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CONTENTS.

	PAGE
1. Notes on Some Land and Fresh-Water Mollusca from Fort Chimo, Ungava Bay, Ungava, by J. F. Whiteaves...	221
2. A New Song for a Common Bird, by W. E. Saunders	224
3. Notes taken in the Peace River, Athabaska, and Adjacent Country, by J. A. Macrae	226
4. Two Warblers New to Canada, by W. L. Kells	230
5. Review	235
6. Index	237

ANNUAL MEETING, MARCH 19, Y.M.C.A. ROOMS, 8 p.m.

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THE OTTAWA NATURALIST.

VOL. XIV.

OTTAWA, MARCH, 1901.

No. 12.

NOTES ON SOME LAND AND FRESH-WATER MOLLUSCA FROM FORT CHIMO, UNGAVA BAY, UNGAVA.

By J. F. WHITEAVES.

In 1864 Dr. A. S. Packard made a small collection of land and fresh-water mollusca on the Gulf and Atlantic coasts of Labrador. The names of the species in this collection are included in his "View of the Recent Invertebrate Fauna of Labrador," published in the first volume of Memoirs of the Boston Society of Natural History. Omitting *Alasmodonta arcuata*, which is included only on hearsay evidence, and *Hyalina electrina* and *Zoogenetes harpa*, which seem to have been found only on the Gulf coast, the species recognized from the Atlantic coast are as follows, the land shells having been determined by Prof. E. S. Morse.

PISIDIUM STEENBUCHII (Moller).

= *Cyclas Steenbuchii*, Moller, 1842.

"Abundant in fresh water streams and swampy lands at Square Island and Strawberry Harbor."

ISTHIA (PUPA) HOPPII, Beck.

"Common at Strawberry Harbor."

CONULUS (HELIX) FABRICII, Beck et Moller.

"At Strawberry Harbor, July 26. Found under sticks in a retired and protected valley."

VITRINA ANGELICÆ, Beck et Moller.

"Common, generally occurring with '*Hyalina electrina*.'
Taken at Strawberry Harbor."

LIMAX AGRESTIS, Linn.

"Not uncommon at Strawberry Harbor and at Square
Island, under stones."

In 1883 and 1884 Mr. Lucien M. Turner, of the Smithsonian Institution, collected a few specimens of land and fresh-water mollusca, still farther to the northward, at or near Fort Chimo. These specimens are referred to by Dr. W. H. Dall, on pages 202 and 203 of a paper published (in 1886) in the ninth volume of Proceedings of the United States National Museum, where they are identified with the following species.

LIMNÆA PALUSTRIS, Muller, var. VAHLII.

= *Limnæa VahlII* (Beck), Moller, 1842.

LIMAX (AGRIOLIMAX) hyperboreus, Westerland.

ZONITES (CONULUS) CHERSINA, var. EGENA, Say.

= *Helix Fabricii*, Beck, 1837; *Conulus Fabricii*, Packard;
and probably the same as the northern European shell now
called *Conulus fulvus* or *Petasia fulva*.

PUPA DECORA, Gould.

Much more recently, in 1896, while assisting Mr. A. P. Low, of the Geological Survey of Canada, in his Labrador explorations, Mr. W. Spreadborough collected a small but interesting series of fresh water shells at Fort Chimo. In this little collection, also, there are four species represented, of which one is a *Limnæa* that is evidently the same as that collected at the same place by Mr. Turner, and identified by Dr. Dall with *L. palustris*, var. *VahlII*. The others appear to be as follows:

PISIDIUM STEENBUCHII (Møller).

Eight perfect specimens, which, upon the whole, agree very well with the rather vague description of this species, without any illustration, in the "Index Molluscorum Groenlandiæ."

VALVATA SINCERA, Say.

About thirty living specimens, in fine condition, with their opercula.

Many years ago Canadian examples of this species were erroneously referred to *Valvata humeralis*, Say; and Mr. W. G. Binney at one time thought that they should be regarded as a smooth form of *Valvata tricarinata*. As now understood, the true *V. sincera* appears to range over nearly the whole of the northern part of this continent. Living or recent specimens of it have been collected at the following localities. In the Province of Quebec, at three different lakes or rivers in the county of Rimouski; in fresh water streams on the Island of Anticosti; and in the Lachine Canal at Montreal. In Ontario, at Lake Nipigon; in Assiniboia, on the east fork of Milk River; and in British Columbia, at two localities in the East Kootenay district. Similar specimens have been found at Great Slave Lake; at Sturgeon Lake, Athabasca; and on the Peace and Upper Mackenzie rivers. The species is also known to occur in great abundance, in a semi-fossil state, in many shell marl deposits in Quebec and Ontario, from Anticosti to Owen Sound.

PLANORBIS ARCTICUS (Beck) Møller, 1842.

Seven specimens, which seem to be referable to this species, though *P. arcticus* may be only a synonym of *P. parvus*, Say (1816) which Binney says is found as far to the northward as Moose Factory in James Bay, and Fort Simpson on the Mackenzie River.

Ottawa, January 11th, 1901.

