTH ALDER

SHRUBS
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES: LEAVES TOOTHED; LEAFSTALKS SHORT (LESS THAN 1.5 CM. LONG). FRUIT NOT FLESHY.

NEW JERSEY TEA *Ceanothus americanus*
Leaves with 3 main veins meeting at base and reaching strongly forward. Fruit 3-lobed capsules. Small shrub up to 1 meter high. Dry, sterile, scrub woods. Uncommon.

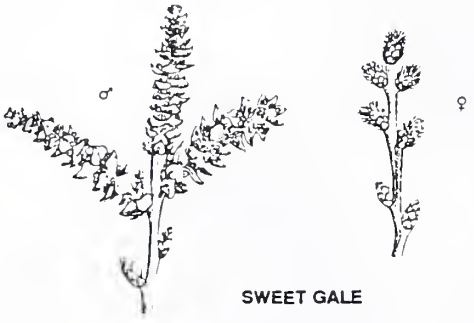


NEW JERSEY TEA



NEW JERSEY TEA

SWEET GALE *Myrica gale*
Leaves narrow, taper-based, aromatic when crushed, coarse-toothed mostly towards tip. Fruit cone-like. Pond margins, shallow water, peat bogs. Common.



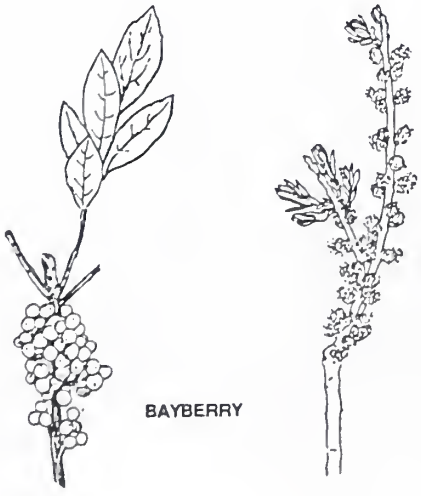
SWEET GALE

BAYBERRY *Myrica pensylvanica*
Leaves taper-based, aromatic when crushed, few-toothed (or occasionally untoothed). Fruit globular, whitish, wax-coated nutlets. Dry or wet, sterile soil, thickets. Uncommon.

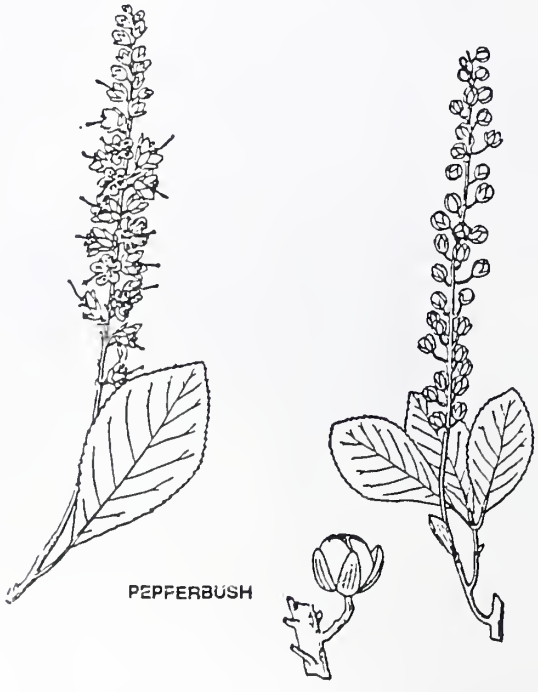


SWEET GALE

SWEET PEPPERBUSH *Clethra alnifolia*
Leaves with main side veins extending to leaf edge or nearly so. Fruit (flowers) in upright, wand-like clusters. Fruit spherical capsules. Low to swampy woods and thickets. Common.



BAYBERRY

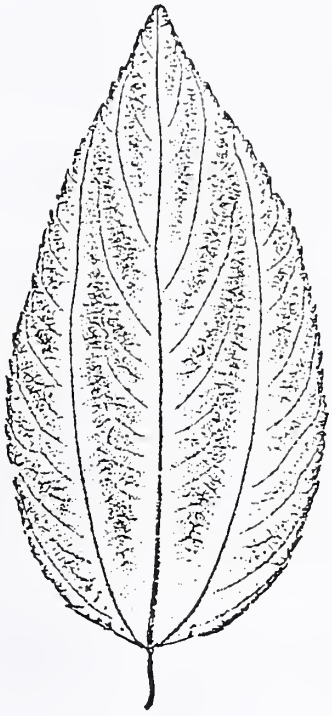


PEPPERBUSH

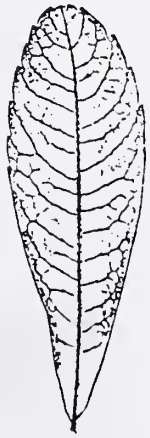
SHRUBS
ALTERNATE SIMPLE LEAVES



PEPPERBUSH

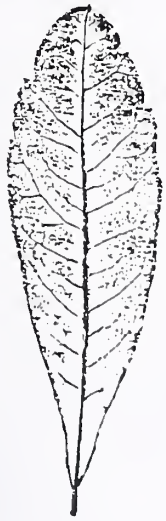


NEW JERSEY TEA



SWEET GALE

(PRINTS FULL SIZE)



BAYBERRY

(CONTINUED ON NEXT PAGE)

SHRUBS
ALTERNATE SIMPLE LEAVES

MISCELLANEOUS SPECIES: LEAVES TOOTHED; LEAFSTALKS SHORT (LESS THAN 1.5 CM.). FRUIT NOT FLESHY. (CONT.)

HARDHACK *Spiraea tomentosa*
Leaves small (3-5 cm. long), woolly beneath, very short-stalked. Fruit (flowers) in narrow, spire-like clusters. Fruit tiny, dry, felted. Dry or wet acid soil in the open. Common.



HARDHACK



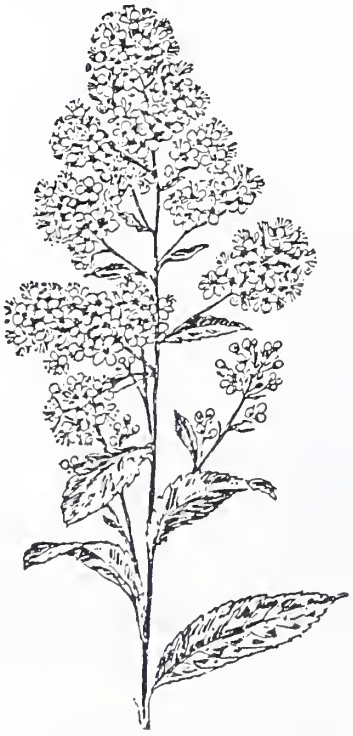
HARDHACK

BROADLEAF MEADOWSWEET
Spiraea latifolia
Leaves coarsely (often doubly) toothed, hairless or nearly so beneath. Fruit (flowers) in somewhat loose, pyramidal clusters. Fruit tiny, dry, hairless. Dry or (usually) moist soil in the open. Common.



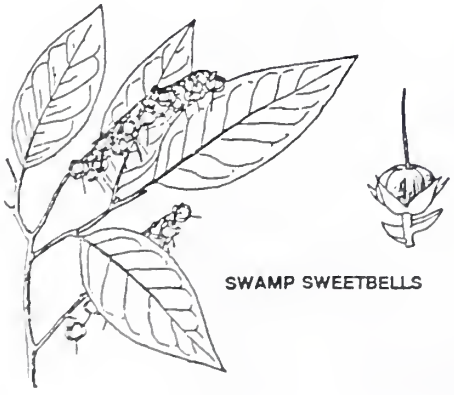
MEADOWSWEET

SWAMP SWEETBELLS *Leucothoe racemosa*
Leaves finely toothed; leafstalks short (1-5 mm. long). Fruit (flowers) in elongated clusters. Flower clusters one-sided. Fruit somewhat spherical capsules. Pond shores, moist thickets, cedar swamps, bogs. Rare.



MEADOWSWEET

MALEBERRY *Lyonia ligustrina*
Leaves obscurely fine-toothed. Fruit (flowers) in tree-like clusters.
See p. 76.



