KEY TO THE WILD AND CULTIVATED TREES IN AUTUMN*

BY CHESTER ARTHUR DARLING

I	<i>a</i> .	Leaves about 1/8 in. or less broad, often evergreen2.
	b.	Leaves more than 1/4 in. broad
2	а.	Leaves scale-like, more or less appressed to the stem, the tips sometimes
		spreading
	<i>b</i> .	Leaves awl-shaped, linear, or needle-like, not appressed to the stem6.
3	<i>a</i> .	Branchlets appear more or less 4-sided, not flattened laterally; all leaves
		more or less keeled
	<i>b</i> .	Branchlets appear much flattened laterally, two rows of leaves flat and two.
		rows keeled or ridged4.
4	<i>a</i> .	Branchlets about 1/16 in. broad, the flat leaves with a discoid marking on
		the backSouthern White Cedar. (Chamaecyparis thyoides.)
		Branchlets about 1/6 in. broad5.
5		Branchlets lighter colored beneath Arbor Vitae. (Thuja occidentalis.)
	b.	Branchlets alike on both sides. Oriental Arbor Vitae. (Thuja orientalis.)
6		Leaves in clusters on the stem
		Leaves attached singly to the stem
7		Leaves 2-5 in a cluster
		Leaves 10 or more in a cluster17.
8		Leaves in clusters of 5, or some in 4's9.
		Leaves in clusters of 2 or 3 II.
9	а.	Leaves 5-8 in. long, drooping, the young branches whitish; cultivated tree.
		Bhotan Pine. (Pinus excelsa.)
		Leaves 2-5 in. long, not drooping, young branches not whitish10.
10	а.	Young branches covered with brownish hairs; mature cones 2-4 in. long;
		cultivated tree Swiss Stone Pine. (Pinus cembra.)
	ь.	Young branches not covered with brownish hairs; mature cones 3-6 in. long;
		native tree, often planted White Pine. (Pinus Strobus.)
II		Leaves in clusters of 312.
		Leaves in clusters of 2, or some in 3's13.
12	а.	Cultivated tree; mature cones 4-6 in. long.
		Western Yellow Pine. (Pinus ponderosa.)
		Native tree; mature cones 2-3 in. longPitch Pine. (Pinus rigida.)
		Average leaf less than 4 in long
	12	I HORO ROLLAND OF MORO LODG

* This key is designed to be used in the field to determine the trees to be found growing in the eastern United States. In using the key begin with No. 1, read both a and b and choose the one which fits the specimen; follow the key as indicated by the number to which you are referred each time, reading both a and b until the name of the specimen is obtained. Accuracy in observation and in following the key are of first importance, choosing an average specimen is likewise important. Additional copies of this key may be had for 10 cents by addressing the author at Columbia University, New York City.

