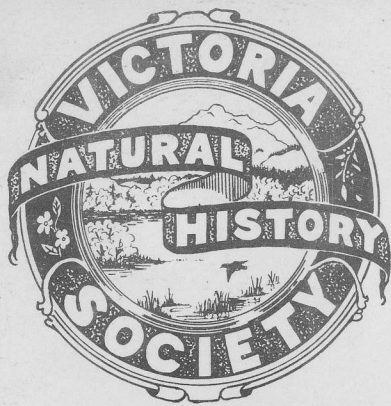


FEBRUARY



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NESTING OF DOUBLE CRESTED CORMORANTS

BALLINGALL ISLAND, B. C.

THE VICTORIA NATURALIST

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The regular monthly meeting of the Society was held in the Provincial Library Reading Room on January 14th. Dr. Carl took the chair. A nature quiz followed the usual business. Some pieces of fossilized wood were shown by Mr. Marrion. These had been found at Gordon Head, and at Ocean View Park (Saanich) where there is swamp material at present under the sea. A jam jar, in which a spider had spun a web before dying of starvation inside his own web, was shown by one of the junior members.

The speaker for the evening was Dr. Don Buckland of the Forest Pathology Dept. of B. C. This department was formed in 1940 and has now a staff of sixteen who spend about four months of every year in the forests.

Dr. Buckland defined forest pathology as the study of diseases and all disturbances to the normal functioning of tree growth, except fire and insects.

Thirty per cent of accessible forest stands are lost annually, 10% by fire, 10% by insects, and 10% by disease. This means that 500,000,000 board feet are lost annually by disease in mature stands alone. This figure is for British Columbia only. Immature stands are not included in this though obviously very important.

Dr. Buckland went on to say that diseases of trees could be classified into two groups; 1. Native and 2. Introduced. In the case of native diseases resistance to them has been developed in the trees, so generally only loss of growth results.

Introduced diseases threaten the lives of the trees through epidemics.

One of the worst imported diseases of trees in recent years is the "white pine blister rust", introduced in 1910 from France. Blister rust is native to Asia and has wiped out, as commercial stand, all white pine in the East. It has two hosts, white pine and currant

bushes. The spores return again to white pine from the currant bushes. Spores from cultivated currant and gooseberry bushes travel much farther than those from the wild plants. A white pine stand is generally safe if no wild currant is growing nearer than 1000 feet. After being attacked by the disease trees die within fifteen years, choked to death by the destruction of bark. Willow blight was introduced into the eastern provinces. Willows are important in that they hold rivers to their courses and willow blight has done much harm in killing these trees.

In dealing with "native" diseases the policy of the forest pathology dept. is to hold losses to a minimum by cultural methods, they take toll from before the seedling shows above the ground for several hundred years.

The disease known as "damping-off" is due to a fungus in the soil.

Physiological causes of loss are those due to wrong environment. Needle diseases are due to fungi and operate in favourable conditions.

Native rusts are found on yellow and lodgepole pine and cause loss of vitality and growth. They form galls and kill off branches but not the whole tree.

Mistletoe diseases are fairly common at the coast. There are also root diseases and loss and disease caused by animals. At Revelstoke 80% of some stands are scarred by porcupine. It has to be decided whether they should be cut now (70 years old) or left to 120 years.

Susceptibility to disease increases after trees have attained maturity.

Mr. Thomas Taylor thanked Dr. Buckland for his most interesting and instructive address.

ASPECTS OF BIRD MIGRATION ON VANCOUVER ISLAND (Continued from last issue)

The fall migration of the Anatidae depends a lot on the pressure of cold weather; there are fewer ducks around here or to be seen passing through so long as the weather remains open in the north. In spring, however, one reads of these birds over-shooting the mark and retiring before a cold spell. With these larger birds, food is not likely to disappear as it might for a warbler. Though we never experience a warbler rush, as in the east, after a spell of bad weather I have seen much the same phenomenon with water birds here. On this occasion poor migrating weather suddenly turned unseasonably warm and the sea became alive with birds, all steadily moving north. None of the species had previously been there in numbers, yet all disappeared a day or two later. Had one missed this particular day, migration of these species might have been put down as poor. It is possible that a good food supply, such as a school of herring, may have been the attraction but of this I saw no sign.

