

INDICATOR SPECIES OF FOREST HABITAT TYPES
OF CENTRAL AND SOUTHERN UTAH

INTERMOUNTAIN REGION AND UTAH STATE UNIVERSITY

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INTRODUCTION

This training manual was prepared to help foresters identify key indicator species of forest habitat types in central and southern Utah.

The species illustrated are to be used in conjunction with:

Coniferous Forest Habitat Types of Central and Southern Utah, 1985
by Andrew P. Youngblood and Ronald L. Mauk. USDA Forest Service
Intermt. For. and Range Exp. Stn. Gen. Tech. Rep. INT-187.

The species are presented generally in alphabetical order within lifeforms, as on the field form (appendix I of the above publication).

The illustrations (except where noted) were copied with permission from

Hitchcock, C.L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1955-1969.
Vascular Plants of the Pacific Northwest, Volumes 1-5. University of
Washington Press, Seattle. Drawings by Jeanne R. Janish.

A few illustrations were copied with permission from

Cronquist, A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal, and P.K.
Holmgren. 1977. Intermountain Flora: Vascular Plants of the
Intermountain West, U.S.A. Volumes 1 and 4, Columbia University Press
and New York Botanical Garden, New York.

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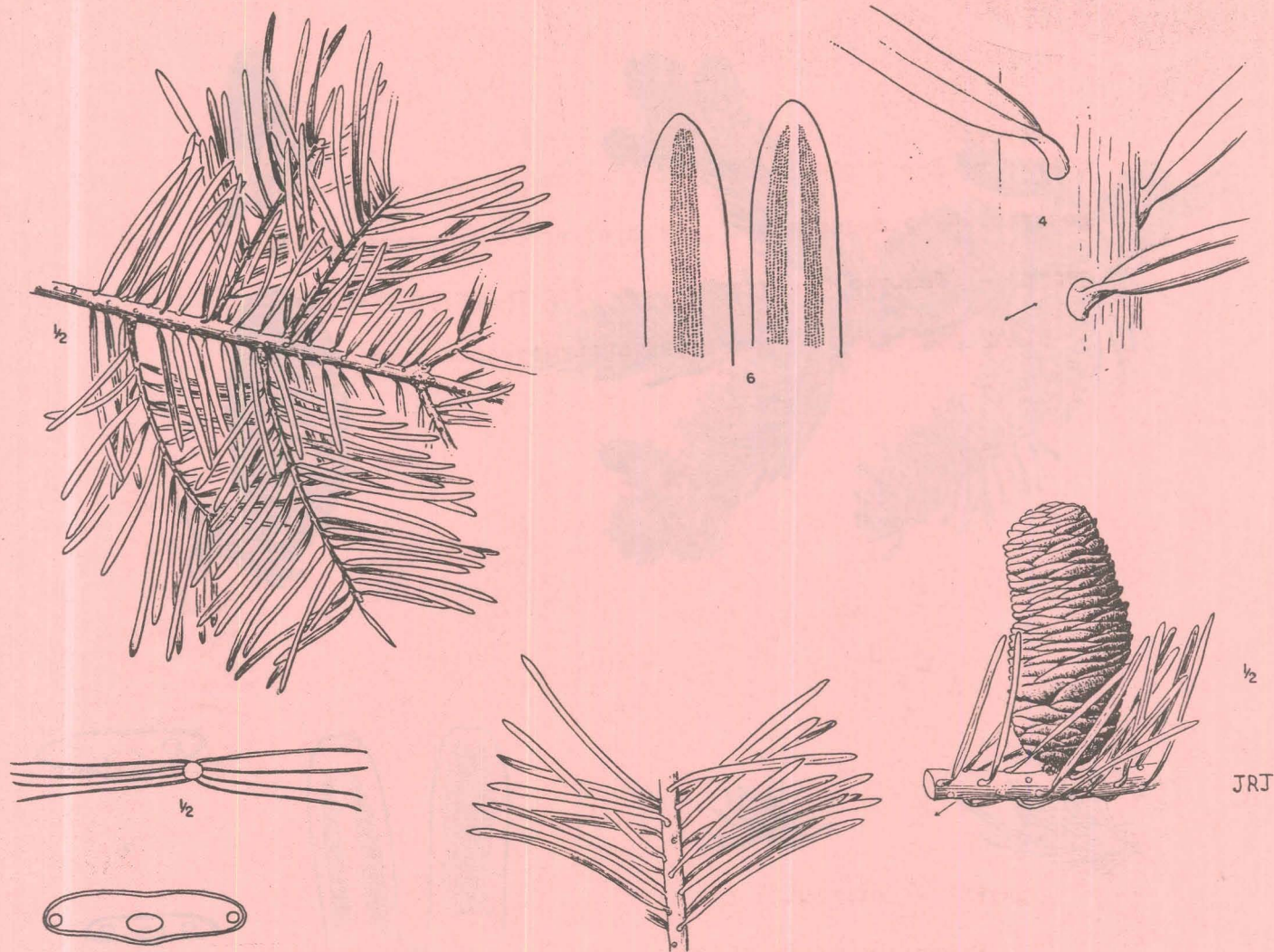
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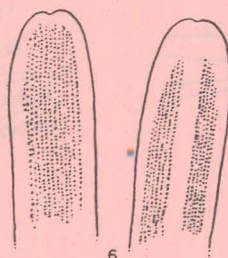
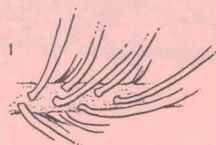
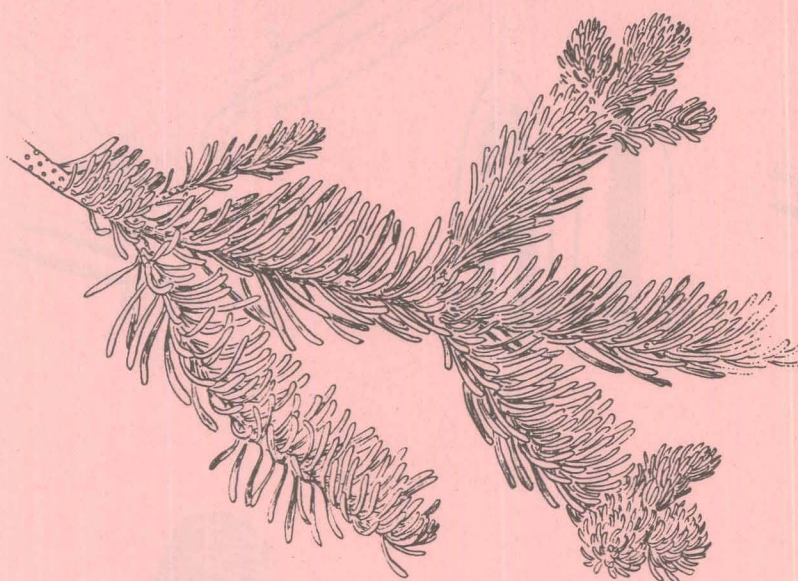


ABIES CONCOLOR - White Fir

Needles - linear, flattened, slightly pointed, about 2 inches long, silver-green in color, tending to be horizontal rather than curving up, and forming a flattened spray