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14 a.	Leaves 1-3 in. long, dark green; native tree.
	Jersey Pine. (Pinus virginiana.)
<i>b</i> .	Leaves about 3 in. long, twisted, rather light green; cultivated tree.
	Scotch Pine. (Pinus sylvestris.)
15 a.	Cultivated tree; leaves much clustered at the ends of the branches; mature
	cones 2-3 in. longAustrian Pine. (Pinus austriaca.)
<i>b</i> .	Native tree; leaves not noticeably clustered at the ends of the branches;
	mature cones 1-2 in. long16.
16 a.	Some leaves on the branch in clusters of 3, others in 2's.
	Yellow Pine. (Pinus echinata.)
b.	All leaves in clusters of 2
17 a.	Leaves deciduous, borne on short bud-like branches18.
b.	Leaves evergreen, not borne on short bud-like branches19.
18 a.	Leaves about $3/4$ in. long; mature cones about $1/2$ in. long; native tree.
	Tamarack. (Larix laricina.)
b.	Leaves about I in. long; mature cones about I in. long; cultivated tree.
	European Larch. (Larix decidua.)
19 a.	Leaves 1/2-3/4 in. long; mature cones 2-3 in. long.
	African Cedar. (Cedrus Atlantica.)
b.	Leaves 1-3 in. long; mature cones 3-5 in. long.
	Cedar-of-Lebanon. (Cedrus Libani.)
20 a.	Leaves 3-6 in. long, in whorls at the ends of the branches; small cultivated
	tree Umbrella Pine. (Sciadopitys verticillata.)
b.	Leaves 2 in. or less long
2I a.	Each leaf extends down the stem, not jointed to it; leaves awl-shaped, rigid;
	small cultivated tree Japanese Cedar. (Cryptomeria japonica.)
b.	
	small cultivated tree Japanese Cedar. (Cryptomeria japonica.)
	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
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22 a. b. 23 a. b. 24 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b. 25 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b. 25 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b. 25 a. b.	small cultivated tree.Japanese Cedar. (Cryptomeria japonica.)Trees not completely as in a.22.Leaves thick, somewhat 4-sided; branches very rough when leaves are removed.23.Trees not completely as in a.23.Trees not completely as in a.26.Leaves 1/4-1/2 in. long, crowded, appressed to the branches.26.Leaves 1/2-1 in. long, not appressed to the branches.24.Leaves bluish or whitish, strongly incurved on the upper branches.24.Leaves not completely as in a.25.Leaves usually 3/4-1 in. long; mature cones 4-6 in. long; cultivated tree.Norway Spruce. (Picea Abies.)Leaves usually 1/2 in. long; mature cones 1-2 in. long; native tree.Black Spruce. (Picea Mariana.)
22 a. b. 23 a. b. 24 a. b. 25 a. b.	<pre>small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a</pre>
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22 a. b. 23 a. b. 24 a. b. 25 a. b. 26 a. b.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
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22 a. b. 23 a. b. 24 a. b. 25 a. b. 26 a. 27 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b. 25 a. b. 26 a. 27 a. b.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a
22 a. b. 23 a. b. 24 a. b. 25 a. b. 26 a. 27 a. 28 a.	small cultivated treeJapanese Cedar. (Cryptomeria japonica.) Trees not completely as in a

29 a. Leaves blunt at apex, about 1/2 in. long, with two white lines beneath when b. Leaves somewhat pointed at apex, 3/4-1 in. long. European Yew. (Taxus baccata.) 30 a. Leaves pointed at the apex. . Cephalonian Silver Fir. (Abies cephalonica.) 31 a. Leaves blue-green, usually glaucous on the young shoots, often 4-sided. Red Fir. (Abies nobilis.) 32 a. Native tree; leaves about 3/4 in. long; mature cones 2-4 in. long. Balsam Fir. (Abies balsamea.) b. Cultivated trees; average leaves usually more than 3/4 in. long; mature 33 a. Leaves tapering to the base, somewhat curved. Northern Silver Fir. (Abies nordmanniana.) b. Leaves not completely as in a Silver Fir. (Abies Picea.) b. Leaves with toothed or lobed margins.....40. 37 a. Leaves ovate, 2-5 in. long; small tree with bark peeling off in small rec-38 a. Leaves 2-3 in. long with wavy margins; cultivated tree. Cercidiphyllum. (Cercidiphyllum japonicum.) 39 a. Fruit of long pods 8-20 in. long..... Catalpa. (Catalpa Catalpa.) b. Fruit of short capsules 1-2 in. long. . . Empress Tree. (Paulownia tomentosa.) 40 a. Leaves sharply toothed, not lobed, the teeth about 1/4 in. long; cultivated b. Leaves more or less lobed......41. 41 a. Leaves very deeply 7-11-lobed, the lobes linear to lanceolate, narrow, sometimes relobed; cultivated tree.... Japanese Maple. (Acer palmatum.) b. Leaves not completely as in a.....42. 42 a. Leaves nearly circular in outline, 5-9-lobed, the lobes doubly toothed; b. Leaves not completely as in a.....43. 43 a. Leaves 3-lobed only toward the apex, the margins finely toothed all around; bark smooth, green, striped Striped Maple. (Acer pennsylvanicum.) b. Leaves and bark not completely as in a.....44. 44 a. Leaves with indentations extending more than half way to the petiole, whitish beneath; bark peeling off in thin flakes; branches often upturned b. Trees not completely as in a.....45. 45 a. Leaves 3-7-lobed, the lobes entire or the middle one sometimes slightly

toothed; cultivated trees......46.