A NEW SONG FOR A COMMON BIRD.

By W. E. SAUNDERS, London, Ont.

On May 3rd of the present year Mr. H. Gould and I spent the day twenty-five miles west of London, seeking with some success the nests of the larger hawks. Near the close of the day there lay a few miles between us and the railway-station, and we chose the longer of two ways "for a walk," to see the country and to hear the birds. When the light had grown so dim that we could no longer see a bird at any distance, our attention was arrested by a harsh nasal "gaap," delivered in a tone midway between that of a snipe and a night-hawk, to the latter of which we were at first inclined to refer it. Sitting down to listen, we were in a few minutes startled to hear the bird evidently flying our way, and uttering all the time a most peculiar set of twitterings, which we could not accurately describe. When over our heads we caught a glimpse of it, still rising, then turning, and in a few seconds more the twitterings ceased and then the monotonous, regular "gaap" reached us again, from about the locality of his former perch. While awaiting further développments we speculated on the identity of the singer, and what we considered our best guess was the snipe, for the notes appeared to have some characters which fulfilled our ideas of the kind of song a snipe might sing—if he could. Continuing our vigil, we were favoured with several repetitions of the flight song, the "gaap" being continuously rendered at intervals of say five seconds during all the time when the bird was on the ground. It was too dark to see to shoot the bird, and much too dark to have found it, if we had shot it, and, besides, we had no gun; so we were compelled to leave it, and for some months were in ignorance of its identity, no one to whom the problem was referred being able to throw the least light on the matter.

Recently, however, in reviewing the pages of the "Nidologist" I read an interesting article (Page 6, vol. IV.) by Mr. R. B. McLain, of Elm Grove, W. Va., on the twilight song of the Meadow-lark which seems to parallel our own exactly, and as this opens up

an almost unknown chapter of this common bird's life I quote his article at length: "In 1895, the writer, chancing to be in close proximity to a field, observed a bird perched in a tree-top. Its position and actions proclaimed it a Meadowlark at the first glance. As I approached, it took wing and flew swiftly upward, its wings vibrating rapidly as the bird ascended spirally into the air, uttering a hushed but penetrating, chattering noise resembling somewhat the notes of the *Chatura pelagica*. Suddenly these chattering noises are interrupted by loud 'chirps' or 'cheeps' like those of a Canary uttered in quick succession. The bird flew in almost a circle, slowly descending to the ground again. It seemed to have great power of ventriloquism (or else the damp air caused a misleading influence in determining its position by hearing), for the notes appeared to come out of the tree—near which I stood—but every twig was visible and no bird was to be seen: and, as I had lost sight of it in its flight, I knew not where it could be. The notes grew louder and louder. I was positive the bird was in the tree. But it was not, for I was still gazing upward, above and partially through it. I was puzzled. The bird was certainly coming nearer, for the notes continued to grow louder, until I almost imagined it would end by lighting on my head. But the misleading notes did not end here. The noise ceased for a moment, then a sharp and harsh grating 'cheep' came from a point in the field above, 80 or 100 feet distant. I was vexed the first time this occurred, but realized that either the bird was deceiving me or the air had a hand in the deception. The loud, hoarse call was repeated at intervals, and I could easily determine its position. A few moments later it again took wing, and the chattering began, broken in upon occasionally by the chirping, until it again seemed almost upon me. Then a repetition of the intervals of silence and once more the tell-tale 'cheep' from the field. On one occasion while gazing up, the bird flew directly over my head only about thirty feet above; his voice had so bewildered me that I could not ascertain his whereabouts until I saw him sail smoothly over. Whether the dampness, the clear moist air, or the bird itself caused this ventriloquial effect I do not know, but I rather favour the latter supposition."

This experience was ours exactly; the ventriloquial quality was not so marked, but it was present; the height of the flight was about the same, and our bird also described a circle when near the end of its song. I do not know any more satisfying occurrence in the experience of a bird student, than to open a new page in the life history of a common bird, and this is a chapter that is certainly rarely entered upon by anyone.

The time of day at which the song occurs, usually finds us wheeling homewards, if not already at home, and the season for this song is doubtless very short, so that it may be counted among one's rarest ornithological recollections. The Ovenbird has a similar song, fairly well known in the aggregate, but which has been well heard by but few persons. And why not? How many persons know the call of the Sawwhet Owl, which is to be heard near most cedar swamps in March and April? Is it not true that we miss these and many other novel phases of bird life by spending the evening and early night under cover?

NOTES TAKEN IN THE PEACE RIVER, ATHABASKA, AND ADJACENT COUNTRY.

The following interesting letter from Mr. J. A. Macrae, Commissioner to deal with Indians and Half breeds in the Athabaska districts in 1900, has been kindly placed at the disposal of the OTTAWA NATURALIST by Dr. Otto J. Klotz, Astronomer to the Department of the Interior, at whose request the observations were made during Mr. Macrae's official visit to the far north last summer.

"Ottawa, January 22nd, 1901.

