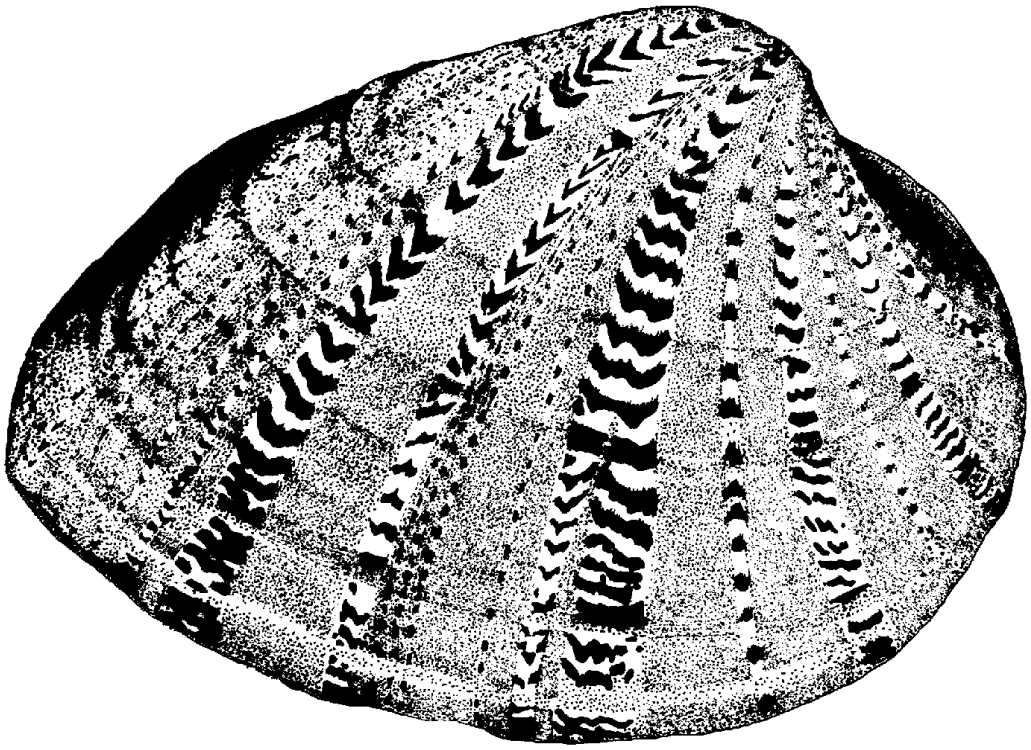
Ellipsaria

The Newsletter of the Freshwater Mollusk Conservation Society

Volume 12 – Number 3 **December 2010**



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Submissions for the March 2011 issue of *Ellipsaria* may be sent to the incoming editor at any time but are requested by **February 15, 2011**. Anyone may submit material but you must be a member of FMCS to access *Ellipsaria*. Starting in 2011, *Ellipsaria* will be available only on-line through the FMCS web site; no printed copies will be distributed.

Categories for contributions include: news items, abstracts, job postings, meeting notices, publication announcements, informal articles about ongoing research, and comments on current issues affecting aquatic mollusks. Please limit the length of each contribution to about one page. Electronic submissions are preferred and we are now able to include pertinent color photographs and other graphics. Contact the incoming editor with any questions. Note that submissions are not peer reviewed but are checked for appropriateness and clarity.

Incoming Editor - John Jenkinson - jjjenkinson@hotmail.com

Ellipsaria

NEWSLETTER OF THE FRESHWATER MOLLUSK CONSERVATION SOCIETY

Volume 12, No. 3 http://www.molluskconservation.org December 2010

FMCS News

FMCS Officer Nominations

The FMCS is seeking nominees for the position of President-Elect, Secretary, and Treasurer. Any member may nominate any other member. Nominees must be current FMCS members in good standing who agree to be nominated. These positions will take place in April of 2011 during the FMCS symposium in Louisville, Kentucky.

The deadline for nominations is December 31, 2010.

The nominations committee will select the two candidates for each office who receive the most nominations and who are willing to run for that office. Ballots and position statements from the candidates will be mailed out to all members after nominations close. Send nominations to:

Leroy Koch
U.S. Fish and Wildlife Service
J.C. Watts Federal Building - Room 265
330 West Broadway
Frankfort, Kentucky 40601
Office phone: 502-695-0468 ext. 106
Email: **Leroy_Koch@fws.gov**

Call for 2011 FMCS Professional Award Nominations

Do you know someone who has made worthwhile contributions to mussel conservation or to the Society either through donating their professional time or expertise or through their scientific endeavors? Consider nominating them for one of the three FMCS Professional Awards. Nominations and supporting documentation are due on **December 31, 2010**. For more details, see the Awards Committee web site at http://molluskconservation.org/Mservices_awards.html

Please send nominations and supporting information to either Dr. Teresa Newton, tnewton@usgs.gov, 608-781-6217 or Dr. Greg Cope, greg_cope@ncsu.edu, 919-515-5296.

Student Travel Awards Available for 2011 FMCS Symposium

CALLING ALL STUDENTS— To facilitate your participation in the 7th Biennial Symposium of the Society to be held April 12-14, 2011 in Louisville, Kentucky, travel awards are being offered by the Society. Support is provided via Society paid lodging accommodations for the duration of the meeting at the host hotel (The Seelbach Hilton Louisville). It is anticipated that about 6 awards will be made for the 2011 Symposium.

A complete application package must be submitted by mail, fax, or e-mail to Dr. Teresa J. Newton, FMCS Awards Committee, U.S. Geological Survey, Upper Midwest Environmental Sciences Center, 2630 Fanta Reed Road, La Crosse, WI 54603, fax 608-783-6066, e-mail tnewton@usgs.gov on or before **January 30, 2011**.
See the Awards Committee web site at http://molluskconservation.org/Mservices_awards.html or contact Teresa Newton (608-781-6217) for more information.

2011 Membership Dues

You can now pay your FMCS dues on-line at www.molluskconservation.org. If you are a member, click on *members*, then click on *my profile page*, and log in using your email and password (if you don't have or remember your password, click on *forgot password* and follow instructions on resetting your password; if your email is not found and you believe you are a current member, contact Heidi Dunn at HDunn@ecologicalspecialists.com or Greg Zimmerman at gzimmerman@enviroscienceinc.com. You can then renew your membership and edit your profile. Don't forget to sign up for committees! For new members, click on join and follow instructions.

Many members have expressed interest in paying dues for two years rather than one and making the payment as part of the symposium registration. Additionally, we need to increase dues to defer cost of our new journal *Walkerana* (stay tuned for details in the near future). Therefore, membership dues in 2011 will be $80 for two years for regular members and $40 for two years for student members. Membership will still be from January to January. You can pay on-line (see above) at any time or along with your symposium registration. Registration will be $80 or $40 more for non-members than for members, and the additional amount will be applied to a two-year membership. Many of you have already paid your 2011 dues (thanks for being so diligent). Those members will have an on-line option of paying $40 (or $20) in 2012.

