

601/A/52/2

SEPTEMBER, 1906.

VOL. XX, No. 6

THE OTTAWA NATURALIST.

Published by the Ottawa Field-Naturalists' Club.

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(ISSUED SEPTEMBER 15, 1906.)

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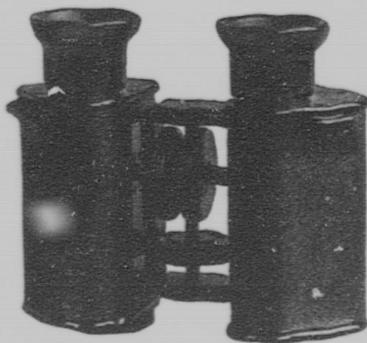
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VOL. XX. OTTAWA, SEPTEMBER, 1906.

No. 6

NOTES ON SOME LAND AND FRESH WATER SHELLS FROM BRITISH COLUMBIA.

By J. F. WHITEAVES.

(A.) *From the vicinity of the International Boundary, on and between the Similkameen River and the Sumas Lake and Prairie; collected by J. M. Macoun and W. Spreadborough in 1905.*

The specimens referred to in this list were collected by Mr. Macoun in his capacity as Naturalist to the International Boundary Commission, or by Mr. Spreadborough, who was his assistant.

Although the region that they collected in is part of the country traversed by Mr. J. K. Lord, when naturalist to a similar commission in 1860, no specimens of *Limnæa Sumassi*, Baird, or of *Physa Lordi*, Baird, were detected or recognized in any of their collections. In the case of the *Physa*, the water at the typical locality for it (Lake Osoyoos) was so high when Mr. Macoun and his colleague visited it, in June, that no fresh water shells of any kind were obtained there. And, in this connection it may be mentioned that good specimens of the large *Physa* from Meach's Lake, near Chelsea, that were long thought to be either *P. Lordi*, or a large form of *P. ancillaria*, have recently been examined by Dr. Dall and pronounced to be the latter. "These shells," he writes, in a letter dated May 11th, 1906, "according to Tryon and Haldeman, are typical *Physa ancillaria*, Say, except that they are larger than usual. One of the middle sized specimens exactly agrees with Tryon's figure."

The species with an asterisk prefixed to their names were kindly determined by Dr. V.-Sterki.

PELECYPODA.

Anodonta Oregonensis, Lea. (1838).

Anodonta cognata, Gould, 1850.

Small lake at Hope, and Sumas Lake, W. Spreadborough ; several living and adult shells from each of these localities.

Sphærium tumidum, Baird.

Sumas Lake, W. Spreadborough ; a fine series of living specimens, in all stages of growth. This is the typical and only known locality for this well defined species.

**Sphærium (Musculium) Raymondi* ? J. G. Cooper.]

Sumas Prairie, W. Spreadborough, several specimens, most of which are very immature. Specimens similar to the larger ones, in the Museum of the Geological Survey of Canada, were collected at ponds between Quesnel and Stewart lakes, by the late Dr. A. R. C. Selwyn in 1875.

**Pisidium proximum*, Sterki.

Second summit west of the Skagit River, in a small pond at an altitude of 6,000 feet, W. Spreadborough ; many fine and adult living specimens.

**Pisidium Strevatori*, Sterki. Var.

Third summit west of the Skagit River, in a small pond at an altitude of 6,000 feet, W. Spreadborough ; nineteen specimens.

**Pisidium variabile* ? Prime.

Sumas Prairie, W. Spreadborough ; six specimens.

Pisidium, sp. undetermined.

Peat bog near the Skagit River, J. M. Macoun ; eight specimens.

Pisidium, sp. undetermined.

In a marsh, Lake House, Skagit River, J. M. Macoun ; sixteen specimens.

GASTEROPODA.

Limnaea palustris, Muller.

Similkameen River, J. M. Macoun ; five specimens.

Limnaea desidiosa, Say. (Teste Dall.)

Sumas Prairie, W. Spreadborough ; many specimens.

Limnaea Vahlîi? (Beck) Moller. Young.

Or *L. lepida*, Gould, young. Dall.

