



SHELL-O-GRAM

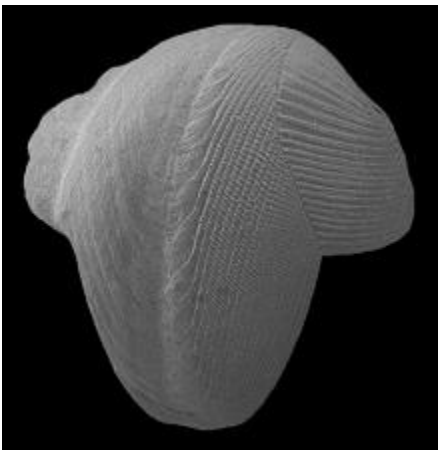
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Nov.- Dec., 2023

Volume 64 (no. 6)

Upcoming events

The Jacksonville Shell Club, Inc. (JSC) customarily meets on the **fourth** Thursday of each month except for November (a week earlier due to Thanksgiving) and December (traditional Xmas get-together) at 7:00 PM in



Function Room D of the Southeast Branch, Jacksonville Public Library <https://www.jaxpubliclibrary.org/locations/southeast-regional>. The main program on **November 16th** will be presented by **Paul Jones** and will deal with the olives and strombs (families Olividae and Strombidae) of the Panamic Province. As with the predecessor programs on mollusks of tropical western America (TWA) given on April 27 and June 22, he'll draw strongly from his collection derived from the field work of the late JSC member Jim Knight, who brought back hundreds of species from Las Perlas Islands, Pacific Panama. As with the shells featured in those talks, we'll be able to appreciate the closeness (cognate taxa) and differences between the more familiar Caribbean fauna and Paul's TWA species. **Harry Lee** will present the shell-of-the-month [L]. Who knows this little clam, collected

near Jupiter by **Rick Edwards**? Hint: despite the small size of its shell, the animal and its relatives are responsible for millions of dollars of damage annually in the US alone.

We hope to gather for the annual Christmas social sometime in early to mid December. Our unofficial event-facilitator, Paul Jones, has relocated to Flagler County, but he has hopes of carrying on the job of host for our shell cleaning, identifying, swapping, and sharing meet. A luncheon is expected to follow in a nearby restaurant.

Membership Dues are payable in **September** each year.

Many of you have complied, but if you're in arrears, please send in your dues:

Individual \$15.00; Family \$20.00, to

Harry G. Lee, Treasurer, JSC

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Editor-in-Chief: Harry G. Lee ... Email: shells@hglee.com**Managing Editor: Rick Edwards ... Email: edwar1@hotmail.com**

The club customarily meets monthly at the Southeast Branch of the Jacksonville Public Library, 10599 Deerwood Park Blvd., Jacksonville, Florida <https://www.jaxpubliclibrary.org/locations/southeast-regional>.

