

The  
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(F. L. Beebe.)

Fly agaric.

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OUR COVER

The Fly Agaric (Amanita muscaria) is one of the few local mushrooms which is really poisonous.

It is of quite frequent occurrence, growing in woods or on trail sides in small groups of two to several individuals.

Its colour is normally red, but quite commonly of a yellowish hue, and the upper surface of the umbrella is often covered with wart-like scales.

Its toxic properties were appreciated by the early Greeks and Romans, who considered it 'very conveniently adapted for poisoning'. A small quantity of this mushroom may be fatal. However, it is bitter to the taste, which might be a preliminary warning to go no further.

Mr. Beebe's excellent drawing makes a detailed description unnecessary.

(From "Some Mushrooms and other Fungi of B.C." by George A. Hardy).

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TERNS

As this is written (Sept.19) there are hundreds of terns to be seen off shore around the Victoria waterfront.

As is usual with the tern migration, a few parasitic jaegers accompanied them. It is fascinating to watch a jaeger select a particular tern from a flock and pursue it. Then there is seen a most remarkable exhibition of flying, all done with such speed, it is difficult to follow them.

The jaeger never harms the tern, but makes it (sometimes) disgorge the last fish it has caught, which the jaeger immediately snatches out of the air.

At this time of year it would pay anyone interested in wildlife to stand at a strategic point in Oak Bay and just watch the vast number of various species of sea birds flying to and fro. Tonight we saw immense flocks of Bonaparte gulls and terns, many groups of migrating scoters, murrens

and marbled murrelets, Heerman, California, short-billed and glaucous-winged gulls, five or six sooty shearwaters, and one parasitic jaeger.

A.R.D.

GENERAL MEETING: September 5th

The following notes are taken from the address to the Society given at the above meeting by John A. Livingston, Executive Director of the Audubon Society of Canada.

"As you know, the Audubon Society is dedicated to conservation in its broadest possible sense - to the preservation and perpetuation of water, soil, plants and wildlife. We all realize, of course, that there can be no wildlife without soil and water and green plants - that wildlife is the summit or the apex of the delicate pyramid of life. We know that every living thing, including mankind, resolves itself in the final analysis to total dependence on the soil and water and sunlight which provide the green matter on which all life is built.

It has been a good many years now and times have changed radically since the acceptance of the original Abrahamic concept that the earth and everything dwelling in it was created for the express and exclusive benefit of man. Organizations such as yours - and mine - exist because today we know that man, rather than being an all-consuming and all-powerful emperor, is actually dependent - completely dependent - on the other animals and other living matter in the world around him. We know today that human progress cannot continue without wise use and intelligent treatment of soil, of water, of green plants and wildlife. We know now that this wonderful, awe-inspiring community of life is a complicated and finely-woven structure of delicate checks and balances. We know that to realize the fullest benefit from the earth, man must treat the earth and its sub-human inhabitants as partners rather than as expendables in day-to-day activities. "Peaceful coexistence" is a political chestnut, I know, but I think it has a significance as sound and as true as any phrase in the language. Coexistence and mutual cooperation must be the attitude of man toward the earth in order that man may benefit and continue to benefit from the bounty of the earth.

It is very important that we remember there would be no need for this thing we call "conservation" were it not for human activity. In a state of nature, where human influence is unfelt, things have a way of working themselves out simply

and efficiently. But since humans are, after all, in business today - at least in the present geological age, we have to arrange things so that we, as part of the natural world, can function more efficiently for our own benefit. We come to realize that if we are to thrive and prosper, we must conserve certain elements of the earth in order that we may turn them to our own best uses.

As an example, the tendency of the shooters toward trophy hunting is strongly detrimental to the game species. You see, to shoot the mountain sheep with the largest horns; to take the moose with the widest spread, is to remove the breeding potential of the most fit, the most suited to reproduce that species. Just as the predator is useful in taking out the negative breeding potential, the trophy hunter is harmful in taking out the best, finest breeding potential. This is a subject, by the way, which could perhaps use more airing, particularly here in the west, where trophy hunting of sheep, wapiti, bears and moose has for a good many years been a very common activity.

Even the farmers are beginning to realize the value of the protection of predators. When we were engaged in another (happily successful) campaign on behalf of the predatory birds in Alberta, two of the strongest supporters of our cause were the two great farm organizations in that province. Farm organizations in Alberta mean something. So we have an excuse, I think, for feeling rather optimistic. It is a matter of education, of course, of continued work toward the spreading of the fundamental principles and truths of conservation in those quarters where it will do most good.

This need for public enlightenment is a challenge to all conservation and natural history organizations. This need accounts for the existence of the Audubon Society, because we are fundamentally an educational organization. I would ask you to understand that I have merely used this predator-prey relation tonight as an illustration of the crying need for public education about the natural world. This is the job of local nature clubs and conservation societies everywhere.

