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CONCHOLOGISTS



OF AMERICA, INC.

In 1972, a group of shell collectors saw the need for a national organization devoted to the interests of shell collectors; to the beauty of shells, to their scientific aspects, and to the collecting and preservation of mollusks. This was the start of COA. Our membership includes novices, advanced collectors, scientists, and shell dealers from around the world. In 1995, COA adopted a conservation resolution: Whereas there are an estimated 100,000 species of living mollusks, many of great economic, ecological, and cultural importance to humans and whereas habitat destruction and commercial fisheries have had serious effects on mollusk populations worldwide, and whereas modern conchology continues the tradition of amateur naturalists exploring and documenting the natural world, be it resolved that the Conchologists of America endorses responsible scientific collecting as a means of monitoring the status of mollusk species and populations and promoting informed decision making in regulatory processes intended to safeguard mollusks and their habitats.

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Editor's comments: I received the following from Harry Lee:

"Dear Tom,

"I have been caught in a bald-faced inaccuracy (plus one of lesser import), and I think the record should be set straight.

"In the article on partulid snails, etc. in the last issue (Lee, H.G., 2012) I made an inexplicable and heinous misidentification. The gentleman with the "cadaverous countenance" in Fig. 4 (p. 11), is Andrew Garrett, not William Harper Pease as captioned. I owe thanks to Dr. Alan Kabat, who recalls the photograph from Harvard's Museum of Comparative Zoology, where that dour-appearing but kindred spirit looked upon him for many long hours. An additional error pertains to Fig. 8, in the caption of which I wrote: "Le Château be Balaine (sometimes rendered Baleine), home to the Adanson family, was completed in 1850 and now serves as an upscale country inn within a 20-hectare botanical garden in France." Dr. Danielle Callen, Historian of the Family, Arboretum de Balaine, has informed me that the construction of the château continued until about 1890, that it is not actually an inn, rather the residence Courteix-Adanson family, and that the surrounding land is better termed a botanical arboretum (as indicated elsewhere in the text). The only explanation for the disconnect is my heavy reliance on Internet resources; lesson learned.

"Lee, H.G., 2012. Partulid snails, their collectors, and a prodigious dynasty of French naturalists. *American Conchologist* 40(1): 10-19. March [April].

"Harry G. Lee"

Unfortunately, I have to follow this with acknowledgement of an error of my own. In the last issue, in Karen VanderVen's article on shelling in Honduras, I credited several photographs of living mollusks to "author." Karen was quick to point out that she DID NOT take those photos, but that they had been taken by Charles Rawlings. I should have recognized them as we have all seen his superb photos many times in this magazine. So apologies to both Karen and Charles.

Now please enjoy this issue. There should be something here for just about everybody.

Front Cover: *Cepaea nemoralis* (Linnaeus, 1758), a colorful European land snail that was introduced into the United States in 1857 by Dr. W. G. Binney a British Malacologist, who released the snail into his garden in New Jersey. Image by Nuimal Bahar of the United Kingdom.

Back Cover: A pearlized *Nautilus pompilius* Linnaeus, 1758, decorated with silver and turned into a vessel similar to those popular in Europe in the 18th Century. This shell was one of the spectacular shells displayed by Donald Dan at the St. Petersburg Shell Club shell show. Photo adapted from original by Randy Allamand.

Sinistral peanut snail and polygyrid update. Sequestered specimens, oversight, irony, and a failed strategy with a happy outcome

Harry G. Lee

Thanks to Jerry Harasewych, some other cooperative museum scientists, and two recent bits of conchological irony, I now I have two additional sinistral *Cerion* specimens, an expanded account of two reported earlier, an additional polygyrid species, and a short vignette on the discovery of the third specimen of a confamily to add my recent account (Lee, 2011).

Left-handed *Cerion*

C. incanum (A. Binney, 1851): USA: Florida: Monroe Co., Big Pine Key. On W side US 1. Collected by William J. Clench, 6 June 1956: MCZ [Museum of Comparative Zoology, Harvard University] 211263; one 22.2 mm sinistral specimen among 121 shells (personal communication, M.G. Harasewych, 2 Dec. 2011, and Adam Baldinger, 11 January 2012). Previously reported and figured in B&W without full collection data or catalogue no. (Gould *et al.*, 1985) [Fig. 1].

C. incanum (A. Binney, 1851): USA: Florida: Monroe Co., Big Pine Key. At SE corner of Old Beach Rd. and US 1 [T67S, R29/30N; ca. 15 mi. W Marathon], FL. Collected by William J. Clench, Margaret and Archie Jones, and Margaret Teskey, 6 August 1978, *ex* Clench: OSUM [Ohio State University Museum] 8189: one 19.1 mm sinistral specimen among 18 shells (pers. communication G.T. Watters, 6 December 2011). Previously reported and figured in B&W without full collection data or catalogue no. (Gould *et al.*, 1985). No MCZ material from this station seems to exist (MCZ Malacology Database).

C. lividum (Maynard, 1924) [= *C. glans* (Küster, 1844) *fide* Gould and Woodruff, 1986]: Nassau, Bahamas. Collected by Charles Johnson Maynard, summer 1924: United States National Museum [USNM] 420104: one 26.9 mm sinistral specimen among 200 paralectotypes. Maynard's fourth sinistral *Cerion* shell; mentioned but not figured in Harasewych *et al.* (2007: 520) [Fig. 2].

C. tridentatum costellatum Pilsbry, 1946: USA: Florida: Palm Beach Co., Delray Beach. SR A1A just N of the public beach and S Crestwood Drive. Empty shells on sand behind dunes. Collected by Anne DuPont, 2 February 2011: one 32.3 mm sinistral specimen among 17 shells: H.G. Lee Collection [Fig. 3]. This outing constituted the first time Anne ever searched for land snails, let alone *Cerion*, let alone a sinistral specimen thereof. To say this situation included both a novitiate and a stroke of good fortune **hardly does justice to the improbability** of this event.

Present totals: 5 species and 14 specimens, only 5 individuals known to have collected 13 of them; the 14th (OSUM 8189; see above) seeming to have been the product of a collecting quartet's effort and its special significance apparently unrealized until Bill Kasson brought it to light a few years after the fact (Gould *et al.*, 1985).



Fig. 1 (above) *Cerion incanum*, 22.2 mm, from Big Pine Key, Florida. Proving the value yet again of museum collections, this specimen was collected in 1956 but only 'rediscovered' as a sinistral specimen in 2011.

Fig. 2 (below) *Cerion lividum*, 26.9 mm, from Nassau, Bahamas. The sinistral specimen on the left was collected in 1924 with some 200 dextral specimens.



