

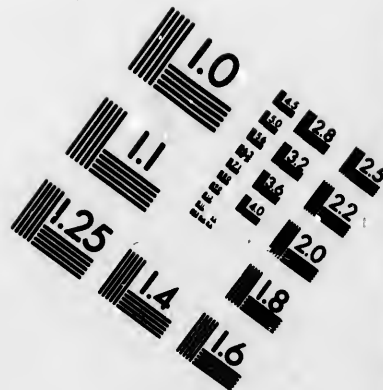
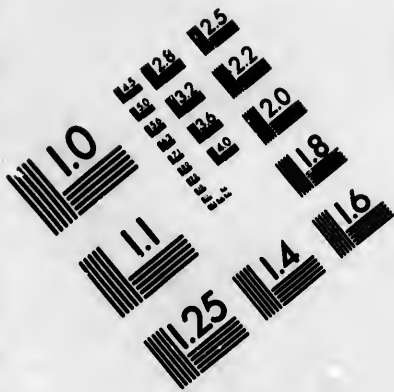
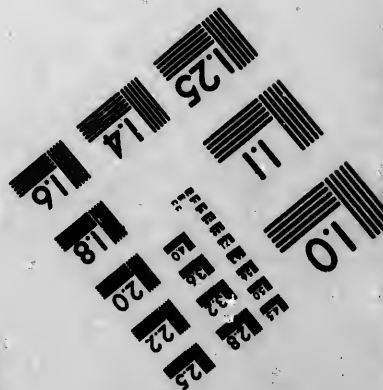
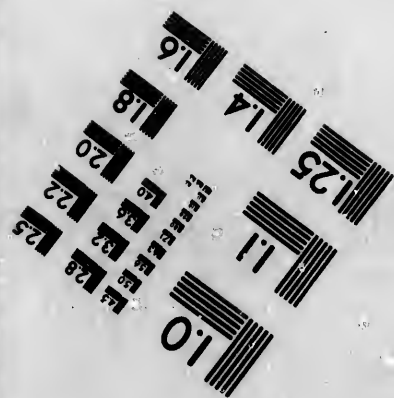
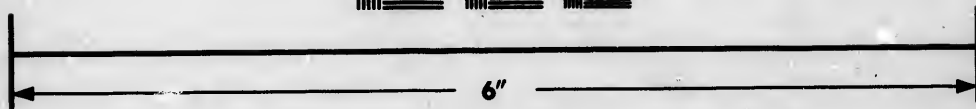
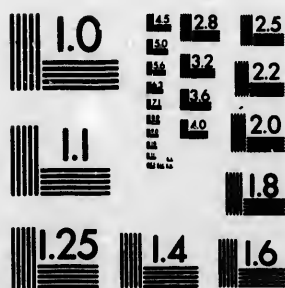


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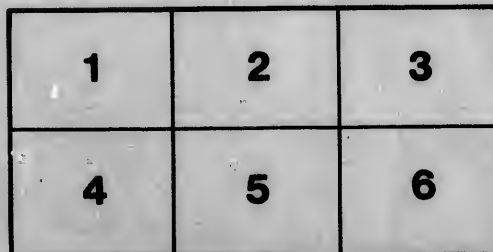
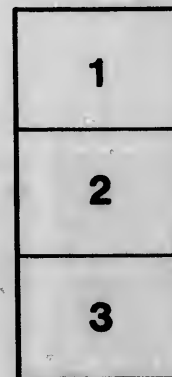
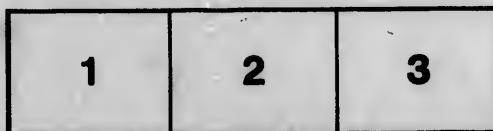
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SERIES · IV ·

WAYSIDE TREES

HICKORIES · ASHES · HORSE-
CHESTNUT · PINE · FIR
SPRUCE · ETC.

WITH LIFE
SIZE PEN AND
INK STUDIES
OF THE LEAVES
FROM NATURE
BY

F · SCHVYLER MATHEWS

TABER-PRANG ART CO
BOSTON & SPRINGFIELD, MASS.





AYSIDE REES

SERIES IV. BEING A DESCRIPTION OF THE HICK-
ORIES, ASHES, HORSE-CHESTNUT
PINE, FIR, SPRUCE, ETC.

BY F. SCHUYLER MATHEWS
ILLUSTRATED WITH PEN AND INK
DRAWINGS FROM NATURE BY THE
AUTHOR

TABER-PRANG ART CO
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INTRODUCTION

WAYSIDE TREES, SERIES IV.

THE compound leaf of the class numbered 14 in the third series, we continue in this fourth series, which completes the list of trees growing in the North-eastern States. The Pine family whose needlelike leaves remain green throughout the winter, is the last of the interesting group of distinctly American trees.

Our order continues as follows:—

Leaves, Compound :	Alternate growing	pages
	With teeth	
Class 14	Leaflets bordering main leaf-stem	3, 5

The ashes again break loose from the method of growth in leaves just described and are systematized as follows:—

Class 15	Opposite growing	
	With or without teeth	
	Leaflets bordering main leaf-stem	7, 9, 11

And in the horse-chestnuts we have still another principle of growth demonstrated, that of radiation.

Class 16	Opposite growing	pages
	With teeth	
	Leaflets radiating	13

Finally we reach the great evergreen Pine family whose leaves may be classified thus:—

Evergreen leaves: 17	Long needles	15, 17, 19
18	Short blunt needles	21

The larches break the rule by not being evergreen: they may be described thus:—

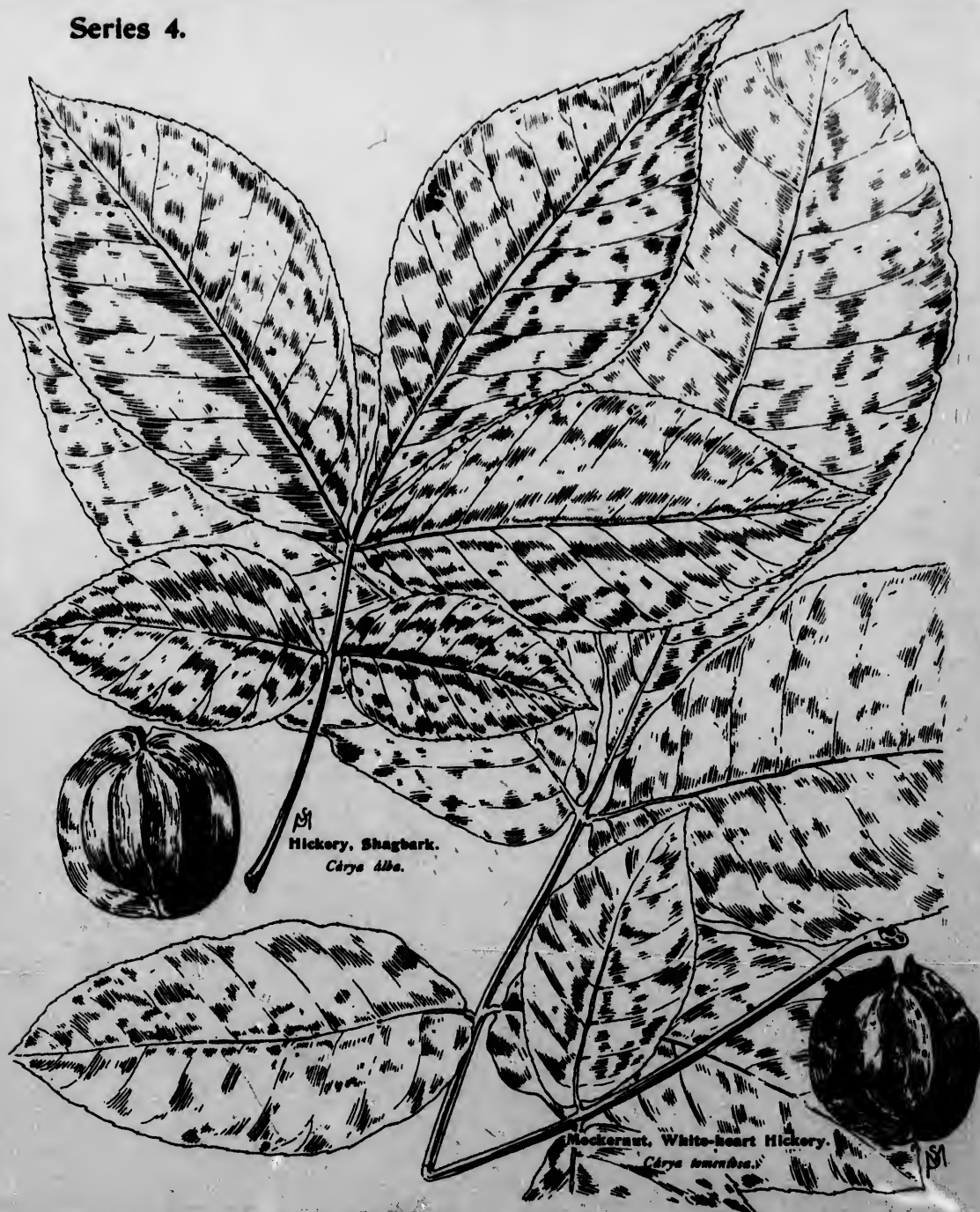
Class 19	Soft, deciduous needles	21
" 20	Short sharp needles	23
" 21	With miniature scaly leaves	25

With these 21 classes of leaves we have comprehended all the trees which are native to the north-eastern part of the country, and in classifying them according to their character we have not materially interfered with the botanist's classification.

