

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

November 3, 1930

Report No. 38

by Henry Vander Schalie, on

THE CLAMMING INDUSTRY OF THE ST. JOSEPH RIVER

From September 15 to September 19, Edwin Creaser and I conducted a general survey of the Molluscan fauna of the St. Joseph River in the south-western part of Michigan. Incidental to the general collecting, we made inquiries and investigations concerning the clamming industry of that river.

In two general regions in the St. Joseph River is the clamming industry at present being carried on. The first of these covers that section of the river between Union City, Branch County, and Mendon, in St. Joseph County. The clams obtained in this section of the river are sent to Three Rivers, where a Mr. Morris buys from the clammers. The second area lies between Berrien Springs and the mouth of the river. The clams from this region are handled by a dealer at Berrien Springs.

At Three Rivers, Mr. Morris has about an acre of ground upon which are large piles of clams. (See Photographs). These are covered by straw to prevent weathering. We only managed to get three species here tho there were many more. The ones we got were:

1. Lasnigona costata Rafinesque
"Fluted Shell" "Sand Mussel"





2. Lamosilis ventricosa Barnes
"Pocket Book"
3. Actinonaias carinata Barnes
"Mocket"

At Berrien Springs the dealer has assorted piles of clam shells. He also runs a shop in which button blanks are made. Quite a few specimens were ob-

tained from this dealer's collection. The species list is as follows:

- | | | |
|-----|--|---|
| 1. | <u>Ligumia recta latissima</u> (Rafinesque) | "Sand Shell" "Black Sand Shell" |
| 2. | <u>Fusconaias flava</u> (Rafinesque) | "Fig Toe" |
| 3. | <u>Lamosilis ventricosa</u> (Barnes) | "Pocket Book" |
| 4. | <u>Actinonaias carinata</u> (Barnes) | "Mocket" |
| 5. | <u>Lasmigona costata</u> (Rafinesque) | "Fluted Shell" "Squaw Foot" "Sand Mussel" |
| 6. | <u>Anblema costata</u> (Rafinesque) | "Wash Board" "Three Ridge" "Blue Point" "Flat Plicata" "Fluter" |
| 7. | <u>Lasmigona complanata</u> (Barnes) | "Heel Splitter" "Hatchet Back" "Fancake" |
| 8. | <u>Cyclononaias tuberculata</u> (Rafinesque) | "Deer Horn" "Rock Horn" |
| 9. | <u>Elliptio dilatatus</u> (Rafinesque) | "Lady Finger" "Solke" |
| 10. | <u>Quadrula pustulosa</u> (Lea) | "Warty Back" "Warty Figtoe" "Nipple Back" |
| 11. | <u>Alasmidonta marginata</u> (Say) | "Wigger Toe" "Elk Toe" |

Of the above list, all species except the last (Alasmidonta marginata) are good shells for buttons. This species must have gotten into the piles by accident because I do not believe it has a thick enough shell to be of any commercial importance. The

above list will, then, serve well to show what species are being used in the St. Joseph River between Berrien Springs and the mouth of First street in the clamming industry.

The three species most used by the industry, in the lower St. Joseph, were found to be, in order of abundance--

1. Actinonaias carinata Rafinesque "Bucket"
2. Leucisilla ventricosa Barnes "Pocket Hook"
3. Ligumia recta latissima Rafinesque "Sand Shell" "Black Sand Shell"

The boats used by the clambers along the St. Joseph River are of the usual type. They are flat bottomed scows about twelve feet long, to the sides of which are attached the various clamming devises. Some of these boats are powered by outdoor motors.



The price paid to the clambers for their shells varies according to the size and the quality of the shells brought in. The highest price was \$.05 per pound.

The buttons cut at Berrien Springs are of two sizes, a 3/4 inch size and a 1/2 inch. A medium-sized clam shell will produce somewhere in the neighborhood of 20 half-inch buttons or 14 three-quarter-inch buttons. Seven moderate sized clam shells weigh about a pound. Consequently, a pound of large shells will produce roughly one hundred three-quarter-inch buttons, or about one hundred and fifty of the smaller buttons. From a smaller

sized shell about seven three-quarter-inch buttons may be obtained; and as it takes nine small shells to make a pound, approximately sixty-five buttons may be obtained from a pound of this small size. The above estimates have been made on the basis of a very small amount of material but they are probably approximately correct.

