



# SHELL-O-GRAM

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## Editorial

These are unusual times, and groups such as our Jacksonville Shell Club have encountered unprecedented challenges to the ability to execute their mission, most notably to meet, to share common experiences, and to create and disseminate knowledge. The *Shell-O-Gram* intends to carry on its aim, the dissemination piece of the mission. Just when the membership can physically assemble indoors remains in doubt, but this organization has been in existence since 1959, and that's before Jacksonville's consolidation, before the Moon Landing, before the Beatles, and well before the Internet. The latter may prove to be a medium to allow a form of assembly during the era of social distancing and sheltering-in-place which keeps us physically apart. An example of what I mean is President Jones, who has kept kindred souls around the world aware of his conchological passion through Facebook with photographs of highlights in the Paul & Teddy Jones Collection as well as personal field trip retrospectives likewise illuminated. Think about how you can keep up with conchology and conchologists during the various stages of shut-down, practice good hygiene, and, above all, stay well until we meet again.

## Upcoming meetings (see also p. 2)



The **July** 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 **23<sup>th</sup>**). 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 <<http://jpl.coj.net/lib/branches/se.html>>. 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 summer meeting of the year **may** be on Thursday **August 27th** at the customary time and place. We'll first hear from Paul Jones, who has selected *Asaphis deflorata* (Linnaeus, 1758) on the R [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.



## Confidence in Numbers: How quantum collecting can provide a lens on land snail taxonomy

by Robert E. Winters

In Central Tennessee, the months of February and March, 2020 were especially wet and harsh. In March two major storms with tornados dumped 10 inches of rain on ground already sodden. This caused the streams and rivers of the area to flood and raised the water levels of the area impoundments drastically. The Center Hill Reservoir (CHR) on the Caney Fork River rose up 20ft over normal pool level. When the water level dropped, it wasn't all at once, but in five to eight foot ebbs over days, stranding water-borne drift at each decremental level. On the lee shore, where the wind pushed the massed drift to land, a considerable pile or mat of debris was left. This drift contained thousands of dead, buoyant land shells to be picked up at the collector's leisure.

Over a two day period, 27-28 March, my wife Annette and I recovered 2482 intact, dry land shells. This article deals with 42% of the total, 1051 specimens of *Inflectarius inflectus* (Say, 1821) from Johnsons Chapel Beach area of the Center Hill Reservoir (CHR), DeKalb Co., TN. Authors have postulated that a species complex is hiding within *I. inflectus*, so having a large sample might provide insights into this possibility. Since in time past, I had made massive collections of this species at CHR, it was decided to collect a large sample for inspection.

We set out to collect any undamaged shell that we observed without bias to species or number of the same. The area covered was ~ 420m by 55m upslope from water's edge. There is a county park



here, so much of the area was mown grass with picnic table areas cut into the slope. These proved to be excellent catchments for drift and specimens. Annette claimed these areas while I combed the bushes and small trees that sprouted in the riprap at water's edge and upslope away from the beach.

The sample of 1051 *I. inflectus* was arranged from the smallest @ 8.54mm to the largest @ 13.35mm (photo). Sixty (60) specimens were extracted from the sample that exhibited partially imperforate umbilici. These form 5.7% of the sample and are present at about the same percentage of any large *I. inflectus* sample I have recovered. These 60 agree *in toto* with *Polygyra inflectus* [sic] *mobilensis* Clapp, 1915 (Pilsbry, 1940: 774, fig. 463). Since I can document four (4) other sites where partially imperforate *I. inflectus* occur as a small percentage of a large sample, I conclude that *Inflectarius inflectus mobilensis* (Clapp, 1915) is not a valid subspecies but merely a minor varietal form.

The super large (15.56mm) *Inflectarius* species at mid-position in tray #3 is not *I. inflectus* (see photos of small, medium, & large *I. inflectus* with this specimens) This is a relic specimen of *Inflectarius smithi* (Clapp, 1905) and a long way from its' current range. The present range of *I. smithi* does not extend N of Franklin Co., TN; which is ca. 80 miles S of DeKalb Co. Hubricht (1985: 159, map 441) shows an x in Smith Co., TN, which is ca. 30 miles NW of Dekalb Co. Since an x on a Hubricht map indicates drift recovery only, I postulate from the position of the x that the drift in question came from the Cumberland River of North Central Tennessee. These two relictual occurrences of *I. smithi*, point to a much larger range for the species, perhaps only in time past.