"My dear Dr. Klotz—

I have already told you how sorry I am not to be able to bring you back more detailed and useful information from the North, but in case the few observations I am able to report may be of use to you I give them here.

The only thermometrical readings I can give you are as follows:—

April 18, 6 p.m. 30°.

" 19, Carrot Creek : minimum 18°, 6 a.m. 26°, noon 58°,
6 p.m. 30°.

" 20, Pembina Valley : minimum 28°, 6 a.m. 30°, noon 43°,
6 p.m. 41°.

" 21, Pembina Valley : minimum 26°, 6 a.m. 30°, noon 57°,
6 p.m. 50°.

" 22, Paddle River : minimum 33°, 6 a.m. 37°, 6 p.m. 40°.

" 23, Six miles north of Paddle River : minimum 33°, 6 a.m.
35°, 6 p.m. 42°.

" 24, Six miles north of Paddle River : minimum 32°, 6
p.m. 42°.

" 25, Athabasca River : minimum 30°, 6 p.m. 40°.

" 26, Six miles north of Athabasca River : minimum 32°,
6 a.m. 32°, 6 p.m. 39°.

" 27, Deep Creek : minimum 24°, 6 a.m. 35°, 6 p.m. 40°.

" 27, Deep Creek : minimum 24°, 6 a.m. 35°, 6 p.m. 40°.

" 29, Deep Creek : minimum 18°, 6 a.m. 22°.

May 1, Swan Hills : minimum 28°, 6 a.m. 30°.

I observe from notes made in my diary that frogs were heard on April 21st for the first time, between Pembina River and Paddle River. The frost was already a foot out of ground on the roads. I find a note made on the 27th April that anemones were well up and plentiful at Deep Creek, and young grass was about three inches high. A caribou was seen, a fact which I mention as I think that it was rather far southwest.

April 29. The frost is still in the ground. On the 28th the first mosquitoes were seen. Northern lights of great brilliancy on this date. No rustling or crackling noticeable.

On May 1st I crossed the Swan Hills, finding very deep snow on the summit. The aneroid both in ascending and descending the hills showed that poor Chalmers's reading of 1,000 feet is about correct. Your instrument read 995 feet. The grass on the south slope of the hills was very much more advanced than any we had seen yet.

On May 3rd we saw the first wild ducks. Upon leaving the high country on May 14th and going down into Peace River

Valley I was much surprised to note the difference in vegetation. It was at least two or three weeks ahead of that about Lesser Slave Lake, and this is said to be always the case. The poplars and tamaracks were all in leaf and mosquitoes plentiful.

It is of interest to us who have so long known the North West Territories, and I think have observed how frost does damage in valleys whilst high ground escapes, that in the Upper Peace River Valley the contrary is the case; frost blights vegetation on high ground but not in the valley. This is probably due in part to the great height of the table lands and in part to the enormous body of water contained in the river.

On May 20th, south of Clear Hills on the road to Fort St. John, I noticed strawberries, raspberries, saskatoon, wild cherries, and snap-dragon in flower, anemones and wild flax in seed. At Peace River they informed me that the season was always a couple of weeks ahead of Lesser Slave Lake. The depth of Pine Valley I made out from the aneroid to be 725 feet. On the 21st, 22nd, and 23rd of May we found the grass very much more in advance of what it had been elsewhere, and it appears that, as the mountains are neared in going up the Peace River, the vegetation becomes more rapid and the season earlier.

At Vermillion on the night of June 23rd at its darkest I was able to read print outside of my tent, and night was only twilight on Slave River on July 14th. Strawberries, gooseberries, and saskatoon berries were ripe.

The pelicans, which gather in great numbers at Pelican Rapids on Slave River, had gone north ten or twelve days before July 18th.

At Fort Chipewyan, Fort Smith, and Fort Resolution I made close inquiries into the number of Wood Buffalo remaining, having an opportunity to do this owing to meeting so many Indians fresh from their grounds—such as, I think, no one else has enjoyed. Some of the Indians who came in to meet me at each place had lately been near the buffalo, and had counted the different herds, which are, generally speaking, three in number; one ranging from Salt River to Peace Point on Peace River, one from Salt River north to Great Slave Lake, and one from Salt River east and west. They number I conclude from 500 to 575 head. You

will, of course, understand that errors in count may have occurred, few Indians counting reliably, but I think that it is quite safe to say that about the number stated are left. Some eight or nine were killed last winter, but as I tried and punished those who killed them it is thought in the country, and is hoped by me, that no more depredations will occur. I understand that there has been an increase, since the animals were protected, of perhaps a couple of hundred, and it would appear to be only necessary to continue vigorous protective measures in order to perpetuate the herd. It is noticeable that the fur of the Wood Buffalo, owing no doubt to climatic conditions, is longer and thicker than was that of its brother of the plains, and it has that straightness and thickness which characterizes that of the Musk Ox.

I was informed that it was never safe to count upon Great Slave Lake being open before July 1st.

On 23rd July we had exceedingly hot weather, but the nights continued pleasant and cool.