Sumas Prairie, W. Spreadborough ; twelve specimens.

Planorbis (Pierosoma) trivolvis? Say.

Sumas Prairie, and small lake at Hope, W. Spreadborough ; several immature specimens from each of these localities. These specimens are probably referable to *P. trivolvis*, but they may be young shells of *P. Rinneyi*, Tryon.

Planorbis (Menetus) opercularis, Gould.

Sumas Prairie, W. Spreadborough ; several specimens.

Planorbis (Menetus) opercularis, Gould,

var. *Centervilleensis*, Tryon. Teste Dall.

Peat bog near the Skagit River, J. M. Macoun ; four specimens.

Planorbis (Torquis) vermicularis, Gould.

Marsh near Lake House, on the Skagit River, J. M. Macoun ; several living specimens.

Physa propinqua, Tryon.

Sumas Prairie, W. Spreadborough, seven specimens ; and Similkameen River, J. M. Macoun, six specimens. This is the *Physa heterostropha* of Baird, but apparently not of Say.

Physa gyrina, Say. Teste Dall.

Sumas Prairie, W. Spreadborough ; several specimens.

Physa Nuttalli, Lea. Teste Dall.

Sumas Prairie, W. Spreadborough ; thirteen specimens.

Zonitoides arboreus (Say).

Peat bog near the Skagit River, J. M. Macoun ; five specimens.

Euconulus fulvus (Draparnaud).

Peat bog near the Skagit River, J. M. Macoun ; one specimen.

Succinea Harvinksi, Baird.

East bank of the Similkameen River, J. M. Macoun; four rather small but living specimens.

Succinea retusa, Lea.

Sumas Prairie, W. Spreadborough; several specimens. In the Museum of the Geological Survey there are similar specimens from Deer Park, B.C., at an altitude of 5,300 feet, collected by Professor Macoun in 1890.

(B.) *From Douglas, B.C., collected by W. Spreadborough in May, 1906.*

PELECYPODA.

Margaritana margaritifera (L).

Campbell's Creek; four perfect but rather small specimens.

**Pisidium* "abditum," or near.

Several specimens.

GASTEROPODA.

Planorbis (Menetus) opercularis,

var. *Centervillensis*.

Several specimens.

Polygyra Columbiana (Lea).

Two living and adult specimens.

Circinaria Vancouverensis (Lea).

One fine adult and living specimen.

(C.) *From various localities and collections.*

PELECYPODA.

Gonidea angulata (Lea).

Anodonta angulata, Lea, 1838.

This species has been recorded from British Columbia by Simpson and Dali, presumably because it is included in one of the lists of shells collected in that province by J. K. Lord in 1860. But, Mr. Lord's specimens are expressly stated to be from the Columbia River at Fort Colville, which, he says, is "not strictly

in British Columbia." It is not included in the Rev. G. W. Taylor's "Preliminary Catalogue of the Marine Mollusca of the Pacific Coast of Canada, with notes upon their distribution," in the Transactions of the Royal Society of Canada for 1895, though this paper gives a list of the land and fresh water, as well as of the marine shells of British Columbia, and quite recently Dr. Dall writes that he can find no specific record of *Gonidea* from that province in the United States National Museum.

In March, 1906, however, two dead but characteristic and separate valves, of shells that, in the writer's judgment, are clearly referable to this species, were presented to the Museum of the Geological Survey, by Mr. G. E. Winkler, of Penticton, who writes that he had recently found them "in the Okanagan River, near where it leaves Okanagan Lake, at Penticton." And, still more recently, in August last, he has collected and kindly forwarded, four perfect and adult, living but otherwise similar shells, from the same locality. This would seem to be the first definitely Canadian record for this well known California and Idaho species.

Pisidium Idahoense, Reper.

In the Museum of the Geological Survey there are two specimens, one perfect one and a single valve, of this species, which were collected at Fort George, "at the confluence of the Fraser and Nechacco rivers, B C.," by Dr. G. M. Dawson in 1875. This is a previously unrecorded locality for this apparently rather rare species.

GASTEROPODA.