Twigs - smooth and yellow-green

Cones - about 4 inches long, yellow-green when mature, and roughly cylindrical



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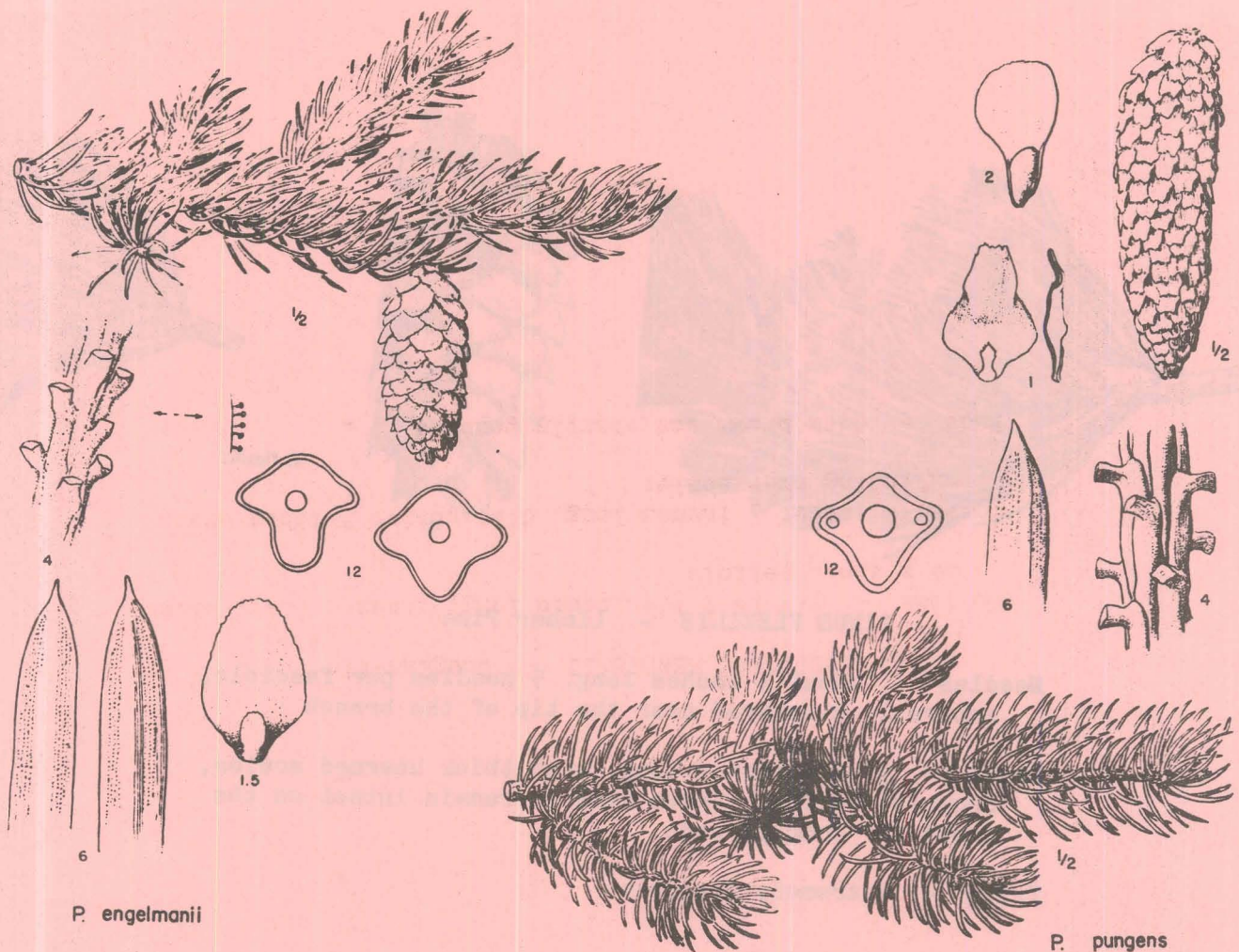
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ABIES LASIOCARPA - Subalpine Fir

Needles - curved and not flattened, blunt or notched on the tip, about 1 inch long. Needles are arranged around the twig, but often curve up to appear as if on the upper surface.

Twigs - slightly pubescent

Cones - about 2-4 inches long, and silver or purple when mature



P. engelmannii

P. pungens

PICEA ENGELMANNII - Engelmann Spruce

Needles - 4-sided, green or blue-green, about 1 inch long, tending to point toward the tip of the twig

Twigs - slightly pubescent, brown to grey

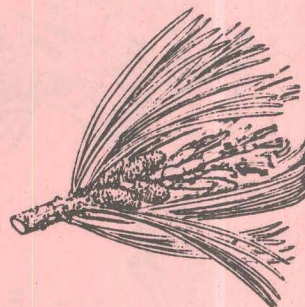
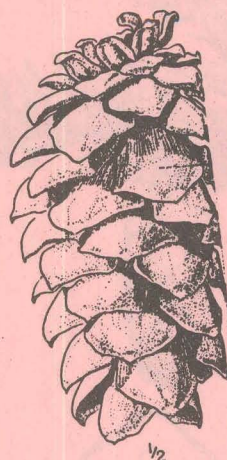
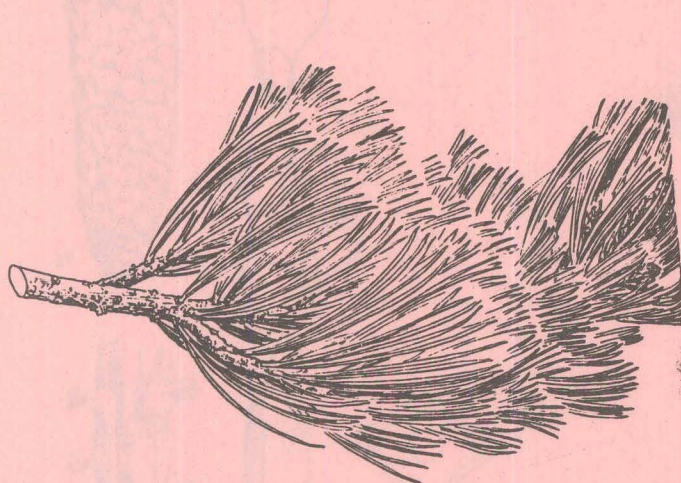
Cones - commonly about 2 inches long, cone scale tips slightly rounded

PICEA PUNGENS - Blue Spruce

Needles - 4-sided, green or blue, about 1 inch long, stiff and sharp, more erect on the twig

Twigs - glabrous, with prominent sterigmata

Cones - commonly about 3 inches, cone scale tips noticeably irregular and rough



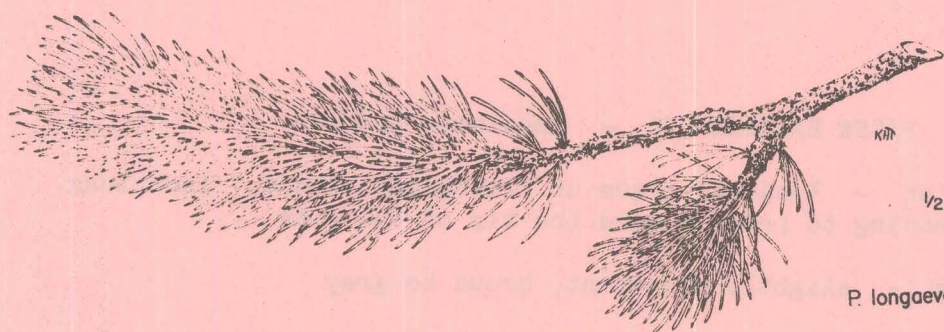
P. flexilis

PINUS FLEXILIS - Limber Pine

Needles - about 3 inches long, 5 needles per fascicle, generally clustered near the tip of the branch

Cones - 3 to 6 inches long, with thick unarmed scales, brownish yellow. Cones tend to remain intact on the ground for long periods.

