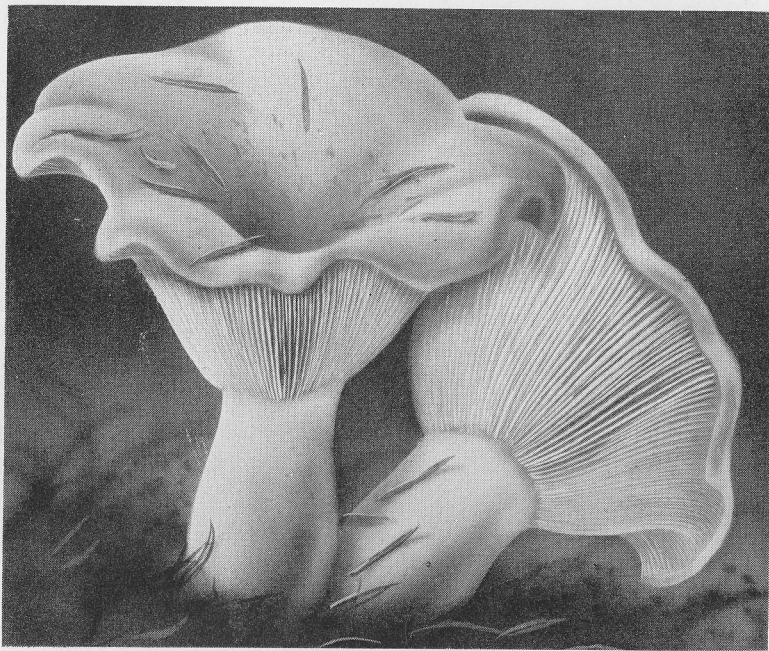


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Giant clitocybe.

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## Report of the September Meeting

Mr. Ernest Smith, Vice-president, acted as chairman in the absence of Mr. Hardy who was guest speaker at the Victoria Rock and Alpine Garden Society which met on the same date. After the adoption of the minutes several new members and visitors were introduced and welcomed by the Chairman. Because of a lengthy programme to follow the matter of the affiliation of the Society for the Preservation of Native Plants was left until the October meeting. After an announcement concerning the Audubon lectures and an explanation from the Editor as to why the "Naturalist" was late the chairman turned the meeting over to Mrs. Woodward. The following members contributed field observations to the programme: Mr. J. O. Clay, Bush-tits in the Victoria area; Dr. G. C. Carl, Film of bush-tits and Cassin's vireo; Miss Dorothea Curtis, Colour slides of Interior; Col. E. J. T. Woodward, Bone gnawed by squirrel; Mr. Brian Ainscough, Observations at Alta Lake and Sooke.

Mr. A. H. Marrion, Technical Instructor of the Victoria Schools, then presented his talk entitled "When Glaciers Passed this Way". By means of numerous diagrams and photos projected on the screen he traced the history of southern Vancouver Island during the latest glacial periods basing his conclusions on evidences which are still to be seen in this area. A detailed account of the presentation will not be given here since Mr. Marrion has kindly provided a synopsis of his talk which follows.

The meeting adjourned after a warm expression of thanks from the chairman and members were given the opportunity to examine a collection of inter-glacial fossils displayed by Mr. Marrion.-

G. C. Carl.

WHEN GLACIERS PASSED THIS WAY

Synopsis of talk given by A.H. Marrison

The last two glacial periods of the North American continent (Wisconsin and Illinois) are possibly correlated with two separated till beds of the coast. Local outwash effects of the first (Admiralty) are scarce, and possibly not found at all on the lower land levels. The subject matter was presented in the following order:

1. Pre Glacial period. Erosion carried on, soils laid down, fossils preserved. Climate, warm. Elevation 1000 feet.
2. Admiralty advance. Outwash clays, sands, and gravels laid down.
3. Admiralty period. Rock erosion, and grooving. Pot holes possibly formed.
4. Admiralty recession. Till, stream deposited sands.
5. Ice Recession and Advance. Weathered and rescratched surfaces on base rock (Douglas St.)
6. Interglacial period. Marine blue clays laid down. Life: plants and moluscs.
7. Interglacial period. Land elevation (200 ft.) Icebergs present.
8. Interglacial period. Land erosion taking place; lake areas and peat beds formed. Trees and animals present. Climate, warm.
9. Ice Advance (Vashon). Weathered surfaces removed, outwashed to form brown clays. Icebergs present. Sands, gravels laid down; wood, shells and other animal remains present. Climate, becoming glacial. Land sinking.
10. Vashon period. Erosion of all former beds and re-polishing of base rocks. Pot holes?
11. Vashon Retreat. Thick and thin till beds containing rocks, broken shells, coal and fossils. (up island?).
12. Vashon Retreat (valleys) River deltas. (Fore and top set). Icebergs present forming kettle holes. Whale vertebrae as fossils. Deltas as gauge of land-sea level.
13. Post glacial uplift. Sea erosion and sorting of

materials. Marine platforms, etc. Recent shells deposited.

14. Uplift effects. (uplift 400 feet) climate, like the present.
  - (a) Rivers cutting through old deltas; cutting of land valleys.
  - (b) Rivers re-routed, sometimes in opposite direction.
  - (c) Sea forming beaches, sand bars and lagoons.
  - (d) Sea erosion of cliff and rock outcrops.
  - (e) Weathering of rock outcrops.
15. Time interval. As required to produce present effects as noted under 14 (a),(c),(d),(e).

Specimens exhibited (a) shells from blue and brown clays, and uplift beaches. Fresh-water shells. (b) Broken shells, coal, rock types, ammonite from till beds. (c) Peat and wood from interglacial. Peat from recent lake deposits.

Bird Notes

Mr. Bruce Irving in charge of Carmanah Light near Port Renfrew, West Coast, reports seeing two female cowbirds on August 7 and 13 and one female on August 27 and 30 of this year. Last year a lone female was observed near the same place on August 21 and 22. In general, cowbirds appear to be rare on Vancouver Island.

Mr. H. R. Lacon of Denman Island reports seeing six Emperor geese flying south early in September.



A MEASURE OF THE FUNGI

by George A. Hardy, Provincial Museum

The fungi in general have one phase in common, they all possess a system of creeping threads, called mycelium, which permeates the substratum of vegetable matter, dead or living, in search of food. Under the microscope the mycelium of the different species appears very much alike. It is in the final and reproductive stages that their real characters come out. The sole purpose of this last stage is the distribution of spores in order to ensure the continuance of the race.

Over 100,000 species of fungi have been described and new ones are constantly being added to the list, but the mere enumeration of species, impressive as it is, gives no conception of the individual abundance of any one kind. One species alone can dominate a whole country as was vividly demonstrated in Ireland in 1845, when the potato blight, Phytophorus infestans, destroyed the crop resulting in a completely new way of life for the people. It is this same blight which has recently assumed serious proportions in British Columbia. Many other forms of fungi popularly known as moulds, mildews, smuts and rusts have made it necessary for governments to spend large sums of money in an effort to check their ravages among our fields and gardens.

A very noticeable obnoxious fungi in these days of fine lawns is the fairy-ring mushroom, Marasmius oreades, whose presence is indicated only after much damage has been done by the hidden mycelium. In this case we can have a belated revenge by eating the little mushrooms that show up in rings and curves during moist weather.

The fungus tribe has the doubtful honour of

possessing a species containing one of the most deadly poisons known to man. It goes by the appropriate name of the Destroying Angel, Amanita phalloides. The only deadly poisonous mushroom at present known to occur in the Victoria district is the Fly Agaric, Amanita muscaria, a close relative of the former; it is quite common. On the other side of the picture the fungi have many good points that counteract the facts so far presented.

In the first place it is impossible to correctly evaluate the good work they unobtrusively perform in breaking down dead vegetable matter into the friable humus so necessary for the development of the plant life as we know it today. An examination of the forest floor will give some idea of the extent to which the fungal mycelia have penetrated; leaves, twigs, bits of wood and old logs are seen to be packed and impregnated with the white searching threads. This is the first stage in the reduction of solid vegetable matter into humus. A later stage is to be observed in the "punk" wood of stumps and logs; that dry, brownish, powdery substance which precedes the final admixture with the soil itself. Cubical rot, that bane of lumbermen, is entirely the work of the fungal mycelia.

