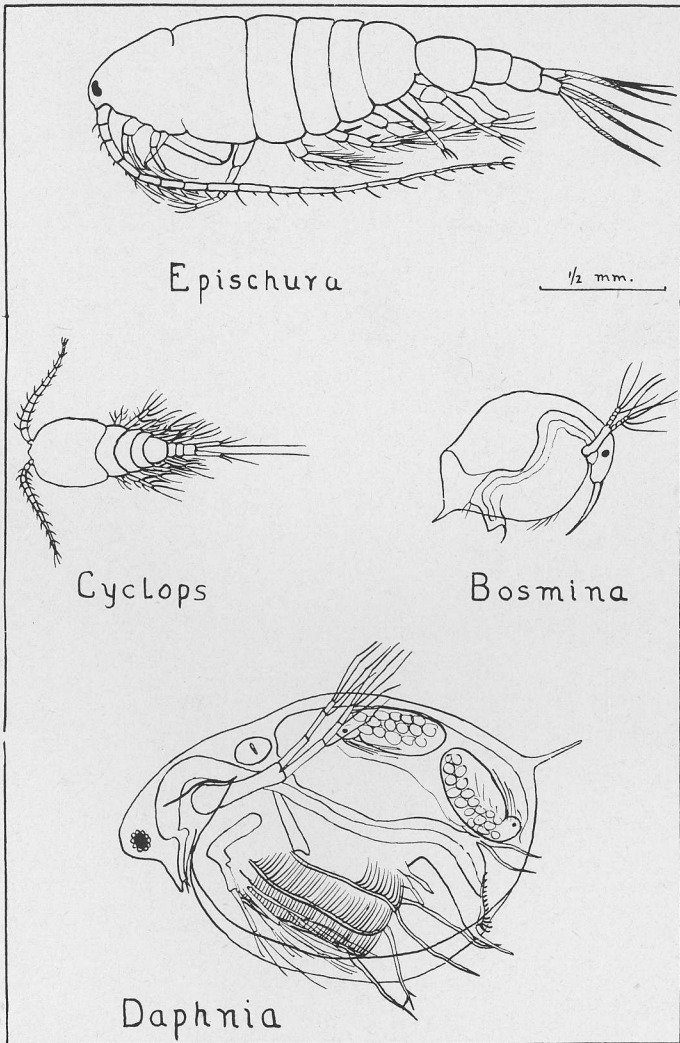


The
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Epischura

1/2 mm.

Cyclops

Bosmina

Daphnia

Fresh-water Crustacea.

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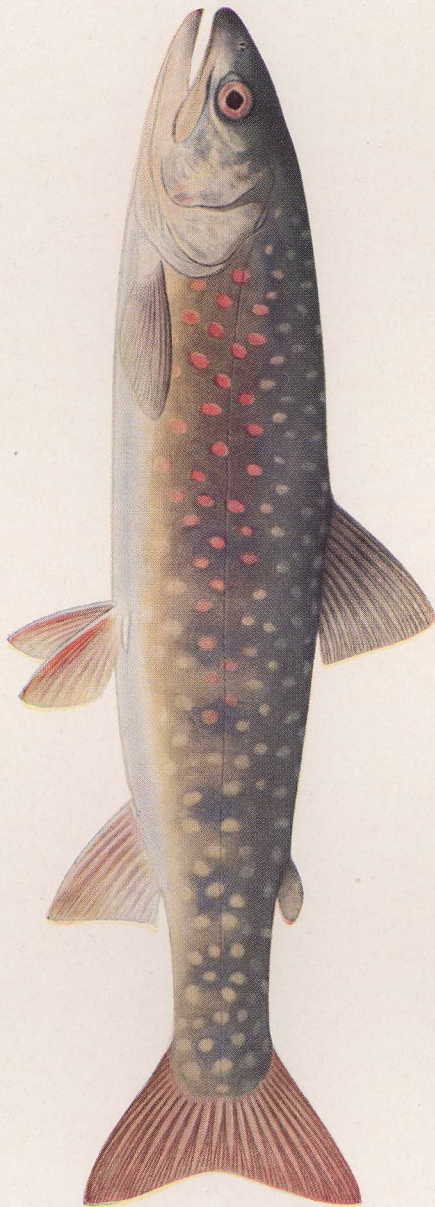
The Dolly Varden

One of our most common game fishes is the Dolly Varden. It is distributed along the Pacific Coast, in both salt and fresh water, from northwestern Alaska to Northern California. Since it is capable of living in the sea as well as in fresh water, it has spread along our coast-line to enter all our river systems except the Okanagan. Toward the southern part of its range the Dolly Varden is more or less restricted to fresh water but in the north it is abundant in the sea particularly in the vicinity of the Alaska peninsula and around river mouths.

