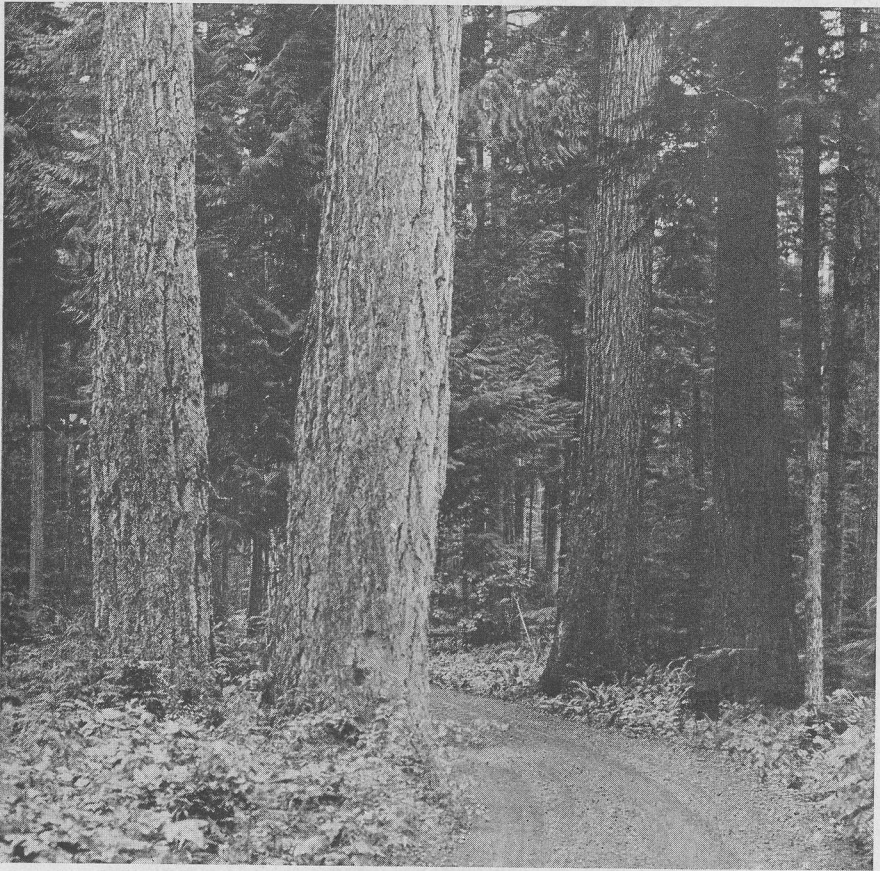


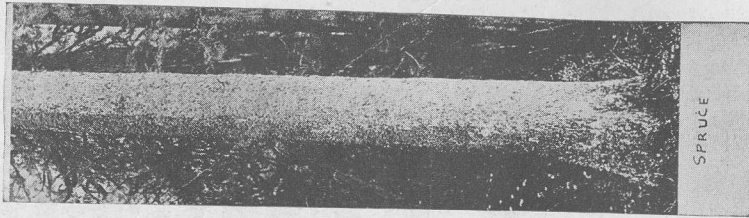
The
**VICTORIA
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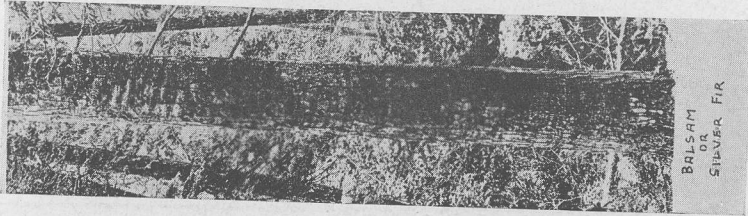


DOUGLAS FIR
at Cathedral Grove, Cameron Lake, V. I.