Fungi are unable to manufacture their food direct from the raw elements, as do the green-leaved plants, but depend upon the ready made food of the latter, which the fungi utilize by a process of breaking the plants down into the simpler elements from which they were made, extracting what is needed and discarding the refuse which becomes incorporated with the soil as humus.

The mushrooms, among the so-called higher fungi, contain species that afford one of the most delectable viands in the realm of gastronomy. One species alone, the Meadow mushroom, Agaricus campestris, is responsible for an industry running into millions of dollars annually, but this is only one of very many kinds that await the picking to provide equally tasty

morsels. It needs only a little basic knowledge in order to weed out the undesirable sorts.

The "staff of life", our daily bread would be a sorry article indeed if it were not for a member of the fungus family, for it is the leavening ability of the yeast which gives to bread that tasty tang of which we never seem to tire.

Still other fungi have given to the world invaluable aids to medical science. Penicillin, whose virtues have been extensively extolled, is the product of one of the green bread-moulds of the genus Penicillium; several others have and are being discovered that have beneficial uses. Among the latest is Aureomycin which is claimed to have far reaching possibilities in the sphere of medication. Our common Puffballs, that make such dainty stews or fries in their young stages, have when ripe and "powdery", been used by woodsmen in an emergency to staunch the flow of blood in cases of accident.

The relationship between the mycelium of fungi and the roots of trees and herbs has long been recognized, though only comparatively recently understood. Certain Boleti or Clod fungi and Cortinari or Curtain fungi are specifically associated with coniferous trees. The Orchid grower is well aware of a similar fungal partnership in the propagation of his choice blooms.

The Indian Pipe, Monotropa uniflora, that ghostly plant of our springtime woods, depends in a large measure on the fungi in order to perform its life function. The horticulturist can take lessons from the fungi and by providing mycelium impregnated soil can be assured of a more certain success in fir tree plantings.

Those who enjoy the contemplation of nature as a restful recreation will find the varied hues and bizarre shapes of the mushrooms and other fungi a constant source of delight, for in this part of the

world they are often at the height of their beauty in the fall and winter months and in some measure compensate for the lack of the flowers of spring and summer. Then it is that the often brilliant caps of the mushrooms stand out in bold relief against the sombre shades of their woodland haunts or enliven the grassy borders with their evanescent forms and colours. No wonder that in days gone by ignorance of their true significance lent wings to the imagination, peopling the forest glades with fairies, gnomes and elves whose activities were often related to the mushrooms and toadstools of their domain. At that period of unknown causes of disease and plague that often swept through the country, the lowly fungus was despised and blamed for all manner of misfortunes concerning the health and well-being of the country folk.

Not only do the fungi afford food for mankind, but whole groups of insects, flies, beetles, etc. find their life work bound up with them; a mushroom is shelter and larder combined and when the mushroom's work is done its frayed and worn substance is still of use to some form of life, while ultimately its final dissolution adds vitality in the form of nitrogen and other elements to the very humus it helped to form.

While most fungi feed on vegetable matter, they in turn are often preyed upon by others of their kind. A good example in the Victoria district is the Hypomyces that creeps like an orange-coloured shroud over one of the Milky mushrooms, Lactarius piperatus, completely obliterating the gills and distorting its shape so that it forms quite a conspicuous object on the forest floor.

The subject of the picture on the cover is the Giant Clitocybe, Clitocybe gigantea, a fairly common species in our woodlands whose presence is often indicated by a vast upheaval of a patch of the ground immediately above its wide spread cap.

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Note: Detailed illustrated accounts of many of our



local species of mushrooms, together with notes on the salient features that distinguish the poisonous from the harmless kinds, food value etc., will be found in Handbook No.4 obtainable at the Provincial Museum at 25 cents.

SOME BOTANICAL NOTES, 1948

by W. Tildesley.

From a botanical point of view, the past spring was very late but very satisfying when it did arrive.