SWAMP SWEETBELLS

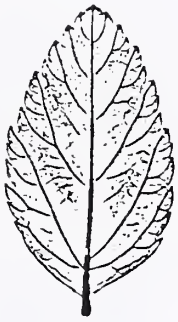


SWAMP SWEETBELLS

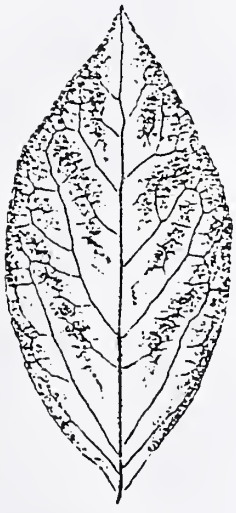
SHRUBS
ALTERNATE SIMPLE LEAVES



MEADOWSWEET



HARDHACK



SWAMP SWEETBELLS

(PRINTS FULL SIZE)

VINES
OPPOSITE LEAVES

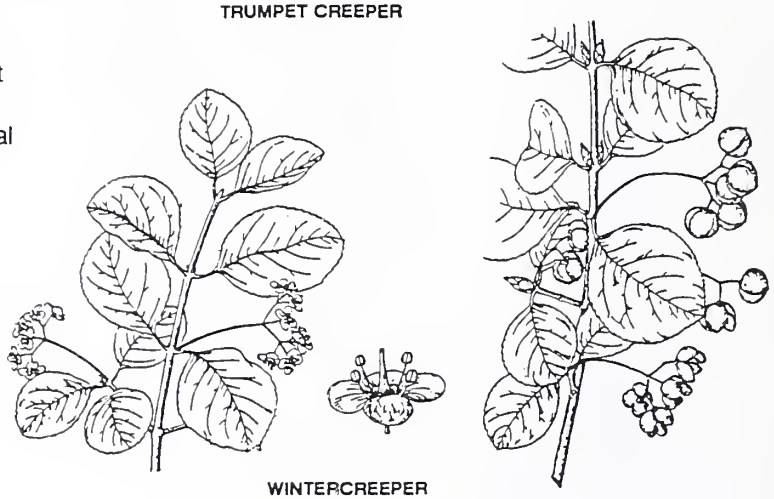
TRUMPET CREEPER *Campsis radicans*
Leaves compound with 9-11 toothed leaflets. Flowers showy, reddish-orange (occasionally yellowish). Fruits cigar-shaped pods, 10-20 cm. long. Roadsides, thickets. Occasional escape.



TRUMPET CREEPER

COMMON WINTERCREEPER
Euonymus fortunei
Leaves simple, small, toothed, leathery-evergreen. Flowers greenish white. Fruit pinkish or orange, fleshy, somewhat poisonous. Roadside woods. Occasional escape.

TRUMPET HONEYSUCKLE
Lonicera sempervirens
Leaves simple, untoothed; uppermost pairs near flowers (fruit) united at base. Twigs hairless or nearly so. Flowers red (rarely orange to yellow). "Berries" red, bitter. Woods, thickets. Uncommon.

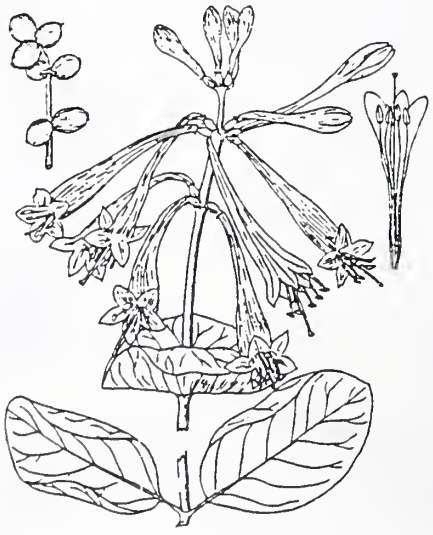


WINTERCREEPER

JAPANESE HONEYSUCKLE
Lonicera japonica
Leaves simple, untoothed. Twigs hairy. Flowers white turning yellow. "Berries" black, bitter. Thickets, borders of woods, roadsides. Uncommon escape.



JAPANESE HONEYSUCKLE

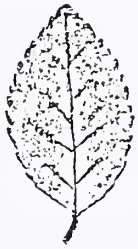


TRUMPET HONEYSUCKLE

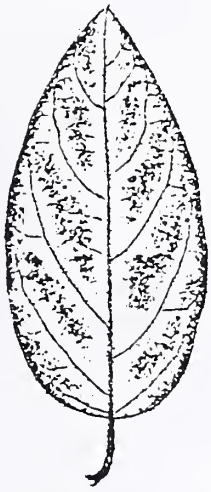
VINES
OPPOSITE LEAVES



TRUMPET CREEPER



WINTERCREEPER



JAPANESE HONEYSUCKLE

TRUMPET HONEYSUCKLE

(PRINTS FULL SIZE)

VINES
ALTERNATE COMPOUND LEAVES

POISON IVY *Rhus radicans*
Leaves with 3 leaflets. "Berries" whitish. All parts of this plant irritate the skin of most people. Climbing on trees, stone walls, fences, or trailing, especially along roadsides. Common.



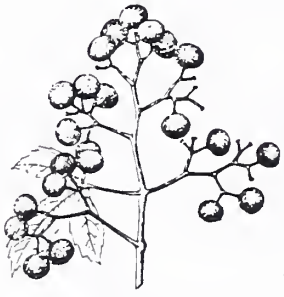
POISON IVY



POISON IVY

VIRGINIA CREEPER
Parthenocissus quinquefolia
Leaves mostly with 5 toothed leaflets. Tendrils tipped with adhesive disks. Fruit (flower) cluster with a central axis. Berries bluish-black, 5-7 mm. thick, poisonous. Climbing on trees, walls, fences or trailing in woods and on rocky banks. Common.

THICKET CREEPER
Parthenocissus vitacea
Leaves mostly with 5 toothed leaflets. Tendrils with very few or no adhesive disks. Fruit (flower) cluster forked (without evident central axis). Berries bluish-black, 8-10 mm. thick, poisonous. Trailing or slightly climbing in woods, thickets, along banks. Uncommon.





VIRGINIA CREEPER



THICKET CREEPER

VINES
ALTERNATE COMPOUND LEAVES



POISON IVY



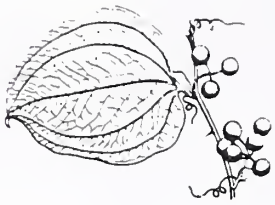
(PRINTS 3/4 SIZE)

VIRGINIA & THICKET CREEPER

VINES
ALTERNATE SIMPLE LEAVES

COMMON GREENBRIER
Smilax rotundifolia

Leaves untoothed (or minutely jagged). Stems thorny. Berries blue-black, edible though possibly not palatable. Low, moist thickets and woods (especially near shores). Common.



GREENBRIER

BITTER NIGHTSHADE
Solanum dulcamara

Leaves untoothed, lobed or unlobed. Berries red, somewhat poisonous. Thickets, clearings, and moist soil near dwellings. Naturalized. Common.



NIGHTSHADE



NIGHTSHADE

AMERICAN BITTERSWEET
Celastrus scandens

Leaves toothed and unlobed. Flower (fruit) clusters at ends of branchlets with numerous flowers (fruits) in each cluster. Fruit yellow-orange on outside, opening to reveal red, berry-like interior, somewhat poisonous. Thickets, stone walls, woods, roadsides. Formerly common, now apparently rare.

ASIAN BITTERSWEET
Celastrus orbiculatus

Similar to American Bittersweet but flowers (fruits) 2-4 per cluster along sides of branchlets where leaves are attached. Naturalized in same habitats as the native species, sometimes covering entire trees. Common, often locally abundant.