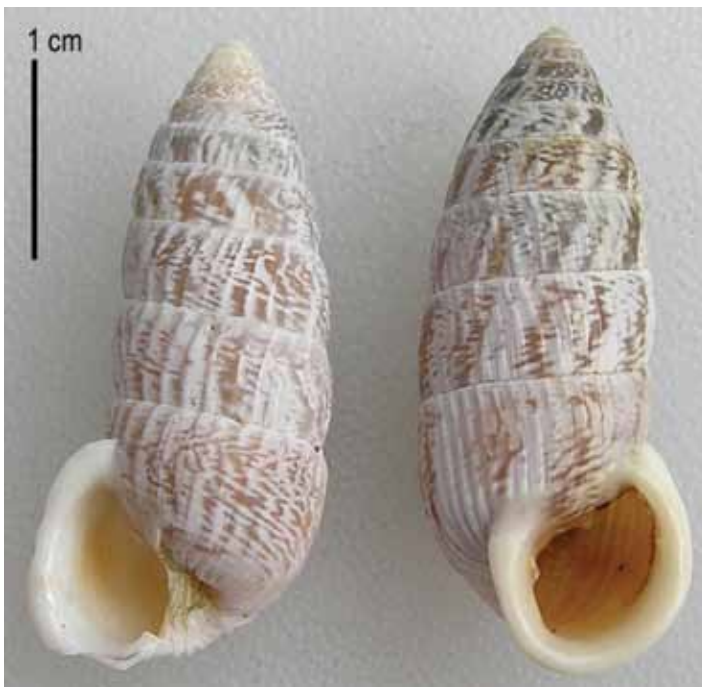


Fig. 3 *Cerion tridentatum costellatum*, 32.3 mm, from Delray Beach, Palm Beach Co., Florida. The sinistral specimen on the left was collected by Anne DuPont along with 16 dextral specimens. The rarity of sinistral *Cerion* and the fact that this was Anne's first attempt at land snail collecting, make this find truly noteworthy.

Sinistral polygyrids

There are also two addenda to the polygyrid portion of the topical report. I somehow overlooked a sinistral specimen of the Atlantic threetooth, *Triodopsis juxtidentis* (Pilsbry, 1894), collected and photographed alive by John Slapcinsky (now of the Florida Museum of Natural History, FLMNH) in juxtaposition with one of its six dextral lot mates and figured in Abbott (1989: 9). John tells me he found these snails the preceding year in Starnardsville, Greene Co., VA, in a meter-wide portion of a poison ivy-covered embankment alongside US 33 near the courthouse parking lot (38.2971°N 78.4394°W). He doesn't recall the exact date, but well remembers the *Toxicodendron* allergy that ensued [ed. note: poison ivy or sumac for our non-MD readers]. This is the first reported occurrence of a sinistral specimen of this species, the fifth species, and the tenth individual of its genus known in this condition. The lot of seven is now in the Field Museum of Natural History, Chicago (FMNH 311545).

One more polygyrid find warrants a short commentary. Most Florida shellers can attest to the abundance and ubiquity of the southern flatcoil, *Polygyra cereolus* Mühlfeld, 1818. Knowing that my late friend Wayne Sullivan had collected a live sinistral specimen (Lee, *loc. cit.*: 9) from a large sample, on April 23, 2006, I recruited one of Florida's most productive field collectors, Bill Frank, to exploit a large population of this species he'd found estivating on the side of a small building on the campus of the University of North Florida, almost coating it from foundation to eaves [Fig. 4]. Using a paint brush, dust pan, and a scrub bucket, he harvested about one pint of snails. I then examined the specimens: all were southern flatcoils, 30 percent juveniles (3-6 mm),



Fig. 4 (above) This building on the University of North Florida campus was covered with *Polygyra cereolus*. Bill Frank collected 14 oz. of *P. cereolus* from this building - approximately 3,885 specimens!

Fig. 5 (below) The result of Bill's collecting efforts, close to one pint of southern flatcoils, did not include a single sinistral specimen.



the remainder 6-9 mm adults. The total volume of the sample was 14 oz., and, by weighing 100 shells, I was able to place the total number at about 3,885 specimens [Fig. 5]. Alas, not one sinistral specimen was in the lot of them, and, yes, they were released into the wild after their disappointing service to science.

Normally such an experiment with irreproducible or, as in this instance, negative, results doesn't gain much currency, so this little study was simply filed away at <<http://www.jaxshells.org/galleryx04.htm>>. Its ascent to newsworthiness enough to reach the pages of *American Conchologist* occurred five years later, July 27, 2011. To be exact, I noted a strange small white shell while walking along the shoulder of CR 207 just NW of the Deep Cr. bridge near Hastings, St. Johns Co., FL. Compelled to look more closely, as I have on thousands of previous roadside reconnaissances, I picked it up. You guessed it [Fig. 6]! Thus the



Although rare, sinistral *Polygyra cereolus* do exist, as the specimen on the right proves. This was not found by examining thousands of specimens, but rather spotted as I walked along a Florida roadside. [ed. note: Dr. Harry Lee obviously has a well-developed and maybe even unique 'search engine' as I doubt many of us would have spotted this tiny shell, much less noted its sinistral structure.]

third reported instance of a sinistral southern flatcoil was actualized, not through a calculated protocol, but by a random encounter. Looking at the literature, one cannot help but be impressed by the fact that this is the way it is done! Thus the secrets to "beating the odds" are (1) keep your eyes peeled, (2) spend lots of time in the field, (3) be patient, don't force it, and (4) persevere, good fortune may well catch up in due course!

Acknowledgments: I thank Adam Baldinger, MCZ [MCZ], Jochen Gerber FMNH [FMNH], M.G. (Jerry) Harasewych, USNM [MCZ, USNM], John Slapcinsky, FLMNH [FMNH], and G. Thomas Waters OSUM [OSUM] for information on the discussed specimens, which came to their notice in the field and/or collections of the four bracketed collections. Figures 1 and 2 were provided by Jerry Harasewych. Nos. 3, 4, and 5 were created by Bill Frank (Jacksonville, FL), who also provided image editing services.

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Fie to you!

[or Φ 2 U]

This short note is to recommend a paper for your edification and amusement. It is Marjorie Fogan's Presidential Address, entitled *Mollusca in Fiction*, in the 1991 *Journal of Conchology*. There are numerous interesting and entertaining excerpts from, and descriptions of, various novels in which mollusks play a part. My favorite is from a short story by Lord Dunsany, *The Sign*.