Twigs - extremely flexible



KH

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P. longaeva

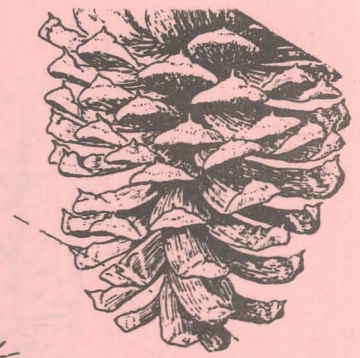
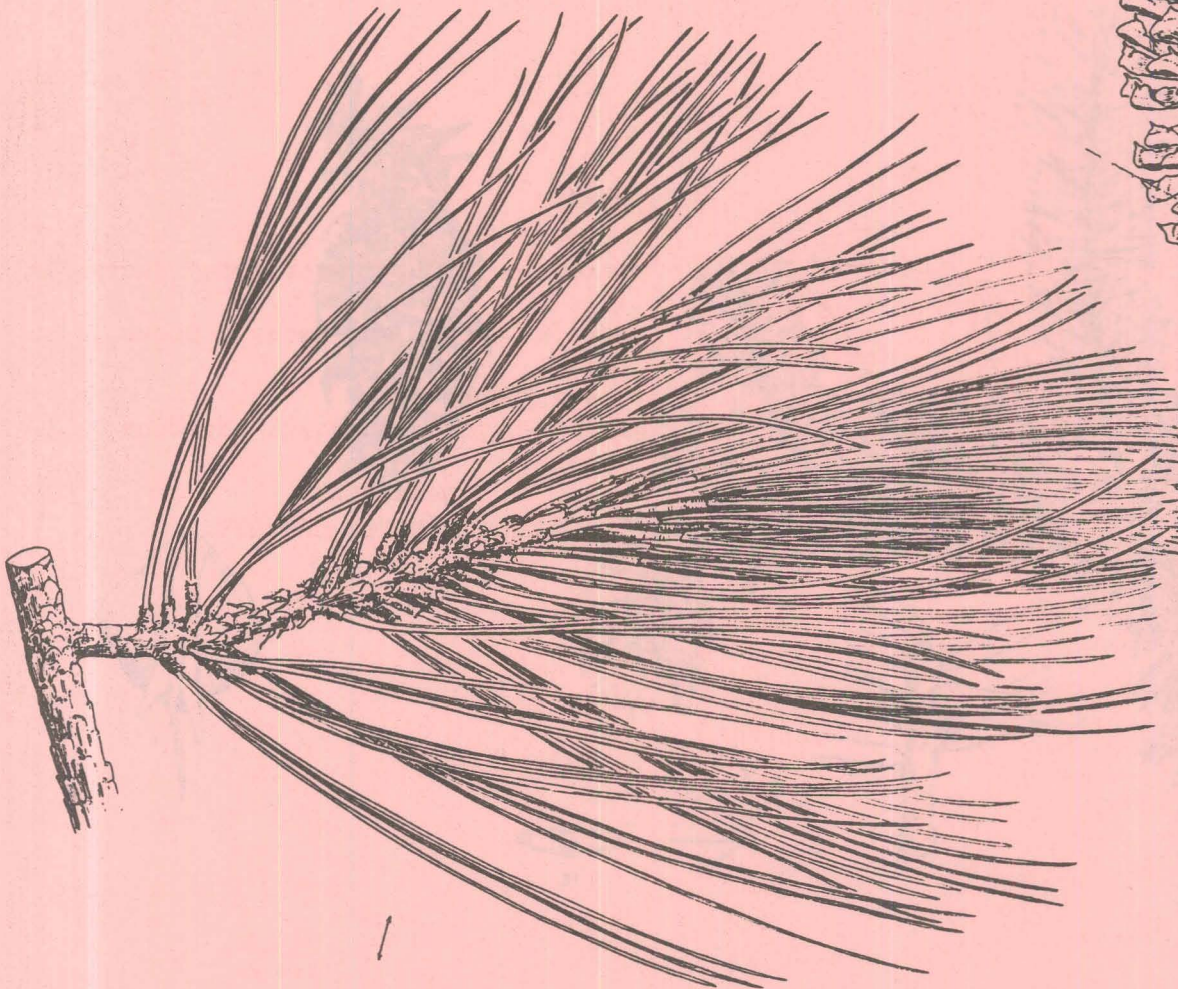


PINUS LONGAEVA - Great Basin Bristlecone Pine

Habit - gnarled or twisted tree with drooping branches

Needles - 5 needles per fascicle, with deciduous sheaths

Cones - 3-4 inches long, ovoid, armed with long curved spines

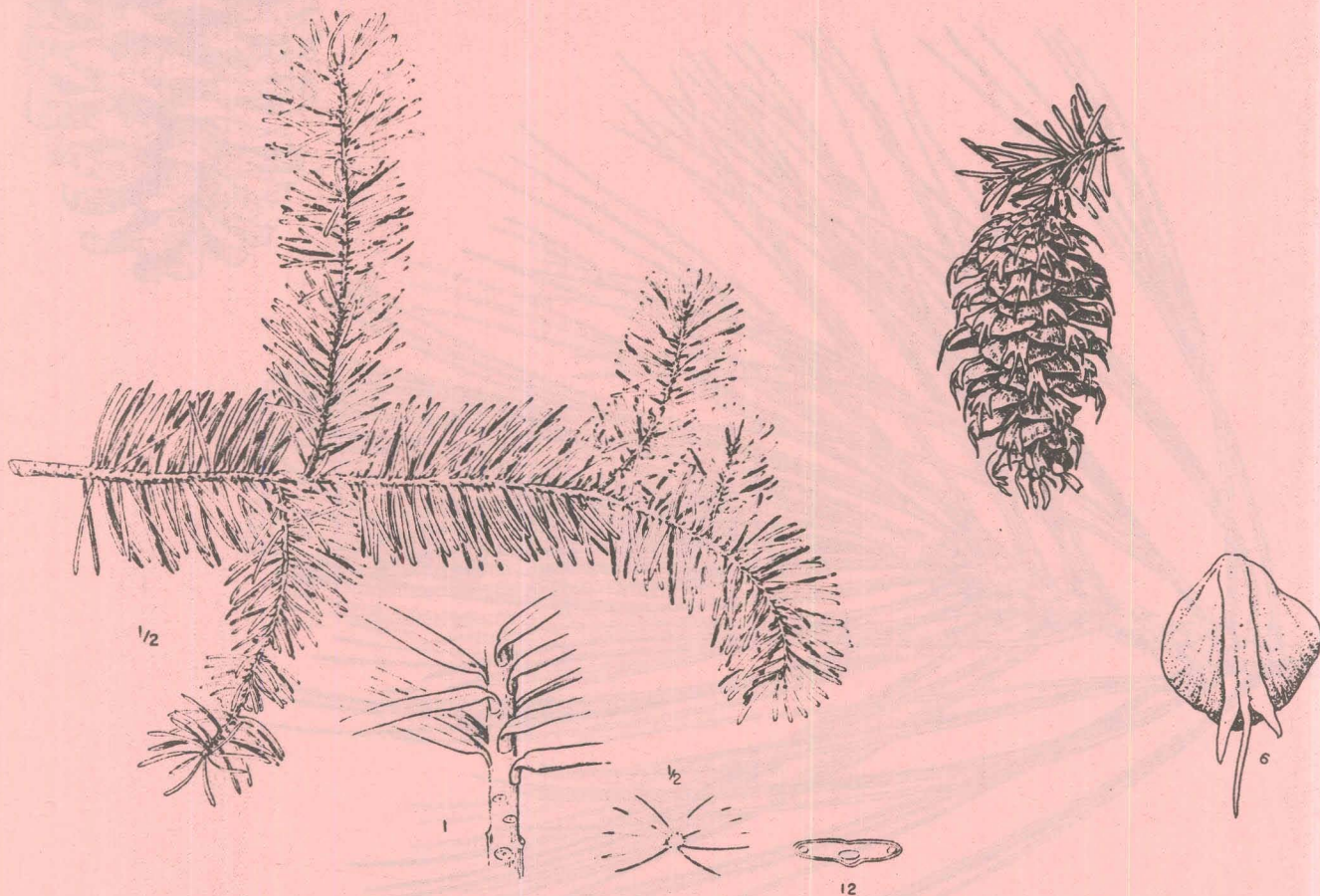


PINUS PONDEROSA - Ponderosa Pine

Needles - 2 or 3 needles per fascicle, about 6 - 10 inches long, generally clustered at the tips of branches

