

5.11

CO-OPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF CALIFORNIA

MADERA COUNTY FARM ADVISOR

UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
CO-OPERATING

EXTENSION SERVICE
FARM ADVISOR WORK
AGRICULTURE CLUB WORK
HOME DEMONSTRATION WORK

Office of the Director
College of Agriculture
Berkeley, California

ILLUSTRATIONS OF CALIFORNIA TREES

PART I - CONIFERS

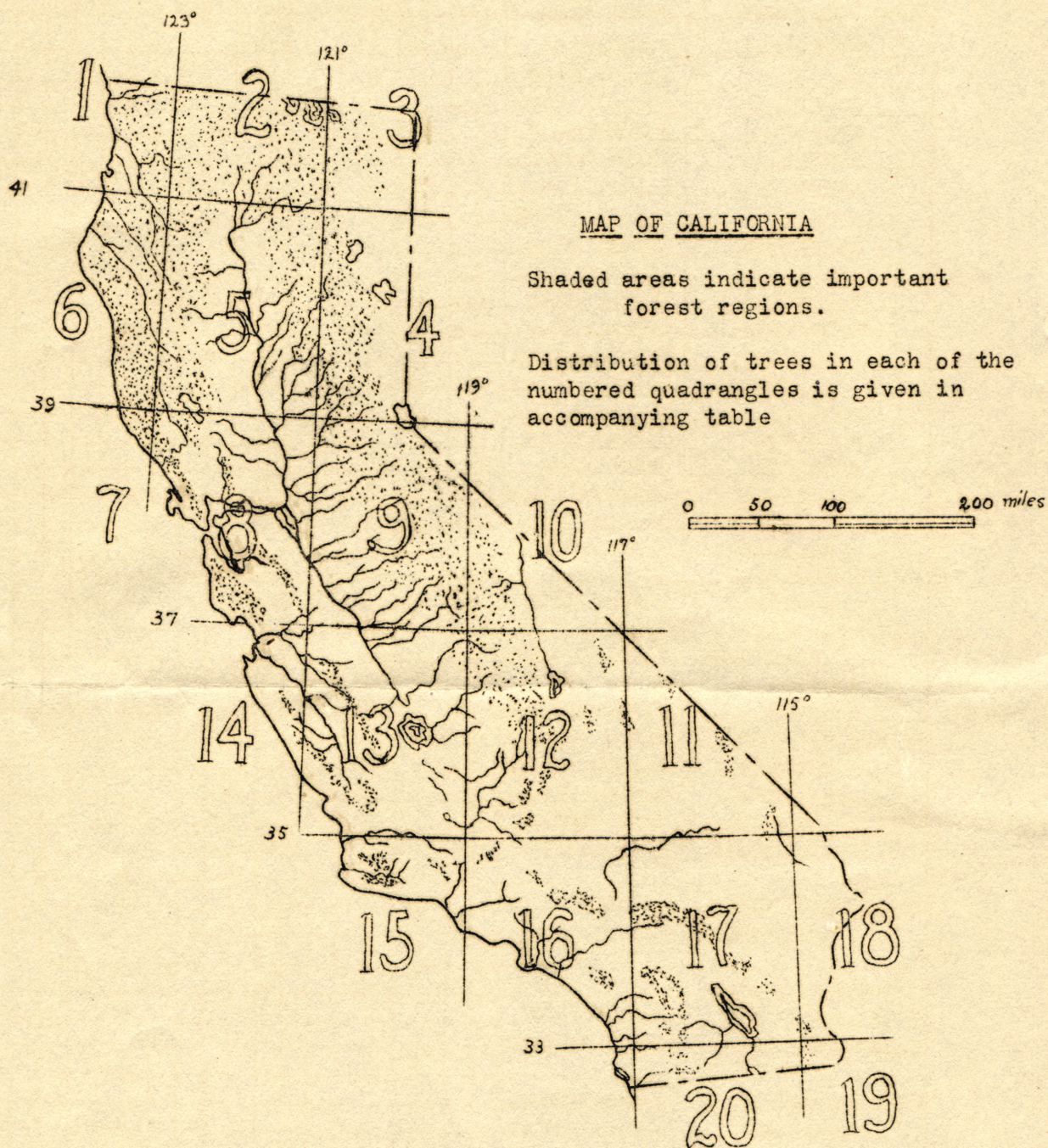
PREPARED FOR CALIFORNIA 4-H CLUB LEADERS

Trees and forests are among the most important natural resources of a state. Their protection and wise use are important responsibilities in which all the people can have a part. These illustrations are sent you in the hope that they will be of assistance to you and your club members in identifying some of our common trees.

Grateful acknowledgment is made to Duncan Dunning of the California Forest Experiment Station for many of the original drawings. Also to H. M. Butterfield for his painstaking work in making the stencils.

Woodbridge Metcalf,
Extension Forester

Berkeley, California
April, 1930.



