The UNIVERSITY OF B.C.
DEPARTMENT OF BOTANY.

Trees of British Columbia.

CLASSIFICATION
AND
ANALYTICAL TABLES.

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GENERA OF B.C. GYMNOSPERM TREES.

- Leaves Needles
  - Fruit:- Berry-like.
    - Leaves Flat. (TAXUS)
    - Leaves channelled. Awl shaped (JUNIPERUS)
  - Fruit:- Woody cones.
    - Leaves in bundles.
      - 2-5 Persistent. (PINUS)
      - Many, deciduous. (LARIX)
    - Leaves solitary.
      - Cones not erect. Scales persistent.
        - Leaves flat.
          - Bracts shorter than scales. (TSUGA)
          - Bracts longer, and 3 lobed. (PSEUDOTSUGA)
        - Leaves 4-sided. (PICEA)
      - Cones erect. Scales deciduous. (ABIES)
- Leaves Scale-like
  - Fruit:- Berry-like. (JUNIPERUS)
  - Fruit:- Woody cones
    - Cones ovate. (THUJA)
    - Globular. (CHAMECYPARIS)

GENERA OF B.C. ANGIOSPERM TREES

- **Evergreen.**
  - Leaves 3-nerved from base (CEANOTHUS)
  - " not " " " (ARBUTUS)
- **Deciduous.**
  - **Simple leaves.**
    - **Opposite.**
      - **Pinnately veined.** (CORNUS)
      - **Palmately veined.** (ACER)
    - **Alternate.**
      - **Flowers in Catkins.**
        - **Fruits cone-like.**
          - **Scales Deciduous.** (BETULA)
          - **Scales Persistent.** (ALNUS)
        - **Not cone-like.**
          - **Seed in Nut.**
            - In shallow woody cup. (QUERCUS)
            - In membranous bract. (CORYLUS)
          - **Seeds "Cottony".**
            - Buds 1 scaled. (SALIX)
            - Buds more than 1 scaled. (POPULUS)
      - **No Catkins.**
        - **Buds with Scales**
          - **Pome Fruits**
            - **Branches spinous.** (CRATAEGUS)
            - **Not spinous.**
              - Fruit yellow or red. (PYRUS)
              - Fruit blue-black. (AMELANCHIER)
          - **Stone Fruits**
            - Leaves serrate (PRUNUS)
            - Leaves entire (NUTTALLIA)
        - **Buds without Scales** (RHAMNUS)
  - **Compound leaves.**
    - **Alternate.**
      - Fruit a pod. (ROBINIA)
      - Fruit berry-like (PYRUS)
    - **Opposite.** (SAMBUCUS)

A B I E S - TRUE FIRS (So-called "Balsams"

	Leaves of lower branches	Resin ducts of leaves	Stomata	Cones	Bracts
A.grandis Lindl. (Grand Fir)	Usually 2-ranked Spreading horizontally	Near lower epiderm	On lower surface	Green	
A.amabilis (Dougl) Forbes. (Amabilis Fir).	Leaves on upper sides of branches more or less appressed to twigs.	Near lower epiderm	On lower surface	Purple	
A.lasiocarpa (Hook.) Nutt. (Alpine Fir.)	All leaves turned upwards	in mesophyll	On both surfaces	Purple	

A C E R - MAPLES

	Leaves	Bundle scars	Fruit	Wings.
A.macrophyllum Pursh. (Large-leaved Maple.)	Deeply 3-5 lobed	5 or more	Bristly	Form angles of 70°-90°
A.glabrum Torr. (Mountain Maple).	3-5 lobed	Usually 3	glabrous	Form angles of 70°-90°
A.circinatum Pursh. (Vine Maple)	5-9 lobed	Usually 3	Glabrous	Spreading horizontally

A L N U S - ALDERS

	Habit	Leaves	Peduncles	Flowers, etc.
A.rhombifolia Nutt. (White Alder)	Trees	Simply serrate	Shorter than the cone like fruits	Fruits not winged, stamens 2 or 3.
A.rubra Bong. (Red Alder)	Trees	Doubly serrate teeth broad	Shorter than the cone like fruits	Winged fruits flowers appear before leaves Stamens 4.
A.sitchensis (Regel). Sargent (Sitka Alder.)	Shrubs or small trees	Sharply doubly-serrate teeth small	Equalling or longer than the cone-like fruits.	Winged fruits Flowers appear with leaves Stamens 4.
A.tenuifolia Nutt. (Mountain Alder)	Shrub	Sharply doubly-serrate	Shorter than the cone-like fruits	Fruits not winged. Flowers appear before leaves. Stamens 4.