Technically, the Dolly Varden is a char, not a trout; it is therefore grouped with the lake "trout" and speckled "trout" in a separate division of the Family Salmonidae. It is distinguished mainly by the colour pattern which is usually plain olivaceous with light-coloured spots on back and sides, those on the sides being orange or reddish and nearly as large as the pupil of the eye. The pectoral, ventral and anal fins often have a whitish anterior border. Specimens found in salt water are usually more silvery with pale spots, or none at all.

The unusual colour pattern gave rise to the name Dolly Varden since this fish was receiving general notice about the time colourful prints of that name came into fashion. Other names in use include "bull trout", "western char" and "salmon trout". It was first recorded from British Columbia waters in 1866 by J. K. Lord as Salmo spectabilis and as Fario Lordii (The Naturalist in British Columbia).

The food of the Dolly Varden includes insects, crustaceans, and other organisms which frequent the bottom of ponds, lakes, streams, etc. together with



DOLLY VARDEN CHAR.
Salvelinus alpinus malma (Walbaum).

fishes and fish eggs. Compared with a trout the Dolly Varden is more sluggish in its habits and in general not so desirable as a sport fish. Average weights run to about a few pounds, but weights up to 20 pounds have been recorded in British Columbia. Recently an individual weighing 32 pounds was taken in Lake Pend Oreille, Idaho.

A Tip to Bird House Builders

Mr. E. E. Bossence of 3230 Quadra Street, who has had considerable success in constructing "sparrow-proof" nesting boxes for violet green swallows, has kindly provided the following details. The size of the box itself is of no great importance (usual minimum dimensions are 5 x 5 x 6 inches high) but the entrance hole should be one and five-sixteenths inches in diameter and no more. An entrance of this size will just admit a swallow but not a sparrow, especially if the wood is at least $\frac{1}{2}$ inch in thickness. Omitting the landing platform further discourages sparrows but is no hindrance to swallows.

The box should be located in an open space, preferably on a post, and at least 10 feet from the ground. A small opening at the rear will aid in ventilation.

It is not too soon to construct nesting boxes for next season, since they should be erected in advance to allow a certain amount of weathering to take place.

G.C.C.

Report on the Seventh Annual Fungus Foray

A brilliantly sunny afternoon, on October 15th, was a feature of the seventh annual Fungus Foray which was held, as in other years, at the Hudson's Bay Woods.

Twenty-nine members gathered at the end of Cromwell Road at the appointed time. Among those present were Mr. and Mrs. M. A. F. Waugh who flew from Vancouver especially for the occasion.

Compared with other seasons this season was somewhat disappointing; mushrooms and other fungi were very scarce. However, a total of at least 40 species was noted.

Among the more interesting finds were the Globe Polypore (Cryptoporus volvatus) on dead Douglas fir, a fine specimen of the Showy Pholiota (Pholiota spectabilis) growing from the base of an old white fir stump, and a nice clump of the Tufted Hypholoma (Hypholoma fasciculare) emerging from a similar site. Vast numbers of small shelf-fungi belonging to the genera Polyporus and Stereum sprouting from dead or decaying wood, more especially on Garry oak stumps, were noted by everyone. The Velvet-top (Polyporus Schweinitzii) was observed near the base of a Douglas fir, while that bane of the forester, the Honey mushroom (Armillaria mellea) was observed at the base of Oak and other trees.

On the ground the Doubtful Hypholoma (Hypholoma (Stropharia) ambigua) reared its glistening ochre-coloured caps, the bun-like Boleti (B. subaureus and B. chrysenteron) showed their fat little sporophores, while the scarce Green Stropharia (Stropharia aeruginosa) was found by one of the energetic juniors.

On fallen Douglas fir cones the pretty Cone mushroom (Collybia albopilata) was abundant, while a few brittle caps of Russulas and the orange caps of the Golden Chanterelle (Cantharellus aurantiaca) gladdened the eye. And so with species of Mycena, Naucoria, Inocybe, Clitocybe, Crepidotus and other genera an array of diverse forms of

fungi were passed in review, fulfilling the main object of the visit, which was to see and to study the mushrooms in their natural setting. If this desirable objective was attained to even a small extent then the time and effort expended was well worth while.

George A. Hardy.