Four tribes of Indians, representatives of which had never before entered into treaty relations with the Crown, were dealt with, namely, the Slave or Slavey Indians of Hay River, the Dogribs, the Yellowknives, and the Cariboo Eaters. The habitat of the Dogribs is to the north and south of the central portion of Great Slave Lake; the Yellowknives come from Fond du Lac or Great Slave Lake near old Fort Reliance; the Slaves inhabit the Hay River basin, and the Cariboo Eaters, the country east of Slave River.

On September 6th we experienced frost, and on September 13th had a very cold storm of rain and sleet with some frost. The leaves along the Athabasca had changed colour and were falling from September 3rd.

I do not understand the naming of the Great Slave River. It is in fact identical with Peace River; yet, after the waters from Lake Athabasca enter it, making no appreciable difference in its size or course, its name changes to the Great Slave. Locally it seems to be as often called the "Peace" as it is the "Great Slave."

With my report in the blue book of the Department of Indian Affairs will be published a map that may interest you showing

roughly the habitat of various Indian tribes. Please note the incursion of the Crees, who are of Algonquin stock, into the country of the Tinnie or Dhinnie family. Of the existence of the Iroquois about Jasper House you will have been long aware.

J. A. MACRAE.

TWO WARBLERS NEW TO CANADA.

By W. L. KELLS, Listowel, Ont.

Among the most interesting ornithological events to the students of natural science in the season of 1900 was the securing of specimens of two species of birds new to the avifaunian lists of Canada. Both of these birds belong to the family of the Warblers and the genus *Dendroica*, and both of the specimens obtained were of the male sex. The names of the new visitants are the Kirtland's Warbler (*D. Kirtlandi*), and the Prairie Warbler *D. discolor*. The specimen of the latter was taken on the 11th of May and that of the former on the 16th of the same month, and the fortunate collector was Mr. J. H. Samuel, an ornithologist of Toronto, who reports his discovery of these as well as the discovery of other rare specimens to Mr. C. W. Nash, who edits the "Studies in Nature" department of *The Farming World*. In introducing Mr. Samuel's report Mr. Nash says:—"These records will be of the greatest interest to naturalists, as they include two species of birds that have never before been found in Canada."

THE KIRTLAND'S WARBLER.

Regarding the Kirtland's Warbler, Mr. Nash remarks: "The capture of the Kirtland's Warbler near Toronto is quite the most interesting event of the season. This warbler is one of the least known of North American birds, only seventy-five specimens being in American collections up to Jan. 1st, 1899, and, of these, fifty-five were taken in the Bahamas, the other twenty having been taken in the United States. The rarity of this bird makes it improbable that we shall hear or see anything of it again for some time,

unless, like Cory's Bittern, the few that come northward should select this province for their future home."

This member of the Warbler family received the name of Kirtland from Dr. J. P. Kirtland, of Ohio, who appears to have been the first to introduce the species to the notice of American ornithologists, and add its name to the list of the warblers of North America, of which it is among the rarest.

The male of this species is about five and a half inches in length, and the plumage on the upper parts is of a slaty blue colour, the front of the head being black and the crown streaked with lines of the same hue, the under parts yellow, whitening toward the extremities, and the wings and tail are each marked with spots and lines of a clear white. The female is a little smaller in size than the male and the marking of her plumage is much similar, but the colours are of a duller hue. The bill and feet are black.

Of the nesting and general habits of this species but little is known, but in its migratory movements and food-seeking actions it does not appear to differ from the other members of its genus.

Dr. Coues, in his "Key to North American Birds," gives a full description of the size and plumage of both sexes of this species, and after noting its habitations "Eastern United States," says that it is the rarest of all the warblers, and that up to 1884 only about a dozen specimens had been collected.

In the general notes of the first volume of "The Auk," page 389, under the heading "Another Kirtland's Warbler from Michigan," Mr. Robert Ridgway, of the Smithsonian Institute, Washington, contributes the following note regarding this species:—"The national museum has recently acquired a fully adult male of this species which, on the collector's label, bears the following legend: 'No. III. collection of N.Y. Green (*Dendroica pinus*) Pine Creeping Warbler; Battle Creek, Mich., May 11th, 1883.' This specimen, which was generously presented to the National Museum by Mr. J. H. Batty, of Parkville, L.I., is in the highest state of plumage of the fully adult male, and has the yellow of the under parts entirely free from markings on the jugulum which are present in the type (an immature male changing to spring plumage) and in two of the three females in the collection.

The reader will note that though the collector of the above specimen labelled it as the Pine Warbler, yet Mr. Ridgway identified it as a fully plumaged specimen of Kirtland's species.

Referring to "The Birds of Michigan," by Prof. A. T. Cook, we find that author recording the Kirtland as a rare straggler in that State, mentions the specimen taken at Battle Creek in May, 1883, and identified by Mr. Ridgway, and speaks of another taken at Ann Arbor in May, 1888, and refers to another captured at the Straits of Mackinaw and identified by Dr. Merriam. Up to 1878 but nine specimens were known, the fifth and ninth of these having been taken by Mr. Covert at Washtenan, in that State.

