

copy to: S.A. Colton

INSTITUTE FOR FISHERIES RESEARCH
UNIVERSITY MUSEUMS
UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

Report 303

August 12, 1935

REPORT ON VALUE OF MUSSEL SHELLS FROM RED CEDAR RIVER

This report is in response to the following communication from Mr. F. A. Westerman, Fish Division, Department of Conservation, dated August 7, 1935:

Under separate cover we are mailing a few samples of mussel shells which were delivered at this office by S. A. Colton of Williamston, Michigan.

Mr. Colton advises he has located a plentiful supply of shells in the Red Cedar River but questions the marketability of these shells due to the color.

I wonder if the Institute, Mr. Vander Schalie or someone can give him any information on the value of these shells and the type of pollution responsible for their off-color.

Dr. Carl L. Hubbs, Director of the Institute for Fisheries Research has requested that I prepare a report on these shells. The following remarks are based on an examination of the shells submitted, and also on experience gained in a survey of the mussels of the Red Cedar River and other streams of the Grand River system made by me in the fall of 1934.

Of the 14 species of mussels found in the Red Cedar River only 5 are of any commercial value. These are as follows:

FAT MUCKET (Lampsilis siliquoidea): This species is ordinarily excellent for commercial purposes. However, the samples submitted are of very doubtful commercial value, because they all show an "off-color". This discolored nacre I attribute to a parasitic infection by a trematode worm, which condition may not be related to pollution. If most of the shells in the bed under consideration are thus affected, I would regard them as almost worthless commercially.

POCKETBOOK (Lampsilis ventricosa): This species, which was most numerous in the sample, is often not valuable commercially by reason of being too brittle to per-

mit proper cutting. Whether the Red Cedar shells of this species fall into this category is questionable. All specimens submitted, however, are rendered virtually worthless commercially by a trematode infection of the mantle of this mussel, which colors the nacre. Since the bulk of the sample submitted comprised this species, this conclusion applies to the entire lot. If the majority of the shells in the bed are of this "off-color", it is very doubtful whether they would be worth digging. Roughly half of the many shells of this species taken by me in the 1934 survey of the Red Cedar River mussels are similarly affected. The condition is therefore not confined to the one bed, although it may be more serious there than elsewhere in the river.

FLAT NIGGERHEAD (Pleurobema cordatum coccineum): Although this large-stream species has a shell generally of good quality, it will be found in relatively small numbers in the Red Cedar River. Furthermore this species often has a pink nacre (this is true of the one specimen in the sample of shells submitted), so that only part of the few taken will be of commercial value.

FLUTED SHELL (Lasmigona costata): Of the few shells of this species which would be taken in the Red Cedar River, the majority would run too thin or too much off-color to be of any considerable commercial value.

PIG TOE (Fusconaia flava): Although this is a good button-shell, it is not abundant enough in the Red Cedar River for profitable digging.

To sum up: The shells of the few commercial species of mussels in the Red Cedar River which are abundant enough to promise any considerable return, are very often off-color, due to a trematode parasite of the mussel's mantle. This is of ^{true} virtually all the specimens in the sample submitted. If the majority of the shells in the bed are so affected, it is very doubtful that they would be worth digging. Whether the digging would pay depends also of course on their abundance and on the price which a shell factory would pay for them, under present conditions of reduced shell take. I am not in a position to give a final estimate on these points.

For the records of the Museum of Zoology of the University, Mr. Colton is requested to inform us of the exact locality where the specimens submitted were taken.

If Mr. Colton desires the return of named specimens, we will be glad to send them to him.

Respectfully submitted

Through the INSTITUTE FOR FISHERIES RESEARCH

Henry Vander Schalie

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