AMERICAN BITTERSWEET



AMERICAN BITTERSWEET

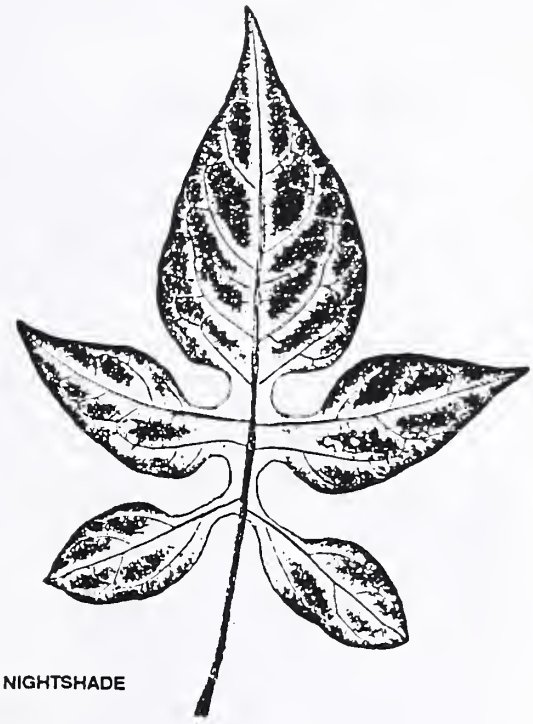


ASIAN BITTERSWEET

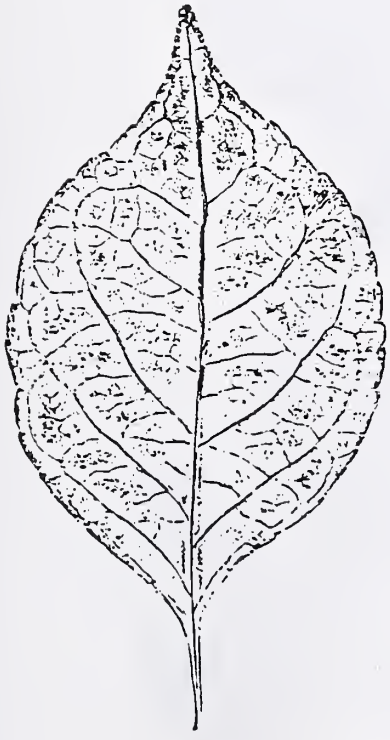
VINES
ALTERNATE SIMPLE LEAVES



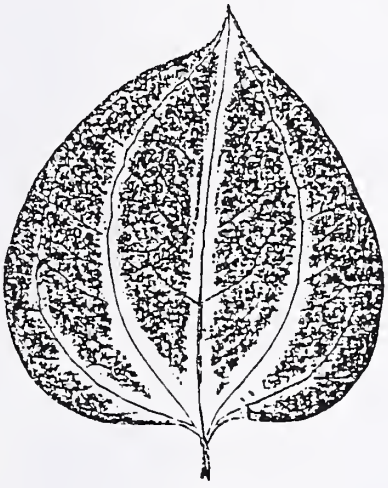
BITTER NIGHTSHADE



BITTER NIGHTSHADE



BITTERSWEET



GREENBRIER

(PRINTS FULL SIZE)



BITTERSWEET

(CONTINUED ON NEXT PAGE)

VINES
ALTERNATE SIMPLE LEAVES

GRAPES & AMPELOPSIS: VINES CLIMBING BY TENDRILS. LEAVES TOOTHED AND USUALLY LOBED.

AMUR AMPELOPSIS
Ampelopsis brevipedunculata
Leaves 3-lobed. Bark speckled, tight (not peeling or shredding). Stem pith white. Berries becoming bright blue (rarely whitish), edibility unknown. Roadsides, thickets. Occasional escape.



AMPELOPSIS

RIVERBANK GRAPE *Vitis riparia*
Leaves with large coarse teeth (often long-tapered), becoming mostly hairless beneath and not whitened. Grapes 8-12 mm. thick, with much bloom, sour. Rich thickets, roadsides, moist woods, shaded riverbanks. Uncommon.

FOX GRAPE *Vitis labrusca*
Leaves permanently densely rusty or whitish felted beneath, shallow toothed, usually shallowly 3-lobed (occasionally unlobed). Tendrils or fruit (flower) clusters opposite at least 3-7 consecutive leaves. Grapes 15-25 mm. thick, becoming sweetish. A parent of the Concord Grape and most other American cultivated grapes. Roadsides, woods, thickets. Abundant.



GRAPE

SUMMER GRAPE *Vitis aestivalis*
Leaves with patchy or cobwebby, somewhat persistent, rusty hair beneath. Tendrils or fruit (flower) clusters missing each third leaf. Grapes 5-12 mm. thick, black, with a thin bloom, variable in sweetness. Open woods, thickets, roadsides. Uncommon.

VINES
ALTERNATE SIMPLE LEAVES



AMPELOPSIS



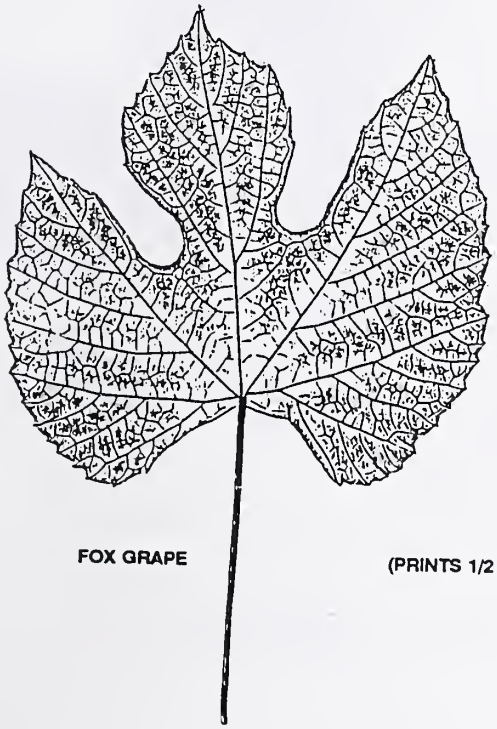
AMPELOPSIS



SUMMER GRAPE

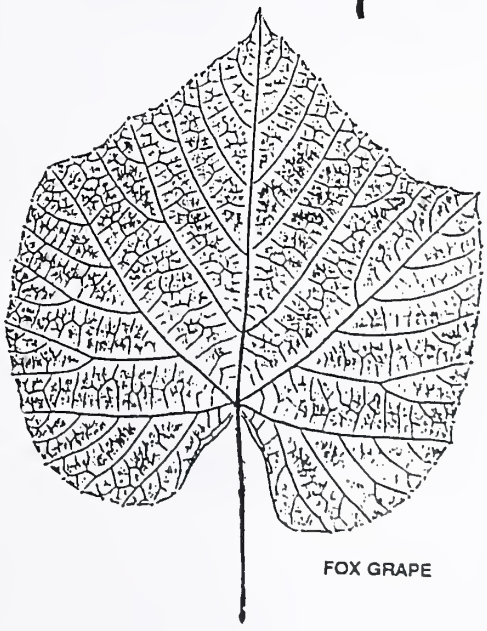


RIVERBANK GRAPE



FOX GRAPE

(PRINTS 1/2 TO 2/3 SIZE)



FOX GRAPE

BLACKBERRIES, RASPBERRIES, & DEWBERRIES

THORNY OR BRISTLY PLANTS WITH SLIGHTLY WOODY STEMS OF ONE, TWO OR THREE YEARS DURATION. LEAVES ALTERNATE, COMPOUND WITH 3-5 LEAFLETS. "BERRIES" EDIBLE.

Many species in this group are quite variable and not infrequently hybridize. For a detailed treatment of New England's Blackberries and Dewberries see the work of A. Hodgdon and F. Steele in vol. 68 of *Rhodora* (1966) pp. 474-513. For information on New England hybrids in this group see the work of the same authors in vol. 72 of *Rhodora* (1970) pp. 240-257, 547.

RASPBERRIES: LEAFLETS WHITE BENEATH. RIPE "BERRIES" LEAVING A SMALL WHITE KNOB BEHIND WHEN PICKED.

Note: Feather-compound vs. fan-compound is illustrated by the leaf prints of 5-leaflet leaves of Red Raspberry vs. Black Raspberry.

RED RASPBERRY *Rubus idaeus*
Those leaves with 5 leaflets, feather-compound; 3-leaflet leaves often tending toward this form by lobes on end leaflet. Calyx often bristly. "Berries" red when ripe. Thickets, clearings, roadsides, old pastures. Common.