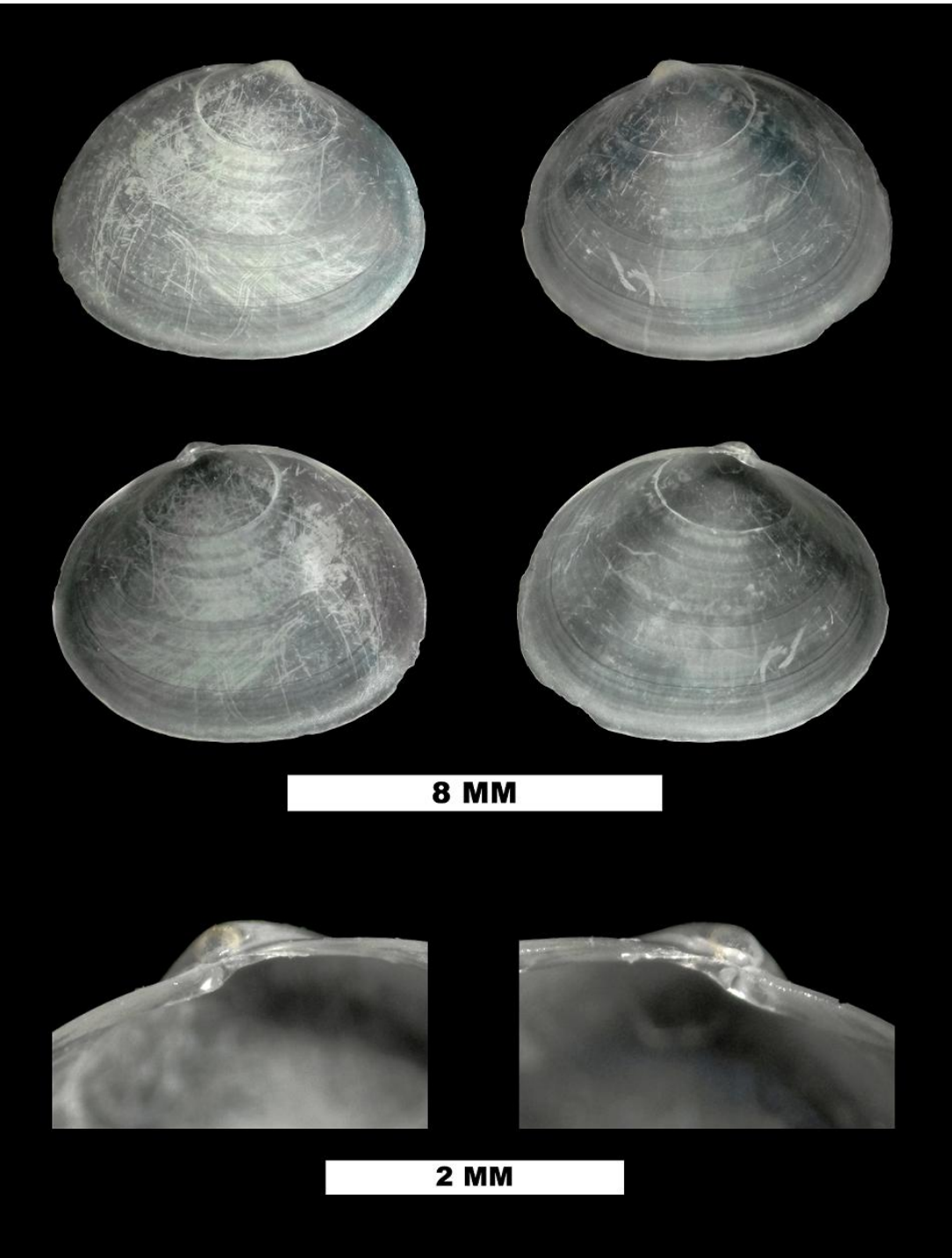
Please address any correspondence to the club's address above. Annual membership dues are \$15.00 individual, \$20.00 family (domestic) and \$25.00 (overseas). Lifetime membership is available. Please remit payment for dues to the address below and make checks payable to the Jacksonville Shell Club. 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 about two days later and sent to about 200 individuals who have demonstrated an interest in malacological research and/or Florida mollusks. These pdf's (ISSN 2472-2782) have also been posted to <http://jaxshells.org/letters.htm> since November, 1998. We encourage members and other 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 *Shell-O-Gram* Editor-in-Chief. As a courtesy, the editor should receive a copy of the republished version. Contents of the *Shell-O-Gram* are intended to enter the permanent scientific record. The club is a chartered corporation in the State of Florida and a non-profit educational organization under the provisions of Section 501(c)(3) of the US IRS Code.

Toward the demystification of Florida-Caribbean LWC's. Babystep 1.***Cymatiosa mazyckii***

by Harry G. Lee, Ari Dmitris, and Sean Roberts

Many years ago, the senior author coined the term "Little White Clams" out of frustration with the unsettled phylogenetics of this quite possibly heterogeneous assortment of marine clams that share characters like small stature, a general poverty of pigmentation, and nondescript shell features. Of those qualifying taxonomically-challenging waifs in which more of their life history is known, the deployment of their ample mantles, often bearing tentacles, over the exterior of the their valves, a prominent and powerful foot, and consequently un-clammy motility (at least some can easily outcrawl snails of comparable size) serve to further inform their appearance and behavior. Ecologically, at least most of the relatively few species we know are symbionts of burrowing crustaceans, e.g., Mikkelsen & Bieler (1989) or worms, e.g., Lee (1987). Currently the majority of LWC's are placed within the superfamily Galeommatidae according to Huber (2015), who opined that it might well be the largest bivalve family living today and repeatedly lamented the lack of phylogenetic underpinnings for its composition (*Idem*, 461, *passim*).