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Ъ.	Leaves with lobes more or less toothed or relobed47.
·45 a.	Branches corky; leaves 3-5-lobed, the lobes blunt at apex.
	English Maple. (Acer campestre.)
b.	Branches not corky; leaves 5-7-lobed, the lobes pointed.
	Colchicum-leaved Maple. (Acer laetum.)
47 a.	Leaves usually 3-lobed, the lobes toothed; petiole and twigs usually red;
	bark usually smooth and light gray, usually rough only toward the base.
	Red Maple. (Acer rubrum.)
b.	Trees not completely as in a
48 a.	Lobes of leaves many-toothed, the teeth usually rounded, not with bristly
	tips Sycamore Maple. (Acer pseudo-platanus.)
·b.	Lobes of leaves with 2-4 coarse teeth, the teeth usually pointed or with
	bristly tips49.
·49 a.	Cultivated tree; leaves 4-7 in. broad; bark smooth or short-furrowed.
	Norway Maple. (Acer platanoides.)
Ь.	Native tree; leaves 3-6 in. broad; bark peeling in elongated flakes.
	Sugar Maple. (Acer Saccharum.)
50 a.	Leaves palmately compound
ь.	Leaves pinnately compound
51 a.	Fruit prickly; tree rather commonly planted.
	Horse-chestnut. (Aesculus Hippocastanum.)
b.	Fruit not prickly; tree not very commonly planted.
	Ohio Buckeye. (Aesculus glabra.)
52 a.	Leaflets 3 or 5, coarsely toothed or lobedBox Elder. (Acer Negundo.)
b.	Leaflets 7 or more
53 a.	Fruit berry-like; bark corky Cork Tree. (Phellodendron amurense.)
0.	Fruit winged; bark not corky54.
.54 a.	Lateral leaflets stalked
0.	Lateral leaflets not stalked
-55 a.	Fruit with wing nearly all terminal on the seed.
L	White Ash. (Fraxinus americana.)
.0.	Fruit with wing extending about half way down on the seed.
760	Red Ash. (Fraxinus pennsylvanica.)
50 a.	Trees growing wild, in moist places Black Ash. (Fraxinus nigra.)
57.0	Cultivated trees
514.	Fruit 3/4-1 in. long; leaflets usually entire.
h	Flowering Ash. (Fraxinus ornus.)
	Fruit 1-2 in. long; leaflets usually toothed.
58 a.	English Ash. (Fraxinus excelsior.)
	Leaves compound, composed of 3 or more leaflets
50 a.	Leaves simple
b.	Leaflets usually 2 in. or less long, with entire margins; fruit a pod60.
	Some or all of the leaflets more than 2 in. long, with entire or toothed margins.
60 a.	margins
	doubly compound; pods 10 in. or more long, flat.
Ь.	Thorny Locust. (Gleditsia triacanthos.) Trees not completely as in a