It is difficult to improve on Fogan's succinctness, and much of this note will be quoted directly from her paper. The protagonist, named Hochner, believes in transmigration. He is "vain enough to anticipate his reincarnation in some very superior station – possibly as a king. He tells a younger friend that he has trained himself to remember in any circumstances a sign, the Greek letter *Phi*, and that he will be able to prove the truth of transmigration by making the sign." As he was talking to his friend, they were walking in a garden where Hochner steps on snails in the path "which cannot matter to such low forms of life." After Hochner's death, the friend anticipates some day seeing "some exalted person" making the sign, "but walking again in the garden he notices a snail upon the wall. Slowly it traces with its slime a perfect circle, then a vertical line intersecting it and forming the letter *Phi*."

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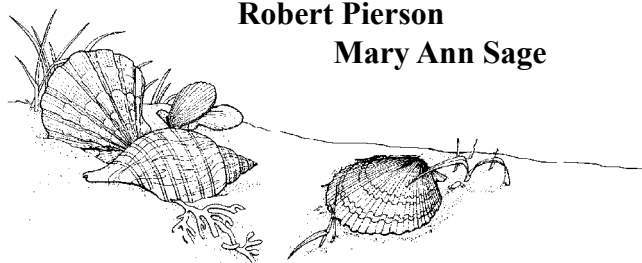
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In memoriam:

Robert Pierson
Mary Ann Sage



A shell show primer

John Timmerman

The success of a shell show depends upon varied elements. Exhibitors and collectors gather to show off new shell-related finds, discuss scientific discoveries, and interact with one another. The visiting public is a valued and integral part of the show's success. As exhibitors we must remind ourselves that our general audience may know little about shells. A good show introduces shells in a language that speaks to all, not just the expert. To the experienced shell collector, a basic understanding of the process by which the animal makes a shell seems elementary. I meet people that know hermit crabs live in shells, know the crab does not make its shell, but do not know where the shell(s) come from.

Whether exploring a beach or backdoor garden, mollusks and their shells are often ubiquitous to the scene. Few people have walked a beach without coming across a shell that elicits questions. How many durable objects of inspired beauty and design can you think of that can be found lying on a beach with the following holding true - at no monetary cost?

It is there to be picked up.
You may enjoy it.
You may study it.
You may keep and treasure it.

"I found this" is a statement with which most people can identify that reflects the excitement of shell collecting. The unfettered conditions of the experience starts creative juices flowing. A shell show encourages and expands on this discovery.

To the uninitiated, a shell show may be a group of geeky people meeting to promote a subject in which few in the general population are interested. National and regional awards that promote accurate scientific study and presentation may not be understood. For shell people, the exhibitor who earns recognition for a job well done and the details of his or her winning exhibit are what is important. Significance of shell show awards is no less so than those earned within other disciplines by encouraging and recognizing excellence. The award paradigm is integral to a quality show and a successful connection to the public. Add the shell collectors themselves and the matrix for presenting this incredible study for all to understand is complete.

The North Carolina Shell Show is the place to go in southeastern North Carolina to see a shell show at its best. Nationally recognized shell collectors exhibit wonders of the natural world. Shell enthusiasts, amateur and professional alike, provide an endless font of knowledge and experiences with shells for all in attendance to enjoy. These beautiful objects and their animals inspire entrants to enter photographs and create works of art that help us see the subject in a new light. It is also the opportunity to get a few new shells from the vendors for your fireplace mantle or a growing shell cabinet. As an added plus, there is the ever-popular shell give away table. Whether purchasing or grabbing up a free shell, the stunning and endless variety of shells from around the world is amazing.



Above: FREE SEASHELLS! Susan Rotman assists visitors at the Shell Give-a-Way. Shells are displayed in trays where visitors can find the shell that most pleases their eye. The Shell Give-a-Way is part of the club's welcome center, including information on shows, conventions, membership, and ballots that can be cast for the "People's Choice Award."

Below: These shells are not free, but they form a key part of any shell show. Dealer displays and sale tables are fodder for collector's dreams.





Frank Abramson, Ed Petuch, and Lyle Therriault examine a fossil *Ecphora* Dr. Petuch has just discovered at the Shell Give-a-Way. The *Ecphora* proved to be a species previously unknown from North Carolina deposits.



Left to right: Art Bogan, Sue Hobbs, Phil Dietz. Sue's display of shells for sale is a highlight of every show she attends, with high quality shells, beautifully displayed.



Above: Susan Ross and Bill Bennight staff the club's sales table. Such sales support a scholarship at University of North Carolina Wilmington (UNCW), sponsored by the North Carolina Shell Club.



Susan O'Connor expands her shell collection aided by Bob Lipe, knowledgeable dealer and long-time COA supporter.



Right: "Chambered Nautilus, Past and Present" displayed at the 2011 North Carolina Shell Show.



Above: Doug Wolfe and Betsy Bluethenthal discuss shell books. While critical to successful shell collecting such books, like a rare shell, can strain the budget.

Below: Ronald C. Hill holds his truly spectacular slit shell, *Enemnotrochus rumphii* (Schepman, 1879).



Left to right: Everett Long, John Timmerman, and Harold Brown have a quick meeting to discuss shell show business. Shell shows are the product of many dedicated people.

National and local organizations sponsor awards that promote excellence in shell shows. In 2012, to commemorate the 55th anniversary of the founding of North Carolina Shell Club, the North Carolina Shell Show will recognize the one exhibit that is superior in educational value to all others with the “Nan - Sea Education Award.” The award is named for Nancy, wife of club member Everett Long, who has been an educator for 30+ years. Many of us founded our collections on the beauty of shells but inevitably asked questions. “What is it?” “What is its scientific name?” “What is its natural history?” If it weren’t for scholars there would be no answers, even as basic as a name. The skilled collector researches the subject with the goal of expanding his or her knowledge of the kingdom of shells. The “Nan - Sea Award” emphasizes the importance of that goal; for without such knowledge we all would all be poorer. Educational excellence is arguably one of the most important tenets of all shell shows.

Whether you go to a shell show to learn about the shell you found on vacation or under a log in your backyard, or to expand an existing interest, or to be inspired and simply to hobnob with other shell collectors, the North Carolina Shell Show provides it all.

A few questions and statements generated by the hermit crab find:

“I can’t believe something like a garden slug made the shell the crab uses! How does it know how to do that? Does it discard it to grow a larger one as it grows? Why is the shell colorful? Why does it have spines?”

We do not have answers to all of the questions a simple shell can elicit, but that is what makes this pursuit so enjoyable. With a shell show we open a door to questions and some answers, all based upon the wondrous nature of shells.

