SHELL·O·GRAM

Official Publication of the
JACKSONVILLE SHELL CLUB, INC.

Sept.-Oct., 2020 _____Volume 61 (no. 5)

Shell Cleaning & ID'ing Event

JSC President Paul Jones will host the third shell cleaning and ID'ing event of the year at his home **Saturday, October 3rd, starting about 11:00 AM** at 3609 Crazy Horse Trail, St. Augustine, Florida 32086. (904) 347-7254.
Directions: From Jacksonville, take I 95 southbound to Exit 311 - State Road 207.
From the Ormond Beach area, take I 95 northbound to Exit 311 - State Road 207.
Exit on State Road 207, go east on SR 207 towards St. Augustine for about two miles. Turn right at the first stoplight you come to - onto Wildwood Drive. Follow Wildwood Drive for about a mile to a mile and a half, then on the left look for the Prairie Creek subdivision sign on the left hand side of the road. Turn into Prairie Creek, after stopping at the guard house (Paul will alert the guard to your arrivals), proceed thru the gate and up the hill, past the tennis courts and take the first right you come to - Crazy Horse Trail. His house is the third on the right, first driveway past the speed bump.
Due to ongoing concerns about COVID-19, **we require that <u>everyone</u> attending wear a mask** …. (cont'd p. 8)

Upcoming meetings (see also p. 2)

The **September** meeting of the Jacksonville Shell Club (JSC) **may** be held at the usual place, the Southeast Branch of the Jacksonville Public Library <http://www.yelp.com/biz/jacksonville-public-library-southeast-regional-jacksonville>, on the customary **fourth** Thursday (the **24th**). The specific venue continues to be Function Room D and President Paul Jones will rap the gavel at 7:00 PM. Harry Lee will present the Shell-of-the-Month, *Orectospira babelica* (Dall, 1905) holotype on **L** [image courtesy of the US National Museum]. The original monotype of *Orectospira* Dall, 1925, it is a 1-2 inch deepwater Japonic marine snail with a somewhat murky systematic placement. Rick and Roz Edwards are back from a recent Caribbean cruise COVID-19-free and able to share their shelling experiences with the rest of us. They were able to go ashore in Labadee, Haiti; St. Thomas (US Virgin Is.); and St. Maarten/Martin, where Rick assembled an impressive collection of beach-collected shells. Many of the species he collected cannot be found in NE Florida, so be prepared for some Antillean novelties.

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This club meets monthly at the Southeast Branch of the Jacksonville Public Library, 10599 Deerwood Park Blvd,, Jacksonville, Florida <https://www.jaxpubliclibrary.org/locations/southeast-regional>. Please address any correspondence to the club's address above. Annual membership dues are $15.00 individual, $20.00 family (domestic) and $25.00 (overseas). Lifetime membership is available. Please remit payment for dues to the address below and make checks payable to the Jacksonville Shell Club. The club's newsletter and scientific journal, the *Shell-O-Gram* (ISSN 2472-2774) is issued bimonthly and mailed to an average of 15 regular members and friends by specific request and no less than ten scientific institutions with permanent libraries. An electronic (pdf) version, identical except for "live" URL's and color (vs. B&W) images, is issued the next day and sent to about 200 individuals who have demonstrated an interest in malacological research. These pdf's (ISSN 2472-2782) have also been posted to <http://jaxshells.org/letters.htm> since November, 1998. We encourage members and friends to submit articles for publication. Closing date for manuscript submission is two weeks before each month of publication. Articles appearing in the *Shell-O-Gram* may be republished provided credit is given the author and the *Shell-O-Gram*. As a courtesy, the editor and author should receive a copy of the republication.
Contents of the *Shell-O-Gram* are intended to enter the permanent scientific record.

Upcoming meetings (cont'd)

Our second autumn meeting of the year **may** be **on Thursday October22** at the customary time and place. We'll first hear from Paul Jones, who has selected *Asaphis deflorata* (Linnaeus, 1758) on the **L** [credit Femorale Shells] as his Shell-of-the-Month. As with many of the shells Rick presented at the preceding meeting, this 2-3 inch variably-colored clam is found only south of us on the Florida coast and points beyond. Paul has been an outspoken proponent of bivalve collecting, and he intends to show us why. Harry Lee will present a discussion of the valid species proposed in 1786 by Rev. John Lightfoot. The topical publication, an auction catalogue of curios left behind by the late Dutchess of Portland (U.K.), has a long and somewhat tortured history in the annals on molluscan taxonomy and nomenclature. There is a general consensus as to the validity of 53 nominal species in this publication, but a couple more, with more contentious standing, will receive fuller treatment by Harry. The array of specimens on the **R** belong to Kristi Hathaway, who collected them in the Indian R. near Jupiter, FL.