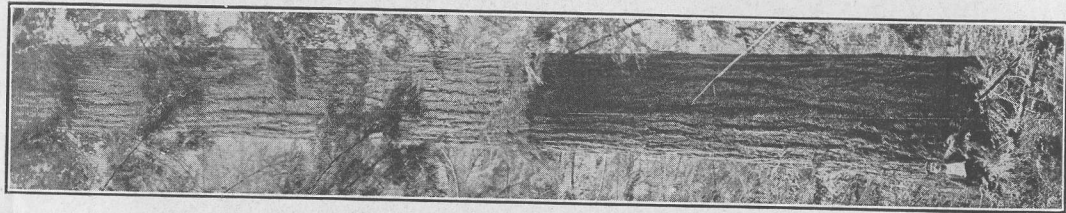
SPRUCE

6. *Picea sitchensis*.

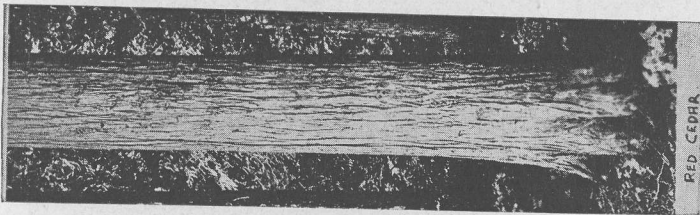


BALSAM OR SILVER FIR

5. *Abies grandis*.

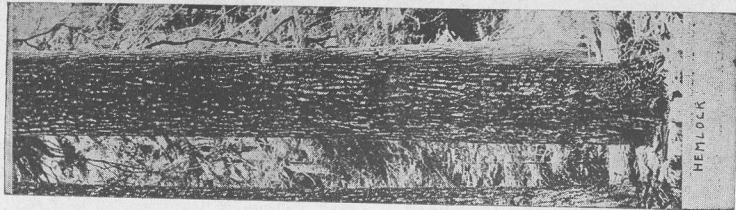


4. *Pseudotsuga taxifolia*.



RED CEDAR

3. *Thuja plicata*.



HEMLOCK

2. *Tsuga heterophylla*.

THE VICTORIA NATURALIST

Published by

The Victoria Natural History Society

The regular monthly meeting of the Society was held in the Reading room of the Provincial library on Tuesday, 12th December. Mr. L. C. Curtis acted as chairman. Mr. G. Hardy, Botanist of the Provincial Museum gave the address, a summary of which follows:-

Man, himself an animal, sometimes tends to under-rate the importance of the vegetable kingdom. The entire world of living things is dependent upon plants for those food compounds which they alone can elaborate by means of chlorophyll and sunlight. In order to carry out their complex functions plants are equipped with specialized organs which fall into four groups:- root, stem, leaves, and flower, each with its proper functions.

Plants have developed from very simple beginnings, the earliest having been simple, unspecialized cells, mere blobs of gelatinous protoplasm. These early forms, though simple, were highly efficient, and their descendants still exist almost unchanged. However, down through the ages there has been a steady increase in complexity, and at various periods the dominant position has been occupied by the algae, marine in habitat; lichens, mosses and liverworts, which led the advance into the terrestrial habitat, followed by the more highly specialized club mosses and ferns; and the flowering plants, which are the most complex and highly developed forms, though not necessarily the most recent.

The fundamental need of any plant is a means of reproduction. This was accomplished vegetatively by primitive plants - a method which is still open to all forms. However, the rejuvenation of the species calls for some form of sexual reproduction, accomplished in the higher forms by means of spores or seeds.

The speaker then proceeded to a discussion of the factors which have influenced the distribution of plants about the face of the globe. He pointed out that there have been great changes in the geographical range of some plants, for instance the Sequoias, which once ranged over Greenland and Spitzbergen. The apparently illogical distribution of some forms can be traced to the existence of former land bridges which have long since vanished.