John Timmerman/Chair North Carolina Shell Show
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A report on *Gibberulus gibbosus* (Röding, 1798)

Scott & Jeanette Johnson



Gibberulus gibbosus (or as it is sometimes still known, *Strombus gibberulus gibbosus*) is abundant in many lagoon sand flats in the Marshall Islands. In some areas the hump-backed or hunchback conch seems to be the most common mollusk present. They are seen only rarely on the seaward reef. They range from about 1 to at least 20m depth and probably often extend deeper as well. The largest we know of was about 49mm long. Sometimes the shell is pure white, but it often is variably marked with brown and may have a purple or white aperture. Occasionally we see piles of shells that have been recently cleaned out by some predator without damaging the shell. We suspect some nocturnally active octopus is pulling the animals out of the shells and devouring them in large numbers.

These small conchs can frequently be seen gathering on sand flats to breed, leaving their eggs in mixtures of sand and mucus on the top of the sand. We found the large group pictured here, marching (well, hopping) down a sandy lagoon slope all in the same direction. You can see the crowded front line toward the upper part of the last two photos on the next page, with their tracks in the sand trailing from the lower left. The front line extended a good 10 to 12m and there must have been thousands of the mollusks, all apparently of the same mind(?) about where to go.



Gibberulus gibbosus (same individual as above) showing the eye placement within the 'stromboid notch' (right eye) and the siphonal canal (left eye) as well as the operculum. Strombs occur from shallow to fairly deep water and are most prevalent (number of species) in the tropics. They are herbivorous grazers, reproduce sexually, and lay thousands of eggs, apparently a successful life style as they are often one of the more commonly encountered species in a given environment.



Dorsal and ventral views of living *Gibberulus gibbosus*.



Gibberulus gibbosus clustered on the substrate, apparently scraping off the algae they feed on from the surface.



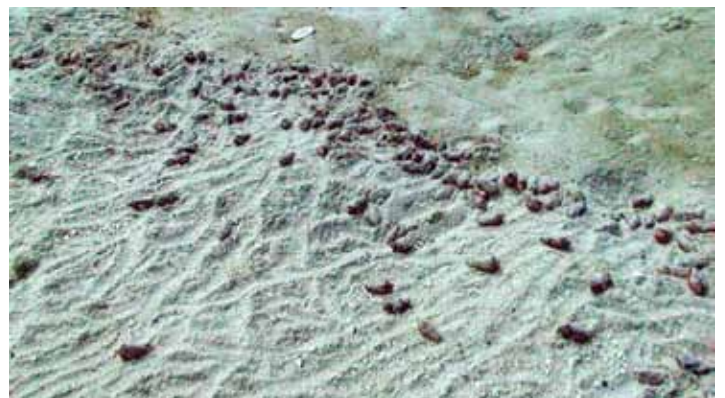
Both this image and the one to the right show feeding activity that involves digging under the substrate.



A cluster of *Gibberulus gibbosus* apparently feeding by digging into the substrate gravel.



The leading edge of the large group of strombs headed to the upper right in the photo and probably feeding as they go.




This image clearly shows the difference between the undisturbed substrate on the upper right and the channeled substrate the strombs have passed over and through.


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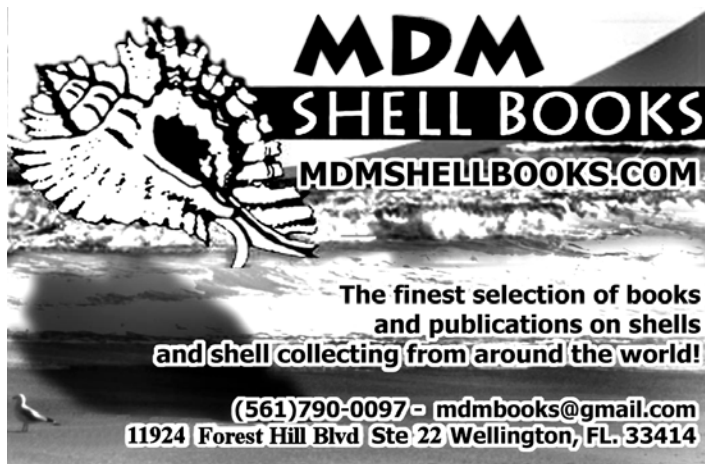
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Humboldt squid - cannibalistic killers or just jumbo mollusks? Diving amongst “killer” cephalopods - photographing the Humboldt squid

Charles Rawlings (photos by the author)

Fellow shell enthusiasts, sometimes an experience, a species, or an idea, while not specifically about shells, demands an article detailing the same. What follows is one of those instances. I recently had the opportunity to dive and photograph the “killer” cephalopod known as the Humboldt squid over the course of a week in the Sea of Cortez off Bahia de Los Angeles. What follows is a chronicle of my experiences accompanied by what is hopefully informative scientific observations as well as some heretofore never before photographed behavior.

As shellers and divers we rarely encounter any creature that could inflict a mortal bite, sting, or wound. In fact, very few animals in the ocean have actually caused a human death. When anyone mentions a dangerous sea creature, sharks immediately come to mind, along with those species of jellyfish that constitute the sea wasps or box jellies. Other dangerous species of which shellers and most ocean aficionados are aware include the cone shells and the blue-ringed octopus. Any number of well-known cone species have caused human deaths and the bite of the blue-ringed octopus kills in much the same manner. While these animals have lethal venom, only a very few sea creatures will actually eat a human. Such creatures include the oceanic white tip shark, the tiger shark, and the bull shark. As an aside, the great white shark really only tastes a human and doesn't eat him. Except for these sharks, no other sea creature actually will attempt to eat a human, save for one - *Dosidicus gigas* (d'Orbigny, 1835), the Humboldt squid - the subject of this article.

As most shellers are aware, the phylum Mollusca includes the typical seashells: gastropods, scaphopods, pelecypods, and cephalopods. Other classes, such as Aplacophora and Monoplacophora are not commonly encountered. The gastropods are the single-shell snails (for the most part), the scaphopods are the tusk-shells, while the pelecypods are the bivalves. Upon further division, the cephalopods include the *Nautilus*, the octopodes, the cuttles, and the squid. The *Nautilus* is a well known cephalopod with an external shell (**Photograph 1**), while the octopi (**Photograph 2**) have no shell at all (except the *Argonauta*). The cuttlefish (**Photograph 3**) and squid (**Photograph 4**) both have 'cartilaginous' inner support structures known in the cuttles as the cuttlebone; while in squids the inner support piece is flimsy and pliable and is sometimes called the 'pen.' The “killer” squid or Humboldt squid belongs to this group of mollusks, the cephalopods, which are also known as “head-footed.” This mollusk, this cephalopod, this “killer” squid, was the object of our expedition.

