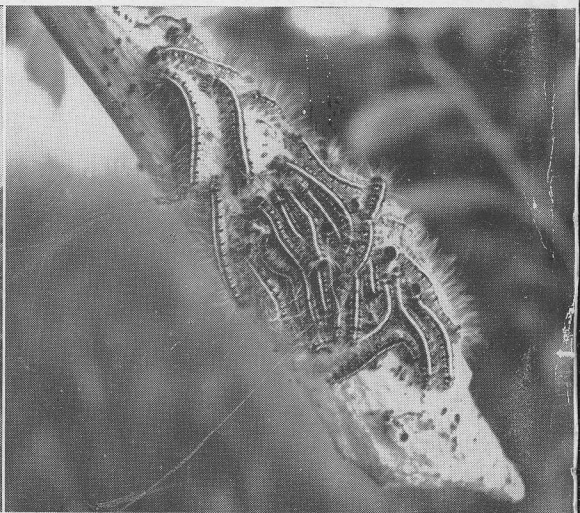


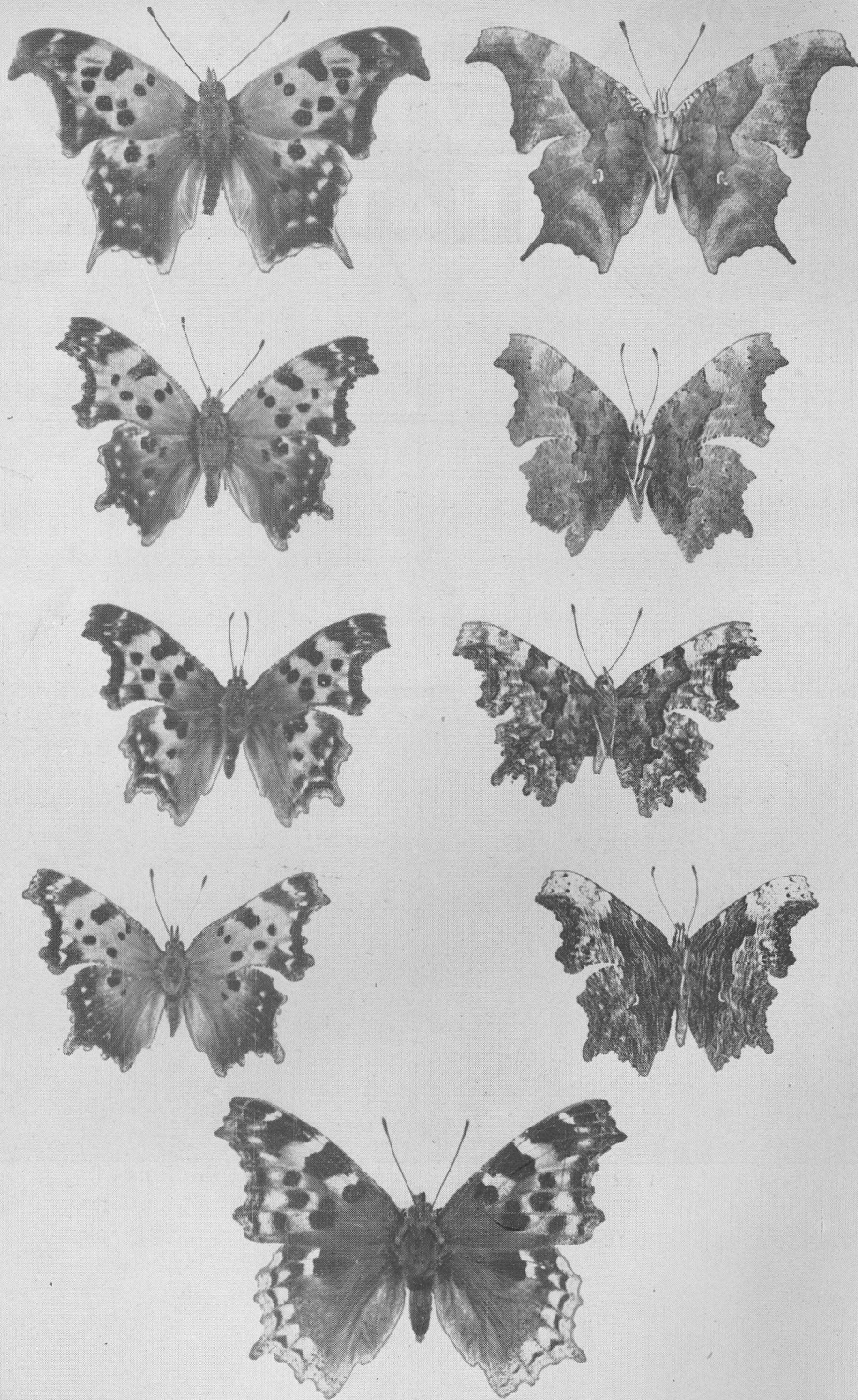
The
**VICTORIA
NATURALIST**

Vol. 2, No. 9

March, 1946



TENT CATERpillARS.

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 the 12th February with Mr. Winkler acting as Chairman. Dr. Carl gave notice of motion to change Section 5 of the Constitution of the Society to read as follows:

Section 5: Officers. "The officers of the Society shall consist of: Honorary Presidents, Past President, President, Vice-President, Secretary, Treasurer, Editor, Chairmen of the various groups. The executive shall be given the power to co-opt."

This motion will be voted on at the Annual Meeting to be held in the Provincial Museum on March 12th. Correspondence between the Secretary and the Game Department was read in connection with shooting at Swan Lake and it was the unanimous wish of the members present that everything possible should be done to preserve this lake as a bird sanctuary. Mr. Winkler then introduced Mr. L. Colin Curtis who spoke on--

Pioneer Naturalists of the Northwest

He outlined briefly the careers of some of the pioneer Naturalists who came to the Pacific Northwest in bygone days.

He began by pointing out that the names of many of these men have been perpetuated in the scientific names which have been given to some of the plants and animals discovered by them, and stated that his attention was first directed to the topic as a result of his curiosity concerning the repeated appearance of these names in the local flora and fauna.

The earliest naturalist of whom there is any record on the coast is David Nelson who visited Nootka and the northern coast in company with Captain Cook on his third Voyage. Nelson later sailed with Captain Bligh in the "Bounty", and died at Timor.

During the ensuing decade, the coast was visited by Colignon, Haenke, and Mozino who made collections at various points from California to Alaska.