Adapted from U.S.F.S. data

Woodbridge Metcalf
1924

DISTRIBUTION OF CALIFORNIA CONIFERS

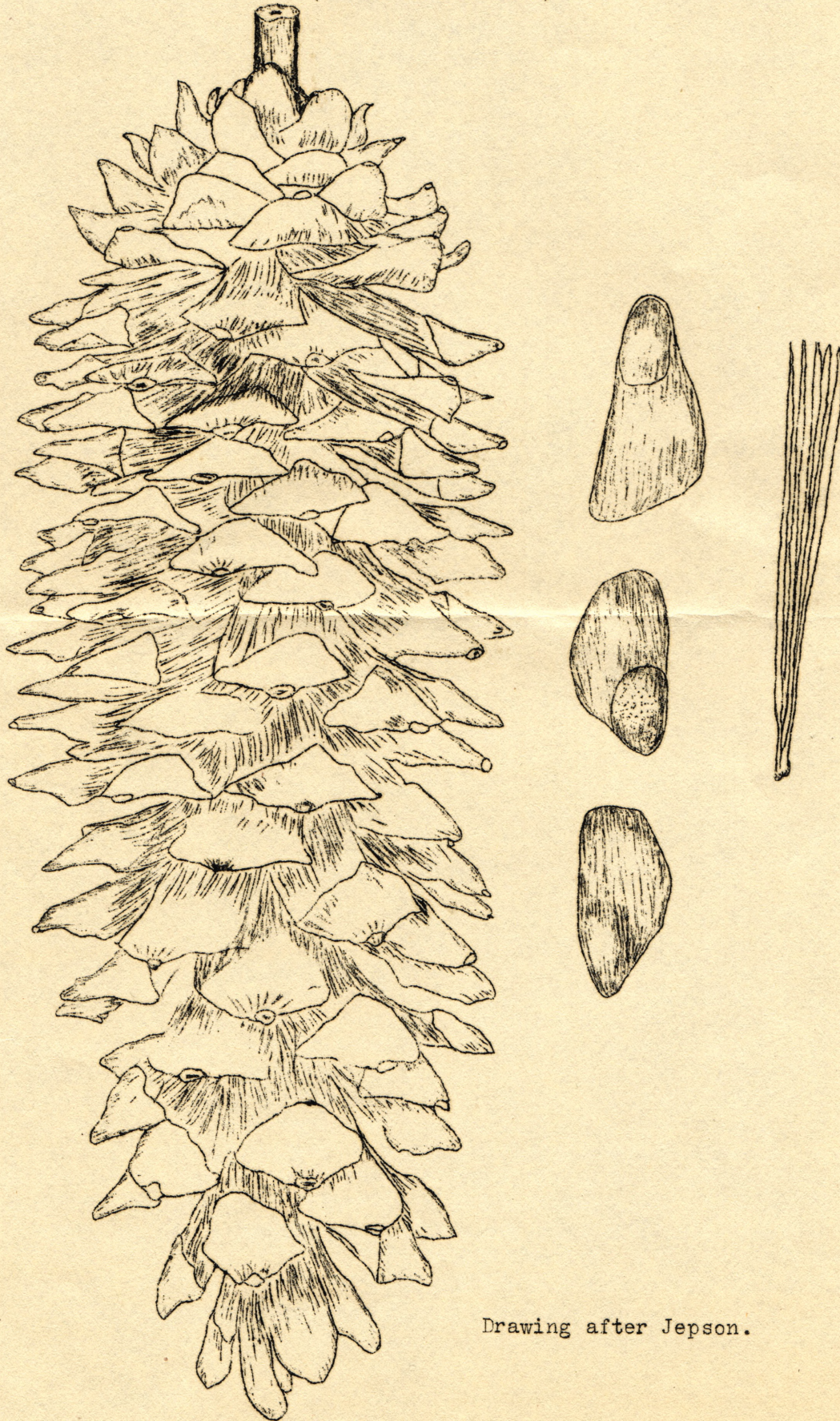
Scientific Name Common Name		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ABIETINAE	<i>Pinus lambertiana</i>	Sugar Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>monticola</i> A	W. White Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>flexilis</i> A	Limber Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>balfouriana</i> A	Foxtail Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>aristata</i> A	Bristle-cone P.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>albicaulis</i> A	White-bark P.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>monophylla</i>	1-leaf Pinon	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>parryana</i>	4-leaf Pinon	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>torreyana</i> c	Torrey Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>coulteri</i>	Coulter Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>sabiniana</i>	Digger Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>attenuata</i>	Knobcone Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>ponderosa</i>	W. Yellow Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>jeffreyi</i> c	Jeffrey Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>radiata</i>	Monterey Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>muricata</i> c	Bishop Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>contorta</i> c	Beach Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>murrayana</i> A	Lodgepole Pine	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TAXODINAE	<i>Pseudotsuga taxifolia</i>	Douglas Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>macrocarpa</i>	Big-cone Spruce	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Abies concolor</i>	White Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>grandis</i> c	Lowland W. Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>magnifica</i> A	Cal. Red Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>shastensis</i> A	Shasta Red Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>nobilis</i>	Noble Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>venusta</i> A	Bristle-cone Fir	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Picea sitchensis</i> c	Sitka Spruce	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>breweriana</i> A	Weeping Spruce	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CUPRESSINAE	" <i>engelmannii</i> A	Engelmann Spruce	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Tsuga heterophylla</i> c	Western Hemlock	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>mertensiana</i> A	Mt. Hemlock	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Sequoiadendron sempervirens</i> c	Redwood	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>washingtoniana</i> A	Big Tree	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Libocedrus decurrens</i>	Incense Cedar	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Thuja plicata</i> c	W. Red Cedar	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Chamaecyparis lawsoniana</i> c	Port Orford Cedar	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Cupressus macrocarpa</i> c	Monterey Cypress	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>goeyeniana</i>	Gowen Cypress	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
TAXACEAE	" <i>sargentii</i>	Sargent Cypress	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>macnabiana</i>	Mac Nab "	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>gudaloupensis</i> A	Tecate Cypress	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Juniperus occidentalis</i>	Western Juniper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>californica</i>	Calif. Juniper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>utahensis</i>	Utah Juniper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	" <i>communis</i>	Dwarf Juniper	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Taxus brevifolia</i>	Western Yew	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	<i>Forreya californica</i>	Calif. Nutmeg	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

A-Alpine distribution c-Coastwise distribution

Numbers refer to quadrangles on accompanying map. A dot indicates that the species is found in the corresponding quarter of that quadrangle

Adapted from U.S.F.S. data by Woodbridge Metcalf-1930

SUGAR PINE
(*PINUS LAMBERTIANA*)



Drawing after Jepson.

SOME MOUNTAIN FIVE-NEEDLE PINES

WESTERN WHITE PINE
(*Pinus monticola*)
x 2/3



LIMBER PINE
(*Pinus flexilis*)



FOXTAIL PINE
(*Pinus balfouriana*)

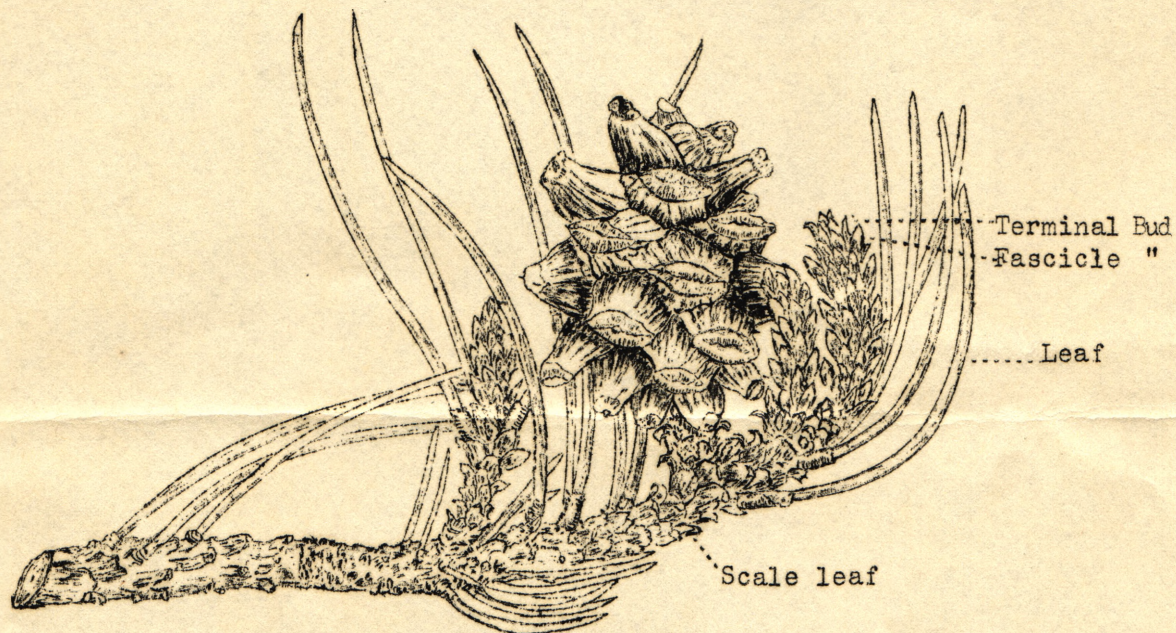


BRISTLEcone PINE
(*Pinus aristata*)



WHITEBARK PINE
(*Pinus albicaulis*)

SINGLE LEAF PINŌN
(PINUS MONOPHYLLA)



Branch with dry immature cone - x 1



One leaved Fascicle - x 2 $\frac{1}{2}$

COULTER PINE

(PINUS COULTERI)



DIGGER PINE

(PINUS SABINIANA)



Drawings after Sudworth
Seeds and leaves natural
size. Cones 1/2 size.

