found three nests of Gadwalls and one of a Mallard and a Pintail. A thorough investigation of the nesting composition of ducks in April, May, and June, 1968, revealed a total of four Mallard and nine Pintail nests. In 1970, the island was searched for nests by two observers for a one hour period each on June 4 and 9. The search resulted in 37 nests consisting of 9, 9, 13, 4 and 2 nests of the Pintail, Mallard, Gadwall, American Widgeon and Redhead respectively. As the 1970 search was not exhaustive, many nests may have escaped our attention. One of the Pintail nests was counted as two nests because two hens were observed flying from that nest. The rectangularly shaped nest contained two sets of six eggs, each set distinctly differently coloured from the other, indicating that two hens were nesting side by side.

From measurements it appeared that Dowling Lake averaged approximately two feet deep in 1967 and 1970, but went almost completely dry in May 1968. The difference in species composition and number of nests in 1968 and 1970 may be related to the varying lake levels between those years. Pintails and Mallards are early nesters compared to Gadwalls and American Widgeon. The latter two species usually initiate their first clutches in Alberta during the last half of May (Keith, 1961; Vermeer, 1968). As Dowling Lake had dried up by the second half of May, 1968, Gadwalls and American Widgeon may have been discouraged from nesting there that year. The observation that Gadwalls also nested on the island in 1967 when the lake was filled with water lends additional support to this hypothesis.

Acknowledgments

Mr. J. A. Windsor assisted with the nest count on June 4 and 9, 1970.

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Freshwater Ostracoda (Crustacea) from Lake Nipigon, Ontario

Abstract. Twelve species of Ostracoda were identified from collections made in Lake Nipigon. This adds eight new records of Ostracoda for this lake. Morphological variation hitherto unrecorded was found in two species. Some species considered as shallow water forms from previous work were recorded from deep water. The distribution of species in the lake appears to be influenced by the temperature of the water.

Introduction

Lake Nipigon is the largest inland water body of Ontario with an area of 1769 square miles (Wilson, 1910). It is an oligotrophic lake of low productivity (Rawson, 1955) with a mean depth of 180 feet. Studies were made on the chemical and physical limnology of Lake Nipigon by Clemens (1923), on the plankton by Bigelow (1923), on the molluscs by Adamstone (1923), on the benthic fauna by Adamstone and Harkness (1923), and fish by Dymond (1923) and Clemens *et al.* (1923).

There are few published records of Ostracoda from Lake Nipigon. Adamstone and Harkness

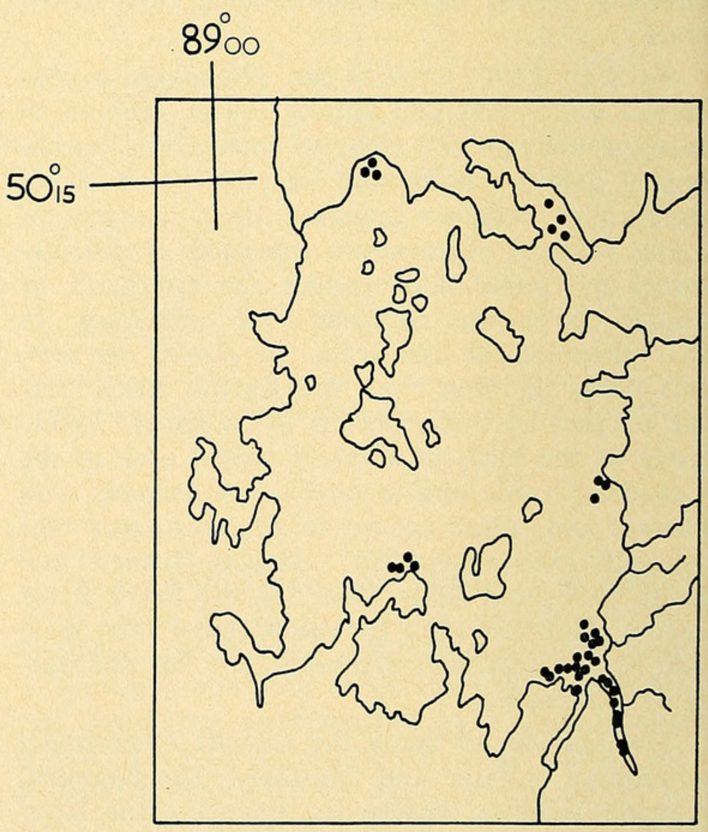

FIGURE 1. Map of the collecting sites in Lake Nipigon.

TABLE 1. — Data available on Ostracod collections from Lake Nipigon.

