The VICTORIA NATURALIST

Mt Arrowsmith. Mammals of V.I.

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VICTORIA NATURAL HISTORY SOCIETY

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----------The Victoria Natural History Society ----------

The fourth general annual meeting of the Society was held in the Provincial Museum on March 11th with Dr. Carl in the chair. The Secretary, Miss Perry, read the minutes of the last annual meeting and also gave a report on the activities of the Society for the closing year. The number of meetings held was as follows:

Monthly meetings	8	
With Pac.B.and M. Soc.	1	
Annual general meeting	1	10
Group meetings:		
Botany	7	
Zoology	2	
Ornithology	9	
Marine biology	1	
Entomology	3	
Geology	5	28
Executive meetings	8	8
		46

The nominating committee proposed a slate of officers which was accepted in its entirety and the changes in the present officers are as follows:
Mr. Colin Curtis to be Vice-President versus Mrs. K. Drury (resigned).
Miss M. Speed to be Secretary versus Miss E.Perry (resigned)
The position of programme convener, formerly held by Mr. Colin Curtis, to be filled by someone chosen by the executive.
The Treasurer, Mr. A.L. Meugens, then gave his report which was as follows:-

BALANCE SHEET FOR YEAR 1946-7

Receipts			Expenditures		
Cash on hand 1/3/46		43.67	Magazine:		
Old Sub.Paid		3.00	Printing	168.80	
			Covers	24.00	
Membership:			Mailing	18.54	$211.34
18 Junior	18.00				
82 single	164.00		Secretary's exp.		10.94
20 Family	60.00				
		242.00	Balance for year...		79.86
Sale of Magazines		10.45			
Sundries,int.etc.		3.02			
		$302.14			$302.14
Balance for year		79.86			
Subs.pd.in advance		13.00			
Cash in bank		$ 92.86			

A. L. Meugens,
Treasurer.

On conclusion of all business, Dr. John Stevenson addressed the meeting on the subject, "The Geology of British Columbia". Dr. Stevenson quoted Sir James Jeans' comparative description of the age of the world and of man;- "If the Woolworth building in New York represented the age of the earth, then a nickel placed on top of it would represent the age of man and a sheet of paper would represent the historic age." The oldest rocks found in B.C. are upper Paleozoic.

Most of B.C. is a land mass from the Precambrian and Carboniferous Periods, Carboniferous and Mesozoic sedimentation is found east to the Kootenays and north to the Yukon. Sea covered most of the land at this time.

We regret that want of space prevents us from reporting more fully Dr. Stevenson's most lucid address, which was followed by a number of remarkable air photographs. We append, however, a geological calendar given during the address.

GEOLOGICAL CALENDAR

ERA	PERIOD		DURATION million years
Quaternary	Recent Pleistocene	Age of man	25
Tertiary	Pliocene Miocene Oligocene Eocene	Age of mammals and modern flora	35
Mesozoic	Cretaceous Jurassic Triassic	Age of Reptiles	140
Paleozoic	Permian Carboniferous Devonian Silurian Ordovician Cambrian	Age of Amphibians " Fishes " higher shelled vertebrates	340
Pre-Cambrian			1500

THE MAMMALS OF VANCOUVER ISLAND

It often comes as a surprise to some persons to discover that certain common and well-known animals are not found on Vancouver Island. The layman apparently assumes that because a certain animal is present on the mainland it should also be present on this Island, where conditions are presumedly in no way different from those of the adjacent coast. But this assumption is incorrect; well-known mammals such as the chipmunk, the mole, the skunk, and the pack-rat, to name a few, are not known to occur on Vancouver Island and yet they are present on the nearby mainland. See Table I.

It will be noted that certain animals which might be expected to be present, such as the chipmunk, mole and skunk, are absent from this list. It will also be seen that, except for aerial species (the bats), marine species and introduced species, all but three of the mammals in the list bear names which distinguish them from their kind on the mainland. Close examination shows that the Vancouver Island members of these species differ in some characters such as size, colour, or proportions from the mainland representatives so that experts are able to recognize the Island forms as subspecies. The three exceptions (otter, wapiti and deer) apparently do not differ from the mainland species.

To illustrate still further the peculiarities of the Vancouver Island mammal fauna let us see what species are found on the mainland but which are not found on the Island. See Table II.

It is perhaps understandable how moles are restricted to the mainland since they seldom travel above ground, but it is more difficult to understand how the larger and more adventuresome animals have remained behind. For example, how is it that chipmunks and flying squirrels are not represented on Vancouver Island while red squirrels are? How is it that the bobcat failed to arrive on the Island while the cougar was successful in colonizing the area? What prevented the skunk and the wood-rat from getting across while the weak-swimming mice and shrews were successful?

