

and between attempted feedings he climbed around his box briskly enough for a porcupine. But his occasional fits of crying were distressing.

At last on the third day of his captivity I thought of a friendly correspondent, Mr. Linwood Flint of North Waterford, Maine, who is probably more intimate with porcupines than anyone else in the world, as he rears them for sale on a "Porcupine Farm". A query addressed to him by telegram as to what to do with a baby porcupine that wouldn't eat anything brought the prompt but disappointing reply, that it was impossible to rear a young porcupine away from its mother. This dashed my hopes of porcupine study, and my only care now was to get the little creature back to his mother as soon as possible. For the last time I got my mitts full of quills while putting him into the rucksack, and just at nightfall I reached the rocky ridge where I had found him. The long walk was lightened by hearing on the way the meditative notes of the first hermit thrush of the season, and a red deer was startled from the path and leap-

ed exquisitely over a log into the bushes. As I emptied the little creature out of the bag I had an absurd feeling of basely abandoning an infant in the wilds. But this was home to him, and as he moved off deliberately into the darkling cedars, his final leave taking was an angry flip of his spiked tail. I did not blame him; he had no reason to feel grateful to me. That night, when going to bed, as I was walking around my room in bare feet a sudden sharp pain took me in the toe. It was a last physical reminder of the little porcupine—a slender needle-sharp spine driven into my flesh.

Next day I visited again the place where I had left him, and searched thoroughly all around the spot, but discovered no trace of him. So I have no doubt that his mother, who I am sure lives somewhere in the neighboring rocks, heard his plaints in the night and came to him. And I like to think that when I was looking for him that afternoon he was safe in a nearby rock crevice, with a full stomach, fast asleep.

NOTES ON CANADIAN ENTOMOSTRACA.

BY A. BROOKER KLUGH, M. A., Queen's University, Kingston.

The fresh-water Entomostraca have up to the present received very little attention in Canada. The only Ontario records, so far as I know, are those of Dr. G. O. Sars, who reports on 16 species, collected at Go-Home Bay, Muskoka, in 1907, by Dr. E. M. Walker, in "Contributions to Canadian Biology, 1911-14, Fasc. 2", and of Prof. Acheson, who in "Proc. Can. Inst., Ser. 3, Vol. 1" lists *Daphnia Pulex?* and *Cyclops quadricornis* as occurring in Toronto tap-water. With regard to these last records, it is possible that *Daphnia pulex?* was really that species, but it is more likely to have been one of the *D. Longispina* group, which are inhabitants of open water, while *Cyclops quadricornis* is a name which was at one time used for what are now regarded as several distinct species.

These minute crustaceans are of great economic importance, because a great many of our fresh-water food and game fishes,

during their young stages, feed to a very large extent on Cladocerans and Copepods, while these same Entomostraca constitute the chief food-supply of the smaller species of fresh-water fishes, which in turn are preyed upon by many of the larger fishes. The Entomostraca are thus one of the chief links in the chain of food-relations which leads from the fresh-water algae to the commercial and game fishes of our inland waters.

In regard to distribution the different species of Entomostraca differ markedly, some, as *Chydorus sphaericus*, being practically cosmopolitan, while others are apparently extremely local.

The following records, obtained in 1920, are presented as a preliminary list of Canadian Entomostraca, to which I hope to add from time to time as my investigations on this ground continue.

ORDER CLADOCERA.

Diaphanosoma leuchtenbergianum, Fischer. Frequent in plancton at 1 metre in Lake Missanag, Frontenac County, Ont., Aug. 30.

Holopedium gibberum, Zaddach. Scarce in surface plancton, Lake of Bays, Muskoka, Ont., Aug. 24.

Daphnia pulex de Geer. Well water, Guelph, Ont. Well water, Harrowsmith, Ont. Pool in woods, Aylmer, Ont.; collected by H. C. White.

Daphnia longispina hyalina, Leydig. Common in surface plancton, Lake of Bays, Muskoka, Ont., Aug. 24. Abundant in surface plancton, mouth of the Cataraqui River, Ont., Nov. 5.

Daphnia longispina hyalina mendotae, Birge. Common in surface plancton, mouth of the Cataraqui River, Ont. Nov. 5.

Simocephalus vetulus, O. F. Miller. Common among decaying vegetation at the bottom of a shallow channel in a marsh on the Cataraqui River, Ont.

Ceriodaphnia megalops, Sars. Scarce in the same habitat as the preceding.

Bosmina longirostris, O. F. Müller. Common in surface plancton, Lake of Bays, Aug. 24. Common in surface plancton, mouth of the Cataraqui River, Ont.

Bosmina longispina, Leydig. Common in plancton at 1 metre, Lake Missanag, Ont., Aug. 30.

Alona guttata, Sars. Scarce in surface plancton in shallow channel in a marsh on the Cataraqui River, Ont., Nov. 5.

Chydorus sphaericus, O. F. Müller. Common in surface plancton, mouth of the Cataraqui River, Ont., Nov. 5.

Polyphemus pediculus, Linn. Frequent in plancton at 1 metre, Lake Missanag, Ont.

ORDER OSTRACODA.

Cypridopsis vidua, O. F. Müller. Com-

mon among aquatic vegetation at mouth of the Cataraqui River, Ont. Common in a marshy pond near Kingston, Ont.

Cyclocypris laevis, O. F. Müller. Common among filamentous algae at the mouth of the Cataraqui River, Ont.

Cypris dentata, Sharpe. Abundant in a pool near Kingston, Ont.; collected by H. C. White.

Cypris testudinaria, Sharpe. Common in a pool in the woods, Aylmer, Ont., May; collected by H. C. White.

ORDER COPEPODA.

Diaptomus oregonensis, Lilljeborg. Abundant in plancton at 1 metre, Lake Missanag, Ont. Common in surface plancton, mouth of the Cataraqui River, Ont.

Cyclops bicuspidatus, Claus. Common in surface plancton, Lake of Bays, Ont., Aug. 24. Common in surface plancton, mouth of the Cataraqui River, Ont., Nov. 5. Common in surface plancton, Lake Ontario, Dec. 15.

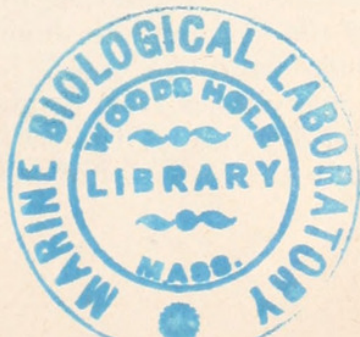
Cyclops viridis brevispinosus, Herrick. Common in plancton at 1 metre. Lake Missanag. Aug. 30.

Cyclops fimbriatus, Fischer. Scarce in channel in marsh at mouth of Cataraqui River, Ont.

Canthocamptus minutus, Claus. Scarce in surface plancton, Lake Ontario at Kingston, Dec. 15.

N. B. — Since the above was written, copies of Parts H and J of Vol. 7 Report of the Canadian Arctic Expedition containing records of Arctic Cladocera by Dr. Juday and Copepoda by Dr. Marsh have come to hand.¹

¹ Dr. Robert Chambers in Biological Bulletin, Vol. 22, p. 293, mentions the occurrence of *Cyclops parens* and *C. Americanus* at Toronto. The Euphyllopoda and parasitic Copepoda have not been considered. — Ed.





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