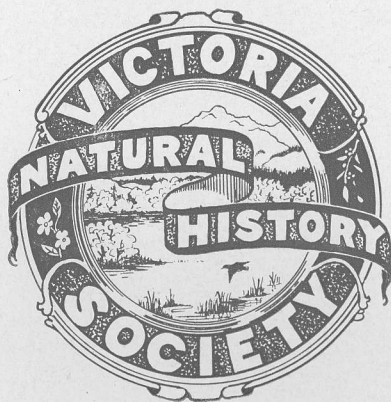


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THE VICTORIA NATURAL HISTORY SOCIETY

The November monthly meeting of the Society took place on the 18th in the Provincial Library R. Room. The chair was taken by Dr. Carl. Some correspondence was dealt with after which the Chairman introduced the Speaker of the evening, Mr. G. Andrews. Mr. Andrews spoke on mapping the Province of B. C. through aerial photography and illustrated his subject with slides showing the equipment used in photographing and developing; diagrams indicating areas covered by different types of lenses; also photos taken in the air and on land during survey trips. There follows a summary of Mr. Andrew's interesting and instructive lecture.

The difference between a map and a plan is mainly one of scale. The topographic map is the basis for many types of map, such as economic, forest, geological, soil, mineral etc., Until a few years ago the topographical map was made the hard way. The theodolite is the instrument of the surveyor and what he has not measured he may not show. At best there is a large personal factor. It has always been the surveyor's prayer that he might be lifted above swamps, blackflies, Devil's Foot etc. and now his prayer has been realized. An air camera does the surveying, recording accurately essential survey information. The interpreting of air photography is spoken of as photogrammetry.

Aerial photography makes available an unobstructed view and can also give stereoscopic views (i.e. of three dimensions). The last war accelerated the development of air mapping, and in this, Canada played a leading part. Surveyors, engineers, and foresters in B. C. did pioneer work. The first air maps were made in 1936 and by 1939 7000 sq. miles annually were being mapped. The Provincial air photography dept. in 1946 covered 20,000 sq. miles and in 1947 40,000 sq. miles. Dominion work is also done, but independently.

An air-photo library is maintained in Victoria which keeps a copy of every photo made. Air film rolls are also preserved in a special vault to duplicate photos when necessary. Copies of photos can be bought at a nominal cost and the public are encouraged to buy. Air-photo libraries are now being established in local headquarters, for easy reference.

Exposures are taken at 10, 20 or 60 seconds apart. The camera is set as required. The camera is fitted into the floor of the plane, is insulated from vibration and must be swung for drift. There are also two oblique windows in the plane for taking oblique view photos. A special wide-angled survey lens is used to give 95% view. The Ross lens gives no distortion. Flight is usually at 17000 feet in an Anson aircraft (which has a ceiling of 18000 and a speed of 150 m.p.h. A hot-air line keeps the camera warm.

Photos must be taken in the summer as shadows are then shortest. Shadows obscure the topography on the photos. Excellent multiplex plotting equipment has been invented for reproducing contours in photographs. Profiles can also be made. When flying high in summer the prevailing colour is blue.

On conclusion of his talk Mr. Andrews answered a number of questions put by members. B.C. uses negatives 5" by 5" and projects at once to 9" by 9" which is the usual negative size.

Speed is 1/100 sec. which is very accurate at high altitudes.

Stereoscopic exposures are taken in one camera which is electrically fed with film.

Possibly one third of this Province has now been photographed.

AQUARIUM REARING OF LARVAL NEWTS

Early in October 1946, while collecting water beetles in a little lake near Wellington, I found many larvae of the Pacific Coast Newt (Triturus granulosis). Most of these were still very tiny with over-sized heads and bodies little more than threads. But all, at least of those I took home, had all four legs fully developed. Two were somewhat further ahead than the rest, being an inch or so long, with heads more in proportion to their bodies.

I had not provided myself with any container in which I could carry them safely, and so only three survived the journey home. Of these, two were the larger individuals mentioned above.

These little newts thrived in a fruit jar of water with an inch of soft mud on the bottom. Many tiny crustaceans emerged from this mud, swimming with jerky movements through the water. Evidently these are the natural food of such immature newts, and my pets lost no time in getting after them.

To keep this food supply going, I merely scraped up now and then a handful of mud from the bottom of a ditch or swampy pool. This, in a jar full of water was at first an opaque mess, but after a couple of days in a sunny window became perfectly clear, with all the mud settled on the bottom. The tiny crustacea could then be seen jiggling merrily around. The newts I lifted with an old tea-strainer and placed in their new home, where so long as any small life remained in evidence, I left them to look after themselves.

