

REPRINTS OF RARE PAPERS ON MOLLUSCA. -- Robert Bell, 1859, On the Natural History of the Gulf of St. Lawrence. -- Canadian Naturalist and Geologist, vol. 4, pp. 212-216, 219-220.

NOTE. Only part of this paper is reproduced here, namely that which deals with fresh-water and land species. The full title of the paper, as it appears at the beginning of Bell's article, is given below, the entire paper occupies pages 197 to 220 of vol. 4 of the Canadian Naturalist and Geologist.

Eastern Townships, and along the south-east side of the St. Lawrence below Quebec as far down as Gaspé Bay. They seem to thrive as well and grow to as large a size in Gaspé as anywhere else. I found a few *Physa* in some shell marl from Anticosti, which appears to belong to this species.

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ARTICLE VI. - On the Natural History of the Gulf of St. Lawrence, and the distribution of the Mollusca of Eastern Canada. By Robert Bell, Jr.

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(Fresh Water.)

*Pianorbis trivolvis*. - L'Original on the Ottawa, Lachine, Montreal, and in the Rimouski, Metis and Ristigouche Rivers; found also, in 1857, in Lake Kenogami, between Chicoutimi and Lake St. John, at the head of the Saguenay.

*P. campanulatus*. - Renfrew on the Bonnechere River, Montreal, and in shell marl from near Philipsburgh, St. Asmand and St. Rose, Terrebonne, and living in Lakes Metis and Matapedia.

*P. bicarinatus*. - Renfrew, L'Original, Montreal, in marl from Ste. Rose, Shefford Mountain and Carleton, Bay of Chaleur, also living in the Ristigouche River.

*P. lentus*. - Renfrew and near Montreal.

*P. pascuus*. - L'Original and Montreal, in marl from Anticosti and several localities in the Eastern Townships; inhabits still water throughout the whole of the Peninsula of Gaspé.

*Physa heterostropha*. - Mississippi River, L'Original, neighbourhood of Montreal,

*P. aurea*. - L'Original and Carillon on the Ottawa, Lachine Canal, Montreal, and several localities in the County of Rimouski.

*P. ancellaria*. - L'Original and near Rimouski village.

*P. elongata*. - L'Original, Montreal, Green Island, Metis and Ste. Anne (Gaspé)

*Limnaea megasoma*. - This fine species was found by Mr. Billings in the Bonnechere River, and by myself in a creek near Hawkesbury Village, where it was rather abundant.

*L. jugularis (stagnalis)*. - Plentiful in many streams and small lakes on the south side of the Ottawa and in the St. Lawrence near Montreal, and extremely abundant in the Metis Lakes in the county of Rimouski.

*L. caperata*. - St. Lawrence near Montreal, and very plentiful in Lake, Matapedia.

*L. umbrosa*. - Common in ponds between Montreal and Lachine, and near Ste. Anne (Gaspé) at which place I found an individual having its aperture turned to the left side.

*L. elodes*. - This is by far the most common *Limnaea* inhabiting stagnant waters in the Ottawa valley and about Montreal, but as it is a variable species, I am uncertain whether it occurs or not among those collected below Quebec.

*L. catascopium*. - Rimouski, Ristigouche and Dartmouth Rivers.

*L. opacina*. - St. Lawrence, between St. Nicolas and St. Antoine; alive and pretty abundant at low tide at Point Lévi, in the Metis River

above the high fall, Rimouski and White Rivers.

*L. acuta*. - This is the most abundant species in the shell marl from Marl Lake, Anticosti.

*Ancylus rivularis*. - Old quarries near the mile end toll-gate, Montreal.

*Paludina decisa*. - South Nation River, L'Original, Lachine Canal and St. Helen's Island.

*Melania acuta*. - St. Lawrence, near Montreal and Varennes.

*M. Niagarensis*. - Same localities.

*Amnicola porata*. - Occurs in marl from the Lachine railway and Shefford mountain, and was found living in Little Lake, Matapedia (County of Rimouski).