Thus, the report of the second author of observing and photographing [R] what had to be a LWC while SCUBAS diving off Palm Beach Co. was a welcome opportunity, but, alas, it wasn't collected for further study! However, about a week later (July 24, 2023) she brought home a living specimen of what must be the same species found near the first in 16 ft. close to shore at Datura Avenue, Lauderdale-by-the-Sea complete with photography and a short video of the living



animal. Perhaps larger than the first specimen, it measure eight mm and was promptly placed in 70 percent ethanol and sent to us by fellow diver and veteran *Shell-O-Gram* contributor, Anne Dupont.

Dissection of the soft parts roughly confirmed the observed external anatomy of the animal and allowed one of us (S.R.) to capture images of the shell [lower res version on L]. Among features revealed under the stereomicroscope and in the photographs are radial undulations most evident near the valve margins and a rather uniform microsculpture of very fine regular pits over the valves' exterior, which, interestingly, is glistening white to the unaided eye.

Although untreated in almost all inclusive works on W Atlantic mollusks, it is clear that this LWC is

the same as the ten mm specimen treated as *Cymatinoa bibsae* (Nowell-Usticke, 1969) by Redfern (2013: sp. 1069).

Gordon Nowell-Usticke, a wealthy, driven, and regrettably poorly-tutored malacologist named a certain LWC *Bornia bibsae* in 1969 (pl. 1, fig. 1616). Here's his (1971: 6) description of *Bornia bibsae*:

"[9.0-11.0 mm] A very thin, very small, translucent white shell, subcircular to broadly oval. To the eye it appears smooth and shiny, but under the microscope, the whole surface is covered with minute crisscross lines, leaving tiny pits between, there is also faint concentric sculpture [comment: this is exactly the sculpture seen on the type species of the consubfamilial *Solecardia* Conrad, 1849, *S. eburnea* Conrad, 1849, images of which I have also attached]. The dorsal [sic] margin has a remarkable undulating border, making the edge appear 'frilly' to the eye. The beaks are almost central; the posterior and anteriormargins slope downward and are broadly rounded, as is the base. Found on St. Croix (S. of Frederiksted; Cane Bay). Named in memory of my wife. Holotype, height 9.3 mm, width 11.0 mm ..."

As indicated above, he published a captioned (tiny) figure of a valve exterior in 1969, but my photocopied photocopy of that rare work is little more than confirmatory of the written description. Faber (1988: 73) located the holotype (AMNH 198483; see also Boyko & Sage, 1996: 13) but volunteered no further insight – except, perhaps, for the fact that only 10% of Usticke's new taxa (that he could fully evaluate) were valid.

Huber (2015: 131, 491) later figured and discussed *B. bibsae*, put it in the junior synonymy of *Bornia undulata* Thiele, 1910: 128-129) and agreed with placement in *Cymatinoa*. Judging from Thiele's description **below**, this seems a reasonable action.

Bornia undulata n. sp.

Exemplare von Barbados.

Schale 9,2 mm lang, 7,5—8 mm hoch, 4,5 mm breit, durchscheinend weißlich, eiförmig, unten ein wenig abgeflacht und deutlich wellig, sonst ziemlich gleichmäßig gerundet, mit wenig vortretenden Wirbeln (Fig. 24). Die Oberfläche läßt unter einer guten Lupe eine feine gleichmäßige Netzskulptur erkennen, die nur in der Mitte abgerieben zu sein pflegt. Jede Schalenhälfte zeigt einen Hauptzahn vor dem innern Ligament und hinter diesem einen Seitenzahn.

Herr College DALL war so gütig, mir mitzuteilen, daß seine *Bornia barbadensis* (in: Proc. U. S. nation. Mus., Vol. 21, p. 888) „is a larger and heavier shell with a much stronger hinge“, dagegen hat *B. longipes* (SIMPSON) eine glatte und glänzende Oberfläche; bei Californien kommt eine Art, *B. retifera* DALL, mit ähnlicher Skulptur der Oberfläche vor, wie sie die neue Art aufweist.