A question was posited, "Was any specimen of *Inflectarius rugeli* (Shuttleworth, 1852) recovered from the sample at large?". Both *I. inflectus* and *I. rugeli* are very similar in shell morphology and very closely related. Any question regarding *I. inflectus* vs. *I. rugeli*, poses a real conundrum for me. For years I separated the two by noting the depth of the palatal tooth within the aperture and the extent of the protrusion of the parietal tooth into the aperture. In my view *I. rugeli* has a deeply set palatal tooth and a protruding parietal tooth that nearly closes the aperture. However, all my identified *I. rugeli* are smaller or at least equal in size to smallest *I. inflectus*. This is contrary to most authors who state that *I. rugeli* is larger than *I. inflectus*.

Enter Pilsbry (1940: 773), who states that there are two (2) forms of *I. inflectus* often in the same vicinity. One form has apertural teeth that are large and tightly grouped and the other exhibits small teeth spaced farther apart. The only saving grace is, he does not state that the palatal tooth is more deeply recessed in the aperture of either form. So to date, my *I. rugeli* have a deeper recessed palatal tooth, amore protruding parietal tooth and are smaller than *I. inflectus*.

Now to the question, no, I did not find any *I. rugeli* in the large 2000+ sample or in the 1051 identified as *I. inflectus*. Which brings up a point: In the CHR collections I made in the past, large numbers of *I. inflectus* were recovered. Once and then only one (1) specimen out of thousands was identified as *I. rugeli* according to MY criteria.

Here's something else to consider. Many times in my experience, only one species was recovered at a given site. A search of my records yields this comparison (see next page). It may well be that both species occupy the same sites where only one or the other were recovered. However, my records cover many visits to these sites over a span of 15 years.

***Inflectarus inflectus* alone**

Center Hill Res. (except 1 *I. rugeli*)  
 Flynn Creek Crater, Jackson Co., TN  
 Shinbone Ridge, White Co., TN  
 Estill Fork, Jackson Co., AL  
 KY/TN border, Clinton Co., KY

***I. rugeli* alone**

Beersheba Springs, Grundy Co., TN  
 Gainesboro, Jackson Co., TN  
 quarry Sand Springs, Putnam Co., TN  
 Sweet Gum, Van Buren Co., TN  
 Hollytree, Jackson Co., AL

**Both species**

Gladdice, Jackson Co., TN  
 Long Hollow Rd., Putnam Co., TN  
 Butler Mill, Marshall Co., AL

**JSC KY landsnailer adds chapter to "Shells are where you find 'em." A fortuitous bycatch coup.**

by Lori Schroeder



The scene is the lobby of the 2002 Jacksonville Shell Club's shell show venue, my husband and I were invited guests of Charlotte Thorpe, nee Lloyd. Learning that my husband and I were from limestone rich Kentucky, Harry Lee initiated a conversation about land snails. This was the beginning of "The Reluctant Explorer" (Schroeder, 2005, 2008) and forward to the successful land snail survey on a friend's farm. This eventually led to two additional surveys (Lee, 2008a, 2008b) at "Anguispira Rock," a biological hot spot for land snail diversity on the friend's farm.

I would like to note that being land locked in Kentucky land snails were not on my radar. It was my opinion that boring academics dealt with land snails while the rest of us focused on the loftier pursuit of seaside acquisitions, or as I like to phrase it "being a beach bum."