Polygyra ptychophora (Brown).

Helix ptychophora, A. D. Brown, 1870.

In the same museum there are a few good specimens of this species, from the following localities in British Columbia. Elk River, in the Crow's Nest Pass, collected by J. B. Tyrrell in 1883; Sproat, collected by Professor Macoun in 1890; and Trail, collected by W. Spreadborough in 1902.

Dr. Dall writes that similar specimens from Mission Junction (43 miles east of Vancouver, on the main line of the Canadian Pacific Railway) have recently been received at the United States National Museum.

EXTRACTS FROM THE DIARY OF THE LATE ROBT.
ELLIOTT.

(Continued from Vol XIX p. 178.)

Aug. 17. At edge of wood opposite Mossey Cup Island I found in a small rotten stub, nest of flying squirrel; the female and four young about half grown. Nest five feet from ground in abandoned woodpecker's or blue-bird's hole, filled with fine bark strips. The mother came out, passed to top of stub and descended to foot of nearest tree. While I was examining young she came close to hole but again crawled to the top and passed away as before.

Aug. 29. Examined stomach of racoon; killed about 10 P.M. in corn patch. Contents 2-3 green corn, 1-3 insects, chiefly black beetles, but some red-legged locusts. In addition there was about 30 white worms, round, thickness of a knitting needle and about 1 1-2 to 2 inches long. Preserved three. Order Rematocidea.

Sept. 1. Fine, cloudless day. Saw alighting on dry, ploughed ground about sixty golden plover. When they rose and circled many times in the air, each time rising higher, they formed an exceedingly beautiful sight, especially when in turning, the sun was reflected in metallic opalescence.

Sept. 13. Found *Botrychium lunarioides*, perhaps var. *obliquum*, at Gough's. The Plover Mills *Veronica* is probably *V. agrostis* but Gray says it is one to two seeded while this is eight to twelve.

Nov. 14. At Foster's saw six grouse, one woodcock and one quail. The last named is now quite scarce in this neighborhood. Mr. F. gave me one egg of whippoorwill which he found in leafy woods in June. There was another one which he left. This one has rather small lavender spots upon a white ground. It is somewhat abnormal on account of the spots.

Dec. 15. The bird shot by Mr. A. Ralph, of sixth concession, London Township about Nov. 15th last is very probably the blue goose, *Chen caerulescens* (Linn). This is important and must not be overlooked.

Jany. 3, 1899. R. James and Jos. Smith heard one frog in swamp today. Very mild. I looked a great many places, under rotten logs, etc. for salamanders but found no traces of them.

Jany. 8. Picked off a thorn tree remains of a vole, probably left there by northern shrike.

Jany. 24. Hoar frost. Very warm today. Saw one light colored shore lark on the road (First).

Jany. 31. H. Karm, near Embro, in chopping a hollow tree came across eleven coons (*Procyon lotor*) in the interior; eight were killed, three escaping.

March 8. Saw J. W. digging two skunks out of a burrow in sandy soil, in open woods near river. They were in a nest of dry leaves about 2 1-2 feet from surface, male and female—the latter smaller and fatter than the other. Examined the stomachs; that of the male contained two or three withered leaves, and mixed with them, hairs of (probably) voles. There were also a large number of worms, parasites, numerous very small ones, and half dozen or so larger ones, one inch long. The female's stomach contained nothing but numerous small worms in mucous. W. told me that the greatest number of skunks he ever found in a burrow was eleven; but said that a man he knew once ran a fox into a hole and on setting a trap at the mouth he caught fifteen full grown skunks in as many consecutive nights and on the sixteenth he caught the fox. W. also stated that at one time during winter he dug a skunk out of a nest and found a woodchuck close beside it in a nest of its own. The latter was curled up and in a state of torpor, it awoke on the snow.

March 18. Saw a redtailed hawk and tiger beetle. Is the water bear (*Tardigrada*) really a depauperate arachnidian? Saw caddis fly larva for first time in same pool with *Branchippus stagnalis*. Pickering's tree toad croaking in pools for first.