Another weather factor which appears to affect migration in spring is a spell of clear fine days. The birds go through without being seen because under such conditions small migrants would be flying too high to be visible. On the other hand, cloudy weather forces them down and we see them and call it a good migration.

Then again, weather may deflect birds from their normal course; there is no doubt that stormy weather sends birds down the east side of Vancouver Island in the fall. Some years ago we had an unusual number of whistling swans about in the fall; the weather had been foggy on the west coast. Take another look at the map of North America and it will be apparent that those birds leaving their Alaska homes, or travelling south from further north and heading even only to California, would have to go out of their way to strike Vancouver Island unless

weather conditions caused them to hug the coast all the way. Under these conditions the tendency would be for these birds to continue down the east side of the island which results in a considerable migration of ducks and geese.

There are so many "possible" reasons why a migratory species becomes plentiful: some 4 - 5 years ago baldpates were in numbers in the fall. This was during years of drought on the Prairies and it might have been that conditions there drove the birds to take a more westerly route. At any rate, since there has been more moisture on the prairie fewer baldpate have been seen here.

Another cause of change may be some material alteration in the physical conditions governing feed; until recently V.I. was one vast coniferous forest and therefore a poor feeding ground for insectivorous birds. In the earlier days there was only a fringe of deciduous growth along the shore line and this provided the route for all. Now, there is a larger area for them to feed on. We see the effect of this in the number of migrants observed moving along the shore line, the number appears small because the birds are scattered over the logged areas. One has to go up the mountains to see numbers of birds such as bluebirds, Audubon warblers and sparrows.

Even with this improvement it is difficult to see how V.I. can ever become a great migratory highway. The Coast range offers little food. Sometimes passerine birds do get through or over these mountains, an example being the mountain bluebird which is generally represented in fall and spring, probably working up one or other of the inlets.

Further it must be borne in mind that from Campbell River north, except for the few valleys like Sayward, there is not the prospect of quick growth of deciduous trees as in the south.

The inlets certainly provide routes for many water birds that breed in the interior. About the middle of October the western grebe appears in thousands at Oyster Bay (between Courtenay and Campbell R. and about due south of Bute Inlet) and on every occasion that I have seen them in numbers at this time they have had all the appearance of birds resting after a long flight. I do not think that these grebe attempt a flight over V.I. but continue their way by sea which, my experience suggests, is the usual method of travel for the grebe family.

Migration is not always self-evident. Take the case of our common birds around the garden which are classed as residents; they may be residents as a species but the individual birds wintering here are often not the same that nest. I have ascertained through banding crows that there is a definite movement of the breeding population southwards and that birds wintering here go north in the spring.

Another difficulty, with the waders in particular, is to determine whether a bird is on its way north or returning. I have seen least sandpipers undoubtedly going north in June and before the end of the month they can be seen on their way south. On their journey south they must meet birds which are on their way north. White-winged scoters and some Bonaparte gulls can be seen southbound in June. Possibly such birds may be surplus males, but it is not long before there is an unmistakable migration of these males. Though it is likely they are birds that have left their mates to look after the families, it is, none the less, a return to winter quarters.

The foregoing notes touch on a few of the aspects of migration, apart from the ever debatable cause. Each district is likely to have its own peculiarities. I advise the taking of notes.

Theed Pearse

Comox.