Cones - about 4 inches long, ovoid, scales strongly armed

Twigs - stout, buds often covered with resin

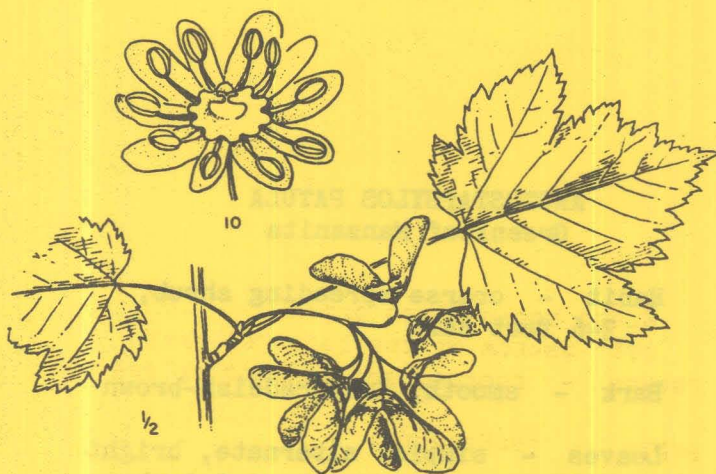


PSEUDOTSUGA MENZIESII - Douglas-fir

Needles - $\frac{3}{4}$ to $1 \frac{1}{4}$ inches long, linear, flat, blunt,
on a short petiole

Cones - about 3 inches long, distinctive 3-lobed bract
extending over scales

Buds - dark brown and sharply pointed



ACER GLABRUM - Mountain Maple

Habit - large shrub or small tree up to 25 feet tall

Leaves - simple, opposite, 3 or 5 lobed, often deeply cleft

Twigs - smooth, reddish purple

Fruit - samaras, seed coat rough and wrinkled



A. arbuscula

**ARTEMISIA ARBUSCULA
Low Sagebrush**

Habit - low or dwarf shrub

Leaves - simple, alternate, three-lobed, densely wooly, cauline leaves divided

Flowers - bracts hairy, heads large

**ARTEMISIA NOVA
Black Sage**

Habit - low or dwarf shrub

Leaves - simple, alternate, three-lobed, densely wooly, cauline leaves entire

Flowers - bracts not hairy, heads smaller



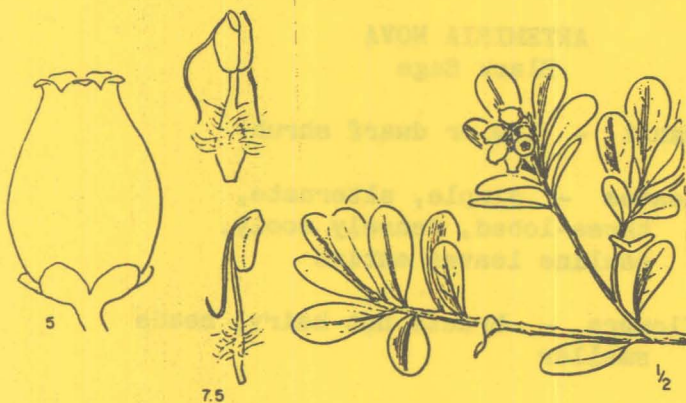
Arctostaphylos patula

ARCTOSTAPHYLOS PATULA
Greenleaf Manzanita

Habit - coarse spreading shrub,
3-6 feet tall

Bark - smooth, dark reddish-brown

Leaves - simple, alternate, bright
yellow-green, smooth, 1-2 inches
long, oblong to elliptic



Arctostaphylos uva-ursi

ARCTOSTAPHYLOS UVA-URSI
Bearberry

Habit - low, spreading subshrub,
4-6 inches tall

Bark - smooth and reddish brown

Leaves - simple, alternate, leathery,
evergreen, oblanceolate



Berberis repens

BERBERIS REPENS - Oregon Grape

Habit - low subshrub, 6-8 inches tall

Leaves - alternate, pinnately compound leathery,
evergreen; leaflets with teeth like Holly

Flowers - clusters of numerous small yellow flowers,
fruit blue berries resembling grapes



CERCOCARPUS LEDIFOLIUS
Curlleaf mountain-mahogany

Habit - large shrub or small tree,
up to 20 feet tall

Leaves - narrow and elliptical with
edges rolled under, upper surface
dark green, lower surface woolly

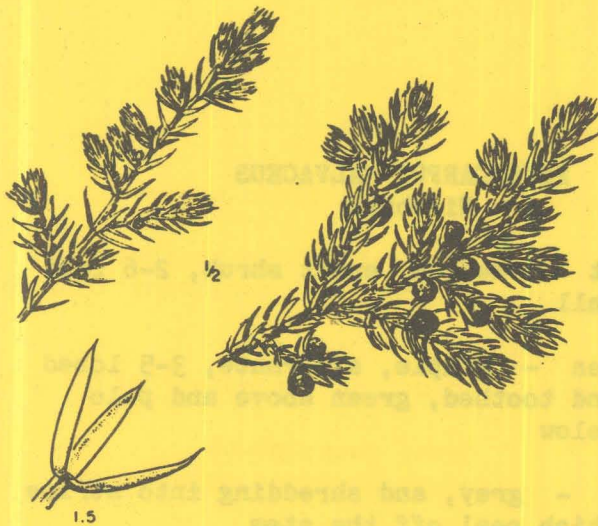


Cercocarpus montanus

CERCOCARPUS MONTANUS
Mountain-Mahogany

Habit - large shrub

Leaves - toothed and rounded at the
tip, narrow at the petiole, dark
green above, pale below



JUNIPERUS COMMUNIS
Common Juniper

Habit - low shrub, up to 3 feet tall
and spreading

Needles - 3 needles to a whorl,
needles spreading away from the twig



PACHISTIMA MYRSINITES
Pachistima

Habit - small to medium shrub, up to
3 feet tall

Leaves - simple, opposite, leathery
and evergreen, oblong with slight
teeth, 1/2 to 1 inch long

Flowers - small, unusual, maroon

Pachistima myrsinites



Physocarpus malvaceus

PHYSOCARPUS MALVACEUS
Ninebark

Habit - medium, erect shrub, 2-6 feet tall

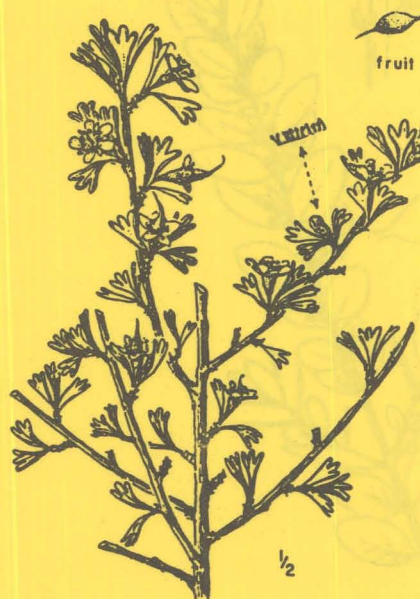
Leaves - simple, alternate, 3-5 lobed and toothed, green above and pale below