End of story? Nah; not so simple as that. Turn the page and read on

Let's go back as far as I'm able to muster knowledge and examine the earlier work of Mörch [Mørch] (1876: 373), who wrote [below]:

7. SCINTILLA EBURNEA, Mörch, n. sp.

T. ovalis, inflata, solidula, eburnea, nitidissima, iridescens; intus lactea, sub umbone radiatim striata. — Long. fere 10 mill., alt. 7.

Hab. Saint-Thomas. « Dredged, by John, 1860 » (R. Swift.)

Le Scintilla lactea Deshayes, est l'espèce qui s'en rapproche le plus.

Sound familiar? Dall (1899: 884 below) picked up on this junior homonym and replaced the name thus:

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PROCEEDINGS OF THE NATIONAL MUSEUM.

VOL. XXI.

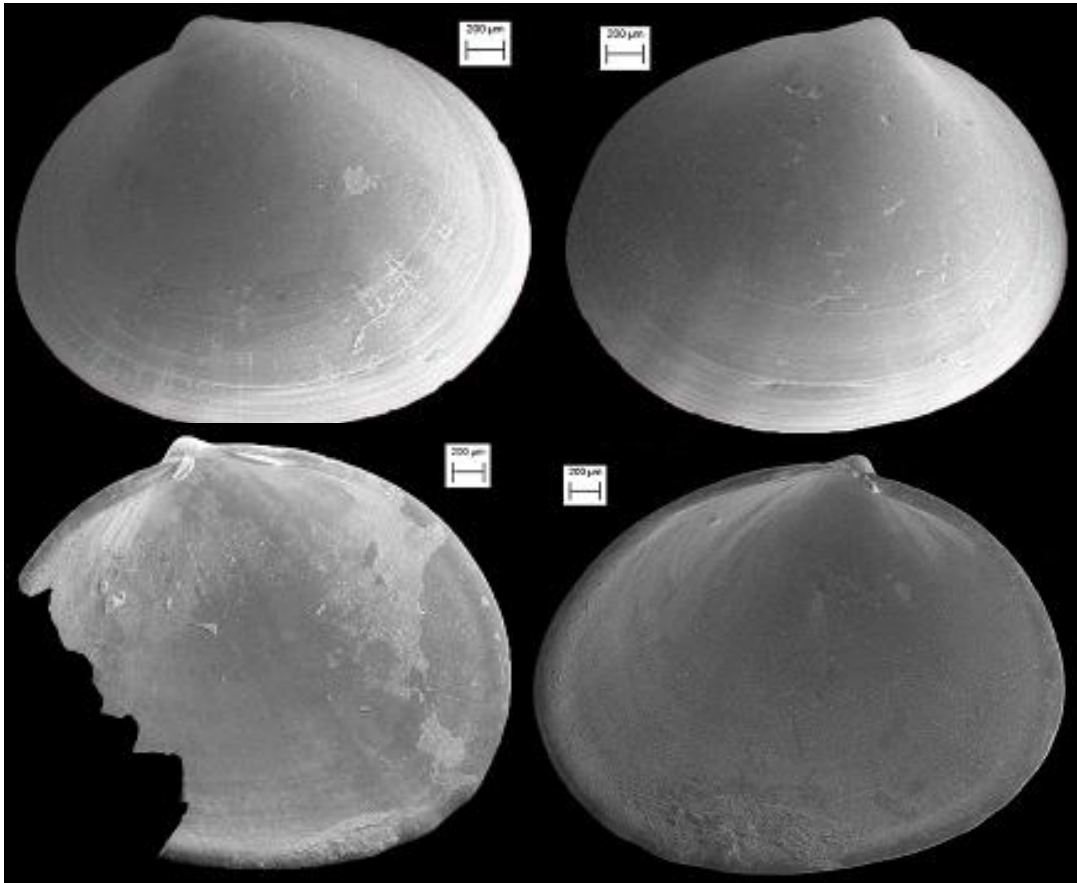
SOLECARDIA MÖRCHII Dall.

Scintilla eburnea MÖRCH, Journ. de Conchyl., XXIV, 1876, p. 373.