During the colder part of the winter, the crustacean food supply failed to show up and the newts were quiet, no doubt partially dormant. I took care to prevent the water from freezing, but kept them away from artificial heat.

By the following April they had doubled in size and a 'jar load' of the tiny life I had been

feeding them did not last for two days. I tried them on very small earthworms, which they were able to swallow with difficulty. But such small worms were hard to find and I could not find time to hunt for them so I think that for several weeks my newts were on somewhat short rations.

Later I hit upon the idea of breeding mosquito larvae for them. This was simple enough as the tiny rafts of black eggs were plentiful on stagnant pools. A few in a small pickle jar, with a little of the green scum on which these larvae seem to feed, would require no further attention. After a week or two the jar would teem with partly grown mosquito worms. I kept a reserve of such cultures; when food for the newts was needed I siphoned a little water from their jar, dumped in a supply of mosquito larvae and left them to it. I did not attempt to estimate the number of such larvae consumed by my newts. I later wished that I had as I think that the figure would have been astonishing. At a guess I should say not less than 20 half grown mosquito worms per newt per day.

By July mosquito eggs had become difficult to find. I scraped in the pools with a wire strainer and secured larvae of mayflies and stoneflies, and other oddities I cannot attempt to name. My pets accepted them but I could not keep them supplied.

By this time, though still quite small, they were rapidly becoming mature in appearance. The two more advanced specimens had lost the long crest-like fin on the back. Their gills had shrunk to half their original size and they frequently rose to the surface, ejecting a bubble of air from the mouth. They were no longer transparent and their skin was assuming its characteristic warty condition.

I introduced these two to a fifty-pound butter box sunk in a pool in the garden where I hoped that they could feed themselves. They were

certainly there for a week or two but later they had disappeared. Perhaps a snake found them, but in the light of my experience with the remaining one I think it likely they made their escape to dry land.

The most backward of the three, now having to itself all the food that I was able to provide, made rapid growth. By late July it was rising so constantly to the surface for air that I placed in the jar a stick, projecting from the water, to which it could cling. On August 7th I found it lying clear of the water on the edge of the jar. Since it evidently wished now to abandon an aquatic life, I placed it temporarily (as I thought) in a jam tin with a little damp moss, placing a cloth over the top held by a rubber band. Very shortly the newt made its escape from this makeshift cage, just how I do not know.

Recently, Sept. 15, I made another trip to the same lake. While dredging for aquatic insects I again brought up four of these larval newts. Two were very small, similar to the smallest of those I had carried home the year before. One appeared about the same size as my hand-reared specimens had been the previous June. A fourth was almost devoid of gills, ready to leave the water. Also while tearing bark from a log, I found two more fully matured, but still small, lying just clear of the water's edge.

I must admit the preceding observations leave much to conjecture. I am at a loss to explain so many different ages and sizes of newts all at the same time. Again, the long period of aquatic life following the development of limbs, seems quite extraordinary, and in strong contrast to the well known life history of tailless amphibia.

R. Guppy.

THE BALD EAGLE

(Editor's note: We feel it fitting that our Society should interest itself in the preservation of the Bald Eagle. We therefore print below a short covering paragraph by Mr. Clay and extracts from three letters received, on the subject, by him and by Mr. Ernest Smith.)

The Bald Eagle, the largest of our much abused predators, still can be saved to be a thing of interest in our Province if the right effort is made to do so. The letters show the need of protection by law of this strong, graceful and beautiful thing of Nature. The bird is of considerable use as a scavenger. Such a species is worth saving. It should be our privilege to do a needed part in establishing its permanent protection.

J.O. Clay.

The first extracts are from a letter to Mr. Clay from Mr. Walter E. Johnstone, of Cranbrook. Mr. Johnstone has been a keen observer of nature for many years.....

"I was very glad indeed to know that some of your Natural History members are taking up the cudgels in defence of that magnificent bird the Bald Eagle, and I am only too pleased to be able in some small measure, to offer a contribution towards its defence.

I have been carefully through my notes (collected since 1913) to find no record or authenticated report that the Bald Eagle has ever preyed on domesticated animals or birds, in the districts I have had under observation.