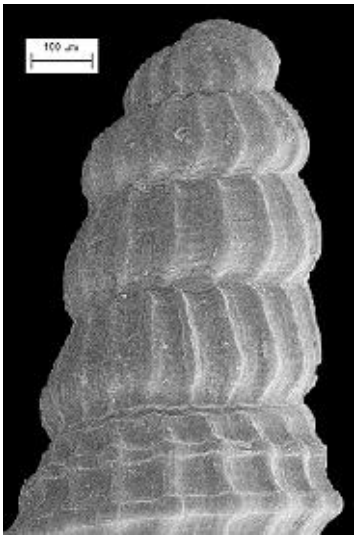
A scrutiny of *Retilaskeya* in the NW Atlantic

by Harry G. Lee

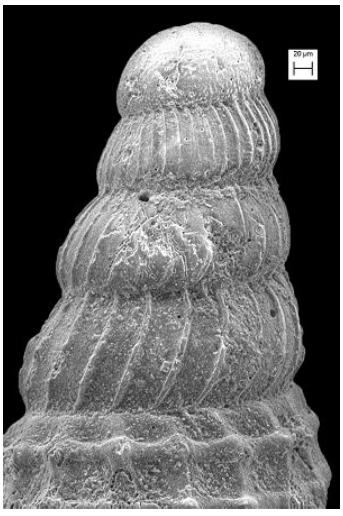
In the antepenultimate *Shell-O-Gram* (Lee, 2020) we put *Cerithium emersonii* C.B. Adams, 1839 Var. α, better known by its valid synonym *Seila adamsii* (H.C. Lea, 1845), under the lens - literally. Now we turn our attention to the parent taxon, found with Var. α in New Bedford, MA, but later divorced to the genus *Retilaskeya* (Newtoniellidae vs. Cerithiopsidae for Var. α), its specific epithet having escaped the multiple homonymy that ultimately befell the variety. Today's second subject is another *Cerithium* Adams brought home from Jamaica to VT and later described. Today it is known as *R. bicolor* (C.B. Adams, 1845). Adams' two descriptions were consistent with the our concept of *Retilaskeya* (Rolán *et al*., 2008), but there no comparison of the two taxa was provided, only *C. emersonii* was figured (poorly), and all specimens lacked preserved protoconchs [pc] (Clench & Turner, 1950). As you will see, the stories of *Seila* and *Retilaskeya* have significant parallels, and, despite my ardent attempts at clarification, some mysteries remain for posterity to solve.

Because of marked similarities of their teleoconch (tc), the two species, *Retilaskea emersonii* and *R. bicolor*, were mistaken for one another in the literature and in museum collections for a century and a half, and, in many cases, right up to the present. Clarification began when Rolán and Espinosa (1992) reported both from Cuba and showed differences in the pc for the first time.* Rosenberg (1992: 83) described the tcc of *R. bicolor*; his illustrated specimen (ANSP 371971) was from Jamaica, the type locality. His description of a four-whorl pc for the species was probably incorrect being based on a Recent specimen from Cedar Keys, Florida (ANSP 18160; Olsson & Harbison, 1953: pl. 48, fig. 1) identified as *Cerithiopsis emersonii* (Rosenberg *et al.*, 2009). The latter authors went on to say "specimens with the bright coloration of Jamaican specimens have a two-whorl pc in material examined thus far; *R. bicolor* is considered to match this type of protoconch" (Rosenberg *et al.*, Idem), who cited NE Gulf of Mexico records for *R. bicolor* (Lee, 2003; Leal, 2005). After scrutiny of material with better pc preservation, those two authors altered their identifications to conform with the Olsson & Harbison (1953) paradigm (*vide infra*). Lyons (1989: pl. 5, Fig. 1) showed a St. Lucie Co., FL shell with that four whorled tapered morphology although apparently misidentifying it as *R. bicolor*.