If we hope to be successful, we must build and nourish public awareness of the basic, fundamental laws of nature. It is much easier for the public to understand and endorse what conservationists are trying to accomplish if the underlying principles are first of all made quite clear. Without the support of the public at large, conservation work would be that much more difficult. With public support, there is no limit to what can be accomplished.



But we have to work to obtain that public support. We who are dedicated conservationists cannot afford to let ourselves become "typed", so to speak. We cannot afford to let the general public get the impression that we are opposed to things. We mustn't be anti-hunting. We mustn't be anti-housing development. We mustn't be anti-timber cutting. We mustn't be anti-anything, except that we will always be anti-abuse. We must be positive. We must be "pro". We must be well informed and we must be constructive. We must show that the wise and intelligent treatment of the natural elements which we Canadians enjoy in such profusion is in the final essence essential to our survival. We must be prepared to prove that we deserve this precious privilege of intelligence and reason; that we deserve the ability to utilize the magnificent bounties of nature.

#### WATER FOR WELLS

(Notes taken by A.H. Marrion from a lecture by Mr.H.W. Nasmith of the Department of Mines to the Society on Feb.26)

City dwellers often have only a vague idea of the complex engineering by which water is collected and delivered to their homes. In rural areas, wide spacing of homes necessitates use of a spring, stream or well, the water of which results from a complicated natural system of collecting, storing and delivering to these sources of supply.

Hydrology is the science dealing with the cyclic movement of water on the earth. Geology is the science dealing with the origin, structure and history of the earth. Intense studies have been made of ground water areas where large quantities of water are required for irrigation and industry and where the supply from lakes or streams is inadequate. Basic principles apply to all water systems.

Hydrologic Cycle is the term applied to the circulation of water from ocean to atmosphere by evaporation; from atmosphere to earth after condensation, and the return to the ocean as streams. The storing of water for a time in the earth as it travels back to the ocean, provides the ground water system.

Vancouver Island is an area of moderate relief and complex geology, and well water in most cases fell as rain a mile or less away. The water falling in one case, in an average year of moderate rainfall (as in Saanich) amounts to 680,000 gallons per acre; plenty to supply ground water

reservoirs and the take off from wells each year.

Drains, ditches and creeks provide a rapid return of surface water to the sea, while a small portion sinks into the ground, the amount depending on different factors, as dry or saturated ground, soft or frozen ground, impervious clay or porous sand and slope of ground surface. Some of the ground water may soon find its way to the surface again as springs. The earth's reservoirs consist of the minute spaces between grains of sand, or the joints and fractures in the massive bed rocks. To measure the capacity of a ground reservoir is an expensive and difficult job.

The level at which water stands in the ground water reservoir is known as the water table and fluctuations in this level give important information about the depletion or addition to the quantity of stored water. In areas of complex geology and glacial drift, it is difficult to interpret the significance of water table fluctuations. In most parts of south Vancouver Island the winter rainfall is sufficient to fill most ground water reservoirs.

Most unconsolidated deposits on this island are the result of the last glacial occupation and ice retreat. The thickness and character of the deposits change rapidly in short distances. These unconsolidated materials (clay, sand, gravel and till) form the most productive ground water reservoirs, some of which may provide enough water to irrigate ten acres or more.

A ridge along east Saanich Road north of Elk Lake containing sand and gravel is capped by a layer of impervious clay. After the ice retreat the land rose and at certain locations wave cut beaches developed. Sand and gravel ten to fifteen feet thick was deposited in long narrow strips along the ridge. The main sand-gravel beds are saturated to a constant level. Much of the water seeps away and discharges as springs, which mark the approximate level of the water table. Level of water in drilled wells down the slope also indicates the level of the water table, the depth also varying with the elevation of the well top down the hillside.

In many areas of Saanich rainwater percolates through the joints and fractures of rock outcrops and flows through a zone of broken rock and under a post-glacial marine clay. Where sands and gravel lie directly on bedrock water may percolate through them into the bedrock below. Shallow wells may penetrate the broken rock and get a supply of water. To penetrate the rock to a deeper depth drilling may be necessary, but generally the number and intensity

of water bearing fractures decrease with depth. Most satisfactory wells produce water at a depth of less than 125 feet.

Wells producing large enough quantities of water for irrigation, industrial or municipal supplies are almost exclusively drilled in the unconsolidated glacial deposits. On Vancouver Island bedrock drilled wells seldom produce as much as ten gallons per minute. Some wells drilled in either type of formation produce no water at all.