These and many other similar questions are not easily answered. We can conjecture that at certain stages in the geological history of Vancouver Island it was possible for animals to pass over from the mainland, either by actual land connections or by ice-bridges which may have existed toward the end of the latest glacial period. Perhaps at these times only some mammals were present on the mainland ready to migrate to new territory. This might explain how squirrels arrived unaccompanied by chipmunks. Perhaps chipmunks and other species which are now absent did manage to reach this Island only to be eliminated by some catastrophe before the species became established. This suggestion is rather unlikely yet it is a possibility which should be given consideration. In any case some of the larger mammals such as the otter, raccoon, deer and wapiti, could have arrived much later in the history of the Island by swimming from the mainland via the numerous small islands in the vicinity of the "Inside Passage".

The possible presence of land or ice bridges, however, is not entirely satisfactory in explaining the presence or absence of certain species on Vancouver Island. Therefore a third means of passage has lately been suggested as a possibility, namely by way of rafts of trees and associated debris originating from the mainland through landslides which occasionally carry immense loads of material into the sea. It is quite conceivable that plants and small animals might accidentally be swept into the water by this means and be transported to offshore islands on the floating mass of material. Such slides must have occurred many times in the past; they occur in present times and of course may happen in the future so that the transport of living animals by this means may even be taking place now and is a definite possibility in years to come. However, most Vancouver Island mammals differ in some slight way from mainland forms indicating that they must have arrived early in the history of the Island and have retained or acquired their differences through isolation. Altogether, the "raft theory" of transport provides a more satisfactory explanation for the presence or absence of some of the smaller species of mammals than any other explanation advanced so far.

Nevertheless all these are theories only, based on evidences on hand. Perhaps man will never solve satisfactorily all the intriguing problems in the present-day distribution of wildlife, but in the meantime they provide interesting material for the enquiring naturalist.

G. Clifford Carl
Provincial Museum.

TABLE I

Mammals of Vancouver Island

Vancouver Island Shrew.- Sorex vagrans vancouverensis Merriam.
Wetmore Shrew.- Sorex obscurus isolatus Jackson.
Vancouver Island Water Shrew.- Sorex palustris brooksi Anderson.
Keen Bat.- Myotis keenii keenii (Merriam).
Miller Bat.- Myotis yumanensis saturatus Miller.
Little Brown Bat.- Myotis lucifugus lucifugus (Le Conte).
Alaska Brown Bat.- Myotis lucifugus alascensis Miller.
Northwestern Little Brown Bat.- Myotis californicus caurinus Miller.
Silver-haired Bat.- Lasionycteris noctivagans (Le Conte).
Big Brown Bat.- Eptesicus fuscus bernardinus Rhoads.
Townsend Lump-nosed Bat.- Corynorhinus rafinesquii townsendii (Cooper).
Hoary Bat.- Nycteris cinerea (Beauvois).
Vancouver Island Black Bear.- Euarctos americanus vancouveri Hall.
Vancouver Island Raccoon.- Procyon lotor vancouverensis Goldman.
Vancouver Island Marten.- Martes caurina vancouverensis Grinnell & Dixon.
Vancouver Island Weasel,- Mustela cicognanii anguinae Hall.
Vancouver Island Mink.- Mustela vison evagor Hall.
Vancouver Island Wolverine.- Gulo luscus vancouverensis Goldman.

Pacific Otter.- Lutra canadensis pacifica (Rhoads).
Vancouver Island Wolf.- Canis lycaon crassodon Hall.
Vancouver Island Cougar.- Felis oregonensis vancouverensis Nelson & Goldman.
Vancouver Island Marmot.- Marmota vancouverensis Swarth.
Vancouver Island Red Squirrel.- Sciurus hudsonicus vancouverensis Allen.
Vancouver Island Beaver.- Castor canadensis leucodonta Gray.
Vancouver Island White-footed Mouse.- Peromyscus maniculatus interdictus Anderson.
Hall's White-footed Mouse.- Peromyscus maniculatus angustus Hall.
Vancouver Island Meadow Mouse.- Microtus townsendii tetramerus (Rhoads).
Laing's Meadow Mouse.- Microtus townsendii laingii Anderson & Rand.
Rocky Mountain Muskrat.- Ondatra zibethica osoyoosensis (Lord).
House Mouse.- Mus musculus musculus Linnaeus.
Norway Rat.- Rattus norvegicus (Erxleben).
Black Rat.- Rattus rattus rattus (Linnaeus).
Roof Rat.- Rattus rattus alexandrinus (Geoffroy)
Western Wapiti.- Cervus canadensis roosvelti Merriam.
Coast Deer.- Odocoileus hemionus columbianus (Richardson).
Mountain Goat.- Oreamnos americanus (Blainville).
Pacific Harbour Seal.- Phoca vitulina richardii (Gray).
California Sea-lion.- Zalophus californianus (Lesson).
Steller Sea-lion.- Eumetopias jubata (Schreber).

Alaska Fur Seal.- Callorhinus ursinus True.
Northern Elephant Seal.- Mirounga angustirostris (Gill).
Northern Sea Otter.- Enhydra lutris lutris (Linnaeus).

Introduced species.

TABLE II.

Some Mammals found on the adjacent mainland but not on Vancouver Island.