*Valvata tricarinata*. - Abundant in marl from Philipsburgh, St. Armand and the Lachine railway, and inhabits Lake Matapedia.

*V. sincera*. - Marl Lake, Anticosti.

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(Terrestrial.)

*Helix alternata*. - This is perhaps the most widely diffused species of the land snails found in Canada. It occurs abundantly on both sides of the Ottawa, at Montreal, Point Levi opposite Quebec, and down the south-east side of the St. Lawrence into Gaspé, and is common over the whole peninsula as far as my observations extended, at Dalhousie, N.B., and along the Ristigouche River.

*H. albolabris*. - One of the most common species in the Ottawa Valley, at Montreal and Point Levi, but does not extend so far down as the County of Gaspé, having been last observed on the coast of Metis. It was, however, found at Lake Matapedia, 25 miles south-east of Metis, and was extremely abundant at Dalhousie and along the Ristigouche as far up as the mouth of the Patapedia.

*H. monodon*. - Very abundant under stones in pasture fields near L'Original and in the augmentation of Grenville, Montreal mountain, Point Levi under decaying leaves lying on disintegrated shale, but was not found further down

the St. Lawrence. Not having collected a single individual of this species during the previous part of the summer while travelling in the northern part of the district, I was astonished on coming to the Ristigouche to find them in the greatest profusion in many places along that river, as well as at Dalhousie.

*H. exoleta*. - One specimen found on the Ristigouche about five miles above the mouth of the Matapedia.

*H. tridentata*. - Montreal mountain, rare.

*H. concava*. - A few specimens found near L'Original and on the Montreal mountain; plentiful at Point Levi.

*H. hortensis*. - It seems scarcely credible that this species has been imported from Europe, considering how widely diffused and vastly numerous it has become along the Lower St. Lawrence. On the main land it was first observed on Mount Commis, about nine miles south of St. Luce and on the coast at Metis, where it was abundant, and below which it seems to occupy the place of *H. albolabris*, but is generally much more numerous. In 1857 I found vast numbers of them on the Brandy Pots and Hare Island in the middle of the St. Lawrence opposite Rivière du Loup. The climate of Gaspé seems to be very favourable to their propagation, as they appear to have spread over the country for a considerable distance inland. The yellow and banded varieties

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seem to be about equally numerous. Where land has been recently cleared and burnt over, their withered shells may be seen strewed in thousands over the surface of the soil. In the valley of the Marcouin they were observed to extend 12 miles inland, which was farther than at any other place. The height at which the last specimen was found was about 1500 feet above the sea, as indicated by the barometer which we had with us. The young from the size of a grain of duck shot to half that of the adult shell were met with in our journey up this valley in the end of July.

*H. arborea*. - This and the next species are probably the most abundant snails in the Ottawa valley and all along the Lower St. Lawrence from Kamouraska to Gaspé Bay, and in every part of the peninsula which we visited, and also around Lake St. John at the head of the Saguenay. Both these species exist on the Island of Anticosti, as I found specimens of them imbedded in fresh-water shell marl which Mr. Richardson brought from there in 1856. They are amongst the commonest land shells at Montreal and Point Levi, although they may not appear to be so owing to their small size.

*H. striatella*. - Found everywhere with the preceding species.

*H. lineata*. - L'Orignal, Augmentation of Grenville, Carillon, Montreal Mountain, and in many localities along the St. Lawrence from Berthier to Marsoni River, Gaspé.

*H. labyrinthica*. - L'Orignal, Rivière du Loup (en-bas), Green Island, and a few localities in Gaspé.

*H. pulchella*. - Carillon, Montreal, Berthier, mouth of Magdalen River and Dalhousie.

*H. electrina*. - Carillon.

*H. chersina*. - L'Orignal, Trois Pistoles, Ste. Anne, Marcouin, Magdalen River and mouth of the Matapedia.