Amendments to By-laws

This past year the Board of Directors thoroughly reviewed the FMCS by-laws. The following amendments were proposed at the Board Meeting held in conjunction with the October 2010 workshop. To amend our by-laws, proposed amendment(s) must be provided to the membership at least 60 days prior to the annual meeting. Our next annual meeting will be held at the Louisville, Kentucky symposium April 12-14, 2011. The amendments will be discussed at the meeting.

The following amendments have been proposed and approved for membership vote by the board of directors. Two amendments pertain to Article VI Officers, 6.1 Number and Elections.

Paragraph D now reads :

> D. The President shall serve a two-year term in this office; however this term will be preceded by a **ONE**-year term as President-Elect, and followed by a **ONE**-year term as Past-President to assist with Society functions as needed. An Active Member shall be elected to this sequence of offices at the beginning of the President-Elect year, and, automatically advance to President and Past-President without the necessity of a vote at either change of office.

The President-elect and Past-President have unofficially been serving for two years. The proposed amendment will make this official. The proposed amendment will read as follows:

> D. The President shall serve a two-year term in this office; however this term will be preceded by a **TWO**-year term as President-Elect, and followed by a **TWO**-year term as Past-President to assist with Society functions as needed. An Active Member shall be elected to this sequence of offices at the beginning of the President-Elect year, and, automatically advance to President and Past-President without the necessity of a vote at either change of office.

Paragraph E now reads:

> E. The Secretary and Treasurer shall be elected for two (2) year terms (except for the first year of the Society's establishment, when the Treasurer will serve for 3 years). The Secretary shall be elected in **odd** years and the Treasurer elected in **even** years. There is no limit to the number of consecutive terms the Secretary or Treasurer may hold.

In the initial by-laws, the president was elected each year and the treasurer and secretary were elected in even and odd years, respectively. Under the current by-laws, the president is elected along with the secretary in odd (symposium) years. Electing the Treasurer in even years requires an additional election, with the additional cost of time and postage. We therefore propose changing the election of the treasurer to correspond with the election of the president and secretary in odd (symposium) years.

As amended, this paragraph will read

> E. The Secretary and Treasurer shall be elected for two (2) year terms (except for the first year of the Society's establishment, when the Treasurer will serve for 3 years). **The Secretary and Treasurer shall be elected in odd years**. There is no limit to the number of consecutive terms the Secretary or Treasurer may hold.

The third amendment concerns Article VIII, the procedure for amendments. This paragraph currently reads:

> AMENDMENTS
>
> An amendment to the By-laws may be proposed in writing to the Board of Directors at least ninety (90) days prior to a scheduled Society annual meeting. If the proposed amendment is supported by at least one voting member of the Board of Directors, the proposed amendment will be distributed to all members sixty (60) days prior to the next annual meeting, and will be open for discussion at that meeting. The amendment and a summary discussion of the amendment will be provided to the membership for a vote during next officer elections. The amendment will be voted on by mail during the next officer elections. The amendment is consummated and ratified when approved by at least two-thirds of the majority of respondents, provided the number of respondents constitutes a quorum.

Since we will now hold elections every other year, rather than every year, amendment approval would require two or more years. Additionally, obtaining a quorum in the returned ballots is not always possible. Most members attend the symposium, which is held in odd years. Discussing and voting on amendments at the symposium general member meeting will allow more members to vote and expedite the amendment process. Amendments will still be provided to the membership for review in the issue of *Ellipsaria* at least 60 days prior to the symposium.

As amended, ARTICLE VIII would read:

> AMENDMENTS
>
> An amendment to the By-laws may be proposed in writing to the Board of Directors at least ninety (90) days prior to a scheduled Society annual meeting. If the proposed amendment is supported by at least one voting member of the Board of Directors, the proposed amendment will be distributed to all members sixty (60) days prior to the next annual meeting, and will be open for discussion **and voted on** at that meeting. The amendment is consummated and ratified when approved by at least two-thirds of the **voting members**, provided the number of **voting members at the meeting** constitutes a quorum**.**

FIRST CALL FOR ABSTRACTS

FMCS 2011 SYMPOSIUM
April 11–15 , 2011
Seelbach Hilton Louisville
Louisville, KY

Join us for the 7th Biennial Symposium of the Freshwater Mollusk Conservation Society, to be held at Seelbach Hilton Louisville in Louisville, Kentucky from April 11 – 15, 2011. The theme for the 2011 symposium is:

Managing Your Mollusks: Reflecting on the Past, Preparing for the Future

A plenary session will open the meeting and provide updates freshwater mollusk conservation and habitat restoration. In 2011, the focus will be on state and regional management of mollusks. Platform and poster session categories covering all taxa of mollusks (gastropods and bivalves) are welcome, and will include:

Session Categories

- Advances in Propagation of Mollusks
- Regional/State Management of Mussels
- Life History & Population Ecology
- Physiology and Reproductive Biology
- Systems and Community Ecology
- Habitat Restoration
- Water Quality and Ecotoxicology
- Evolution and Systematics

INSTRUCTIONS FOR AUTHORS

Submittal form: Abstracts should be submitted as an email attachment in Microsoft Word® or Rich Text format to **Jacob Culp**, Kentucky Department of Fish and Wildlife Resources, 3761 Georgetown Road, Frankfort, KY 40601; **jacob.culp@ky.gov**, 502-573-0330 x 228.

File name should include presenter's last name and initials (e.g., jonesjm.doc).
Subject line of email should include "FMCS 2011 abstract"

Limit abstracts to 300 words or less (including title, authors and affiliations). Abstracts with greater than 300 words will be edited. Acknowledgement of abstract receipt, if requested, will be sent by email.

Submittal format: The abstract should contain the title in **BOLD**, **CAPITAL** letters, followed by the author(s), and address(es). Underscore the presenter's name. Skip one line and begin the text including a clear summary of presentation including objectives, results, and conclusions.

At the bottom of the page, please type:

1. The name, address, telephone, fax, and e-mail of the presenting author.
2. Preference for Platform or Poster presentation and willingness (yes or no) to convert from one format to another.
3. Preference for Session Category (from bullet list above).
4. Regular or Student* attendee

*Note: All students submitting abstracts, provided they meet eligibility requirements, will be judged for the best student platform or poster presentation, unless otherwise indicated.

Oral Presentation Requirements
Not to exceed 20 minutes (15 minutes for talk and 5 minutes for questions and answers).

Poster requirements
The poster should be readable from 5 feet, titles from 10 feet; and the poster should not exceed a size of 4 feet high by 8 feet wide. Authors must be present at the designated poster session.