THE PRAIRIE WARBLER.

Referring to the taking of a specimen of a male Prairie Warbler, by Mr. Samuel, near Toronto, on the 11th of May, 1900, Mr. Nash remarks:—"The Prairie Warbler, which has also made its appearance for the first time, is a much better known bird than the Kirtland Warbler, and as its summer range includes most of the State: immediately south of our border, its occasional appearance here may be expected."

Among the birds of New England the Prairie Warbler is recorded as a rare summer visitant. In Florida it is also listed as a rare bird, but in that State it is met with in the winter season more commonly than in the summer months. In Virginia, it is a more common species, and in all the lists of the birds of the Northern States from New York to the great plains it is recorded as a summer visitant or resident and probably will be found as such in the southern parts of Manitoba. Mr. Goss, in his list of the birds of Kansas, records the Prairie Warbler as a rare summer resident of that State, but says that it arrives there about the first week in May and begins to nest towards the end of that month. The nest is placed in bushes or on the lower branches of trees, in open or thickly-wooded lands, and at an elevation of from two to eight feet off the ground; the site is in upright forks or among twig-like branches, and the nests are made of leaves, strips of plants, fibres, and lined with hair-like rootlets. The eggs are four or five to the set, of an oval form, and average in size .67 x

.49. These are of a white colour, thickly spotted with lilac, purple, and brown.

In general appearance the plumage of both sexes of the Prairie Warbler is much alike, and the colour of the young differs chiefly in being of a duller hue. In length it is nearly five inches, and the extent across the wings about seven inches. The plumage on the upper parts is of a yellow olive hue, with dottings of brick-red on the back, the forehead, and a line on the head; two wing-bars and the whole under parts are a fine yellow. On each side of the head is a three-pointed black mark, with marks of the same hue on the neck and other parts of the body. The places where it is found in the greatest abundance are the middle and southern States, and it passes the winter season on the borders of the Gulf of Mexico and the West India Islands. From this region it begins to move northward in February, and reaches the borders of the Great Lakes in the first week of May. Its general haunts and home is in the sparse low woods, cedar thickets, and old fields grown up with scrub pine. It is remarkable for its peculiar and curious song, and is an expert fly catcher, being constantly in hunt of winged insects after the manner of the redstart and all proper fly-catchers.

The Prairie Warbler was tolerably well known in the time of Audubon, and Alexander Wilson, in his "American Ornithology," thus records his first impressions regarding the species:—"This pretty little species I first discovered in that singular tract of country in Kentucky, commonly called Barrens. I shot several afterwards in the open woods of the Chactaw-nation, where they were more numerous. They seem to prefer these open plains and thinly wooded tracts, and have this singularity in their manners, that they are not easily alarmed; and they search among the leaves, the most leisurely of any of the tribe I have yet met with, seeming to examine every blade of grass and every leaf, uttering at short intervals a feeble chirr. I have observed one of these birds to sit on the lower branch of a tree for half an hour at a time, and allow me to come up nearly to the foot of the tree without seeming to be in the least disturbed, or to discontinue the regularity of its occasional note. It is slow in its movements and

rather a scarce bird in the countries where I found it. Its food consists principally of small caterpillars and winged insects."

Prof. Cook, in "The Birds of Michigan," records this species as a rare migrant, but otherwise relates that it is a summer resident of that State, and has been found to nest as far north as Mackinaw Island. Prof. Davie, in his work on the nests and eggs of North American birds, gives the observations of many persons in regard to the nesting of this species. It is known to breed in various localities east of the Alleghanies, from the latitude of Massachusetts southwards. It is also known to nest in Ohio, but more commonly in Virginia. Dr. Coues found it nesting in great numbers within a small area near Washington, in the month of May. The nests were only a few feet from the ground and were placed preferably in hickory and dogwood bushes. It has also been found nesting in New York State in the latter part of May and first half of June. The nest is a very pretty, deep, cup-shaped fabric, composed of vegetable fibres and fine grass, closely matted and lined with hair. The set of eggs is usually four, rarely five; their colour is whitish, with a greenish tinge, and the markings resemble specks of chestnut and burnt umber, and are usually in the form of wreaths about the larger end.

THE HUDSONIAN CURLEW IN MIDDLESEX CO., ONT.

A Hudsonian Curlew (*Numenius hudsonicus*) was shot near Strathroy, Ont., on September 15th last by a sportsman from that town. The specimen fell into the hands of Mr. L. H. Smith, but was so much decomposed that it was buried. Urged by a telegram, however, he exhumed and skinned it. The specimen was exhibited at the September meeting of the Ornithological Section of the Entomological Society of Ontario at London. Mr. Smith apologized for the condition of the skin, but, considering the circumstances, it was thought by the members of the section that Mr. Smith's efforts deserved commendation rather than that an apology should be received.

W. E. SAUNDERS, London.

REVIEW.

GEOLOGICAL SURVEY OF CANADA. GENERAL INDEX TO THE REPORTS OF PROGRESS, 1863 to 1884. By D. B. Dowling, B.A.Sc., Ottawa, 1900. 475 pages.