To elaborate of the pcs of these two species, I enlisted the help of Paul Callomon (ANSP), Ann Heatherington, John Slapcinsky (both UF), and Bill Frank (jaxshells.org). Consequently I assembled the composite of images, mostly SEM's, that appears on **p. 5** of this issue. [Reader: rotate pdf page 90 degrees counterclockwise; for hardcopy, print it out for easier reference.] On review of these images, I saw a fundamental dichotomy in pc morphology emerge:



Type 1 L [*ex* Fig. 4] Small nucleus, pc rapidly expanding for ~ 1.5 squat whorls. At ~ 0.5 whorls thick, regular axial cords appear. These tend to be progressively more angulate on their anterior portion as translation increases with further growth. Very fine fugacious spirals cross the axials, most conspicuously on their anterior portion. Whorl count variable: 2.5-4.5 (counting technique Pilsbry, 1939: xi); transition to tc gradual. **Figs. 1-9, 18, 21-22**.



Type 2 R [*ex* Fig. 13] Nucleus larger, pc slowly and regularly expanding in conical profile after whorl 2. At ~ 0.75 whorls regular slender slightly arcuate & progressively opisthocline axials appear and continue to the tc, initially 30-40, decreasing to 15-20 on the final (~ 5th) whorl while becoming somewhat stronger faint irregular spirals can be detected in some specimens; transition to tc gradual. Earliest whorls seldom well-preserved (vs. **Type 1**). **Figs. 10-17**

with two qualifications:

1. Pinecrest specimens (two others unfigured here look the same as the featured specimen) resemble **Type 2** but have stronger, fewer, more blade-like and more regular axials. **Fig. 19**.
2. *The Rolán & Espinosa (1992) *R. emersoni* [sic] is a puzzler; size of nuclear whorl vs. next is unique in this array. Affinities are with **Type 2**, but it is not conspecific as Rosenberg *et al*. (2009) had concluded. **Fig. 20**.

After review of the compendium on **p. 5** and of the cited literature, the zoogeography of the two principal morphs seems oddly familiar: **Type 1** Caribbean with some spillover (to SE FL intertidal and submerged in the Carolinian); **Type 2** New England to Caribbean Panama on continental shores, essentially Carolinian with some spillover N & S. Ancestor in the lower Pinecrest of SW FL (3 MYA).

Although this survey is less than exhaustive, e.g., more samples from NC to MA and S of the Caribbean basin, the data support two species, a predominantly Carolinian *R. emersonii* and a Caribbean species (or complex thereof), *R. bicolor.*

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Clench, W.J. and R.D. Turner, 1950. The western Atlantic marine mollusks described by C.B. Adams. *Occasional Papers on Mollusks 1*(15): 233-403 incl. pls. 29-49. 26 June <https://www.biodiversitylibrary.org/page/7756469>

Leal, J.H., 2005. Seashells of Sanibel Island. *American Conchologist 33*(2): 16–17. [ID'ed as *R. bicolor*, a misidentification of *R. emersonii,* which latter nominal taxon was substituted at <https://www.shellmuseum.org/shell-guide> before June 6, 2020]

Lee, H.G., 2003. Cedar Key Marine Mollusks. <http://www.jaxshells.org/cedarkey.htm> [Likely my misidentification of *R. emersonii*; based on more recently collected material, e.g. **p. 5**, fig. 13 herein, the identification was changed last year.]

Lee, H.G., 2020. What is *Seila adamsii* (H.C. Lea, 1845) anyway? *Shell-O-Gram 61*(3): 3-8. May. <http://www.jaxshells.org/pdfs/mayjun20.pdf>

Lyons, W.G., 1989. Nearshore marine ecology at Hutchinson Island, Florida: 1971–1974. XI. Mollusks. Florida Marine Research Publications 47: iv + 131 pp. [plate V, fig. 1; apparent misidentification of *R. emersonii*]

Olsson, A.A. and A. Harbison, 1953. Pliocene mollusca of southern Florida. *Monograph No. 8 Academy of Natural Sciences of Philadelphia*: v + pp. 1-457 + 65 pls.