Bark - grey, and shredding into strips which peel off the stem

PURSHIA TRIDENTATA
Bitterbrush

Habit - medium shrub, 2-6 feet tall

Leaves - simple, alternate, but crowded at the branch tip, 3-lobed, dark green above, wooly below, with the margins curled under



Purshia tridentata



QUERCUS GAMBELII - Gambel Oak

Habit - large shrub or small tree,
up to 30 feet tall

Leaves - simple, alternate, deeply lobed in a classic
white oak pattern

Fruit - acorn

RIBES MONIGENUM - Mountain Gooseberry

Habit - medium shrub up to 3 feet tall, often spreading
and freely branched

Stems - well armed with 3-5 spines at the nodes

Leaves - pubescent and glandular, especially on the
lower surface, deeply incised



R. montigenum

SYMPHORICARPOS OREOPHILUS
Mountain Snowberry

Habit - erect, branching shrub up to 3 feet tall

Leaves - simple, opposite, elliptic

Twigs - extremely fine, greyish-brown



Symphoricarpos oreophilus
var. *utahensis*



V. caespitosum

VACCINIUM CAESPITOSUM
Dwarf Huckleberry

Habit - dwarf or low shrub, up to 8 inches tall

Leaves - alternate, deciduous, widest toward the tip, up to an inch long

Twigs - round, without ridges



VACCINIUM GLOBULARE
Blue Huckleberry

Habit - low to medium shrub, up to 3 feet tall

Leaves - alternate, generally elliptic

Twigs - twigs with ridges running down from axils



VACCINIUM MYRTILLUS
Myrtle Vaccinium

Habit - dwarf to low shrub, up to about 1 foot tall

Leaves - small, ovate to lanceolate, denticulate, up to 1 inch long

Twigs - generally green, with ridges from leaf axils



Bouteloua gracilis

BOUTELOUA GRACILIS
Blue Grama

Habit - rhizomatous perennials, often
mat forming, up to 1 foot tall

Inflorescence - distinctive "comb"

Leaves - mostly basal, blades flat or
loosely involute

Ligule - a fringe of hairs



C. disperma

CAREX DISPERMA
Soft-Leaved Sedge

Habit - slender perennial with
branching rhizomes

Leaves - flat, narrow, and somewhat
drooping, borne on lower stem

Inflorescence - small spikes on
slender drooping stems



CAREX GEYERI
Elk Sedge

Habit - tough perennial with rhizomes,
up to 1 foot tall

Leaves - 3-ranked, narrow, often dying
back at the tip, basal scales brown

Inflorescence - male spike terminal,
brown imbricate scales like a cigar,
female lateral below male, all
occurring on tall stems

JRJ



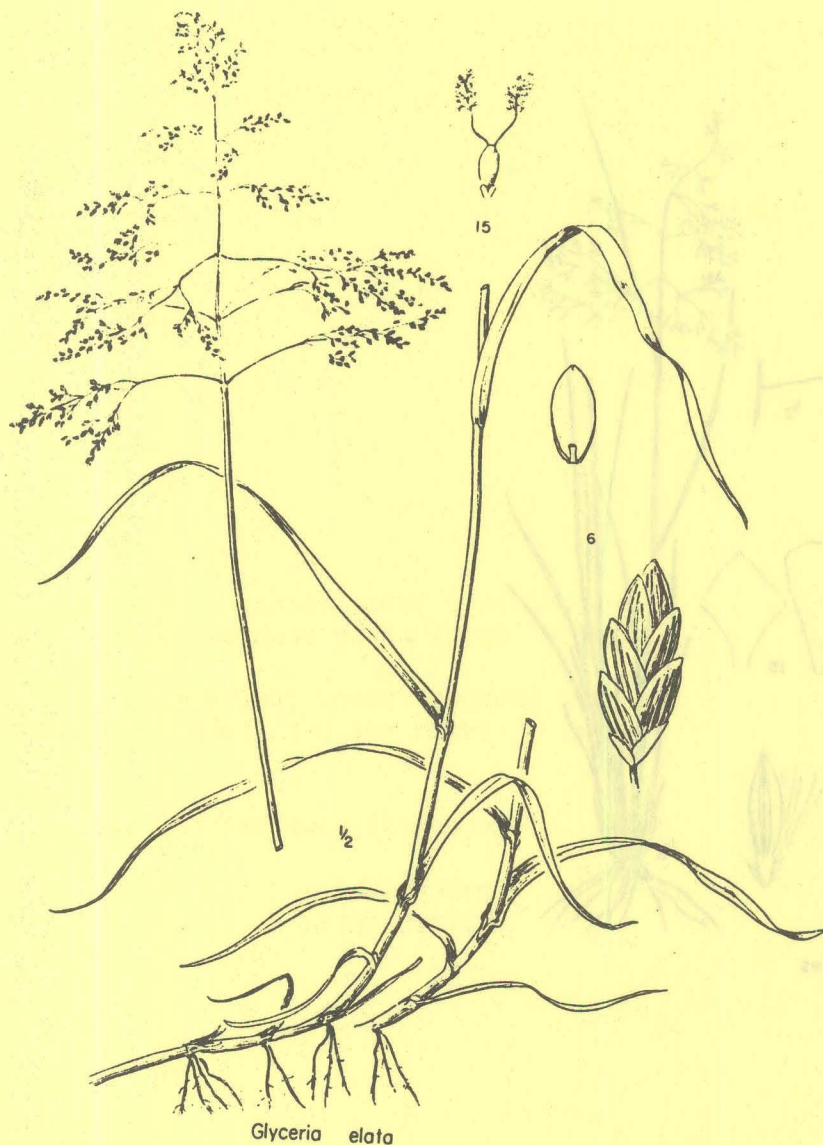
C. rossii

CAREX ROSSII
Ross Sedge

Habit - tufted nonrhizomatous
perennial

Leaves - soft, narrow (1-4mm), basal
scales a cinnamon red

Inflorescence - male spike small,
flowers appearing on all lengths of
stems from short to tall



Glyceria elata

GLYCERIA ELATA
Tall Mannagrass

- Habit - tall rhizomatous perennial, up to 4 feet tall
 Leaves - blades flat or folded, 6-10mm wide, sheath closed to near top
 Ligule - very long (2.5-4mm), truncate,
 Inflorescence - very fine open panicle of minute spikelets, lemmas and paleas distinctly striate

MUHLENBERGIA MONTANA
Mountain Muhly

- Habit - non-rhizomatous bunchgrass, up to 2 feet tall
 Leaves - dense basal cluster, flat to slightly rolled, sheath open, minutely hispid
 Ligule - extremely prominent (5-10mm long), acute, hyaline
 Inflorescence - closed panicle, spikelets with differing glumes, awns variable