March 19. Many Pickering's tree toads out. Saw two small garter snakes on dry knoll at edge of pool. Saw the first Camberwell beauty at edge of woods.

March 21. Saw a white-footed mouse in hole (natural scar) of small green beech. Nest of thistledown. A large mass of shelled beechnuts were lying at foot of tree. The margin of

the hole on the outside was partly eaten away by (I believe) some larger mammal; probably to get at the little white-foot. It was quite tame but would bite a little at a twig inserted and once struck at it with its front feet.

March 25. At Model. *Skunk cabbage in full bloom. The spathe is shell-like and very pretty, being variously streaked with purple and yellow. The whole plant has a strong skunk-like odor, no doubt a defense to the large tender plant in the struggle for life in places overrun by herbivorous animals. The blossom precedes the leaves—and is very early—the only available time the plant has found to catch the eye of the fertilizing bees.

March 28. Froze hard last night. Slight snow fall, quite cold A. M. Birds hard put. P.M. sun out, snow melted.

April 1. Five or six inches of snow. Winter once more. Birds are surely hard put.

April 3. Cloudy and mild. Snow disappearing. Saw four or five killdeer running at a creek edge querulously calling.

April 4. Froze hard last night, rather mild today. Saw at edge of muddy road what I took to be a Wilson snipe, although apparently rather small. It lit on a rail fence and allowed me to approach within thirty-five yards, then flew with the irregular snipe-flight, and at the moment of rising uttered a characteristic bleat.

April 5. Fine, A. M. Vesper sparrow singing for first time, Saw phoebe at Crozier's Creek. P.M. Snowing heavily, and high wind from north. As I rode fifteen miles in the teeth of the storm I had a clearer view of the struggle for existence.

April 6. Snow 6 inches deep on the level and high drifts beside. All this snow fell since yesterday noon. This morning is calm and mild with a strong sun shining, and no doubt, the snow will rapidly pass away, surely none too soon for the poor birds. Saw part of the skin with a few feathers, of a small bird on thorn at edge of side road. A shrike had dined well and

*NOTE.—“The Model” to which Mr. Elliott refers so frequently in his Diary was an abandoned farm with swampy woods and an old neglected orchard which furnished the best possible ground for the botanist and ornithologist. With his gentle satire he christened it the “Model Farm.”

some little songster suddenly ceased to sing. Saw flicker in maple at edge of orchard; also another on ant hill eating a medium-sized ant with brownish head and thorax, and black abdomen. Think of the storm last night and the hot sun today. When the ant hill is bare of snow the inmates sally out, the hungry flicker comes, and the great question is who is to live. How eagerly the ants were working to clear away debris! How pretty the flicker's plumage in the light of the western sun!

April 7. Watched pileated woodpecker digging its nest in a high stub at 10 A.M. Noticed the bird at the same hole on March 17; nest was well dug out at that time. Now, last year, I saw a hole in the winter which was afterwards used by the pileated for a nest. Does this bird use the winter roosting place as a nest for the ensuing season, and are their nests occupied for more than one season? The yellow-shafted flicker does this.

April 8. Visited Gough's in the evening. Many signs of spring, the more notable being blossoms of *Erigenia bulbosa*, *Claytonia* and *Hepatica*. What delicate odors and most exquisite tints these early nurslings of April show! Near the spot where the Harbinger of Spring starred the gray knolls, a male chewink cheerfully sang; another answered him from a neighboring copse. Heard a W. R. shrike singing a feeble song on top of a high elm.

April 9. Captured a specimen of the butterfly *Grapta j-album*. Saw three individuals at different places and followed one a long distance but owing to its very rapid flight it escaped. How perfectly the under side of its wing assimilates with the grey of decayed leaves and wood. When the wings are closed it is very difficult to make it out among dead leaves, and no doubt by this means it often escapes the notice of sharper eyes than mine, viz.:—those of the keen and hungry birds.

April 10. I walked one and half miles along the river from Medel to Plover Mills. It was very pleasant, the bright sun was setting at the head of a long ravine, the moon overhead was slowly gathering light, and on the opposite side of the singing river, half way up a wooded slope, a bright fire was burning in a sugar

camp. What a restful rural sight! The birds were fairly bubbling over with melody, the sweet vesper sparrows, perhaps, carrying off the palm.