It would be quite apparent to even the most casual observer that large individuals of the various species of bivalves are missing in certain sections of the river. We observed this to be true, as indicated by the lists of species we took at each locality visited (see below). This depletion I believe may without doubt be attributed to excessive clamming. The pollution of the river is a matter of concern in legislation governing the clamming industry. The erection of artificial barriers, such as dams, is also a matter of concern to the clambers. The effects of dams, and of the their operation so as to produce sudden periodic changes in water level need investigation.

Through correspondence with Mr. Westerman of the Department of Conservation, we have ascertained that for 1929, 250 licenses were sold to clambers working on the St. Joseph River. The total number of people engaged through the state in clamming in 1929, according to the information furnished by Mr. Westerman, was 1,110. The Grand River system witnesses a greater clamming industry than the St. Joseph. Since such a large number of men are engaged in this industry, investigations concerning the conditions of the fishery should be maintained.

LIST OF CLAMS OBTAINED AT EACH LOCALITY

Collection 1.--St. Joseph River, 1 mile south of Litchfield, Hillsdale County.

At this place the stream was dammed, producing a good deal of backwater. Most of our collecting was done in the river below the dam. At this point the St. Joseph is a stream about 30 feet wide. We were unable to obtain a single living specimen although a careful search was made and conditions seemed favorable. Shells of the following species (all dead) were obtained:

A. Species of commercial importance:

- 1. Lasmigona costata (Rafinesque) 3 dead "Fluted Shell" "Squaw Foot"
"Sand Mussel"
- 2. Fusconaia flava (Rafinesque) 2 dead "Pig Toe"
- 3. Elliptio dilatatus (Rafinesque) 1 dead "Lady Finger" "Spike"

B. Species not of commercial value:

- 1. Lasmigona compressa (Lea) 3 dead _____
- 2. Strophitus rugosus (Swainson) 3 dead "Squaw Foot" "Creeper"
- 3. Anodonta grandis foetiana Lea 1 dead "Floater"

Collection 2.—St. Joseph River, 6 miles northeast of Tekonsha, Calhoun County. Here the St. Joseph is a clear stream having a width of about 40 feet. The living bivalves we obtained were limited to small specimens, though we did find a few large specimens of a size used by clammers. Conditions seemed quite favorable for molluscan life, an abundance of good shoals composed of a fine sand was found. Our collection consisted of the following species:

A. Species of commercial importance:

- 1. Elliptio dilatatus (Rafinesque) 3 dead "Lady Finger" "Spike"
- 2. Lampsilis ventricosa (Barnes) 4 dead "Pocket Book"
- 3. Lasmigona costata (Rafinesque) 2 dead "Fluted Shell" "Squaw Foot"
"Sand Mussel"
- 4. Fusconaia flava (Rafinesque) 1 dead "Pig Toe"
- 5. Actinonaias carinata (Barnes) 1 dead "Mucket"

B. Species not of commercial value:

- 1. Micromya iris (Lea) 10 living "Rainbow Shell"
- 2. Actinonaias ellipsiformis (Conrad) 7 " _____
- 3. Alasmidonta calceolus (Lea) 4 " _____
- 4. Strophitus rugosus (Swainson) 2 " "Pig Toe"
- 5. Alasmidonta marginata (Say) 1 " "Nigger Toe" "Elk Toe"

Collection 3.-St. Joseph River, at Tekonsha, Calhoun County.

Here the river is clear and moderately rapid. It has a uniform depth with an abundance of eel-grass, algae and pond weeds. The river at this point yielded its largest catch of living bivalve material. Many small individuals were obtained as well as those which might be useful in the clamming industry. The following species were secured:

A. Species of commercial importance:

1. <u>Eliptio dilatatus</u> (Rafinesque)	20 living	"Lady Finger" "Spike"
2. <u>Lampsilis ventricosa</u> (Barnes)	19 living	"Pocket Book"
3. <u>Actinonaias carinata</u> (Barnes)	16 living	"Mucket"
4. <u>Fusconaia flava</u> (Rafinesque)	4 living	"Pig Toe"
5. <u>Lasmigona costata</u> (Rafinesque)	1 dead	"Fluted Shell" "Squaw Foot" "Sand Mussel"

B. Species not of commercial value:

1. <u>Strophitus rugosus</u> (Swainson)	10 living	"Squaw Foot" "Creeper"
2. <u>Actinonaias ellipsiformis</u> (Conrad)	9 living	-----
3. <u>Alasmidonta calceolus</u> (Lea)	3 dead	-----
4. <u>Micromya iris</u> (Lea)	2 dead	"Rainbow Shell"
5. <u>Anodontoides ferussaciana</u> (Lea)	1 living	-----
6. <u>Alasmidonta marginata</u> (Say)	1 dead	"Kigger Toe" "Elk Toe"

Collection 4.-Hog Creek, 2 miles southeast of Union City, Branch County.