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M. montana



O. hymenoides

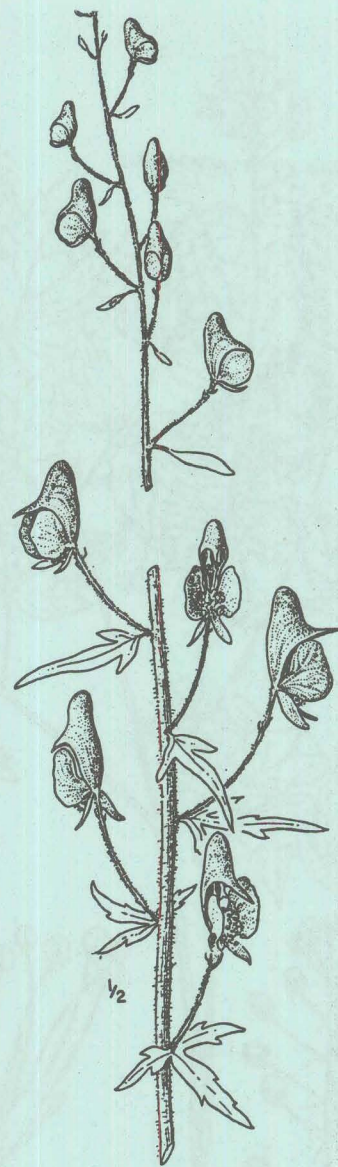
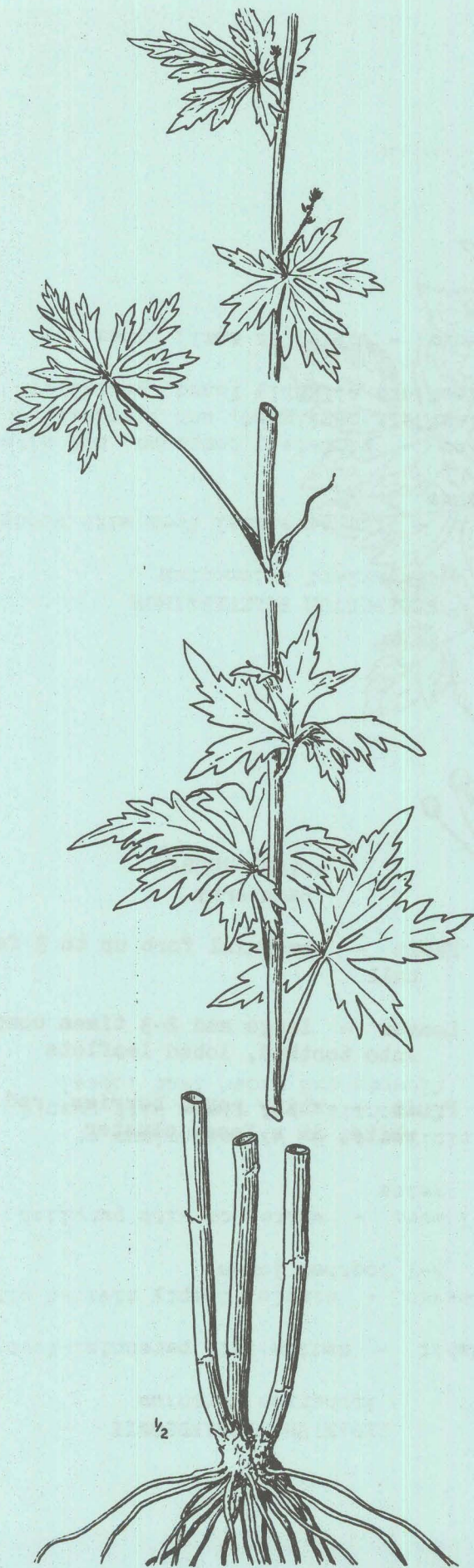
ORYZOPSIS HYMENOIDES
Indian Ricegrass

Habit - densely tufted perennials, up to 2 1/2 feet tall

Leaves - narrow, strongly rolled

Ligule - long (2.5-7.5mm), acute

Inflorescence - extremely open diffuse panicle, branching dichotomously, spikelets 1-flowered, with tufts of hairs exceeding glumes

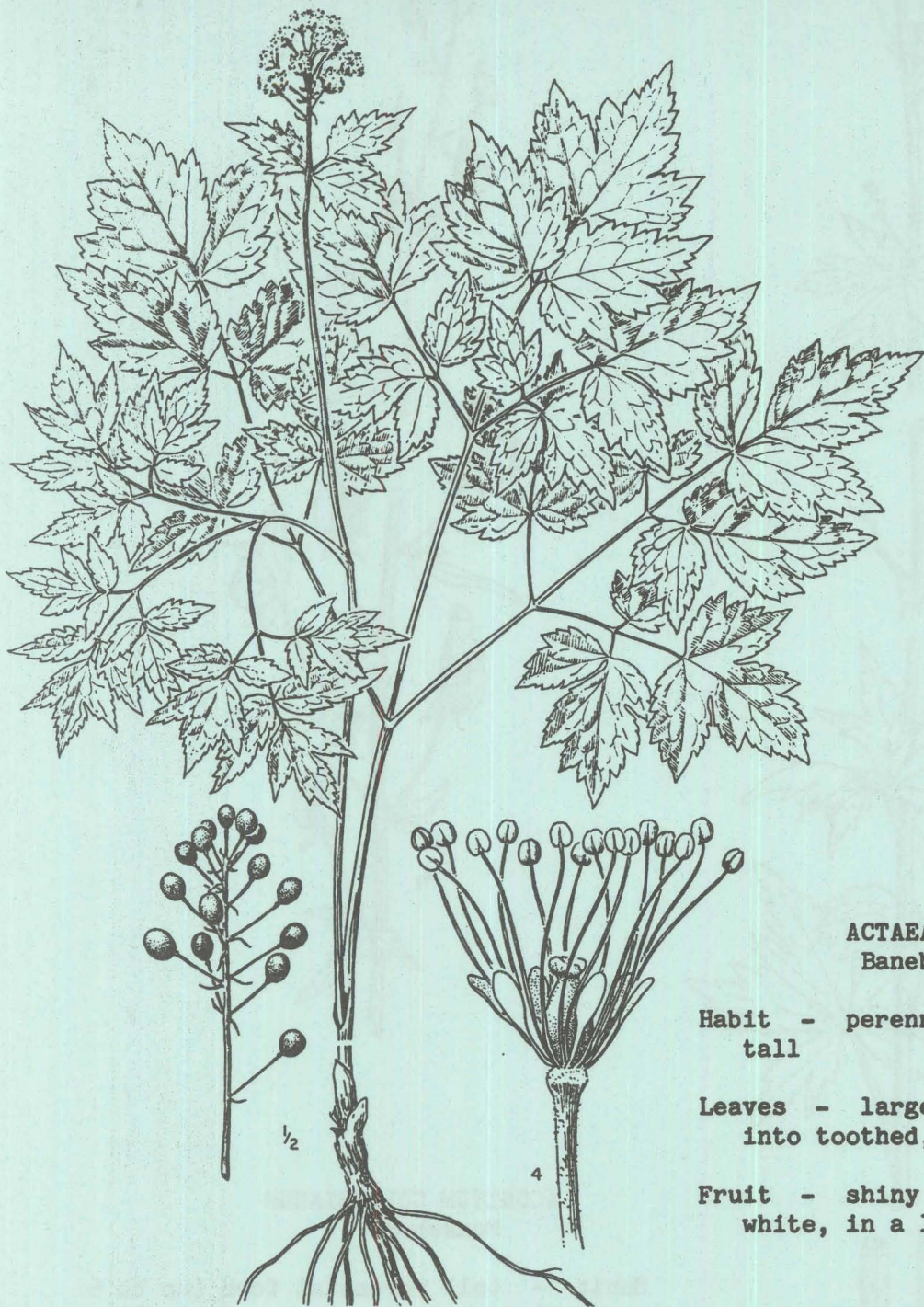


ACONITUM COLUMBIANUM
Monkshood

Habit - tall perennial forb (up to 6 feet) with leafy stems

Leaves - deeply lobed and toothed, generally on stems, with petioles reduced from lower to upper stem