F. SCHUYLER MATHEWS.

+3
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Series 4.





Hickory, Shagbark.

Carya alba.

- Family . . . JUGLANDACEÆ, Walnut.
Leaf . . . Leaflets, 5 to 7, thin, deep olive-green, paler beneath.
Fruit . . . Buff-gray, husk splitting to base, $\frac{1}{4}$ in. or more thick.
Bark . . . Light brown-gray, strips hanging loosely, 6 in. wide, shaggy.
Height . . . 60 ft. to 90 ft., occasionally 120 ft.
Habitat . . . Southern Me. to southern Mich., central Minn., southeastern Neb., south through northern States (except high grounds) to Pa., Del., along Appalachian Mts. to western Fla., northern Ala. and Miss., westward to central Kan., Ind. Ter. and eastern Tex.

Mockernut, White-heart Hickory.

Carya tomentosa.

- Family . . . JUGLANDACEÆ, Walnut.
Leaf . . . Leaflets, 7 to 9, aromatic scented, very large, woolly beneath when young.
Fruit . . . Ellipsoidal or ob-ovate, brownish colored, husk splitting nearly to base.
Bark . . . Brown-gray or dark-gray, shallow fissures.
Height . . . 50 ft. to 70 ft., sometimes 100 ft.
Habitat . . . N. Y. south to Tampa Bay, Fla. west to Mo. and eastern Kan., Oklahoma and valley of Brazos Riv., Tex.

Series 4.



Pignut, Brown Hickory.
Carya porcina.

Swamp Hickory, Bitternut.
Carya amara.

Pignut, Brown Hickory.

Carya porcina.

- Family . . . JUGLANDACEÆ, Walnut.
Leaf . . . Leaflets 5 to 7 (rarely 9), firm, dark olive-green.
Fruit . . . Oval, pear-shaped or oblong, husk, splitting halfway down, thin; nut at first sweet, then bitter.
Bark . . . Light brown-gray, small fissures.
Height . . . 70 ft. to 90 ft., occasionally 120 ft.
Habitat . . . Southern Me. to southeastern Neb., south to Fla., southern Ala., Miss., through Mo., Ark., eastern Kan., Ind. Ter. and eastern Tex.

Swamp Hickory, Bitternut.

Carya amara.

- Family . . . JUGLANDACEÆ, Walnut.
Leaf . . . Leaflets 7 to 11.
Fruit . . . Globular, nut brownish, very thin, brittle shell easily broken.
Bark . . . Light brown, platelike scales, shallow fissures.
Height . . . 50 ft. to 70 ft., sometimes 100 ft.
Habitat . . . Southern Me. to central Mich., Minn. to southeastern Neb., eastern Kan., Ind. Ter., south to western Fla. and eastern Tex.

Character: The nut and husk are thinner than those of other species.

Series 4.



White Ash.
Fraxinus Americana.

Box Elder, Ash-leaved Maple.
Negundo aceroides. *Acer negundo*.

White Ash.

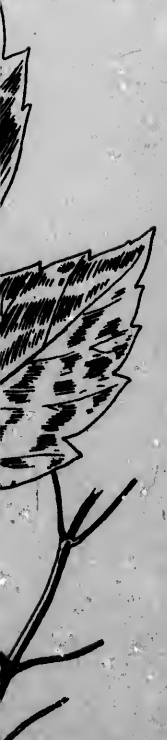
Fraxinus Americana.

- Family . . . OLEACEÆ, Olive.
Leaf . . . Leaflets 5 to 9, commonly 7, moderate green, very pale beneath.
Seed . . . Extremely narrow-winged, pointed.
Bark . . . Dark gray-brown, deeply fissured.
Height . . . 70 ft. to 80 ft., sometimes 120 ft.
Habitat . . . Me. to northern Minn., south to northern Fla., central Ala., Miss., west to eastern Kan., Neb., Ind. Ter., Texas.

Box Elder, Ash-leaved Maple.

Negundo aceroides. Acer negundo.

- Family . . . SAPINDACEÆ, Soapberry.
Leaf . . . Leaflets 3 to 5, smooth, prominent veins.
Seed . . . Stems, 6 ins. to 8 ins. long, large wings, diverging at acute angles.
Bark . . . Gray or gray-brown, deeply fissured, short scales.
Height . . . 40 ft. to 50 ft., sometimes 70 ft.
Habitat . . . Valley of Winouski Riv., Vt., shores of L. Champlain, Vt., N. Y., eastern Pa. to Hernando Co., Fla., west to Rocky Mts. and western Tex.



Ash-leaved Maple.
aceroides. Acer negundo.

Series 4.

Red Ash.
Fraxinus pubescens.

Blue Ash.
Fraxinus quadrangula.





Red Ash.

Fraxinus pubescens.

- Family . . . OLEACEÆ, Olive.
Leaf . . . Leaflets 7 to 9, yellow-green, *pale beneath and silky hairy*; stems woolly.
Seed . . . Extremely narrow wing, long, moderately pointed or notched at tip.
Bark . . . Brown, ruddy tinged, slight fissures, thin close scales.
Height . . . 40 ft. to 60 ft.
Habitat . . . Me. to eastern Neb. and Black Hills, Dak., south to northern Fla. and central Ala., banks of streams and lakes.

Green Ash.

Fraxinus viridis.

- Family . . . OLEACEÆ, Olive.
Leaf . . . Leaflets 7 to 9, smooth, narrow, sharply toothed, bright green, with both sides usually smooth.
Seed . . . Extremely narrow wing, long, same as *F. pubescens*.
Bark . . . Gray tinged with brown, deeper fissures, thin scales.
Height . . . 40 ft. to 60 ft., rarely 70 ft.
Habitat . . . Lake Champlain, Vt., through Appalachian Mts. to northern Fla., west valley of the Saskatchewan, valley of the Colorado Riv., Tex., and to the Rocky Mts. Rare east of Alleghany Mts.

Blue Ash.

Fraxinus quadrangulata.

- Family . . . OLEACEÆ, Olive.
Leaf . . . Leaflets 5 to 9, commonly 7, firm, yellow-green, smooth.
Seed . . . Broad short wing, notched at the tip.
Bark . . . Light brown-gray, large scales.
Height . . . 50 ft. to 70 ft., sometimes 120 ft.
Habitat . . . Southern Mich. to central Mo., southward to eastern Tenn. and northern Ala., Iowa to northeastern Ark. Not very common.

Character: The twigs are commonly 4 to 6 sided, not round.

Series 4.

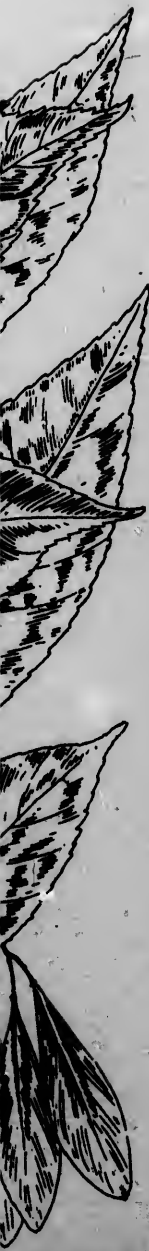


Black Ash.