ABSTRACTS MUST BE RECEIVED BY January 14, 2011

To Register: Go to FMCS website and click on "Events" category at the top. There will be a registration tab under the upcoming FMCS events for the 2011 Symposium: http://molluskconservation.org/Events.html Registration for members will be $280.00, non-members $360.00 (includes 2-year membership). Registration for student members will be $225.00, student non-members $265.00 (includes 2-year membership).

To Reserve Hotel Room: Hotel rooms at the Seelbach Hilton will be $115.00 plus tax (~$133.00 total). To reserve a room go to: http://www.hilton.com/en/hi/groups/personalized/S/SDFSHHF-FMC-20110411/index.jhtml

For More Information: 2011 Symposium Co-Chairs

Monte McGregor phone: 502-573-0330 ext.221, email: monte.mcgregor@ky.gov
Leroy Koch phone: 502-695-0468 ext. 106, email: leroy_koch@fws.gov

2010 Workshop Wrap-up

We had a very successful workshop. In all, 121 attendees spent 2 days listening to presentations on regional faunal identification and sampling. Attendees and experts spent a considerable amount of time both days looking at shell material from across the country and discussing characteristics and distributions. On the last day of the workshop, two full field trips spent time searching for mollusks and participating in sampling demonstrations in the Meramec River. A few brave souls even snorkeled in the cold water! The Pacific Palisades trip netted 28 species of mussels, including pink mucket and sheepnose.

We would again like to thank our Regional Experts for their time and efforts to make this a great workshop: Steve Ahlstedt, Jayne Brim Box, Art Bogan, Kevin Cummings, Gerry Dinkins, Heidi Dunn, Michael Gangloff, Jeff Garner, John Harris, Bob Howells, Paul Johnson, Alison Price, Jamie Smith, Dave Strayer, and Tom Watters.

We would also like to thank our sponsors: Ecological Specialists, Inc., EnviroScience, Inc., Mississippi Interstate Cooperative Resources Association, Missouri Chapter of the American Fisheries Society, Missouri Department of Conservation, Missouri State University, Third Rock Consultants, U.S. Fish and Wildlife Service, University of Oklahoma, Upper Mississippi River Conservation Committee, and Virginia Department of Game and Inland Fisheries.

Submitted by Heidi Dunn and Steve McMurray

. . . And From the Next Editor

Regardless of who's minding the store, the move of *Ellipsaria* to an on-line format brings with it a variety of opportunities and some challenges. Not having to worry about printing and mailing costs will let us include other colors in our newsletter [besides black] and post issues more frequently -- quarterly, I think, at least for a while. On-line posting also should allow us to include more timely news and informal research results, and links to more details, announcements, and web sites.

On the challenges side, I'm sure there will be some bugs to deal with when assembling the submissions, generating the PDF files, getting the files posted on our web site, and letting you know when each new issue is out there. You, on the other hand, will have to spend even more time reading from a computer screen to keep up with what other freshwater malacologists are doing. And you will have to decide for yourself when to print a hard copy of some item or full issue.

Throughout her 10-year stint as editor of *Ellipsaria*, I think Chris Mayer has done an excellent job of editing and distributing the news about our society. I hope to achieve that level of performance and dedication during my tenure in the job. Especially during the next few months, please let me know how you think *Ellipsaria* could become an even better newsletter for the members of our society. And start thinking about what you will contribute (by the February 15 due date) for the first on-line issue.

John Jenkinson, jjjenkinson@hotmail.com

Announcements & News

Biennial Eastern Gulf Slope Mollusk and Crayfish Meeting. Eufaula, Alabama January 19-20, 2011

The Biennial Eastern Gulf Slope Mollusk and Crayfish Meeting serves as a review and update of current mollusk and crayfish conservation and research activities in eastern Gulf of Mexico drainages from the Florida peninsula to the Florida Parishes of Louisiana. The meeting is scheduled to begin at 8:30 a.m. on Wednesday, January 19th and will continue through the afternoon of January 20th. As with previous meetings come prepared with your organized presentation, but please try to keep them brief ~20 minutes. This is a joint meeting with the Alabama Mollusk and Crayfish working group hosted annually by the Alabama Department of Conservation and Natural Resources, Division of Wildlife and Freshwater Fisheries.

The meeting will be held in the Magnolia Room, at Lakepoint Resort State Park outside Eufaula, Alabama. Lakepoint Park has reduced room rates for the event, including both hotel ($59.49 / Queen Double; $78.10 / King; $83.30 / King Suite) and lakeside cottages ($106.00 / 1-bedroom; $140.25 / 2-bedroom; $178.50 / 3-bedroom) for each night. To receive the special rate you must use the group number (#1428) when making reservations (1-800-544-5253). Additional information about Lakepoint Resort State Park is at: *http://www.alapark.com/LakePointResort/*

Unlike previous years, there will be a charge of $10.00 for professionals and $5.00 for students **(cash only)** to cover the costs of refreshments during morning and afternoon breaks for the 2-day meeting. Lunch will be served at the Lodge Restaurant for the cost of $7.95 per day. Otherwise, participants would need to make a15-minute trip into Eufaula for lunch.

Tentative Agenda:

Wednesday – January 19th - AM (8:30 a.m. – 12 noon) - Tennessee River Basin Reports

Wednesday – January 19th - PM (1:30 p.m. - 5 p.m.) - MS & LA Gulf Coastal drainage Reports Mobile River Basin Reports

ID problems with shells and crayfishes will occur during/after the Wednesday afternoon session

Thursday – January 20th – AM (8:30 a.m. – 12 noon) - Mobile River Basin AL, GA, FL Gulf Coast drainage reports

Thursday – January 20th - PM (1:30 p.m. – 5:00 p.m.) - AL, GA, FL Gulf Coast drainage reports

Please be sure to notify the meeting organizers: Sandra Pursifull – USFWS (Sandra_Pursifull@fws.gov) or Jeff Garner – ADNCR (bleufer@aol.com), if you plan to attend. We need to provide the Lakepoint Resort officials with an accurate count for refreshments and meals.

MS Positions at Central Michigan University: Conservation of Freshwater Mussels in the Great Lakes

https://www.benthos.org/Classified-Ads/Graduate-student-and-postdoc-positions/Two-MS-positions-at-Central-Michigan-Univ--Conserv.aspx

Responsibilities: Up to two successful applicants will conduct a two-year research project on unionid mussels in coastal zones of the Great Lakes. This project is funded by the Great Lakes Restoration Initiative (U.S. Fish and Wildlife Service - Great Lakes Fish and Wildlife Restoration Act). These research assistants will combine field and laboratory (genetic) techniques to assist in managing native unionid communities affected by dreissenid mussels is the lower Great Lakes. The remnant unionid communities found along the coastal margins of Lake St. Clair and Lake Erie are all that remain of the abundant and diverse communities prior to the dreissenid mussel invasion of the 1980's. The successful applicant will work with Dr. Dave Zanatta and collaborators at other academic institutions and state agencies to answer questions about the conservation of these mussel communities, ultimately leading to a comprehensive thesis. Stipend support in the form of Research Assistantships will be available in the summers and Teaching and/or Research Assistantships will be available through the school year. Graduate students in Biology receive full tuition waivers.

