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REPORT NO. 332

POSSIBLE CAUSE OF DEATH OF FISH IN RASIN RIVER, LENAWEE COUNTY

On December 20, 1935 a package of fish was received from Mr. Lester T. Harkness, Conservation Officer, Adrian, Michigan. A letter from Mr. Harkness which arrived the same day stated that these fish were still alive when brought to him by a farmer who "found these fish and hundreds of others floundering in the river". This was on December 17. The following day Mr. Harkness checked the river and "found plenty of small fish dead on the bottom and some carp still half alive".

The fish sent in consisted of five small-mouthed black bass (Micropterus dolimieu) and one red horse sucker (Moxostoma aureolum). Examination of the fish was made for parasites by Mr. E. L. Cheatum. A study of the general condition, rate of growth and stomach contents was performed by Mr. Gerald P. Cooper of the Institute staff. Their findings are given in the accompanying table.

As will be noted from this table, these bass were in excellent condition and showed a rapid growth (from scale examination). Three stomachs contained food and two were empty. This is quite a normal condition for bass and indicates that their distress was of recent occurrence and was of a sudden nature. The parasites observed in three fish are commonly found in bass and were not numerous enough to have contributed in any way to their death. All evidence pointed toward some polluting substance as the cause of death.

A phone call was made to Mr. Harkness upon receipt of his letter and arrangement made for an examination of the stream in question. The following day (December 21) the writer and Mr. Gerald Cooper met Mr. Harkness and visited the point where the loss had occurred.

By inquiry of farmers who trapped or otherwise observed the river above and below Adrian it was evident that the suspected pollution had come from that city as no dead fish had been noted above the town. The loss occurred for several days and along a considerable stretch of river (dead fish were reported for a mile east of Adrian). According to the farmer who had sent in the fish and according to Mr. Harkness, large numbers of fish were seen in the shallows along the shores apparently attempting to avoid the main flow of the river. They were gasping and floundering as if for lack of air. The farmer reported that several of these were picked up by a neighbor boy and put in a spring at his home and that these fish recovered.

Due to the extremely cold weather which followed this loss, ice had formed over the river except in the center of the channel. It was therefore impossible for us to determine the number of fish which had been killed. None were seen in the few open places along the shores. Holes were cut in the ice in one pool and a large number of blunt-nosed minnows and one rock bass were observed. These fish were lively and showed no signs of distress. Apparently the recent unfavorable condition of the stream had passed.

All evidence collected indicates that the above loss occurred as a result of some pollution from the city of Adrian. Mr. Harkness plans to check the possible sources of such pollution in that city and will report his findings to the Department.

INSTITUTE FOR FISHERIES RESEARCH

A. S. Hazzard

Small-mouthed Black Bass

Rasin River. Locality just east of Adrian. Fish dying, when collected, as a result of stream pollution. Sent in by Conservation Officer Lester T. Harkness. Weights, lengths and scale samples taken, and stomach examinations and parasite analysis, in laboratory on December 19.

Table I

Examination of five small-mouthed black bass from the Rasin River, Section 8, Palmyra Township, Lenawee County, Michigan., T. 7 S., R 4 E. December 17, 1935

Standard Length In mm.	Total Length In mm.	Weight In Grams	Sex	Stage Of Maturity	Age in com- pleted grow- ing seasons	Food items in Stomach and Intestine	Parasites In Intestine
168	207	125	♀	Maturing	2	Empty	None
183	232	155	♀	"	2	Empty	None
226	277	314	♀	Adult	3	1 <u>Notropis</u> <u>whipplii</u> 50 mm., 1 fish 6½ cms.	None
263	327	456	♂	Adult	3	2 fish, 7 cms. each	3 <u>Proteo-</u> <u>cephalus</u>
288	350	656	♀	Adult	4	Crayfish remains	1 <u>Proteo-</u> <u>cephalus</u>

No serious abrasions or external parasites were noted on the fish.

The gills were hemorrhaged (on one side--due to the fish being either laid or strung on their side) but otherwise normal.

Parasite examinations by E. L. Cheatum. Other examinations by G. P. Cooper