The most important of the very early visitors was Archibald Menzies, who came to this coast twice. The first occasion was in 1787, under Capt. Colnett, and the second and longer visit was in company with Capt. Vancouver in 1792. Menzies added over 400 species to the list of known plants, and also made extensive studies of the climate, geology, soil conditions and ethnography of the region.

In 1804 the Lewis and Clarke expedition made its way overland to the mouth of the Columbia, and its leader Meriwether Lewis was specially prepared in the methods of Nature Study by Prof. Barton. He took back many specimens which were deposited in the Gray Herbarium. At about this period, several Russian naturalists came down the coast from Sitka, including Langsdorf, Chamisso, Escholtz, and Wrangell.

In 1824, there arrived on the coast two outstanding botanists, both pupils of Sir. J. W. Hooker. They were David Douglas and Dr. Scouler. The latter was surgeon of the H.B.Co. ship "William and Mary" and was only able to remain during the ship's stay on the coast. Douglas however, was a passenger, and remained to carry out extensive explorations throughout the territories of Oregon and New Caledonia. He returned to England by way of the Athabaska Pass and Hudson's Bay in 1827, and was the first white man to scale any of the Rocky Mountains, having climbed a peak which he named Mt. Hooker. He returned in 1829 and spent a season on the coast, and then started for home by a route which would have taken him through Alaska and Across Siberia, if he had not been turned back by Indian hostility and disease. He wintered in Hawaii, intending to try again the next year, but came to an untimely end in the Islands.

Dr. W. F. Tolmie arrived in the service of the H.B. Co. in 1833, and as a pupil of Hooker should, at once interested himself in the flora and fauna of the region. He was the first white man to scale Mt. Rainier. He made great contributions to the knowledge of the Indian tribes.

David Lyall and John K. Lord were both attached to the International Boundary Commission, although in their writings, neither makes any mention of the other. Lyall worked chiefly among the Alpine flora, while Lord was primarily a zoologist. They covered the boundary country from the coast to the eastern flank of the Rockies.