Qualifications: The successful applicant should be highly motivated and have a B.S. (or completion by May 2010) in biology, zoology, genetics or closely related field. Prior experience in a molecular lab conducting PCR and genotyping, field experience (e.g, boats, snorkeling, SCUBA), interests in conservation biology, and working with aquatic invertebrates and/or unionid mussels, are assets.

Minimum academic qualifications include 3.0 GPA (on a 4.0 system) and GRE scores must be sent to CMU graduate school for approval. Application materials for the graduate program in Biology: http://bio.cmich.edu/grad_app_admiss.htm (deadline for a Teaching Assistantship is Feb 15 2011).

Salary: approx $15,000 + tuition waiver

Closing Date: Feb 15, 2011 (to CMU Graduate School). The candidate will be expected to begin by June 1, 2011.

In addition to applying to the CMU Graduate Program in Biology, send Dr. Zanatta (email preferred):

1. a cover letter explaining your interest and qualifications
2. a resume (CV)
3. copies of transcripts (unofficial ok)
4. names and contact information for 3 academic references

Feel free to contact Dr. Zanatta with any questions.

Dave Zanatta, Ph.D., Assistant Professor
Central Michigan University, Biology Department
156 Brooks Hall
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989-774-7829
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Publications

Two recent publications regarding mussel responses to contaminates:

Wang N., Ingersoll C.G., Ivey C.D., Hardesty D.K., May T.W., Augspurger T., Roberts A.D,. van Genderen E., Barnhart M.C.. 2010. Sensitivity of early life stages of freshwater mussels (Unionidea) to acute and chronic toxicity of lead, cadmium and zinc in water. *Environmental Toxicology and Chemistry* 29(9): 2053-2063.

Newly transformed juvenile mussels (5-d-old) were the most sensitive life stage of freshwater mussels tested in evaluating the acute toxicity of Pb, Cd, or Zn, in contrast to glochidia (larvae) and older juveniles (two- to six-months-old). In comparison with other tested freshwater organisms, juvenile mussels were relatively sensitive to the acute toxicity of Pb (mussels in the 26th percentile of freshwater species sensitivity distribution), Cd (the 15th to 29th percentile), or Zn (the 12th to 21st percentile). The mussel (*Lampsilis*) genus mean chronic value was the lowest value ever reported for Pb (the 9th percentile) but was near the middle of the sensitivity distribution for Cd (the 61st percentile) or Zn (the 44th percentile). Test results and relevant literature were used to compare mussel sensitivity to the current U.S. EPA water quality criteria for these metals. Criteria are protective of freshwater mussels from Pb or Cd exposure, but might not adequately protect mussels from Zn exposure. A draft biotic ligand model-derived water quality criteria for Zn would be more protective of mussels compared to the current hardness-dependent criteria for Zn.

Miao J., Barnhart M.C., Brunson E.L., Hardesty D.K., Ingersoll C.G., Wang N. 2010. An evaluation of the influence of substrate on the response of juvenile freshwater mussels (Fatmucket, *Lampsilis siliquoidea*) in acute water exposure to ammonia. *Environmental Toxicology and Chemistry*, 29 (9):2112-2116.

A study was conducted to determine whether the acute toxicity of ammonia to juvenile mussels varied in test chambers with or without the presence of a substrate. Acute 96-h ammonia toxicity to three-month-old juvenile mussels (*Lampsilis siliquoidea*) was evaluated in four treatments (water-only, water-only with feeding, water and soil, and water and sand) using an exposure unit designed to maintain consistent pH and ammonia concentrations in overlying water and in pore water surrounding the substrates. Median effect concentrations (EC50s) for total ammonia nitrogen in the four treatments ranged from 5.6 to 7.7 mg/L with overlapping 95% confidence intervals at a mean pH of 8.4. The results indicate no influence of substrate on the sensitivity of juvenile mussels in acute exposures to ammonia.

Submitted by Ning Wang, nwang@usgs.gov

Contributed Articles

The following articles were contributed by FMCS members and others in the malacological community. The contributions are incorporated into the newsletter with minimal editing and the opinions expressed therein are those of the authors.

Sphaeriids at the Milwaukee Public Museum

Joan P. Jass
Invertebrate Zoology, Milwaukee Public Museum
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The Milwaukee Public Museum (MPM) collection of Sphaeriidae presently numbers 3256 specimens in 280 lots, about 25% of these including soft tissues preserved in 70% ethanol. Collecting data from each lot has been computerized in an Access dataset, allowing retrieval and basic analysis of the collection contents. European, South American and West Indian localities are represented by a small number of lots, but by far the majority are from North America, with a regional concentration on the states of the upper Midwest. Wisconsin has the best geographical coverage, with over half of the 72 counties in the state being represented. These MPM specimens also represent a broad range of history, having collection dates covering a span of more than 140 years. Several lots with dates of collection come from the 1870s and '80s, although the greatest number are from recent decades. Historically significant are those from the Increase Lapham collection; it was he who reported the first listings of mollusk species for Wisconsin (Lapham 1852, 1860).

Lots with species-level determinations comprise 76% of the collection. In the early 1900s, museum freshwater mollusks were loaned to H.A. Pilsbry of The Academy of Natural Sciences of Philadelphia; they included 43 sphaeriid lots returned with his determinations. When P. Emmling was researching his University of Wisconsin thesis on Milwaukee Harbor species (Emmling 1976), he provided updated determinations for 40 MPM lots. Of the species listed by NatureServe http://www.natureserve.org/ from Canada and the United States, 21 are represented here.

Although unionids generally receive greater attention, sphaeriids are the dominant bivalve fauna in North American freshwaters. They are present, and often quite abundant, in a very wide range of habitats – from rivers and streams to large lakes and ephemeral ponds. For example, the MPM collection includes vouchers collected from wetland within Tom's Prairie (a State Natural Area) in Wisconsin's southwestern Driftless Area, as well as those from a Lake Michigan study of sphaeriid distribution in the Milwaukee Harbor. *Pisidium cruciatum*, the only sphaeiriid included on the Wisconsin Endangered Resources Program's listing of rare bivalves, is represented at MPM by shells collected in the early 1900s from Lake Winnebago, Calumet County. Inquiries are welcomed from researchers interested in Sphaeriidae at MPM.

Emmling, P. 1976. Factors affecting the distribution of Sphaeriidae (Mollusca: Pelecypoda) in the Milwaukee Harbor, Lake Michigan. Thesis (M.S. in Zoology), University of Wisconsin – Milwaukee. 147 pp.