This creek was apparently favorable for the growth of bivalves, but we were unable to secure more than a few specimens. The few we found were living, and ranged in size from small shells up to one specimen which would serve well in the clamming industry.

A. Species of commercial importance:

1. <u>Elliptio dilatatus</u> (Rafinesque)	2 living	"Lady Finger" "Spike"
2. <u>Actinonaias carinata</u> (Barnes)	2 living	"Mucket"

B. Species not of commercial value:

- 1. Micromya iris (Lea) 2 living "Rainbow Shell"
- 2. Actinonaias ellipsiformis (Conrad) 1 living _____

Collection 5.-St. Joseph River, 2 miles south of Leonidas, St. Joseph County.

Here the river is wide and clear, and is ideal for the propagation of molluscs. Most of the specimens obtained were small, although some large ones were secured from a discard pile left by the clammers. We found here many small living specimens, but we could not find any living specimens of a size used by the clammers.

A. Species of commercial importance:

- 1. Actinonaias carinata (Barnes) 11 living "Mucket"
- 2. Elliptio dilatatus (Rafinesque) 8 living "Lady Finger" "Spike"
- 3. Pleurobema cordatum coccineum (Conrad) 1 " "Pink Pig Toe" "Round Pig Toe" "Flat Nigger Head"
- 4. Lampsilis ventricosa (Barnes) 1 living "Pocket Book"

B. Species not of commercial value:

- 1. Actinonaias ellipsiformis (Conrad) 15 living _____
- 2. Micromya iris (Lea) 13 living "Rainbow Shell"
- 3. Strophitus rugosus (Swainson) 3 living "Squaw Foot" "Creeper"
- 4. Alasmodonta marginata (Say) 3 living "Nigger Toe" "Elk Toe"

Collection 6.-Nottawa Creek, 2 miles west of Leonidas, St. Joseph County.

We were unable to obtain a single living specimen at this place. The dead specimens found are as follows:

A. Species of commercial importance:

- 1. Lampsilis ventricosa (Barnes) 3 dead "Pocket Book"
- 2. Lampsilis siliquoides (Barnes) 2 dead "Fat Mucket"
- 3. Actinonaias carinata (Barnes) 2 dead "Mucket"

B. Species not of commercial value:

- 1. Strophitus rugosus (Swainson) 6 dead "Squaw Foot" "Creeper"

2. Actinonaias ellipsiformis (Conrad) 1 dead _____

Collection 7.-St. Joseph River, 3 miles northeast of Three Rivers, St. Joseph County.

Due to the excessive depth and width of the river at this point an adequate investigation could not be made by means at our disposal. A number of small dead shells were found along the banks and in the more shallow water. We found the following specimens:

A. Species of commercial importance:

- 1. Elliptio dilatatus (Rafinesque) 2 dead "Lady Finger" "Spike"
- 2. Fusconaia flava (Rafinesque) 1 dead "Pig Toe"

B. Species not of commercial value:

- 1. Actinonaias ellipsiformis (Conrad) 25 dead (mostly) _____
- 2. Anodonta grandis footiana Lea 1 dead "Floater"
- 3. Strophitus rugosus (Swainson) 1 dead "Squaw Foot" "Creeper"
- 4. Alasmodonta marginata (Say) 1 dead "Nigger Toe" "Elk Toe"

Collection 8.-Portage River, 4 miles northeast of Three Rivers, St. Joseph County.

This shallow and moderately rapid tributary of the St. Joseph yielded but a few rather small living bivalves. Conditions seemed favorable for the propagation of molluscs. In the small collection made the following species are represented:

A. Species of commercial importance:

- 1. Lamosilis ventricosa (Barnes) 4 dead "Pocket Book"
- 2. Elliptio dilatatus (Rafinesque) 1 dead "Lady Finger" "Spike"

B. Species not of commercial value:

- 1. Micromya iris (Lea) 14 (one-half alive) "Rainbow Shell"
- 2. Actinonaias ellipsiformis (Conrad) 6 (4 living) _____

Collection 9.-Prairie River, 2 miles southeast of Three Rivers, St. Joseph County.

