

The
**VICTORIA
NATURALIST**

Vol. 3, No. 1

April, 1946



EASTER LILIES

Photo by F. B. Pemberton

THE VICTORIA NATURALIST

Published by

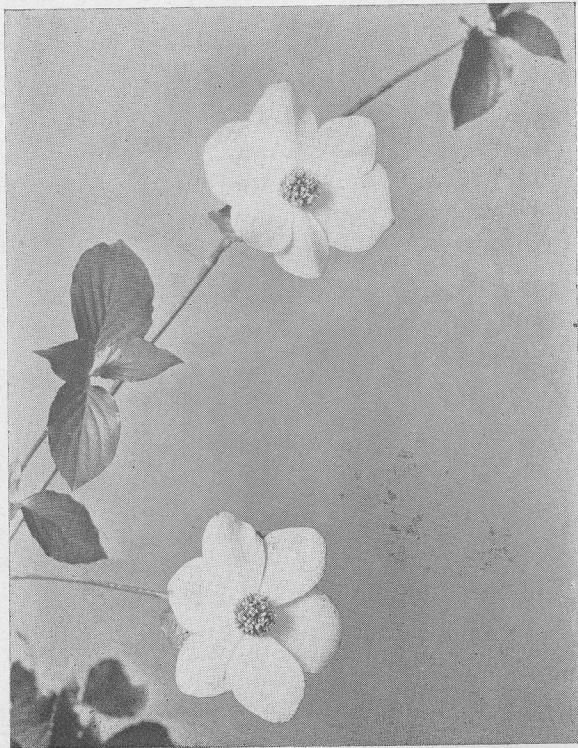
The Victoria Natural History Society

The Third Annual General Meeting of the Society was held in the Provincial Museum on the 12th of March 1946, with the retiring President Archdeacon R. Connell in the chair. The secretary, Miss Eugenie Perry read the minutes of the last annual meeting, and also gave a report on the activities of the Society for the closing year, stating that the Society had held a large number of meetings, as follows:

General meetings indoor				8	
Special with Pac. B & M Club				1	
Annual General meeting				<u>1</u>	10
Group Meetings	Indoor	Outdoor			
Botany	4	6	10		
Marine Biology	2	2	4		
Zoology	2	2	4		
Ornithology	6	4	10		
Entomology	2	1	3		
Geology	2	2	<u>4</u>	35	
				<u>9</u>	
Total Meetings for year					54

The slate of officers as proposed by the Nominating Committee was accepted in its entirety and the officers for the ensuing year are as follows:

- | | |
|---|-----------------------------------|
| <u>Hon. Presidents</u> | <u>Past President</u> |
| J. A. Munro, Dr. G.M. Weir. | Archdeacon R. Connell. |
| <u>President:</u> Dr. G.C. Carl. | <u>Secretary:</u> Miss M.E. Perry |
| <u>Vice-President:</u> Mrs. K. Drury. | |
| <u>Treasurer & Editor:</u> A. L. Meugens. | |
| <u>Chairmen of Groups:</u> | |
| Botany: J.F. Palmer. | Ornithology: J.O. Clay |
| Entomology: Wm. Downes. | Geology: Geo. Winkler |
| Programme: L. Colin Curtis | |
| Zoology: G. C. Carl. | |



(Knight's Studio)

FLOWERING DOGWOOD
(Cornus nuttalli)

The Treasurer then gave the financial statement for the year as follows:

<u>Receipts</u>			
Balance from previous year		\$	34.63
<u>Membership fees</u>			
34 Junior (9 free)	25.00		
77 Single	154.00		
18 Family	54.00		233.00
Total 129 members			
<u>Sundries</u>			1.37
11 Subscriptions paid in advance			26.00
			295.00
<u>Disbursements</u>			
<u>Secretary's expenses</u>			
Postage, notices etc.			8.73
<u>Sundries</u>			
Rents, banding etc.			27.00
<u>Magazine</u>			
Printing and postage			189.60
<u>Balance in Bank</u>			69.67
			\$ 295.00

The motion to change section 5 of the Constitution to read as published in the March issue was carried unanimously. Mr. W. Downes then gave an interesting talk which was illustrated with slides on -

"Peculiar Insects of B. C."