April 11. Heard a brown creeper gaily singing as he wound around a mossy ash. Saw two black squirrels chasing each other round the dead top of a tall maple. A flying squirrel came out of a hole and descended gracefully to a bass-wood stub nearby. On striking the stub the squirrel went down to a brush heap. On agitating this it crawled to the foot of a beech and going to the top, passed to the foot of its home tree and so back to the nest.

April 14. Today Dirca doffs the brown fur cap he wore throughout the winter and gaily shakes his golden forelocks in the sun. Saw four red-backed salamanders. Hylas are incessantly harping in the pool.

April 23. A ruffed grouse built its nest among beech leaves in a brush pile, a hen had a nest four feet from it. The first egg laid by the grouse was accidentally destroyed by a person going to the hen's nest. The grouse then laid in the hen's nest and they have laid five eggs apiece.

May 3. Saw ruffed grouse making its nest near the ridge.

May 6. Followed the "Peeper"—little tree toad, (*Chorophilus triseatus*.) Owing to some ventriloquial power the creature is hard to locate. I found this individual on the grass, on the edge of a pool with its throat much inflated, peeping vigorously, and occasionally uttering a gurgling trill of longer duration.

May 7. Exceedingly warm, quite like June, leaves bursting on every side. What a keen delight is afforded the one who takes a wood-walk today. Butterflies glancing and pirouetting over the blossoms, bees on the Claytonias and Violets, the juneberry hanging her graceful leaves on the forest's skirts, squirrels chattering and birds bubbling over with song. An irresistible march onward of nature's various forces.

June 5. Father saw dead *Procyon lotor* (raccoon) in pasture. I saw live *Mephitis mephitis* in woods. At sight of me it retreated to burrow in a knoll and on my standing still it re-

turned near me and foraged assiduously among leaves and rubbish apparently for beetles. It frequently dug an inch or two after its prey. No smell was noticeable. The most surprising thing connected with this animal in the woods is the enormous size of its tail.

June 15. Visited the carp pond and on the trees around it large numbers of *Hyla versicolor* were trilling musically. I captured four, three of them greyish and one greenish. I watched them for an hour in the bottle and noticed that the greenish one, (the largest) was the only one that trilled, the others merely offering a soft chic, chic, chic. The greenish one was the only one attempting to copulate with the other ones. It was certainly a male and I presume the others were females. I am not aware that sexual distinction is connected with the color of this very variable species; but there is a clear difference in the notes of the sexes. This is interesting. I also noticed that after handling these viscid hylas and accidentally rubbing my eyes I felt a smarting that lasted for twenty minutes or so. I suppose no bird or mammal finds them at all palatable. I would like to offer one to *Procyon lotor*, who greedily devours the Ranas.

June 19. The afternoon turning out fine I had the choice of going to a picnic or to the Model. The winds whispered in the beeches, and I went to the latter alone save for the buzzing thoughts that hummed through my head. Splashing through the swamp there, I came half unaware on a magnificent group of *Cypripedium spectabile*, and I did not envy Wordsworth with his heart dancing with the daffodils. Seventeen blossoms had opened out, the peerless flowers all perfect as one could wish, purple and pink fading invisibly into immaculate white—these boats floated in the ethereal air waiting for some dainty Ariel to set a filmy sail above them, and ready to waft them whither he wished. Or indeed it may be (so dull are mortal senses) that they were moccasins fashioned by the patient worker, Nature, for some fairy Indian maiden, for her wedding hour by the light of the full moon this very midsummer night. Be all this as it may, a portion of this beauty pierced deep through my eye and down to my heart. A swamp sparrow brooded on her eggs near by, and a veery filled the woods with his clingle clangle, a silver bell

with a golden tongue. Coming down to Plover Mills with four of the fairy boats what voyageur ever made a lighter portage? There, R. Y. had caught for me a *Menobranthus* and no stronger contrast could be found in nature than was presented between the burden of my right hand and of my left, in one a glorious flower, in the other a hideous amphibian.