He concluded by exhibiting specimens of plants which showed special adaptation to a variety of habitats, from salt water to mountain-tops. Eel-grass, a true flowering plant, produced gelatinous pollen, admirably suited for migration through water. Salicornia and Sand Verbenagrow on the shore, with their roots often in salt water, and are equipped to conserve fresh water. Other forms which grow in the acid soil of bogs are equipped with hairy leaves, to the same end. The yellow water lily has its stomata on the upper surface of the leaves to facilitate respiration. Efficient adaptation to insect pollination is exhibited by Kalmia and Balsamorhiza. Opuntia, the cactus of the Dry Interior, conserves water by adopting a nearly spherical form which gives the least evaporative surface per unit volume. The extreme alpine forms adopt a very compact habit, with almost no internodes, and very strong roots, to resist the force of avalanches and winter gales.

The evening concluded with the showing of two films which dealt with the fundamentals of plant growth, and the Nitrogen Cycle.

L. Colin Curtis.

SOME OF OUR TREES

For the benefit of the tenderfoot naturalist who may not be acquainted with all the trees discussed here, a key to their identity is included. Most botanical keys are wholly comprehensive and too technical for our purpose; therefore a simple, short key will, it is hoped, be serviceable. The keys given here are comprehensive within certain limitations. They are designed to facilitate identification of the trees native to valleys and lower slopes of the coast region. They are based on readily observable summer features of each coniferous species and each broadleaf genus. Because the keys have been limited to the characteristics of lowland trees, with their common names, there is added a list of all tree species to be found on the coast, with their universal scientific names included. The names are as given in Henry's Flora of Southern British Columbia and Griffith's Trees and Shrubs of British Columbia. Certain names in these references have recently been revised by some authorities, who have given a new specific name to the Blue-berried elder, and varietal names to our species of Black cottonwood, Western birch, Aspen, and Smooth maple. The list comprises thirty-four species that are practically always tree-like. Archdeacon Robert Connell has kindly supplied information with reference to species of local interest not included in the list. He points out that Betula occidentalis and Betula glandulosa, two birches, are found in increasing numbers on the Rithet Farm and are present at near-by Lost Lake in Saanich Municipality. Among the important species that may be classed as trees in local habitats are Silky willow (Salix sitchensis) and Hooker's willow (Salix Hookeriana), Also in this class are Corylus californica, Hazel, and Cornus pubescens, the shrubby dogwood with red branches. The Red-berried elder (Sambucus racemosa) should be mentioned as it is very abundant at the Coast. It is usually a shrub, but Mr. Connell points out that it is our more characteristic elder, and, incidentally, its fruit is occasionally yellow. Only

seven conifers and six broadleaf trees have any commercial value at the Coast, and these are indicated in the lists. All but one of the commercial species are used for lumber. The exception is Cascara, whose bark and wood yield the valuable tonic purgative called Cascara Sagrada. The supply is becoming scarce. During wartime the dried bark is selling for over twenty cents per pound locally. Strictly the leaves of conifers, juniper, yew and arbutus are deciduous, but are called "evergreen" because the annual crops of leaves overlap each other by three to eight years, therefore the trees always appear green.

The food value of some of our trees is surprising. J. R. Anderson in his Trees and Shrubs of British Columbia says the inner bark of Western hemlock was dried by the natives and later mixed with fish oil when needed for food. In a similar way the sap or inner bark of Lodgepole pine is collected in the spring. The fresh strips or dried cakes made from them were considered a delicacy. The fresh bark of cottonwood and aspen were used in the same way. Anyone marooned in the woods in the spring when other plant foods are scarce could still live off the land, with the aid of a knife or sharpened bone. There are four of our species which bear edible berries. Crabapples and Elder berries are used boiled. The Western choke cherry, at first astringent, is sweet and agreeable if allowed to mature, especially when bruised by being carried in a bag. Hawthorn berries are sweet, but dry. It is also well to remember that, because of their resin content, the leaves and heartwood of conifers are easier to ignite than those of the broadleaf trees.