KNOBCONE PINE
(*PINUS ATTENUATA*)



Drawings after Sudworth and Jepson

WESTERN YELLOW PINE
(PINUS PONDEROSA)



Seed - x1

Cone - x1

PINE FAMILY - PINACEAE

MONTEREY PINE
(PINUS RADIATA)



Drawing after Sudworth

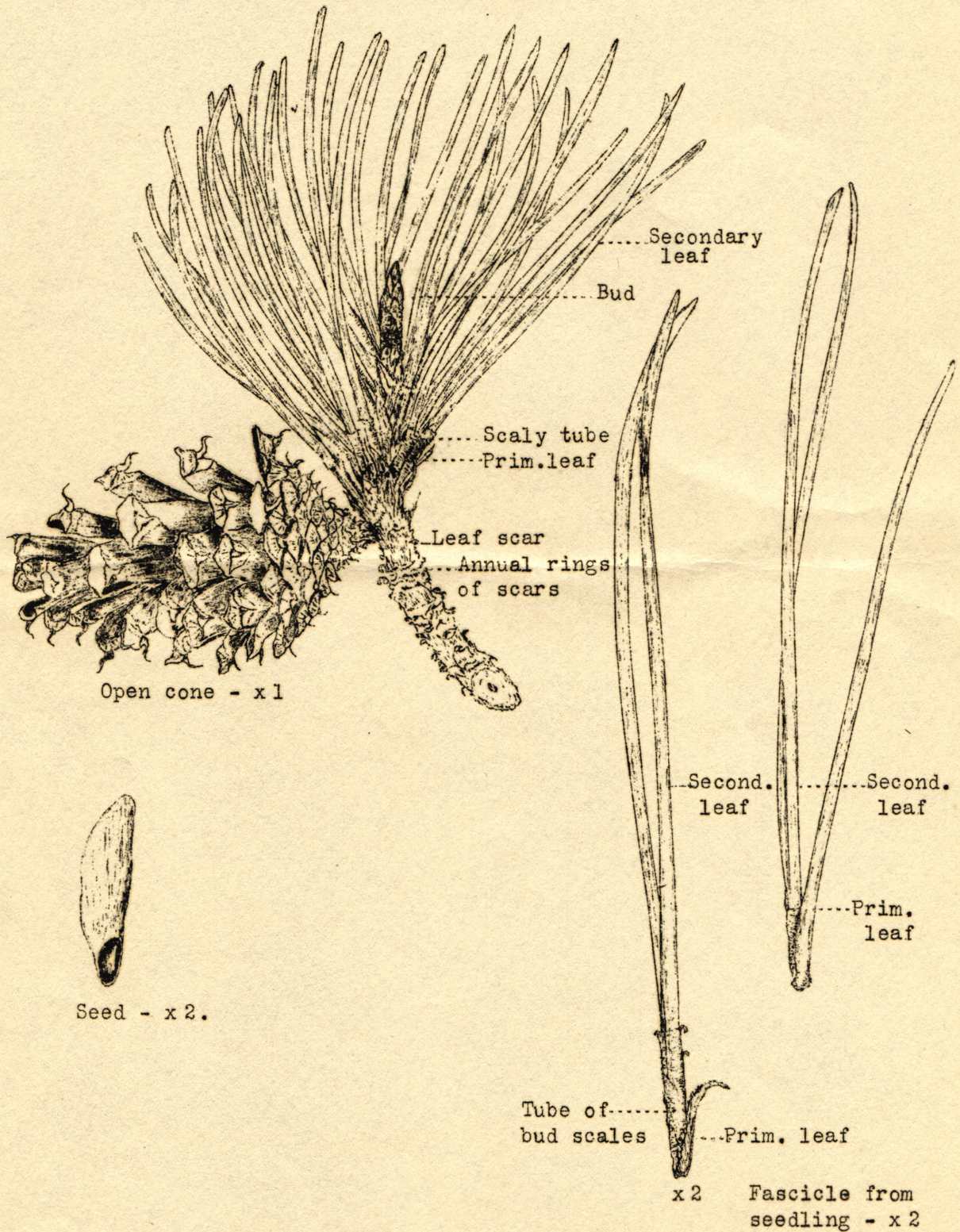
PINE FAMILY - PINACEAE

BISHOP PINE
(PINUS MURICATA)

