



THE VICTORIA NATURALIST

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THE WESTERN TOAD ON SOUTHERN VANCOUVER ISLAND

To the vast majority of people, amphibians are perhaps the least familiar and most misunderstood group of vertebrates. This probably results primarily from their secretive habits. While 11 species of frogs and toads, order Anura, occur in British Columbia, only three are found on Vancouver Island. Each, however, is abundant in its suitable habitat. The Pacific treefrog, Hyla regilla, represents the treefrogs, family Hylidae. Rana aurora, the red-legged frog, represents the Ranidae, or true frogs. Its cousin, the bullfrog, Rana catesbeiana, introduced into B.C., is now quite abundant in the Vancouver area. Bufo boreas boreas, the western or boreal toad, is a member of the Bufonidae, or true toads.

The western toad is from two to five inches long and a whitish vertebral stripe permits easy identification. Its background color varies from dark brown to gray. The rough warty skin of toads separate it from other groups of frogs. Each "bump" is a mass of poison glands, but a popular belief that people contract warts from handling toads is untrue. The western toad, with an almost insatiable appetite, consumes large numbers of both crawling and flying insects. Gardeners should welcome it as a natural control for insect pests.

Largely terrestrial, the western toad frequents a variety of habitats. It occurs locally in drier Douglas fir-hemlock stands, and tends to avoid moist cedar forests. Both dry and bog meadows are also favored habitat. Although primarily nocturnal, animals call infrequently during the day. Adults and juveniles have been sighted at the following locations: Blinkhorn Lake, Weeks Lake, Jordan

Meadows, Koksilah River five miles west of Shawnigan Lake, Pease Lake on the Saanich peninsula. The western toad commonly occurs in rodent burrows, in rock crevices, and under logs or other suitable cover. During cold weather returning to underground retreats prevents it from freezing to death. Common predators include birds and snakes, but lucky members of the species may attain an age of 30 years or more.

The western toad becomes aquatic in spring for breeding only. The red-legged frog breeds earliest, when water temperatures reach about 6 degrees C. The Pacific tree-frog breeds about a week later, generally when water temperatures exceed 8 degrees C. The western toad breeds in water from 11 to 12 degrees C., some two to six weeks after the red-legged frog. The breeding season begins in the Victoria area from late February to early April, after the ground starts to thaw. Choruses of frogs fill the air at this time.

In general, eggs of no more than two of the three Vancouver Island species have been found at one breeding site, even though all prefer the shallow quiet water of lakes, ponds, and streams for breeding. Breeding ponds and lakes are generally mature with much bottom detritus. They often contain some vegetation, with a sedge-reed vegetation cover usually at the water's edge.

On March 28, 1970, several solitary western toad males and a few amplexing pairs were located in two small ponds, each about 20 feet across, just south of Pease Lake. Many alder branches had fallen during winter storms and littered the ponds, and these presumably were the future sites for egg attachment. Water temperature at six inches depth was nearly 12 degrees C. Amplexus, the sexual embrace, is axillary, with the male holding onto the female's back. Fertilization is external as in fish. The female may extrude up to 16,000 eggs in a long double string in water from three to 12 inches deep.

On May 22, 1971, several dozen western toad amplexing pairs at Weeks Lake in Jordan Meadows were observed swimming across the water's surface from the east shore in broad daylight. They swam in a westerly direction, toward a shaded tree grove of Douglas Fir. About six individual animals were seen entering the water from the east shore.

The animal pairs were uniformly distributed, from 15 to 20 feet apart, and covered almost the entire lake surface. Such behavior is unusual for this animal. No eggs were seen in the lake on that date, and this indicated the breeding season had just begun.

Eggs hatch into typical tadpoles a few days after deposition. This is the aquatic stage characteristic of the life history of most frogs. Tadpoles metamorphose into tiny toads less than one-half inch long, exact replicas of the adults, some two or three months after hatching. They then assume the terrestrial existence of the mature animals.

For further information on local amphibians, consult G. Clifford Carl's excellent 1966 edition of The Amphibians of British Columbia, B.C. Provincial Museum Handbook No. 2.

-- Story by M.G. Oliver, University of
Victoria biology department.
Cover photo by Jack Ralph.

JUNIOR JOTTINGS

In spite of the ice and snow in early December, the junior branch continued to have an active time.

The junior section went to Francis Park on two occasions. Tracking in the snow was fun, and they found many different kinds of tracks -- a wide variety of birds, mice, coon, deer and tracks of stray cats.

The intermediate section went for a hike to Mount Finlayson. Some walked as far as the summit while others explored the beach lands. The intermediates also did some more work on the swamp trail at Francis Park and will be on duty at the Audubon Films on Jan. 12 and 13.

Plans are underway for the junior branch to hold an exhibition during the early spring. Full details of this month's junior program can be found on Page 56.