In the terms of the prefatory note by the Director of the Geological Survey, Dr. G. M. Dawson, "the present General Index begins with the volume of 1863 for which an entirely new index has been made, and embraces the succeeding reports to that of 1882-83-84 inclusive. It covers sixteen volumes and two short summaries, making in all 6,585 pages of text to which more than 31,000 entries are given. It thus provides a ready means of reference to practically the entire body of observations published by the Geological Survey up to the year 1884."

From 1885 to the present time, "Annual Reports" have been issued by the Department, each of which is separately indexed. The "General Index" just issued forms publication No. 638 of the Geological Survey, and contains 475 pages of text divided into three parts, viz. :—

Part 1. Districts described in the several reports.

Part 2. Special Examinations.

Part 3. The General Index.

These include :—(1.) The reports analysed geographically and arranged under Provinces, Counties, and Districts, so that under any county or district in a province, a list of references to reports, arranged in chronological order, is given. (2.) Rocks, ores, minerals, or fossils, that have been subjected to assay, analysis, microscopical examination, or were scientifically described. (3.) The general index, in which the arrangement under a reference to a place, is usually chronological, while under a subject, references will be found alphabetically arranged, or in case of common occurrences, as of iron, fossils, &c., localities may be grouped under provinces.

The "Reports of Progress of the Geological Survey of Canada," and the "Annual Reports" of the same, contain a

vast amount of useful and practical information on the mineral and other resources of the Dominion, as do also the maps which accompany these reports, giving in a graphic form the leading geological features of the territory included. This "General Index" is therefore hailed with delight, as a work which gives ready reference to the various economic products in a series of volumes containing 6585 pages of text, not only by all who are interested in the resources of our great Dominion but also by all students in science who may desire to carry on further researches in the various districts comprised in the reports indexed. The amount of time henceforth to be saved in searching for information on the thousand and one points referred to in each of the volumes indexed cannot be over-estimated, and all persons into whose hands this index may fall will bless its projector as well as its author. An index to all the Geological maps referred to in the Reports may be found under the word "Maps."

Mr. Dowling's Index will also be of much value for bibliographic references on the work performed by the various officers of the Geological Survey from 1866 to 1885 under the name of each officer; and, as the readers of THE OTTAWA NATURALIST are aware, we were favoured by Mr. Dowling, in vol. XIV., No. 6, of THE OTTAWA NATURALIST for September last, with a chronological index to the field work done by the officers of the Survey from its commencement to 1865, so that there is now available for ready reference for geology and geological work in Canada a complete record from 1843 to the present time.

ENTOMOLOGICAL SOCIETY OF ONTARIO.

We have received a General Index to the Reports of this important Society, covering all of their annual Reports from the beginning in 1870, until the end of 1899. There is no series of reports on practical entomology of greater value to Canadian farmers, fruit-growers and gardeners, than these popular publications. The present Index will be of inestimable value to the thousands of Ontario farmers who have frequent occasion to consult these reports, which now cover a period of thirty years. The work has been excellently well done by the Rev. Dr. Bethune, of London, who since the foundation of the Society, has always taken a most active part in advancing its interests. The price of the Index is 25 cents in paper, or 50 cents neatly bound in cloth. It is on sale by the Society at London, Ont.

INDEX

TO THE

OTTAWA NATURALIST, VOL. XIV, 1900-1.

Adaptation in fishes, Power of	212	Billings Memorial	91
Address, Annual, of the President	197	Billings, Elkanah, memorial notice of	202
Ami, H. M., note on the squid in St. John Harbour	55	portrait and memorial tablet of	211
Note on British American Echinoderms	56	Bird notes, by W. T. Macoun	21, 72
"Canadian Surveys and Mus- eums. By B. E. Walker."	74	asked for	52
"Annual Report, Botanical Club of Canada	94	Birds, of Southern Saskatchewan. Notes of rare, breeding in On- tario	24 69
"Revision, American Voles of the genus <i>Microtus</i> ."	97	Blatchley, W. S., "Gleanings from Nature"	35
On the occurrence of a <i>Whittle- seya</i> in the Eo-Carboniferous, on Harrington River, N.S.	99	Book Notices—	
On the Devonian-Carboniferous problem in Nova Scotia and New Brunswick	121	Canadian Palæozoic Corals, by L. M. Lambe	32
A National Museum	51	Stories of Insect Life, by Weed and Murtsfeldt	34
Zoological note	173	Gleanings from Nature, by W. S. Blatchley	35
Obituary notices of C. J. E. Brongniart and W. H. Waagen	174	Botanical Club of Canada, An- nual Report 1898-99	94
"Observations on and Descrip- tions of Arctic Fossils"	190	Revision of American Voles of the genus <i>Microtus</i>	97
"The Palæozoic Faunas of Para, Brazil"	191	A new physical Geography	175
Presidential Address	197	Observations on and Descrip- tions of Arctic Fossils, by R. P. Whitfield	190
<i>Anæctangium canadense</i> , Kindb., n. sp.	86	The Palæozoic Faunas of Para, Brazil, by J. M. Clarke	191
Ants in a chimney	93	Botany: an elementary text- book, by L. H. Bailey	195
<i>Arzama diffusa</i>	17	Botany—	
<i>Aster ptarmicoides</i> , var. <i>lutescens</i>	19	"Botany: an elementary text- book," by L. H. Bailey	195
<i>Barathra occidenta</i>	17	Bryology, Additions to N. Am. and European	77
Barlow, Alfred E., honoured with degree of Doctor of Laws	52	Jewel Weed, <i>Impatiens fulva</i>	120
Beattie, F. N., Notes on the Aca- dian Owl	218	Kentucky Coffee Tree	118
Bethune, Rev. C. J. S., Index to Ann. Repts. of Ent. Soc. On- tario, 1870-1899	236	Ottawa Normal School—Botan- ical competition for "the Ross" prize	97
		Manitoba's Wildflowers	1