Species	Numbers	Depth	Substrate	Date
Cyclocypris laevis	2 ♀	6′	mud	July
C. serena	2 ♀	6–9′	mud	July-August
Candona candida	4 ♀ 1 ♂ 1 instar	6–159′	mud, clay and gravel	June-August
Cytherissa lacustris	28 adults 5 instars	6–327′	mud and sand	June-August
Candona ohioensis	3 ♀ 10 ♂ 1 instar	<9′	mud and sand	July-August
Candona cf. C. scupulosa	1 instar	9′	mud	August
C. elliptica	3 ♂	54–312′	mud and sand	June-July
C. eriensis	2 ♂	84–90′	clay	June
Candona cf. C. acutula	1 ♂	108′	sand and clay	August
Limnocythere friabilis	1 ♀	237′	mud	June
Candona crogmaniana	1 ♀	276–285′	mud	—
Ilyocypris bradyi	right valve ♀	279′	mud	—

(1923) and Clemens *et al.* (1923, 1924) mention the occurrence of ostracods in the stomach of fish. Bigelow (1923) records the occurence of *Cypria* sp., *Spirocypris tuberculata*, *Limnocythere reticulata* and *Ilyodromus pectinatus*. Adamstone (1924) records the occurrence of *Candona* sp. and *Limnocythere* sp. from the lake bottom. The present paper is a more complete report on Ostracoda collected from Lake Nipigon.

Materials and Methods

Material for this study was collected by F. B. Adamstone during 1921-23 as part of the Ontario Fisheries Research Laboratory and University of Toronto Limnological investigation of Lake Nipigon. Thirty-eight samples containing ostracods were taken from the lake bottom at depths which varied from 1.5 to 312 feet (figure 1). The type of substrate for each sample was noted by Adamstone.

The ostracods were recovered from the samples by washing through a set of filters and preserved in methyl alcohol. For identification, the two valves of the carapace were carefully separated from the rest of the animal and mounted on micropalaeontological slides with tragacanth glue. The soft-parts of the animal were then dissected in a drop of ACS mounting fluid (Edward Gurr Ltd., London, England) on an ordinary glass slide. In this way a permanent record of both soft and hard parts of the ostracod were made.

Systematics

The following twelve species were identified:

Candona candida (Muller, 1776)
Candona crogmaniana Turner, 1894
Candona elliptica Furtos, 1933
Candona eriensis Furtos, 1933
Candona ohioensis Furtos, 1933
Candona cf. *C. acutula* Delorme, 1967
Candona cf. *C. scupulosa* Furtos, 1933
Cyclocypris laevis (Muller, 1766)
Cyclocypris serena (Koch, 1838)
Cytherissa lacustris (Sars, 1863)
Ilyocypris bradyi (Sars, 1890)
Limnocythere friabilis Benson and MacDonald, 1963

In addition we have found a few specimens referable to the genus *Candona* but they were too poorly preserved to be accurately identified.

Candona cf. *C. acutula*

Delorme (1968) reports a distinct postero-dorsal hinge flange in *C. acutula*, but in the present specimen the hinge flange was not distinct. Furthermore we were unable to find a description of the 'soft-parts' of this species in the literature. The species resembles *C. subtriangulata* Benson and MacDonald in many features of the carapace.

Candona cf. *C. scupulosa*

One instar only was collected from Lake Nipigon. The anterodorsal sinuation in the dorsal margin of the carapace was not as pronounced in our specimen as drawn by Furtos (1933) but the soft-parts fitted the description given by Furtos (1933).

Ecology

Some remarks can be made on the ecology of the species collected in Lake Nipigon on the basis of data available (Table 1). The material on which the present study was based was collected from different types of substrates: mud (28 samples), sand (6 samples), clay (3 samples), and gravel (1 sample). No clear relationship was found between the species and the substrate type. Elofson

(1941) however has shown a relationship between the substrate and the structure of the carapace in different species of marine ostracods. The species collected from shallow water were *Cyclocypris laevis, C. serena, Candona* cf. *C. scupulosa,* and *Candona ohioensis.* All these are warm water species. On the other hand species collected at depths over 50 meters were *Limnocythere friabilis, Candona crogmaniana* and *C. elliptica.* These are probably limited to lower temperatures since Clemens (1923) found that the water below 50 meters did not rise above 5°C in Lake Nipigon.

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Argia Vivida Hagen (Odonata: Coenagrionidae) in Hot Pools at Banff

Abstract. The larvae of the damselfly *Argia vivida* Hagen have been found in thermal pools at 26°C in Banff. The genus *Argia* is mainly Neotropical in distribution and has been recorded from hot springs in the United States. *Argia vivida,* however, is previously recorded only from cold spring-fed streams. *A. vivida* appears to be a 'summer species' at Banff and it is suspected that photoperiod is important in the seasonal regulation of its life history.

Argia vivida Hagen has been collected in the adult stage from Banff, Alberta and from Field and Glacier, B. C., these being the only sites recorded for Canada (Walker 1953). Walker (1927) found the species at two localities on Sulphur Mountain at Banff, both in the vicinity of hot springs, and he subsequently wrote: "We believed that the nymphs would probably be found in the warm springs issuing from the baths, but had no proof of this supposition." (Walker 1953, p. 152). This note substantiates Walker's prediction and discusses some ecological questions that are raised by the discovery.

The location of the hot pools in the Bow Valley below the outflow from the Cave and Basin Hotsprings has been recorded by McAllister (1969), who described the presence of five introduced species of tropical fish. The temperature of the water that issues below the Baths is 30°C, but during the 100m flow to the pools in the valley it cools to about 26°C. Air and water tem-