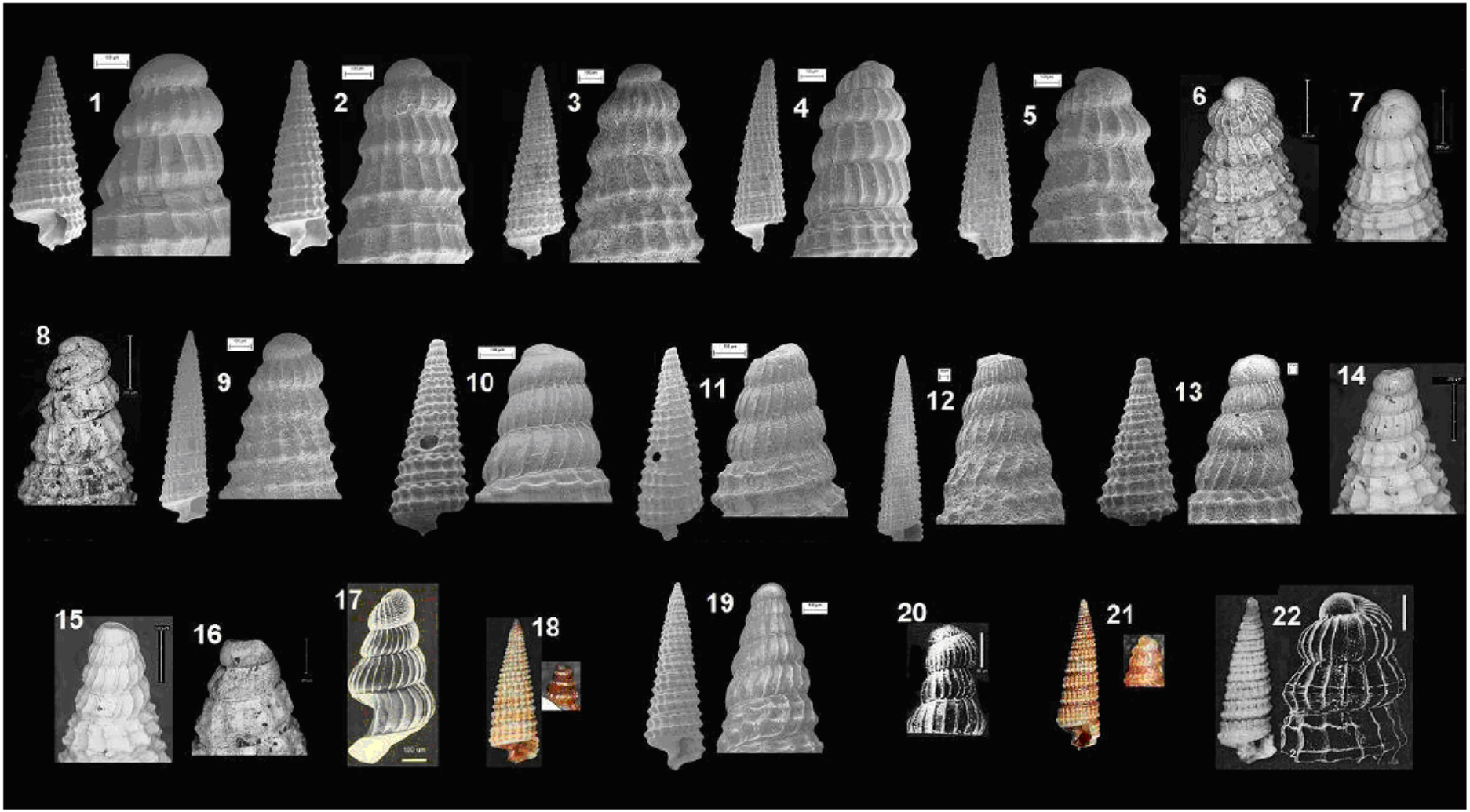
Pilsbry, H.A., 1939. Land Mollusca of North America (north of Mexico) vol. 1 part 1. Academy of Natural Sciences, Philadelphia. xvii + pp. 1-573 + ix. 6 Dec. <http://babel.hathitrust.org/cgi/pt?id=uc1.31822013176466;view=1up;seq=17>

Rolán, E., and J. Espinosa, 1992. La Familia Cerithiopsidae H. y A. Adams, 1853 (Mollusca, Gastropoda), en la Isla de Cuba. 1. El género *Retilaskeya* Marshall, 1978. *Publicações Ocasionais da Sociedade Portuguesa de Malacologia 16*: 39–43, 1 pl.