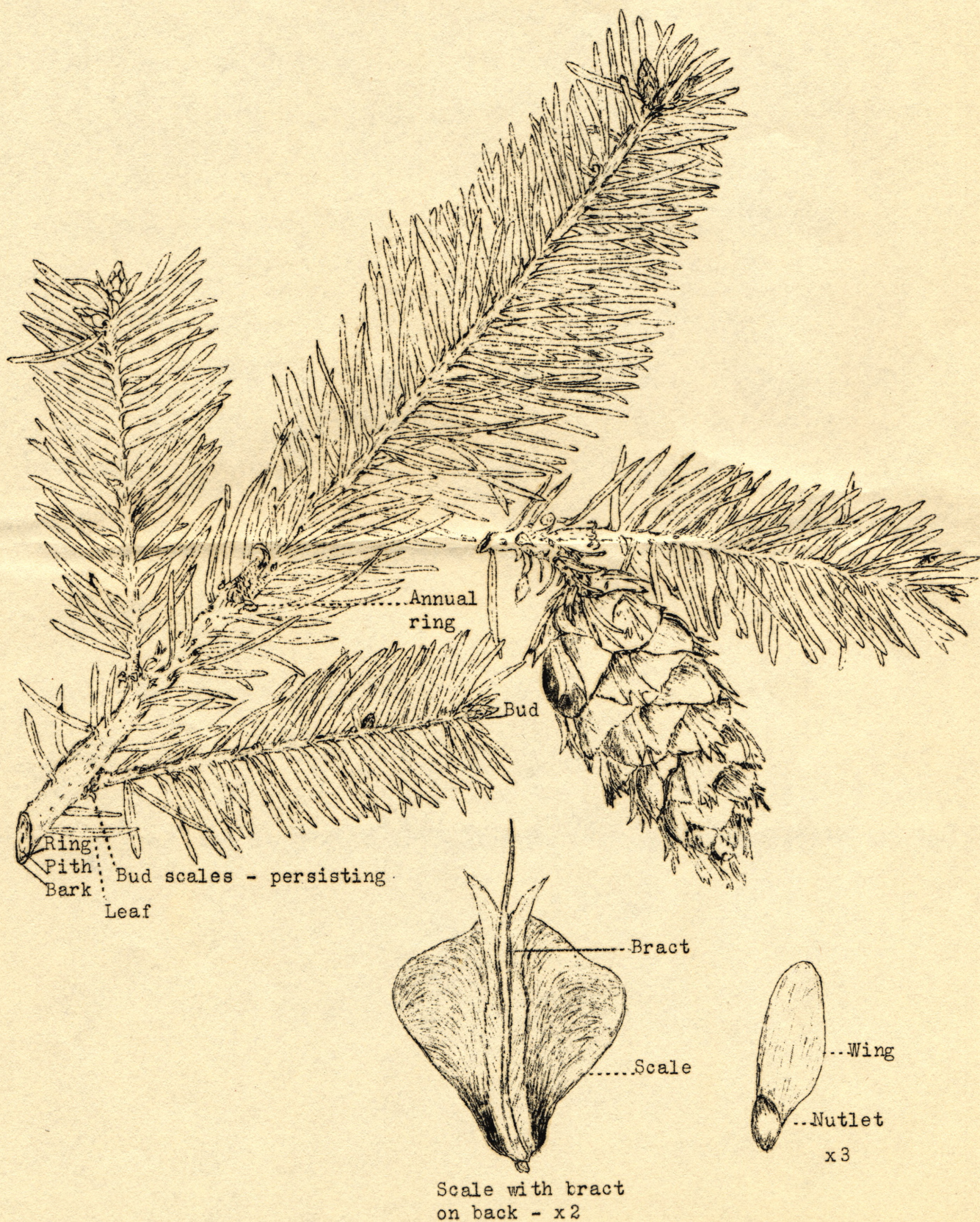


Drawings after Sudworth

LODGEPOLE OR TAMARAC PINE
(PINUS CONTORTA (MURRAYANA))

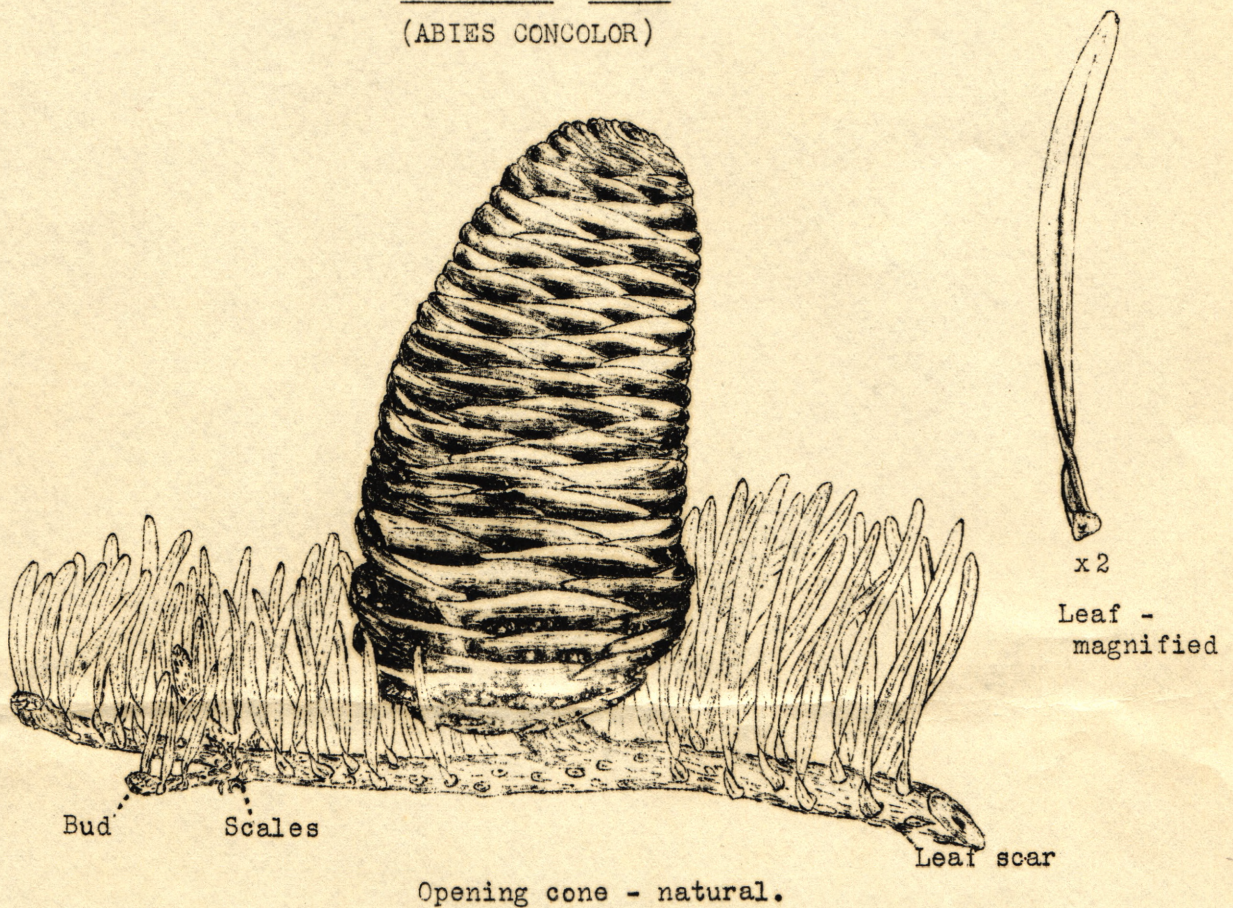


DOUGLAS FIR
(OREGON PINE)
(PSEUDOTSUGA TAXIFOLIA)

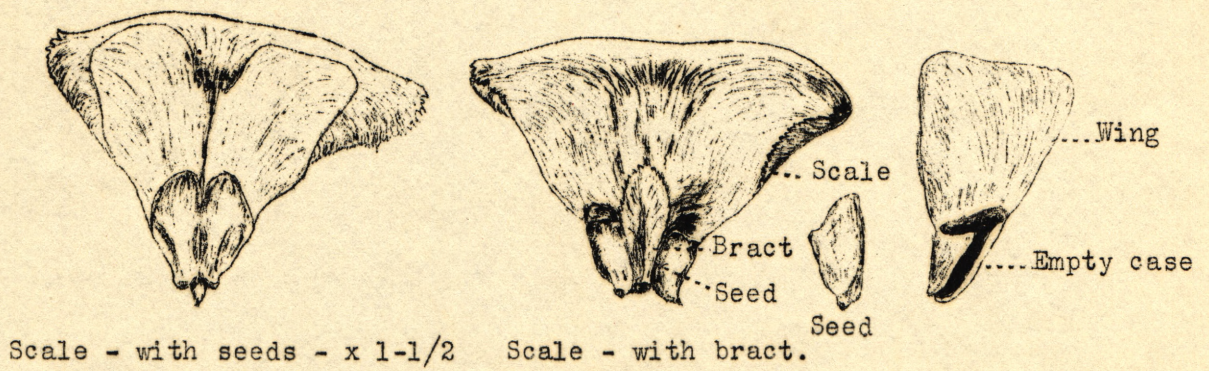


PINE FAMILY - PINACEAE

WHITE FIR
(ABIES CONCOLOR)



Opening cone - natural.