In opening his talk, Mr. Downes remarked that actually all insects are peculiar when closely considered, but that some have gross peculiarities that strike the eye. The insects are of very ancient lineage, and their fossil ancestors are found to have been exceedingly numerous as far back as the Cretaceous period.

The oldest known specimens were related to the present day Cockroach, whose structure shows very little change from theirs. Fossil remains indicate that at all periods, the insects have been well adapted for survival in the struggle for existence, and at present they outnumber all other animal forms.

Mr. Downes then proceeded to show a series of slides of members of two orders, the Hemiptera and the Homoptera. The Hemiptera are the true bugs - somewhat flattened insects which have sucking mouthparts, and wings which overlap, so that only half of the lower one is visible. Amongst the interesting forms shown were the lacebugs, back swimmers, waterboatmen, water striders, and giant water bugs. The latter should be handled with a certain amount of respect, as their proboscis is capable of piercing the toughest skin.

The Homoptera shown included Leaf Hoppers, Tree Hoppers, Spittle Bugs, and Cicadas, all of which have piercing mouthparts, but are uniformly vegetarian in diet.

A number of other slides were shown, dealing with the eggs of Butterflies showing striking sculpturing, Caterpillars, Chrysalids, and a few Moths and Butterflies. After this address Dr. Carl showed two excellent films of birds. The meeting then adjourned.

Japanese Starlings

The report of the appearance of two of these birds being seen in the vicinity of the Willows constitutes the first definite record of their appearance on the south end of the Island.

Considering their large increase in Vancouver and their habit of spreading out into the adjoining area during the nesting season it seems strange that they have not found their way to Nanaimo and Islands in the Straits.

This pair were first noted early in January and have been seen in the Willows district almost daily since. Latterly they have been seen carrying nesting material to a hole in an Oak tree just south of Cadboro Bay Road; the hole being about 20 feet from the ground.

Townsend's Solitaire

Townsend's Solitaires have been singing here during March. Several members of our Bird Group report having seen it and have listened to the song. Whether this song, slowly and sustained, poured down from distant treetops or came quietly from low bush or orchard trees near-by, it is one to be noted and remembered.

J.O. Clay.

JUNIOR GROUP NOTES

Early last year the Society decided to encourage junior members by offering one free junior membership in each school if the School boards would donate a like amount. Victoria availed itself of this offer with nine subscriptions, making eighteen junior members from the Victoria schools.

This year Saanich has applied for fifteen memberships and Oak Bay three which will mean an increase of thirty-six members from these districts. It is hoped that Esquimalt will follow suit.

Editor.

To New Junior Members:

I should like to welcome our second group of members from the Saanich and Oak Bay schools, and I hope that they will all find the pleasure from the Society that the rest of us have since we acquired our membership and with it the right to attend our regular grown-up meetings.

I might also mention that the Juniors enjoy all the privileges of the Society except the election of the Senior officers.

R.K. Duncan,
Chairman Junior Group.

Gull versus Crab

Recently, while watching sea-birds from my window, I saw a seagull struggling and thrashing about in a shallow pool. I went down to investigate. On approaching the water, the seagull shook itself free and flew away. In its place lay a "Kelp Crab" on its back. Evidently, the seagull had been fishing for sea-urchins when the crab caught hold of his wing. The crab is now a specimen in the museum.

Brian Ainscough.

Age, Origin and Composition of the Earth:

The first thing in considering the earth is its origin, and there has been much guessing about that, of course, and a number of theories have been propounded regarding how it came into existence.

No doubt most of you are familiar with the old nebular theory which postulated the origin of our solar system from one great body of gas revolving rapidly in space and throwing off gaseous rings which consolidated as planets and continued to revolve around the central body which formed the sun. That theory was proved unsound by the heterogeneity of the planetary orbits.

But a theory or an hypothesis is useful for this reason; it is a starting point from which there is always a chance to make improvements. The latest theory -I do not know how long it will hold- is that at some time in the distant past our sun was approached by a major body from space, probably of a like magnitude, and that these two bodies had a gravitational pull upon each other which caused large volumes of gas to be drawn out from the sun and possibly also from the visiting star. These gaseous emanations became separated from their parent body or bodies and by cooling and consolidation formed our planetary system.