Fraxinus sambucifolia.

Water Ash, Swamp Ash.

Fraxinus platycarpa.



Black Ash.

Fraxinus sambucifolia.

- Family . . . OLEACEÆ, Olive.
Leaf . . . Leaflets 7 to 11, lateral ones stemless,
deep moderate green, pale below,
smooth.
Seed . . . Broad winged, short, blunt tip, often
twisted, long clusters.
Bark . . . Gray tinged with red-brown, thin
scales.
Height . . . 50 ft. to 70 ft., sometimes 90 ft.
Habitat . . . Cold swamps and beside streams.
Me. to N. Y., south to Newcastle
Co., Del., mts. of Va., southern
Ill., central Mo., northwestern
Ark.

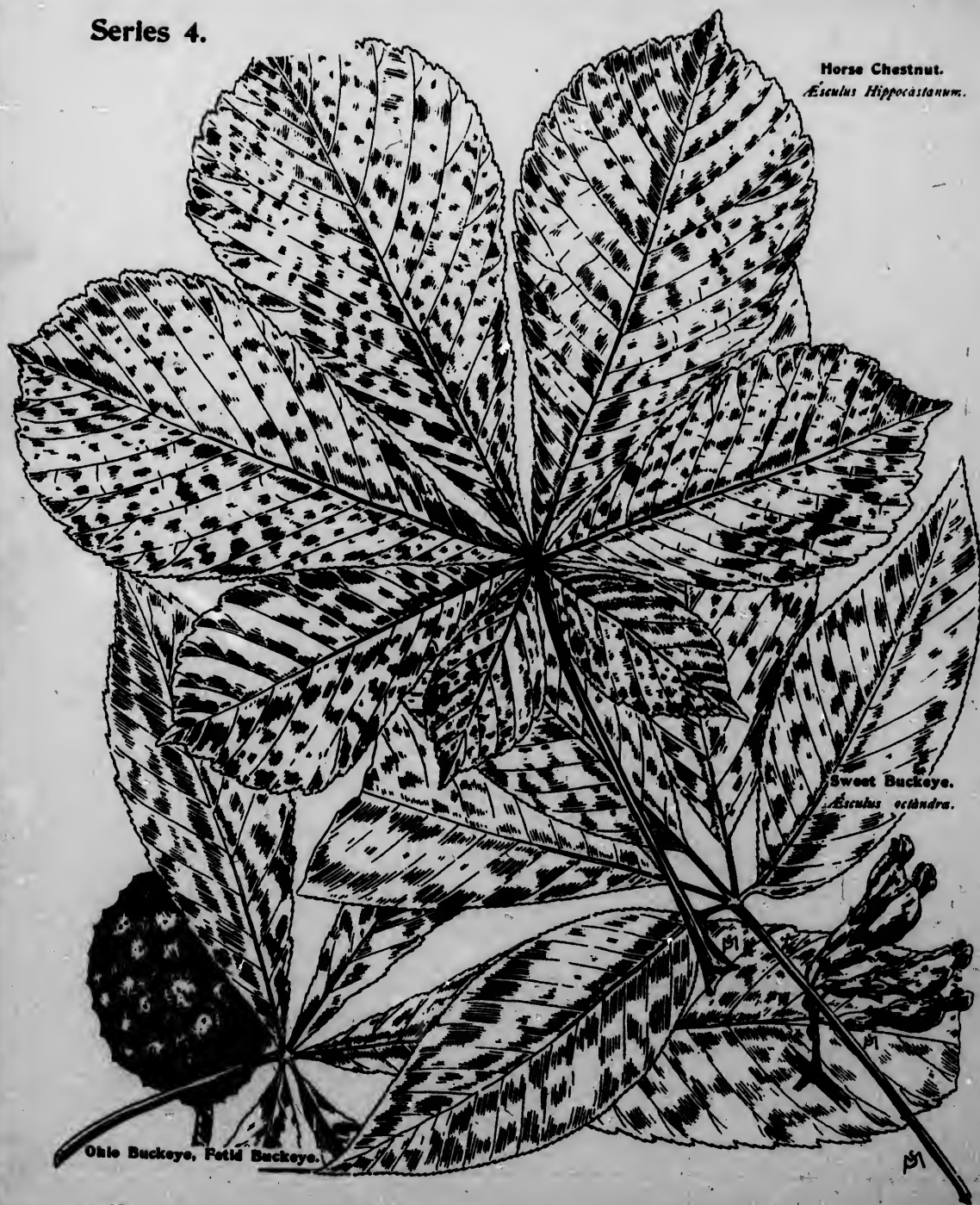
Water Ash, Swamp Ash.

Fraxinus platycarpa.

- Family . . . OLEACEÆ, Olive.
Leaf . . . Leaflets 5 to 7, toothed or plain-
edged, deep green, paler beneath.
Seed . . . Wide and short winged, elliptical.
Bark . . . Gray, stained with brown patches,
thin scaly.
Height . . . 30 ft. to 40 ft., rarely 50 ft.
Habitat . . . Always in deep river swamps, south-
ern Va. to Fla., and valley of
Sabine Riv., Texas, northward
through western La. to southwest-
ern Ark.

Series 4.

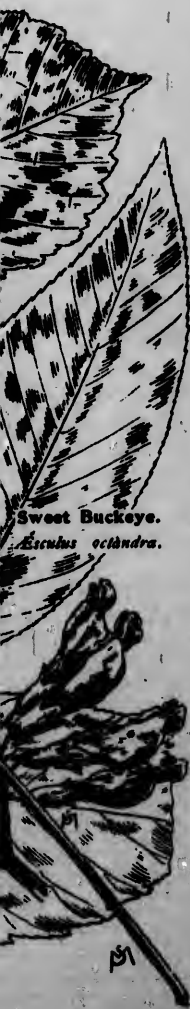
Horse Chestnut.
Esculus Hippocastanum.



Sweet Buckeye.
Esculus octandra.

Ohio Buckeye, Fetid Buckeye.

Horse Chestnut.
Æsculus Hippocastanum.



Horse Chestnut.
Æsculus Hippocastanum.

Family . . . SAPINDACEÆ, Soapberry.
Leaf . . . Dark green, shiny above, lighter beneath.
Fruit . . . Thin prickly husk, red-shelled nut, aromatic kernel, not edible.
Bark . . . Dark brown, scaly, not fissured, rough.
Height . . . 50 ft. to 60 ft.
Habitat . . . Not indigenous: from Europe. Parks and gardens and city streets.