Botany Group Meeting

The above group enjoyed a most interesting talk on "Vegetable Diseases" and "The Bulb Industry" given by Mr. William Foster, Provincial Plant Pathologist. Previous to the meeting Mr. Foster showed the members over the new Animal and Plant Pathology Laboratory and explained the operation of some of the equipment. The talk was supported by four reels of films illustrating the effects of potato diseases on yield and the kind of injury inflicted by virus, fungi and physiological diseases. The two reels on the bulb industry were taken largely on the Saanich Peninsula; it was surprising how few of the members realized that this highly mechanized industry, with an output of millions of bulbs, was being carried out right at their back door. The illustrations of flowering bulbs were lovely and probably proved to the members, what the bulb growers already know, that Vancouver Island bulbs are the best on the market. Mr. Foster was accorded a most hearty vote of thanks. W.T.

New Booklet

"Some Common Tree Diseases of British Columbia" by J. E. Bier, Dominion Department of Agriculture, Division of Botany and Plant Pathology, Ottawa. This booklet gives descriptions of some of the most serious diseases affecting commercial trees of British Columbia. It is well illustrated by photographs. Dr. Bier who was

formerly in charge of the Dominion Laboratory of Forest Pathology in Victoria is now Principal Forest Pathologist in the Dominion Laboratory at Toronto.

Fresh-water Crustacea

Drag a fine-meshed net through any lake or permanent pond and you are almost certain to catch some members of the crustacea represented on the front cover. These small creatures, together with other plant and animal organisms, are collectively known as plankton. They are the basic food for larger forms, especially small fishes. Even some larger fishes, such as kokanee, are plankton feeders, being equipped with a straining device in the gill chamber for removing small forms from the water.

Because plankton is of such importance as food for fishes the quantity present in any body of water is a major factor in determining the productivity of the lake in terms of fish. In other words lakes which support abundant plankton produce the most fish. Measuring the amount of plankton in a lake, therefore, provides a means of judging its productive possibilities.

The most numerous crustacean in the plankton is usually a member of the copepod group such as *Epischura*, *Cyclops* (figured) and *Diaptomus*. These creatures vary considerably in size, but most are minute being visible to the unaided eye as specks jerking through the water. Under a magnifying glass it can be seen that the body is more or less cylindrical in shape and that the swimming is mainly accomplished by the jerking movements of the antennae which cause the animal to move through the water in short spurts.

The next most numerous crustacean is usually some member of the cladoceran group such as *Daphnia*, *Bosmina* and related species. These small transparent creatures also move through the water in a series of short jumps, a fact which has earned them the name of "water fleas". Cladocera differ from copepods structurally in that the body is some-

what flattened from side to side and is provided with a shell of two valves which partly encloses the appendages. Size and shape of the shell varies considerably being influenced by water temperature and amount of food available.

Apart from their economic value in the field of fisheries these plankton organisms are of special interest to certain persons. To the aquarist they provide a source of living food for small aquarium fishes and to students of microscopy they are fascinating objects of study.

G.C.C.

November Meeting of Geology Group

The geology group met at the Museum under the new chairman, Mr. J. H. Whitehouse, at 8 p.m. on November 1st. A large attendance enjoyed the chairman's talk on "Collecting Fossils" in which he gave items of interest from his own experience in Alberta. To illustrate his talk Mr. Whitehouse showed a most interesting collection of material from various geological strata. He pointed out that the types of animals found indicated very definite periods in the earth's development, and slight differences in form may indicate differences of millions of years in the age of the strata in which they are found. Mr. Winkler and Mr. Cornwall spoke on the fossil formations to be found in the Victoria area, and it was decided that a number of these would be visited on field days next summer. Suggestions for future meetings were discussed and the group is looking forward to an active year.

W. T.

Report of November Meeting

The November meeting was held in the Provincial Library at 8 p.m. on the 8th, with the President in the chair. We were all sorry that illness kept the secretary at home and best wishes for her speedy recovery were expressed. In the absence of the secretary, no minutes were read nor was any correspondence.

Mr. W. Tildesley reported on a brief presented by our Society and the Agricultural Institute before the Royal Commission on Arts, Letters and Science during their Victoria sittings. Our brief was in support of an earlier brief which had been presented in Ottawa by the Royal Society of Canada and called for the immediate establishment of at least one National Botanical Garden in Canada. Dr. Gussow most ably presented arguments in support of the brief and in his answers to questions by members of the Commission, demonstrated his wide and intimate knowledge of the subject. He pointed out that Canada was the only member of the Commonwealth that did not have at least one botanical garden. Australia has several, New Zealand two, South Africa one world renowned national garden and several State gardens. Even the small colonies were supporting gardens which in co-operation with the Royal Botanical Garden at Kew are carrying on research of world wide importance.