Nuttall and Howell were American workers who dealt with the Oregon country. The former a professional and the latter an amateur printer, each set up the type for his own publications.

Dr. C.F. Newcombe was a recent resident of Victoria, who made great contributions to our knowledge of the Indian tribes, as well as the botany and zoology of the Province.

Prof. J.K. Henry, a former teacher of Victoria High School, spent thirty years on his "Flora of Southern B. C." which is the standard work in this field.

Death of Trumpeter Swans:

A report that swans were dying in Ruggles Swamp near Hilliers, Vancouver Island, was verified on February 16th, 1946, when investigation revealed a number of dead and sick birds.

From evidence gathered on the spot and from post mortem examination it was determined that the swans were dying of lead poisoning produced by gun-shot pellets possibly picked up on some nearby feeding area. Thirteen birds were involved of which only four were adults. When it is realized that the total number of Trumpeter swans in existence is perilously small it is regrettable that such a tragedy should occur among birds of our local population.

Note: All illustrations in this number of both Tent Caterpillars and Butterflies are through the courtesy of Canadian Nature Magazine, Toronto, Canada.

Nesting of the Black Oyster Catcher in B. C.

On May 31, 1931, a visit was paid to the small rocky island known as "White Rock". This island which lies outside, and a little north of Tofino, V.I., is only about an acre in extent, and on it is operated an acetylene signal light. It is bare of growth, except for a small patch, 20 x 30 ft., covered with coarse, thick grass and weeds, and with a few salmonberry bushes.

A mixed lot of cormorants, estimated to number about 400 individuals, of which 75% were Brandts *Phalacrocorax penicillatus*, and 25% Baird Cormorants *Phalacrocorax pelagicus resplendens* flew from the rocky top and sides of White Rock as we approached.

Six pairs of Black Oyster Catchers were apparently nesting on top of White Rock. Four nests containing eggs were found, as well as a fifth nest being in course of preparation. The partially completed nests of fifteen glaucous winged gulls, *Larus glaucescens*, were also in evidence, but none contained eggs.

The first Oyster Catcher's nest found contained three eggs, and these were lying in a neatly made nest of shells, pebbles, sticks, and crab remains, and partly concealed by the grass under a salmonberry bush.

The second nest also held three eggs, and this nest consisted mainly of small pebbles in a recess in the rocks.

The third and fourth nests each contained two eggs, and these nests were carefully made of small pebbles on exposed bare rock.

The week previous to the visit to White Rock, a visit had been made to another low, rocky island some miles distant, and on this occasion twenty-five Black Oyster Catchers were seen en route, and forty more were counted on the island, which had an area of about ten acres. No nests were found on this occasion.

Kenneth Racey.

Notes on the Swarming of Termites.

It is probably unnecessary to state that the inspiration for putting together these notes on the swarming of Termites was drawn from Dr. Carl's article on the same subject appearing in the November issue of "The Victoria Naturalist". This article included also a short description of the two species of Termites found in B. C., a repetition of which would be superfluous.

I was able to observe no less than four swarms of the *Reticulitermes Hesperus* during the late summer of 1945. Three occurred during the last week of August, one in early September.

Two swarms, both on the same day, emerged from a rocky hillside. One, presumably, from the middle of a gravel road. The fourth colony had apparently selected a most unusual site, at any rate, the swarm was emerging from a crack in the cement walk of a busy street in the city of Nanaimo.

Some digging with a trowel was done on the point of emergence of the first swarm. The ground was mostly broken pieces of rock, with very little soil. I turned up several worker termites, and a few very small light brown ants.

My recording of swarm Number Three is mostly on the basis of some investigating done the previous May. At this time I had noticed tiny piles of sand being thrown up on the surface of a little used gravel roadway. I still believe these were the work of ants, but some excavating with a screw-driver, the only tool available, produced one worker *R. hesperus*. No flight of "queens" could occur at this season, yet the worker was found amongst pure sand or gravel, with no signs of rotten wood. The following August while cycling along this road, several winged specimens of *R. hesperus* flew against me and clung to my clothing.

It is particularly interesting to note that weather conditions were nearly the same on each occasion, and that these compare very closely with those described in Dr. Carl's article. After some rainfall during the night and early morning, the sky had partially cleared, but sunshine was weak and intermittent.