The quality of water from unconsolidated deposits is usually better than bedrock water, as it is often softer and less inclined to contain dissolved iron and hydrogen sulphide. The hard brittle Saanich granodiorite in general has the most open fractures, and wells drilled in this material are the best producing rock wells. The generally similar hard volcanics and the gneissic rocks are good producers. When drilled near limestone the water may be harder than normal, but the quality is acceptable. In Metchosin areas the volcanic rock should supply water fairly readily and of good quality.

In contrast some of the Nanaimo sedimentary series are much softer and the shales are so soft that open fractures do not extend more than a few feet, and drilled wells in most cases produce not more than two gallons per minute. Gases from entombed coaly material may impart an unpleasant odor and flavor to the water, while the presence of dissolved iron produces a rusty deposit, which can clog water pipes and stain porcelain fixtures. In some areas salt may be found dissolved in the water, being apparently trapped in the sediments when deposited in an ancient shallow sea. The salt does not indicate a present connection with local seas.

Many problems related to ground water occurrence can be solved by scientific studies.

#### A LONE FLIGHT

Across the strait in evening light  
A white gull wings in buoyant flight  
With grace and strength and plumage bright  
It seems the only thing in sight.  
But soon the coming of the night  
Will bring it down to quiet rest  
Until another day of quest.

A.O.H.

Lorion,  
September 8, 1957.

#### LOST or BLENKINSOP LAKE

by Freeman King

The area around this lake is a place where one can see the change from water to land in the transition stage. During the past decade or two there has been a shrinking of the water area and the land has increased to the extent of at least 20 to 30 feet all around the lake. The process of land encroachment is helped by the root system of the plants and trees, and no doubt aided by the lack of the ever flowing stream which at one time must have fed this lake.

The land around the lake abounds with plants that are not usually found in more developed areas. Among the evergreens are Douglas fir, balsam fir, pines, cedar, yew, hemlock and arbutus. The broadleaves include alder, western birch, rowan, dogwood and a variety of willows. Amongst the shrubs the labrador tea has grown to such an extent that it covers an acre or more. Hardhack is in profusion till it can hardly be walked through at all. Ninebark and the red elderberry are among the numerous shrubs growing there.

The ground around the lake is a peat bog and is soft and spongy. In the wintertime it could be dangerous to walk close to the water.

Flowers grow in profusion, and continue to bloom from the early chickweeds in the spring till the fall with the late asters.

The water plants, including water lilies, have grown to such an extent that they cover much of the water area and make a wonderful nesting place for water fowl.

It is certainly a bird lovers' paradise. Many species rest here, there being so much feed and shelter. The many kinds of plants and insects that they depend on for food, plus the presence of stagnant water, all help to attract and hold bird life.

The lake can be reached by way of Quadra Street and Lochside Drive, and is within the four mile circle of the city.

#### UNDER ORDER-IN-COUNCIL

dated March 21, 1957 -

all hawks and eagles (except goshawks, Cooper hawks and sharp-shinned hawks) are now protected. The Society is making an effort to have all the hawks, the owls and the vultures given the same protection. Few people can recognize one hawk from another.



ASYNDESMUS LEWIS

by Alan Poynter

One day early in August a Mr. Robert Marshall, whose home is on Browning Street, near Mount Tolmie, enquired of the museum as to the type of bird nesting in the oak trees adjacent to his house. Apparently they were partial to a good B. C. apple, which always raises the eyebrows of our local fruit growers.

A check was made the same evening by Mrs. Eleanore McGavin and A. R. Davidson, who located eight birds at the corner of McRae and Shelley Streets, close to where Mr. Marshall lives, and identified them as the Lewis woodpecker, much to the delight of the ornithologically minded people of our society, as the last reports of the 'Lewis' nesting in this particular area was about twenty-five years ago, no reports having been received since.

The peculiar flycatcher habits of this bird can be misleading, as it will sit on high isolated perches, flying off to pick up insects on the wing, and return to its perch to wedge the insect in a crack or crevice and devour it perched in the normal woodpecker manner.

It was this odd exhibition that incited the writer to make a closer study of a bird observed at the Cedar Hill Crossroads on Sunday, September 8th, and begin a very interesting half hour, as all four species of our woodpeckers were found, namely the Lewis, Harris, Downy and a perfect specimen of the pileated, which was obliging enough to allow me within twelve feet while he fed.

Lewis woodpeckers are uncommon here, the nearest place where they are abundant being the Okanagan Valley. Only occasionally are they seen in the Victoria area.

ANOTHER SEA TRIP FOR THE BIRD WATCHERS

by J. O. Clay

Thirteen members made the trip from Randle's Landing at Shoal Harbour to Sidney Island on Saturday, September 7th, to study sea and marshland birds.

A very representative variety and number of birds were seen. The day was clear and cloudy, with intervals of warm sun, and the sea was calm.