Rolán, E. and R. Fernández-Garcés, 2008. *Cubalaskeya* – a new genus for the Caribbean with some information on the genus *Retilaskeya* (Gastropoda, Cerithiopsidae). *Gloria Maris 47*(1-2): 14-23. <https://www.conchology.be/?t=409&year=2008&volume=47&volumeno=1+2&gloriamaris=1356%3E>

Rosenberg, G., 1992. *The Encyclopedia of Seashells*. Dorset Press, New York. Pp 1-223

Rosenberg, G., F. Moretzsohn, and E.F. García, 2009. Gastropoda (Mollusca) of the Gulf of Mexico, Pp. 579–699 in Felder, D.L. and D.K. Camp (eds.), *Gulf of Mexico–Origins, Waters, and Biota. Biodiversity*. Texas A&M Press, College Station, Texas. <https://www.researchgate.net/publication/251566515_Gastropoda_Mollusca_of_the_Gulf_of_Mexico>



Selected specimens of *Retilaskeya* showing protoconchs: 1.Tobago UF350934 (3.76mm). **2**. Mayaguëz, Puerto Rico *ex* UF495284 (4.09mm). **3**. 56-61m, SSW Johns Pass, Pinellas Co., FL *ex* UF238618 (5.41mm). **4**. Ramey AFB, Puerto Rico *ex* UF163843 (6.29mm). **5**. 513m, off Collier Co., FL UF129842 (7.79mm). **6**. Grand Bahama Is. ANSP373927. **7.** St. Thomas, AVI ANSP6480. **8**. Gold Rock, Grand Bahama Is. ANSP369456. **9**. 66-88m, off Palm Beach Inlet, FL UF177499 (8.90mm). **10**. off St. Augustine, FL UF286037 (2.71mm). **11**. Piña, Colon, Panama *ex* UF171249 (3.08mm). **12**. off Dry Tortugas, FL UF350938 (10.80mm). **13**. 2m Cedar Keys, FL UF547195. **14**. Cedar Keys, FL ANSP18160. **15**. 35m, NNE Cape Hatteras, NC ANSP102450. **16**. Woods Hole, MA ANSP315744. **17**. Woods Hole, MA Thiriot-Quiévreaux & Scheltema (1982) (~0.6mm). **18**. St. Petersburg Beach, FL Marlo Krisberg/LTS (8mm). **19**. SMR 10, Sarasota, FL Pinecrest beds Pliocene UFIP283911 (3.74mm). **20**. Cienfuegos, Cuba Rolán & Espinosa (1992) (~0,35mm). **21**. Intertidal, Palm Beach Inlet, FL Marlo Krisberg/LTS (8.7mm). **22**. Cienfuegos, Cuba Rolán & Espinosa (1992) (5.5mm). Scale line 100µm 1-5, 9-11, 17, 19-20, 22; 300µm: 6-8, 14-15; 200µm: 16; 30µm: 12; 20µm: 13.

The Eastern Pearlshell, *Margaritifera margaritifera* Linnaeus, 1758

by Tom Grace

The taxonomy of the Eastern Pearlshell places it in the Order Unionoida, Family Margaritiferidae. The species is Holarctic in distribution, found in both the Palearctic and the Nearctic (northern Eurasia and North America). It can reach a length of up to 150 mm (6 inches). In the Palearctic region, populations of the species are drastically declining, while large populations are reported to still exist in northern Russia. The North American distribution of the Eastern Pearlshell includes Atlantic Slope basins that range from Labrador south to Pennsylvania.

In Pennsylvania, the Eastern Pearlshell, is currently restrict to only two minor refuges located in the Delaware River basin and the Schuylkill River basin. Historically, the Eastern pearlshell probably included the entire Schuylkill River basin. As such, this would have been the southernmost extent for the species distribution in North America. The Schuylkill River terminates into the Delaware River in Philadelphia.

At present, the species is considered as endangered in Pennsylvania with a state Rank of S1 (Critically Imperiled). The population status of the Delaware River population is unknown, while the population in the one Schuylkill River refuge appears stable and shows promising signs of recruitment. The Commonwealth of Pennsylvania has the immediate goals of maintaining the extant populations of Eastern Pearlshell and protecting the remaining habitat. Its secondary goal is to ultimately see the species recover to the point it can be removed from the Pennsylvania list of endangered species.