Several new members, including Mr. & Mrs. W. Stevens and Mr. A. W. Cameron, were introduced and welcomed, and members reported matters of interest which have occurred lately. Mr. Theed Pearce reported that there is a Western Gull feeding and swimming with the Glaucous-winged gulls at Beacon Hill Park. This is quite a rare visitor; it is most unusual to find it in public places, or confined quarters such as the Beacon Hill ponds. Field marks are a dark mantle and much greater depth of black on the primaries. Mr. Clay reported a large number of Shovellers or Spoon-bills working along the shore locally. The prolonged fine weather has brought a number of wild roses and spiraea into bloom again.

After the members had finished reporting, Mr. Hardy introduced Dr. Kenneth King, Dominion-Provincial Entomologist, who later gave a talk on insects infesting vegetables. First he was asked to identify an insect which Rev. T. Taylor had found in his kitchen. This proved to be a lace-wing fly, the larval stage of which is a very useful predator on aphids.

Dr. King prefaced his talk with the observation that the entomologist of to-day could never claim to have been born 30 years too soon. Problems of insect control which had bothered the world for centuries were being solved by the vast array of new organic chemicals that have only been applied to this purpose in the last ten years. Dr. King's most important work has been with insects of the soil, which probably have resisted man's efforts at control more successfully than any others. Cultural methods which had been fairly successful on our prairies had proven useless in Washington, but by the use of benzene-hexachloride or dichloropropine insects infesting the soil could be effectively and cheaply controlled under almost all conditions. The perfecting of any control methods, or the discovery of new materials to-day was never the work of an individual but of a great number of people working as a team. The chemist synthesizes materials which the entomologist thinks will be useful, these are tested first on insects and then for their effects on crops and animals. If they prove successful they are handed to the manufacturer who must find ways of producing the material at a cost that will be practical for public use. Dr. King said that if he had been asked two years ago about the possibilities of seed treatment that would protect the future plant throughout its life from wireworms, he would have thought it an idle dream. To-day he is very glad he had not gone on record to that effect because a new seed treatment using gamma isomer of benzene-hexachloride not only protects the seed but kills 90 per cent of the wireworms in the soil. A good deal of Dr. King's work has to do with preparation of control charts which give information on certain types of insects in condensed form. Further information can be obtained on specific insects from pamphlets and bulletins.

While there are some 600,000 named species of insects, only a very small fraction are harmful while others are very beneficial. While the tremendous amount of damage done by the harmful few could not go unchecked the person seeking methods of control should know just what he is trying to control and should use the methods that have given best results against that particular pest. Haphazard spraying and dusting are not only uneconomic but are often futile, and kill more useful insects than they do pests.

Since the speaker had been unable to get the Department's film "Vegetable Insects" in time for the meeting he had to be content with a series of slides taken from the film. They were interesting close-ups of some of the most notorious pests, and the audience was very interested in seeing them. An animated question period added greatly to the enjoyment of the members who responded to Mr. Hardy's call for a vote of thanks most heartily.

W. T.

Second Flowering of Late Rose

The Late Rose, Rosa pisocarpa, is late in more ways than one this year, for it was seen in bloom on September 8 and 20 near Lost Lake.

The sight of fruit, flower-buds, and fully expanded flowers growing side by side on the same bush was both unexpected and unusual. Only two groups of bushes of the many score examined showed this precociousness. Both of them were in moist soil.

A clue to the reason might be that due to an extensive premature defoliation of the leaves by some insect of undetermined name, the bushes have been stimulated to put forth every effort to continue the species in forming seed as a last and supreme effort to exist. This is somewhat analogous to the second crop of leaves on the Garry Oak that have suffered so severely from the depredations of the Oak Looper.