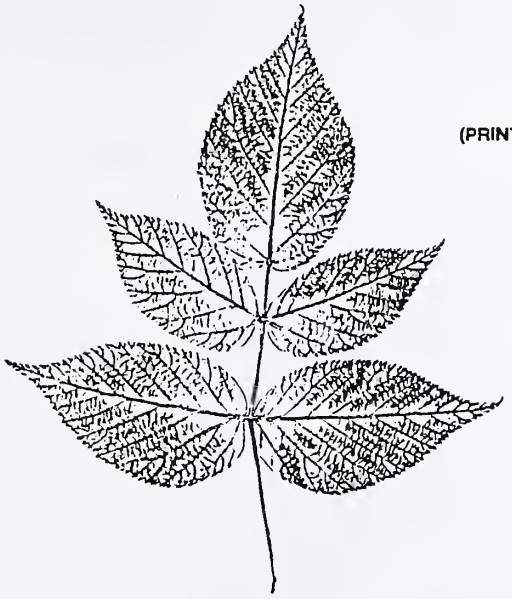
BLACK RASPBERRY *Rubus occidentalis*
Those leaves with 5 leaflets, fan-compound; 3-leaflet leaves often tending toward this form by lobes on side leaflets. Calyx not (or scarcely) bristly. "Berries" dark purple when ripe. Clearings, rich thickets, borders of woods. Common.



RASPBERRY

BLACKBERRIES, RASPBERRIES, & DEWBERRIES

(PRINTS 1/2 SIZE)



RED RASPBERRY



RED RASPBERRY



BLACK RASPBERRY



BLACK RASPBERRY

BLACKBERRIES, RASPBERRIES, & DEWBERRIES

DEWBERRIES & BRAMBLES: STEMS TRAILING OR TENDING TO TRAIL (LOW ARCHING); LEAVES OF FIRST YEAR (NON-FRUITING, NON-FLOWERING) STEMS MOSTLY WITH 3 LEAFLETS.

SWAMP DEWBERRY *Rubus hispidus*
Leaflets small (mostly 3.5-5 cm. long), often dark green and leathery. Stems bristly, without strong prickles. Fruit (flowers) 4-10 per cluster. "Berries" of poor quality. Moist open woods, moist or dry open soil. Common.

ENSLEN BRAMBLE *Rubus enslenii*
Stems very slender, .5-2.5 mm. thick (mostly 1-2 mm.). Fruit (flowers) mostly 1-2 per cluster on nearly erect stalks. "Berries" often of good quality. Dryish woods (mostly oak-hickory), ledges and rocky openings. Uncommon.

NORTHERN DEWBERRY *Rubus flagellaris*
Leaves hairless or nearly so beneath. Stems 1.5-4 mm. thick. Fruit (flowers) 1-5 per cluster on nearly erect stalks; uppermost stalks of cluster 1-2 cm. long. "Berries" often of good quality. Fields, sandy areas, roadsides, ledges. Common.

JAYSMITH DEWBERRY *Rubus jaysmithii*
Like the preceding species but leaves hairy beneath. Similar habitats. Uncommon or rare.

ARCHING BRAMBLE *Rubus recurvicaulis*
Sometimes high trailing, forming a dome. Likely to have more 5-leaflet leaves than above species. Fruit (flowers) 1-12 per cluster (mostly 2-8) on stalks not erect; uppermost stalks of cluster .5-1 cm. long. Stems 2-4 mm. thick. "Berries" poor to good in quality. Pastures, fields, roadsides, railroad banks. Rare.



DEWBERRY & BRAMBLE



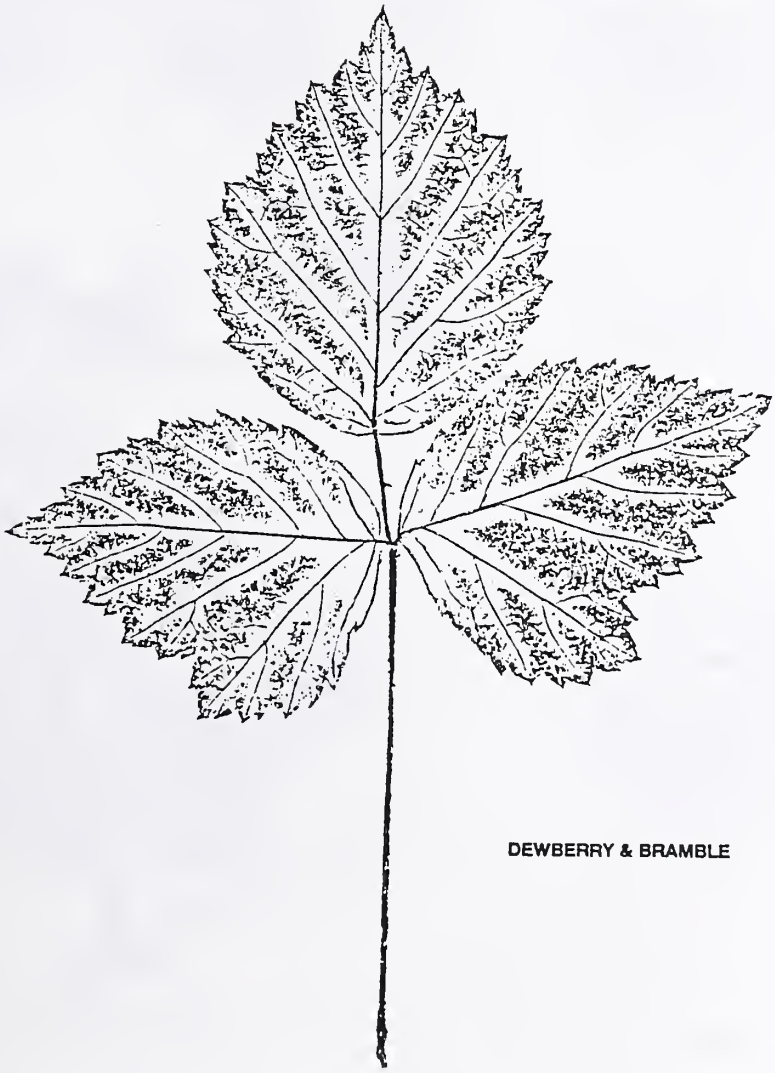
DEWBERRY & BRAMBLE

BLACKBERRIES, RASPBERRIES, & DEWBERRIES

(PRINTS FULL SIZE)



SWAMP DEWBERRY



DEWBERRY & BRAMBLE

BLACKBERRIES, RASPBERRIES, & DEWBERRIES

BLACKBERRIES: Erect or arching stems; leaves of first year (non-fruiting, non-flowering) stems with 5 (occasionally 3) leaflets.

BRISTLY BLACKBERRY *Rubus setosus*
Leaves hairless beneath. First year stems with very many soft bristles. "Berries" dryish. River bottomlands, damp thickets, grassy swamps. Uncommon.

VERMONT BLACKBERRY
Rubus vermontanus
Leaves essentially hairless beneath. Stems very prickly with stiff, needle-like prickles 2-4 mm. long. "Berries" poor to fair in quality. Sterile fields, thickets. Rare.

ALLEGHENY BLACKBERRY
Rubus allegheniensis
Leaves velvety beneath. Stalk of fruit (flower) clusters hairy and with numerous stalked glands. Mature plants mostly 1-2 meters high. "Berries" of good quality. Roadsides, old fields, cut over woods. Common.

BIGELOW BLACKBERRY
Rubus semisetosus
Like Vermont Blackberry but leaves clearly hairy or velvety beneath. Mature plant less than 1 meter high. "Berries" undeveloped or poor in quality. Thickets, open fields. Rare.

PENNSYLVANIA BLACKBERRY
Rubus pensilvanicus
Stems with about 2 or fewer prickles per cm. Prickles mostly 2-4 mm. long. Stalks of fruit (flower) cluster hairy, essentially glandless, with mostly 1-2 leafy bracts. Mature plants mostly 1-2 meters high. "Berries" fair to good. Thickets, roadsides, swamps, woods. Common.