The *Menobranthus* measured 11 3-4 inches; it was rather dark brown on the back with five lighter brown blotches and some large very dark brown spots all over the back and sides; abdomen yellowish brown with a few spots along the centre. The gill tufts (three pairs) had dark brown ends with blood red bases at the gill orifice; four toes on each foot; upper lip slightly overlapping the lower; many small teeth on palate, tongue large but short; head measured one and half inches in length; body from fold of throat to vent five and half inches; tail 4 inches. Is this *lateralis* or *maculata*? It seems to be the latter but it is *lateralis* that Dr. Brodie has. Dr. Garnier mentions another species which he describes as rare, namely *M. Huronense* which is said to be about one foot long, deep sooty brown on back, lighter beneath, throat white, upper jaw hooked over the lower. This seems to agree pretty well with mine. Concerning my specimen I should note that it was caught on a hook baited with earth worm; this was about 3.30 P.M.; the water was very dirty and the river high owing to recent rains.

June 28. At the head of Plover Pond I was looking at a red squirrel at foot of maple and black squirrel close to a nettle tree. The dog Dash made a run for the squirrels when I noticed a great blue heron rise from the shore; and closer, and of much more interest, a female merganser moving out into the water making a quacking sort of a sound. She then flew south half a mile and presently returned. While watching the squirrels I thought I noticed something like a large bird fly down from a dead tree close by the shore and the idea took hold that the bird may be breeding there. This is worth attending to. I resume the hooded merganser is the most likely species to be found here.

BIRD MIGRATION, 1905.

OBSERVATIONS MADE ON SABLE ISLAND, NOVA SCOTIA.

By JAMES BOUTEILLER.

Name of Species.	When First Seen.	Number Seen.
Ringneck Plover ..	April 23.....	One.
Common Arctic Tern	" 27.....	A few.
Flicker	" 27.....	One.
Junco	" 30	Several.
White-throated Sparrow	May 3	One.
Red Phalarope.....	" 4	One.
Greater Yellow-legs	" 6.....	About a dozen.
Least Sandpiper	" 8.....	One.
American Pipit	" 12.....	One.
Roseate Tern	" 13.....	In numbers.
Great Blue Heron	" 18.....	One.
Henslow's Sparrow	" 18.	Several.
Spotted Sandpiper	" 22.....	One.
Red Phalarope.....	" 22.....	In large flocks.
Spotted Sandpiper ..	" 25.....	In numbers.
White-crowned Sparrow	" 25	In numbers.
Shore Lark	" 25.....	One.
Pine Warbler	" 28.....	One.
Wilson's Phalarope	June 7.....	One. First one ever seen here.
Pine Siskin ..	" 16.....	One.
Yellow Warbler	" 25.....	One.
Crossbill, American ..	" 25.....	One.
Greater Yellow-legs	July 10.....	Two.
Wilson's Snipe	" 13.....	Six.
Swallows	Aug. 9.....	Four.
Yellow Warbler ..	" 9.....	One.
Greater and Lesser Yellow-legs..	" 10.....	In numbers.
Pectoral Sandpiper.....	" 10	Several.
Turnstone Plover	" 10.....	In numbers.
White-rumped Sandpiper	" 11.....	Several.
Black-bellied Plover	" 20	In numbers.
White-rumped Sandpiper	" 20.....	In numbers.