This river at the locality given is a fine shallow stream, and yielded an abundance of small and medium sized living specimens. Fine conditions exist for molluscan life in

this stream. The following list represents the species obtained:

A. Species of commercial importance:

- | | | |
|--|-----------|---|
| 1. <u>Actinonaias carinata</u> (Barnes) | 12 living | "Mucket" |
| 2. <u>Elliptio dilatatus</u> (Rafinesque) | 5 dead | "Lady Finger" "Spike" |
| 3. <u>Fusconaia flava</u> (Rafinesque) | 2 living | "Fig Toe" |
| 4. <u>Pleurobema cordatum coccineum</u> (Conrad) | 1 living | "Pink Fig Toe" "Round Fig Toe" "Flat Nigger Head" |

B. Species not of commercial value:

- | | | |
|--|--------------|------------------------|
| 1. <u>Micromya iris</u> (Lea) | 3 dead | "Rainbow Shell" |
| 2. <u>Actinonaias ellipsiformis</u> (Conrad) | 3 (2 living) | _____ |
| 3. <u>Alasmidonta marginata</u> (Say) | 2 living | "Nigger Toe" "Elk Toe" |
| 4. <u>Strophitus rugosus</u> (Swainson) | 1 living | "Squaw Foot" "Creeper" |

Collection 10.—White Pigeon River, at White Pigeon, St. Joseph County.

The bivalves were exceedingly scarce in this stream. Only ten dead specimens could be found after an exhaustive search of over a mile of the stream bottom. These specimens are of the following species:

A. Species of commercial importance:

- | | | |
|---|--------|-----------------------|
| 1. <u>Fusconaia flava</u> (Rafinesque) | 2 dead | "Fig Toe" |
| 2. <u>Actinonaias carinata</u> (Barnes) | 2 dead | "Mucket" |
| 3. <u>Elliptio dilatatus</u> (Rafinesque) | 2 dead | "Lady Finger" "Spike" |
| 4. <u>Lampsilis ventricosa</u> (Barnes) | 1 dead | "Pocket Book" |

B. Species not of commercial value:

- | | | |
|-------------------------------|--------|-----------------|
| 1. <u>Micromya iris</u> (Lea) | 3 dead | "Rainbow Shell" |
|-------------------------------|--------|-----------------|

Collection 11.—St. Joseph River, at Mottville, St. Joseph County.

The river here is below the dam at Three Rivers and is again wide and comparatively shallow. Shell life was abundant; the specimens obtained varying in size from small to large. Collecting here was second only to that of the St. Joseph at Tekonsha. Our collection contains:

A. Species of commercial importance:

1. <u>Actinonaias carinata</u> (Barnes)	16	"Mucket"
2. <u>Fusconaia flava</u> (Rafinesque)	14	"Fig Toe"
3. <u>Elliptio dilatatus</u> (Rafinesque)	8	"Lady Finger" "Spike"
4. <u>Pleurobema cordatum coccineum</u> (Conrad)	4	"Pink Pig Toe" "Round Pig Toe" "Flat Nigger Head"
5. <u>Lasmigona costata</u> (Rafinesque)	3	"Fluted Shell" "Squaw Foot" "Sand Mussel"
6. <u>Cyclonaias tuberculata</u> (Rafinesque)	1	"Deer Horn" "Huck Horn"
7. <u>Lampsilis ventricosa</u> (Barnes)	1	"Pocket Book"

B. Species not of commercial value:

1. <u>Strophitus rugosus</u> (Swainson)	18	"Squaw Foot" "Creeper"
2. <u>Actinonaias ellipsiformis</u> (Conrad)	7	_____
3. <u>Alasmodonta marginata</u> (Say)	2	"Nigger Toe" "Elk Toe"
4. <u>Micromya iris</u> (Lea)	1	"Rainbow Shell"
5. <u>Anodontoides ferussaciana</u> (Lea)	1	_____

Collection 12.-Spring Run, 3 miles west of Mottville, Cass County.

This was a very clear little stream with a good sandy bottom. We obtained few specimens from it. In over a half mile of the stream bottom which we covered, only eight specimens of the following species were obtained:

A. Species of commercial importance:

1. <u>Elliptio dilatatus</u> (Rafinesque)	2 dead	"Lady Finger" "Spike"
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B. Species not of commercial value:

1. <u>Micromya iris</u> (Lea)	5 (3 living)	"Rainbow Shell"
2. <u>Lasmigona compressa</u> (Lea)	1 dead	_____

Collection 13.-Dowagiac Creek, 8 1/2 miles, Berrien County.

