

# NEWS LETTER

OF THE

## THUNDER BAY

## FIELD NATURALISTS CLUB

PORT ARTHUR - FORT WILLIAM



Dec. 15, 1950  
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P.O.Box 416  
Port Arthur, Ont.

Dear Fellow-Naturalists:

The Christmas Bird Census will be taken on Boxing Day, December 26th, weather permitting. If it is necessary to postpone this field day the census will be taken on December 30th or 31st. All those planning on taking part in this annual event should contact the secretary so there will be no duplication of the areas covered by different groups. Keep a record of the number of each species of bird seen, the number of miles travelled on foot and by auto, and phone your list to the secretary as soon as possible afterwards. Last year a total of 1089 birds of 28 different species were seen on the Christmas Census. What will the results be this year?

A Merry Christmas and A Happy New Year,

Yours sincerely,

A. E. Allin, V-Pres.

C. E. Garton, Past Pres.

Keith Denis, Sec.

### FIELD NOTES

- |         |   |         |   |
|---------|---|---------|---|
| Oct. 22 | Groshawk-Lloyd Slichter                                   | Nov. 10 | Robin, Port Arthur-K.D.   |
| 26      | Eastern Chipmunk-A.E.A.&L.S.D.                            | 12      | 25-30 Lapland Longspurs in<br>Fort Arthur- A.E.Allin  |
| 28      | Arctic 3-toed Woodpecker,<br>Whitefish Lake-L.S.D.&A.E.A. |         | Gray Squirrel, Fort William-<br>J. A. Dyke  |
| 29      | Asters still in bloom, Sand-<br>stone Lake- The Allins    | 17      | Red Crossbills and 1 male<br>American Goldfinch feeding<br>on seeds of white birch in<br>Fort William- A. E. A. |
|         | 2 Northern Shrikes-The Allins                             | 20      | 3 Pine Grosbeaks-Mrs.Rydholm  |
| Nov. 1  | Hawk Owl -Lloyd Slichter                                  | 22      | Pileated Woodpecker- "  |
| 4       | Canvasbacks-Jarvis McComber                               | 24      | 50 Evening Grosbeaks eating<br>Poplar buds-Mrs.Rydholm  |
| 5       | American Bittern, Terrace Bay-<br>Dr. E. N. Wright        |         |   |

### SNOWY OWLS - Autumn 1950

- |         |                              |        |   |
|---------|------------------------------|--------|---|
| Oct. 16 | Fort William-David Allin     | Nov. 7 | Fort William - A. E. Allin                                  |
| 20      | Sibley Park -Chris Armstrong | 14     | Fort William - The Allins                                   |
| 23      | Killed by plane at airport   | 14     | Paipoonge Twp.-The Allins                                   |
| 26      | Dorion Hatchery-C.Armstrong  | 18     | Neebing Twp. - The Allins                                   |
| 29      | Paipoonge Twp.-The Allins    | 18     | Paipoonge Twp.-The Allins                                   |
| 31      | One reported in Fort William | 18     | Roslyn Road School-Mr.MacDonald<br>(seen from 13th to 18th) |
| Nov. 4  | Paipoonge Twp. - The Allins  | 19     | Vickers Heights(2)-Mrs.Rydholm                              |
| 5       | Paipoonge Twp. - The Allins  | 29     | Port Arthur-Dick Thompson                                   |
| 6       | One killed at Airport        | 29     | Fort William-Mrs. Murie                                     |
| 7       | Port Arthur- L. Slichter     |        |   |

PARASITIC LAMPREYS OF THUNDER BAY DISTRICT

Keith Denis

The menace of the sea lamprey to our commercial fisheries has been a recurring topic of discussion locally from the day the news was received that a specimen of this predator had been caught about fifty miles distant from the Canadian Lakehead.

This lamprey, an immature adult taken attached to a lake trout netted near Isle Royale in Lake Superior, was received by Dr. John Van Oosten of the United States Fish and Wildlife Service on February 11, 1947. The sea lamprey had successfully invaded Lake Superior.

Since that date a considerable number of specimens have been taken along the south shore of Lake Superior and up to Montreal River on the Canadian side. One was taken at Knife River, Minnesota. Locally 15 definite records have been established plus four 'probables'. The latter specimens were not sent for identification to Mr. G. C. Armstrong, local biologist of the Department of Lands and Forests.