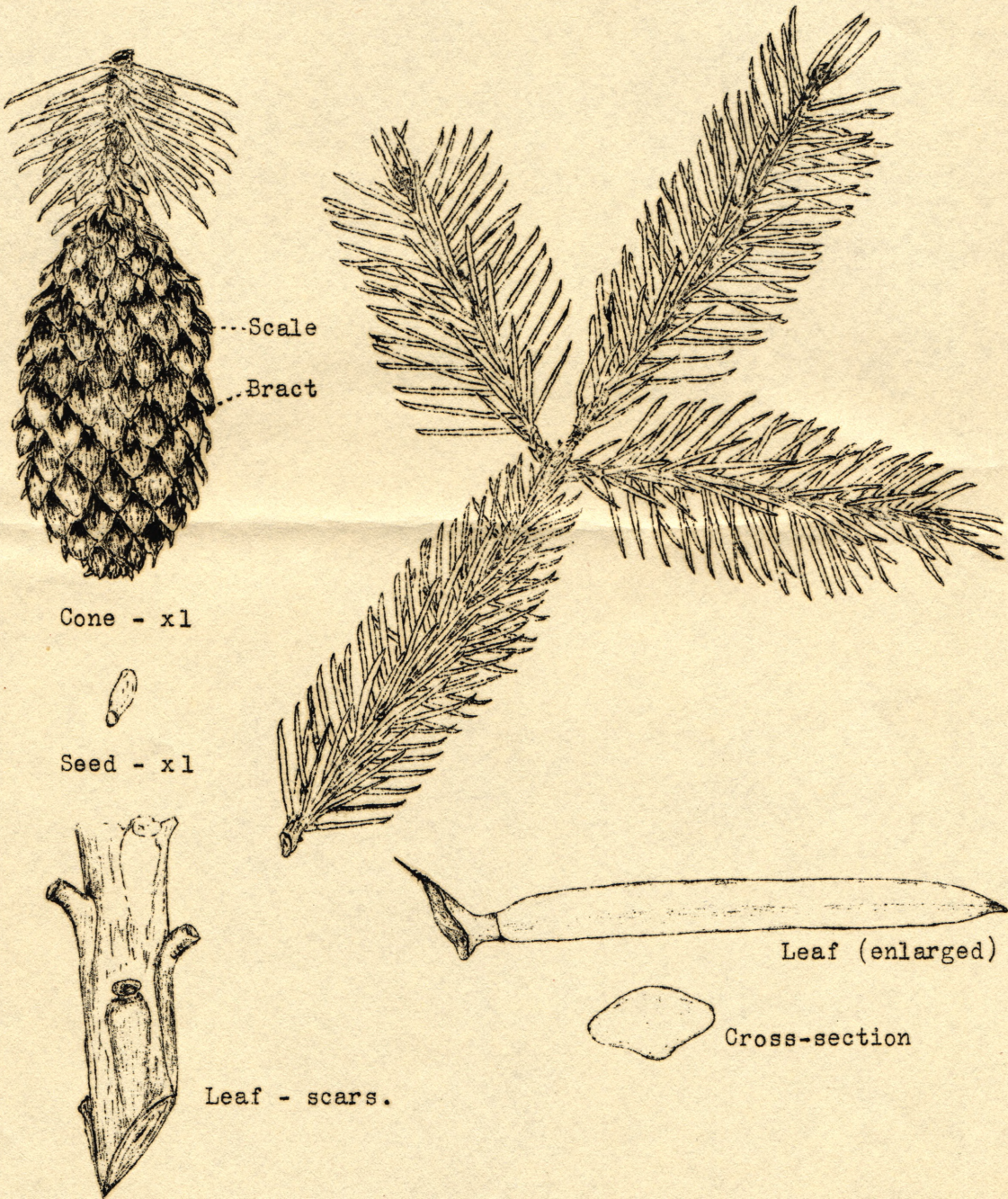


PINE FAMILY - PINACEAE
CALIFORNIA RED FIR
(SILVER FIR)
(ABIES MAGNIFICA)



Cone of Shasta variety after Jepson.
The species has the bracts hidden beneath the
cone scales.

SITKA OR TIDELAND SPRUCE
(PICEA SITCHENSIS)

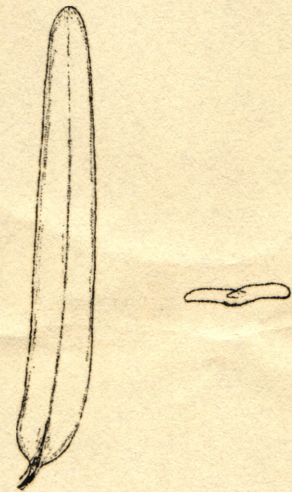


PINE FAMILY - PINACEAE

WESTERN HEMLOCK
(*TSUGA HETEROPHYLLA*)



Branchlet with cone - x1



Leaf (enlarged)

MOUNTAIN OR BLACK HEMLOCK

(*TSUGA MERTENSIANA*)



REDWOOD FAMILY - TAXODIACEAE

C O A S T R E D W O O D

SEQUOIA SEMPERVIRENS



S U G I

(CRYPTOMERIA JAPONICA)

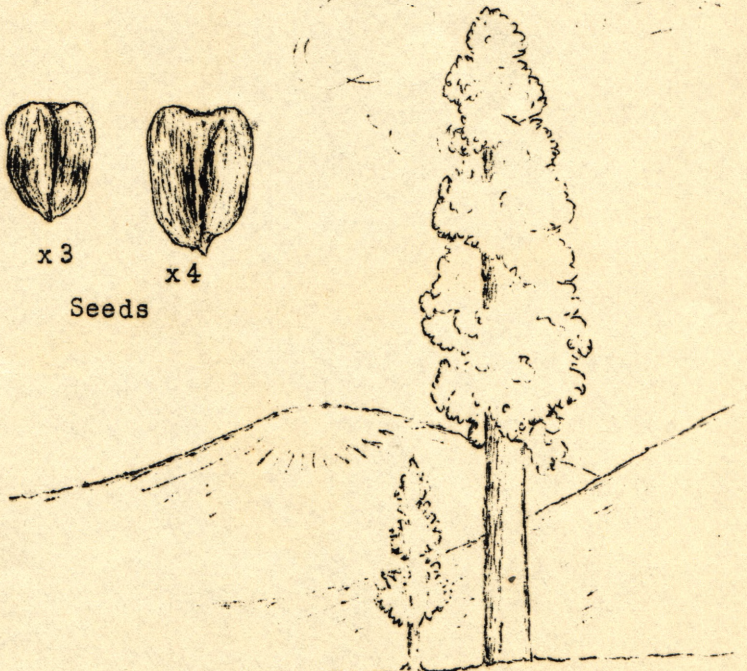
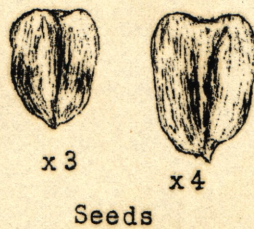
Japan