Name of Species.	When First Seen.	Number Seen.
Swallows	„ 20.....	In numbers.
Golden Plover.....	„ 20.. . . .	Several.
Bartramian Sandpiper	Sept. 8.....	One.
Buff-breasted Sandpiper.....	„ 12.....	One. First one I have ever noticed here.
Black and White Warbler	„ 12.....	One.
Cedar Waxwing	„ 12.....	One.
Pipits.....	„ 16.....	In numbers,
Flicker	„ 16	One.
Palm Warbler	„ 16.....	In numbers.
Pine Warbler .....	.....	Several.
Chimney Swift.....	.....	One.
White-throated Sparrow .....	.....	Several.
Osprey ..	.....	One,
Fox Sparrow ..	.....	One
Kinglet .. . . .	.....	One.
Rusty Blackbird .....	.....	In numbers.
Myrtle Warbler .....	.....	In numbers.
Black-throated Green Warbler..	Oct. 7.....	One.
Various Hawks and Sparrows ..	„ 7 ...	In numbers.
Fox Sparrow	„ 7.....	In numbers.
Kinglet	„ 7.....	Several.
Black-throated Blue Warbler ..	„ 7.....	One.
Junco	„ 16.. . . .	Several.
Fox Sparrow	„ 20.....	Several,
Hermit Thrush	„ 22.....	One or two.
Killdeer Plover	„ 22.. . . .	One.
Long-tailed Squaw.....	„ 25... . . .	In numbers.
Black Creeper... ..	„ 25... . . .	One.
White-winged Scoter... ..	„ 25... . . .	In numbers.
Baldpate	„ 28.. . . .	In numbers.
Woodpecker ..	„ 31... . . .	One.
Junco	Nov. 12.....	About a dozen.
Robin	„ 22... . . .	Several.

*All came during N. W. blow which lasted for two or three days beginning 30th September.

Name of Species.	When First Seen.	Number Seen.
Snowy Owl	„ 25	About a dozen.
White-winged Scoter	Dec. 1	In numbers.
Shelldrake	„ 22	In numbers.
Bluebill	„ 22	In numbers.
Northern Shrike	„ 22	One. Has been here about a month.
Shore Lark	Jan. 6	Three.

MEETINGS OF THE ENTOMOLOGICAL BRANCH.

A good meeting of the Entomological Branch was held at Dr. Fletcher's apartments on the evening of March 23, at which 8 members were present. The chairman exhibited some rare butterflies taken in the Yukon Territory by Mr. Jos. Keele, and by Mr. W. J. Wilson, both of the Geological Survey. Among those taken by Mr. Keele, the most remarkable were *Erebia magdalena* and *Eurymus boothii*.

Mr. Harrington exhibited his collection of *Dytiscidae*, all of which had been recently examined by Mr. J. D. Sherman, Jr., of New York. This collection contains 50 species from Ottawa and will be of great value to local coleopterists in naming their specimens of this little-worked family. There were 7 species which could not be named.

Mr. Gibson showed a fine specimen of *Sthenopsis thule* taken by him on July 6 last. This is the first authentic record of this rare moth ever having been taken at any other place than Montreal, the type locality. Mr. Gibson also showed a leaf of an *Ixia* from the greenhouse at the Experimental Farm which was thickly matted with the dead bodies of a species of aphid, every specimen of which had been destroyed by a minute Chalcid parasite, and read a note on the behaviour of the parasite when stinging its victims.

Mr. Young exhibited a series of nine specimens of *Eucosma solandriana*, showing a remarkable range of variation. These

had all been taken by him about the lower branches of *Ostrya Virginica* in July and August last.

Mr. Baldwin exhibited a specimen of the West Indian moth *Melipotis fasciolaris* taken by him in Ottawa last summer and read a note upon its capture.

Mr. Metcalfe showed 13 species of orthoptera, all taken at Ottawa.

Mr. Halkett showed some parasitized pupae of various kinds from his collection.

Mr. Wilson gave an account of the country he was exploring last summer in the Temagami district.

A copy of Dr. E. P. Felt's sumptuous memoir *Insects Affecting Park and Woodland Trees*, Volume 1, was laid on the table and was much admired by all present.—J. F.

Held at Mr. Gibson's, 20th April. Messrs. Halkett, Fletcher, Harrington, Keele, Metcalfe, Baldwin, Newman and Gibson present.

Mr. Halkett exhibited living specimens of the nymphs of some May-flies and Stone-flies which he had collected from the Rideau river. He said that he had found these in thousands, near St. Patrick's Bridge, swimming up the river against the current. He also showed one of the curious cases, with the larva inside it, of a caddis-worm.