The swarming instinct of *R. hesperus* is much more noticeable than that of *Looternopsis angusticollis*. The latter species seems to vary in its habits from place to place. On the West Coast of the Island, at Tofino, the winged forms often appeared very thickly on certain days and were absent on others. This would indicate a swarming habit similar to that of *R. hesperus*. But in this district the *L. angusticollis* can be seen every day over a period of six weeks or more. In cool weather they fly all day, on warmer days only about sundown, when the temperature drops.

I found this species extraordinarily abundant about high tide mark on the Ocean beaches of the West Coast. It would be difficult to find there, a log decayed enough for their needs, which does not harbour a colony.

Richard Guppy.

TENT CATERPILLARS by W. Downes. Illus. Front Cover.

In view of the threatened outbreak of tent caterpillars in the spring the following information is given regarding methods of control. In most years the tent caterpillars begin to appear about the end of April so spraying should be timed so as to get a deposit of poison on the leaves about that time or a little before.

Last fall the possibility of using an oil spray to destroy the egg masses was mentioned. This is not to be taken as a positive recommendation because, although a winter oil spray is frequently used to destroy the egg masses of other insects and for control of scale insects, such sprays have never actually been used for the destruction of tent caterpillar eggs. The principal method of

controlling tent caterpillars is by means of a spray of arsenate of lead just before the blossoming period and because this spray has always proved effective no one up to the present has thought it worthwhile to use an oil spray for the destruction of tent caterpillar eggs though it is quite possible that it might be effective.

The question of winter oil sprays in this connection has recently been thoroughly discussed with the Dominion entomologists in British Columbia and in the east and the consensus of opinion is that such sprays should not be used at a greater strength than 5 per cent of actual oil, that is, one part of oil emulsion to 15 parts of water, on account of the fact that there is sometimes danger of injury to the young wood. Oil sprays have been used extensively in the past for dormant spraying and were used in this district some years ago with good results for the control of leaf-roller. However, prepared emulsions cannot at the present time be obtained and must be made at home. This is a simple matter and, if anyone wishes to try this spray, full instructions for the preparation and use of oil emulsions can be obtained from the Dominion Entomological office.

The Main Control: Arsenate of lead in the proportion of $3\frac{1}{2}$ or 4 pounds to 100 gallons of water with half a pound of any good spreader added (not soap) applied in April before the blossoms open will give good control of caterpillars. The spray should be applied as a fine mist if possible. A coarse spray produces excessive run-off and the material is wasted. If the operator is inexperienced and the spray equipment not of the best it would be better to use 4 pounds of arsenate rather than $3\frac{1}{2}$. Do not continue spraying too long. As soon as the leaves are seen to be wetted, that is the time to stop. Spraying too long continued causes excessive run-off and prevents the creation of an even deposit of poison on the leaves. The addition of spreader of any good brand increases the efficiency of the spray. Arsenate of lead is heavy and the spray must be kept agitated to prevent it accumulating at the bottom of the spray tank. Nicotine sulphate may be added to this spray if desired for the control of aphids, in which case 2 pounds of hydrated lime should be added to every 100 gallons.

Some Spring and Summer Butterflies

Anglewings or Comma Butterflies

The appearance of a butterfly on a sunny day in winter or early spring is a gladsome sight. Among the earliest adventurers are the Anglewing butterflies that have hibernated in the adult stage, and are easily aroused on a warm day.

Both common names are based on evident characteristics; "anglewing" refers to the ragged outline of the wings; "comma" to the central white mark on the underside of the hind wings.

The Anglewings belong to the genus Polygonia of the family Nymphalidae or Brush-footed butterflies, so called because the forelegs are short and not used in walking, the lower part being clothed with long hairs, that fancifully resemble a brush.

All the members of this genus are similar in appearance and are best identified by the underside, the shape and size of the comma being especially constant in each species. Of the dozen or so North American kinds, about half occur in British Columbia while four are recorded for Vancouver Island.

The Anglewings are often common in the fall, when they flit about in woodland glades, sunning themselves on tree-trunks or imbibing moisture from damp places on roadsides and banks. They are single-brooded in British Columbia and adults over-wintering under loose bark etc. The eggs are truncated cones, ribbed and cross-ribbed, greenish in colour. They are laid in small clusters or pendant strings on the underside of leaves. The caterpillars are variously coloured and striped with brown, yellow, white and black markings. Most prominent are branched spines on each segment including the head. The chrysalis is brownish with conspicuous horns and protuberances, marked with two silver spots on the middle of the underside. It is suspended by the 'tail' from a twig or other support.