*Bulimus lubricus*. - Montreal, Rivière du Loup, Trois Pistoles, Metis Lakes and Campbellton, mouth of Restigouche River.

*B. harpa*. - Metis, mouth of Magdalen River, and very abundant in the Marsoni valley.

*Vitrina pellucida*. - Rivière du Loup, Trois Pistoles and Ste. Anne.

*Succinea ovalis*. - L'Orignal, Metis, Matan and Ste. Anne.

*S. avara*. - L'Orignal, Matan, mouth of Magdalen River, and along the Ristigouche, near the mouth of the Patapedia.

*S. obliqua*. - Abundant in the Ottawa valley, at Montreal,

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Point Levi, all along the south-east side of the St. Lawrence from Rivière du Loup to Gaspé,

and in nearly every place examined in the interior of the peninsula or on the Ristigouche.

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(Fresh Water.)

*Unio radiatus*. - Very abundant in the Ottawa and some of its tributaries from Ottawa City downwards in the Lachine Canal and the St. Lawrence in the vicinity of Montreal. Mr. Billings has a number of specimens of this and the next species from Lake Nipissing.

*U. complanatus*. - Lake Nipissing, Ottawa River, Lachine Canal and the St. Lawrence as far down as Berthier below the Island of Orleans, where the last living specimen was obtained, but valves both of this and the preceding species were very frequently found on the beach all the way to Gaspé. Abundant in Lake St. John, and said to inhabit the Little River St. Margarete on the north shore opposite Ste. Ann, Gaspé.

*U. gibbosus*. - Very abundant in the Ottawa at L'Orignal, and on St. Helen's Island, Montreal.

*U. ventricosus*. - Bonechere and Ottawa Rivers, Lachine Canal and St. Lawrence near Montreal.

*U. ellipsis*. - Culbute, (the channel between Calumet Island and the north shore of the Ottawa) and St. Helen's Island.

*U. rectus*. - Culbute, Ottawa near L'Orignal, Lachine Canal and St. Helen's Island.

*U. alatus*. - Common in Ottawa at L'Orignal, where I once caught a large specimen with a baited fish-hook in about ten feet of water.

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*Margaritana rugosa*. - South Nation River, Lachine Canal and St. Helen's Island.

*M. marginata*. - Culbute and St. Helen's Island.

*M. arcuata (margaritifera)*. - Green and Rimouski Rivers, Lake St. John and both the Matapedia Lakes.

*M. undulata*. - Culbute, L'Orignal and St. Helen's Island.

*Anodonta subcylindracea*. - Lachine Canal, Grand Lac about 10 miles south of Rimouski, a small lake 6 miles southwest of Grand Metis, Lakes Matapedia and St. John.

*A. pavonia*. - Very abundant in the creek at L'Original and in old quarries near the mile end toll-gate, Montreal.

*A. fluviatilis?* - Ottawa near L'Original and Lachine Canal.

*Cyclas similis*. - Very abundant in the creek at L'Original, Lachine Canal, Metis Lakes and a pond 6 miles S. W. of Metis.

*C. Orbiculata*. - St. Lawrence near Montreal.

*C. Dubia*. - Ottawa City, Carillon, Montreal, Point Levi, Mare Lake Anticosti, Eastern Townships, and throughout the eastern peninsula of Lower Canada.

Besides the above 128 species of recent shells occurring in Canada, there are in the collection of the Geological Survey many more, the names of which have not yet been determined. I hope to be able to give a list of these in a future number of the Naturalist. Principal Dawson has kindly undertaken to name the Tubicolae, Bryozoa, Foraminifera, &c., dredged on the north coast of Gaspé, and will publish a list of them in another number of this magazine.

(To be continued.)

EDITOR'S NOTE. Spellings of place names are given in this reprint as they appear in the original. "Marsouins" and "L'Original" seem to have given the printer particular trouble. On this page (opposite) "Mare Lake" should be Marl.