A M E L A N C H I E R - JUNE-BERRY

A.alnifolia Nutt. "Saskatoon"	Only B.C. species attaining a tree-like habit. Sometimes 20 feet high, more often shrubby.

ARBUTUS - MADRONA.

A.MENZIESII Pursh. (Madrona)	Only species in B.C.

B E T U L A - BIRCHES

	Habit	Bark	1st.yr.twigs	Leaves	Catkins. Long	Catkins. Thick.
B.occidentalis Hook (Western Birch).	Tree 100-120 ft	Separable reddish-brown to grayish white.	Pubescent, few warty resinous glands.	3-4 inches long Apex pointed	1 1/4" 1 1/2"	1/4" 1/2
B.alaskana Sargent. (Western White Birch).	Tree 30-80 ft	Separable reddish-brown to nearly white.	Glabrous thickly covered with resinous glands.	1 1/2-3" long Apex long pointed.	1"- to 1 1/4	1/3" 1/2 "
B.fontinalis Sargent. (Mountain Birch).	Small tree. 30-40	not separable dark brown	Covered with warty resinous glands	1-2" long Apex pointed	1" to 1 1/4	1/5 to 2/5
B.glandulosa Michx. (Dwarf Birch)	Shrub	Not separable Bark brown	With warty glands.	1/2"-1" long Apex rounded	1/2" to 1"	1/4" 1/3"
B.alba papyrifera Marsh. (Eastern White Birch)	B.C.records are doubtful. Probably a form of B.occidentalis.					

C E A N O T H U S - SNOWBUSH

C.velutinus var.laevigatus, T.& G. (Snowbush)
Only native variety with tree like habit; occasionally reaching 15-20 feet.

C H A M Æ C Y P A R I S - YELLOW "CEDAR", FALSE CYPRESS

C. nootkatensis, (Lamb.) Spach. Yellow "Cedar".
Only native species in B.C.

C O R N U S - DOGWOOD.

	Habit	Hairs on leaves and young shoots.	Flowers	Fruits
C.Nuttallii Audubon. (Nuttall's Dogwood).	Trees up to 100 ft.	Appressed	With large showy white bracts	Red in globular heads.
C.pubescens Nuttall. (Western Dogwood).	Shrubs 6-25 feet	Spreading.	Corymb of small white flowers.	White or lead colored drupes

C O R Y I U S - HAZEL, FILBERT

	Habit	Leaves	Involucral bracts
C.rostrata Ait. (Eastern or Beaked Hazel)	Shrubs to trees 4-35 ft.	Sub-orbicular to obovate	Form long tubular beak about twice length of nut.
C.rostrata var. californica DC.	Shrubs to trees 4-35 ft.	Ovate or narrowly oval.	Form short beak about half as long as nut.

C R A T Æ G U S - HAWTHORNS.

	Spines	Fruits.
C.Douglasii Lindl. (Short-spined Hawthorn)	$\frac{3}{4}$ - $1\frac{1}{2}$ inches long.	Black
C.columbiana Lindl. (Long-spined Hawthorn)	$1\frac{1}{4}$ - $2\frac{1}{2}$ inches long.	Red

J U N I P E R U S - RED "CEDAR"

	Habit	Leaves
J.scopulorum Sargent. (Red "Cedar"	Small tree	~~Scale-like on mature~~ Scale-like on mature twigs
J.communis var.montana L. (Common Juniper)	Shrub or low tree	All needle-like and sharp pointed.

L A R I X - LARCHES

	Young twigs	Leaves	Bracts	Distribution
A.Lyallii Parl. (Alpine Larch)	Densely hairy		Longer than scales	Rockies Alpine.
L.occidentalis Nuttall. (Western Larch	Sparsely hairy, or glabrous		Longer than scales	East of Cascades. Subalpine
L.americana Michx. (Tamarack), American Larch	Often with glaucous bloom		Shorter than scales	Liard region N.E.,B.C.

N U T T A L L I A - INDIAN PLUM

N.cerasiformis T. & G. (Indian Plum)	Only one species in B.C. Sometimes forms clumps 15-20 feet high.

