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, <u>deeply sinused</u>; veins running to sinuses as well as to lobes. Fruit usually with only one nutlet. Small tree, occasionally thornless, which uncommonly spreads from cultivation.

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

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.



SINGLE-SEED HAWTHORN



COCKSPUR THORN



LONG-SPINED THORN



HAWTHORN

SCARLET THORN Crataegus coccinea (including C. pedicellata, C. holmesiana,

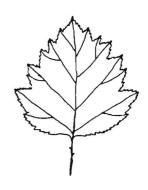
and C. pringlei)

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.

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

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

VARIABLE THORN



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

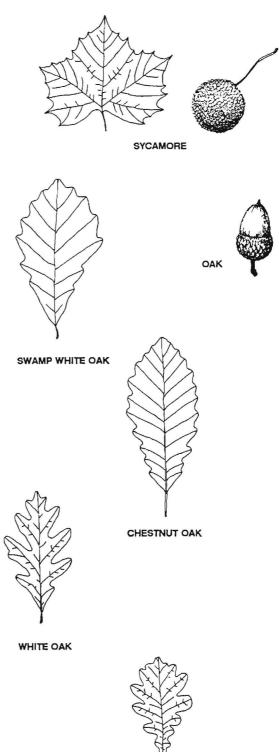
SYCAMORE Platanus occidentalis Bark on upper trunk and branches very characteristic: thin brown flakes coming off in jigsaw-puzzle-like pieces exposing whitish underbark. Ball-like heads of fruit mostly single on long stalks (introduced species with more than one per stalk). Low woods, near streams.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

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.

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.

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.

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 Small tree or usually a shrub. Leaves relatively small (5-12 cm. long), whitishfelted beneath, lustrous dark green above. Acorns small, about 1 cm. long, bitter. Dry, sterile scrub woods, or sandy-gravelly clearings. Common.

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 ¼ or more of acorn; upper scales of cup <u>pressed together</u> (not forming a definite fringe). Acorns bitter. Bark is somewhat intermediate between Red Oak and Black Oak. Dry woods, roadsides. Common.

PIN OAK Quercus palustris

Leaves similar to Scarlet Oak, but acorn cups <u>shallow</u> 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.

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 1/3 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.

RED OAK Quercus rubra

Large, <u>shallow</u>, <u>saucer-like</u> 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 ³/₄ of the way), mostly hairless beneath. Trunk bark flat-topped ridges. Acorns bitter. Moist to dn⁻ woods, roadsides, Abundant.



SCRUB OAK



SCARLET OAK

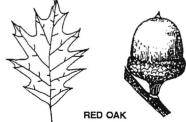


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SCARLET & PIN OAK
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PIN OAK



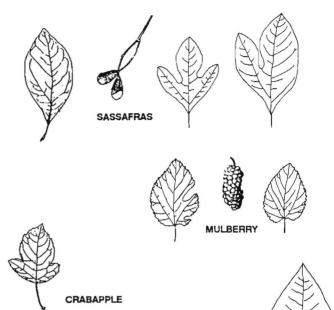


SOME LEAVES LOBED SOME NOT

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

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.

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.



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.

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,

ALTERNATELEAF DOGWOOD Cornus alternifolia

Leaves 6-13 cm. long; main <u>veins reaching</u> <u>strongly forward</u>. Mature bark shallowly fissured. Fruit berry-like, in roundish clusters, unpalatable. Small tree or shrub. Wood borders, thickets, usually dry. Common.

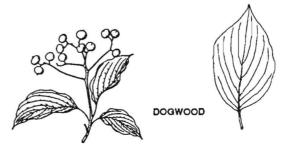
PUSSY WILLOW Salix discolor

shores, Common.

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.

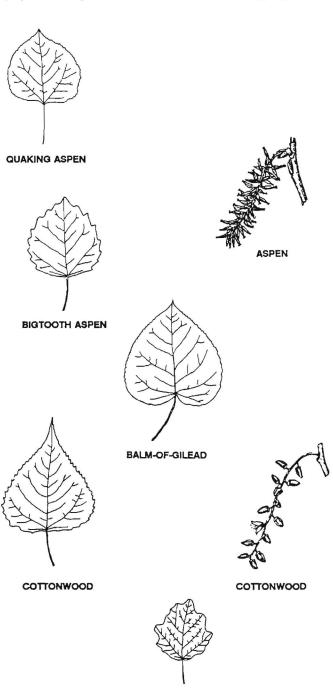
QUAKING ASPEN *Populus tremuloides* Leaves fine-toothed (sometimes obscurely) with 20-40 teeth on each margin. Lower bark usually pale-smooth as well. Name derives from leaves which flutter at the least breeze. A short-lived weed tree. Dry, open woods, recent clearings, poor soil. Common.

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.

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

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

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

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

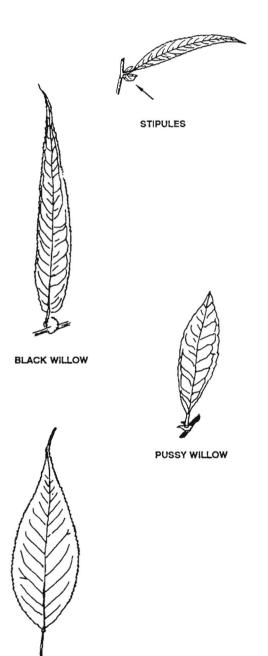
Leaves pure green beneath, .5-1.5 cm. wide, usually <u>10-14</u> times as long as wide, fine-toothed. Leaf teeth gland-tipped. Leafstalks without glands. Leafy stipules often prominent. Twigs becoming hairless. Tree or shrub with flaky, dark brown to blackish bark. Riverbanks, meadows, pond shores, occasionally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

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.