Of the Polygonia species illustrated the two upper rows, P. interrogationis and P. comma, are found only in eastern North America.

Polygonia faunus Edw. Green Comma (third row) occurs throughout most of British Columbia including Vancouver Island. The greenish scales on the margins of the underside and the t-shaped comma are distinctive. The larva feeds on willow, currant and gooseberry.

Polygonia progne Cram. Gray Comma (fourth row) occurs in the central interior of the Province and in the Selkirks up to 8000 feet.

Two other species of Polygonia, not illustrated, occur on Vancouver Island as follows: Polygonia satyrus Edw., Wandering Comma, with much lighter underside and a strongly curved comma. Widely distributed throughout North America. Larva feeds on nettle. Polygonia oreas a.silenus Edw., Western Comma, smaller with dark underside and pronounced L-shaped comma. Larva feeds on gooseberry.

Nymphalis j-album Bdv. & Lec., Compton Tortoise-shell (lower central figure). While not a Polygonia it is closely related. This large handsome species cannot be confused with anything else. The comma is j-shaped. This species has the longest life of any North American butterfly, some individuals surviving for over 12 months. The larva feeds on willow and birch. It is a northern species ranging through British Columbia (except Vancouver Island) to Alaska and Labrador south to Pennsylvania.

Fritillaries, Checker-spot and Crescent-spot Butterflies

Fritillary butterflies and summer days are inseparably associated. Many of the species are strong fliers offering a challenge to those of active disposition to catch them.

The word "Fritillary" is an allusion to the black spots on the upper surface of the wings. The name "Silver-spot" is in reference to spots on the underside of the hind wings.

The Fritillaries, Checker-spots and Crescent-spots belong to the large family Nymphalidae previously mentioned in connection with the Anglewings. Of the species illustrated four are to be found in British Columbia.

Argynis aphrodite race columbiana Hy. Edw.

(Figure 4 male, Figure 5 female, Figure 6 underside). This is the northwestern form of aphrodite. The females are larger and darker than the males, as are all the members of this genus. The eggs are squat, roughly cone-shaped and yellowish in colour. The spiny caterpillars hibernate after eating the egg shell. They are nocturnal, feeding on various species of violet. The chrysalis is dark brown, rough and suspended under a log, etc. This species is widely distributed through British Columbia and Canada but is not found on Vancouver Island.

Two closely related species of Argynis are found on Vancouver Island as follows: Argynis bremeri Edw., Bremmer's Silver-spot (not illustrated). This species has brilliant silver spots on a brown ground colour. Found only in western America. Argynis hydaspe race rodophe Edw., Dusky Silver-spot (not illustrated). Darker above than the preceding and slightly smaller, usually only the marginal spots are silver, the rest are buff on a red background. It is a northern form of hydaspe which is of southern Pacific coast origin.

Brenthis myrina Carm., Silver-bordered Fritillary (Figures 7 & 8). One of the smallest of the Fritillaries with markings similar to aphrodite. In some parts of its range it has one or more broods during the year. The caterpillar feeds on various species of violet. This butterfly has a wide distribution, occurring through British Columbia (except Vancouver Island) to Alaska, east to New England and south to Virginia.

Brenthis bellona Fab., Meadow Fritillary.

(Figures 9 & 10). The tips of the forewings are decidedly squared, in contrast to the more pointed wing tips of epithore. The upper surface is similar to B. myrina, but the underside of the hind wings will at once distinguish them, for the Silver spots are lacking in bellona. There are one or more broods during the year according to the locality though the winter is always passed in the larval stage. The caterpillar feeds on violets. This and the preceding species have similar haunts, habits and distribution. Not reported from Vancouver Island though represented there by the closely related -

Brenthis epithore Edw. Western Fritillary (not illustrated). The black markings of the upper surface

are not so heavy as in bellona while the under surface of the hind wings has less purple and more yellow in the mottling. This species is found from British Columbia including Vancouver Island to Oregon.