Scheffer Mole.- Scapanus orarius schefferi Jackson.
Townsend Mole.- Scapanus townsendii (Bachman).
Gibbs Shrew Mole.- Neurotrichus gibbsii gibbsii (Baird).
Puget Sound Spotted Skunk.- Spilogale phenax olympica (Elliot).
Northern Plains Skunk.- Mephitis hudsonica (Richardson).
Barred Bobcat.- Lynx fasciatus fasciatus Rafinesque.
Townsend Chipmunk.- Eutamias townsendii townsendii (Bachman).
Bachman Flying Squirrel.- Glaucomys sabrinus oregonensis (Bachman).
Northwestern Red-backed Mouse.- Clethrionomys gapperi caurinus (Bailey).
Western Bush-tailed Wood-rat.- Neotoma cinera occidentalis (Baird).
Northwest Jumping Mouse.- Zapus trinotus trinotus Rhoads.
Dusky Porcupine.- Erethizon epixanthus nigrescens Allen.
Cascade Pika.- Ochotona princeps brunnescens (Howell).
Washington Varying Hare.- Lepus washingtonii washingtonii Baird.
American Moose.- Alces americana americana (Clinton).

REPORT OF THE BOTANY GROUP MEETING

The botany group met on February 11th at the home of Mr. J.F. Palmer. Mr. Palmer showed photos to illustrate his talk on the flowers of Mt. Arrowsmith.

There is given below a list of the flowers that may be found on Mt. Arrowsmith.

Moneses uniflors; Cornus canadensis;
Phyllodce empetriformis; Cladothamnus pyrolaeflorus
Menziesia ferruginea; Leptarrhena amplexifolia;
Gaultheria ovatifolia: Caltha leptosepala;
Stenanthium occidentalis; Spiraea pectinata
Sax bronchialis; Sax rufidula (217)
Sax tolmiea (212); Empetrum nigrum
Lewisia columbianum; Phlox douglasii;(196)
Dodecatheon frigida; Romanzoffia sitchensis (211);
Campanula rotundifolia; Phacelia heterophylla
Mimulus Lewisii (158); Erythronium parviflorum
Antennaria rosea; Penstemon Menziesia
Cryptogramma acrosticoides: Erysimum asperum
Solidago corymbosa; Luina hypoleuca;
Oxyria digyna; Parnassia fimbriata;
Pinguicula vulgaris; Silene acaulis;
Erigeron salsuginosus (102);
Erigeron compositus rifidus.

VIOLET-GREEN SWALLOW

Three members of the club have reported seeing violet-green swallows. Mr. Meugens reports having seen them on the 16th March, which his records show to be six days earlier than last year. Mr. Scott Mason's date is 18th for this year and was 20th March last year.

JUNIOR PAGE

The Life History of the Mourning Cloak

The Mourning Cloak (Nymphalis antiopa) is one of the common hibernating butterflies.

It lays its eggs in May, around twigs of elm, poplar, or willow. In about ten days time, a small caterpillar, or larva emerges.

It is about 1/8 of an inch long, and black with long hair on it. The caterpillars from the different eggs keep together, eating the surrounding foliage. In a few days each one moults. The new skin is brown, and the hairs are short. The caterpillar moults four or five times, each time growing a little bigger, the hairs growing longer and harder, and orange spots showing up more and more. After the last moult, it begins to feel drowsy, and spins a silken mat on the underside of a leaf. It then hangs, head down, from the mat. Soon the skin splits along its back and drops off.

It is now in the chrysalis, or pupal stage of its life. It stays like this for two or three weeks, at the end of which time the outside shell splits, and a beautiful butterfly emerges. When it is outside the shell, it expels a drop of bright red fluid.

It sits in the sun until its wings are fully expanded, and are hard and dry. Its wings are dark brown, with a cream coloured border, inside of which is a row of iridescent blue spots on a black background.

Brian Ainscough.

NOTICE OF MEETINGS

1947

Tuesday Apr.1st: ORNITHOLOGY GROUP MEETING at the home of Mrs. R.G. Hobson, 2284 Windsor Rd., at 8 p.m.
Speaker: Mr. George Hardy.
Subject: "Round the year with the birds of the Mount Douglas area of Saanich."

Tuesday Apr.8th Monthly Meeting in the Provincial Library Reading Room at 8 p.m.
Speaker: Mr. Harry Andison, Gov't Entomologist.
Subject: Unknown at the time of going to press.

Saturday Apr.19th OUTDOOR ZOOLOGY GROUP MEETING.
Members will meet at the end of the No.5 Street car line at the B.C.El.Park at the Gorge, at 2 p.m.

Saturday Apr.26th OUTDOOR BOTANY GROUP MEETING.
Members will meet at the terminal circle of the No.9 (Uplands) street car at 2:30 p.m.

Editor's Note: We hope that members will approve of the new cover design for the year 1947-8. The name of the month will appear on the outside of the cover.

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Victoria Natural History Society

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