The other parasite of the family Petromyzonidae found in the district is the Silver or Lake Lamprey. The first record at hand is for the specimen found by David E. Allin on September 17th, 1946, on the lake shore at Port Arthur. However, Isobel Radforth (1954) included Lake Superior and Lake of the Woods in its range. Marshall Bolton of Fort Frances stated that they are taken in Rainy River attached to pickerel (wall-eye). They have also been reported from Saganaga Lake. Isobel Radforth also mentioned that the silver lamprey is absent from most of the waters of Lake Ontario and suggested that this is due to competition with the sea lamprey. Hubbs and Lagler (1949) restrict the Lake Superior distribution to the west end of the lake.

All lampreys have smooth, eel-like bodies, no scales, seven external gill openings on each side just behind the head, one nostril on top of the head, and a round sucking disk for a mouth. This very primitive group of fishes lack paired (pectoral and pelvic) fins but have a long dorsal fin that is united with the caudal or tail fin.

The Sea Lamprey (*Petromyzon marinus*) has two separate dorsal fins. So has the American brook lamprey but the latter is far smaller. Sea Lampreys usually are strongly mottled with black or brown blotches on a gray or yellow background. Adults range from 14 to 30 inches in length. In the Great Lakes they do not usually exceed two feet in length. The buccal funnel has a series of teeth radiating in all directions from the mouth.

The Silver Lamprey (*Ichthyomyzon unicuspis*) has a dorsal fin which is not notched and in this respect is similar to the Chestnut and Michigan Brook Lamprey. The silver lamprey is the largest of these three, usually being between 6 and 15 inches long. Except in rare cases the circumoral teeth are all unicuspid.

Sexually mature lampreys of both species gather in the estuaries of streams in the spring; and after stream temperatures reach about 40°F they begin to move upstream, usually at night. The peak run is believed to occur when the water temperatures are between 50° and 60°F. Males are in the majority at first while later in the run females predominate. During this activity feeding ceases.

Nests are usually hollowed out in gravel bottoms of rapids and riffles, often just below quiet pools. The sea lamprey moves stones to the downstream side of the nesting area with its mouth, building a nest 12 to 30 inches in diameter and between 3 and 6 inches deep in water up to 3 feet deep. Spawning generally takes place in water of 55° to 65° Fahrenheit. After spawning is completed the adults die, the body tissues soon disintegrate leaving only the white gristly notochord (spinal column). Egg counts vary from 78,000 to 236,000 in sea lampreys, according to size.

The larvae of all species are called ammocetes and having hatched a week to three weeks after fertilization of the egg are soon carried downstream until reaching a quiet backwater they burrow in the mud. Here they live on small plant life (algae, etc.) and other materials they strain from the ooze. During this period of development a fleshy hood overhangs the mouth. Species identification is extremely difficult in this stage.

Metamorphosis probably takes place during the fall. After the hood disappears the parasitic lampreys attach themselves to a fish, rasp their way through the scales

and into the flesh using their teeth and sharp tongue. A secretion of the buccal glands prevents coagulation of the blood and the lampreys feed until satiated or the fish dies.

It has been estimated that the sea lamprey remains a larvae for  $4\frac{1}{2}$  years and lives its predacious existence for  $1\frac{1}{2}$  to  $3\frac{1}{2}$  years before maturing sexually.

The economic importance of the sea lamprey in Lake Superior cannot be estimated yet. Fishermen fear the catch of lake trout will decrease drastically as it did in Lake Huron where only 3% of the former catch is now taken. The silver lamprey is not regarded as a commercially important predator.

The mortality rate of fish attacked by lampreys is unknown but the scars borne by the fish that live are becoming more familiar to commercial fishermen. No close check has been made on scarring but some estimate that one out of every 100 lake trout caught is scarred. One veteran of the industry stated that he has seen scarred fish occasionally for many years and that the sea lamprey is probably blamed for damaging a number of fish injured in other ways. No difficulty has been experienced in selling scarred fish.

The Lake Trout is the favourite prey of the sea lamprey, with Whitefish, suckers and the Yellow Pike-perch (also called pickerel or wall-eye) following in order of preference. Brook and Rainbow Trout will suffer with the increase of the parasite.

The Thunder Bay District Fish and Game Association, apprehensive of the future of sportsfishing in the Lake Superior watershed, arranged in May 1950 to set six wire lamprey traps, which they purchased, into district streams. Difficulties arose in maintaining the traps in position and the only good record was for a trap set in the McIntyre River. A Silver Lamprey was taken in this trap on June 23. Water temperatures varied greatly in this stream, being  $50^{\circ}\text{F}$  on May 21 and June 21;  $70^{\circ}\text{F}$  on June 14 and  $48^{\circ}\text{F}$  on July 3rd. No other lampreys were caught. The project will likely be resumed in 1951.