It is my studied opinion that the harm that this bird does is negligible in so far as the Kootenays are concerned. Where they are numerous, as I believe they are in some sections of the coast, there might be isolated cases of depredation, hardly sufficient, I should think, to condemn the race.

This eagle is resident here, breeding in the Kootenay and Columbia valleys. We have a place on Columbia Lake and nearby there is a nesting site,

so I have had many opportunities to observe the habits of both old and immature birds. Their main diet, during the period of open water at least, is most certainly fish. Suckers are abundant in the lake and many dead ones float ashore, these appear quite acceptable as a source of food. I have only twice seen the Eagle take a live fish, and that was in very shallow water. That they persecute and rob the Ospreys is well known, I have watched this "hijacking" many times.

I was fishing from a canoe some years ago and caught a squawfish, which I killed and threw overboard; at the time I happened to be about a quarter of a mile from a Bald Eagles' nest, where one of the adults was incubating; its white head could be plainly seen on the nest from where I was situated. The dead squawfish had hardly struck the water when I saw the eagle leave the nest, come straight across the lake, seize the fish, and return to its nest.

The main source of winter food in this district seems to be carrion, though these eagles still continue to frequent the water that stays clear of ice in the Columbia, Kootenay and Moyie Rivers. Deer get killed on the highways by cars and trucks, the coyotes make their kills on the frozen lakes; wherever these kills occur, sooner or later, an eagle will show up and gorge to repletion, often encircled by a protesting group of magpies and ravens; the latter often going to some lengths to distract and endeavour to make, the eagle abandon his meal.....

Regarding wildfowl, I have many times watched the Bald Eagle harassing ducks, success in capture seems to depend almost entirely upon the pursuer being able to isolate a single bird, in open water, away from rushes etc., Then the procedure always seems to be the same, keep right after the duck and make it dive until exhausted.

During the hunting season, wounded ducks are easily taken:

I have frequently seen Bald Eagles

flying low over the rushes, much in the same manner as a marsh hawk, evidently in search of wounded birds.....Only last week I saw four Canada Geese sitting on a sand spit in Columbia Lake and an eagle sailed in and settled within fifteen feet of the geese without them showing any apparent sign of fear. Personally I should very much like to see this species protected....."

There now follows extracts from a letter written to Mr. Ernest Smith by Mr. J.W. Winson, Huntingdon, B.C.

"The Bald Eagle has long been persecuted unreasonably. It is one of our greatest birds and one of the least harmful. By choice a fish-eater, it is lazy enough to prefer its fish dead, and the spent salmon on lake shores and river banks are its principal food. Since man has reduced the number of salmon, the eagle hunts the shores and shallows and takes other fish, often stealing the catch of the osprey.

Hunting the hills...dead or helpless animals are eaten, lambs, fawns, etc. but not many, because none are taken when the parents are defending them..... no alleged predator kills less than the Bald Eagle.

When the great salmon slaughter of the Alaskan canners began to lessen the numbers, the men looked around for a culprit and found three, the Indian catching for winter, the bear taking the tired fish from the banks, and the Bald Eagle. They shot many bears, tried vainly to bar out the Indian and got a bounty put on the eagles.

.....The bounty was afterwards abolished, when biologists reported the truth and the bird is now protected in many States. In truth the predatory damage of the eagle is slight. Compared with its value to the "scenery" it is far less than that of the bear..... How posterity would condemn us if we brought about its extermination. It would be a splendid move if we could persuade the Government to put it on the protected list, with the proviso that Game Wardens, and they only

may shoot any single bird that threatens livestock." (Mr. Winson writes under the nom-de-plume of Wildwood in the Vancouver Daily Province.) The third letter from which we quote is from Mr. S.J. Darcus, Penticton, to Mr. Clay

"... It will give me great pleasure to help in any way I can in getting this much persecuted bird (the Bald Eagle) protected.

I have had ample opportunities for observing the habits of the Bald Eagle for more than forty years, both on the coast and inland, and have never known it to commit the crimes attributed to it.

It is not a killer of birds or deer, I think it would be impossible for the Bald Eagle to catch a healthy duck. I have known it take wounded ducks of which it finds many on the lakes and marshes during the shooting season.

During my residence on the Vaseaux Lake Bird Sanctuary I had an opportunity of observing the habits of a pair of Bald Eagles which used to nest there and which were said to have used the same tree for more than fifty years. Those birds never interfered with the ducks in the sanctuary. Their prey consisted for the most part of carp and marmots; and yet those birds were destroyed by orders of the Game Warden as all our nesting Bald Eagles in the valley have been.