On leaving Shoal Harbour many seals were seen asleep on the rocks, while California murrelets, marbled murrelets, pigeon

guillemots and Bonaparte gulls dotted the sea. At the lagoon were large flocks of pintail, with smaller ones of mallard and a few teal. Land birds were represented by several flickers, one horned lark and many savannah sparrows, and accompanying the latter were some small flocks of American pipits.

What was indeed the highlight of interest was one individual Alaska longspur. This bird posed long enough for the party to watch it intently in good light and very close range.

Returning along the north shore of the inlet some rocks were seen black with pelagic (Baird) cormorants, and white with serried rows of migrating sanderlings.

Forty-two species were identified on this boat trip.

UNUSUAL FIR BURNS

by A. O. Hayes

The hill-top grandeur of John Dean Park has also the charm of stillness amongst ancient firs and cedars, giving it a cathedral like quiet. We try to return every summer to enjoy the beauty.

But one feature was puzzling. About breast high on many of the oldest firs are burned places that penetrate the bark over an area of one or two square feet. The blackened bark does not extend beyond the small burn. The burned places face in different directions on different trees, and while they appeared to be the work of man, there did not seem to be any logical explanation.

In August 1956 my wife and I drove into Mount Douglas Park from the south, up to the steep slope of the hill, and on an old tree I saw the same sort of burn.

Leaving the park on a road eastward, I talked with Mr. Todd, whose house and property lie along the park boundary, and I asked him about the burns. He said that he worked in the woods when he was younger, and that boys liked to chew the gum of the fir tree. By heating the wood under the bark, the gum or resin would flow freely; and this was done, leaving the bark burned through at easy working height above the ground.

This seems to me to be a logical explanation. When I was in the Province of Quebec, we collected spruce gum, the hardened resin, from the bark of the trees. We would chew it until it turned from yellow to pink, and became strong

tasting and brittle. I fancy the fir gum was even stronger, but have no inclination to try it now.

### A PROPOSAL FOR THE SOCIETY

At a meeting of your executive held in the Museum on September 18th there was present a Mr. W. P. Keller, who has been a resident of the Victoria district for about ten years. He is a keen conservationist and a professional photographer, having spent many years taking pictures of wildlife in Africa and other countries.

His proposition is to make a series of motion pictures of the big game in British Columbia, stressing particularly the importance of conservation in all its aspects. These pictures would be used for educational purposes in the schools of the Province and among the ever-increasing groups of people who are interested in this important subject. They may also be eventually used in public theatres. He has interviewed the Minister of Conservation and Recreation who has promised to give all the assistance possible.

He estimates this series of films will take about five years to complete and will cost possibly \$50,000.

He has been promised half of this amount by an anonymous donor, providing he can have the project sponsored by a Society such as ours and providing that the films are used for educational purposes.

This matter will be on the agenda of the General Meeting of October 8th for discussion by the members.

The question to be put to the Society is, would they favour the sponsoring of this project and endeavour to raise the balance of the required sum of \$25,000.

### JUNIOR NATURAL HISTORY PAGE

The first meeting of the fall session was held on Wednesday afternoon, September 18th, in the Provincial Museum; fifteen members were present.

After discussion it was decided to hold the regular meeting for the older members on Saturday evenings commencing at 7 p.m. Members are to be notified as to where the meeting will be held.

At the next meeting members are asked to bring in a collection of seeds from any plant that they like; they are to be identified if possible.

An election of officers for the coming year will be held at the next session.

Tentative plans were made for a field trip to visit the B. C. Forest Service tree farm at Duncan.

Members are reminded that subscriptions are now due; will they please bring them in to the next meeting.

At the conclusion of the meeting a short talk was given on the survival of Douglas fir seedlings and some of the enemies that destroy them.

It is hoped that all members will have an opportunity to try their hand at raising dogwood trees from the seeds that will be given them next week.

F. K.

NOTICES OF MEETINGS1957

Saturday

BIRD GROUP:

Oct. 5th:

Field trip to Esquimalt Lagoon, etc.  
 Meet at the Monterey Cafe at 9:15 a.m.  
 or bridge at Esquimalt Lagoon at 10 a.m.  
 Bring lunch. Leader: Mr. J. O. Clay.

Tuesday:

GENERAL MEETING:

Oct. 8th:

Provincial Museum at 8 p.m.  
 Speaker: Mr. L. E. Taylor.  
 Subject: A Naturalist's wanderings  
 in Africa.

Saturday:

ANNUAL FUNGUS FORAY:

Oct. 19th:

Meet at Monterey Cafe at 1:30 p.m. or  
 Thetis Lake at 2 p.m.  
 Leader: Mr. G. A. Hardy

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BOTANY

A few enquiries have been received asking  
 if there will be a class in botany this  
 winter. Will anyone interested in form-  
 ing a class please contact the Secretary.

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