My quest began several weeks before my actual travel with an e-mail explaining that the 'large' Humboldt squid were not in their usual habitat off the coast of Santa Rosalia, but were actually being identified several hundred miles north off the coast of Bahia de Los Angeles. How did we know? In the Sea of Cortez, August is squid fishing time and the Humboldt are prime targets,



1. (above): *Nautilus belauensis* Saunders, 1981 (the Palau nautilus), photographed in 80' of water, trapped in 1500' of water, Palau.

2. (below): *Octopus briareus* Robson, 1929 (Caribbean reef octopus), photographed hunting in 20' of water, U.S. Virgin Islands.





3. (above): *Metasepia pfefferi* (Hoyle, 1885) (flamboyant cuttle), photographed in 40' of water, Sulawesi, Indonesia.

4. (below): *Sepioteuthis sepioidea* (Blainville, 1823) (reef squid), photographed in 50' of water, Roatan, Honduras.



some measuring 8 feet in length and weighing up to 200 pounds. Oh, the small ones were being caught off Santa Rosalia (2-3 feet in length), but the big ones, they were further north. As a result, the travel time on our dive boat was increased by a day and a half both ways, while our dive time was diminished by two nights. With that knowledge I boarded the plane to Cabo. After landing I took a car to La Paz, where I was to meet the boat. At least we knew where prime squid habitat was to be found, off Bahia de Los Angeles.

After arriving in La Paz during a driving rainstorm (yes, it does rain in Baja) I was able to board the dive boat at about 2 pm. The boat's name is *The Sandman* and it is owned and skippered by Captain Ron Steele. Captain Ron is a legend with anyone who knows anything about Humboldt squid. He has captained *The Sandman* for any number of squid expeditions, including the BBC and National Geographic, plus fishing for squid himself. If he couldn't put us in the water for squid photographs - no one could. The boat is a beautiful synthesis of form and function. The dive deck is spacious and easy to use while the sleeping quarters are large and comfortable. They needed to be as we would be steam-

ing from La Paz to Bahia de Los Angeles for two and a half days with stops only for fuel. At 6 pm we left the dock, entered the Sea of Cortez, and began our steam northward. The seas were calm, the sunset was an amazingly intense amalgamation of red, orange, and purple, and the air was balmy. Our first night we were accompanied by pods of dolphins as well as several humpback whales. Captain Ron kept the bow pointed north, with Baja on our left and the Sea of Cortez on our right. In the ocean we spotted sailfish, whales, dolphins, and mola mola; on the land, there was absolutely no sign of human habitation, the rock and geological formation were of mind boggling proportions, and cacti grew rampant. Each night the sunset was more magnificent than the first. On the evening we turned the corner into the vicinity of Bahia de Los Angeles we noticed small two-person pangas with small lights; we had found the home of the killer squid and the fishermen. Our first attempts at diving with the squid, however, were a nightmare.

Before you read about our diving exploits, let's examine what is known or at least hypothesized about Humboldt squid. The Humboldt squid, also known as the jumbo squid as well as diablos rojos, the red devils, by the fishermen in the Sea of Cortez, take their name from the cold water current known as the Humboldt where they live. Their reputation as a killer squid is the basis for their name diablos rojos, at least among the squid fishermen. These squid are large, can reach up to 8 feet in length, and weigh between 100 and 200 pounds. They are deep-water dwellers during the day, living at depths of between 500 and 2000 feet. At night they ascend all the way to the surface to hunt. Their distribution ranges from Tierra del Fuego north to at least northern California. In fact, recent reports have them ranging even further north to Alaska. In addition, they live in the Sea of Cortez, most commonly off Santa Rosalia, and now it seems the large ones had migrated north off the coast of Bahia de Los Angeles.

These squid are typical cephalopods in some ways but have several unusual characteristics. As is typical with squids, the Humboldt can change colors rapidly. In fact, they are able to flash a series of colors ranging from pale white to brilliant red due to the presence of and control over numerous chromatophores (**Photographs 5 and 6**). These squid are also able to eject a large ink cloud when disturbed (**Photograph 7**). Unique characteristics include barbed suckers on their feeding tentacles as well as their other arms, plus the presence of a large, almost baseball size, chitonous beak. The barbs surround all the suckers and can hook into flesh as well as wet suits. When these suckers peel off it sounds like Velcro underwater. As for the beak, unofficial studies put the force generated by the squid at about 1200 psi. With its razorblade sharpness and these generated pressures, the squid shreds its prey to bite-sized chunks in minutes. These squid hunt aggressively in schools numbering up to 1000 individuals. They will attack and eat most sea life but their favorite prey include: lantern fish, shrimp, and other squid. They have also been known to exhibit cannibalism. Moreover, they have been known to attack humans with one of the most famous instances captured on film by Howard Hall and Bob Cranston. Almost nothing is known about their reproduction and their eggs have never been observed. Finally, when caught, Humboldt squid are vicious and there are reports of fishermen being dragged over the side of their pangas, never to be seen again. What was it like diving and trying to photograph them? As I alluded to earlier, our first night in the water with the squid was complete mayhem.



5. Humboldt squid, normal grey-white phase, photographed in 50' of water, Sea of Cortez.



6. Humboldt squid, red phase, just coming under attack, photographed in 30' of water, Sea of Cortez.



7. (above): Humboldt squid under attack releasing an ink cloud, photographed in 50' of water, Sea of Cortez.

8. (below, left): Panga fisherman with a small Humboldt squid caught on luminescent lure in 700' of water, Sea of Cortez.

9. (below, right): Close-up of the suckers showing the encircling barbs.



During our days at sea, the group conceived of a plan where everyone would have an opportunity to dive and photograph the squid. We would put down a bait cage at 50 feet and have two crew members “fishing” for the squid with large luminescent lures to bring the squid close to the boat. A pair of divers would be at the bait while another pair would wait around the boat for any squid lured by the “fishermen.” We would always dive in pairs for protection and would rotate the 3 pairs every 30 minutes; or so went the plan! We arrived at the squid’s habitat offshore of Bahia de Los Angeles at around 5 pm, accompanied by the squid fishermen in their pangas. With them around we knew we were in the correct location for squid and almost immediately caught an intermediate-sized one about 5 feet in length weighing 80 or so pounds from 800 feet of water. (**Photograph 8**) The squid were coming. Everyone got suited up, the sun set, the night grew dark, as did the water, and the teams went into the water, one at the bait cage, the other at 30 feet under the boat. Then the squid arrived. They were everywhere. Flying past the divers so fast they were just blurs and slamming into the divers from all sides and quickly emptying the bait box. What we hadn’t planned for in advance was the poor water clarity and the squids’ speed. Visibility was maybe 15 feet at best, unlike the 50 to 60 feet off of Santa Rosalia. The water was pitch black and our lights penetrated weakly if at all. The squid would retreat and hit again. Same with the bait cage - the squid would fly past, stop, take the bait, and leave, all before any photographs could be taken. After 2 hours and essentially no photographs being obtained, we admitted defeat and climbed back aboard the boat. We needed a new plan.