B I G T R E E
(SEQUOIA GIGANTEA)

Sierras

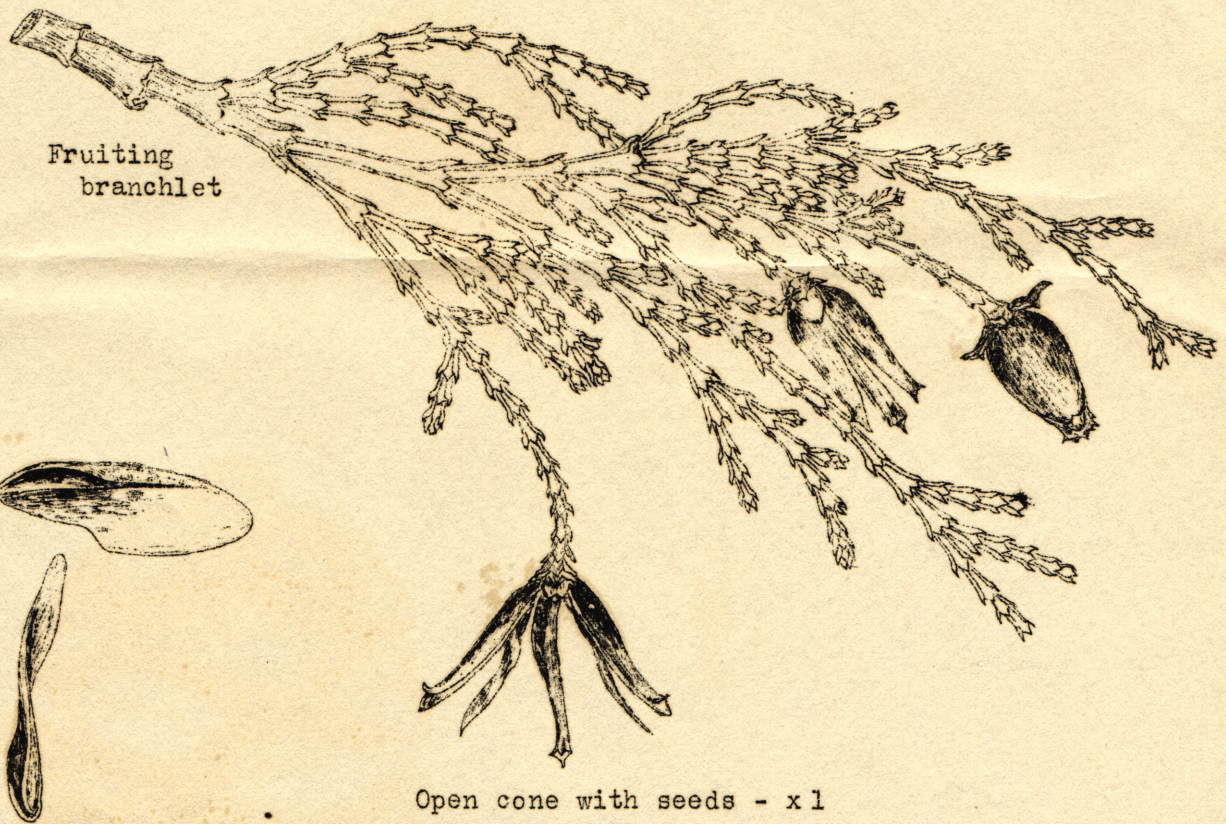


Large cone from Mariposa
Grove - x1



CYPRESS FAMILY - CUPRESSACEAE

I N C E N S E C E D A R
(LIBOCEDRUS DECURRENS)



Fruiting
branchlet

Seed - x 1-1/2

Open cone with seeds - x 1

WESTERN RED CEDAR
(*THUYA PLICATA*)



PORT ORFORD CEDAR
(*CHAMAECYPARIS LAWSONIANA*)



CYPRESS FAMILY - CUPRESSACEAE

I T A L I A N C Y P R E S S

(CUPRESSUS SEMPLERVIRENS)



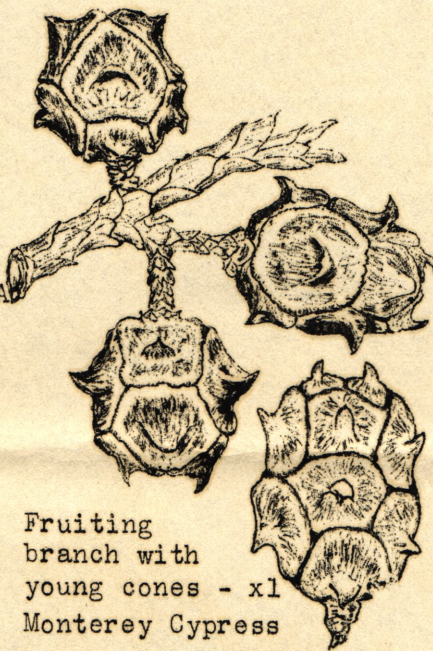
Cone of
Italian Cypress



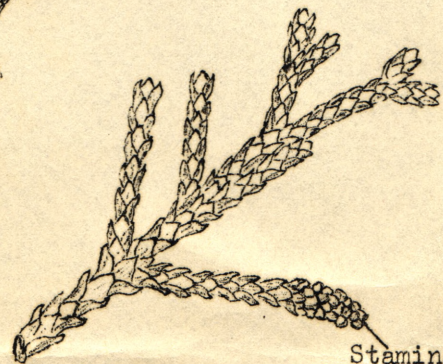
Foliage of
Italian Cypress

M O N T E R E Y
C Y P R E S S

CUPRESSUS MACROCARPA



Fruiting
branch with
young cones - x1
Monterey Cypress



Foliage of
Monterey Cypress
x2

Staminate
catkin



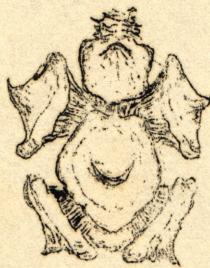
Seed - x8



Seeds

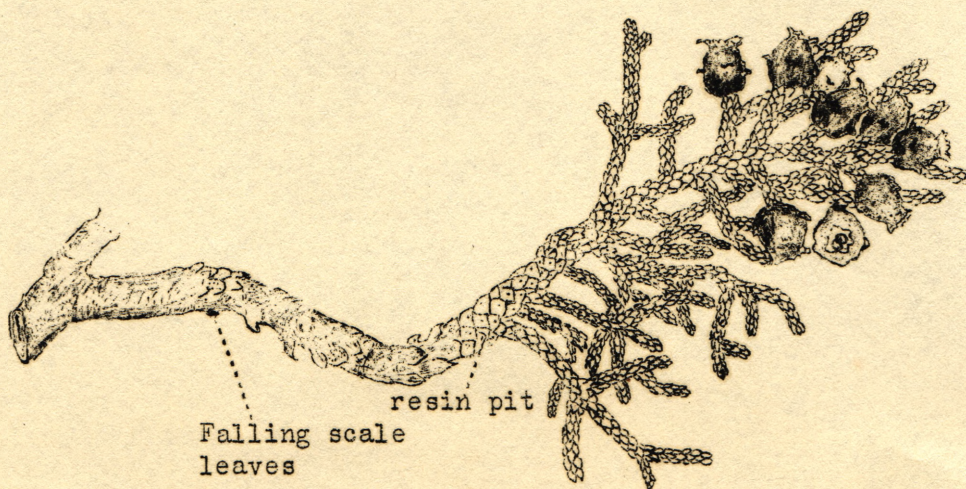
Scale

Longitudinal section of cone
Monterey Cypress



C A L I F O R N I A J U N I P E R

(JUNIPERUS CALIFORNICA)