--Freeman King.

THE PROVINCIAL MUSEUM HANDBOOKS

By A.R. Davidson

Thirty years ago Dr. Clifford Carl initiated the publishing of booklets on the flora and fauna of British Columbia, which are known as the 'Handbook Series.' In his foreword to the first issue in 1942, he wrote:

"It is felt that the publication of these booklets will satisfy a need on the part of students and the general public for a source of information concerning the natural history and anthropology of this province."

And how right he has proved to be. Since 1942 there have appeared 29 of this series -- eight on birds, 11 on plants and the balance on mammals and sea life.

The first one, "Edible Plants," was written by George Hardy, who was the Provincial Botanist in those years, the drawings done by himself. In parenthesis, I would like to record that George Hardy, during the years until his death in 1966, wrote over 70 articles for the Naturalist, and though a sound botanist, he was a nature lover first, as his charming articles demonstrate.

Most of the others are illustrated by Frank L. Beebe, the Museum's staff artist. The last of the series, "Diving Birds and Tube-nosed Swimmers," was published in 1971.

Marine Biology was Cliff Carl's special subject, and he authored those handbooks relating to fishes and marine life. Charles Guiguet, the Provincial Biologist, wrote all the series on birds and mammals, while Adam Szczawinski, the present provincial botanist, was responsible for the two delightful books on the Orchids and the Heather family.

I cannot think of any books more useful to those interested in our wild life. All of them are written in sound, understandable English -- scientific phraseology down to a minimum -- and the drawings of Beebe are a perfect complement to the text.

The size of these booklets, five by seven inches, is small enough for the pocket, and the prices range from 50 cents to a dollar, with the exception of the Mammals of B.C., which is the largest of the series with 400 pages and costs two dollars.

It is our hope that the publishing of these handbooks will be continued to their completion in the near future. ##

FROM THE EDITOR'S MAILBOX

An interesting letter on a common bird this month from Mrs. Alison Berry, 779 Byng, Victoria:

"Most people dislike crows; I find them interesting. Quite large flocks stay harmoniously together, and together they express their noisy disapproval whenever cats appear in my garden. About 11 of them lie in wait for me each morning, and as soon as they see me at the kitchen window they set up a loud squawking which they continue until I produce some food. Generally it is cut-up suet; if I give them bread, they promptly dunk it in the bird bath. They are just as eager for water as for food, and during December's freezing weather, they could hardly wait for me to remove the ice and give them fresh water. Even with regular feeding, they remain cautious and only once did one take food from my hand.

"The other day I watched two youngish crows in a tree quite close to me. One of them stood very still with its head bent while the other appeared to pick something from its head. This continued for perhaps two minutes. They then reversed roles and the one that had been doing the picking stood absolutely still with its head down while the other did the picking.

"Can any reader suggest what they were doing? Removing lice, "anting" or just being affectionate?"
How about it, readers?

* * * * *

Gwennie Hooper sends along an interesting note culled from the New Scientist: "With a doubling time of less than a year, we can expect to have 5,000 million environmental journals by the end of the century. Not that we are likely to get much past 1990, by which time the demand for paper for environmental journals will have destroyed all the

world's forests and reduced atmospheric oxygen levels by at least 15 per cent."

* * * * *

And Doris Page sends in a bright verse first heard at a congress of the American Horticultural Society, "A Brief for Botany:"

There should be no monotony
In studying your botany.
It helps to train,
And spur the brain --
Unless you haven't got any.

It teaches you, does botany,
To know the plants and spot any,
And learn just why
They live or die,
In case you plant or pot any.

You learn from reading botany
Of woolly plants and cottony
That grow on earth
And what they're worth,
And why some spots have not any.

You sketch the plants in botany;
You learn to chart and plot any,
Like corn or oats.
You jot down notes --
If you know how to jot any.

Your time, if you'll allot any,
Will teach you how and what any
Old plant or tree
Can do or be,
And that's the use of botany."

* * * * *

The President, Dr. J.B. Tatum, informs us he has changed his address and telephone number -- he now lives at Suite 305, 1680 Poplar Street, and his phone number is 477-1089.