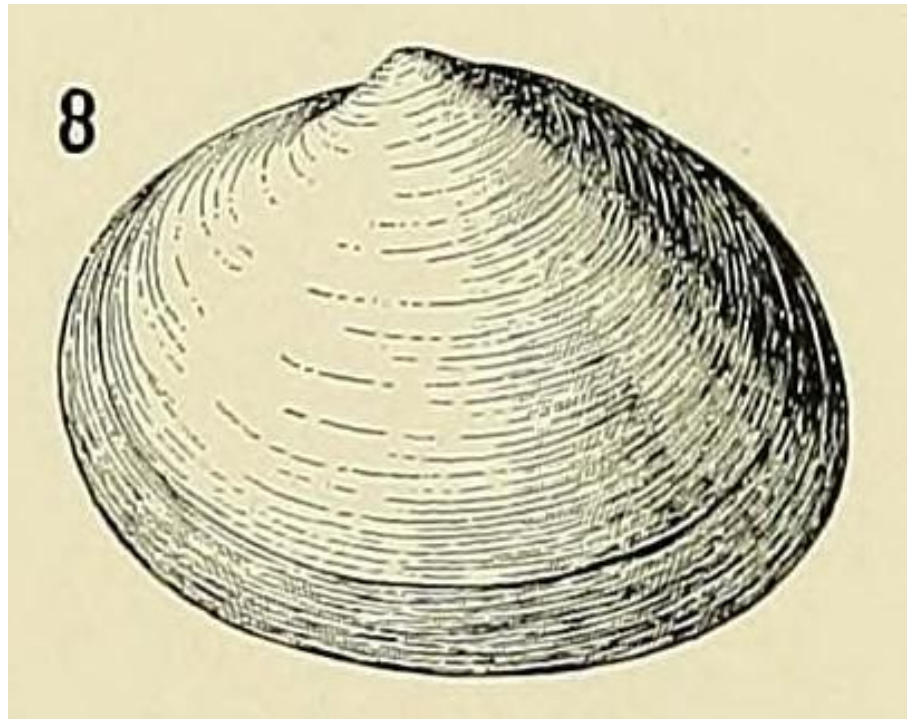
A. 1. Though described from the Swift collection, now the property of the Academy of Natural Sciences, Philadelphia, it seems not to exist there at present. It is unfigured. Mörch says that it is nearest to "*S. lactea* Deshayes," but the only *S. lactea* in the literature is of Sowerby, and this is probably what is meant.

Like Dall above, Huber (2015: 493) searched unsuccessfully in Europe for type material and tacitly considered the taxon a *nomen inquirendum*. Thus we can put *Solecardia moerchi* Dall, 1899 [name emended in compliance with ICZN Article 32.5.2.1; see ICZN, 1998] on temporary hold for purposes of this discussion.

As with the Recent LWC's, the senior author's investigations into the Late Cenozoic micromollusks of Florida has been substantially challenged by this group. This fauna is at least as extensive as its Recent counterpart, there being over five dozen species in roughly a dozen genera. One such LWC species, not at all uncommon, happens to be a dead ringer for the species under discussion. Because of materials and methods inherent in this work, almost all material examined is less than 5mm in maximum dimension, so specimens are often represented by less-than full-grown individuals. SEM images of four specimens in the 3-4mm range collected in the Pliocene Pinecrest beds of the Tamiami Formation SMR 10, NE Sarasota Co., FL are depicted on the next page. Another specimen was found nearby in a member of the Caloosahatchee beds.



I have identified this taxon as *Bornia mazyckii* Dall, 1898 (pl. 25, fig. 8) based on the iconotype [R] and text description (Dall, 1900: 1152) [next page]. These shells have the same outline, beaks, timidity, dentition, microsculpture, and undulant radial ridges as Ari's specimen on p. 3. The latter two features were not mentioned by Dall, but that may be consequent to poor preservation of his two specimens, one of which was broken. The dentition rules out *Bornia* and *Ceratobornia* (in which genus some of the fossil and Recent western Atlantic "*Bornia*" of the nineteenth century are more properly assigned) and points to *Cymatioa*. On the other hand, the roughly contemporary "*Cymatioa* sp. cf. *C. bibsae*," of the roughly contemporary Wacamaw Formation in SC (T.C. Campbell, 2023: 328), while quite possibly a congener, appears too evenly elliptical to be this species.



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TRANSACTIONS OF WAGNER

TERTIARY FAUNA OF FLORIDA

Bornia Mazyckii Dall.

PLATE 25, FIGURE 8.

Bornia Mazyckii Dall, Trans. Wagner Inst., iii., part iv., p. 920, pl. 25, fig. 8, 1898.