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.



WILLOW FRUIT



SHINING WILLOW

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. Mediumsized or large tree. Frequently planted. An uncommon escape in low ground and along riverbanks.

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 <u>conspicuously hanging</u>. Medium-sized or large tree. Frequently planted. Rarely escapes cultivation to low ground.

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. Mediumsized or large tree. Uncommon escape to shores and swamps.



WEEPING WILLOW



WHITE WILLOW

CRACK WILLOW

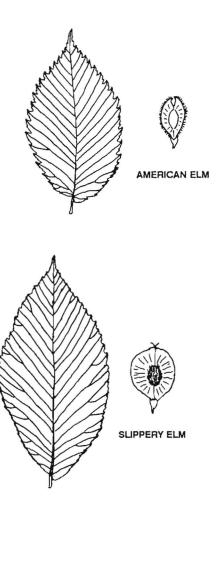
ELMS: LEAVES DOUBLE-TOOTHED, WITH UNEVEN, ROUNDED LEAF BASES. OFTEN SANDPAPERY ABOVE.

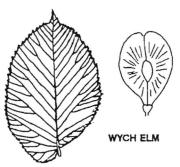
AMERICAN ELM Ulmus americana When growing in the open, <u>vase-shaped</u> form of tree is distinctive. Leaves deeply coarse-toothed; main side veins fork a few times at most. Fruit wafer-like, <u>fringed</u> along the edge. Rich soils, especially along streams, roadsides. Common (most often as young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

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

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.







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



の方法に対応する

PAPER BIRCH Betula papyrifera

Mature trunk bark usually clear white, often peeling. Bark of saplings and young branches brown. Leaves broadly wedge-based or roundbased, 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.

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.

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.

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.



MALE CATKINS



EUROPEAN WEEPING BIRCH





BLACK & YELLOW BIRCH

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 <u>groove</u> or <u>line</u> running from base to tip, red or yellow, juicy, usually a bit sour but edible. Often a shrub. Thickets, roadsides, wood borders. Uncommon.

CANADA PLUM Prunus nigra

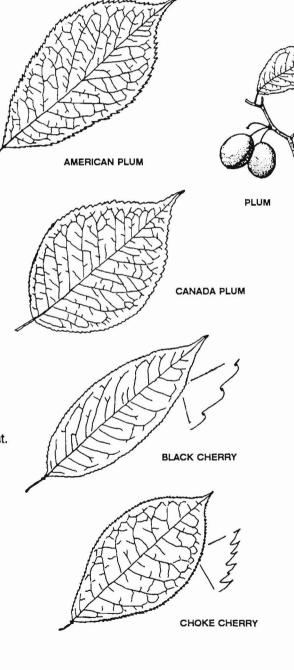
Fruit (flowers) not in elongated clusters. Leaf teeth rounded. Spur branches often spiny sharp. Mature fruit oblong, 2.5 cm. long, with a <u>groove</u> or <u>line</u> running from base to tip, orange-red to yellowish, edible. A small tree or shrub. Thickets, fencerows, wood borders. Rare.

BLACK CHERRY Prunus serotina

Fruit (flowers) in <u>elongated</u> 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.

CHOKE CHERRY Prunus virginiana Fruit (flowers) in <u>elongated</u> 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.



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 <u>small</u>, 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.

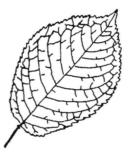
SWEET CHERRY Prunus avium

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

MISCELLANEOUS SPECIES (ALL LEAVES TOOTHED, UNLOBED)

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

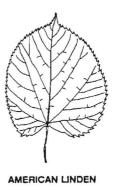
AMERICAN LINDEN (BASSWOOD)

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.

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.

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

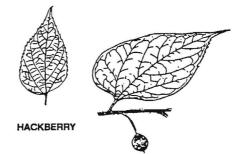








EUROPEAN LINDEN



MISCELLANEOUS SPECIES (ALL LEAVES TOOTHED, UNLOBED)

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

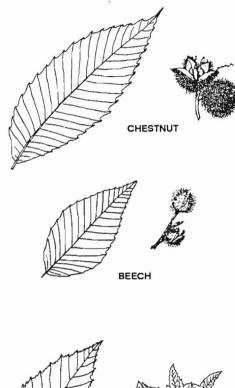
AMERICAN CHESTNUT Castanea dentata Leaves coarsely single-toothed, long (13-23 cm.). Leaf teeth sharp and prominent. Dry, gravelly, mostly acid soil. Once abundant, now common as sprouts from roots and stumps of blight victims. Occasionally maturing enough to bear fruit before dying.

AMERICAN BEECH Fagus grandifolia Leaves <u>coarsely</u> and distinctly <u>single-</u> <u>toothed</u>, 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 intials carving. Rich woods. Uncommon.

IRONWOOD (AMERICAN HORNBEAM)

Carpinus caroliniana Small tree or shrub with distinctive <u>smooth</u>, <u>sinewy-muscular-like</u> 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.

HOP-HORNBEAM Ostrya virginiana Mature bark <u>scaly</u> or <u>shreddy</u> 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

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.

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

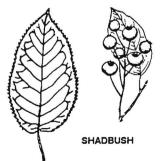
PEAR

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 inter-Lacing stripes or ridges. Small trees or shrubs. Our species with 9 or more side vein pairs.

SMOOTH SHADBUSH Amelanchier laevis Leaves <u>hairless</u> 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.



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