This stream is dammed at Niles and periodically the water is released causing an

alternation of high and low water in the stream. With such conditions the bivalves proved very scarce. All our material here was dead. The following species were found:

A. Species of commercial importance:

- | | | |
|---|--------|-----------------------|
| 1. <u>Elliptio dilatatus</u> (Rafinesque) | 4 dead | "Lady Finger" "Spike" |
|---|--------|-----------------------|

B. Species not of commercial value:

- | | | |
|--|--------|-------|
| 1. <u>Actinonaias ellipsiformis</u> (Conrad) | 2 dead | _____ |
| 2. <u>Lasmigona compressa</u> (Lea) | 1 dead | _____ |
| 3. <u>Anodontoides ferussaciana</u> (Lea) | 1 dead | _____ |

Collection 114.—St. Joseph River, at St. Joseph, Berrien County.

There are large resorts at the mouth of the river and to make a beach this region is periodically dredged. The specimens we obtained were taken from the backwater. No specimens could be obtained along the lake shore, although a wide area was searched.

One species was obtained in the backwater:

- | | | |
|---|----------|-----------|
| 1. <u>Anodonta grandis fontiana</u> Lea | 1 living | "Floater" |
|---|----------|-----------|

LIST OF CLAMS OBTAINED AT ALL 15 LOCALITIES VISITED
IN THE ST. JOSEPH RIVER SYSTEM

A. Species of commercial importance	Number of Localities at which obtained.	
1. <u>Elliptio dilatatus</u> (Rafinesque)	12	"Lady Finger" "Spike"
2. <u>Actinonaias carinata</u> (Barnes)	8	"Mucket"
3. <u>Fusconaias flava</u> (Rafinesque)	7	"Fig Toe"
4. <u>Lampsilis ventricosa</u> (Barnes)	7	"Pocket Book"
5. <u>Lasmigona costata</u> (Rafinesque)	4	"Fluted Shell" "Squaw Foot" "Sand Mussel"
6. <u>Pleurobema cordatum coccineum</u> (Conrad)	3	"Pink Pig Toe" "Round Pig Toe"
7. <u>Lampsilis siliquoidea</u> (Barnes)	1	"Flat Nigger Head" "Fat Mucket"
8. <u>Cyclonaias tuberculata</u> (Rafinesque)	1	"Deer Horn" "Buck Horn"

B. Species not of commercial value	Number of localities at which obtained	
1. <u>Actinonaias ellipsiformis</u> (Conrad)	10	_____
2. <u>Micromya iris</u> (Lea)	9	"Rainbow Shell"
3. <u>Strophitus rugosus</u> (Swainson)	8	"Squaw Foot" "Creeper"
4. <u>Alasmidonta marginata</u> (Say)	6	"Nigger Toe" "Elk Toe"
5. <u>Anodonta grandis footiana</u> Lea	3	"Floater"
6. <u>Lasnigona compressa</u> (Lea)	3	_____
7. <u>Anodontoides ferussaciana</u> (Lea)	3	_____
8. <u>Alasmidonta calceolus</u> (Lea)	2	_____

The common names used in all the species lists are taken from published papers. What common names are used in Michigan ought to be determined.

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2. Fusconaia flava (Rafinesque) "Pig Toe"
3. Lampsilis ventricosa (Barnes) "Pocket Book"
4. Actinonaias carinata (Barnes) "Mucket"
5. Lasnigona costata (Rafinesque) "Fluted Shell" "Squaw Foot" "Sand Mussel"
6. Amblema costata (Rafinesque) "Wash Board" "Three Ridge" "Blue Point" "Flat Plicate" "Flutter"
7. Lasnigona complanata (Barnes) "Heel Splitter" "Hatchet Back" "Pancake"
8. Cyclononaias tuberculata (Rafinesque) "Deer Horn" "Buck Horn"
9. Elliptio dilatatus (Rafinesque) "Lady Finger" "Spike"
10. Quadrula pustulosa (Lea) "Warty Back" "Warty Pigtoe" "Pimple Back"
11. Alasmidonta marginata (Say) "Nigger Toe" "Elk Toe"

Of the above list, all species except the last (Alasmidonta marginata) are good shells for buttons. This species must have gotten into the piles by accident because I do not believe it has a thick enough shell to be of any commercial importance. The

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"Sand Mussel"
- 2. Fusconia flava (Rafinesque) 2 dead "Pig Toe"
- 3. Elliptio dilatatus (Rafinesque) 1 dead "Lady Finger" "Spike"

B. Species not of commercial value:

- 1. Lasmigona compressa (Lea) 3 dead *****
- 2. Strophitus rugosus (Swainson) 3 dead "Squaw Foot" "Creeper"
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B. Species not of commercial value:

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- 3. Alasmidonta calceolus (Lea) 4 " -----
- 4. Strophitus rugosus (Swainson) 2 " "Pig Toe"
- 5. Alasmidonta marginata (Say) 1 " "Nigger Toe" "Elk Toe"

Collection 3. - St. Joseph River, at Tekonsha, Calhoun County.