Christmas Bird Count 1946

Time - - - - -	Dec. 26th	Dec. 27th	Dec. 26th	Dec. 26th
Beacon Hill - - - - -1,2, 3 lakes		Cliffs Shore	Shoal Bay	Woods Brush
Horned Grebe		9	1	
Baird's Cormorant		7	2	
Cackling Goose	1			
Mallard	184			
Shoveller	1		42	
European Widgeon	1			
Baldpate	267		329	
Wood-duck	3			
Canvas-back	1			
Greater Scaup	3	25	190	
Amer. Golden-eye		2	3	
Buffle-head		12	11	
Old-squaw			2	
Harlequin duck		8	3	
White-winged Scoter		1		
Surf-scoter		13		
American Scoter		1		
Red-breasted Merganser		3		
Cooper's Hawk	1	1		

Continued - - - - -	3 lakes	Cliffs Shore	Shoal Bay	Woods Brush
Black Turnstone		5	7	
Glaucous-winged Gull	260	5		
Herring Gull	1	1		
Short-billed Gull	1		192	
North-western Flicker		2		
Harris' Woodpecker		1		
Seattle Wren		1		
Robin		1		
Varied Thrush (dead)	1			
Meadowlark		1		
Pine Siskin				100
Oregon Junco				1
Rusty Song Sparrow		1		4
Species 32	Totals	525	100	782
				105

Notes: The mallards include two big and two black. The two Cooper's hawks counted for Beacon Hill were probably the same bird.

Weather on 26th was overcast and rainy.

Weather on 27th was bright and sunny.

The Beacon Hill count was made by Mr. J.O. Clay and 6 others. The Shoal Bay count was made by Mr. A. Forbes and Mr. John Redford.

GEOLOGY OF SOUTHERN VANCOUVER ISLAND
and
ADJACENT AREAS
Palaeozoic Rocks

The oldest known rocks occurring in the vicinity of southern Vancouver Island belong to the Devonian period. Fossils of this age have, however, been found at only one point, in a limestone quarry on Orcas Island. Other fossils found on the San Juan Islands include Carboniferous and Upper Permian forms. The rocks associated with these fossils include a wide variety of types: cherts and argillites are common and volcanic rocks and limestone bodies are locally abundant. Similar rocks are found on Vancouver Island in a belt extending from Mt. Sicker and Cobble Hill northwestward to Alberni and Horne Lake. In both the latter localities Carboniferous or Permian fossils have been found. A Permo-Carboniferous succession is exposed still farther northwest around Buttle Lake. C.H. Clapp (Geological Survey of Canada, Memoir 13) considered that the slates north of the Leech River were also of Palaeozoic age but no fossils have yet been found to confirm his belief.

Triassic Rocks

A succession of altered volcanic rocks, now 'greenstones', many thousands of feet thick, overlies the Palaeozoic rocks in the central part of Vancouver Island. Similar greenstones together with scattered limestone bodies, are exposed in a belt extending northwestward from Victoria and Cordova Bay through the Malahat district to Cowichan Lake and Alberni Canal where it joins the area mentioned above. The character of these rocks and the fossils, found at Cowichan Lake, indicate that the succession corresponds to the Texada formation of Upper Triassic age. The Marble Bay formation as much as 2000 ft. thick and made up almost entirely of limestone, overlies the Texada formation in the central part of Vancouver Island but is not known to be

present in the southern part of the island unless it is represented by the unfossiliferous marbles of Nitinat Lake.

Structure

All the Palaeozoic and Triassic rocks have been highly deformed and the rocks as a result have been more or less altered. Shales and argillites have been converted to slates and many of the volcanic rocks have been converted to green schists. The former flat-lying beds have been warped and contorted in large and small folds having a general northwesterly trend. In other places the strata have been broken and displaced along fault planes. As a result of the alteration, the folding and the faulting, it is now rarely possible to decipher the detailed structure of the older rocks over any great area.