Pliocene marls of the Caloosahatchie River, Florida; Dall.

Shell ovate, compressed, subequilateral, faintly concentrically striated, brilliantly polished; beaks low, small, the prodissoconch obvious; hinge narrow, with, in the left valve, a long, narrow posterior lamella, mostly low and feeble, with a small triangular elevated part distally, below this a short resiliary scar near the umbo, and anteriorly two small, short lamellæ, one directly under the umbo, the other larger, longer, and more oblique and the hinge-plate in front of it flattish; in the right valve the teeth are similar with the hinge-plate grooved above them; posterior part of the shell slightly longer, interior faintly radially striated, margins entire. Lon. 11.5, alt. 8.7, diam. 3.8 mm.; a larger fragment was originally about 13 mm. long.

This species appears to be rare. Its outline is not unlike that of "*Montacuta*" *Bowmani* Holmes (Post-Pl. Fos. S. Car., p. 30), but that shell is described and figured as having the hinge of *Rochefortia*. The horizon to which *M. Bowmani* belongs is not mentioned by Holmes. The present species is named in honor of Mr. W. G. Mazyck, of Charleston, South Carolina.

Thus it appears we have arrived at the valid name for this particular little white clam *Cymatinoa mazyckii* (Dall, 1898). Subjective synonyms include the permanently invalid *Scintilla eburnean* Mørch, 1876; *Solecardia moerchii* Dall, 1899; *Bornia undulata* Thiele, 1910; and *B. bibsae* (Nowell-Usticke, 1969).

There's a bit of déjà vu aspect to this chronicle. A project, like so many others still reposing on the cutting room floor, came back to life. Over four years ago, the same Anne Dupont forwarded the senior author some photo's of a bevy of LWC's found by an Everett Turner on September 4, 2019 in 10 feet of water near an ironshore coastline on Grand Cayman Island - apparently under rocks he overturned. Like Ari, he's a diver-photographer and conservation-oriented naturalist. Although we lack any more palpable evidence, I think it's quite safe to assume these "less than half-inch" animals, of which I counted thirteen before cropping the image [next page], are *Cymatinoa mazyckii* (Dall, 1898)! Note the circumferential mantle tentacles and antero-

dorsal pigmented area in the soft parts like those shown on p. 3 (as well as seen on the specimen Ari later collected and I examined). **Below** are *in situ* images provided by Everett, the close-ups showing the mighty, apparently prehensile, foot and multiple mantle tentacles:



Thus we have a probable range in time and space including Florida: Pliocene Tamiami Fm. (herein) Plio-Pleistocene (herein as well as Dall, 1898), and Recent (Broward Co. herein), as well as the Bahamas (Redfern, 2013), American Virgin Islands: St. Thomas (Mørch, 1876) and St. Croix (Nowell-Usticke, 1971), Cayman Islands (herein), Barbados (Thiele, 1910), and Caribbean Colombia (Daccarett & Bossio, 2011: 344, sp. 1276).

Acknowledgments:

We thank Everett Turner, Grand Cayman Island and Anne Dupont, Delray Beach, FL for their indispensable assistance in assembling this story. SEM's were taken with major assistance from Dr. Ann Heatherington, Department of Geological Sciences, University of Florida, Gainesville. Bill Frank assisted with image editing.

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Florida Mollusca Exotica: Part 5, ampullariids (conclusion - fresh and brackish water snails)

by Robert R. Fales (Edison, NJ; fales@verizon.net)

Caenogastropoda, Architaenioglossa, Ampullariidae^{1,2}

These four taxa are “New World” snails (although there are congeners in the “Old World”) that inhabit primarily fresh water but can tolerate light brackish conditions. The similarity among “species” of the genus *Pomacea* has resulted in confusion in identification and taxonomy. As is frequently the case in species with highly variable shells, species boundaries have been differently interpreted, names have been synonymized and applied inconsistently, or species have simply been identified incorrectly. The so-called “Channeled Applesnail,” *Pomacea canaliculata* (Lamarck, 1822), for instance, was actually determined to be a species complex, and *P. canaliculata* s.s. likely does not occur in Florida. Applesnails have a pulmonary sac as well as a gill, and are amphibious in their habits; they can survive weeks to months of air exposure, depending on humidity and temperature. The sexes are separate. Eggs are laid below the water surface by *Marisa cornuarietis*, and on stems above the water surface by *Pomacea* spp. As a final cautionary note, introduction of all non-native ampullariids is a concern because of the suite of associated parasites and their potential effects on applesnail predators and humans.