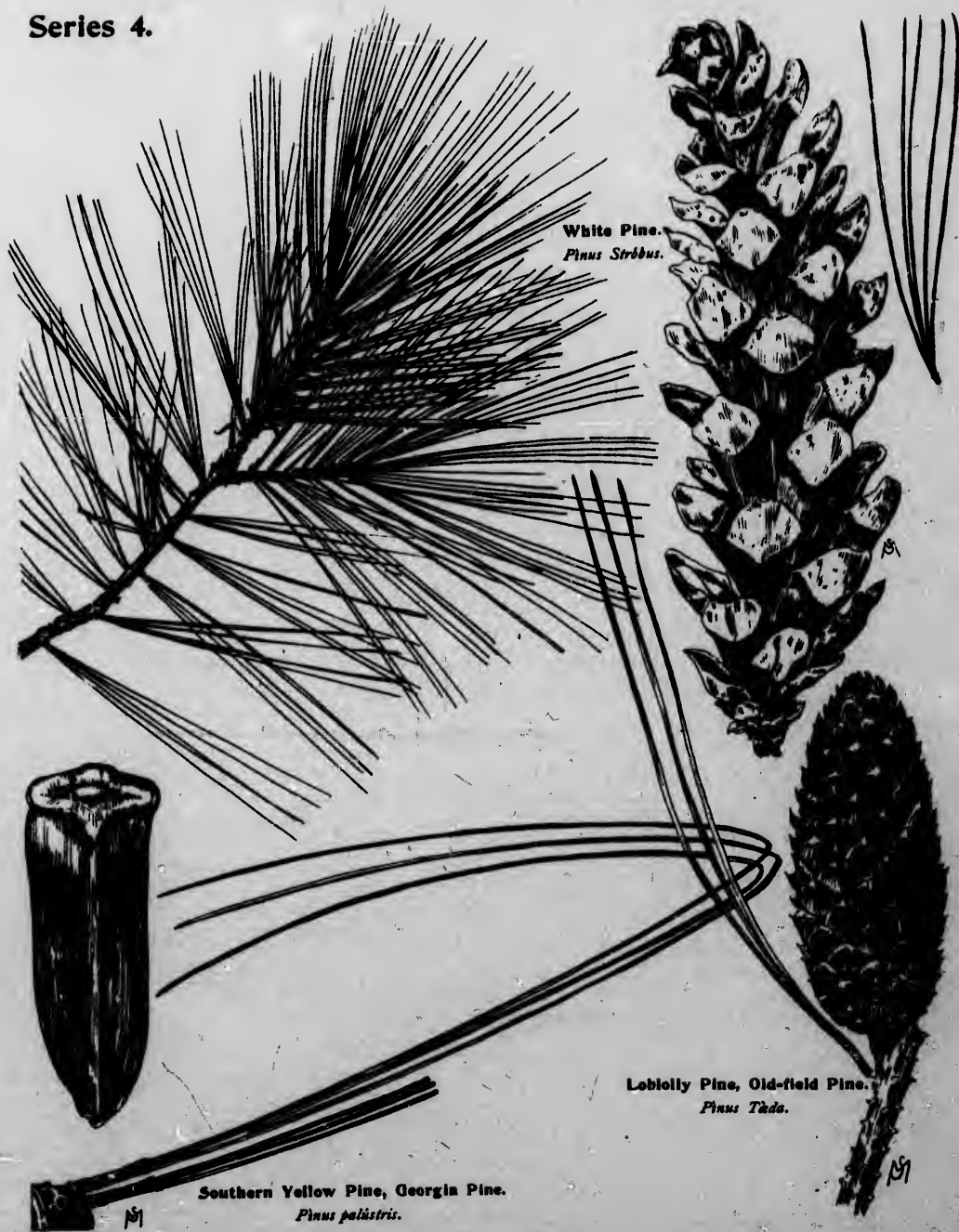
Ohio Buckeye, Fetid Buckeye.
Æsculus glabra.

Family . . . SAPINDACEÆ, Soapberry.
Leaf . . . Usually 5 leaflets (rarely 7), smooth yellow-green.
Fruit . . . Warty husk, chestnut-brown irregular nut, not edible.
Bark . . . Gray-brown, broken into thick plates, scaly.
Height . . . 30 ft. to 40 ft., rarely 70 ft.
Habitat . . . Valley of Mississippi Riv., western slopes Alleghany Mts. from Pa. to northern Ala., westward to Iowa and Ind. Ter.

Sweet Buckeye.
Æsculus octandra.

Family . . . SAPINDACEÆ, Soapberry.
Leaf . . . Leaflets, 5 to 7.
Fruit . . . Slightly marked, pale brown husk, generally two chestnut-colored nuts, not edible.
Bark . . . Dark brown, small thin scales.
Height . . . 40 ft. to 60 ft., sometimes 90 ft.
Habitat . . . Allegheny Co., Pa., Alleghany Mts. to Augusta, Ga., northern Ala. westward to southern Iowa, Ind. Ter. and western Tex.

Series 4.



White Pine.
Pinus Strobus.

Loblolly Pine, Old-field Pine.
Pinus Taeda.

Southern Yellow Pine, Georgia Pine.
Pinus palustris.



White Pine.

Pinus Strobus.

- Family . . CONIFERÆ, Pine.
 Needle . . Fine, soft clusters of 5, light green.
 Cone . . . 3 ins. to 6 ins. long, scales thin, without prickles.
 Bark . . . Young trees smooth, old trees rough, gray-brown, scales often stained with white resin.
 Height . . 70 ft. to 100 ft., sometimes 160 ft.
 Habitat . . Me. to Minn. and eastern Iowa, southward through Alleghany Mts. to Ga.

Southern Yellow Pine, Georgia Pine.

Pinus palustris.

- Family . . CONIFERÆ, Pine.
 Needle . . Flexible, 10 ins. to 15 ins. long, bright olive-green, clusters of 3.
 Cone . . . 6 in. to 10 in. long, light brown, thick scales with small prickles.
 Bark . . . Ruddy brown bark, thin scales, scaly branches.
 Height . . 70 ft. to 80 ft.
 Habitat . . Cultivated in N. J., southern Va. south to Fla. and Texas.

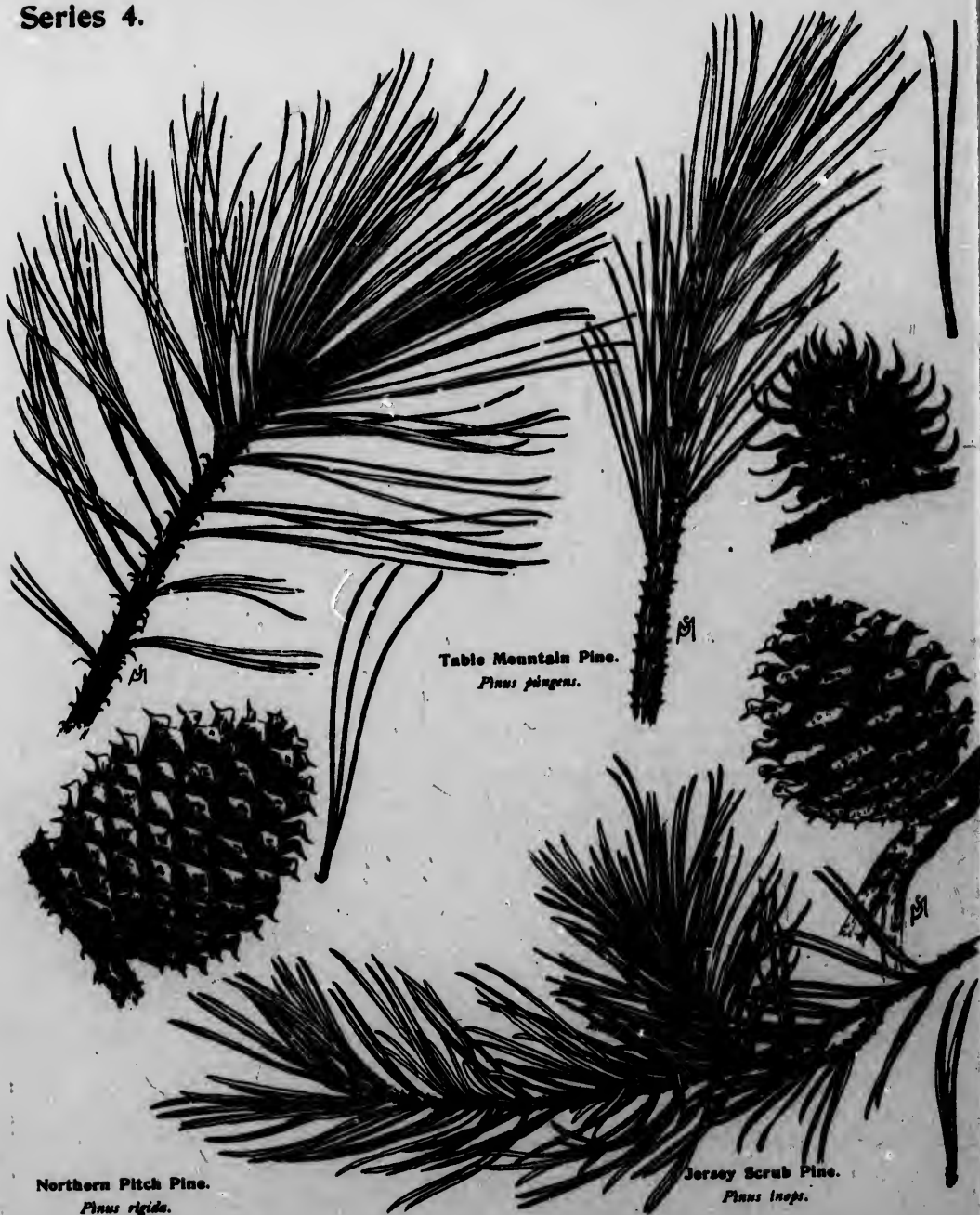
Character: Needles crowded in dense clusters at ends of branchlets.

Loblolly Pine, Old-field Pine.

Pinus Tæda.