The species is found in clean, low nutrient, calcium poor, and fast flowing areas of small creeks to medium sized rivers. Often they may be the only mussel species found in the region. The species also requires salmonid species as the host for its glochidia. These include rainbow trout, brown trout and brook trout. These trout species have either been historically found within the range of the Eastern pearlshell or have been introduced. The species has become threatened due to a number of reasons, both historically and currently. Historically, the Eastern Pearlshell was a highly sought after for the high quality freshwater pearls it could produce. Ortmann (1919) indicated that the “recklessness of the pearl-hunters has nearly exterminate it “from the Schuylkill River. In addition to the pearl industry, portions of the Schuylkill River region, in particular headwater regions, were heavily mined, and contaminated, by the coal industry. At the time of Ortmann’s paper, Pennsylvania was experiencing its peak production of coal. A number of streams that may have historically supported Eastern Pearlshell were probably destroyed by mine-related pollution.
Threats to the species continue to this day with continuous habitat degradation owing to a number of reasons, stream flow alteration, invasive species introduction as well as predation. The Pennsylvania Fish and Boat

Commission is currently working with other state agencies to develop a comprehensive Conservation and Recovery Plan for the recovery of the species. The Plan includes:

- Conservation actions being taken in both the Schuylkill and Delaware River Basins, which now includes a total ban on collecting any mussel species in Pennsylvania without a collecting permit.
- Monitoring
- Reintroduction and augmentation, as deemed necessary.

So where am I going with all of this?
I had the fortunate experience of coming across the one remaining refuge area for the Eastern Pearlshell in the Schuylkill River Basin. It is a very restricted area, located in the headwaters of the Schuylkill River, in Schuylkill County (see map). It is in a very precarious location. The mountains surrounding the stream have or had active coal mining and the stream itself has been dammed below the refuge. The valley it is in also sees a fair amount of agricultural activity.

It has several factors however that favor it. The region remains very isolated, with little outside interference, the mines are closed, the farms practice good field technique by leaving large buffer zones between the crop areas and the stream, and the stream contains native brook trout, small (3-4 inches), but common. The stream is shallow and small, with many areas it that can be jumped over and with clean moving water. In it. The substrata was primarily broken rock with some sand in it, And lots of overhanging brush on both sides. The bottom was not covered with weeds, nor were *Corbicula* (Asian clams) observed there.

My son Todd and I got there and walked maybe a mile of the stream, in wider areas with lots of rocks and some depth up to one meter. We saw a number of live specimens of the Eastern pearlshell. During the walk we also picked up several dozen freshly taken and eaten specimens. A selection of these is on the **L**. The most important observation we made was that

there is definite recruitment in the stream. The range in size is readily apparent. Predation was most likely due to raccoons or opossums.

Recently, regarding freshwater mussels in general in Pennsylvania, it appears that a number of species are making a comeback and reappearing in regions they were previously thought to have been extirpated.

Thinking back on the day Todd and I walked the stream and found the Eastern Pearlshell there, it would indeed be nice to see this unique mussel species make a comeback in Pennsylvania.

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Strayer, D.L. and K.J. Jirka 1997. The pearly mussels of New York State. *New York State Museum. Memoir 26*. 113 pages, 27 plates.

Editor's note: Tom Grace lives in the Philadelphia area and is a past president of the Conchologists of America.

Shell Cleaning & ID'ing Event (cont'd)

and gloves (which will be needed for the shell cleaning anyway), and we shall practice strict social distancing guidelines (which is not difficult to do in my large yard and driveway in shade under trees). In the event of inclement weather, I do have a garage and a large lanai area we can use.

Things to bring: folding chairs definitely, maybe a folding table or two also. We plan to have both hot and cold drinks available, but if you have a favorite, you may want to bring it along. Maybe a couple of plastic buckets, maybe a bottle or two of bleach and Dawn detergent. I'll have a big cooler with ice, so no need to bring any of that. I have a ton of small Ziploc plastic bags, we should be good on them. Feel free to bring any shells you may have that may need IDing as well.

Membership Dues are payable in **September** each year.
If you're not paid up, please send in your dues: Individual $15.00; Family $20.00, to
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