Euphydryas phaeton (Figure 11). Is not found in British Columbia. The figure, however, gives a very good idea of the general arrangement of the numerous spots of the genus which is represented in British Columbia among others by:

Euphydryas taylori Edw., Taylor's Checker-spot (not illustrated). This species is smaller than phaeton but otherwise possesses a peculiar type of lattice-like spotting in which much red and yellow is disposed upon an umber background. The spots are larger on the underside of the wings and are of a uniform buff colour. The caterpillars are at first gregarious. The pupae are very pretty, white with black spots. Among its recorded food plants are Valerianella, Camassia and Plantain. This species is confined to the Puget Sound area and adjacent territory including Vancouver Island.

Phyciodes tharos race pascoensis Wright. Pearl Crescent (Figures 12 & 13). Tharos is an eastern species of which the race pascoensis is the western counterpart. They are slow fliers and are therefore easily caught. The general colour of the upper surface is tawny yellow with heavy black borders and blotches on the fore wings. The under surface is ochraceous. The caterpillar feeds on Aster and other Compositae.

Phyciodes nycteis (Figures 14 & 15). Occurs east of the Rocky Mountains.

The accompanying plates were kindly loaned by the editor of Canadian Nature; they were published in that magazine to illustrate articles by F. A. Urquhart.

While some species are common to both east and west, they are for the most part distinctly different. In the groups dealt with here, however, the generic similarity is sufficiently well marked as to form an adequate introduction to our western species.

George A. Hardy,
Provincial Museum.

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SPECIAL NOTICE re

Pacific Northwest Bird & Mammal Society

We are to be again favoured by a visit of the above Society on March 23rd and 24th. A joint meeting has been arranged with our Society for the evening of the 23rd at 8 p.m. in the Museum, and all our members are urged to attend as this is one of the outstanding meetings of the year.

An invitation is also extended to our members to attend their meeting at 2 p.m. in the museum on the same day.

Sunday, March 24th at 9:00 a.m. a field trip through Beacon Hill park and adjacent beach has been arranged. At 1:30 p.m. an excursion along Marine Drive through to the Uplands skylark areas has been arranged. This will tax the accommodation of the cars promised to the limit and it is hoped that any other member who can supply a car for this trip will notify Dr. Carl as soon as possible.

NOTICE OF MEETINGSANNUAL GENERAL MEETING -

Tuesday, 12th March at 8 p.m. in the
Provincial Museum

Speaker - - - - - Mr. W. Downes
"Some Peculiar Insects of B.C."
General Business, Election of Officers, Reports of
Chairmen of Groups, also a very interesting film will
be shown.

GROUP MEETINGS

Tuesday
March 5th: Botany - - - - - Dr. H. T. Gussow
"Applied Botany"
Provincial Museum

Tuesday
March 19th: Zoology - - - - - Mr. H. Chadbourne
"Rocky Mountain Mammals"
Provincial Museum

Saturday
March 23rd: Joint meeting with Pacific Northwest
Bird & Mammal Society.
Provincial Museum