- Family . . CONIFERÆ, Pine.
 Needle . . 6 in. to 10 in., clusters of 3, rarely 2, slender, rigid, light olive-green.
 Cone . . . 3 ins. to 4 ins. long, in pairs, or solitary; scales with short firm prickles.
 Bark . . . Rough, dark brown.
 Height . . 50 ft. to 90 ft., sometimes 150 ft.
 Habitat . . Del. to Fla., near the coast, thence to Tex. and Ark. Located in swamps and old fields.

Series 4.



Northern Pitch Pine.
Pinus rigida.

Table Mountain Pine.
Pinus pungens.

Jersey Scrub Pine.
Pinus inops.



Table Mountain Pine.

Pinus pungens.

- Family . . CONIFERÆ, Pine.
Needle . . Dark green, flat, clusters of 2 (some-
times 3), short.
Cone . . Scales terminate with strong, hooked
prickles, $\frac{1}{4}$ in. long, brown, rigid.
Bark . . Rough, dark brown.
Height . . 20 ft. to 60 ft.
Habitat . . N.J., through Alleghany Mts., south
from Pa. to Tenn., plentiful on
Table Mt., N. Car.

Northern Pitch Pine.

Pinus rigida.

- Family . . CONIFERÆ, Pine.
Needle . . Curved, rigid, coarse, somewhat flat-
tened, in clusters of 3.
Cone . . In clusters, rigid scales with curved
prickles.
Bark . . Rough, blackish brown-gray, rugged
branches.
Height . . 30 ft. to 80 ft.
Habitat . . Me. to northern Ga., western N. Y.,
western slopes of Alleghany Mts.,
West Va., and Ky.

Jersey Scrub Pine.

Pinus Inops.

- Family . . CONIFERÆ, Pine.
Needle . . Short, flat, curved, clusters of 2, deep
yellow-green.
Cone . . 2 ins. to 3 ins. long, scales with awl-
shaped prickles.
Bark . . Gray-brown, thin scales.
Height . . 15 ft. to 40 ft.
Habitat . . Long Island, N. Y., to South Car.,
near the coast, westward through
Ky., to southern Ind. In barren
sandy soil.

Series 4.



Yellow Pine.
Pinus mitis.



Red Pine, Norway Pine.
Pinus resinosa.



Gray Pine.
Pinus Banksiana.



Red Pine, Norway Pine.
Pinus resinosa.



Yellow Pine.

Pinus mitis.

- Family . . . CONIFERÆ, Pine.
Needle . . . 3 ins. to 5 ins. long, flexible, dark green, clusters of 2 (sometimes 3).
Cone . . . About 2 ins. long, scales with tiny prickles. Our smallest pine cone.
Bark . . . Gray-brown, scaly.
Height . . . 50 ft. to 100 ft.
Habitat . . . Staten Island and N. J., south to western Fla., Gulf States, Ark., Kan., Mo., and Ill.

Red Pine, Norway Pine.

Pinus resinosa.

- Family . . . CONIFERÆ, Pine.
Needle . . . 4 ins. to 6 ins. long, dark green, coarse, long, clusters of 2.
Cone . . . About 2½ ins. long, growing in clusters, scales without prickles.
Bark . . . Red-brown, broad flat scales, ruddy edged.
Height . . . 50 ft. to 90 ft., rarely 100 ft.
Habitat . . . Mass., northward to Gulf of St. Lawrence, westward to Minn., south in mts. of northern Pa.

Gray Pine.

Pinus Banksiana.

- Family . . . CONIFERÆ, Pine.
Needle . . . Short, 1 in. long, flat, curved, very yellow-green, 2 in a cluster.
Cone . . . Lateral with branch, often points the same way, no prickle; when ripe, with reflexed scales.
Bark . . . Gray-brown, thin scaly.
Height . . . 10 ft. to 30 ft., often a shrub.
Habitat . . . Extreme northern States: southern Me., northern Vt. to southern Mich. and central Minn., and northward.

Series 4.



Hemlock.
Tsuga Canadensis.

Larch, American Hackmatack.
Larix Americana.

Balsam Fir.
Abies balsamea.



Hemlock.
Tsuga Canadensis.

Family . . . CONIFERÆ, Pine.
Needle . . . Obtuse, lustrous dark green, short,
 $\frac{1}{4}$ in. long, whitish beneath.
Cone . . . Very small, drooping from beneath
 branchlets, very few thin scales.
Bark . . . Ruddy brown, scaly, rough fissures.
Height . . . 50 ft. to 80 ft.
Habitat . . . Me. to Minn., through Mich., south
 to Del., and through Alleghany
 Mts. to Ala.

Balsam Fir.
Abies balsamea.

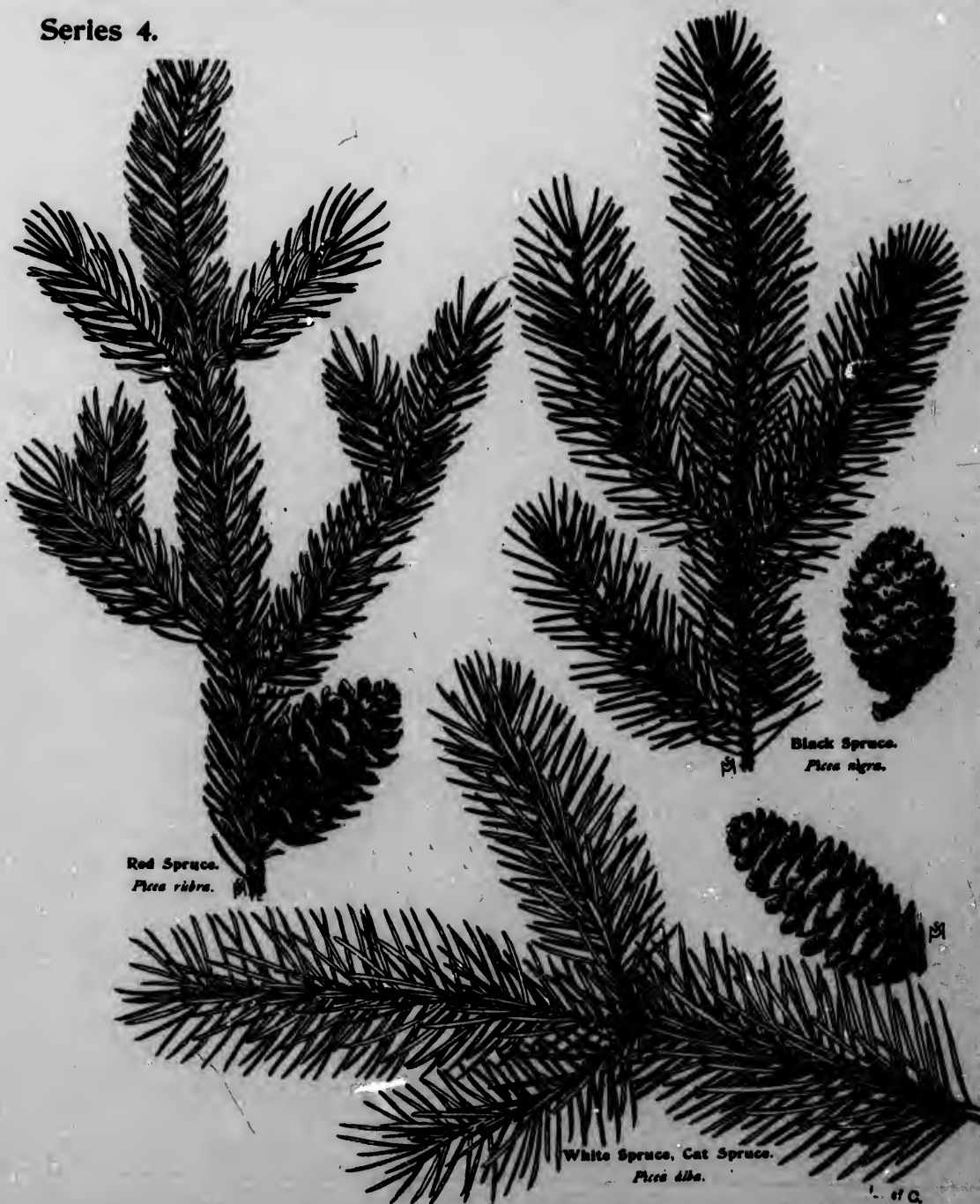
Family . . . CONIFERÆ, Pine.
Needle . . . Blunt-tipped, blue-green, whitish
 beneath, flat, straight.
Cone . . . Thin, deciduous, scales, generally
 erect on branchlet, purplish when
 young.
Bark . . . Smooth, gray, blistered; blisters con-
 tain Canada balsam. Marked hori-
 zontally.
Height . . . 40 ft. to 45 ft., rarely 50 ft.
Habitat . . . Me. to Pa., along the Alleghany Mts.,
 to West Va., westward through
 damp woods to Minn.

