

UNIVERSITY OF TORONTO STUDIES

PUBLICATIONS OF THE
ONTARIO FISHERIES RESEARCH LABORATORY

No. 12

A PROVISIONAL LIST OF THE FISHES OF LAKE
NIPIGON

BY

JOHN R. DYMOND

OF THE DEPARTMENT OF BIOLOGY
UNIVERSITY OF TORONTO

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1923

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The following brief account of the fishes of Lake Nipigon is based upon material obtained by the first field party of 1921. It contains a list of the species so far identified, with some reference to undetermined varieties, and is preliminary to a more comprehensive study and report, the material for which will, it is expected, be obtained during the summer of 1922.

The most striking feature of the fish fauna of Lake Nipigon, in view of its size, is the small number of species which inhabit it. As a result of the first season's work there fewer than thirty species were found in the waters of the lake itself. This is in striking contrast to what is found in other large lakes. Dymond (1922) gives ninety-one species of fish and two species of lamprey as occurring in Lake Erie, while Bensley (1915) records forty-eight species from Georgian Bay.

The small number of species occurring in Lake Nipigon is no doubt due in part to the physical conditions in the lake and in part to its geological history. Its waters have been isolated for long ages from the waters of the lower lakes, by means of falls sufficiently high to offer an insurmountable obstacle to the ascent of species from the south. Some species found in neighbouring lakes are absent from Lake Nipigon, which probably means that conditions in the lake are unsuitable for these forms.

The Sturgeon, *Acipenser rubicundus* Le Sueur, is fairly abundant. During 1919, 17,595 pounds were taken from the lake. The largest specimen recorded weighed 99 pounds.

The Long-nosed or Northern Sucker, *Catostomus catostomus* (Forster), and the Common Sucker, *Catostomus com-*

mersonii (Lacépède), are very abundant. The former, especially, is taken in considerable numbers in deep waters in gill nets set for whitefish and lake trout. The Common Sucker is found in shallower water. On account of the distance from market it is not profitable to ship these species, and those taken in the nets are consequently destroyed.

Only four species of *Cyprinidae* were found in the lake. In the order of their relative abundance they are, the Spotted-tailed Minnow, *Notropis hudsonius* (De Witt Clinton), Lake Chub, *Couesius plumbeus* (Agassiz), Long-nosed Dace, *Rhinichthys cataractæ* (Cuvier and Valenciennes), and the Shiner, *Notropis atherinoides* Rafinesque. None of them appears to be at all common, and no specimens of any of them were identified in the stomachs of fishes. *Leuciscus neogæus* (Cope) is found in a number of small lakes in the neighbourhood, but has not been taken from Lake Nipigon itself. This species has not been previously recorded from Ontario.

Speckled Trout, *Salvelinus fontinalis* (Mitchill), of unusual size are taken on the line in the Nipigon river. The largest one taken in recent years weighed 14½ pounds, but specimens of five pounds in weight are quite commonly secured. They are also found in the fishermen's pound nets, but fish so taken are returned to the water.

The Lake Trout, *Cristivomer namaycush* (Walbaum), is, next to the whitefish, the most important commercial species of Lake Nipigon. It is usually taken in gill-nets in deep water, but a very dark, slim form is commonly taken in pound nets in shallow water. The significance of the latter variety is to be further investigated.

The Round Whitefish, *Coregonus quadrilateralis* Richardson, is not uncommon. It appears to remain in comparatively shallow water. On account of its slimness, it is not taken in the fishermen's nets.

The Common Whitefish, *Coregonus clupeaformis* (Mitchill), is the most important commercial species in the lake. The fishermen recognize two types, *viz.*, the deep-water and the shallow-water forms. In general, the latter is a darker, slimmer fish than the former, although both types are taken

in deep water. The two extremes are connected by intergradations. The variation in colour, form, and other characters dependent on depth and other factors has not yet been fully investigated.

The Ciscoes or Lake Herrings, *Leucichthys* spp., have not yet been definitely worked out, but there appear to be at least three varieties. The commonest form is a dark fish with black fins. It averages about 1½ pounds in weight. A larger, lighter-coloured form, locally known as "Tullibée", is occasionally taken in the gill-nets in deep water. A much smaller variety with longer head and very pale fins appears to be confined to comparatively shallow water.

The Pike, *Lucius lucius* (Linn.), is common in small bays along shore, and is occasionally taken in the fishermen's nets.

The Brook Stickleback, *Eucalia inconstans* (Kirtland), is much less common than the nine-spined Stickleback, *Pygosteus pungitius* (Linn.). The latter is perhaps the most abundant of the smaller species inhabiting the lake, some specimens being taken in nearly all seine catches. It was also commonly found in the stomachs of Pike Perch, and less commonly in Lake Trout, Ling, Pike, and Whitefish.

The Trout Perch, *Percopsis omiscomaycus* (Walbaum), appears to be common. A few specimens were taken from the stomachs of predaceous species, and thousands were taken in July in a specially constructed bag net set in a stream a few hundred yards above where it enters the lake.

The Small-mouthed Black Bass, *Micropterus dolomieu* Lacépède, is believed not to occur naturally in Lake Nipigon. Small specimens of the year were taken in the seine near the foot of Orient Bay in July. They were probably the progeny of some parent fish planted the previous season.

The Yellow Pickerel or Pike Perch, *Stizostedion vitreum* (Mitchill), is an important commercial species in Lake Nipigon. It is taken in pound nets in shallow water. The maximum size attained is about nine pounds.

The Yellow Perch, *Percu flavescens* (Mitchill), was taken in considerable numbers in small bays by means of the seine.

For some reason the species does not reach a very large size, the largest specimen secured being six inches in length.

The only species of darter taken was the Tessellated Darter, *Boleosoma nigrum* (Rafinesque.) It was commonly taken in the seine in shallow water.

A number of specimens of the Miller's Thumb, *Cottus ictalops* (Rafinesque), and of *Uranidea gracilis* (Heckel), were taken about the middle of June in a specially constructed bag net set in a stream a short distance from where it enters the lake. Partly digested specimens, too fragmentary for definite determination, taken from the stomachs of ling may represent a third species of the family *Cottidae*.

The Ling, *Lota maculosa* (Le Sueur), is very common in deep water, and large numbers are taken in gill nets set for Whitefish.

Although this list is not extensive, it includes the principal commercial species characteristic of the Great Lakes. Its deficiency is mainly in *Cyprinidae* and other small forms. To what extent this deficiency limits the productivity of the lake by curtailing the food of the larger predaceous species cannot be estimated until other bodies of water, rich in the smaller species, have been investigated.

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ONTARIO FISHERIES RESEARCH LABORATORY

No. 13

THE PLANKTON OF LAKE NIPIGON AND ENVIRONS

BY

N. K. BIGELOW

OF THE DEPARTMENT OF BIOLOGY
UNIVERSITY OF TORONTO

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