Flowers - irregular blue flowers in a spike



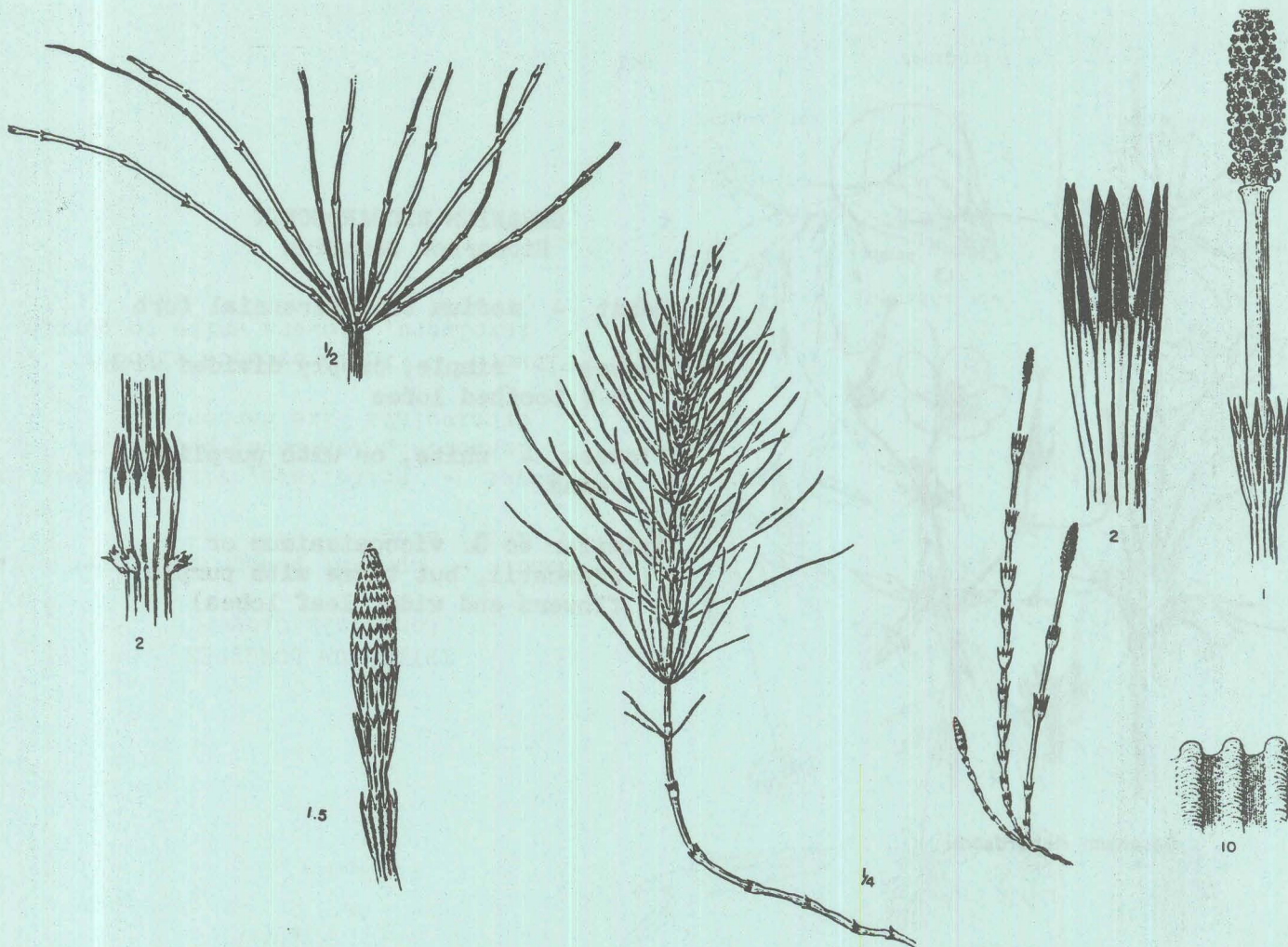
Actaea rubra

ACTAEA RUBRA
Baneberry

Habit - perennial forb up to 3 feet tall

Leaves - large and 2-3 times compound into toothed, lobed leaflets

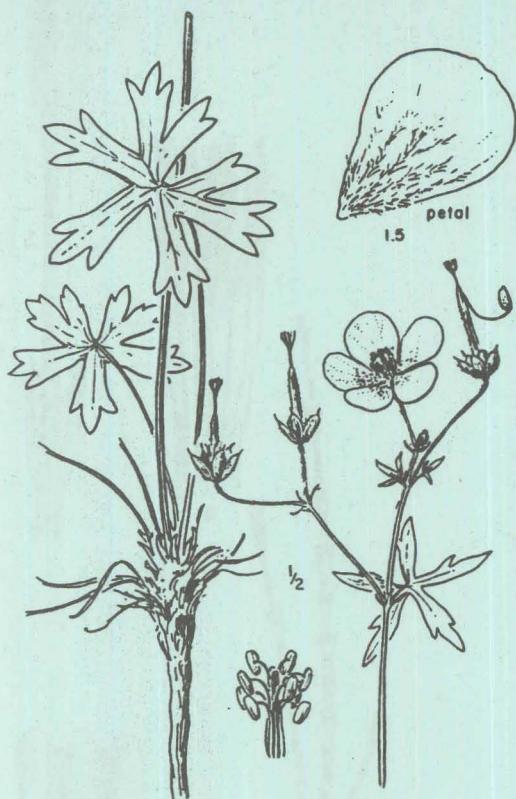
Fruit - shiny round berries, red or white, in a loose cluster



EQUISETUM ARVENSE
Common Horsetail

Habit - erect, branchless stems,
sterile stems with whorls of linear
branches, stems jointed

Leaves - extremely reduced to bracts



Geranium richardsonii

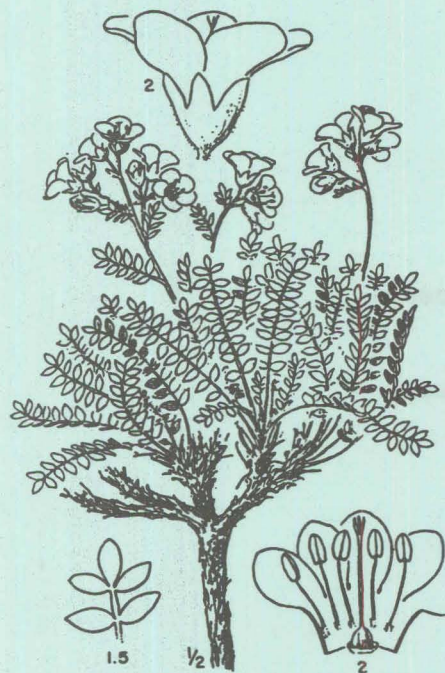
GERANIUM RICHARDSONII
 Richardson Geranium

Habit - medium tall perennial forb

Leaves - simple, deeply divided with
 5-7 toothed lobes

Flowers - white, or with purplish
 veins

(similar to *G. viscosissimum* or
fremontii, but these with purple
 flowers and wider leaf lobes)