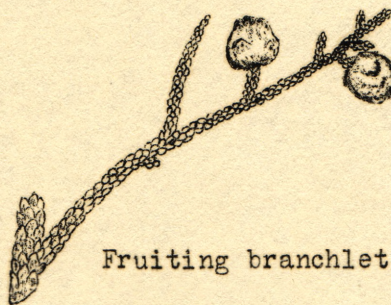


- seeds (enlarged 1-1/2)

Branchlet - with "berries" - x 1

S I E R R A J U N I P E R (WESTERN)

(JUNIPERUS OCCIDENTALIS)



Fruiting branchlet

YEW FAMILY - TAXACEAE

W E S T E R N Y E W
(TAXUS BREVIFOLIA)



Branch



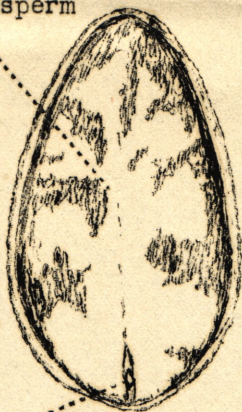
Berries - with seed

C A L I F O R N I A N U T M E G
(TORREYA CALIFORNICA)

Dry
Fruit -
x 1

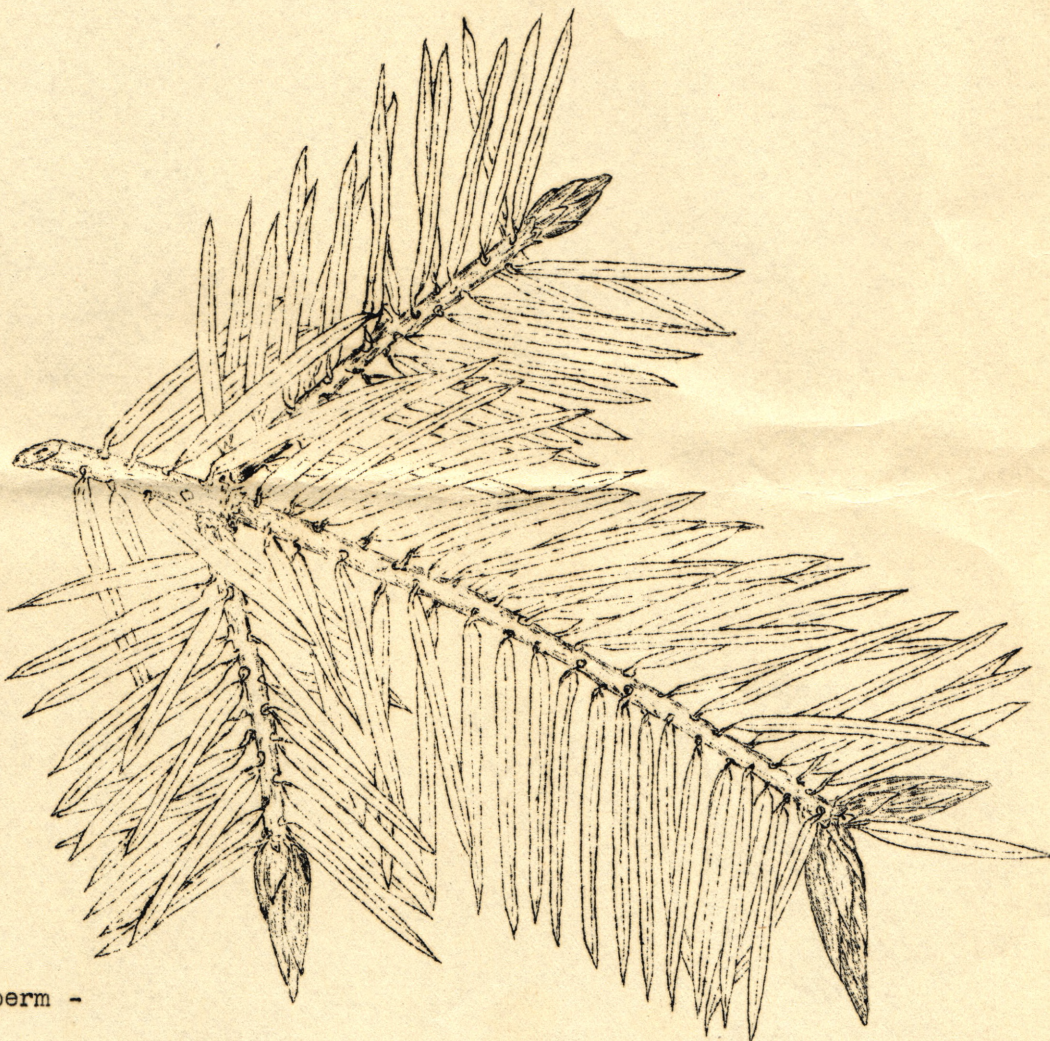


Endosperm



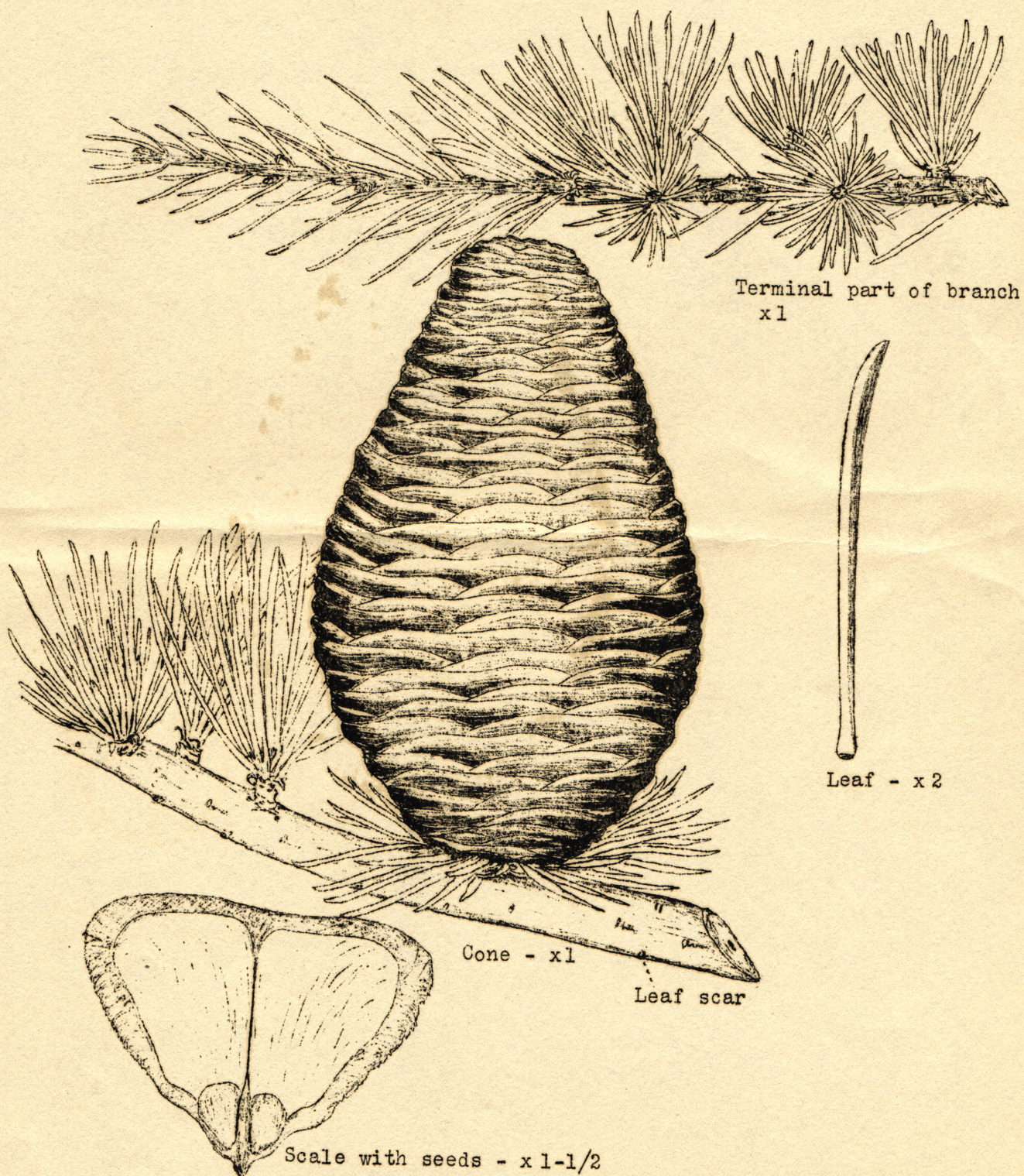
Embryo

Section - with