61 a. Leaves doubly compound; pods 6-10 in. long.
Coffee-tree. (Gymnocladus dioica.)
b. Leaves singly compound; pods 6 in. or less long
62 a. Usually short spines at the base of the petiole in place of stipules; branches
zigzag; pods about 4 in. long; bark with long furrows.
Black Locust. (Robinia pseudacacia).
b. No spines at base of leaves as in a; cultivated tree.
Pagoda Tree. (Sophora japonica.)
63 a. Leaflets with entire margins; cultivated tree.
Yellow-wood. (Cladrastis lutea.)
b. Leaflets with margins more or less toothed or incised
64 a. Leaflets with only 2-8 teeth at the base; fruit winged.
Ailanthus. (Ailanthus glandulosa.)
b. Leaflets not completely as in a
65 a. Leaflets irregularly toothed or incised; cultivated tree.
Varnish Tree. (Koelreuteria paniculata.) b. Leaflets more or less regularly toothed
66 a. Leaflets toothed towards the apex, usually less than I in. broad; fruit of red
berries
b. Leaflets usually toothed all around; fruit of nuts
67 a. Leaflets 13–25 to each leaf
b. Leaflets 5-11
68 a. Cultivated tree; nuts with wings about 3/4 in. broad.
Caucasian Walnut. (Pterocarya fraxinifolia.)
b. Native trees; nuts not winged
69 a. Leaflets with sticky hairs; nut oblong Butternut. (Juglans cinerea.)
b. Leaflets not with sticky hairs; nut globoseBlack Walnut. (Juglans nigra.)
70 a. Cultivated tree; shuck of nut not splitting.
English Walnut. (Juglans regia.)
b. Native trees; shuck splitting from the nut
71 a. Bark of trunk shaggy in older trees; leaflets usually 5
b. Bark not shaggy; leaflets 5-11
72 a. Nut about 3/4 in. or more broad; shuck comparatively thick; common tree.
Shagbark Hickory. (<i>Hicoria ovata.</i>) b. Nut less than 3/4 in. broad; shuck comparatively thin; tree not common.
Small-fruited Hickory. (Hicoria microcarpa.)
73 a. Terminal bud yellowish, without thin scales; leaflets 7–11.
Bitternut Hickory. (Hicoria minima.)
b. Terminal bud not yellowish, with thin scales; leaflets 5-9
74 a. Twigs covered with hairs just back of the terminal bud; leaflets usually 7;
shuck of nut comparatively thick
b. Twigs not covered with hairs as in a; leaflets usually 5; shuck of nut thin.
Pignut. (Hicoria glabra.)
75 a. Trees with light colored patches on the upper trunk and branches where bark
has peeled; fruit globose with stems 2 in. or more long
b. Tress not completely as in a
76 a. Fruit in clusters of 2 or more Oriental Sycamore. (Platanus orientalis.)
b. Fruit single, not in clusters American Sycamore. (Platanus occidentalis.)

71	7 a	. Leaves somewhat fan-shaped, the apex usually deeply incised; cultivated
	1	tree
	0.	Leaves not completely as in a
78	s a	Leaves broadly notched at apex, usually with 2 lateral and 2 basal lobes;
		fruit cylindrical White Wood. Tulip Poplar. (Liriodendron tulipifera.)
	b.	Leaves not notched at apex, usually pointed
75) a	. Leaves somewhat star-shaped, 5-7-pointed, deep red in autumn; fruit
		globose, prickly; twigs often with wings of cork.
		Sweet Gum. (Liquidambar styraciflua.)
	b.	Leaves not star-shaped
80) a.	Bark spicy; leaves with 1-3 lobes or some not lobed.
		Sassafras. (Sassafras Sassafras.)
	b.	Trees not completely as in a
81	a.	Leaves with entire or smooth margins
	b.	Leaves with toothed or lobed margins
82	a.	Small trees usually with thorns on the branches; fruit globose, 2 in. or more
		in diameter; a milky sap often exudes from cut or broken twigs.
	Ъ.	Mock Orange. (Toxylon pomiferum.)
83	a.	Trees not completely as in <i>a</i>
-5		Branches conspicuously massed toward the top of trees, horizontal, often
		drooping; bark often checkered; leaves usually red in autumn; fruit
	h	berry-like
84	0.	Trees not completely as in <i>a</i>
04	и. h	Leaves whitish beneath, rather thick Magnolia. (Magnolia virginiana.)
8-	0.	Leaves not whitish beaneath
05	u.	Leaves 10-24 in. longUmbrella Tree. (Magnolia tripetala.)
06	0.	Leaves 5 in. or less long
00	<i>a</i> .	Fruit somewhat fluffy, in large panicles, very conspicuous on the small tree.
	1	Smoke Tree. (Cotinus cotinoides.)
0-	0.	Trees not completely as in a
87	a.	Leaves somewhat rounded; fruit a pod. Judas Tree. (Cercis canadensis.)
	0.	Leaves oval to lanceolate
88	a.	Leaves oval; fruit fleshy; bark in patches.
		Persimmon. (Diospyros virginiana.)
	<i>b</i> .	Leaves linear-lanceolate; fruit an acorn.
		Willow Oak. (Quercus Phellos.)
89	a.	Leaves with margins more or less lobed, with more than 3 lobes; fruit an
		acorn
	<i>b</i> .	Leaves usually with toothed margins, sometimes with 2 or 3 lobes; or pal-
		mately veined; fruit not an acorn or wanting
90	a.	Lobes of leaves more or less pointed or with bristly tips; cup of acorn with
		comparatively smooth scales on the outside
	b.	Lobes of leaves more or less rounded, not with bristly tips; cup of acorn
		rough on the outside
91	<i>a</i> .	Average leaf 3-5 in. long; branches conspicuously horizontal or drooping,
		and low down on the trunk; acorn about $1/2$ in. long.
1	Ь.	Pin Oak. (Quercus palustris.) Trees not completely as in a