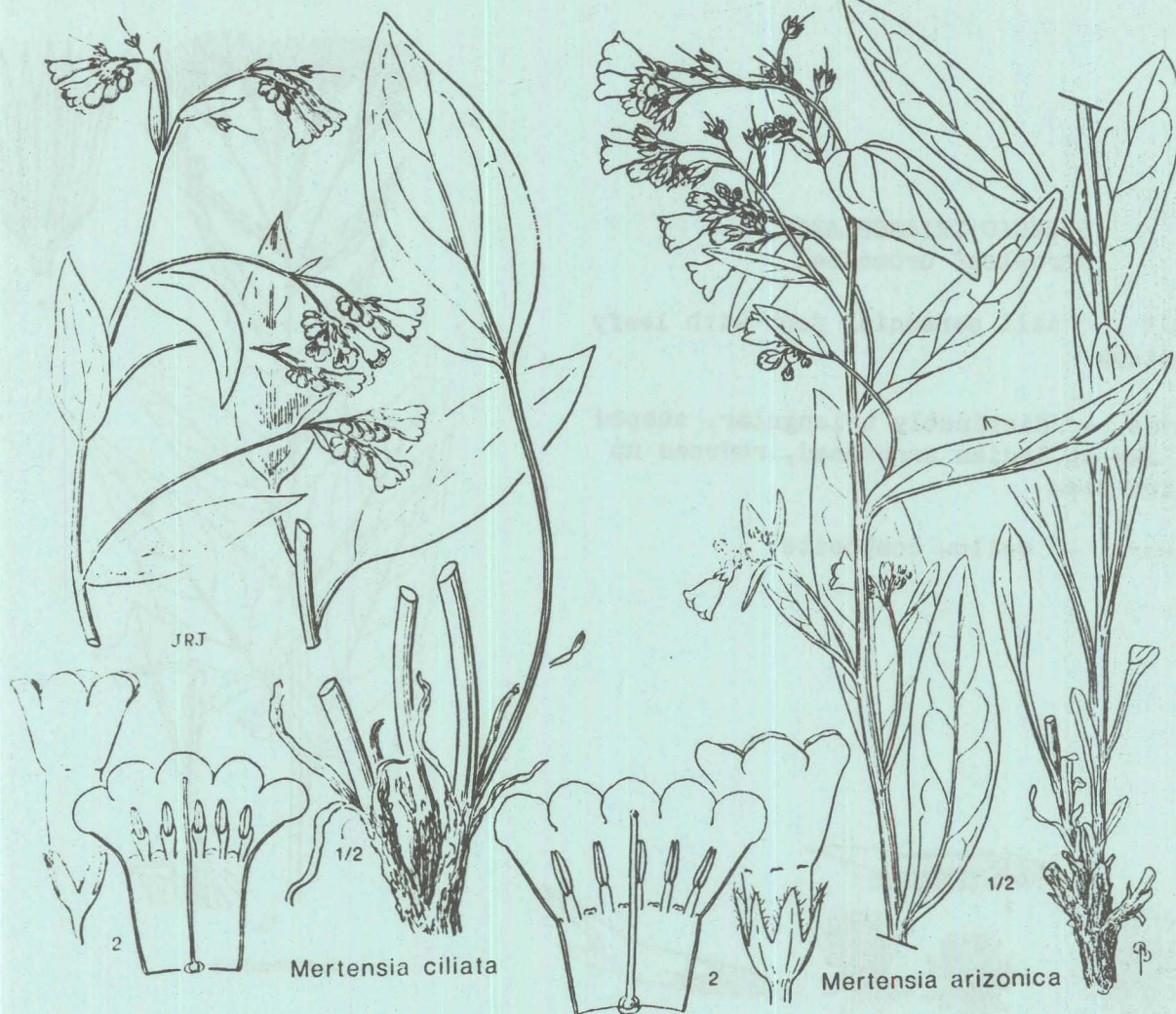
P. pulcherrimum var. *pulcherrimum*

POLEMONIUM PULCHERRIMUM
 Skunkleaf Polemonium

Habit - low perennial forb with woody
 base

Leaves - pinnately compound, but with
 leaflets unaligned, and terminal
 leaflets slightly fused, glandular

Flowers - blue, in small cymes



MERTENSIA CILIATA
Mountain Bluebells

Habit - medium to tall perennial forb

Leaves - simple, alternate, entire,
often glaucous

Flowers - short, separate calyx lobes
with long floral tube

MERTENSIA ARIZONICA
Arizona Bluebells

Habit - medium to tall perennial forb

Leaves - simple, alternate, entire,
veiny, often glaucous

Flowers - long fused calyx with short
floral tube

SENECIO TRIANGULARIS
Arrowleaf Groundsel

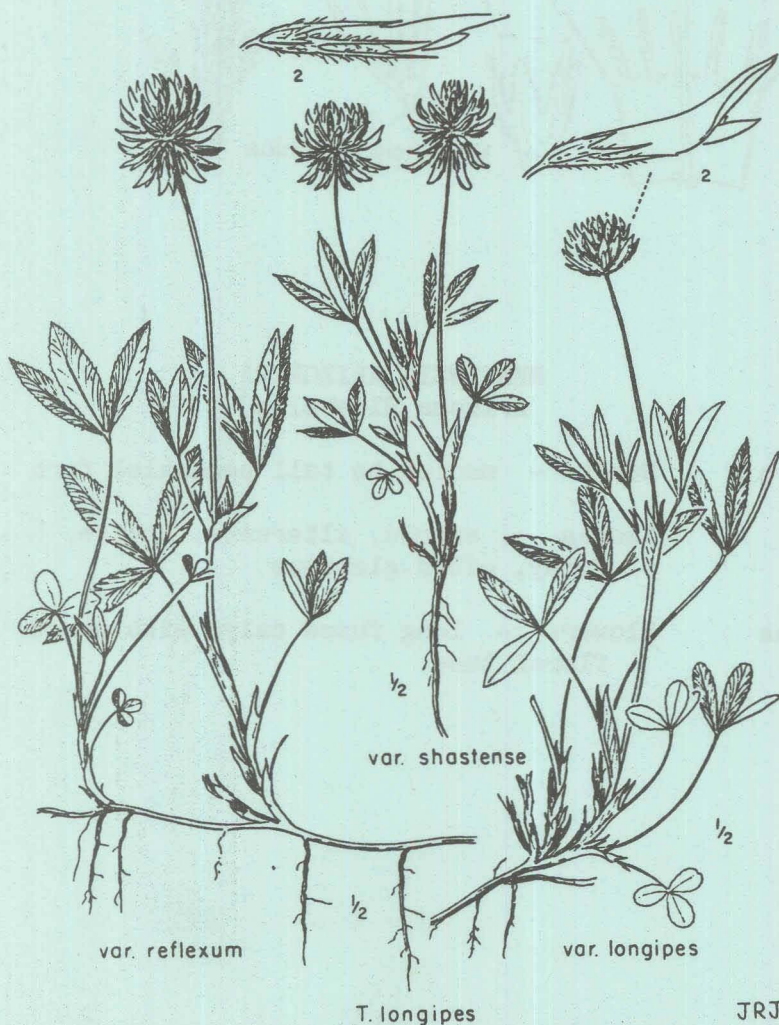
Habit - tall perennial forb with leafy stems

Leaves - distinctly triangular, shaped like an Indian arrowhead, reduced up the stem

Flowers - yellow composite



S. triangularis



T. longipes

JRJ

TRIFOLIUM LONGIPES
Longstalk Clover

Habit - upright perennial clover with leafy stems

Leaves - trifoliate, with elliptic or lanceolate leaflets, pubescent, denticulate like *Berberis*

Flowers - inflorescence without involucre, flowers white to purple