We know that our planets are composed of the same materials as the sun - not in the same proportions, but of the same elements - and the amount of matter that would be taken from the sun to form all our planets would be something like 1.87% of the sun's mass. The fragments left in space and revolving about the sun would be hot, They cooled rather rapidly and coalesced to form Venus, Mars, Saturn, Pluto, Neptune, Jupiter, Earth, Mercury and their various satellites. Briefly stated, this is the planetesimal theory.

There has been a great deal of discussion about the age of the earth. Figures have been based largely on the fossil evidence, the amount of salt in the oceans and seas, and other supposed proofs.

A new measuring rod has come into existence in the last few decades that promises greater accuracy than any of the old methods.

With the discovery of radioactivity it became possible to gauge the age of rocks that contain no identifiable fossils. Radioactive minerals disintegrate at a certain known rate, regardless of heat and pressure, in the rocks in which they occur. By noting the change that has taken place an estimate can be made of the age of the host rocks in which they are found.

A test made on pegmatites from Haliburton County, Ontario, showed an age of one billion, 299 million years. Geologists are now inclined to agree that the earth is at least two billion years old.

The earth is composed of silicates and oxides in about the following proportions:

Oxygen - - - - -	46.43	per cent
Silicon - - - - -	27.77	" "
Aluminum - - - - -	8.14	" "
Iron - - - - -	5.12	" "
Calcium - - - - -	3.63	" "
Sodium - - - - -	2.85	" "
Potassium - - - - -	2.60	" "
Magnesium - - - - -	2.09	" "

This leaves for all the rest of the known elements 1.37 per cent; which includes all the metals we use except iron, aluminum and magnesium. This estimate does not take into account the atmosphere or the hydrosphere.

Very important in the earth's history are the geological processes that have changed and are still changing the face of the planet on which we live.

The earth looks very stable to us, but evidences mount up on all sides that immense alterations in its surface have occurred during past ages. It is difficult for us to realize that these changes are still going on, probably as rapidly as in the past.

Erosion is one of the most important of the geological processes. The erosive agents are water, air, frost, chemical decay. These have been at work at least since the atmosphere was formed. You can grasp the importance of erosion when you consider such a body as the moon, which has no atmosphere. Moon topography is static. It has no streams to carry materials, no lakes, seas or oceans to receive them.

Without the carbon dioxide of the air there can be no chemical decay. There was great volcanic activity there at one time, but that seems to have ended. It has a very rugged topography, but no life and no change, whereas real changes are taking place here continuously. Every land mass on earth is constantly under attack by the air and water surrounding it and the streams that drain it. Each stream is carrying material to its outlet and there dropping it to be picked up by lake or ocean currents. In addition to mud, sand and gravel, the streams carry certain elements in solution. The oceans have derived their salt and lime from the wearing down of continental land masses.

On the ocean floors around the continents materials brought in by the streams are spread to form in time what we call the sedimentary rocks. The first material to be dropped by a rapid stream is fairly coarse, consisting of pebbles and small boulders. Consolidated to form a rock, this would be known as a conglomerate. Next would be sand, forming a sandstone, and beyond that mud, which would form a shale. Limestone may form still further out as the result of the activities of living organisms, such as the corals, though some limestones are in part sedimentary. Gas, coal and oil come from the sedimentary rocks. Rock salt, gypsum and phosphate beds are mined in them also.

There is another major geological process of great importance, and that is caused by the necessity the earth is under to make isostatic adjustments when some particular segment of its crust becomes overloaded. This has occurred on numerous occasions in its geologic history by the forming of a thick prism of sediments on one of the continental shelves, causing a sinking of the floor, a rise in temperature and an outbreak of volcanic activity. During such convulsions the overloaded portion of the sea floor is elevated, folding and faulting on a large scale occurs, and the water-laid sediments appear as new mountain ranges. All the principal mountain ranges of the earth are composed of sedimentary rocks mainly.

The instability of the earth's crust is demonstrated by the fact that a disc of sediments 3,000 feet thick and 30 miles in diameter requires adjustment.