92	e a.	Leeaves conspicuously wedge-shaped with 3-5 rather short, rounded lobes
		with bristly tips Black-jack Oak. (Quercus marylandica.)
		Lobes of leaves pointed93.
93	a.	Cup of acorn shallow, saucer-shaped, enclosing $1/8-1/4$ of the mature acorn;
	1	lobes of leaves usually triangular
	<i>b</i> .	Cup of acorn encloses about $1/2$ of the mature acorn; lobes of leaves not
		usually triangular94.
94	ţa.	Inner bark yellow or orange and very bitter; scales of cup fringed or reflexed
		about the top of cup; lobes of leaf often at right angles to the midrib.
		Black Oak. (Quercus velutina.)
	0.	Inner bark not as in <i>a</i> ; scales of cup usually compressed about the acorn;
		lobes of leaves often relobed toward outer ends.
07		Scarlet Oak. (Quercus coccinea.)
95		Bark on trunk furrowed, dark gray96. Bark on trunk flaky, usually light gray
06		Cup of acorn fringed; leaves usually regularly lobed; cultivated tree.
90	·	Turkey Oak. (Quercus cerris.)
	h	Cup of acorn not fringed
07		Native tree; leaves regularly lobed; cup enclosed about 1/4 or less of the
21		acorn; bark with very hard triangular ridges.
		Rock Chestnut Oak. (Quercus prinus.)
	ь.	Cultivated tree; leaves variously lobed; cup encloses 1/3 or more of the acorn.
		English Oak. (Quercus pedunculata.)
98	a.	Lobes of leaves short, the indentations about 1/4 the distance to the midrib;
		bark very loose on the smaller branches; cup with stalk 2-4 in. long.
		Swamp White Oak. (Quercus platanoides.)
		Trees not completely as an <i>a</i> 99.
.99	a.	Lobes of leaves usually narrow toward the base, often relobed at the apex;
		leaves usually thick and with brownish hairs beneath.
	L	Post Oak. (Quercus minor.)
100		Leaves not completely as in <i>a</i> 100. Cup conspicuously fringed at top, mossy; tree not common.
100	ч.	Bur Oak. (Quercus macrocarpa.)
	h.	Cup not fringed at top; tree commonWhite Oak. (Quercus alba.)
101		Bark smooth, dark gray, the trunk ridged or sinew-like; fruit with leaf-like
		wings, in pairsBlue Beech. (Carpinus caroliniana.)
	ь.	Trees not completely as in <i>a</i> 102.
102		Bark smooth, light gray, without horizontal markings; terminal bud slender,
		tapering, 1/2–1 in. long103.
	<i>b</i> .	Bark and terminal buds not completely as in a104.
103	а.	Leaves hairy beneath, sometimes purplish; cultivated species.
		European Beech. (Fagus sylvatica.)
	b.	Leaves not hairy beneath; native species.
		American Beech. (Fagus grandifolia.)
104	a.	Leaves with margin toothed only toward apex, entire toward the base; fruit
		berry-like, sweet; bark on trunk often corky at base.
	2	Hackberry. (Celtis occidentalis.)
	0.	Leaves toothed all around the margin105.