Lapham, I.A. 1852. Flora and fauna of Wisconsin. Transactions of the Wisconsin State Agricultural Society, II: 367-370 [Mollusca].

Lapham, J[I].A. 1860. A list of the shells of the state of Wisconsin. Proceedings of the Academy of Natural Sciences of Philadelphia, 12: 154-156.

A New Species Location Record in Sussex County, Delaware

F. Matthew Blaine
908 West Street, Laurel, Delaware 19956-1932

Abstract

There have been few surveys of Niades (Bivalvia: Unionidae) in Sussex County, Delaware. The last major survey which included Sussex County was by Clement L. Counts, III, Thomas S. Handwerker, and Roman V. Jesien. It is published and in American Malacological Bulletin, Vol. 9(1) (1991) 27-37. In that report several stations in Sussex County Delaware are sited. I have been monitoring several of these stations recently and have found one new species sighting. I found *Anodonta cataracta* Say, 1817 in addition to *Elliptio fisheriana* (Lea, 1838) at station #39 as listed in their paper.

Description Of The Study Area

Williams Pond is located on the Nanticoke River System. In 1954 a branch of the river was dammed off which created the pond. The dam is located in Seaford, Delaware and Williams Pond extends northeast from that point out of the city limits for about a mile and a half. Williams pond is crossed by two bridges. The first is for duel highway, Route 13 (Sussex Highway) and is in the middle of the pond. The second is The Tharp Road Bridge at the northeastern end of the pond. The area from the Route 13 bridge to The Tharp Road Bridge on the pond is surrounded by private waterfront homes. On August 6th, 2010 Del Dot drew down the water in Williams Pond by approximately 1.5 meters to facilitate repair of the dam structure. This draw down of water exposed previously flooded shoreline around the lake.

Williams Pond Dam, Seaford, Delaware, Sussex County. By F. Matthew Blaine.

Methods

A review of the available literature was conducted. Periodic trips to various stations listed for Sussex County, Delaware by Counts, Handwerker, and Jesien were revisited periodically over the past few years. Shells were brought to me that were collected on private property. The property is located about 300 meters west of the Tharp Road Bridge. Shells were collected there on September 25, 2010 and again on September 28th. I visited the property on August 6, 2010, took notes, and collected material. All shells collected were dead. The bottom is sand with some mud mixed in it. All shells were taken from exposed bank. It is assumed that the shells were left on the shore by animals because all shells were removed from the bank on each collecting trip and new dead shells were found on the same bank on subsequent visits. Shells that were collected were identified by me and were shown to Dr. Arthur E. Bogan, who agreed with my identification.

Results

Two species of Niades were found at Williams Pond, Seaford, Delaware. One was the previously reported *Elliptio fisheriana* (Lea, 1838). The second and previously unreported at this location was *Anodonta cataracta* Say 1817.

The total number of articulated *A. Cataracta* collected was 15 and an additional 23 single valves.

The total number of articulated *E. Fisheriana* collected was 16 and an additional 3 single valves.

A number of Corbicula were also found.

Anodonta cataracta found on exposed shoreline. Williams Pond, Seaford, Delaware. By F. Matthew Blaine.

Acknowledgements

The author wishes to thank Kenneth Bryson for his help during sampling and his help in collecting specimens. I would like to also thank Mrs. Sharlana Edgell for allowing us to go on her property, to collect shells on her property, and for providing local historic background about the area. Lastly, I would like to thank Dr. Arthur E. Bogan for his encouragement over the years and for his support.

Literature Cited

Counts, et al. 1991. *The Naiades (Bivalvia: Unionidea) of the Delmarva Peninsula.* American Malacological Bulletin, Vol. 9(1) (1991):27-37.

Williams, J.D., Bogan, A.E., and Garner, J.T. 2008. Freshwater Mussels of Alabama & The Mobile Basin in Georgia, Mississippi & Tennessee. P.633

Elliptio fisheriana, *Anodonta cataracta* and *Corbicula* on exposed shoreline, Williams Pond. Seaford, Delaware.

Summary of OVUM IV Talks, 6 November 2010

Submitted by Tim Pearce & Tom Watters

The very successful fourth annual meeting of the Ohio Valley Unified Malacologists (OVUM IV) was held jointly with the first annual meeting of the Great Lakes Unified Malacologists (GLUM) on Saturday 6 Nov 2010 at The Ohio State University, hosted by Tom Watters, with an optional field trip on Sunday 7 Nov 2010. On Saturday there were 34 participants and 14 presentations, with time to use the research collection during lunch hours and after the talks had concluded.

Kody F. Kuehnl, Franklin University, "A state of some unionids address: phylogenetic relationships in an imperiled group of freshwater mussels (genus *Villosa*)."

Villosa as currently recognized is polyphyletic according to mitochondrial DNA (CO1, ND1). *V. villosa* and *V. amygdala* might be the only true *Villosa*. *Villosa iris* is monophyletic, with 8 well supported sub-clades, most of which occur geographically in a narrow band S of glacial extent and N of ocean rise extent.

Mac Albin, Columbus Metro Parks, "Observations and comments on freshwater mussels and conservation in Big Darby Creek."

The Creek is only 82 miles long but has 44 species of mussels. 85% agriculture in the drainage causes conservation concerns. Conservation efforts continue.

Rosemary A. Mormon, University of St. Francis, "Distribution and habitat characterization of unionids in Crooked Lake, Whitley County, Indiana: a preliminary report."

This glacial lake is deep; unionids were found on shallow shelves, one found as deep as 15 feet.

Michael Hoggarth, Otterbein University, "The mussels of the Little Miami River system fifteen years later."

Headwaters showed decrease in species over time. Farther downstream showed some increases, particularly in mussel species that can use Drum as a host.

Timothy A. Pearce & Stephanie L. Payne, Carnegie Museum of Natural History, "The scoop on goose poop: do land snail shells traverse the gut of modern dinosaurs?"

Found snails in goose poop. Geese are modern dinosaurs. So it is possible that snails could traverse the gut of ancient dinosaurs (contrary to a paper from last year).

Daelyn A. Woonough, Daniel Auer, Daryl Kuipers & Dave Zanata, Central Michigan University, "Pelecypod and gastropod communities at Pierce Cedar Creek Institute: variation in understudied organisms."

Ordination on data from non-unionid molluscan taxa differentiates among habitats (river, lake, wetland) better than other aquatic macro invertebrates. Taxa were identified to genus for Sphaeriidae, species for Gastropoda, mostly to family for other invertebrates.

Andy Harris & Dave Zanatta, Central Michigan University, "Phylogeography of the ellipse mussel *Venustaconcha ellipsiformis*."

Using COI data, found 8 haplotypes of *V. ellipsiformis*. It seems to be a single species. There were more haplotypes S of the glacial line, and 1-2 haplotypes N of that line.