W. H. Mathews
B. C. Dept. of Mines.

Note on Hummingbird

The Rufous hummingbird, now a 'hardy perennial', has been seen again this winter at Victoria. On Dec. 21 a large male with iridescent gorget was seen feeding on yellow jasmine by Commander Redford and family, and by Mrs. Compton-Lundy, Victoria Ave., under Gonzales Hill. On Jan. 5th it was seen by Mr. J. W. Anderson, Beach Drive (Willows) and on January 12th by J.O. Clay, Beach Drive (under Gonzales Hill). This last sight record was taken in a storm of sleet in late afternoon; a strong bird flying fast over the street and swerving rapidly between two houses. In all cases previous to the last the bird has been seen whilst feeding among jasmine flowers. This is the third winter in succession that several sight-records of hummingbirds have been made.

J. O. Clay.

MOULTS AND PLUMAGES OF DUCKS

When females are established at their incubation duties, the males of most ducks desert them, gather into flocks and proceed to moult their winter plumage.

During this period the brilliant plumage is gradually replaced by a somber, inconspicuous dress, generally identical with that of the adult female. This is known as the eclipse plumage. The moult which results is known as the eclipse moult. It consists of a complete moult of body, tail and wing feathers. The eclipse plumage is worn for about a month. At its height the males lose their flight feathers simultaneously. The wing is the only feature that does not take on the colours of the female. During the moult of the flight feathers the birds are, of course, unable to fly.

As soon as the flight feathers have grown in again the drakes commence a second moult, about September, and lose the eclipse plumage and gradually acquire the brilliant colours of the full winter plumage.

Thus it is, in the more northern climes, that in the autumn the males are never seen in full winter plumage. This autumn moult is known as the pre-nuptial.

The imitation of the female is so complete in some species that, in the case of the American Merganser the drake, who has no crest, assumes one during the eclipse. Even the bills of some species change colour. Examples of this are the Gadwell and Shoveller.

The eclipse is peculiar to ducks, no other kind of bird has it. It is present only in ducks of the Northern Hemisphere whatever the similarity of climate, and does not occur in birds of the same species, as the Cinnamon Teals of North and South America.

Ref: "Ducks, Geese and Swans of North America" by F. H. Kortright.

THE JUNIOR'S PAGE

As a result of the note in last month's bulletin about feeding birds in cold weather, several juniors have reported some interesting facts. David Anderson saw a towhee and some juncos, Keith Duncan noticed quite a few robins sheltering in Beacon Hill Park. David Birley writes "on putting out crumbs on the bird table outside our window I had interesting results. At first nothing happened and then suddenly they all got bold at once. The result was a squalling, squeaking mass of purple finches all fighting to get at the food. We had also hung a cocoanut and a jay was having a wonderful time on it."

The junior editor reports that when she hung out turkey and ham bones on a willow first one then three, then five Stellar's blue jay came. The females are much slimmer than the males. She has a snapshot of a blue jay and of a towhee feeding from these bones. This morning Bill Stevens saw a downy woodpecker, blue jay and Seattle wren all on a willow branch at the same time. The Seattle wren left hurriedly during the morning.

Another junior reports she went to the Boxing day bird count at Beacon Hill Park. Among the interesting birds seen there were three wood duck. Look them up in a bird book and watch for them.

Jan. 11th:

Today we met in Dr. Carl's office and Mr. Winkler showed us slides on extinct volcanoes, glaciers and passes worn by glaciers. They also showed "land cracks", that is land that has been cracked by pressure or an earthquake, with streams or a river running down them.

Carol Stevens
Junior Editor.

NOTICE OF MEETINGSSPECIAL NOTE:

Owing to the opening of Parliament on Feb. 11 the monthly meeting in February will not be held on that date but on TUESDAY 18th in the MUSEUM at 8 o'clock.

Speaker: MR. F.G. Roe; his subject "American Bison".

TUESDAY

Feb. 4th: Entomology group will meet in the Entomology laboratory on Superior St.

Feb. 11th: Botany group will meet at the home of Mr. J. F. Palmer,
740 Cowper Street
at 8 o'clock.

Feb. 18th: Monthly meeting in the Museum.
(See above note.)

Feb. 25th: Geology group.
(Details at monthly meeting.)

March
4th: Ornithology group.

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To