The technical name of a plant may perpetuate the name of its discoverer. Douglas fir, our most valuable commercial tree at present, was at one time designated Pseudotsuga Douglasii after David Douglas, a Scottish

botanist who explored northwest America in the employ of the Hudson's Bay Company a century ago. The present name, Pseudotsuga taxifolia, indicates that botanists went to the Greek in an attempt to describe this botanical puzzle as a "false hemlock with a yew-like leaf". This tree was first noted by Archibald Menzies at Nootka, V.I. as "Hemlock Spruce", but it was re-discovered and introduced into England in 1827 by Douglas, who had been thoroughly instructed by Menzies in the plants he would find on this coast. Our hawthorn bears the name of Douglas. Our oak was given the name of Nicholas Garry, Secretary of the Hudson's Bay Company, by Douglas. All these trees and sixteen others were discovered by Dr. Menzies when he visited these shores with Capt. Vancouver in H.M.S. Discovery. At an anchorage across the Straits, just west of Puget Sound, Menzies saw the "Strawberry Tree" (Arbutus Menziesii) which is a plentiful ornament to the landscape from Victoria to Comox. At the same place he first recorded our oak, Broadleaf maple, alder and crab-apple. Cascara was discovered by Menzies, but was named Rhamnus Purshiana for the American botanist Pursh who described it from specimens collected by the ^{Lewis} and Clark expedition while Menzies' collections of ten years earlier were still awaiting description in England. An interesting description of the beautiful tree later named Arbutus Menziesii is contained in Menzies journal of the voyage, copies of which are in the Provincial Archives.

The scientific names are often descriptive of characteristics useful in the identification of plants. Thus, one of our maples is called Acer macrophyllum for its exceedingly large leaves, another Acer glabrum because the bark is smooth.

Our 2-needle

Pinus contorta is so named from the gnarled shape of our Lodgepole or Jack pine when growing exposed to the wind. Choke-cherry has the universal specific name demissa to describe its slender or weak stems, inclined to bend over. The species name for Juniperus scopulorum

where it is called Shorepine

rightly describes a dweller on the rocks. The name of our coast spruce Picea sitchensis indicates that it is found in Alaska, particularly at Sitka. Aspen is uniquely and well named to express a habit; who has not delighted in the quivering, trembling, green and white shimmer of Populus tremuloides in the slightest breeze of a summer day! Many plant names were evidently suggested by the flowers or fruit; we need only mention Sambucus glauca, the glaucous-berried elder with its large clusters of blue berries covered with a whitish bloom; or the cottonwood, fond reminder of Spring. The large cottonwood at Blanshard and McClure Streets has delighted many with the sweet resinous odour of its large sticky buds, and the cottony seed-capsules like masses of thistledown which give it the name trichocarpa.

Cedar is the "grand old man" of the community---- not tall, but rotund (the infolding or fluted base is indicated in the name "plicata" meaning "folded"); not always sound at heart, but most durable in life and when removed from the society of which it is so much a part. At Capilano River cedar was over one-thousand years old before it was cut to serve man as shingles and lumber.

Douglas fir is not quite a millenarian like Red cedar, but was stronger than cedar when proudly celebrating 800 years of leadership in the forest association at Cowichan Lake, Vancouver Island. Like many another plant whose annual flowering period is short, Douglas fir is particularly attractive when blossoming in early April. On trees over twenty years old its flaming flowers are like candles on Christmas trees, and pass as quickly. The long trident-shaped bracts are red "flames" on the flowering "cones" then standing upright on the branches, ready to receive wind-borne pollen.

Garry oak is the only timber oak of the Northwest. In Washington and British Columbia it is confined to the coast country. It is found on the Gulf Islands and on the warm rocky shoreline north as far as Comox. At Yale it is now a permanent part of the flora on the left bank of the Fraser River, and sixty miles from an isolated colony on a spur of Sumas Mountain. Glendenning (Can. Field-Naturalist 58: 61-65, 1944) gives evidence that these stands are recent extensions from the main distributional areas, but were somehow started before the advent of white men.

Garry oak is able to cope with the dry conditions of its habitat by conserving moisture in the leathery leaves which are very hairy on the under surface. The gnarled winter silhouette of the large trees in Beacon Hill Park is very attractive. A very fine specimen now fortunately and conveniently growing in the boulevard at the southwest corner of Rupert Street and Heywood Ave. in Victoria is 40 inches diameter and sixty-five feet high. A bigger tree is growing nearby on the western edge of the playing field in Beacon Hill park. It measures eighty feet in height and 51 inches diameter, which places it among the largest - and possibly oldest - of its kind.