Dr. Fletcher spoke of an interesting occurrence at Ottawa, in very destructive numbers, of a tineid caterpillar. This minute larva is at present working inside the tips of white cedars, killing many twigs and giving the trees a very unsightly and unhealthy appearance. Specimens of the work of this minute insect were examined. Dr. Fletcher also showed some living parasites, *Pteromalus puparum*, reared from the chrysalids of the Common White Cabbage Butterfly. Mr. Harrington mentioned that he had found the cases of *Coleophora laricella* in large numbers on wild trees of *Larix Americana* at several places in the Ottawa district. A living specimen of *Meloe niger*, one of the first insects to appear in the spring, was also shown by Dr. Fletcher.

This species is as a rule rather rare in collections but is always common at Ottawa.

Mr. Harrington exhibited a collection of 11 species of *Andrena* taken at Ottawa and Toronto, which had recently been critically examined and named by Mr. Vierick, of Philadelphia. He also showed a perfectly fresh specimen of *Scoleopteryx libatrix* which he had caught the day before. He was under the impression that the specimen must have recently emerged from the pupa. There was some discussion on the winter habits of the species, which branched off into the abundance of some Vanessians last autumn and this spring. There was reason to hope that *Vanessa j-album* might this year be again abundant and all members were urged to try and secure eggs of this species so that the full life-history might be worked out.

Mr. Metcalfe showed some living larvæ of *Leucania comoides*, and also one of a species of *Crococa*, as well as a small collection of micros taken in Toronto and mounted by himself.

Mr. Baldwin exhibited a fine specimen each of *Apantesis celia* and *virguncula*, which had been taken by him during last season. Both of these moths are rare in this locality.

Mr. Newman spoke of the injuries by the larvæ of *Grapholitha interstinctana* to the clover seed crop in Ontario. He had found the larvæ very abundant in Victoria, Durham, Peterboro and Prince Edward counties.

Mr. Gibson showed some specimens of a *Coleophora* found this spring upon the heads of Yarrow and also some yellow larvæ of a moth hibernated in the Dry stems of *Oenothera*. Larvæ of *Penthina hebesana*, in the heads of mullein were also exhibited.—A. G.

CORRECTION.

On page 107 of the last issue of the OTTAWA NATURALIST *Pachystima Myrsinites* and *Pachystima macrophyllum* were by the printer marked "sp. nov." after the last proofs had left the editor's hands. The former of these species was described by Rafinesque the latter by Miss Farr.

REVIEW,
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MOSESSES WITH A HAND-LENS AND MICROSCOPE. A NON-TECHNICAL HAND-BOOK OF THE MORE COMMON MOSESSES OF THE NORTHEASTERN UNITED STATES. By A. J. Grout, Ph. D. Parts I, II and III, published by the author, 360 Lenox Road, Brooklyn, N. Y. \$1.00 a part.

In his preface Dr. Grout says: "Mosses are individually so small and inconspicuous that the effect which they have as a mass in creating and enhancing the beauty of natural scenery is often overlooked," and as he later points out many would have collected and studied them had not the difficulties been so numerous and hard to overcome. It is to lessen the number of these difficulties that "Mosses with a Hand-lens and Microscope" has been published. A short review of "Mosses with a Hand-lens" was printed in THE NATURALIST a few months ago. Useful as that book is to young students it cannot compare in value with Dr. Grout's later and more exhaustive work. The same methods have been used but the hand-lens being replaced by the microscope it has been possible to refer to many microscopic distinctions that could not be detected at all, or only with great difficulty, by a hand-lens. Though purporting to be only a hand-book of the mosses of the northeastern United States, nearly all eastern Canadian species are included.

The first 46 pages of Part I are divided into (1) Introduction (2) Classification and Nomenclature. (3) The Collection and Preservation of Mosses. (4) How to mount Mosses. (5) Methods of Manipulation. (6) Life-History and structure of the moss plant. (7) Illustrated glossary of bryological terms. The description of species and the characterization of genera and orders is so exact that any one familiar with moss terminology should have little difficulty in determining the species he collects.

Heavy coated paper, new type and illustrations without number add to the value as well as the appearance of what must be considered the most important work that has yet been published on American mosses. No other book will be needed by any moss-student except the specialist.

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