Character: The general color is blue-green;
cones fall apart when mature.

Larch, American Hackmatack.
Larix Americana.

Family . . . CONIFERÆ, Pine.
Leaf . . . Soft, light green, deciduous.
Cone . . . Reddish brown, $\frac{1}{2}$ in. to $\frac{3}{4}$ in. long.
Bark . . . Dull gray-brown, rough.
Height . . . 40 ft. to 100 ft.
Habitat . . . Chiefly swamps, Me., northern Pa.,
 west to northern Ind. and central
 Minn., and northward.

Series 4.





Red Spruce.

Picea rubra.

- Family . . . CONIFERÆ, Pine.
Needle . . . Dark olive-green, four-sided, curved.
Cone . . . Red-brown, stiff scales, almost smooth edged. $1\frac{1}{2}$ ins. to 2 ins. long, more readily deciduous than *P. nigra*.
Bark . . . Scaly brown or gray-brown, tiny branchlets hairy.
Height . . . 40 ft. to 80 ft.
Habitat . . . Me. to Minn., mt. regions of N. H., along the Alleghany Mts., south to N. Car.

Black Spruce.

Picea nigra.

- Family . . . CONIFERÆ, Pine.
Needle . . . Slender, slightly curved, dark dusty green, sharp.
Cone . . . Smaller than red spruce, scales denticulate and thin edged, dull brown.
Bark . . . Dark brown, scaly;
Height . . . 30 ft. to 60 ft.
Habitat . . . Me. to Minn., south along Alleghany Mts. to Ga.

White Spruce, Cat Spruce.

Picea alba.

- Family . . . CONIFERÆ, Pine.
Needle . . . Slender, slightly curved, but mostly straight, sharp, dusty dull green.
Cone . . . Papery, soft, scales thin, plain edged, light brown, narrow.
Bark . . . Lighter brown-gray, scaly; tiny branchlets buff color and smooth.
Height . . . 25 ft. to 100 ft.
Habitat . . . Me., northeastern Vt., northern Mich., Minn., and north. Swamps and low grounds.

Character: The crushed needles have a disagreeable pungent, animal-like odor, hence the name "cat spruce" among the woodsmen.

Series 4.



Arbutus vitis, White Cedar.
Thuja occidentalis.



White Cedar.
Chamaecyparis sphaeroidea.



Red Cedar.
Juniperus Virginiana.



White Cedar.
Chamaecyparis sphaeroides.

Family . . CONIFERÆ, Pine.
Foliage . . Brown-green, triangular awl-shaped
tiny scales.
Cone . . . Tiny, with about 6 scales opening
from axis of cone, beneath branch.
Bark . . . Fibrous, dull brown.
Height . . . 30 ft. to 90 ft.
Habitat . . Me. through Atlantic States to Fla.
and Miss.

Arbor Vitæ, White Cedar.
Thuja occidentalis.

Family . . CONIFERÆ, Pine.
Foliage . . Flat, in scales, clear green, spreading.
Cone . . . Tiny, with about 6 to 10 scales, light
brown, scales opening from base
of cone.
Bark . . . Fibrous, dull gray-brown.
Height . . . 20 ft. to 50 ft.
Habitat . . N. H. and N. Y. along Alleghany
Mts. to North Car., west to Minn.

Red Cedar.
Juniperus Virginiana.

Family . . CONIFERÆ, Pine.
Foliage . . Ruddy brown-green; young trees,
sharp needles; old trees, tiny scales.
Fruit . . . A cadet-blue berry, beneath bloom,
purple-black.
Bark . . . Fibrous, brown, shreddy. Heart-
wood red and aromatic.
Height . . . 30 ft. to 90 ft.
Habitat . . Common; Me. to Minn., south to Fla.

A REVISED LIST OF BOTANICAL NAMES OF THE TREES.

THE botanical names of trees have been revised according to certain laws now adopted by many botanists, and a most important revision, according to the Check List made by George B. Sudworth, prepared under the direction of Prof. B. E. Fernow, for the United States Department of Agriculture, is given below, accompanied by a revision by Prof. C. S. Sargent (see *Filva* of North America), and the older

names according to Dr. Asa Gray (see Manual). The preference given in this book to the nomenclature of Dr. Gray, is naturally conservative, but consistent with the fact that Dr. Gray's Manual is its standard of authority; at the same time the reform in the use of names is sure to be established in time, and the accompanying list is essentially valuable to a popular work of this kind.

DR. ASA GRAY.	G. S. GARDNETT.	DR. E. S. SOUTHWORTH.	
<i>Ailanthus</i> or <i>Ailantum</i>. Alder, Black. Arbor Vitæ, or White Cedar. Ash, Black. Ash, Blue. Ash, Green. Ash, Mountain. Ash, Red. Ash, Water or Swamp. Ash, White. Aspen. Aspen, Large-toothed. Balm of Gilead. Burwood, Small-leaved. Beech. Buckeye, Ohio or Fatid. Buckeye, Sweet. Burning Bush. Butternut. Buttonwood or Sycamore. Birch, Black, or Sweet. Birch, European. Birch, Gray. Birch, Paper, Canoe, or White. Birch, Red, or River. Birch, Yellow. Catalpa. Cedar, Red. Cedar, White. Cherry, Black. Cherry, Cnoke. Cherry, Red, or Bird Cherry. Chestnut. Cottonwood. Cucumber Tree. Dogwood, Alternate-leaved. Dogwood, Flowering. Elm, American, or White. Elm, Corky White. Elm, Red, or Slippery. Fir, Balsam. Fringe Tree. Hackberry, or Sugarberry. Haw, Black. Haw, Scarlet. Hemlock. Hickory, Brown, or Pignut. Hickory, or Shagbark. Hickory, Swamp, or Bittersut Hickory, White-heart, or Mockernut. Holly, American. Hornbeam, or Water Beech, or Blue Beech. Hornbeam, Hop, or Ironwood. Horse Chestnut. Ilex, Mountain. Kentucky Coffee Tree.	<i>Ailanthus glandulosa</i>. <i>Ilex verticillata</i>. <i>Theja occidentalis</i>. <i>Fraxinus sambucifolia</i>. <i>Fraxinus quadrangulata</i>. <i>Fraxinus viridis</i>. <i>Fyrus Americana</i>. <i>Fraxinus pubescens</i>. <i>Fraxinus platycarpa</i>. <i>Fraxinus Americana</i>. <i>Populus tremuloides</i>. <i>Populus grandidentata</i>. <i>Populus balsamifera</i> var. <i>canadensis</i>. <i>Tilia pubescens</i>. <i>Fagus ferruginea</i>. <i>Æsculus glabra</i>. <i>Æsculus flava</i>. <i>Æsculus Europæus</i>. <i>Juglans cinerea</i>. <i>Platanus occidentalis</i>. <i>Betula lenta</i>. <i>Betula alba</i>. <i>Betula populifolia</i>. <i>Betula papyrifera</i>. <i>Betula nigra</i>. <i>Betula lenta</i>. <i>Catalpa bignonioides</i>. <i>Juniperus Virginiana</i>. <i>Chamaecyparis spheroides</i>. <i>Prunus serotina</i>. <i>Prunus Virginiana</i>. <i>Prunus Pennsylvanica</i>. <i>Castanea sativa</i> var. <i>Americana</i>. <i>Populus monilifera</i>. <i>Magnolia acuminata</i>. <i>Cornus alternifolia</i>. <i>Cornus florida</i>. <i>Ulmus Americana</i>. <i>Ulmus racemosa</i>. <i>Ulmus flava</i>. <i>Abies balsamea</i>. <i>Chionanthus Virginica</i>. <i>Celtis occidentalis</i>. <i>Viburnum prunifolium</i>. <i>Crataegus cocinea</i> var. <i>mollis</i>. <i>Townsendia canadensis</i>. <i>Carya porcina</i>. <i>Carya alba</i>. <i>Carya amara</i>. <i>Carya tomentosa</i>. <i>Ilex opaca</i>. <i>Carpinus Caroliniana</i>. <i>Ostrya Virginica</i>. <i>Æsculus Hippocastanum</i>. <i>Ilex monticola</i>. <i>Gymnocladus Canadensis</i>.	<i>Fraxinus nigra</i>. <i>Fraxinus lanceolata</i>. <i>Fyrus americana</i>. <i>Fraxinus pennsylvanica</i>. <i>Fraxinus Caroliniana</i>. <i>Fagus Americana</i>. <i>Æsculus octandra</i>. <i>Catalpa catalpa</i>. <i>Cupressus thyoides</i>. <i>Castanea dentata</i>. <i>Populus deltoides</i>. <i>Hicoria glabra</i>. <i>Hicoria ovata</i>. <i>Hicoria minima</i>. <i>Hicoria alba</i>.	<i>Fraxinus nigra</i>. <i>Fraxinus lanceolata</i>. <i>Fyrus americana</i>. <i>Fraxinus pennsylvanica</i>. <i>Fraxinus caroliniana</i>. <i>Fraxinus americana</i>. <i>Fagus atropurpurea</i>. <i>Æsculus octandra</i>. <i>Æsculus europæus</i>. <i>Catalpa catalpa</i>. <i>Juniperus virginiana</i>. <i>Chamaecyparis thyoides</i>. <i>Prunus virginiana</i>. <i>Prunus pennsylvanica</i>. <i>Castanea dentata</i>. <i>Populus deltoides</i>. <i>Ulmus americana</i>. <i>Ulmus pubescens</i>. <i>Chionanthus virginica</i>. <i>Townsendia canadensis</i>. <i>Hicoria glabra</i>. <i>Hicoria ovata</i>. <i>Hicoria minima</i>. <i>Hicoria alba</i>. <i>Carpinus caroliniana</i>. <i>Ostrya virginiana</i>. <i>Æsc. for hip. castanum</i>. <i>Gymnocladus dioica</i>.