Dave Zanatta, Central Michigan University, "What a difference a mussel (or two) makes: a quarter century of change in the unionid communities of Lake St. Clair"

Lake St. Clair is ground zero for the zebra mussel invasion of North America in 1986. Due to *D. polymorpha*, unionid abundance is 2 orders of magnitude less. Used 65 sq m plots. Yes, Unionidae declined, but there is some stabilization and species diversity persists. Yes, zebra mussels have declined.

Josh Wyatt, Thomas More College, "Identifying large river fish hosts for native mussel larvae."

Drum are very good hosts for larvae.

Stephen Matter, Francisco Borrero & Cody Fleece, Cincinnati Museum Center, "Growth and survival of fat mucket populations in Ohio Brush Creek."

Lampsilis radiata luteola might not have pulses in reproduction.

Sean Collins, University of Cincinnati, "Aquatic snails at the Monkey River Drainage – Belize"

Algae don't seem to predict freshwater snail abundance, but snails negatively correlate with human impact.

Francisco J. Borrero, Cincinnati Museum Center, "Systematic and biogeographic relationships of the land snail fauna of northern South America. Notes on some Pleurodontidae of the Sierra Nevada de Santa Marta, Colombia, with a new species of *Isomeria*."

Camaenidae and Orthalicidae seem to be Gondwanan in distribution. In land snail studies of Colombia, we seem to be early in the species saturation curve.

Kip Brady, New Philadelphia (OH) High School, "Community interactions and ecosystem processes: do crayfish predators alter leaf processing by the snail *Helisoma trivolvis*?"

Crayfish predator cues didn't alter leaf processing by the snails.

Tom Watters, Ohio State University, "Columbis Zoo and Aquarium Freshwater Mussel Conservation and Research Center."

Recent projects include augmenting wild populations of northern riffle shells and fanshells, host identifications, and propagation for mitigation.

The Development of an Aquatic Mollusc Fauna at the Site of the Ice-rink in Midsland-Noord, Terschelling, the Netherlands

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On Terschelling, one of the Wadden-islands in the north of the Netherlands, an ice-rink had been excavated some time ago in Midsland-Noord at the edge of the dunes adjacent to the so-called Goat-meadow. This ice-rink has an oval form and is more or less a very wide ditch surrounded by higher banks and a central higher area. It carries water almost the year round, except during long dry hot summers, a rare event in the Netherlands, then large parts of it are drying up. Since the water is shallow it is covered relatively quickly by a layer of ice during cold winters, which allows the local youth to show their skating abilities, usually during a relatively short period.

Because of the constant change in water level the aquatic flora is poorly developed. Here and there Common reed (*Phragmites*), Bulrush or Cattail (*Typha*) and Bur-reed (*Sparganium*) are growing near the banks, and since shortly someone has planted a White water-lily (*Nymphaea alba*) in the eastern part of the ice-rink where also Pondweed (*Potamogeton*) has established itself.

In autumn 2005, the senior author sampled for the first time the ice-rink for the presence of aquatic molluscs. The water level was extremely low and not a single gastropod or bivalve could be traced. Also, an entomologist looking for aquatic insects at the same time did not see a single mollusc in his dip-net. This situation remained unaltered in the autumns of 2006 and 2007. On 25 September 2008, the senior author noticed that a White water-lily hand been planted in the water off the eastern bank of the ice-rink. On the floating leaves of that Water-lily numerous specimens of an invasive freshwater limpet *Ferrissia clessiniana* (Jickeli, 1882)* were found. No other species were noted. In autumn 2009 the ice-rink remained unchecked.

In the autumn of 2010 the water of the ice-rink was surveyed twice. Sampling took place on 19 September 2010 by both authors and on 27 September 2010 once again by the senior author. To our surprise the presence of the following seven species of aquatic molluscs could be registered:

Haitia acuta (Draparnaud, 1805) [(syn. heterostropha (Say, 1817)]
Physella cf. *gyrina* (Say, 1821)
Gyraulus (Gyraulus) albus (Müller, 1774)
Ferrissia clessiniana (Jickeli, 1882)*
Radix balthica (Linnaeus, 1758)
Pisidium milium Held, 1836
Pisidium subtruncatum Malm, 1855

The freshwater limpet *Ferrissia clessiniana* was again only collected from the leaves of the White water-lily. All other species were found among a dense stand of Bur-reed and Pondweed in the south-east corner of the ice-rink.

Interesting are the finds of two species of Bladder snails: *Haitia acuta* and what we call at the moment *Physella* cf. *gyrina.* On Terschelling two species of Bladder snails were already known to occur: the autochthonous *Physa fontinalis* (Linnaeus, 1758) with its blunt apex, and the allochthonous *Haitia acuta* with a sharp apex. *Physa fontinalis* was certainly not encountered in the water of the ice-rink. However, of the two forms of Bladder snails which we managed to catch on 19 September, one form was characterized by having a slender shell with a sharp apex fitting the description of *Haitia acuta*, the other form was characterized by a rather broad shell with a lower and less sharp apex. These shells fit in details those figured by Taylor (2003: plate 11, figs. 1-3) as belonging to *Physella gyrina*. Although all our specimens were relatively small (adults may reach a height of 25 mm!), they showed traces of the crescentic microsculpture, which is characteristic for that species. Since the specimens were not studied anatomically we prefer to call them for the meantime *Physella* cf. *gyrina.*

There is proof that the American exotic species *Haitia acuta* reached Terschelling fairly recently by means of the sale of pond plants infected by these snails in a local garden centre (HKM, personal observations, 2008-2010). We do not rule out the possibility that the other Bladder snail discovered in the waters of the ice-rink on Terschelling reached that island in a similar way. It is noteworthy that *Physella gyrina* has never been recorded before from open waters in the Netherlands, but it is at least known from Ireland and Great Britain (Anderson, 1996) and Germany (Glöer, 2002).

The sudden appearance and increase in mollusc species occurring in the waters of the ice-rink is without doubt due to human activities. Planting of a White water-lily infected with *Ferrissia clessiniana** has occurred at several places on Terschelling. Also dumping of excessive pond plants and aquarium snails has taken place regularly (Mienis, 2005, 2007, 2009 & 2010). However, on the other hand the presence of an increasing number of aquatic plants may attract more and more aquatic birds. The latter may transport inadvertently additional mollusc species to the waters of the ice-rink. In each case we will continue our survey of thus interesting aquatic habitat in the coming years.

*We leave in the middle whether *Ferrissia clessiniana* has to be considered a junior synonym of the American species *Ferrissia fragilis* (Tryon, 1863).

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Planorbella duryi in a Canal in Purmerend, the Netherlands

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During my annual visit to my native the Netherlands, I noticed that some of the canals in Purmerend, a town some 12 km north of Amsterdam in the province of North-Holland, had been cleaned with the aid of a water mower machine. The mowed aquatic plants, mainly the leaves of Yellow Pond lilies (*Nuphar luteum*) and Cattails (*Typha* species), had been dumped here and there on the banks of canals.