Over the next 24 hours, we conceived of a new plan. We would still have the bait box if any diver wanted to wait there, but we would use more “fishermen” to lure the squid to the boat. In fact, our intention was to hook a squid, and then release him for photographs. Two teams of divers would be on either side of the boat with the “fishermen” while one could be waiting or at the bait box. Armed with this new plan we set out the following night, arriving at the same location; the pangas were there as well. The plan should have worked, at least in theory. The problem was the weather; it had changed as a front blew through. A heretofore unnoticed current was running and the wind was howling, pushing the boat along and raising 5 to 8 foot waves. Still the squid came. One panga that night caught almost a ton of squid. We did nearly as well. Not a ton, but several that we released and were able to photograph, even with the seas, the current, and the drifting boat. What amazed us, however, was the incredibly vicious nature of the squid. They were clearly cannibals and a hooked squid was torn apart in a matter of minutes. We left expecting the following night to be “the one” for photos. No one was disappointed.

Our last night was clear and almost windless. The moon rose and with it a mild current. The pangas were out and again the squid were everywhere. I concentrated on photographing the cannibalistic behavior as well as obtaining close-ups of their eyes and tentacles. What I observed was truly mind boggling. Any squid that was hooked or even latched onto a lure was immediately attacked by a larger squid. The attacking squid wrapped all its tentacles around the hapless prey and began tearing it to pieces. From about 50 feet to the surface the prey squid was torn in half or eaten in its entirety. The color changes were phenomenal - flashing from red to pink to yellow to white as it died. Close-up photo-

graphs revealed the huge eyes and the suckers surrounded by the hooked barbs. In other photographs the marks left by these barbed suckers are clearly visible. While other divers were photographing individual squids, I was able to document the true savagery of the Humboldt squid as demonstrated by their cannibalistic nature. No squid survived to the surface once hooked! (**Photograph 9**) That was our final night and we left soon thereafter to begin our long steam south back to La Paz.

So what did the expedition learn about the Humboldts? It seems the population in the Sea of Cortez has moved north just as its brethren off the coast of California. They are incredibly fast and will indeed physically contact divers in the water. No diver was harmed and no one felt in immediate danger, but after the first night two of our team never went back into the water. These squid are feeding machines. Their tentacles are lined with suckers that are encircled by sharp hooks designed to catch flesh. The marks of these hooks are all too apparent on the squids’ prey. Their beaks can tear flesh at will and could easily rip through a human’s thin skin. They are savagely cannibalistic. If hooked or injured, the prey squid was remorselessly attacked and eaten by larger squid. Once injured or immobilized the hapless squid was dead in a matter of minutes. Finally, they can and do flash colors ranging from red to purple to yellow to white. These colors show up well in photographs. Is this a form of communication? For me that is unclear, but red was common when a squid was attacked.

In conclusion, as we steamed back to La Paz, in between the encounters with sperm whales, sailfish, and dolphins, after being mesmerized by the stark beauty and desolation of Baja and enchanted by the blazing, ephemerality of the sunsets, we realized that we had been diving amongst the “killer” squid, the stuff of legends, the Humboldt squid. We had seen their flashing colors, graceful speed, and savage nature all epitomized by their cannibalistic action. We had seen their beaks and hooked suckers in action. We had dived with the amazing Humboldt squid. Who knew a mollusk could eat you?

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Additional sources on the Humboldt squid:

Smithsonian National Zoological Park online at: <http://national-zoo.si.edu/Animals/Invertebrates/Facts/cephalopods/FactSheets/Humboldtsquid.cfm>

National Geographic online at: <http://news.nationalgeographic.com/news/> (search for Humboldt squid)

Humboldt squid online at: <http://squid-world.com/humboldt-squid.html>

Alien invaders: *Haminoea japonica* in North America and Europe

Dieta Hanson

Haminoea japonica Pilsbry, 1895, is a small yellow brown opisthobranch (sea slug), also known as the Japanese paper bubble snail, that was first described based on shell morphology by Pilsbry in 1895 as a variety of *H. binotata* (Pilsbry, 1895). In 1952, a more reliable description based on radular morphology was published by Habe. Starting in the 1980s, the species has been reported from South Korea, Washington State, Northern California, British Columbia in Canada, Italy, Spain, and France. *H. japonica* appears to have a negative impact on the native *Haminoea* species in the US (*Haminoea vesicula* (Gould, 1855)), and populations have decreased significantly in areas where *H. japonica* has flourished. *H. japonica* also has been found to carry a non-native parasite that has caused swimmer's itch in humans exposed to seawater in San Francisco Bay.



A living *Haminoea japonica* showing the color of the animal around what is basically a yellowish white transparent shell. Photo by Angel Valdés.

For my master's thesis, I wanted to answer two questions. First, is *H. japonica* really native to Japan? Since the first verifiable description was published shortly after the major expansion of Japanese forces during WWII, it is possible that the slug had been brought to Japan accidentally in ship ballast water or other means from other areas of Asia. Second, if it did come from Japan, specifically where in Japan? This may help us answer how the slug was transported to North America and Europe; if it was through ship ballast, we would expect that they probably came from an area with high shipping traffic, such as Tokyo or Hiroshima. Alternatively, if it came from an area with low shipping traffic but high oyster production, transport with oyster spat (seed) is the most likely mechanism, as proposed by Terry Gosliner and David Behrens in their 2006 paper published in the Proceedings of the California Academy of Sciences.

countries, but thorough surveys are needed to confirm this.

To answer these questions, I looked at the DNA of *H. japonica* specimens from their entire range - Japan, North America, and Europe - to see how much variety in the DNA there was in these different locations and to "match" DNA types, much like DNA is used in humans to identify close relatives. Through the generosity of the Conchologists of America and other sponsors, I was able to travel to Japan and Washington State in the summer of 2011 to collect material. Because of the earthquake and tsunami four months earlier, a large part of the north-east coast of Japan was not sampled, but Japanese colleagues were able to supply me with specimens collected before the disaster. Specimens from Europe were borrowed from museums or collected by colleagues.

In the invasive range, North America and Europe, all individuals were very closely related, with very low genetic diversity and structure. Furthermore, they were also closely related (exact match in the CO1 gene) to individuals from the northeastern Japanese prefectures of Miyagi, Fukushima, and Ibaraki. This region of Japan does not have any major international shipping ports, but is of major importance in historical and modern oyster export. The first oysters brought to North America from Japan were from this region. All other *H. japonica* from Japan (south, west, and north coasts) were very distantly related to those in the invasive range. This evidence, taken with historical data on oyster transport between Japan, North America, and Europe, supports the hypothesis that *H. japonica* was transported to its invasive range through exports of oyster spat from northeastern Japan, in answer to my second question.