During one afternoon stroll through Beacon Hill and out to Clover Point in late March the only plants in bloom were a few weeds, field daffodils and an odd plant of our western buttercup (Ranunculus occidentalis Nutt.) The shrubs did not seem to be quite so backward, the bird-cherry (Nuttallia cerasiformis) was in full bloom but only in sheltered sunny places was there an occasional golden spray of broom (Cytisus scoparius.)

About the last day of March, with a perishing wind blowing from the sea, I went exploring around Gonzales Point and the Chinese Cemetery and in a very sheltered spot, full in the sun, I came across a colony of shooting stars or peacocks (Dodecatheon pauciflora) all in full bloom. It is these unexpected finds that bring joy to the heart and compensation for the cold uncomfortable body. The western buttercup was now well in bloom and it is in this locality that the many-petaled variety of this species is seen at its best. Flowers with ten to twenty petals and measuring over an inch across are quite common all over the north end of the cemetery and on over the Point.

On the 10th of April the botany group held its first field day of the season on Gonzales Hill. It was a perfect day with a good turn out of members. All our varied interests were well taken care of with Mr. George Winkler to inform us on things

geological, Mr. J.O. Clay on things ornithological, and Mr. George A. Hardy, who seems equally at home in all fields, to fill in the gaps. The most conspicuous gap being in botany, I was most grateful for the shelter he provided for my own ignorance of the local flora.

The time was ideal for that particular location with all the early spring flowers just coming into full bloom. Besides the masses of the less conspicuous flowers like buttercup and miner's lettuce (Montia perfoliata), most of the more showy members of our spring flora were also at their best. That queen of Victoria springs, the fawn lily (Erythronium oregonum) was sending up its first stately white blossoms; the blue-eyed Mary, (Collinsia grandiflora), formed delicate blue masses over the rocks while beneath, sheltered at the base, were lovely golden masses of that so inadequately named monkey flower, (Mimulus alsinoides). Two bold members of the Saxifrage family, the fringe-cup (Tellima tenella), and Tolmiea menziesii stood upright in clumps or as single sentinels overlooking the more modest carpet of grasses, mosses, and the two low growing early mustards, whitlow grass (Draba verna) and bitter cress (Cardamine oligosperma) which are among our earliest but our least noticed flowering plants. The shooting star (Dodecatheon pauciflora), which, ten days before had been tentatively pushing its first buds into a cold unfriendly world, was now in full bloom and at its sprightly best.

It was a few minutes after the group had dispersed for their homes that I came upon my most interesting find. About twenty yards from

the road where I had just parted from the group, I walked into a mass of flowers that were quite new to me. In shape they looked as though they should belong to the Scrophularia family. The single flower looked very much like a Pentstemon but it sat straight up on top of a bare stem, with no leaves or branches of any kind. After I got it home I was able to identify it as the single-flowered cancer root, (Orobanche uniflora), a member of a family of parasites (Orobanchaceae) which is very closely related to the Scrophularias. On later visits to the spot I found that this colony was parasitizing a mass of yellow stone-crop, a garden escape. Another member of this genus, O. conosa, is often found as a parasite on gum weed (Grindelia sp.) growing along the shore and banks by the sea. Miss Archer brought a specimen to the September meeting and I have collected it on Clover Point on several occasions.

#### AMERICAN COOT

The coot (Illustration A) more familiarly known as "Mudhen", somewhat resembles a duck and is frequently mistaken for one. The body is slate grey with a white patch beneath the tail; the head and neck are black. A white bar on the wing is visible in flight. The bill is cream coloured with a reddish spot near the tip of each mandible and a reddish plate near the base. The feet are greenish, the toes are flattened to form paddles. Coots breed in marshes throughout the southern part of the Province. The platform-like nest is made of dry rushes or similar vegetation and usually contain 10 to 12 dark-cream coloured eggs finely speckled with black or brown. The young are of extraordinary appearance at hatching being covered with a dark-grey down through which appear long orange-red filaments most numerous on the head. The bill is red and the skin about the eyes is blue.