P I C E A - SPRUCES

	Habit	Branchlets	Cones	Scales	Bracts	Distr.
P.mariana (Mill) B.S.P. (Black Spruce)	Small trees	Hairy	Persisting several years 1" long.	Erose	Oval erose	Northern B.C.
P.canadensis (Mill) B.S.P. (White Spruce)	Medium trees	Usually glabrous	Deciduous 1-2$\frac{1}{2}$ inches	Usually Entire Obovate Rounded at apex	Ovate Erose	Northern B.C.
P.Engelmanni (Parry) Engelm. (Engelmann Spruce)	Large trees	Hairy	Deciduous 1$\frac{1}{4}$ - 2$\frac{1}{2}$	Rhombic Lacinate to erose, rarely entire.	Ovate Erose	East of Cascades.
P.sitchensis (Bong.) Carr. (Sitka Spruce)	Large trees	Glabrous	Deciduous 2 - 3$\frac{1}{2}$ inches.	Rhombic Erose to lacinate	Lanceolate Entire or slightly erose	Chiefly in Coast region

P I N U S - PINES

	Leaves	Cones	Scales	Distribution
P.contorta Dougl. (Lodge-pole Pine, Jack Pine).	2 in bundle, 1-3 inches long.	Ovoid 1-2 inches long	Usually with prickles	Coast and Interior.
P.ponderosa Dougl. (Yellow Pine, Bull Pine.)	3 in bundle. 4-6 inches long.	Ovoid 3-5$\frac{1}{2}$ inches long.	With prickles	Interior.

P I N U S - PINES. (Continued)

	Leaves	Cones	Scales	Distribution
P.monticola Dougl. (Western White Pine)	5 in bundle 2-4 inches long.	Cylindrical green 6-11 inches long.	Thin No prickles	General
P.albicaulis Engelm. (White-bark Pine)	5 in bundle 1-3 inches long.	Ovoid to sub-globose. Purple 1½-3 inches long. Not opening widely at maturity.	Very thick fleshy. No prickles.	Alpine and Northern.
P.flexilis James. (Limber Pine)	5 in bundle 1-3 inches long.	Ovoid 3-8 inches long. Opening widely at maturity	Very thick No prickles	Mountains East of Cascades.

P O P U L U S - POPLAR, COTTONWOOD, ASPEN.

	Leaf stalk.	Stamens	Stigmas
P.Tremuloides Michx. (Aspen)	Compressed laterally	6-12	2
P.trichocarpa T. & G. (Black Cottonwood)	Terete (Cylindrical)	40-60	3
P.balsamifera L. (Balm of Gilead.) (Tacamahac)	Terete (Cylindrical)	20-30	2

P R U N U S - CHERRIES.

	Leaves	Flowers	Fruits
P.emarginata Douglas. (Wild Cherry)	Usually obtuse	In corymbs of 6-12 greenish white flowers.	Red to almost black. 1/4"- 1/2" dia.
P.pennsylvanica Linn. (Bird Cherry)	Usually acuminate; (rarely acute)	in umbels (rarely corymbs) of 3-5 creamy white flowers.	Light red 1/4 inch diameter.
P.demissa Nutt. (Bird Cherry)	Abruptly acuminate	Racemes of many pure white flowers.	Nearly black 1/4"- 1/2" dia

P S E U D O T S U G A - DOUGLAS FIR.

P.taxifolia (Lamb.) Britton (Douglas Fir)	Only one species in British Columbia. (Known also as P.Douglasii, and P.mucronata.)

P Y R U S - APPLE, MOUNTAIN ASH.

	Habit	Leaves
P.diversifolia Bong. (Wild Crab Apple)	Tree	Simple
P.aucuparia (L.) Bhrh. (Rowan-tree) (Introduced)	Tree	Compound
P.occidentalis Wats (Western Mountain Ash.)	Shrub	Dull, compound, serrate at apex only.
P.sitchensis (Roem.) Piper. (Sitka Mountain Ash.)	Shrub	Shinning, compound, serrate from near the base.

Q U E R C U S - Oak

Q.Garryana Douglas (Garry Oak)	Only one species in British Columbia

R H A M N U S - CASCARA-TREE

R.Purshiana DC. (Cascara-tree).	Only one arborescent species in B.C.

R O B I N I A - LOCUST, FALSE-ACACIA

R. Pseud-Acacia L. (False-Acacia)	An introduced tree which spreads readily by seeds and suckers.

S A L I X - WILLOWS.