G. A. Hardy.

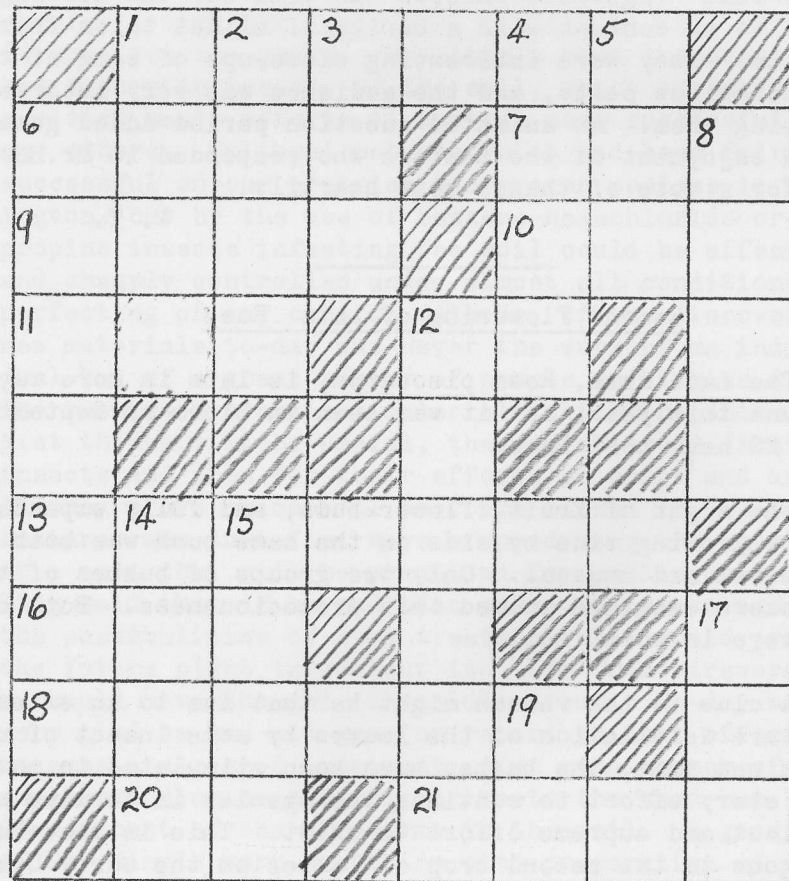
JUNIOR PAGE

Hi, kids !

The winners of the cross-word puzzle which appeared in the October issue are as follows:-

Marilyn McElmoyle and Peggy Carl - tie
Doreen Wilby - - Honourable Mention

Here's another biological puzzle to try your brains on -



Across -

1. Eel-like fish found under rocks at low tide.

Across -

6. A marine mammal.
7. An elongated fish.
9. Land set aside for recreation.
10. Wonder; great fear.
11. It must have been crowded aboard this ship.
12. Not down.
13. He wears a mask and rings on his tail.
16. Eggs.
18. A tree fond of moisture.
20. DF
21. Our most abundant game animal.

DOWN-

1. The largest carnivore.
2. Bird with a sweet song.
3. The largest mammal on Vancouver Island.
4. A medium high tide.
5. A berry-producing evergreen.
6. A small common bird.
8. A tree's factory.
12. Swimming legs on telson of crab or shrimp.
14. Greedy.
15. Baby cow.
17. Auditory organ.
19. You and I.

The Junior Naturalists will meet at the Museum on Saturday, December 3, 10 and 17, at 10 a.m. The first meeting in January will be on the 14th.

New Pamphlet on Exotic Trees

"Exotic Trees in the Coastal Region of British Columbia" by E.H. Garman. Research Notes, B.C. Forest Service, No.15, 1949. This work reviews the plantations of conifers and dicots in the Lower Fraser Valley and on Vancouver Island and discusses the advisability of introducing more hardwoods. It also includes a table of introduced trees giving names and location, and also a list of common and scientific names.

NOTICES OF MEETINGS

Friday MEETING OF THE EXECUTIVE in Mr. Hardy's Office,
Dec. 9: Provincial Museum, 4 p.m.

Tuesday GENERAL MEETING in the Reading Room of the
Dec. 13 Provincial Library, at 8 p.m.
Speaker: Mr. H.B. Binny; "Trees around
Victoria", illustrated by lantern
slides.

Junior Naturalists

Saturdays
Dec. 3, 10th
and 17th: Juniors will meet at the Museum
at 10 a.m.

Editorial note to Members: When you read the monthly issue of the Naturalist which you receive as members of the Victoria Natural History Society do you ever wonder as to the source of the material? Do any of you feel some sense of responsibility for keeping the publication "up to scratch"? How about a paragraph on some interesting thing you have observed in nature or a short article on some subject in which you are interested? We are sure our readers would be more interested in the personal experiences of fellow members than in the text-book type of material available in libraries. Let us have some original contributions.

A question and answer section has also been suggested. What are your views with regard to this proposal? Let us have your opinions and alternate suggestions.

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To