When looking at the DNA in a gene called CO1, I found that there were very high levels of genetic (DNA) diversity in Japan that were also highly structured in association with the different ocean currents that surround the islands. For example, individuals collected from different locations in the Sea of Japan were more closely related to one another than they were to individuals from Tokyo Bay. This structure and diversity answered my first question; *H. japonica* was definitely a native species in Japan, although that does not preclude other regions in Asia from also being within the range of the species. Malacologists in China and Russia have said they have not found the slug in their respective

Since oyster spat is still transported all over the world, including between European countries, Washington state, California, Oregon, Canada, and Hawaii, there is a very real possibility that *H. japonica* could spread even further to places where it is not currently found, such as Southern California. If slugs carrying the swimmer's itch-causing parasite were transported to Southern California and flourished, it would be disastrous for the local beach-tourism economy, in addition to the effects on local native species. The results of this study, therefore, provide important data for the development of policies and regulations aimed to prevent further spread of this species.

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A new land snail discovered in New Mexico (USA)

Tom Eichhorst

“What can New Mexico offer a shell collector?” When my wife and I returned to New Mexico in 1994, after 25 years in the US Air Force, I would have answered that question, “Not much.” I was aware of a few introduced species: *Cornu aspersum* (Müller, 1774) (the common brown garden snail often listed as *Helix aspersa*) (Fig. 1) probably introduced in the early 1940s on rose plants imported from California by the New Mexico Rose Society, or several snails found in ornamental ponds that have not yet gained a foothold in our local water ways despite being commonly found at pet shops and pond suppliers. Species such as *Planorbarius corneus* (Linnaeus, 1758), the ramshorn snail (Fig. 2), or *Radix peregra* (Müller, 1774) (previously known as *Lymnaea peregra*), the wandering pond snail (Fig. 3), were what I expected to find in our local streams and ponds.

What I found instead was a plethora of small freshwater gastropods that were often indigenous to just a couple of springs and were listed as threatened or endangered by the state and sometimes the federal government as well. NO COLLECTING. I also discovered there is an endangered freshwater mussel in the state, *Popenaias popeii* (Lea, 1857), the Texas hornshell (Fig. 4). This came as quite a surprise as the only bivalve I had seen in New Mexican waters previously was *Corbicula fluminea* (Müller, 1774), the Asian or golden clam (Fig. 5), an almost worldwide invasive species. Like most other freshwater mussels, habitat destruction was the key factor in the endangered status of *Popenaias popeii* in New Mexico (Carman, 2007). Some of our small freshwater snails, like *Assiminea pecos* Taylor, 1987 (Fig. 6), are threatened or endangered simply because they inhabit isolated gypsum springs, seeps, and associated wetlands. Often a particular species is found in just one or two freshwater springs or spring-fed ponds. One ecological mess, such as someone dumping chemicals into an isolated pond, can wipe out an entire species. Of equally immediate concern is ground water pumping to water a dry state. Such pumping can and has caused water sources to go dry, often at the expense of a small molluscan species. In 1997, “Land Snails of New Mexico” was published and I found I could add 114 species of land snail to my New Mexico list of shelled mollusks.

In 2006 a list of “Threatened and Endangered Species of New Mexico,” was published by the New Mexico Department of Game and Fish (http://www.wildlife.state.nm.us/conservation/threatened_endangered_species/documents/06BiennialReview_000.pdf). It lists the following molluscan species as threatened or endangered in the state (as defined by the NM Department of Game and Fish, an “endangered” species is one that is in danger of extinction whereas a “threatened” species is one likely to become endangered):

- Ashmunella hebardii* Pilsbry and Vanatta, 1923, Hacheta Grande woodlandsnail (threatened)
- Ashmunella macromphala* Vagvolgyi, 1974, Cooke’s Peak woodlandsnail (threatened)
- Assiminea pecos* Taylor, 1987, Pecos snail (endangered)
- Gastrocopta dalliana dalliana* (Sterki, 1898, New Mexico short-neck snaggletooth (threatened)

- Utterbackia imbecillis* (Say 1829), paper pondsnail (endangered)
- Popenaias popeii* Lea, 1857, Texas hornshell (endangered)
- Oreohelix pilsbryi* Ferriss, 1917, Mineral Creek Mountainsnail (threatened)
- Oreohelix forida* Pilsbry, 1939, Florida Mountainsnail (endangered)
- Musculium partumeium* (Say, 1822), swamp fingernail clam (threatened)
- Pisidium lilljeborgi* Esmark & Hoyer, 1886, Lilljeborg’s peaclam (threatened)
- Musculium lacustre* (Müller, 1774), lake fingernail clam (threatened)
- Pisidium sanguinichristi* Taylor, 1987, Sangre de Cristo peaclam (threatened)
- Musculium transversum* (Say, 1829), long fingernail clam (threatened)
- Pyrgulopsis thermalis* Taylor, 1987, New Mexico hot spring snail (threatened)
- Stagnicola caperata* (Say, 1829), wrinkled marshsnail (endangered)
- Gyraulus crista* (Linnaeus, 1758), star gyro snail (threatened)
- Pseudotryonia alamosae* (Taylor, 1987), Alamosa springsnail (Federally endangered) (Hydrobiidae) fed protected since 1991, endemic to Socorro County, a couple of hot springs at the headwaters of the Alamosa River
- Pyrgulopsis chupaderae* (Taylor, 1987), Chupadera springsnail (endangered)
- Pyrgulopsis gilae* (Taylor, 1987), Gila springsnail (threatened)
- Juturnia kosteri* (Taylor, 1987), Koster’s springsnail (Federally endangered)
- Pyrgulopsis pecosensis* (Taylor, 1987), Pecos springsnail (threatened)
- Pyrgulopsis roswellensis* (Taylor, 1987), Roswell springsnail (Fed endangered)
- Pyrgulopsis neomexicana* (Pilsbry, 1916), Socorro springsnail (Fed endangered)
- Sonorella todseni* W.B. Miller, 1976, Dona Ana talus snail (threatened)
- Vertigo ovata* Say, 1822, ovate vertigo snail (threatened)

The list includes a few land snails (pulmonates), some (mostly minute) freshwater snails, and some freshwater bivalves. The danger to each in this state is habitat destruction. A small springsnail (I don’t think many get much over 3mm) living in an isolated gypsum spring or seep is at great risk. Some of these ponds have been completely drained due to ground water pumping and all are susceptible to pollution or introduced alien species. Lose one spring - lose one species. The NM Department of Game and Fish actually monitors such sites fairly closely.