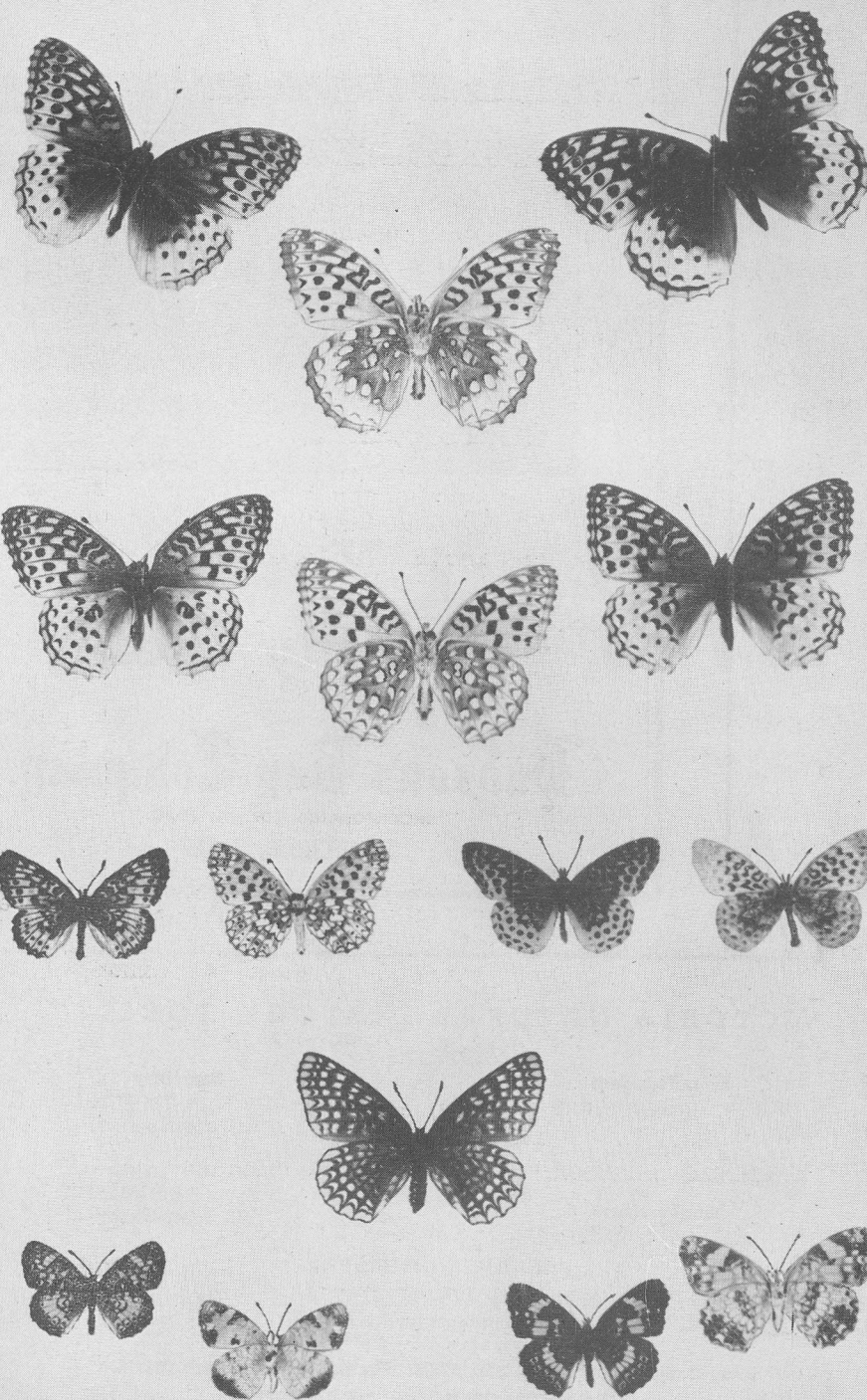
Tuesday
March 26th: Geology - - - - - Mr. E. Woodward
"Precious Stones"
at Dr.K.Watson's home at 42 Linden Ave.

Tuesday
April 2nd: Ornithology (A speaker will be
arranged for.)
at Mrs.Jones' home at 1320 Purcell Place

JUNIOR NATURALISTS

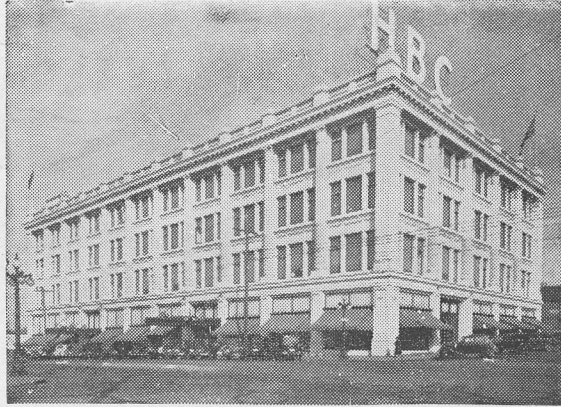
will continue to meet at the Saturday
morning lectures in the office of the Museum at 10 a.m.
on March 2nd, 9th, 16th, 23rd, 30th, and April 6th.

N O T E: Subscriptions are now due for the ensuing
year and should be paid to the Treasurer.



To

Mr. I. E. CORNWELL,
584 Vincent St.,
Victoria, B. C.



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NOTICE OF NEXT MEETING

The next meeting of the Society will be held in
PROVINCIAL MUSEUM, PARLIAMENT BUILDINGS
at 8 p.m. on Tuesday, the 12th March, 1946.