The disruption of the sea floor as a result of overloading causes the intrusion of hot masses of rocks from the earth's interior, which cooling under the cover of the disturbed sedimentaries, are known as the plutonic rocks. They form the core of all mountain ranges and are responsible for many of our mineral deposits. Those reaching the surface at the time are called extrusives, in which all lavas are included. The continental masses are the lightest portions of the earth, and the crustal rocks are the lightest portions of the continents. The specific gravity of the earth is more than double that of our surface rocks. The core is thought to be composed largely of such metals as iron, nickel and cobalt. Only the major subdivisions of the geological time table will be dealt with, beginning with the latest. The divisions have been made largely on the basis of the life that the earth has supported during its existence. The age in which we live includes the time that has passed since the last ice age and is known as Recent. The table follows:-

Recent	Existing Life Forms
Tertiary	Age of Mammals
Mesozoic	Age of Reptiles
Paleozoic	Age of Fishes
Proterozoic	Earliest Life
Archaeozoic	Age of no Life

The life of the Proterozoic was of a low, primitive character, such as bacteria, algae, etc. What appears from the fossil remains to have been a remarkable increase in life forms occurred in the lower Paleozoic, consisting largely of shell fish in a great variety of forms. It is thought this was due to the development of lime-secreting organisms. Those lasting shells would be unlikely to leave fossil remains. True fishes, as we know them, did not exist in the waters of the earth till much later.

No mammals, amphibians, reptiles or birds existed in the Paleozoic. The dominant life of that period was the life of the seas and oceans. That is why it has been called the Age of Fishes.

Reptiles evolved in the Mesozoic period and became the dominant type, so the Mesozoic was called the Age of Reptiles. Birds are an off-shoot from one or more of the reptile families. Mammals did not appear on the earth till late in the Mesozoic, but during the Tertiary period outstripped all competitors and became the supreme life form.

Plant life has had a long evolution from the single-celled algae to the stately trees that now cover much of our land.

The principal rock types are classed as -

- Sedimentary
- Igneous
- Metamorphic

Into one of these classes you can fit any rock you observe. If you see sandstones, shales, limes, conglomerates, quartzites, you can be sure that water has been at work on them in stream, lake bottom or ocean.

If you see granite, diorite, or any fairly coarse-grained "pepper and salt" rock in which the crystals interlock you can as a rule be sure you are looking at an igneous rock that has cooled under a cover of older rocks. The finer-grained lavas which are the extrusive equivalents, chemically, of the intrusive igneous rocks are less easily identified.

Metamorphic rocks may be either sedimentary or igneous in origin, but have been so altered that their original composition becomes uncertain. Serpentine, a silicate of magnesium, is always a metamorphic rock. Schist may be an altered sedimentary or an altered igneous rock. Marble is simply an altered limestone.

George E. Winkler.

SPRING FLOWERS

Easter Lily - - - - - *Erythronium oregonum* Applegate.

This is the season of the year when the old is ever new, for who can resist enthusing over the first lily of spring, as if it had never been seen before.

The fragile beauty of its pendant blooms arising from between twin leaves of mottled brown on green, and of an exquisite satiny texture, is a pleasing sight to winter-jaded nerves, and a fitting vanguard of the hosts of flowers to come.

The Easter Lily is unfortunate in not possessing a distinctive common name worthy of its charms, for this name is already held by the Bermuda Lily of commerce. Certain Indians called it Bear's-tooth from the resemblance of the narrow bulb to the tooth of a bear, and similarly dog's tooth, although these names have a better claim for recognition than the addition of the word 'violet' which is unaccountably appended to the latter.

At first upright, the bud of the Easter Lily soon assumes the pendant form just before exposing the treasures within. In this way the delicate organs of stamen and style are protected from the vicissitude of the weather in its woodland haunts. The style protrudes beyond the anthers with its sticky surface down.

Thus the visiting bee or fly is most likely to convey pollen from another flower with which its head has been deluged when seeking the nectar within, and so effect cross-pollination.

When the seeds begin to develop, the flowers wither and drop off while the swelling seed pod gradually re-assumes the erect position.

The dry flaky seeds are distributed in small numbers at a time by the shaking or jarring of the stem by wind or animal action.

While the Easter Lily will persist for some years from offsets of the bulb, seed is necessary for its continuous existence, hence in the interests of the future, some flowers should always be allowed to mature. Picking the leaves is the surest way to a rapid extermination of the plant.

Flowering Dogwood - - - - - *Cornus Nuttallii* T.&G

The large conspicuous inflorescence of the Flowering Dogwood is deservedly one of the floral attractions of the west coast.

The flowers appear before the leaves and seem to be suspended in mid-air, especially if against a dark background of coniferous trees. Later the flowers are followed by bright red balls of many seeds. Sometimes a second blooming occurs in the fall.