BLACKBERRY

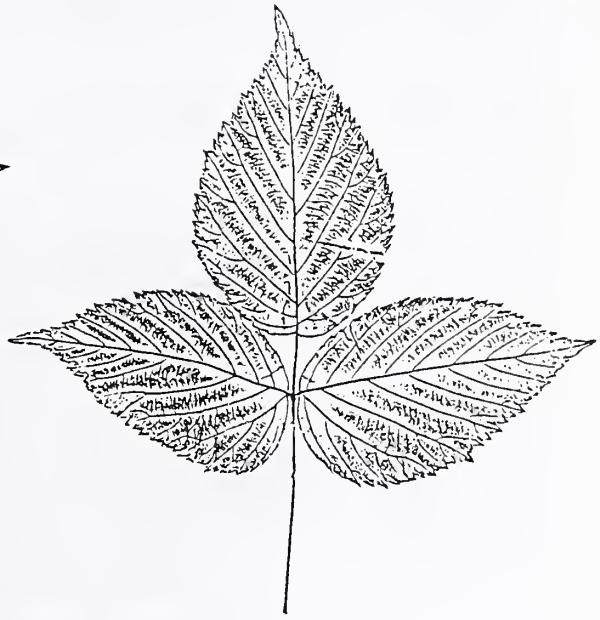

BLACKBERRY

BLACKBERRIES, RASPBERRIES, & DEWBERRIES

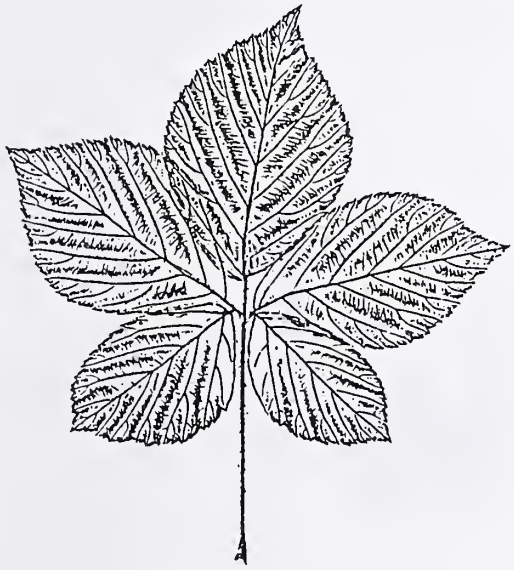
(PRINTS 1/2 SIZE)



BLACKBERRY



BLACKBERRY



BRISTLY BLACKBERRY



BRISTLY BLACKBERRY

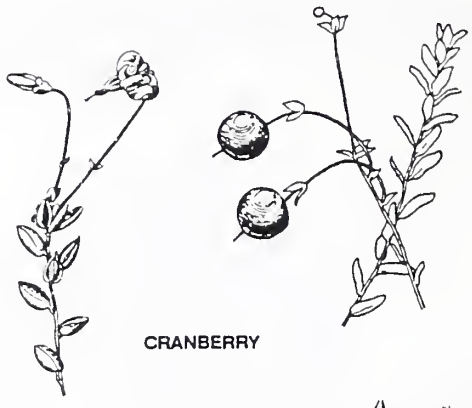
SMALL BOG SPECIES (ALL WITH UNTOOTHED LEAVES.)

SMALL CRANBERRY
Vaccinium oxycoccus
Trailing plant with tiny, narrow alternate leaves (3-10 mm. long, 1-3 mm. wide) pointed at the tips. "Berries" .5-1.0 cm. thick, becoming red, sour. Uncommon.

LARGE CRANBERRY
Vaccinium macrocarpon
Trailing plant with tiny, oblong alternate leaves (6-14 mm. long, 2-6.5 mm. wide) with blunt or rounded tips. "Berries" 1-2 cm. thick, becoming red, sour. Also found in swamps and on wet shores. Common.

PALE LAUREL *Kalmia polifolia*
Straggling plant with narrow, opposite leaves 1-3.5 cm. long. Twigs 2-edged. Fruit globular capsules. Uncommon.

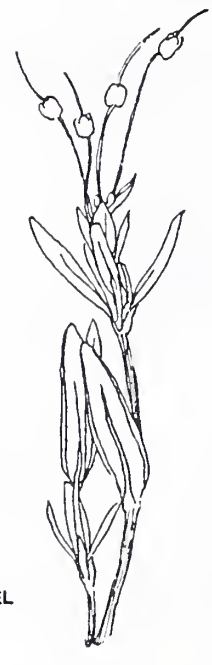
DOWNY BOG-ROSEMARY
Andromeda glaucophylla
Upright plant with narrow, alternate leaves 2-5 cm. long. Twigs not 2-edged. Fruit somewhat globular capsules. Uncommon.


CRANBERRY


SMALL CRANBERRY


LARGE CRANBERRY


PALE LAUREL




PALE LAUREL

(PRINTS FULL SIZE)


BOG-ROSEMARY


BOG-ROSEMARY

CRABAPPLES & APPLES

THORNLESS TREES (OCCASIONALLY SHRUBS) WITH ALTERNATE SIMPLE LEAVES. FRUIT (FLOWERS) IN CLUSTERS WHERE STALKS ARE ATTACHED NEAR SAME POINT. FRUIT FLESHY, MORE OR LESS SPHERICAL, WITH 2-5 CELLS CONTAINING 2 SEEDS PER CELL; SOMETIMES USED IN JELLIES.

Note: The species treated below are potential or known escapes. These include many (but by no means all) of the more commonly planted species. Escapes tend to occur along roadsides, borders of woods and in thickets.

KEY TO SPECIES (USING MATURE FRUIT AND FOLIAGE)

Fruit large (2 cm. or more thick); calyx persistent
- Leaves of shoots somewhat lobed; fruit greenish: **WILD SWEET CRABAPPLE**
- Leaves not lobed
  - Leaf teeth sharp; calyx forming a short tube at end of fruit: **CHINESE APPLE**
  - Leaf teeth incurved; calyx impressed at end of fruit: **COMMON APPLE** & varieties

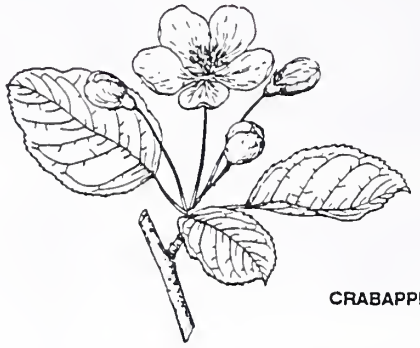
Fruit small (about 1.5 cm. or less thick); calyx shedding
- Leaves of shoots deeply lobed; fruit quite small, 6-8 mm. thick, red or brownish yellow: **TORINGO CRABAPPLE**
- Leaves not deeply lobed
  - Fruit quite small, 6-8 mm. thick, yellow or red; leaves sharp-toothed, some with a slight, sharp lobe: **JAPANESE FLOWERING CRABAPPLE**
  - Fruit 8-15 mm. thick
    - Leafstalks 2-5 cm. long; fruit red or yellow: **SIBERIAN CRABAPPLE**
    - Leafstalks 1-3 cm. long; fruit usually greenish yellow with red cheek: **TEA CRABAPPLE**

For additional possibilities see hybrid species at end of species descriptions on p. 106.

(CONTINUED ON NEXT PAGE)

CRABAPPLES & APPLES

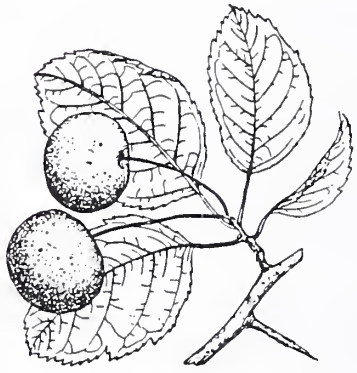
WILD SWEET CRABAPPLE
Pyrus (Malus) coronaria
Leaves of shoots somewhat lobed. Flowers 3-4 cm. across, white to pinkish, fragrant; stamen heads red. Fruit about 3 cm. thick, greenish; calyx persistent. Small tree. Native in New York state but not recorded as an escape in New England.