On 8 October 2010 I made a brief check for the presence of aquatic snails among the Yellow Pond lily leaves present in such heap on the bank of the canal between the Meeuwstraat and the Leeuwerikplein. The first snail I encountered was an empty shell of the Seminole rams-horn *Planorbella duryi* (Wetherby, 1879), which has to be considered an exotic species in the Netherlands and elsewhere in Europe, because it is a native species from the south-eastern part of the U.S.A.

A further search produced numerous shells still containing the desiccated bodies of more common species like Mud bithynia or Faucet snail *Bithynia tentaculata* (Linnaeus, 1758), Leach's bithynia *Bithynia leachii* (Sheppard, 1823), Great rams-horn *Planorbarius corneus* (Linnaeus, 1758), Common rams-horn *Planorbis planorbis* (Linnaeus, 1758), Whirpool rams-horn *Anisis vortex* (Linnaeus, 1758), Great pond snail *Lymnaea stagnalis* (Linnaeus, 1758), Bladder snail *Physa fontinalis* (Linnaeus, 1758), Pointed bladder snail *Haitia acuta* (Draparnaud, 1805) and Lake limpet *Acroloxus lacustris* (Linnaeus, 1758).

Exactly one week later on 15 October 2010 I managed to collect two living specimens of *Planorbella duryi* at almost the same spot, but this time from among the aquatic plants still present in the canal.

The find of the North-American Seminole rams-horn seems to constitute the first record of its occurrence in open water in the Netherlands. However it is possible that snails reported as *Helisoma nigricans* (Spix, 1827) and collected in Krimpen aan den IJssel in 1959 and the Hague in 1983 (Gittenberger et al., 1998) belonged in reality to the genus *Planorbella* and more particularly to *Planorbella duryi.* True *nigricans* is not a species from southern North-America (among others Florida) as stated by Gittenberger et al. (1998), but a South American species belonging to the genus *Biomphalaria* according to the studies of Paraense (2006).

Planorbella duryi is a common aquarium snail in the Netherlands and occurs also in botanical gardens (Ripken & Gittenberger, 1963). In aquaria it often becomes a nuisance because of its rapid reproduction. Therefore aquarium-keepers are cleaning from time-to-time their basins and the collected specimens are usually released in a nearby ditch, canal, pond or lake. This has lead to free-land records of *Planorbella duryi* from a number of countries in Europe among others from France – Corsica (Falkner et al., 2002), Spain – Baleares (Pons et al., 2001; Beckmann, 2007), Malta (Giusti et al., 1995), Italy (Giusti et al., 1995; Cianfanelli et al., 2007) and others.

The future must show whether the population of *Planorbella duryi* in the canal in Purmerend is a permanent or a temporary one. Noteworthy is the fact that the snails were found after a relatively long and harsh winter (2009/10) with an ice-cover of the canals for more than a month.

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Additional Information Concerning the Conquest of Europe by the Invasive Chinese Pond Mussel *Sinanodonta woodiana.* 23. General Information and News from France and Serbia.

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General Remarks

Since I started with my regular review of the literature dealing with the conquest of Europe by the Chinese Pond Mussel *Sinanodonta woodiana* (Lea, 1834) first in the "Triannual Unionid Report" and subsequently in "Ellipsaria", I was asked from time-to-time why I am publishing these notes in a newsletter being published in the U.S.A.? My answer was always that in spite of all the current laws in the U.S.A. it will be a matter of time and this species will also reach North America. In that case information concerning its spread in Europe might be of some use in order to prevent a similar situation in the U.S.A.

Of course I did not know at that time that I had to wait for the first record from the U.S.A. until this year. Unfortunately it has happened. This highly invasive and competitive species has been found in the ponds of a former fish farm in the Franklin Township, Hunterdon County, New Jersey (Benson, 2010, and numerous popular websites). Numerous shells were encountered on a 51-acre property off Joe Ent Road at a former aquaculture business known as Huey Farm where they were growing mainly species of carp the for Asian markets. Some shells were also found in a nearby stream the Wickecheoke Creek (Murray, 2010). I hope indeed that all the specimens have now been collected by rangers of the New Jersey Conservation Foundation. If not then I am afraid that we may expect another series under the heading: "Additional Information Concerning the Conquest of North America by the Invasive Chinese Pond Mussel *Sinanodonta woodiana*."

New Information from Europe

Recently I have come across some new information published in France and about its presence in Serbia.

France

Adam (2010) has recently given an overview of the presence of this species in the basin of the Rhône, southern France. However, the author gives much more information. In fact he reviewed most of the knowledge concerning any aspects of this invasive mussel species in Europe. In the wake of the recent discovery of *Sinanodonta woodiana i*n the U.S.A., any one working on this mussel species should consult this paper.

Serbia

Tomović et al. (2010) has recently reviewed the presence of alien molluscs in Serbian waters. According to their most up-to-date survey, the Chinese Pond Mussel is present in moderate numbers at many localities in the following rivers: Danube, Sava and Tisa. The introduction of Grass carp *Ctenopharyngodon idella*, Prusian carp *Carassius auratus gibelio*, Silver carp *Hypophthalmichthys molitrix* and Bighead carp *Arstichthys nobilis* from China and other Far East countries seems to have played a crucial part of the distribution of the Chinese Pond Mussel in Serbia.

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Mollusk fauna in the "extremes" of the Southern Brazil region – a revision rehearsal: new bibliographical records

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Continuing the results which were submitted in previous editions of this newsletter (Agudo-Padrón 2009 a-d, 2010), here are new contributions which escaped our initial attention or have recently been produced for the Santa Catarina's extreme neighbors State political territories of Paraná - PR (to the North) and Rio Grande do Sul - RS (to the South), Southern Brazil region integral of the "Atlantic Slope of the Southern Cone in South America":

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Mollusk fauna of Santa Catarina's State, SC, Southern Brazil: a regional bibliographical compilation

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Similar to the fact for the neighbor States of Rio Grande do Sul - RS (Agudo-Padrón 2009 b, e) and Paraná - PR (Agudo-Padrón 2009 a, c), a compilation of the main bibliographical sources of interest follows, seeking to contribute to the regional knowledge of this diversified invertebrate fauna, already considered in the extent as one of the more poorly studied and known of Brazil (Agudo 2002, 2004; Agudo-Padrón 2008:147, 2010a:32, 2010b:13):

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* Particularly, this last contribution relates a total of 63 species and subspecieses of terrestrial gastropods for the State ...