In instances where Bald Eagles have been found feeding on deer those deer have not been killed by the Eagles but in most cases shot and escaped from the hunter.

My experience with the Bald Eagle is that it is a scavenger and prefers to feed on dead carcasses.

At the present rate of destruction the Bald Eagle will be a rare bird in a few years time.

I wish you the best of luck in your efforts to get it protected by law, but I fear it will be

a hard fight owing to the attitude the shooting public take in the matter."

ROGER TORY PETERSON

(Who will give the third Audubon Screen Tour Talk in January, on the subject "The Riddle of Migration")

Few bird or nature lovers need an introduction to R. T. Peterson. Either his Eastern or Western field guide, ornithologists' Bibles, accompanies most of them on their field trips. His famous bird paintings adorn the walls of many homes, his splendid illustrations highlight bird books, and he has lectured before many distinguished audiences.

While teaching art and science, Mr. Peterson created his first "Field Guide to the Birds". It was published in 1934. In that same year he joined the staff of the National Audubon Society. He continued to paint and photograph birds. He travelled 20,000 miles in the writing of his "Field Guide to Western Birds", published in 1941. He is a member of the Linnaean Society, the Nuttall Club, and a full member of the American Ornithologists' Union.

Perhaps one of the most fascinating aspects of all bird study is the subject of Migration. There is something intriguing to the imagination about this ability to pick up and go, this remarkable faculty for seeking out the best climate for all seasons, this capacity for travelling tremendous distances with little effort, with an almost unerring sense of direction.

The story of this interesting riddle of the flyways is told by Mr. Peterson through natural colour motion pictures taken by a group of the U.S.A.'s leading natural history photographers who have contributed their time and energies to make this study possible.

JUNIOR PAGE

ACTIVITIES:

Following the regular Saturday morning meeting on October 25th the Juniors were taken to the Outer Wharf cold storage plant. There, with the help of a guide we toured the plant, seeing the fish being unloaded from a fish packer, the cleaning of the fish, the making of ice, the power plant and the cold storage rooms filled with wholly frozen fish.

On November 1st Mrs. Leveson-Gower very kindly consented to show us part of her wonderful collection of shells and to demonstrate how to clean them with bleach and muriatic acid. Already, I am sure, some of the Juniors have been attempting to clean some of their own shells.

On November 8th the Dept. of Agriculture supplied three interesting films on leather, wool, and sailing ships, which we viewed in the photographic branch of the Travel Bureau theatre.

NATURE NOTES BY D. BIRLEY:

During the summer two swallows moved into my birdhouse. On returning from camp, where I had been for two weeks, I found three visitors in the hut, clambering for food as all young birds do. About five days later I looked into the birdhouse but could see only two babies. I soon discovered why; one, more bold, was right up in front of the hut. The parents were worried and as soon as I had left they flew in to see if all was in order. The following day I saw two of the babies poking their heads through the hole at the same time, then one flew away. Next day they were all gone.

COMMENTS: I should like to draw attention to the excellent article and pictures which appeared in the Times on Saturday Nov. 1st. We are indeed indebted to Mr. Humphrey Davy and to Mr. Irving Strickland.

The last few meetings we have had record attendances which shows that the Junior Group is quite popular.

Charles Faulkner.

NOTICES

Tuesday Zoology Group Meeting at Mrs. Hobson's,
Dec.2nd: 2284 Windsor Rd., Oak Bay, 8 o'clock.
Speaker: Dr. G. C. Carl.

Tuesday Monthly Meeting in the Provincial
Dec.9th: Library Reading Room at 8 o'clock.
Speaker: Dr. David Turner
Subject: Conservation of Natural
Resources in B.C.

Tuesday Geology Group Meeting in Dr. Carl's
Jan.6th office at the Museum at 8 o'clock.
1948: Speaker: Mr. Winkler.
A series of lectures on historical
geology will follow this meeting if
a sufficient number of members are
interested.

JUNIORS

Saturdays
Dec.7th Meetings on these two Saturdays as usual,
" 14th: after which Juniors will not meet until
Saturday, January 11th, 1948.

NOTE: At the November monthly meeting a letter was
read from the American Ornithologists Union
asking for a donation to their fund for the
relief of European ornithologists. At the
meeting it was proposed and seconded that a
collection be taken up after the meeting.
We are glad to report that the sum of \$10.
was collected and has been sent to U.S.A.
for the purchase of food parcels.

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To