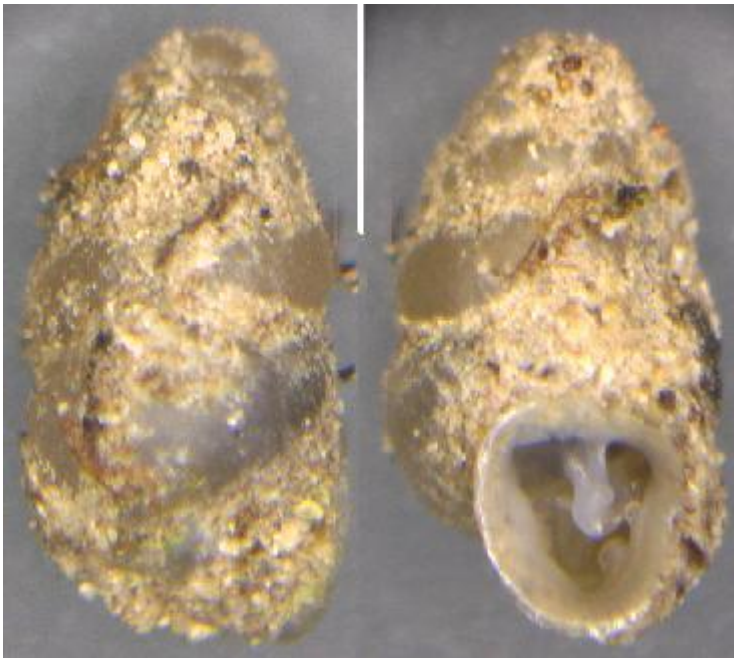
As it so often happens in life, a chance encounter through my husband's dental practice led to another land snail research opportunity at Bernheim Arboretum and Research Forest (BARF), Clermont, KY. As a novice land snailer, it would have been impossible for me to tackle a project of this magnitude solo. A quick note to Harry Lee netted an enthusiastic response when asked if he would consider being a member of the team. To

date, the unofficial result of the Bernheim Arboretum and Research Forest Landsnail Inventory Project ("BARFLI") has netted the unofficial top spot for land snail diversity in Kentucky. One of our collaborative projects was a survey of habitats at another biological hot spot located in BARF called "Kochi Hill" (Lee & Schroeder, 2012).

Seventeen years have elapsed since my first land snailing days. I'm still in the game as they say in sports. Now I'm doing what I once thought only boring academics did. I conduct land snail research as a citizen scientist. A non-land snail person might say to oneself at this point "Aren't land snails boring?" To that I would now reply with an emphatic "No!"

Case in point, just recently I took a short hike in a small wooded area near my home. I was looking for a nice patch of moss to bring home for some land snails under observation in captivity. Moss was in short supply so I picked up a short section of dead bark peeling off a fallen log. I placed the bark inside the terrarium to observe if the live snails preferred the bark, or the mossy habitat. So far the macro snails have shown a preference for the moss. While examining the terrarium I noticed what I thought was a tiny snail on the bark. I grabbed the rotting piece of wood and examined it under microscopic enhancement. Eureka! What I found is none other than a micro species of land snail in the family Vertiginidae: *Gastrocopta contracta* (Say, 1822), the Bottleneck Snaggletooth. They are tiny at 2.0 mm. But wait, I see more! They are literally crawling all over the bark [p. 7]. After a couple of days wondering, curiosity got the better of me. How many were there? After completing a lengthy snail count, the final tally was **85** snaggletooth snails, one ovum, and a *Strobilops* too juvenile for identification. Many of the *G. contracta* were newly hatched, other juveniles a little more developed, and many adults. No wonder. They surely are prolific in nature!

*Gastrocopta contracta* are also fertile in captivity. Last fall I brought home a piece of moss to place inside a terrarium with larger species of snails in the Family Polygyridae. I spotted a *Gastrocopta* crawling inside the moss. Knowing it would be fine in captivity I let the snail co-habitate with the larger snails. By this spring, the number of individuals had increased to fifty! They have since been released back into the wild to celebrate the coming of spring.



I've had success raising Snaggletooths in captivity. Wild caught snails almost always have debris attached to their shells [L]. Snails hatched in captivity will attach debris in the first couple of days. At times the encrustation can be very heavy. Otherwise the species is a beautiful land snail. They are white underneath the attachments. One can't help but notice the beautiful conical shape. This is where things start to get interesting. The lip is large. Flared. Funicular. Inside the aperture are four distinct teeth that can appear overcrowded at times. Coming down from the parietal wall is a large parietal tooth that curves around to the right and hovers above the upper palatal tooth which is small and conical. There is a lower palatal tooth that is blunt. Along the columellar wall is a deeply recessed tooth that looks more shield-like than

tooth.

Over the years I've read about JSC members finding phenomenal caches of shells at the beach. A few have

been lucky enough to find ultra rare, or new species of mollusks. It gives me great pleasure to share with you my story of the purely happenstance acquisition of the cluster of living Snaggletooths [below].



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