CRABAPPLE

CHINESE APPLE *Pyrus (Malus) prunifolia*
Leaves sharply toothed. Flowers about 3 cm. across, white (sometimes pinkish). Fruit about 2 cm. thick, yellow or red, with a persistent beak-like calyx at end. Small tree. From Eurasia. Occasional escape.

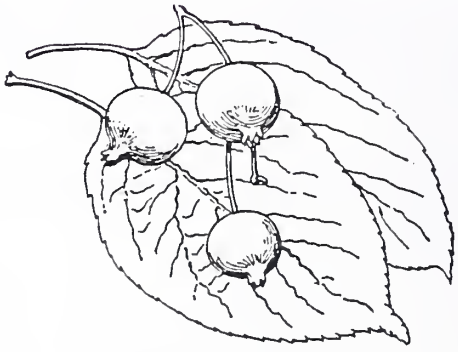
COMMON APPLE *Pyrus malus (Malus pumila)*
Leaves with rounded teeth, hairy beneath. Flowers pinkish-white on woolly stalks. Fruit 2 cm. or more in thickness, indented at base and at end; calyx persistent. Small tree. From Eurasia. Uncommon escape.



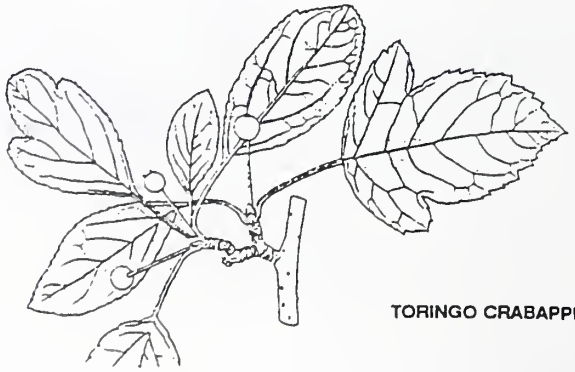
WILD SWEET CRABAPPLE

TORINGO CRABAPPLE
Pyrus (Malus) sieboldii
Leaves deeply lobed on shoots. Flowers about 2 cm. across, pink becoming white. Fruit 6-8 mm. thick, red or brownish yellow; calyx shedding. Small tree or shrub. From Asia. Uncommon escape becoming naturalized.

JAPANESE FLOWERING CRABAPPLE
Pyrus (Malus) floribunda
Leaves sharply toothed with occasional sharp, slight lobes on shoots. Flowers abundant, pink changing to nearly white, 2.5-3 cm. across. Fruit 6-8 mm. thick, yellow to red; calyx shedding. Small tree of mound-like habit. From Asia. Not recorded as an escape.

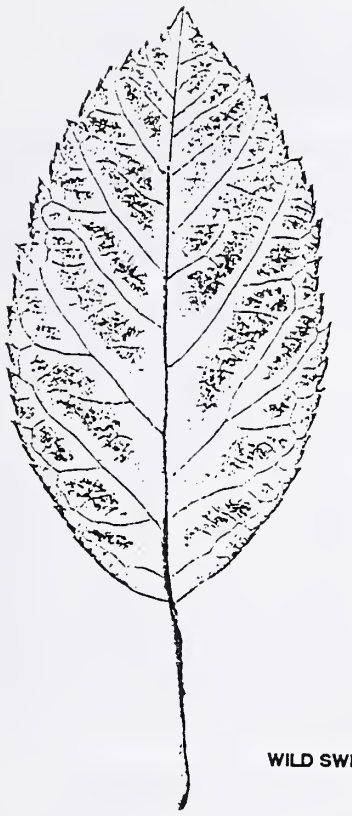


CHINESE APPLE

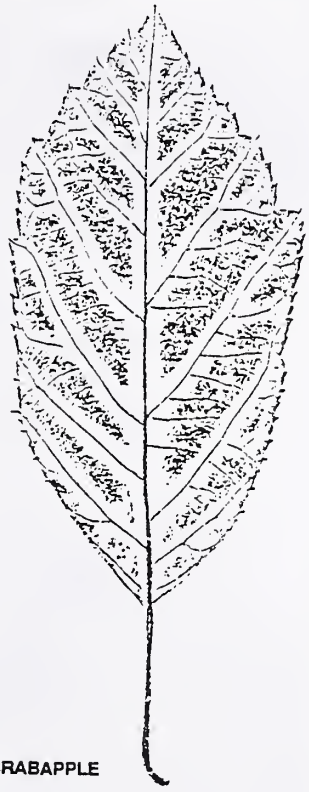


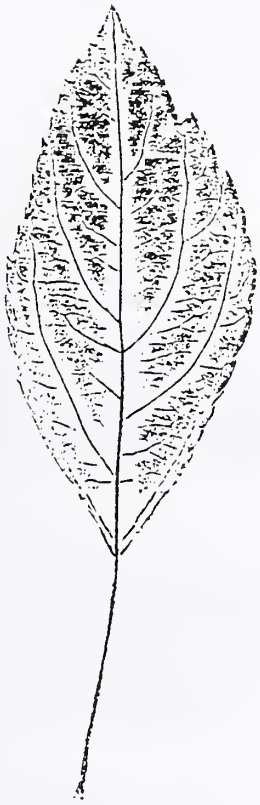
TORINGO CRABAPPLE

CRABAPPLES & APPLES

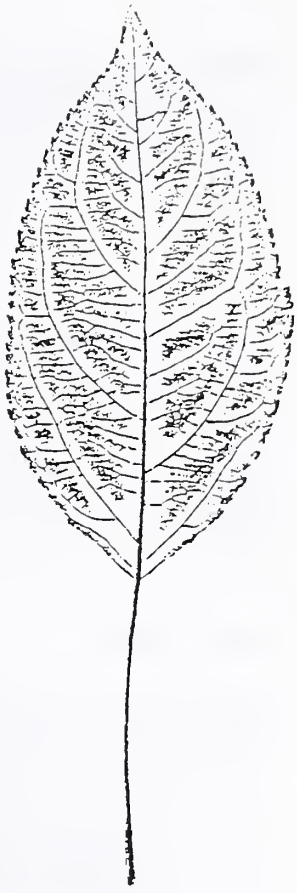


WILD SWEET CRABAPPLE





JAPANESE
FLOWERING
CRABAPPLE



CHINESE APPLE



TORINGO CRABAPPLE



TORINGO CRABAPPLE

(PRINTS FULL SIZE)



COMMON APPLE

(CONTINUED ON NEXT PAGE)

CRABAPPLES & APPLES

SIBERIAN CRABAPPLE
Pyrus (Malus) baccata
Twigs hairless. Leafstalks 2-5 cm. long. Flowers 3-3.5 cm. across, white. Fruit 8-10 mm. thick, red or yellow; calyx shedding. Small tree. From Asia. Recorded escape in Lexington, Mass.

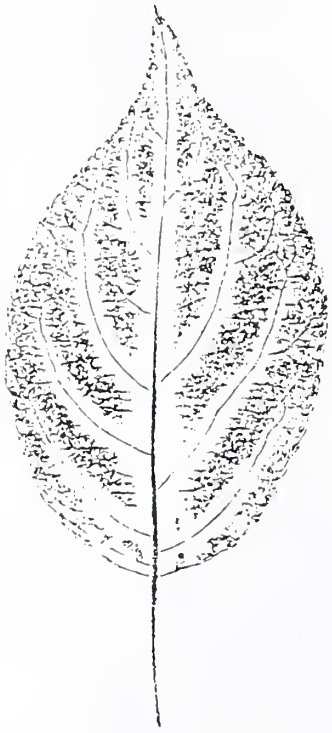


SIBERIAN CRABAPPLE



SIBERIAN CRABAPPLE

TEA CRABAPPLE
Pyrus (Malus) hupehensis
Leaves firm-textured. Leafstalks 1-3 cm. long. Flowers 3.5-4 cm. across, white or pinkish, fragrant. Fruit about 1 cm. thick, usually greenish yellow with red cheek. Small tree. From Asia. Not recorded as an escape.