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Suitable host fishes for the wartyback mussel, Quadrula nodulata

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The wartyback mussel (*Quadrula nodulata*) is an endangered species in Minnesota, occurring primarily in the Mississippi River from Minneapolis-St. Paul to Hastings, Minnesota, and sporadically in the Minnesota River. Channel catfish, flathead catfish, and white crappie have been reported to be naturally infested with wartyback glochidia (Surber 1913, Wilson 1916, Coker *et al*. 1921), but transformation to the juvenile stage was not confirmed.

To determine what fish species are potential hosts for wartyback, we ran laboratory trials on 63 fish species in 12 families using standard procedures (Neves *et al*. 1985). Gravid mussels with mature glochidia were collected from the Mississippi River (RM 819) on 11 and 22 June and 13 July, 2010. Fishes were collected from various rivers and streams in central and southern Minnesota and southeastern Missouri. We placed fish and glochidia in an aerated bath, and glochidia attachment to gills was confirmed for at least one individual of each fish species tested. Three and six days after inoculation, we re-examined fish for encapsulated glochidia. If gills were free of glochidia, the trial for that species ended. If glochidia remained on gills after day 6, all individuals of that fish species were placed together in a separate aquarium for monitoring. Aquarium floor water was siphoned every 3 to 4 days through a 125µ mesh sieve. Siphonate was examined for juveniles with a dissecting microscope.

Six catfish species (Ictaluridae) facilitated metamorphosis of wartyback glochidia, with channel and blue catfish producing relatively more juveniles per fish (Table 1). These results corroborate previous studies that have found catfish are suitable hosts for members of the *pustulosa* species group of quadruline unionids (Howard 1914, Coker *et al*. 1921, Haag and Warren 2003).

Table 1. Fish species that facilitated metamorphosis of *Quadrula nodulata* glochidia.

Fish Species*	Trial	No. Fish	No. Juveniles Recovered	Juvenile recovery period (d)
Ictalurus punctatus	1	5	2,485	10-34
Ictalurus punctatus	2	3	29	17-22
Ictalurus furcatus	1	7	2,239	7-27
Ameiurus melas	1	19	1,034	10-28
Ameiurus melas	2	1	3	16-21
Ameiurus melas	3	3	0	n/a
Ameiurus nebulosus	1	1	34	17-26
Noturus exilis	1	4	23	10-25
Pylodictis olivaris	1	1	10	15-22

*Fishes that did not facilitate metamorphosis (n) - *Ambloplites rupestris* (13), *Acipenser fulvescens* (3), *Aplodinotus grunniens* (1), *Campostoma anomalum* (1), *Carassius auratus* (1), *Carpiodes cyprinus* (3), *Catostomus commersoni* (7), *Cyprinella galactura* (1), *Cyprinella spiloptera* (6), *Cyprinella venusta* (6), *Cyprinus carpio* (7), *Etheostoma exile* (7), *Fundulus olivaceus* (2), *Hypentelium nigricans* (7), *Ictiobus bubalus* (1), *Lepisosteus osseus* (2), *Lepisosteus platostomus* (2), *Lepomis cyanellus* (4), *Lepomis gibbosus* (2), *Lepomis humilis* (8), *Lepomis macrochirus* (15), *Lepomis megalotis* (3), *Lepomis microlophus* (4), *Lota lota* (1), *Luxilus chrysocephalus* (2), *Luxilus cornutus* (3), *Macrhybopsis storeriana* (1), *Micropterus dolomieu* (6), *Micropterus salmoides* (11), *Moxostoma anisurum* (1), *Moxostoma macrolepidotum* (8), *Nocomis biguttatus* (1), *Notemigonis crysoleucas* (10), *Notropis blennius* (1), *Notropis dorsalis* (2), *Notropis nubilus* (7), *Notropis topeka* (5), *Notropis volucellus* (1), *Notropis zonatus* (4), *Noturus flavus* (7), *Noturus gyrinus* (1), *Oncorhynchus mykiss* (3), *Perca flavescens* (8), *Percina caprodes* (13), *Percina phoxocephala* (1), *Phoxinus eos* (1), *Pimephales notatus* (9), *Pimephales promelas* (5), *Pomoxis annularis* (1), *Pomoxis nigromaculatus* (2), *Rhinichthys atratulus* (4), *Rhinichthys cataractae* (3), *Salvelinus fontinalis* (3), *Semotilus atromaculatus* (2), *Sander canadensis* (3), *Sander vitreus* (1), *Umbra limi* (10)

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This is the final hard copy issue of *Ellipsaria*. Beginning with the first issue of 2011, members will receive the newsletter as a PDF. Note that John Jenkinson will be taking over as the new editor – thanks John! Please see his note on page 4 of this issue. cam

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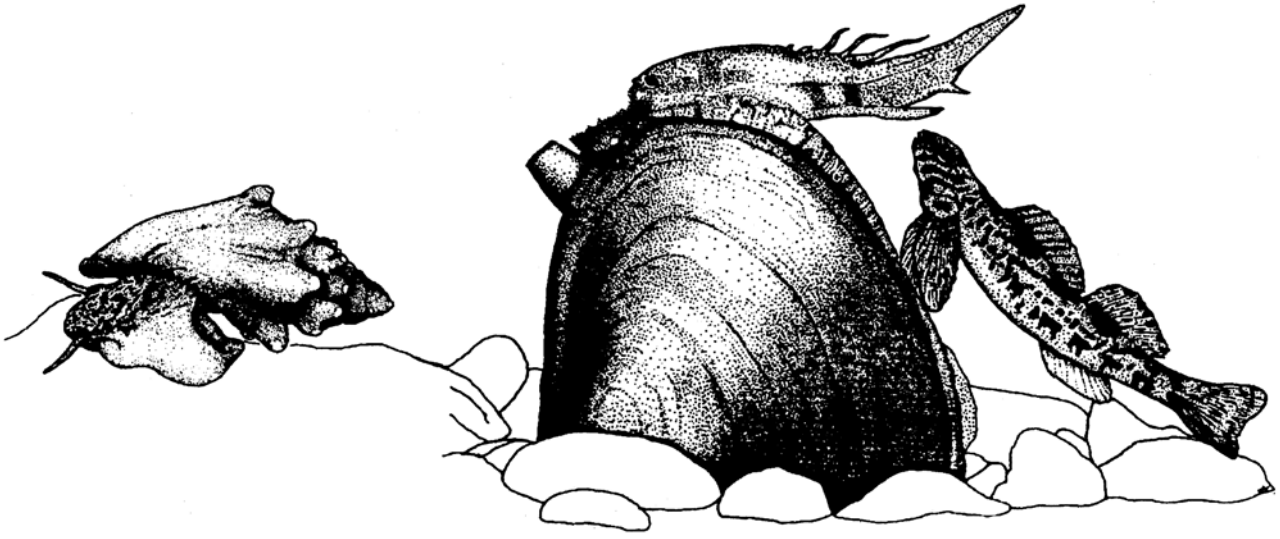

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