Brongniart, C. J. E., obit. notice.	174	Entomology—	
<i>Brachythecium cyrtophyllum</i> , Kindberg	81	Ants in a chimney	93
Bryology—Additions to N. Am. and European	77	<i>Colias Eurytheme</i>	136
<i>Bryum microstegioides</i> , Kindb., n.s.	88	Fauna Ottawaensis, Diptera	127
<i>pseudo-carneum</i> , Kindb., n.s.	88	Gardeners, a hint to	120
<i>Calliergus subgiganteum</i> , Kindb., n. sp.	80	Humble-bee's nest, Unusual site for	93
<i>Catocala cerogama</i>	18	Insects as disease carriers	90
<i>Cnicus Drummondii</i>	19	Moths, On collecting	14
<i>Colias Eurytheme</i>	136	Moths, Some interesting Ot- tawa	13
Conchology—		<i>Epiglaea apiata</i>	17
An addition to the Molluscan Fauna of Canada	94	<i>Euprepia caja</i> , L., var. <i>Americana</i>	16
Slug, a new Canadian	94, 150	Excursion to	36
Ungava inland mollusca	221	to Kirk's Ferry	120
Cormorants and Gannets	146	Fishes, Power of adaptation in	212
Coubeaux, Eug., The Birds of Southern Saskatchewan	24	Flamingo's nest, The finding of a	135
Council of the O.F.N.C., 1900-01.	3	Fletcher, James, Treasurer's Re- port	11
Report of, for 1899-1900	7	On N. Criddle's paintings	20
Craig, John, Review of a New Physical Geography	175	"Stories of Insect Life."	34
"Botany: an elementary text- book, by L. H. Bailey."	195	"Gleanings from Nature."	35
Criddle, Norman, Paintings of Manitoban flowers	19	A hint to gardeners	120
Curllew, The Hudsonian, in Mid- dlesex Co., Ont	234	Jewel Weed (<i>Impatiens fulva</i>)	120
Dawson, Dr. G. M., remarks when accepting E. Billings's por- trait	211	Work for the naturalist in winter	152
<i>Dendroica discolor</i>	230	Gannets and Cormorants	146
<i>Kirtlandi</i>	230	<i>Gastrodonta lamellidens</i>	94
Devono Carboniferous problem, the, in N.S. and N.B.	121	Geological Survey of Canada— Summary of Field-work ac- complished to 1865	107
Dowling, D. B., "A condensed summary of Field-work by officers of the Geological Sur- vey of Canada from its com- mencement to 1865"	107	"General Index to the Reports of progress 1863 to 1884"	235
"General Index to Geological Survey Reports," 1863 to 1884	235	Geology—	
Dresser, John A., Preliminary note on an amygdaloidal trap rock in the Eastern Town- ships, Que	180	Amygdaloidal Trap in Eastern Townships	180
Elementary Lectures to City Schools	7	Devono-Carboniferous problem in Nova Scotia	121
Entomological Society of Ont- ario, Index to reports, 1870 to 1899	236	Mining Statistics of Ontario	194
		<i>Unio Nanaimoensis</i> , n. sp., On <i>Whittleseyia</i> in Nova Scotia	9)
		Gibson, Arthur, Note on <i>Colias</i> <i>Eurytheme</i>	136
		Some interesting moths taken at Ottawa	13
		<i>Grimmia subflaccida</i> , Kindb., n.s.	85
		<i>Gymnocladus canadensis</i>	118
		Halkett, Andrew, Gannets and Cormorants	146
		Harrington, W. Hague, Fauna Ottawaensis, Diptera	127
		<i>Hemphillia glandulosa</i>	150
		Howard, L. O., Lecture before Royal Society	89