	Dr. ASA GRAY.	C. S. SARGENT.	Geo. B. SUDWORTH.
Larch, American, or Hackmatack.	Larix Americana.	Larix laricina.	Larix laricina.
Linden, American, or Basswood.	Tilia Americana.		Tilia americana.
Liquidambar, or Sweet Gum.	Liquidambar styraciflua.		Robinia pseudacacia.
Locust.	Robinia Pseudacacia.		Gleditsia triacanthos.
Locust, Honey.	Gleditsia triacanthos.		
Magnolia, Small, or Sweet Bay.	Magnolia glauca.		
Maple, Ash-leaved, or Box Elder.	Negundo aceroides.	Acer negundo.	Acer negundo.
Maple, Black Sugar.	Acer saccharinum var. nigrum.	Acer barbatum var. nigrum.	Acer saccharum nigrum.
Maple, Mountain.	Acer spicatum.		
Maple, Norway.	Acer platanoides.		
Maple, Red, or Swamp.	Acer rubrum.		
Maple, Striped, or Goosefoot.	Acer Pennsylvanicum.		Acer pennsylvanicum.
Maple, Sugar, or Rock.	Acer saccharinum.	Acer barbatum.	Acer saccharum.
Maple, White or Silver.	Acer dasycarpum.	Acer saccharinum.	Acer saccharinum.
Mulberry, Red.	Morus rubra.		
Oak, Basket, or Cow.	Quercus Michauxii.		Quercus michauxii.
Oak, Hicce.	Quercus coccinea var. tinctoria.	Quercus velutina.	Quercus velutina (Yellow Oak).
	Quercus nigra.	Quercus Marilandica.	Quercus marilandica.
Oak, Black Jack.	Quercus macrocarpa.		
Oak, Bur, or Overcup.	Quercus prinus.		
Oak, Chestnut.	Quercus imbricaria.		
Oak, Laurel.	Quercus palustris.	Quercus minor.	Quercus minor.
Oak, Pin.	Quercus stellata.		
Oak, Post, or Iron.	Quercus rubra.		
Oak, Red.	Quercus coccinea.		
Oak, Scarlet.	Quercus falcata.	Quercus digitata.	Quercus digitata.
Oak, Spanish.	Quercus bicolor.	Quercus platanoidea.	Quercus platanoidea.
Oak, Swamp White.	Quercus aquatica.	Quercus nigra.	Quercus nigra.
Oak, Water.	Quercus alba.		
Oak, White.	Quercus Phellos.		Quercus phellos.
Oak, Willow.	Quercus Muhlenbergii.	Quercus acuminata.	Quercus acuminata (Chinquapin Oak).
Oak, Yellow Chestnut.			
Papaw, or Custard Apple.	Asimina triloba.		
Perimmon.	Diospyros Virginiana.		Diospyros virginiana.
Pine, Gray, or Jack.	Pinus Banksiana.	Pinus divaricata.	Pinus divaricata.
Pine, Jersey Scrub.	Pinus inops.	Pinus Virginiana.	Pinus virginiana.
Pine, Loblolly, or Old Field.	Pinus Tada.		Pinus tada.
Pine, Northern Pitch.	Pinus rigida.		
Pine, Red, or Norway.	Pinus resinosa.		
Pine, Southern Yellow, or Georgia, or Long-leaf.	Pinus palustris.		
Pine, Table Mountain.	Pinus pungens.		
Pine, White.	Pinus strobus.	Pinus echinata.	Pinus strobus.
Pine, Yellow, Short-leaf Pine.	Pinus mitis.	Prunus nigra.	Pinus echinata.
Plum, Canada.	Prunus Americana.		Prunus nigra.
Poplar, Balsam.	Populus balsamifera.		
Poplar, Balsam — Varieties.	Populus balsamifera var. intermedia.		
	Populus balsamifera var. latifolia.		
	Populus balsamifera var. missillii.		
Poplar, White.	Populus alba.	Populus alba.	Populus alba.
Red Bud, or Judas Tree.	Cercis Canadensis.		Cercis canadensis.
Sassafras.	Sassafras officinale.	Sassafras Sassafras.	Sassafras sassafras.
Spruce, Black.	Picea nigra.	Picea Mariana.	Picea mariana.
Spruce, Red.	Picea nigra var. rubra.	Picea rubens.	Picea rubens.
Spruce, White, or Cat.	Picea alba.	Picea Canadensis.	Picea canadensis.
Thorn, White, or Scarlet-fruited.	Crataegus coccinea.		
Tulip Tree.	Liriodendron tulipifera.		
Tupelo, or Sour Gum.	Nyssa sylvatica.		
Umbrella Tree.	Magnolia Umbrella.	Magnolia tripetala.	Magnolia tripetala.
Viburnum, Sweet, or Sheep-berry.	Viburnum Lentago.		Viburnum lentago.
Walnut, Black.	Juglans nigra.		
Willow, Black.	Salix nigra.		
Willow, Crack.	Salix fragilis.		
Willow, Heart-leaved.	Salix cordata.		
Willow, Long-leaved.	Salix longifolia.	Salix fluviatilis.	Salix fluviatilis.
Willow, Weeping.	Salix Babylonica.		Salix babylonica.
Willow, White.	Salix alba var. canaliculata.		
Yellowwood, or Virgilia.	Cladrastis tinctoria.	Cladrastis lutea.	Cladrastis lutea.

ALPHABETICAL INDEX

OF THE FOUR SERIES OF WAYSIDE TREES.