***Marisa cornuarietis* (Linnaeus, 1758)³⁻⁵** (Giant Ramshorn Snail): Native from southern Central America to Brazil; subsequently brought to many Caribbean Islands with the aquarium trade and with cargo vessels.

Some introductions into Africa and the Caribbean have been deliberate, for the biocontrol of native snails transmitting blood flukes causing schistosomiasis through competition for resources and egg predation. It can survive cool temperatures and lightly brackish conditions. First recorded in Florida in Coral Gables in 1957; subsequent observation suggested that the population was already well established by then. In 1996 and 2004, it was collected on the gulf coast of Florida, near Fort Myers. This snail is capable of very rapid population growth, and is a voracious feeder. It can remove much of the rooted plant growth from lakes and canals, and will feed on terrestrial plants such as tomatoes, carrots, lettuce, and rice. It often consumes the eggs of other freshwater snails and some fish. It undergoes great fluctuations in abundance, however, and recent reports of ecological damage are not known. *Marisa cornuarietis* is a known intermediate host of several trematode parasites that, while not of any known veterinary or medical significance, could be transmitted to native snail species, possibly resulting in decreased reproductive capacity. It is also susceptible under experimental conditions to infection with the parasitic nematode *Angiostrongylus cantonensis*; it is not known if this would occur naturally.



***Pomacea diffusa* Blume, 1957**^{1,6,7} (Spike-topped Apple Snail): Confusing taxonomy; sometimes incorrectly identified as *Pomacea bridgesii* (Reeve, 1856). Native to tropical and subtropical South America, including Bolivia, Peru, and the Amazon system of Brazil, it prefers rivers, streams, ponds, and wetlands. Introduced into southern Florida, probably in the 1950s, it is now established and has been collected in Alachua, Hillsborough, Pinellas, Collier, Broward, Miami-Dade, Palm Beach, and Monroe Counties. Ingests mostly decaying vegetation, but will also feed on rock-borne periphyton and carcasses of dead aquatic animals. It is felt that *P. diffusa* may not be a significant threat to macrophytes and crops in the United States. It may compete with native species for resources, however.



***Pomacea haustum* (Reeve, 1856)**^{1,2} (Titan Apple Snail): Confusing taxonomy; one of the *P. canaliculata* species complex. Some authorities believe that this taxon is a synonym of *P. maculata* below. It is difficult to identify even in the general region of the type locality for this taxon because of the confusion of names of rivers on early maps, but it is believed to be native to Brazil, Peru, and Bolivia. Sustaining population established in Palm Beach County sometime in the 1970s or 1980s (uncertainty based on confusing taxonomy), but the range has failed to expand appreciably since then. No specific information available on potential impact.

***Pomacea maculata* G. Perry, 1810**^{2,8,9} (Giant Applesnail, Island Applesnail, Spotted Applesnail): Confusing taxonomy; one of the *P. canaliculata* species complex. *Pomacea maculata* is limited to fresh and oligohaline (low salinity) waters in warm-temperate to tropical climates. It is native to Uruguay, Paraguay, and the bordering areas of Brazil and Argentina, north to the Amazon River; now widespread in southeast Asia, and detected in western Europe. In Florida, first collected at a pond in Lantana, Palm Beach County, in 1987, and on the Gulf coast in Tampa in 1996; now widespread, including much of Jacksonville <http://jaxshells.org/chan.htm>. It is a serious pest in rice fields, and can consume large quantities of other aquatic plants. Field observations and experiments indicate that *P. maculata* appears to compete with the Florida Applesnail [*P. paludosa* (Say, 1829)], replacing the native in Florida lakes and wetlands, thus having a potential negative effect on the Snail Kite [*Rostrhamus sociabilis* (Vieillot, 1817)], which has trouble handling the larger *P. maculata*. However, JSC member Billy Aley (2021) recently provided convincing evidence that at least one population of the bird is successfully exploiting the non-native prey.



Acknowledgments:

Photographs used herein were taken by the late Bill Frank and were lifted from <<http://jaxshells.org/>>.

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