ruminating endosperm -
x 1



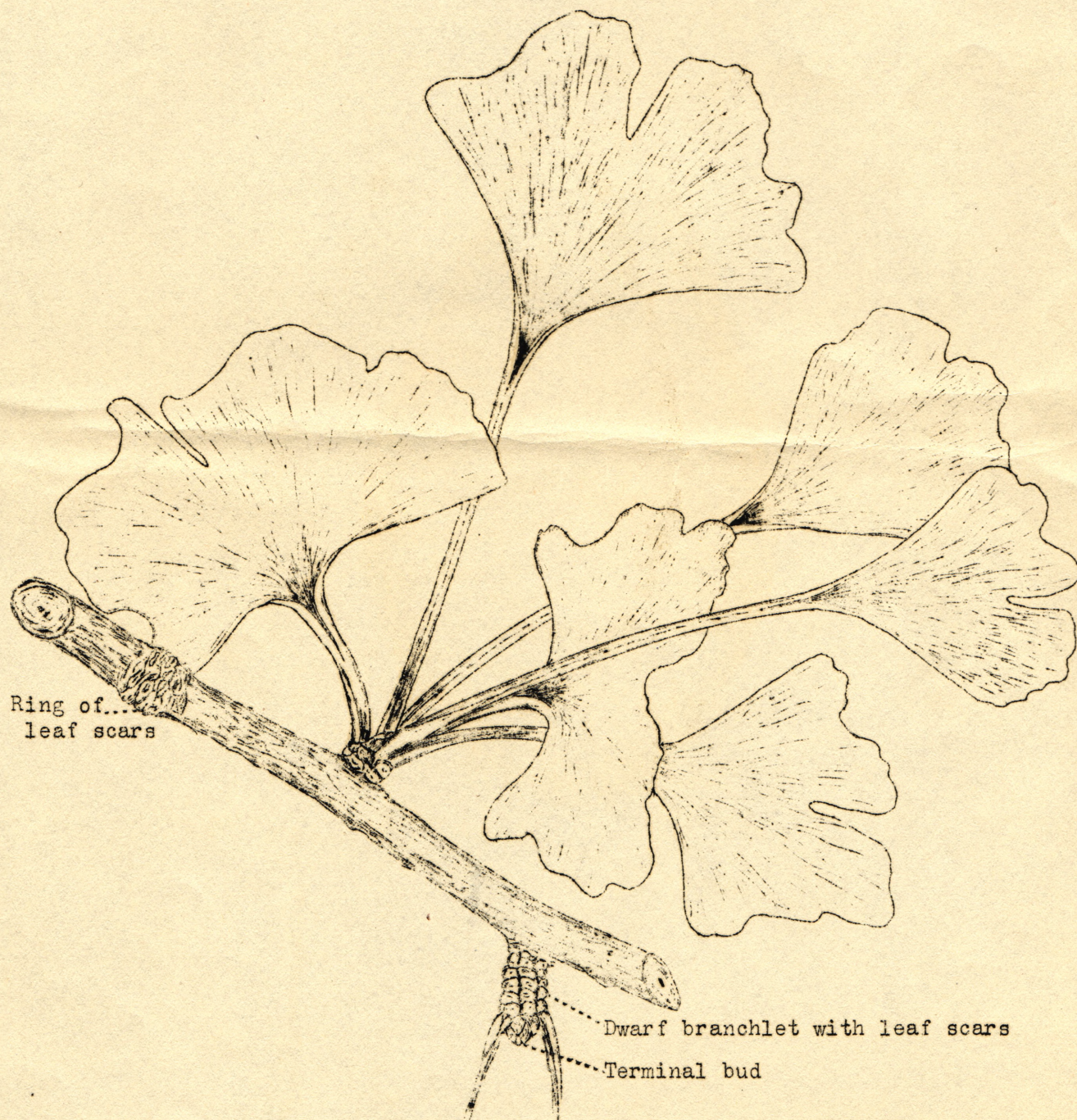
Branch with winter buds - x 1

DEODAR CEDAR (INDIA)
(CEDRUS DEODARA)



GINKGO FAMILY - GINKGOACEAE

CHINESE MAIDENHAIR TREE
(GINKGO BILOBA)



REFERENCES ON CALIFORNIA TREES

- W. L. Jepson - Trees of California
- W. L. Jepson - Sylva of California
- C. S. Sargent - Manual of the Trees of
North America
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1925
- J. B. Berry - Western Forest Trees
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