



CASE NO. \_\_\_\_\_

MANUSCRIPT REPORTS OF THE BIOLOGICAL STATIONS

No.190A

OBSERVATIONS ON LAKE JESSE MAY 9 and 10, 1936.

No.190B

INTERIM REPORT UPON THE INVESTIGATIONS MADE IN  
BOAR'S BACK, TEDFORD AND JESSE LAKES, MAY 1938.

No.190C.

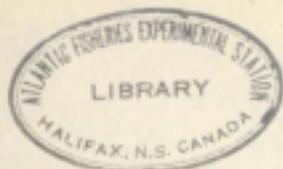
TREATMENT OF  
REPORT ON TREFRY'S LAKE, YARMOUTH COUNTY, N. S.  
WITH COPPER SULPHATE.

No.190D

THE REMOVAL OF UNDESIRABLE FISH FROM LAKES BY  
NETS AND TRAPS.

By

M. W. Smith.



# BIOLOGICAL BOARD OF CANADA

MANUSCRIPT REPORTS OF THE BIOLOGICAL STATIONS

No. 190A

Title

OBSERVATIONS ON LAKE JESSE MAY 9 and 10, 1936.

Author

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## OBSERVATIONS ON LAKE JESSE

May 9 and 10, 1936.

In company with Dr. A. H. Leim a short survey was made of the conditions in Lake Jesse on May 9 and 10, 1936.

### Hydrographic

The water of the lake was found to be nearly homothermous from surface to bottom, the surface temperature being 14.2°C. and the bottom temperature at a depth of 5.8 metres, 13.1°C. (The observations were made on May 9 around 11:45 A.M.; sky partly cloudy; surface rippled; air temperature, 15.8°C.). The dissolved oxygen content of the water at 5.5 metres was 7.0lcc. per litre, or 93.4 per cent. saturated. The surface pH value was found to be approximately 5.3 (B.D.H. Universal), which value is considerably lower than that found in summer, namely 6.2 to 6.6 (1934). Samples of the bottom water at 5.5 metres, both with and without mud, were taken for copper analysis (Samples taken on October 31, 1935, showed only a trace of copper in the water to a depth of 4.5 metres, and 0.30 p.p.m. of copper sulphate at 5.5 metres).

### Plankton

Fifteen-minute plankton tows were taken with numbers 5 and 18 nets at the surface and at 3-4 metres. The amount of phytoplankton was still very small, although certain forms were evidently re-establishing themselves. The amount of zooplankton was good, but to a large extent consisted of one species, Diaptomus minutus, although, as with the algae, other species were beginning to appear. Of the algae, the diatoms, Tabellaria fenestrata, Tabellaria flocculosa and Synedra sp. were common. Filaments of Spirogyra sp.

and Hyalotheca dissiliens, the latter a desmid, which group was dominant in Lake Jesse before the copper sulphate treatment, were fairly numerous. Dinobryon stipitatum were also taken. Of the zooplankton, two rotifers, Conochilus unicornis and Cathypna (luna?) were present. Also the cladocerans, Sida crystallina (common), Daphnia longispina (rare) and Acroperus harpae (rare) and the copepod, Diaptomus minutus (dominant) were taken in the nets. The results of these tows seem to indicate that the plankton association in Lake Jesse was becoming very well established, presumably from a nucleus of forms which escaped the copper treatment.

#### Bottom Fauna.

Dredgings were made with an Ekman dredge at three depth levels. Three samples were taken at each of the following depths, 5-6 metres, 3-4 metres and 2 metres. Very few organisms were found in these samples. One chironomid larva was taken in the three dredges in the deepest water, three chironomid larvae and one snail in the intermediate depths, and one caddis fly larvae in the two metre depths. From a sample of leaves at the shore a number of oligochaetes were taken, Hyalella, caddis fly and may fly larvae were found in small numbers under stones and debris in the shallow littoral water. Many of the small sticks and stems of aquatic vegetation were covered with algal growths. It is to be expected that the bottom fauna would be slow in recovering its former abundance. The dredgings indicate, however, that the bottom forms are present, and probably in sufficient numbers to seed the lake.

Observations at the outlet.

The fish barrier in the outelt was examined and appeared in good repair. The leaves, etc., accumulated upon the apron of the dam were removed. A small eel and a stickleback were noticed in the outlet above the dam.

Recommendations

It was recommended that speckled trout fry be planted in Lake Jesse immediately at the rate of 1000 per acre (45000 for the whole lake). It must be kept in mind that Lake Hectanooga, the control lake, should be planted at the same time and in the same proportion, i.e. with 60,000 speckled trout fry.

M. W. Smith.