105 a. Leaves 5 in. or more long, with very sharply toothed margins; fruit a prickly	y
bur	
b. Leaves and fruit not completely as in a107	
106 a. Native tree; leaves tapering to the apex.	
American Chestnut. (Castanea dentata.)
b. Cultivated tree; leaves abruptly pointed at apex.	
European Chestnut. (Castanea sativa.)
107 a. Leaves somewhat rounded, often unequal at the base; fruit leaf-like with	n
small globose nutlets attached; buds often reddish and placed to one side	e
of the leaf-scar	
b. Trees not completely as in a	
108 a. Leaves white-woolly beneath; cultivated tree.	
Silver Linden. (Tilia tomentosa.)
b. Leaves not white-woolly beneath	
109 a. Cultivated tree; leaves with a tuft of wool in the axils of the veins beneath	
European Linden. (Tilia vulgaris.)
b. Native tree; leaves not usually as in a Basswood. (Tilia americana.)
110 a. Bark on trunk peels off in elongated, rather regular vertical strips; frui	t
hop-likeIronwood. (Ostrya virginiana.)
b. Bark and fruit not completely as in a	
III a. Leaves usually irregularly and deeply toothed or lobed; palmately veined	;
thorns usually present on the branches; fruit somewhat fleshy112	
b. Trees not completely as in a	
112 a. Thorns more or less curved; leaves broadly ovate, doubly toothed113	
b. Thorns straight; leaves obovate or ovate	
113 a. Lower surface of leaves densely hairy; fruit with hairy stalks.	
Red-fruited Thorn. (Crataegus mollis.))
b. Lower surface of leaves not densely hairy	
114 a. Leaves rounded or heart-shaped at base.	
Washington Thorn. (Crataegus cordata.))
b. Leaves usually tapering at the base.	
Pruinose Thorn. (Crataegus pruinosa.))
115 a. Thorns 1/2 in. or less long; leaves ovate, 3-15-lobed or cleft; cultivated tree	•
English Hawthorn. (Crataegus oxyacantha.)	
b. Thorns 3/4 in. or more long	•
116 a. Fruit solitary or 2-3 together, yellow when ripe; margin of leaves with broad	1
teeth Dwarf Thorn. (Crataegus uniflora.))
b. Fruit 3 or more together, usually red when ripe	•
117 a. Leaves usually shining above, not doubly toothed; stalks of fruit not hairy	
Cockspur Thorn. (Crataegus crus-galli.)	1
b. Leaves not shining above, usually doubly toothed; stalks of fruit hairy	
118 a. Fruit about $1/2$ in. in diameter, reddish-brown when ripe; leaves lobed	
Red Haw. (Crataegus coccinea.) b. Fruit 1/2-1 in in diameter wellow or red when rises have a set of the set	
b. Fruit 1/2-1 in. in diameter, yellow or red when ripe; leaves not usually lobed.	
Large-fruited Thorn. (Crataegus punctata.) 119 a. Bark on trunk and on branches with horizontal markings usually 1/2 in. or	
more long, ususally 1/4 in. or less broad; bark not with regular longitudinal	
furrows	-