Each 'flower' of the Dogwood is really composed of a large number of small flowers massed in the centre. The large white 'petals' are bracts or floral leaves that serve as an attractive setting to gain attention from passing insects.

There are two species of Flowering Dogwood in North America, the one, shown in the illustration, and another in the east, the latter having among other differences a notch in each white bract.

Yellow Lady Slipper, Moccasin Flower

Cypripedium parviflorum Salish.

A member of the Orchid family, the Moccasin Flower is a specialist in the art of cross pollination, conserving its valuable pollen to the last grain. This it has achieved by the cunning arrangement of its flowers, for they are so constructed that the bee must enter in one door, thereby having the pollen on its back obtained from another flower, scraped off on to the stigma at the entrance. The front 'door' then closes by its elasticity, forcing the imprisoned insect to emerge from a small opening at the back, to which it is attracted by guiding hairs.

On its way out, the anthers are brushed against, thus giving the bee more pollen to transfer to the stigma of the next plant visited.

The Moccasin flower does not occur on Vancouver Island, but east of the Cascades mountains into Alberta.

George A. Hardy, Botanist,
Provincial Museum.

NOTICE OF MEETINGSMONTHLY MEETING

Tuesday
Apr. 9th
Victoria College Laboratory
Speaker: Dr. J. S. Stevenson
"Volcanoes & Earthquakes"

Group Meetings (Indoor)
at 8 p.m.

Tuesday
Apr. 2nd
Ornithology - - - - - Dr. H. A. Munson
at Mrs. Jones' home at 1320 Purcell Place

Tuesday
Apr. 16th
Entomology - - - - - Mr. W. Downes
on "Butterflies"
Dominion Entomology Lab. 545 Superior St.

Group Meetings (Outdoor)

Saturday
Apr. 13th
Ornithology - - - - - Mr. J. O. Clay
At Mr. J. B. Brousdell's residence
"Boxley" Arbutus Rd. Gordon Head.
Take V.I. Coach Lines Gordon Head Bus, at
1:05 or 2:00 p.m. Returning buses leave
Gordon Head 4:30 and 5:50 p.m.

Saturday
Apr. 20th:
Botany - - - - - Mr. W. H. Warren
Meet on the bridge in Beacon
Hill Park at 2:30 p.m.

Saturday
Apr. 27th:
Zoology - - - - - Dr. Clifford Carl
Goldstream Park
Take 1:30 bus from Coach Lines Depot
to Park, return by 4:37 bus arriving
in town 5:05 p.m. Fare 80¢ return.

Saturday
May 4th
Geology - - - - - Mr. Geo. Winkler
(No data)

Junior Group Meetings

Saturday Apr. 6th @ 10 a.m. In Provincial Museum

Saturday Apr. 13th @ 10 a.m. " "

On April 20, 27, May 4, the Juniors will join the
Seniors on the outings as outlined.

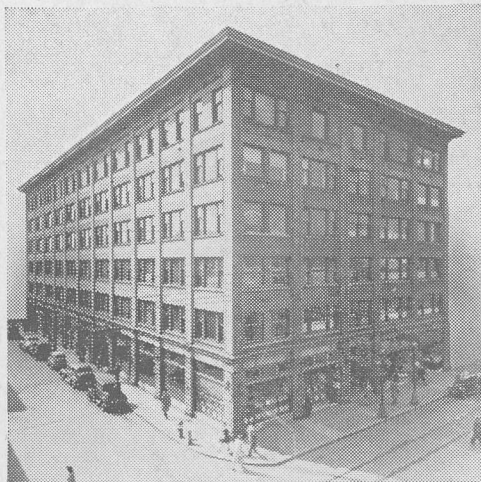


(Courtesy "Flowers of Western Canada")

YELLOW LADY SLIPPER—YELLOW ORCHID
(*Cypripedium parviflorum*)

To

Mrs Leveson Gower
1417 Fernwood Road
Victoria B. C.



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Annual Subscription: Single, \$2.00; Family, \$3.00; Junior, \$1.00.

NOTICE OF NEXT MEETING

The next meeting of the Society will be held in
VICTORIA COLLEGE LABORATORY — Joan Crescent
at 8 p.m. on Tuesday, the 9th April, 1946.

9890

CANADA