TEA CRABAPPLE

HYBRIDS:

MAGDEBURGE APPLE
P. malus (M. pumila) X P.(M.) spectabilis
Like Common Apple but calyx lobes of flower shorter than calyx tube; flowers with more than 5 petals. Fruit yellowish, without indentation at base (at fruit stalk). Reported escape in Concord, Mass.

ARNOLD CRABAPPLE
P.(M.) floribunda X P.(M.) baccata
Like Japanese Flowering Crabapple but flowers larger (up to 5 cm. across) and fruit larger (about 1 cm. thick). Reported escape in Concord, Mass.

DWARF APPLE *Pyrus (Malus) micromalus*
= P.(M.) spectabilis X ?
Leafstalks 2-3 cm. long. Flowers pink, about 4 cm. across. Fruit 1-1.5 cm. thick, with indentation at base; calyx persistent or shedding. From Asia Not recorded as an escape.



DWARF APPLE

(PRINTS FULL SIZE)

LIST OF EXCLUDED SEMI-WOODY OR PROSTRATE SPECIES (RECORDED IN CONCORD AREA):

Aralia hispida BRISTLY SARSAPARILLA
Arceuthobium pusillum DWARF MISTLETOE
Arctostaphylos uva-ursi COMMON BEARBERRY
Artemisia absinthum WORMWOOD
Artemisia frigida PRAIRIE SAGEWORT
Calluna vulgaris SCOTCH HEATHER
Chimaphila maculata STRIPED PIPSISSEWA
Chimaphila umbellata COMMON PIPSISSEWA
Chiogenes hispidula CREEPING PEARLBERRY
Clematis virginiana VIRGIN'S BOWER
Decodon verticillatus SWAMP LOOSESTRIFE
Epigaea repens TRAILING ARBUTUS
Gaultheria procumbens CHECKERBERRY
Helianthemum bicknellii BICKNELL FROSTWEED
Helianthemum canadense COMMON FROSTWEED
Linnaea borealis TWINFLOWER
Mitchella repens PARTRIDGEBERRY
Potentilla palustris MARSH CINQUEFOIL
Vinca minor COMMON PERIWINKLE

LIST OF COMMONLY PLANTED SPECIES NOT KNOWN TO HAVE ESCAPED IN OUR AREA (AN INCOMPLETE LIST):

TREES: EUROPEAN BEECH (including PURPLE or COPPER variety), EUROPEAN WHITE BIRCH, JAPANESE WEEPING CHERRY, KANZAN CHERRY, KENTUCKY COFFEETREE, CORKTREE, most CRABAPPLES, KOUSA DOGWOOD, SIBERIAN ELM, BALSAM FIR, DOUGLAS FIR, GINKGO, SWEET GUM, AMERICAN HOLLY, KATSURA TREE, PERSIAN LILAC, CHINESE MAGNOLIA, CUCUMBER MAGNOLIA, SAUCER MAGNOLIA, STAR MAGNOLIA, JAPANESE MAPLE, PAGODA TREE, CALLERY PEAR, AUSTRIAN PINE, LONDON PLANETREE, LOMBARDY POPLAR, REDBUD, SMOKETREE, BLUE SPRUCE, TAMARISK, WASHINGTON THORN, TULIP-TREE, GOAT WILLOW, YELLOWWOOD.

SHRUBS: FLOWERING ALMOND, FLAME AZALEA, JAPANESE AZALEA, BEAUTYBUSH, AMERICAN BLADDERNUT, BOXWOOD, CORNELIAN "CHERRY", COTONEASTERS, DEUTZIA, FIRETHORN, ERECT FORSYTHIA, OREGON GRAPE, BLACK JETBEAD, JAPANESE LILAC, JAPANESE PIERIS, QUINCE, CATAWBA RHODODENDRON, RUGOSA ROSE (& innumerable cultivated ROSES), SHRUBALTHEA (ROSE-OF-SHARON), BRIDALWREATH SPIREA, THUNBERG SPIREA, KOREANSPICE VIBURNUM, WEIGELA, CHINESE WITCH-HAZEL, ENGLISH YEW.

VINES: BOSTON IVY, ENGLISH IVY, DUTCHMAN'S PIPE, CHINESE WISTERIA.

Note: Viertel's *Trees, Shrubs, and Vines* (see Bibliography) is recommended as an easy-to-use, illustrated, relatively comprehensive identification book for ornamental species (excluding "evergreens").

GLOSSARY

ALTERNATE (LEAVES, BUDS, LEAF SCARS): Arranged singly at intervals along twigs; not opposite.



ALTERNATE LEAVES

BARK (YOUNG VS. MATURE):

YOUNG BARK is that of young trees or that of the upper trunk and branches of mature trees.

MATURE BARK is that of the lower trunk of mature trees.

BRACT: A modified leaf, usually very small.



BRACTS

BRANCHED THORNS: Thorns which themselves have thorns, buds or leaves growing on them.



BRANCHED THORNS

BRANCHLET: The youngest and smallest part of a branch except for the current year's growth (see TWIG).

BUD: Undeveloped twigs, leaves and flowers.



BUDS

BUNDLE SCAR: See SCAR.

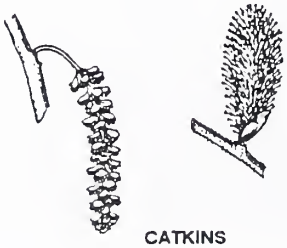
CALYX: The flower cup, consisting of a circle of modified leaves (lobes) which become the end formation on fleshy fruits.



CALYX

CAPSULE: A dry fruit containing more than one seed.

CATKIN: A cluster of tiny, petal-less flowers usually of one sex, often long and drooping.



CATKINS

COMPOUND LEAF: A leaf composed of several leaflets each of which resembles a leaf. Compound leaves can be recognized when some "leaves" appear to be growing directly from the ends of twigs. These are actually leaflets at the end of the compound leafstalks, since a true twig will not end directly in a simple leaf. See LEAFLET.



COMPOUND LEAF

DOUBLE-TOOTHED (LEAF EDGE): Some teeth bearing smaller teeth.

ESCAPE: A species not native to the area (introduced) that reproduces in the wild without human aid and that is persistent.

GLAND: A small knob or wart that is a normal part of the plant, sometimes at the end of a tiny stalk or at the tips of leaf teeth.

HYBRID: The offspring of two different species.

LEAFLET: One of the leaflike parts of a compound leaf. Leaflets are attached to budless, essentially non-woody stalks; whereas true leaves are attached to woody twigs that bear buds and upon which leaf scars are formed.

LEAF SCAR: See SCAR.

LOBE: A place in the outline of a leaf that sticks out (more than a tooth).

MIDRIB: The central vein of a leaf.

NATURALIZED: A species not native to the area (introduced) that has reproduced so readily in the wild as to appear to be part the native flora.

OPPOSITE (LEAVES, BUDS, LEAF SCARS): In opposing pairs (two at a node).

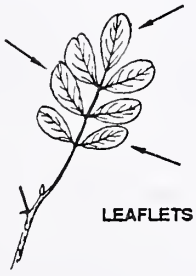
SCAR (LEAF, BUNDLE): The mark left on a twig after a leaf has fallen is a LEAF SCAR. The tiny marks within a leaf scar made by the arteries of the fallen stalks are BUNDLE SCARS.



DOUBLE TEETH



GLANDS



LEAFLETS



LOBES



MIDRIB



OPPOSITE LEAVES



LEAF SCARS



BUNDLE SCARS

SHRUB: A woody plant usually no higher than 5 meters and usually with several or many stems that are not more than 10 cm. thick.

SIMPLE (LEAF): Not divided into parts (leaflets); not compound.

SINUS: The indentation in the outline of a leaf between lobes or between teeth.

SPUR BRANCH: A very short branchlet; often stubby and crowded with leaves but sometimes narrow and sharp.

STAMEN: The male part of a flower; usually consisting of a stalk with a pollen-bearing head.

STIPULE: A growth on the twig at the base of a leafstalk, usually small and in pairs, sometimes leafy.

STYLE: An extension of the ovary arising from the very center of a flower. A "female stamen", so to speak, but not shedding pollen.

TREE: A woody plant usually with a single main trunk and generally growing more than 6 meters tall.