Humble-bee's nest, Unusual site for a.....	93	<i>Ommatostrephes illecebrosa</i>	55
<i>Hypnum imponentiforme</i> , Kindb., n. sp.	83	Ornithological incursion into Florida.....	101
<i>pseudo-lycopodioides</i> , Kindb., n. sp.....	82	Ornithology —	
<i>pseudo-circinnale</i> , Kindb., n. sp.....	83	Acadian Owl, Notes on	218
<i>Hypopterygium canadense</i> , Kindb.....	78	Bird notes, asked for	52
Insects as carriers of disease.....	90	for spring	21
		„ July	72
Kells, W. L., Two warblers new to Canada.....	230	Birds, Rare, breeding in Eastern Ontario.....	69
Kentucky Coffee Tree.....	118	of Southern Saskatchewan..	24
Kindberg, N. Conr., Additions to the North American and European Bryology (Moss-Flora)	77	Cormorants and Gannets	146
Kirk's Ferry, Excursion to	120	Flamingo's nest, Finding of a..	135
Labrador Flying Squirrel	48	Hudsonian Curlew, The....	234
Lambe, L. M., Revision of Canadian Palæozoic Corals.....	32	Meadowlark, New song of... ..	224
Catalogue of the Recent Marine Sponges of Canada and Alaska	153	Ornithological incursion into Florida.....	101
Lampman, Archibald, memorial notice of	201	Prairie Horned Lark, Early nesting of	23
Lark, Prairie Horned, Early nesting of	23	Warbler Cerulean, nesting of..	183
Macoun, W. T., Bird notes for spring.	21	Warblers, Two, new to Canada	230
„ Bird notes for July	72	Owl, Acadian, Notes on	218
Macrae, J. A., Notes taken in the Peace River country	226	Peace River country, Notes taken in	226
Meadow-lark, A new song of the Members of the O.F.N.C., List of	4	<i>Perognathus Lordi</i>	173
Mining Statistics, Ontario	194	Pocket Mouse, A Canadian....	173
Morrison, Rev. John, On the Kentucky Coffee Tree.....	118	Poole, Henry S., On ants in a chimney, and unusual site for a humble-bee's nest	93
Mosquitoes, Prize offered for collection of.....	76	Prairie Horned Lark, early nesting of	23
Moss-Flora, Additions to the North American and European Bryology	77	Prince, Prof. E. E., Dr. Nansen's Scientific results	137
Mosses, new species described by Kindberg	77	Power of adaptation in fishes..	212
Museum, A National.....	76, 151	Prizes offered by the Club	8
The National	199	Putman, J. H., Address of welcome	186
Nansen's Scientific results	137	Queen Victoria, in memoriam ..	197
Nature Study, Address on	186	Ross, Hon. G. W., Donor of prize for Botanical competition ...	96
<i>Numenius hudsonicus</i>	234	Ross Prize competition	198
<i>Nyctala Acadica</i>	218	Royal Society of Canada	89
Odell, W. S., On Two-lined Salamander	53	Delegate to meeting of	199
		Saunders, W. E., An ornithological incursion into Florida ..	101
		The finding of a Flamingo's nest	135
		The nesting of the Cerulean Warbler	183
		A new song for a common bird	224
		Shutt, F. T., Soils and the maintenance of their fertility through the growth of legumes.....	37, 57

Slug, new, to Canadian list 94, 150	Warbler, Cerulean, The nesting of 183
Soils and maintenance of their fertility by growing legumes, by F. T. Shutt 37, 57	Warblers, Two, new to Canada. 230
Sornborger, J. D., The Labrador Flying Squirrel 48	Weed, C. M., and Murtfeldt, Mary E., Stories of Insect Life 34
Sponges, Catalogue of the recent Marine, of Canada and Alaska, by L. M. Lambe 153	Whiteaves, J. F., honoured with degree of Doctor of Laws 52
Sub Excursion 1 12	Description of a new species of <i>Unio</i> from the Cretaceous rocks, Nanaimo 177
<i>Sula bassana</i> 146	Ungava inland mollusca 221
Summer School of Science, Proposed 200	Whitfield, R. P., "Observations on and Description of Arctic Fossils." 190
Taylor, Geo. W., A Slug new to the Canadian list 150	<i>Whittlesya</i> , species in Eo-Carboniferous, N.S. 99
Trap rock, amygdaloidal, A preliminary note on, in the Eastern Townships, Que. 180	Winter lectures 145
<i>Torunshendia sericea</i> 20	work 152
Treasurer's Report for 1899-1900 11	soirées, 1900-1901 176
Two-lined Salamander, by W. S. Odell 53	soirée, first 185
<i>Unio Nanaimoensis</i> , a new Cretaceous species, by J. F. Whiteaves 177	Young, C. H., On Prairie Horned Lark 23
Waagen, W. H., Obit. notice . . 174	Young, Rev. C. J., Notes on rare Birds occasionally breeding in Eastern Ontario 69
Waghorne, Arthur C., memorial notice 93	
Walker, B. E., On Canadian Surveys and Museums 74	Zoology --
On L. M. Lambe's Revision of Canadian Palæozoic Corals. 32	British-American Echinoderms 56
Walker, Bryant, An addition to Molluscan Fauna of Canada. 94	Fishes, Powers of adaptation in 212
	Labrador Flying Squirrel 48
	Pocket-mouse, A Canadian 173
	Sponges, Recent Canadian Marine 153
	The Squid in St. John harbour. 55
	Two-lined Salamander 53

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