Here the river is clear and moderately rapid. It has a uniform depth with an abundance of eel-grass, algae and pond weeds. The river at this point yielded its largest catch of living bivalve material. Many small individuals were obtained as well as those which might be useful in the clamming industry. The following species were secured:

A. Species of commercial importance:

1. <u>Eliptio dilatatus</u> (Rafinesque)	20 living	"Lady Finger" "Spike"
2. <u>Lampsilis ventricosa</u> (Barnes)	19 living	"Pocket Book"
3. <u>Actinonaias carinata</u> (Barnes)	16 living	"Mucket"
4. <u>Fusconaia flava</u> (Rafinesque)	4 living	"Pig Toe"
5. <u>Lasnigona costata</u> (Rafinesque)	1 dead	"Fluted Shell" "Squaw foot" "Sand Mussel"

B. Species not of commercial value:

1. <u>Strophitus rugosus</u> (Swainson)	10 living	"Squaw Foot" "Creeper"
2. <u>Actinonaias ellipsiformis</u> (Conrad)	9 living	-----
3. <u>Alasmidonta calceolus</u> (Lea)	3 dead	-----
4. <u>Micromya iris</u> (Lea)	2 dead	"Rainbow Shell"
5. <u>Anodontoides ferussaciana</u> (Lea)	1 living	-----
6. <u>Alasmidonta marginata</u> (Say)	1 dead	"Nigger Toe" "Elk Toe"

Collection 4.-Hog Creek, 2 miles southeast of Union City, Branch County.

This creek was apparently favorable for the growth of bivalves, but we were unable to secure more than a few specimens. The few we found were living, and ranged in size from small shells up to one specimen which would serve well in the clamming industry.

A. Species of commercial importance:

1. <u>Eliptio dilatatus</u> (Rafinesque)	2 living	"Lady Finger" "Spike"
--	----------	-----------------------

2. Actinonaias carinata (Barnes) 2 living "Mucket"

B. Species not of commercial value:

1. Micromya iris (Lea) 2 living "Rainbow Shell"

2. Actinonaias ellipsiformis(Conrad) 1 living -----

Collection 5.-St. Joseph River, 2 miles south of Leonidas, St. Joseph County.

Here the river is wide and clear, and is ideal for the propagation of molluscs.

Most of the specimens obtained were small, although some large ones were secured from a discard pile left by the clammers. We found here many small living specimens, but we could not find any living specimens of a size used by the clammers.

A. Species of commercial importance:

1. Actinonaias carinata (Barnes) 11 living "Mucket"

2. Elliptio dilatatus (Rafinesque) 8 living "Lady Finger" "Spike"

3. Pleurobema cordatum coccineum(Conrad) "Pink Pig Toe" "Round Pig
1 " Toe" "Flat Nigger Head"

4. Lampsilis ventricosa (Barnes) 1 living "Pocket Book"

B. Species not of commercial value:

1. Actinonaias ellipsiformis (Conrad) 15 living -----

2. Micromya iris (Lea) 13 living "Rainbow Shell"

3. Strophitus rugosus (Swainson) 3 living "Squaw Foot" "Creeper"

4. Alasmodonta marginata (Say) 3 living "Nigger Toe" "Elk Toe"

Collection 6. - Nottawa Creek, 2 miles west of Leonidas, St. Joseph County.

We were unable to obtain a single living specimen at this place. The dead specimens found are as follows:

A. Species of commercial importance:

1. Lampsilis ventricosa (Barnes) 3 dead "Pocket Book"

2. Lampsilis silicoidea (Barnes) 2 dead "Fat Mucket"

3. Actinonaias carinata (Barnes) 2 dead "Mucket"

B. Species not of commercial value:

1. Strophitus rugosus (Swainson) 6 dead "Squaw Foot" "Creeper"

2. Actinonaias ellipsiformis (Conrad) 1 dead -----

Collection 7. - St. Joseph River, 3 miles northeast of Three Rivers, St. Joseph County.