Eric H. Garman.

To Marjorie 12/80

BH Park (mostly in Louis Lane)

Key to the EVERGREEN TREES native to the Coastal

lowlands of British Columbia.

("Lvs" abbreviation for "LEAVES")

- Lvs. broad ARBUTUS
- Lvs. needle- or scale-like.
- Lvs. needle-like.
- Lvs. in bundles. *SHORKE or*
 - Bundles of two leaves LODGEPOLE PINE..
 - Bundles of five leaves WESTERN WHITE PINE..
- Lvs. attached singly.
- Lvs. sharp-pointed.
 - Lvs. stiff & not two-ranked SITKA SPRUCE..
 - Lvs. soft & two-ranked WESTERN YEW..
- Lvs. blunt.
 - Lvs. shiny, 1 1/2"-2 1/2" long & tips notched on lower branches GRAND FIR..
 - Lvs. dullish, less than 1 1/2" long and not notched.
 - Lvs. appearing 2-ranked, less than 1" long WESTERN HEMLOCK..
 - Lvs. spirally attached, more than 1" long DOUGLAS FIR..
- Lvs. scale-like on mature branches.
 - Lvs. all scale-like, fruit a woody cone *an ovoid* WESTERN RED CEDAR
 - Lvs. needle-like on young twigs, scales *of cones - flowers* coalesce to become a berry-like fruit ROCKY MOUNTAIN JUNIPER..

also, Pond Pine - 3 needle
Yellow Cedar - ^{woody} cones globular

Key to the BROADLEAF TREES native to the coastal lowlands of British Columbia

("Lvs" abbreviation for "Leaves")

- Lvs. evergreen ARBUTUS
- Lvs. deciduous (all fall each year).
- Lvs. compound, composed of 3-9 leaflets ELDER
- Lvs. simple (not divided into leaflets).
- Lvs. opposite (arranged in pairs on the stem).
 - Lvs. lobed MAPLE
 - Lvs. not lobed DOGWOOD
- Lvs. alternate (arranged singly on the stem).
 - Lvs. lobed.
 - Lobes 5 to 7, lobes not toothed OAK
 - Lobes fewer and toothed.
 - Lvs. 3-lobed or without lobes CRAB-APPLE
 - Lvs. irregularly lobed or without lobes.. HAWTHORN
 - Lvs. not lobed.
 - Margin of lvs. doubly serrate or toothed.
 - Bark peels into thin sheets; rare on Vancouver Island BIRCH
 - Bark does not peel naturally; common on Vancouver Island ALDER
 - Margin of lvs. serrate to almost entire.
 - Small lvs. serrate; large lvs. serrate & lobed.
 - Stems with stout thorns over 1/2" long HAWTHORN
 - Stems without thorns CRAB-APPLE
 - All lvs. serrate or almost entire.
 - Lvs. prominently veined; buds without scales CASCARA
 - Lvs. obscurely veined; buds with covering of scales.
 - Buds covered with one scale WILLOW
 - Buds covered with several scales.
 - Bark thick, grey and hard.
 - Leaf-stalks flattened on two sides ASPEN
 - Leaf-stalks roundish in cross-section, COTTONWOOD
 - Bark thin, brown & papery on old trees.. CHERRY

BRITISH COLUMBIA COASTAL TREES

A list comprising 14 conifers and 20 broadleaf species.

Conifers *are cone-bearing trees,* including all evergreens with needle or scale-like leaves.