	Series Pp.		Series Pp.		Series Pp.		Series Pp.
Able Tree	II-11	Chamaecyparis sphaeroides	IV-25	Maple, Rock	III-11	Populus monilifera	II-11
Ahies balsamea	IV-21	Cherry, Bird	I-13	Maple, Silver	III-17	Populus tremuloides	II-11
Acer dasycarpum	III-17	Cherry, Black	I-15	Maple, Striped	III-9	Prunus americana	I-13
Acer negundo	IV-7	Cherry, Choke	I-15	Maple, Sugar	III-11	Prunus nigra	I-13
Acer pennsylvanicum	III-9	Cherry, Red	I-15	Maple, Swamp	III-19	Prunus pennsylvanica	I-13
Acer platanoides	III-19	Chestnut	II-5	Maple, White	III-17	Prunus serotina	I-15
Acer rubrum	III-19	Chionanthus virginica	III-5	Mockernut	IV-3	Prunus virginiana	I-15
Acer saccharinum var. ni-	III-11	Chloranthus hirtellus	III-14	Morus rubra	I-21	Pyrus americana	III-23
grum	III-11	Cornus alternifolia	III-3	Mulberry, Red	I-21	Quercus alba	II-17
Acer spicatum	III-11	Cornus florida	III-3	Negundo aceroides	IV-7	Quercus aquatica	II-23
Aesculus glabra	IV-13	Cottonwood	II-11	Nyssa sylvatica	I-5	Quercus bicolor	II-19
Aesculus hippocastanum	IV-13	Crataegus coccinea, var. mollis	II-15	Oak, Basket	II-19	Quercus coccinea	II-21
Aesculus octandra	IV-13	Cucumber Tree	I-3	Oak, Black	II-21	Quercus, var. flaccida	II-21
Alhambra or Alhambra	III-15	Castor Apple	I-5	Oak, Black Jack	II-23	Quercus digitata	II-21
Alnus glandulosa	III-15	Diostyris virginiana	I-5	Oak, Bur	I-17	Quercus falcata	II-21
Alder, Black	I-11	Dogwood, Alternate-leaved	III-3	Oak, Chestnut	II-19	Quercus imbricaria	II-23
Arbor Vitae	IV-25	Dogwood, Flowering	III-3	Oak, Cow	II-19	Quercus macrocarpa	II-17
Ash, Black	IV-11	Elm, American	I-17	Oak, Iron	II-17	Quercus marilandica	II-23
Ash, Blue	IV-9	Elm, Corky White	I-19	Oak, Laurel	II-23	Quercus Michauxii	II-19
Ash, Green	IV-9	Elm, Red	I-17	Oak, Overcup	II-17	Quercus Muhlenbergii ac-	II-19
Ash, Mountain	III-23	Elm, Slippery	I-17	Oak, Pin	II-21	minata	II-19
Ash, Red	IV-9	Elm, White	I-17	Oak, Post	II-17	Quercus nigra	II-23
Ash, Swamp	IV-11	Eunymus europaeus	III-7	Oak, Red	II-21	Quercus palustris	II-21
Ash, Water	IV-11	Fagus americana	II-5	Oak, Scarlet	II-21	Quercus prinus	II-23
Ash, White	IV-7	Fagus ferruginea	II-5	Oak, Swamp White	II-19	Quercus rubra	II-21
Asimina triloba	I-5	Flr, Balsam	IV-21	Oak, Water	II-23	Quercus stellata	II-17
Aspen	II-11	Fraxinus americana	IV-7	Oak, White	II-17	Quercus subulata	II-21
Aspen, Large-toothed	II-11	Fraxinus platycarpa	IV-11	Oak, Willow	II-23	Red Bud	I-5
Balm of Gilead	II-13	Fraxinus pubescens	IV-9	Oak, Yellow Chestnut	II-19	Rubus Prunae	III-21
Basswood	I-9	Fraxinus quadrangulata	IV-9	Ostrya virginiana	II-3	Salix alba var. Cornuta	II-9
Basswood, Small-leaved	I-9	Fraxinus sambucifolia	IV-11	Ostrya virginica	II-3	Salix babingtonii	II-9
Beech	II-5	Fraxinus viridis	IV-9	Papaw	I-5	Salix cordata	II-7
Beech, Water	II-3	Fringe Tree	III-5	Panama	I-5	Salix fragilis	II-7
Betula alba	I-23	Gleditsia triacanthos	III-23	Picea alba	IV-23	Salix longifolia	II-7
Betula lenta	I-21	Gymnocladus canadensis	III-21	Picea nigra	IV-23	Salix nigra	II-9
Betula lutea	I-23	Hackberry	I-19	Picea rubra	IV-23	Sassafras officinale	I-7
Betula nigra	I-25	Hackmatack	IV-21	Pignut	IV-5	Sassafras sassafras	I-7
Betula papyrifera	I-25	Hemlock	IV-21	Pine, Georgia	IV-15	Scarlet Haw	II-15
Betula populifolia	I-23	Hickory	IV-3	Pine, Gay	IV-19	Shagbark	IV-3
Birch, Black	I-21	Hickory, Brown	IV-5	Pine, Jersey Scrub	IV-17	Shoeberry	III-7
Birch, Canoe	I-25	Hickory, Swamp	IV-5	Pine, Loblolly	IV-15	Sour Gum	I-5
Birch, Cat-leaved White	I-23	Hickory, White-heart	IV-3	Pine, Northern Pitch	IV-17	Spruce, Black	IV-23
European	I-23	Holly, American	I-11	Pine, Norway	IV-19	Spruce, Cat	IV-23
Birch, Gray	I-23	Hornbeam	II-3	Pine, Old-field	IV-15	Spruce, Red	IV-23
Birch, Paper	I-25	Hornbeam, Hop	II-3	Pine, Red	IV-19	Spruce, White	IV-23
Birch, Red	I-25	Hornbeam, Hop	II-3	Pine, Southern Yellow	IV-15	Sugarberry	I-19
Birch, River	I-25	Hornbeam, Hop	II-3	Pine, Table Mountain	IV-17	Sweet Bay	I-2
Birch, Sweet	I-21	Ilex monticola	I-11	Pine, White	IV-15	Sycamore	II-25
Birch, White	I-25	Ilex monticola	I-11	Pine, Yellow	IV-19	Tacamahac	II-13
Birch, Yellow	I-23	Ilex verticillata	I-11	Pinus banksiana	IV-19	Thorn, Scarlet-fruited	II-15
Bittersweet	IV-5	Judas Tree	I-5	Pinus inops	IV-17	Thorn, White	II-15
Black Haw	III-7	Juglans cinerea	III-25	Pinus mitis	IV-19	Tilia americana	I-9
Black Walnut	III-25	Juglans nigra	III-25	Pinus palustris	IV-15	Tilia pubescens	I-9
Bon Elder	IV-7	Juniperus virginiana	IV-25	Pinus pungens	IV-17	Thuja occidentalis	IV-25
Buckeye, Fetid	IV-13	Kentucky Coffee Tree	III-21	Pinus resinosa	IV-19	Thuja canadensis	IV-21
Buckeye, Ohio	IV-13	Larch, American	IV-21	Pinus rigida	IV-17	Tulip Tree	I-7
Buckeye, Sweet	IV-13	Larix americana	IV-21	Pinus strobus	IV-15	Tupelo	I-5
Burning Bush	III-7	Linden, American	I-9	Pinus taeda	IV-15	Ulmus americana	I-17
Butternut	III-25	Liquidambar styraciflua	II-25	Platanus occidentalis	II-25	Ulmus fulva	I-17
Buttonwood	II-25	Liriodendron tulipifera	I-7	Plum, Canada	I-13	Ulmus racemosa	I-19
Carpinus Caroliniana	II-1	Locust	III-21	Poplar, Balsam	II-13	Umbrella Tree	I-3
Carya alba	IV-3	Locust, Honey	III-23	Poplar, White	II-11	Viburnum lentago	III-7
Carya amara	IV-3	Magnolia acuminata	I-3	Populus alba	II-11	Viburnum prunifolium	III-7
Carya ovata	IV-3	Magnolia glauca	I-3	Populus balsamifera	II-13	Viburnum, Sweet	III-7
Carya tomentosa	IV-3	Magnolia, Small	I-3	Populus balsamifera, var. can-	II-13	Vigilia	III-14
Castanea dentata	II-5	Magnolia tripetala	I-3	dicans	II-13	Willow, Black	II-9
Castanea sativa	II-5	Magnolia, Umbrella	I-3	Populus balsamifera, var. in-	II-13	Willow, Crack	II-7
Catalpa bignonioides	III-5	Maple, Ash-leaved	IV-7	termedia	II-13	Willow, Heart-leaved	II-7
Cedar, Red	IV-25	Maple, Black Sugar	III-11	Populus balsamifera, var. lat-	II-13	Willow, Long-leaved	II-7
Cedar, White	IV-25	Maple, Greenfoot	III-9	folia	II-13	Willow, Weeping	II-9
Cedrus, White, or Arbor Viti-	IV-25	Maple, Mountain	III-9	Populus balsamifera, var. vi-	II-13	Willow, White	II-9
alis occidentalis	I-19	Maple, Norway	III-19	minata	II-13	Yellowwood	III-14
Cercis canadensis	I-5	Maple, Red	III-19	Populus grandidentata	II-11		

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