TWICE-COMPOUND: Type of compound leaf whose leaflets themselves are compound.

TWIG: The end subdivision of a branch; the current year's growth.



SINUSES



SPUR BRANCHES



STAMENS



STIPULE



STYLE



TWICE-COMPOUND LEAF

BIBLIOGRAPHY

Blakeslee, Albert and Chester Jarvis. *Northeastern Trees in Winter*. New York: Dover Publications, Inc., 1972 (reprint of 1911 original).

The original title *New England Trees in Winter* is more appropriate. Good photos of bark and fruit (also photos of twigs and entire trees). Detailed descriptions; similar species compared. New England distribution data taken from book by Lorin Dame and Henry Brooks (see below). Treats some ornamentals.

Campbell, Christopher S., Fay Hyland and Mary L.F. Campbell. *Winter Keys to Woody Plants of Maine*. Orono, Me.: University of Maine Press, 1975.

Includes the majority of tree, shrub and woody vine species of the Concord area. Excellent drawings of buds, twigs, persistent fruit, and persistent foliage. Keys to species using winter characters.

Dame, Lorin and Henry Brooks. *Handbook of the Trees of New England*. New York: Dover Publications, Inc., 1972 (reprint of 1901 original).

Roughly the summer complement of the book by Albert Blakeslee and Chester Jarvis (see above). First-rate drawings of leaves, fruit and flowers. New England distribution given state by state for each species. Mostly excludes escapes.

Eaton, Richard J. *A Flora of Concord*. Cambridge, Mass.: Museum of Comparative Zoology, Harvard University, 1974.

Comprehensive botanical listing of the vascular species recorded growing wild in Concord, Mass. with habitats and frequency of occurrence of each. This is not a manual for identification. Describes Concord's sites of botanical interest and outlines the history of botanical activity in the township. Unillustrated aside from 11 photos of rare pressed specimens.

Elias, Thomas S. *The Complete Trees of North America*. New York: Van Nostrand Reinhold Co., 1980.

Essentially a modern version of the work of Charles S. Sargent (see below) and including many of the illustrations from that work. Unlike that work, many introduced species are included. Also distribution maps are provided for most species. There is a significant amount of introductory material on the different aspects of trees and more commentary on each species beyond descriptive data for identification.

Fernald, Merritt L. *Gray's Manual of Botany* 8th ed. New York: American Book Company, 1950.

A standard technical manual for the identification of wild vascular plants in the northeastern and central U.S. and adjacent Canada. Not recommended for the botanically squeamish. The user must do battle with adjectives like "subcoriaceous" at every turn. Sparingly illustrated. Recently reprinted by Dioscorides Press.

Gleason, Henry A. *The New Britton and Brown Illustrated Flora of the Northeastern U.S. and Adjacent Canada* (3 vol.). New York: The New York Botanical Garden, 1952.

A sort of illustrated version of *Gray's Manual* but differing in its treatment of some groups and in scientific nomenclature. Good drawings of leaves, flowers and fruit. Tends to exclude escapes. Useful to non-experts for its illustration of uncommon species that are left out of popular field guides. The original 1913 version, an entirely different work, is still available in paperback in 3 volumes.

Gleason, Henry A. and Arthur Cronquist. *Manual of Vascular Plants of Northeastern U.S. and Adjacent Canada*. Princeton, N.J.: D. Van Nostrand Co., 1963.

An unillustrated manual based on the preceding reference but taking into account some more recent studies.

Graves, Arthur J. *Illustrated Guide to Trees and Shrubs* revised ed. New York: Harper & Row Publishers, Inc., 1956.
Covers northeastern U.S. Includes most introduced species and many ornamentals. Very good leaf and bud illustrations but fruit illustrations often lacking. Descriptions brief, frequently omitting habitat data.

Grimm, William C. *The Book of Trees*. New York: Hawthorn Books, Inc., 1962.
Covers eastern U.S. Illustrates leaves, flowers, fruit and buds. Includes some escapes. Notes practical uses and importance for wildlife.

Grimm, William C. *The Book of Shrubs*. Harrisburg, Pa.: The Stackpole Company, 1957.
The corresponding book for shrubs as the preceding one for trees and in the same format.

Keeler, Harriet. *Our Northern Shrubs*. New York: Dover Publications, Inc., 1969 (reprint of the 1903 original).
Covers the northeastern U.S. Detailed species descriptions. Species illustrated with photographs. Literately portrays the pecularities of each shrub. Includes some ornamentals. Not organized well for identification.

Mathews, F. Schuyler. *Field Book of American Trees and Shrubs*. New York: G.P. Putnam's Sons, 1915.
Covers 48-state U.S. Includes nearly all New England tree and shrub species. Very good drawings of leaves and fruit (or flowers). Descriptions brief. Not organized well for field identification.

Newcomb, Lawrence. *Newcomb's Wildflower Guide*. Boston: Little, Brown and Co., 1977.
Includes flowering (petaled) shrubs of the northeastern U.S. Excellent drawings of flowers and accompanying foliage. Brief species descriptions focusing on separating similar species. Well organized for field identification.

Peattie, Donald C. *The Natural History of Trees of Eastern and Central North America*. Boston: Houghton Mifflin Co., 1950.
Essentially a collection of tree biographies of the more common species, portraying the importance of each to pioneers, carpenters, Indians, children, history and the poet. Contains identification material and stylized illustrations.

Petrides, George A. *A Field Guide to Trees and Shrubs* 2nd ed. Boston: Houghton Mifflin Co., 1972.
Comprehensive field guide to the trees, shrubs, and woody vines growing wild in the northeastern U.S. (aside from Hawthorns and other difficult groups in the Rose family). Illustrated with schematic leaf drawings and some pictures of fruit (flowers). Species descriptions focus mainly on separating similar species. Well organized for field identification.

Petrides, George A. *A Field Guide to Eastern Trees*. Boston: Houghton Mifflin Co., 1988.
A more improved version of the preceding work but limited to trees. The most notable difference is in the attractive color drawings that include fruit (or flowers) and twigs. Also range maps are included for almost every species. Geographic coverage is broadened to include entire eastern United States.

Rehder, Alfred. *Manual of Cultivated Trees and Shrubs* 2nd ed. New York: The Macmillan Co., 1940.
The standard work for cultivated woody plants in North America (including most of the native species as well). Unillustrated and technical.

Sargent, Charles S. *Manual of the Trees of North America* (2 vol.). New York: Dover Publications, Inc., 1965 (reprint of 1922 ed.).
Long the standard work on North American trees. Treats only the native species. Very good drawings of leaves, fruit, flowers. Detailed descriptions of each variety of each species.

Seymour, Frank C. *The Flora of New England*. Rutland, Vt.: Charles E. Tuttle Co., 1969.
A comprehensive, somewhat technical key for the identification of New England's wild vascular plants. Very little description beyond habitat, frequency of occurrence, and flowering dates. Illustrated with photographs only at difficult parts of the keys. Special feature is the listing of detailed geographical locality data for each species. For serious local amateur botanists, students, and professionals. A couple versions have come out since the original publication. These have some corrections added at the end and have replaced the photographs with outline drawings of the photographs.

Symonds, George W.D. *The Tree Identification Book*. New York: William Morrow & Co., Inc., 1958.
A photographic guide to most of the wild trees of the eastern U.S. Excellent photos of leaves, flowers, fruit, twigs, bark, and habit of growth. Very little text material (e.g., no habitat data). Easily the best supplementary book for the identification of our trees.

Symonds, George W.D. *The Shrub Identification Book*. New York: William Morrow & Co., Inc., 1963.
The corresponding work for shrubs and woody vines as the preceding one for trees and in the same format.

Viertel, Arthur T. *Trees, Shrubs and Vines*. Syracuse, N.Y.: Syracuse University Press, 1970.
Covers the ornamental and most wild species of the northeastern U.S. exclusive of conifers. Many very good, detailed leaf outlines. Detailed species descriptions. Organized for rapid identification by leaf comparison.

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NOTES



Numbered divisions are centimeters (cm.)

Smallest divisions are millimeters (mm.)

(1 cm. = 10 mm.)