<u>Common name</u>	<u>Scientific name</u>
- Cedar <i>(Aborvitae)</i>	Thuja and Chamaecyparis
- western red (C.V.)	T. plicata
- yellow (C.V.)	C. nootkatensis
- Douglas fir (C.V.)	Pseudotsuga taxifolia
- Fir, (Balsam)	Abies
- grand (C.V.)	A. grandis
- lovely	A. amabilis
- alpine x	A. lasiocarpa
- Hemlock	Tsuga
- western (C.V.)	T. heterophylla
- mountain x	T. Mertensiana
- Juniper	Juniperus
- Rocky Mountain <i>(Lige tree at Deep Cove)</i>	J. scopulorum
- Pine	Pinus
- western white (C.V.) ...	P. monticola
- lodgepole	P. contorta
- white-bark x	P. albicaulis
- Spruce, sitka .. (C.V.)	Picea sitchensis
- Yew, western	Taxus brevifolia

Broadleaf Trees

Evergreen

Arbutus

Arbutus Menziesii

Deciduous

Alder

Alnus

red (C.V.)

A. rubra

green

A. sitchensis

mountain x

A. tenuifolia

Common Name

Scientific Name

Aspen	Populus tremuloides
Birch, western white (C.V.)	Betula occidentalis
Cascara	Rhamnus Purshiana
Cherry	Prunus
choke	P. demissa
wild	P. emarginata
Cottonwood, black .. (C.V.)	Populus trichocarpa
Crab-apple	Pyrus diversifolia
Dogwood, flowery	Cornus Nuttallii
Elder, blue-berried	Sambucus glauca
Hawthorn, black	Craetagus Douglasii
Maple	Acer
broadleaf (C.V.)	A. macrophyllum
smooth or dwarf	A. glabrum
Oak, garry	Quercus Garryana
Willow	Salix
black	S. lasiandra
Nuttall's	S. Nuttallii

x Indicates species occurring only above 2000' altitude on Vancouver Island.

(C.V.) indicates trees of commercial value at the coast.

Note: Authors' names are omitted to save space.

BIRD NOTES: Mr. J.O. Clay reports that a Humming Bird was heard and then seen feeding on flowers in his garden on the 11th day of November 1944. This is exceptional as they are seldom seen after the second week in Sept.

Ed.

NOTICE OF MEETINGS

Note: The Regular Monthly Meeting has been changed from the second Tuesday to the THIRD TUESDAY for this month only.

MONTHLY MEETING

Tuesday Jan.16th Provincial Library Reading Room.
Speaker: Dr. Joseph A.Pearce,
Director, Dominion Astrophysical Observatory,
on
"The Story of the Pleiades."

GROUP MEETINGS

Tuesday Jan.9th Marine Biology Mr.Cunningham
Biology Lab.,Victoria College, Joan Cres.

Tuesday Jan.23rd Botany Archdeacon Connell
"Flowering Plants"
Biology Lab.,Victoria College, Joan Cres.

Tuesday Jan.30th Zoology Mr. R. Watson
"Amphibians; Past & Present."
Biology Lab.,Victoria College, Joan Cres.

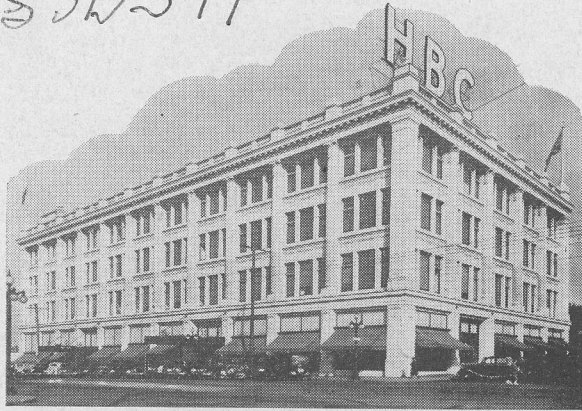
Tuesday Feb.6th OrnithologyMr. J. O. Clay
Biology Lab.,Victoria College, Joan Crea.



AN UNUSUAL GROUP
The five largest trees in the group are, from left to right, Douglas Fir, Western Hemlock, Western White Pine, Grand Fir, Western Red Cedar.
(Photo by J. D. Lacey Co.)

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NOTICE OF NEXT MEETING

The next meeting of the Society will be held in
READING ROOM OF PROVINCIAL LIBRARY, PARLIAMENT BUILDINGS
at 8 p.m. on Tuesday the 16th January, 1945