b.	. Bark not completely as in a127.
120 a.	. Leaves triangular in shape121.
b	. Leaves rather ovate to oblong in shape
12I a	. Bark close on trunk not in loose sheets; native tree.
	Gray Birch. (Betula populifolia.)
b.	. Bark in rather loose sheets on the trunk; cultivated tree.
	European White Birch. (Betula alba.)
122 a.	. Bark creamy white, in rather loose sheets on the trunk of older trees.
	Paper Birch. (Betula papyrifera.)
b.	. Bark yellowish, gray, or brown, not whitish123.
123 a	. Bark yellowish, in rather thin loose sheets on the trunk.
	Yellow Birch. (Betula lutea.)
	Bark not yellowish
124 a.	. Fruit usually present on the tree, consisting of hard or woody aments;
	short twigs present on the branches; bark of twigs not bitter; leaves
Strend.	rather ovate
ь.	Fruit not present; bark of twigs bitter126.
125 a.	Bark greenish-brown to reddish, in thin loose layers; bark not usually sweet
	nor aromatic; trees usually growing in damp places.
1.41	Red Birch. (Betula nigra.)
ь.	Bark dark-brown or ashy-gray, close on the trunk or peeling in flakes or
	plates; bark sweet and aromatic; common tree in rather dry places.
	Sweet Birch. (Betula lenta.)
126 a.	Leaves mostly oblong, teeth on margin usually incurved; often brownish
	hairs along the midvein beneathBlack Cherry. (Prunus serotina.)
0.	Leaves mostly obovate; teeth on margin somewhat spreading, usually
107.0	pointed Choke Cherry. (Prunus virginiana.)
127 0.	Leaves with all secondary veins parallel, prominent and oblique to the midrib. 128.
h	Leaves not with secondary veins parallel as in a
	Fruit cone-like; leaves with the blade equal at the base.
120 0.	European Alder. (Alnus glutinosa.)
b.	Fruit always wanting; leaves with blade usually unequal at the base; outer
	bark often somewhat corky
120 a.	Leaves not noticeably rough above; buds not hairy.
	American Elm. (Ulmus americana.)
<i>b</i> .	Leaves rough on upper surface; buds hairy
	Native tree; upper branches drooping and slender; tree usually growing in
	moist places
ь.	Cultivated tree; upper branches ascending or horizontal, rather coarse.
	English Elm. (Ulmus campestris.)
131 a.	Leaves usually not more than twice as long as broad; lateral buds with
	numerous scales
b.	Leaves usually more than twice as long as broad; lateral buds with a single
	scale141.
	Petioles of leaves flattened laterally
b.	Petioles of leaves not flattened laterally136.
	Leaves white-woolly beneath and lobed White Poplar. (Populus alba.)
<i>b</i> .	Leaves not completely as in a 134.

134 a. Leaves more or less triangular in shape
b. Leaves not triangular
135 a. Leaves 2-3 in. broad, branches erect or ascending.
Lombardy Poplar. (Populus italica.)
b. Leaves 3-7 in. broad; branches more or less spreading.
Cottonwood. (Populus deltoides.)
136 a. Terminal bud about 1/2 in. or more long, usually pointed
b. Terminal bud 1/4 in. or less long, usually rounded
137 a. Leaves ovate, the margins usually with large irregular teeth $1/8$ in. or more
longLarge-toothed Aspen. (Populus grandidentata.)
b. Leaves round-heart-shaped, 1-3 in. broad, the margin with rather small
regular teeth usually less than 1/8 in. long.
American Aspen. (Populus tremuloides.)
138 a. Leaves fragrant when crushed, not densely hairy when young, the apex
usually tapering
b. Leaves not fragrant when crushed, densely hairy when young, the apex
blunt, the basal lobes often overlapping.
Downy Poplar. (Populus heterophylla.)
139 a. Branches densely hairy; bark on trunk usually spotted.
Paper Mulberry. (Broussonetia papyrifera.)
b. Branches not hairy; bark not spotted140.
140 a. Mature leaves dull green on upper surface, often rough.
Red Mulberry. (Morus rubra.)
b. Mature leaves usually shining and smooth on upper surface.
White Mulberry. (Morus alba.)
141 a. Mature leaves shining on both sides, not hairy, ovate to lanceolate; twigs
shiningShining Willow. (Salix lucida.)
b. Mature leaves not shining on both sides142.
142 a. Leaves green on both sides, not conspicuously lighter colored beneath;
branchlets pale yellow; leaves 1/4-3/4 in. broad, narrowly lanceolate.
Black Willow. (Salix nigra.)
b. Leaves conspicuously lighter colored beneath
143 a. Leaves 1/4-1/2 in. broad, 3-7 in. long, very pale beneath; twigs slender and
drooping
b. Trees not completely as in a144.
144 a. Mature leaves $3/4-2$ in. broad, very pale beneath.
Pussy Willow. (Salix discolor.)
<i>b.</i> Mature leaves 1/2-3/4 in. broad
145 a. Large trees with twigs usually shining yellow White Yellow. (Salix alba.)
b. Slender trees with twigs reddish-green, very brittle at the base.
Columbia University Crack Willow. (Salix fragalis.)
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