Of more than 40 kinds of native Willows in British Columbia, about 12 kinds become arborescent.

	Height	Twigs	Leaves	Stamens	Ovary	Catkin
S.sitchensis Sanson (Sitka Willow)	25-30 ft	Dark, reddish brown, with hoary tomentum.	Conduplicate glabrate above lustrous tomentose beneath	1.	In flower pubescent.	Slender on short tomentose branchlets
S.Hookeriana Barg. (Hooker's Willow.	20-30 ft.	Dark, reddish brown, with hoary tomentum	Pubescent above, tomentose beneath.	2.	In flower pubescent in fruit glabrous	Thick more or less curved; on short tomentose branchlets.

S A L I X - WILLOWS. (Continued)

	Height	Twigs	Leaves	Stamens	Ovary	Catkins
S. Nuttallii Sarg. (Nuttall's or Scouler's Willow)	20-30 ft.	Slender more or less pendulous, 1st. yr. yellowish orange, 2nd. yr. reddish brown.	Involute Pubescen-glabrate	2	In flower hoary pubescent	Nearly sessile on short tomentose branchlet
S. Nuttallii var brachystachys Sarg.	40-70 ft.	Stouter than type. Roughened by leaf-scars.	Involute. Pubescent -glabrate	2	In flower hoary pubescent	Ditto. often strongly curved
S. Bebbiana Sarg. (Bebb's Willow	25 ft.	Brown Pubescent -glabrate.	Conduplicate. glabrate above glaucous beneath.	2	Villous	On short leafy branches.
S. sessilifolia Nutt. (Silver leaf Willow)	30 ft.	Reddish brown, at first hoary pubescent.	Involute, Glabrous or puberulent above, Silky Villous beneath.	2	Villous	Terminal and axillary on leafy branches.
S. cordata Muhl. (Heart-leaved or Diamond Willow.)	15-50 ft.	Puberulent or glabrous	Involute. Green and glabrous both sides	2	Glabrous	Terminal on short leaf branches
S. cordata var. MacKenzie's Hook. (MacKenzie's Willow).	15-18 ft.	Shining yellow, glabrous.	Involute. Glabrous above, glab. and glaucous beneath.	2	Glabrous	Terminal on short leafy branches.
S. fluviatilis Nutt. (Long-leaved Willow)	20-70 ft.	Orange to purplish red, glabrous.	Involute. Glabrous. Long and narrow.	2	Glabrous or pubescent	Terminal and axillary on leafy branches.
S. fluviatilis var. argyrophylla Sarg. (Sand-bar Willow)	25 ft.	Orange to purplish red. Glabrous	Involute. Silky tomentose (Pale)	2	Silky tomentose (Pale)	Terminal on leafy branches.

S A L I X - WILLOWS. (Continued)

	Height	Twigs	Leaves	Stamens	Ovary	Catkin
S.lasiandra Benth. (Cracked-bark Willow.	60 ft.	Raddish yellow. Slightly pubescent.	Involute 2 or more glands on petiole.	5-9	Glabrous	On leafy shoot
S.amygdaloides Anders. (Almond Willow)	60-70 feet.	Orange brown Glabrous	Revolute no glands. on petiole	5-9	Glabrous	On leafy shoots.

S A M B U C U S - ELDER, BOURTREE

	Inflorescence	Berries
S.glauca Nutt. (Blue Elderberry)	Flat topped.	Black covered with white bloom
S.racemosa. L. (Red Elderberry)	Pyramidal	Red
S.melanocarpa A.Gray (Black Elderberry)	Pyramidal	Black with no bloom

* T A X U S - YEW

T. brevifolia Nutt. (Yew Tree)	Only one native species in British Columbia.

T H U J A - GIANT "CEDAR" ARBOR-vitæ

T.plicata. Donn. (Giant "Cedar")	Only one native species in B.C. Locally called "Red Cedar" and "White Cedar" (There are no true Cedars native on this continent)

T S U G A - HEMLOCK SPRUCE.

	Leaves	Cones
T. heterophylla. (Raf) Sarg. (Western Hemlock)	Usually 2-ranked. Stomata on lower surface only. Flat on upper surface	Ovoid.
T.Mertensiana (Bong) Sargent (Mountain or Black Hemlock)	Not 2-ranked. Stomata on both surfaces. Convex or keeled on upper surface.	Oblong-cylindrical