The principal food is tubers and leaves of water-plants, snails, insect larvae and other small aquatic forms. In lakes where there are more desirable ducks, coots may seriously compete with them for food.

During the winter months coots congregate in numbers on the lakes of both the coast and the interior. While considered a game bird the lowly coot is usually passed up by the hunter in search of more sporting game.

#### JUNIOR PAGE

The Junior Naturalists held their first regular meeting in the Museum on Saturday, September 18th. It was agreed at that meeting that we should hold our annual election of officers the following week. Here are the results of the election: Chairman, Ronald Sibbald; Vice-Chairman, Allan Watson; Secretary, Charles Faulkner; Junior Editor, Brian Ainscough.

Activities: This year the Juniors have a place in which to work. Dr. Carl has kindly let us have a corner of the Museum for our meetings.

The first meeting, September 18th, the members helped to set up our new headquarters.

The following week, September 25th, we held our first meeting in the new place. Two projects were started. The first, with Charles Faulkner in charge, was modelling with plasticine. Another group started an aquarium.

If any member has any ideas for the Junior Page, or would like to write an article, will he please contact me, either at G. 5517 or at the Junior meeting.

Brian Ainscough,

Junior Editor.



NOTICES

Tuesday General Meeting, Reading Room of the  
 Oct. 12: Provincial Library at 8 p.m. Speaker:  
 Mr. Lionel Taylor on "Fauna and Flora of  
 South Africa".

Saturday Fifth Annual Fungus Foray. Hudson Bay  
 Oct. 16: Woods. Meet at terminus of Mt. Tolmie  
 bus at 2 p.m., rain or shine. Bring tea-  
 cup and specimen bag. Mr. G.A. Hardy.

Tuesday Ornithology Group Meeting. Home of Mrs.  
 Oct. 19: R.G. Hobson, 2284 Windsor Rd. at 8 p.m.  
 Mr. J. O. Clay.

Tuesday Botany Group Meeting. Provincial Museum  
 Oct. 26: at 8 p.m. Mr. W. Tildesley.

Tuesday Zoology Group Meeting. Home of Dr. and  
 Nov. 2: Mrs. G.C. Carl, 410 Queen Anne Heights,  
 8 p.m. Take Gonzales bus to Queen Anne  
 Heights.

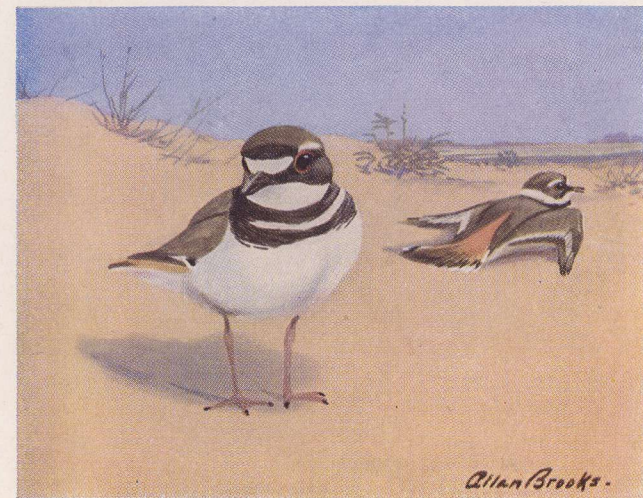
Saturdays Junior Naturalists meet at the Museum at  
 10 a.m.

Monday Audubon Screen Tour. Prince Robert House  
 Nov. 15: at 8 p.m. Wm. Ferguson, "This Curious  
 World in Nature".

Killdeer Plover: The Killdeer (Illustration B) is  
 one of our most commonly seen  
 "waders" or "shore-birds". Its whistled call, "bee-  
 dee-ah, bee-dee-ah", is a familiar sound over field  
 and meadow land especially in the spring. Two to four  
 eggs are laid in a slight depression, often on a gravelly  
 surface where they are difficult to see. When disturbed  
 the parent birds put on a "broken wing" display in order  
 to attract attention away from the eggs or young.



A. American Coot; scale,  $\frac{1}{2}$



B. Killdeer; scale,  $\frac{1}{4}$



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*Jo*