Means of controlling the Sea Lamprey are being sought. First a good knowledge of its life history, its habits, and its spawning grounds is necessary. The Provincial Government is conducting experiments and is also co-operating with states on the south side of the lake. The commercial fishermen of Rosspoint and other fishing villages are helping in this programme. The general public can also assist in this work by reporting every evidence of this predator to the District Biologist, Department of Lands and Forests, Dorion Hatchery, Ontario. Any specimens collected should be sent to him with details of the place caught, how taken, the water and air temperatures at the time if possible to obtain, and other pertinent facts. Scarred fish, notochords, and ammocetes are of interest.

Ammocetes might be found in the mud bottoms of streams. Examining a few shovelfuls of ooze could yield valuable information. Even negative results are worth mentioning.

The following records of Silver Lampreys were collected by Dr. A. E. Allin during 1950. On May 19th two were received, one 300mm long was taken at the Great Lakes Paper Mill in Fort William. Robert Warwick, Port Arthur, caught a specimen attached to a Common Sucker in the McIntyre River on June 3rd. Lorne Fusile took a Northern Sucker with a Silver lamprey attached in the same stream on June 16th. A large number of these parasites were found by the crew of a dredge working in the Kaministiquia River on June 23rd, the same day one was taken in the lamprey trap on the McIntyre River.

The Sea Lamprey records in the table accompanying this article were compiled through the courtesy of Mr. G. C. Armstrong.

#### REFERENCES

- Hubbs, C. L. & Lagler, K. F.: Fishes of the Great Lakes Region; Cranbrook Institute of Science.
- Applegate, Vernon C.: Menace of the Sea Lamprey; published in Michigan Conservation May 1947.
- Radforth, Isobel: Some Considerations on the Distribution of Fishes in Ontario; Contributions Royal Ontario Museum of Zoology Bulletin #25.

SEA LAMPREY RECORDS

Specimen Number	Date	Observer	Prey Species	Locality	Size	Method
1	July 1949	Wm. Legault	22 lb. Lake Trout	Armour Island	14 3/8"	Commercial Net
2	June 25, 1950	John Goyan	5 lb. Lake Trout	Pie Island	9 1/2"	Commercial Net
3	July 21, 1950	P. S. Dahl	3 lb. Lake Trout	Slate Island	6 1/2"	Trolling
4	July 25, 1950	L.C. Whitney	-	Copper Island	11 3/8"	Trolling
5	Aug. 8, 1950	Wm. Legault	-	Armour Island	9 13/16"	Found Net
6	Aug. 31, 1950	Gerow Bros.	-	Rosspoint Point	-	Found Net
7	Sept. 7, 1950	J. Paulmert	-	W. of Wilson Island	12 3/16"	Found Net
8	Sept. 10, 1950	P. Dahl	Lake Trout	Bottle Point (Steels R.)	14"	Found Net
9	Sept. 25, 1950	D. Gerow	-	Powder Island	11 1/2"	Trolling
10	Sept. 27, 1950	J. Paulmert	-	W. of Wilson Island	13 3/8"	Found Net
11	Sept. 28, 1950	Mrs. S. Benning, Wisc.	Lake Trout	S. of Wilson Island	14 7/16"	Found Net
12	Oct. 7, 1950	S. Paulmert	-	Schreiber Point	14"	Trolling (15' water)
13	Oct. 8, 1950	Wm. Legault	-	Armour Island	-	Found Net
14	Oct. 21, 1950	S.T. McCavour	21 lb Lake Trout	Rosspoint	18"	Found Net
15	Nov. 7, 1950	Legault Bros.	Lake Trout	E. of Kabinosh Island	-	Trolling Gill Net

In addition to the above there were two specimens (Frank Gerow, Magnet Island and Wm. Legault, Rosspoint) reported in 1949; and one (commercial fisherman, Port Coldwell) reported in 1950. These specimens can only be recorded as "probables" because they were not officially examined. Another probable in 1950 was taken by Fred Westerback, Silver Island.

Investigations are being carried on to further assess the damage done to commercial fisheries by the sea lamprey. The prohibitive cost of all control measures that have been suggested to date and the possibility of continuing additions to the present population from the lower lakes makes elimination of the predator unlikely. Studies are under way to learn the value in B and D content of the sea lamprey, as well as other food values. Smoked lamprey is being produced at present on a small scale.