Due to the excessive depth and width of the river at this point an adequate investigation could not be made by means at our disposal. A number of small dead shells were found along the banks and in the more shallow water. We found the following specimens:

A. Species of commercial importance:

1. Elliptio dilatatus (Rafinesque) 2 dead "Lady Finger" "Spike"
2. Fusconaia flava (Rafinesque) 1 dead "Pig Toe"

B. Species not of commercial value:

1. Actinonaias ellipsiformis (Conrad) 25 dead (mostly)-----
2. Anodonta grandis footiana (Lea) 1 dead "Floater"
3. Strophitus rugosus (Swainson) 1 dead "Squaw Foot" "Creeper"
4. Alasmodonta marginata (Say) 1 dead "Nigger Toe" "Elk Toe"

Collection 8.-Portage River, 4 miles northeast of Three Rivers, St. Joseph County.

This shallow and moderately rapid tributary of the St. Joseph yielded but a few rather small living bivalves. Conditions seemed favorable for the propagation of molluscs. In the small collection made the following species are represented:

A. Species of commercial importance:

1. Lamprolaima ventricosa (Barnes) 4 dead "Pocket Book"
2. Elliptio dilatatus (Rafinesque) 1 dead "Lady Finger" "Spike"

B. Species not of commercial value:

1. Micromya iris (Lea) 14 (one-half "Rainbow Shell"
alive)
2. Actinonaias ellipsiformis (Conrad) 6 (4 living) _____

Collection 9.-Prairie River, 2 miles southeast of Three Rivers, St. Joseph County.

This river at the locality given is a fine shallow stream, and yielded an abundance of small and medium sized living specimens. Fine conditions exist for molluscan life in

this stream. The following list represents the species obtained:

A. Species of commercial importance:

- | | | |
|--|-----------|---|
| 1. <u>Actinonaias carinata</u> (Barnes) | 12 living | "Mucket" |
| 2. <u>Elliptio dilatatus</u> (Rafinesque) | 5 dead | "Lady Finger" "Spike" |
| 3. <u>Fusconaia flava</u> (Rafinesque) | 2 living | "Pig Toe" |
| 4. <u>Pleurobema cordatum coccineum</u> (Conrad) | 1 living | "Pink Pig Toe" "Round Pig Toe" "Flat Nigger Head" |

B. Species not of commercial value:

- | | | |
|--|--------------|------------------------|
| 1. <u>Micromya iris</u> (Lea) | 3 dead | "Rainbow Shell" |
| 2. <u>Actinonaias ellipsiformis</u> (Conrad) | 3 (2 living) | ----- |
| 3. <u>Alasmidonta marginata</u> (Say) | 2 living | "Nigger Toe" "Elk Toe" |
| 4. <u>Strophitus rugosus</u> (Swainson) | 1 living | "Squaw Foot" "Creeper" |

Collection 10.-White Pigeon River, at White Pigeon, St. Joseph County.

The bivalves were exceedingly scarce in this stream. Only ten dead specimens could be found after an exhaustive search of over a mile of the stream bottom. These specimens are of the following species:

A. Species of commercial importance:

- | | | |
|---|--------|-----------------------|
| 1. <u>Fusconaia flava</u> (Rafinesque) | 2 dead | "Pig Toe" |
| 2. <u>Actinonaias carinata</u> (Barnes) | 2 dead | "Mucket" |
| 3. <u>Elliptio dilatatus</u> (Rafinesque) | 2 dead | "Lady Finger" "Spike" |
| 4. <u>Lampsilis ventricosa</u> (Barnes) | 1 dead | "Pocket Book" |

B. Species not of commercial value:

- | | | |
|-------------------------------|--------|-----------------|
| 1. <u>Micromya iris</u> (Lea) | 3 dead | "Rainbow Shell" |
|-------------------------------|--------|-----------------|

Collection 11.- St. Joseph River, at Mottville, St. Joseph County.

The river here is below the dam at Three Rivers and is again wide and comparatively shallow. Shell life was abundant; the specimens obtained varying in size from small to large. Collecting here was second only to that of the St. Joseph at Tekonsha. Our collection contains:

A. Species of commercial importance:

1. <u>Actinonaias carinata</u> (Barnes)	16	"Mucket"
2. <u>Fusconaia flava</u> (Rafinesque)	14	"Pig Toe"
3. <u>Elliptio dilatatus</u> (Rafinesque)	8	"Lady Finger" "Spike"
4. <u>Pleurobema cordatum coccineum</u> (Conrad)	4	"Pink Pig Toe" "Round Pig Toe" "Flat Nigger Head"
5. <u>Lasmigona costata</u> (Rafinesque)	3	"Fluted Shell" "Squaw Foot" "Sand Mussel"
6. <u>Cyclonaias tuberculata</u> (Rafinesque)	1	"Deer Horn" "Huck Horn"
7. <u>Lampsilis ventricosa</u> (Barnes)	1	"Pocket Book"