BIRDS REPORTED

Hutton's Vireo	(1)	Oct. 8	Otter Point
Barn Owl	(1)	Oct. 19	Otter Point Stuart Johnston
Solitary Sandpiper	(1)	Nov. 13	Esquimalt Lagoon Al Muir
White-throated Spar- row	(3)	Nov. 17	Saseenos Ivy Jarvie
Savannah Sparrow	(1)	Nov. 19	Esquimalt Lagoon Stuart Johnston
Palm Warbler	(1)	Nov. 19	Sayward Road Mike Shepard
Lincoln's Sparrow	(2)	Nov. 19	Point Ellis Bridge Harold Hosford
Peregrine Falcon	(1)	Nov. 23	Airport Dr. Houston
Evening Grosbeak	(10)	Nov. 24	Martindale Road Mrs. Farquhar
Common Teal	(1)	Nov. 25	Shoal Harbour A.R. Davidson
Violet-green Swallow	(1)	Nov. 25	Whiffin Spit Doug Sparling
Audubon's Warbler	(4)	Nov. 30	Brighton Ave. A.R. Davidson
Yellow-shafted Flicker	(1)	Dec. 1	Beacon Hill Mr. and Mrs. Vic Goodwill
Hummingbird (Anna's?)	(1)	Dec. 5	Landowne Mrs. Parker
Gadwall	(1)	Dec. 5	Clover Point Mr. and Mrs. Vic Goodwill
Yellow-bellied Sap- sucker	(1)	Dec. 9	Pike Lake (Terese Todd)
Rusty Blackbird	(1)	Dec. 9	Roy Road Goodwills and R. Satterfield

ADDENDA

We have received no less than four reports of Harris' Sparrows. Details as follows: Nov. 13, one (imm.), Ascot Drive, Mrs. Vera Walker; Nov. 19, two, Point Ellis bridge, Harold Hosford; Nov. 29, 30, one, St. Patrick St., Grace Bell; Dec. 9, two (imm.), Sooke, Nava and Alex James.

We wish you all a Happy New Year and good birding in 1973.

--M. and L. Slocombe, 3134 Henderson
592-9047.

PROGRAM FOR JANUARY 1973

- Executive Meeting: 8 p.m. Board Room 104M
 Tuesday, Jan. 2 Provincial Museum
- General Meeting: 8 p.m. Newcombe Auditorium (south
 Tuesday, Jan. 9 entrance). "Forest Insects of B.C."
 an illustrated talk by Dr. John
 Harris.
- Audubon Wildlife Film: Robert Fulz, "Sky Island: Arizona's
 Fri., Jan 12 and Sat., Chiricahua Mountain Range." 8 p.m.
 Jan. 13 both days, 2:30 p.m. Sat. Newcombe
 Auditorium.
- Bird Field Trip: Meet at Mayfair Lanes (north side)
 Saturday, Jan. 13 at 9:30 a.m. or at Beaver Lake park-
 ing lot at 10 a.m. for trip to Bea-
 ver and Elk Lakes. Bring lunch
 and rubber boots. Leader: Ruth
 Stirling.

JUNIOR PROGRAM

- Jan. 13 Juniors. Prospect Lake. Drivers: McGavin, Parrish.
 Jan. 20 Intermediates. Beaver Lake. Drivers: Suttill,
 Rimmington,
 Jan. 27 Juniors. Goldstream campsite. Drivers: Egoyan,
 Walsh.
 Feb. 3 Intermediates. Power line, upper Munn's Road.
 Drivers: Sandeman-Allen, Smith.

All trips begin from Mayfair Lanes parking lot
 (north side, corner of Roderick and Oak) at 1:30 p.m.

* * * * *

URGENT NOTE: Enid Lemon is in need of someone to
 host a small reception for the Audubon speaker after the
 program on Sat., Jan. 13. If you can help out, please give
 Enid a call at 598-3517.

* * * * *

LAST BUT NOT LEAST DEPARTMENT: Jeremy Tatum reminds
 all birders that records for the 1972 Annual Bird Report
 are due in to him by Feb. 14 at the latest. He has record
 sheets free for the asking for anyone who needs one.

VICTORIA NATURAL HISTORY SOCIETY

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592-1332

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Audubon Wildlife Films: Miss Enid Lemon, 1226 Roslyn Road --- 598-3517
A.H. Couser, #403-435 Michigan St. ---- 384-0832

Group Leaders

Botany: Stephen Mitchell, 3930 Braefoot Road ----- 477-9248
Entomology: Prof. H.H. Huxley, 510-1701 Cedar Hill X Rd. ----- 477-8905
Ornithology: Ruth Stirling, 3500 Salsbury Way ----- 385-4223
Marine Biology: Freeman F. King, 541 McKenzie Ave. ----- 479-2966
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Gail Mitchell, 3930 Braefoot Rd. ----- 477-9248

Ornithology Records: Dr. Jeremy Tatum, (see address above)
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Membership: Mrs. A.R. Davidson, 2144 Brighton Ave. ----- 598-3088
Librarian: A.R. Davidson, 2144 Brighton Ave. ----- 598-3088
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Assistant Editor: Harold Hosford, (see address above)

Annual Dues, including subscription: Single \$3; Family \$6; Junior \$2
Junior Membership is restricted to those not under 9½ years and not over 18 years.

Financial Year is May 1 to April 30.

New Members joining after January 1 - half fee.

Dues and change of address should be sent to the Treasurer.