B. Species not of commercial value:

1. <u>Strophitus rugosus</u> (Swainson)	18	"Squaw Foot" "Creeper"
2. <u>Actinonaias ellipsiformis</u> (Conrad)	7	-----
3. <u>Alasmodonta marginata</u> (Say)	2	"Nigger Toe" "Elk Toe"
4. <u>Micromya iris</u> (Lea)	1	"Rainbow Shell"
5. <u>Anodontoides ferussaciana</u> (Lea)	1	-----

Collection 12.- Spring Run, 3 miles west of Mottville, Cass County.

This was a very clear little stream with a good sandy bottom. We obtained few specimens from it. In over a half mile of the stream bottom which we covered, only eight specimens of the following species were obtained:

A. Species of commercial importance:

1. <u>Elliptio dilatatus</u> (Rafinesque)	2 dead	"Lady Finger" "Spike"
---	--------	-----------------------

B. Species not of commercial value:

1. <u>Micromya iris</u> (Lea)	5 (3 living)	"Rainbow Shell"
2. <u>Lasmigona compressa</u> (Lea)	1 dead	-----

Collection 13.-Dowagiac Creek, at Niles, Berrien County.

This stream is dammed at Niles and periodically the water is released causing an

alternation of high and low water in the stream. With such conditions the bivalves proved very scarce. All our material here was dead. The following species were found;

A. Species of commercial importance:

- | | | |
|---|--------|-----------------------|
| 1. <u>Elliptio dilatatus</u> (Rafinesque) | 4 dead | "Lady Finger" "Spike" |
|---|--------|-----------------------|

B. Species not of commercial value:

- | | | |
|--|--------|-------|
| 1. <u>Actinonaias ellipsiformis</u> (Conrad) | 2 dead | ----- |
| 2. <u>Lasmigona compressa</u> (Lea) | 1 dead | ----- |
| 3. <u>Anodontoides ferussaciana</u> (Lea) | 1 dead | ----- |

Collection 14. - St. Joseph River, at St. Joseph, Berrien County.

There are large resorts at the mouth of the river and to make a beach this region is periodically dredged. The specimens we obtained were taken from the backwater. No specimens could be obtained along the lake shore, although a wide area was searched.

One species was obtained in the backwater:

- | | | |
|---|----------|-----------|
| 1. <u>Anodonta grandis footiana</u> (Lea) | 1 living | "Floater" |
|---|----------|-----------|

LIST OF CLAMS OBTAINED AT ALL 15 LOCALITIES VISITED

IN THE ST. JOSEPH RIVER SYSTEM

A. Species of commercial importance	Number of Localities at which obtained.	
1. <u>Elliptio dilatatus</u> (Rafinesque)	12	"Lady Finger" "Spike"
2. <u>Actinonaias carinata</u> (Barnes)	8	"Mucket"
3. <u>Fusconaia flava</u> (Rafinesque)	7	"Pig Toe"
4. <u>Lammsilis ventricosa</u> (Barnes)	7	"Pocket Book"
5. <u>Lasmigona costata</u> (Rafinesque)	6	"Fluted Shell" "Squaw Foot" "Sand Mussel"
6. <u>Pleurobema cordatum coccineum</u> (Conrad)	3	"Pink Pig Toe" "Round Pig Toe" "Flat Nigger Head"
7. <u>Lammsilis siliquoidea</u> (Barnes)	1	"Fat Mucket"
8. <u>Cyclonaias tuberculata</u> (Rafinesque)	1	"Deer Horn" "Buck Horn"

B. Species not of Commercial value:	Number of localities at which obtained	
1. <u>Actinonaias ellipsiformis</u> (Conrad)	10	-----
2. <u>Micromya iris</u> (Lea)	9	"Rainbow Shell"
3. <u>Strophitus rugosus</u> (Swainson)	8	"Squaw Foot" "Creeper"
4. <u>Alasmidonta marginata</u> (Say)	6	"Nigger Toe" "Elk Toe"
5. <u>Anodonta grandis footiana</u> (Lea)	3	"Floater"
6. <u>Laemigona compressa</u> (Lea)	3	-----
7. <u>Anodontoides ferussaciana</u> (Lea)	3	-----
8. <u>Alasmidonta calceolus</u> (Lea)	2	-----

The common names used in all the species lists are taken from published papers.

What common names are used in Michigan ought to be determined.