Land snails are generally more widespread in the state, but there are still many that are limited to a single mountain valley or range or even a single peak. For example, almost all of the 30-some species and subspecies of *Ashmunella* in the state are each endemic to a specific mountain range or peak, where most in-



Fig. 1 *Cornu aspersum* (Müller, 1774) (*Helix aspersa* in older references, *Cantareus aspersus* in some Italian research, and *Cryptomphalus aspersus* by Russian writers), the common garden snail, 25mm, originated along the Mediterranean, but has since been spread, deliberately or accidentally, throughout much of the world. In New Mexico it survives in suburban areas as well as in the 'bosque' or riparian area along the Rio Grande. Photo from Wikipedia.com.



Fig. 4 *Popenaias popeii* (Lea, 1857), the Texas hornshell, 85mm, is listed as an endangered species in New Mexico (doing fine in Texas). It presently inhabits a 9-mile reach of the Black River (a tributary of the Pecos River) in the southeastern part of the state. At one time it could be found in the Rio Grande, the Pecos, and the Black River. The population is considered stable at present. Photo by Joel Deluxe and released through Wikipedia.



Fig. 2 *Planorbarius corneus* (Linnaeus, 1758), the red or black (depending on color variety) ramshorn snail, is a common aquarium pest introduced with live plants. A prolific breeder, common in decorative ponds and aquariums, it seems unable to survive New Mexican winters. Photo by Michael Manas, released through Wikipedia.



Fig. 5 *Corbicula fluminea* (Müller, 1774), the Asian or Asiatic clam, 25mm, has been introduced and successfully established worldwide. In New Mexico it is commonly found in the Rio Grande and especially the complex system of drainage and irrigation ditches that parallel much of the river. Although it can grow to 50mm, it seems the smaller ones are more commonly encountered. Photo by Aad van Meerkerk, released through Wikipedia.



Fig. 3 *Radix peregra* (Müller, 1774), the small or wandering pond snail, 14mm, has been introduced from its original habitat in Europe through much of Asia and into the United States. Introduced into New Mexico with imported decorative water plants for backyard ponds.

Fig. 6 *Assiminea pecos* Taylor, 1987, the Pecos assiminea or Pecos spring-snail, 2mm, is listed as endangered by the state and the federal government. Its preferred habitat is moist soil near a seepage or small spring. It apparently does not tolerate changing water levels. It is known from two small springs in Texas and the Sago Springs in southeastern New Mexico. Photo by Brian Lang, New Mexico Department of Game & Fish.





Fig. 7 A typical talus slope that can be found along mountain ranges in southern New Mexico. It is just as steep and treacherous as it looks. Throw in a bit of August heat, lightning from afternoon thunderstorms, and the odd rattler or two, and you have land snail collecting in New Mexico.



Fig. 8 A closer view of the igneous rocks that make up the talus slopes such as those found in the San Luis mountains. The snails are two to six feet down in debris that collects under the rocks.

habit the talus slope (the area of broken rocks that have fallen from the mountain peak). Most remain underground through much of the year to avoid desiccation, coming out in late summer when the state gets the largest portion of its limited rainfall. Annual rainfall where I live is less than 8 inches per year (much less the last 10 years) and only about 28 inches in the nearby mountains. One third to one half of these totals falls in late July, August, and early September from afternoon thunderstorms. This all means these snails are really tough to collect. The typical talus slope habitats are steep, the footing is horrendously tricky, and these slopes are the preferred habitat for a couple of our rattlesnake species. This means a shell collector turning over a rock looking for an elusive land snail can just as likely find an irritated rock rattlesnake (*Crotalus lepidus* (Kennicott, 1861) or maybe even the rare and protected ridge-nosed rattlesnake (*Crotalus willardi* Meek, 1905). Of course, this works both ways; an individual flipping rocks looking for a rattlesnake can instead find a land snail. Yes, some people do that. Even I have been known to partake.

A friend of mine, Charlie Painter, is the herpetologist for the New Mexico Department of Game and Fish. In 1997 he was turning rocks looking for ridge-nosed rattlesnakes as part of an on-going study by the NM Department of Game & Fish in the San Luis Mountains in southwestern New Mexico (the 'bootheel'). Under one of the rocks were a couple of land snails he did not recognize. He collected them (the NM Department of Game and Fish keeps a voucher collection) and informed Brian K. Lang, a malacologist (among other duties) for the NM Department of Game and Fish. This started a long process of first trying to identify the snail, then ascertaining if it was a variety of a known species, then checking it against all known species in that genus to see if it had been introduced to the area from somewhere else, and finally determining if it actually was an undescribed species.

Once initially discovered, many additional specimens were found in the San Luis, Big Hatchet, and Peloncillo Mountains

of Hidalgo County, New Mexico. The expertise of Lance H. Gilbertson from the Natural History Museum of Los Angeles County was added to that of Brian Lang and the snail was studied at length. It was determined to be in the genus *Sonorella* Pilsbry, 1939, a genus with over 100 taxa in the Southwestern United States and the adjacent Mexican states of Chihuahua and Sonora. Pilsbry and subsequent authors further divided *Sonorella* into subgenera and 'species groups.' One such group is the *Sonorella hachitana* complex, with four described species and two subspecies in New Mexico. To this, Lang and Gilbertson (2010) added a new species, *Sonorella painteri* Lang & Gilbertson, 2010 (Figs. 9 & 10), and they raised the two subspecies to full species rank. This raises the number of land snail species for the state from 114 to 117. Most of these species are micro, but *Sonorella painteri* is actually visible to the naked eye at somewhere around 20mm.

With all of these land snail species in the state, what have I collected besides *Cornu aspersum*? Nothing. I do have five specimens of New Mexican land snails, all given to me by COA member and friend, Bruce Neville. In a single day of scratching around in the dirt on the mountain top just east of Albuquerque, he found:

Microphysula ingersolli (T. Bland, 1875) 3mm
Oreohelix neomexicana Pilsbry, 1905, 6mm
Pupilla muscorum (Linnaeus, 1758) 2.1mm
Succinea grosvenori Lea, 1864, 5mm
Vallonia cyclophorella Sterki, 1892, 1.8mm

The data for all five shells are: "Dirt and leaf/needle litter along trail below Crest House, west side of Sandia Crest, ele. 10,600 ft, Bernalillo County, New Mexico, by Bruce Neville, 7 Sep 2004."

Thus none of my New Mexican land snails is large enough to be seen without serious magnification. I marvel at any-



Fig. 9 Two live specimens of *Sonorella painteri*. Even though found in an extremely harsh environment, these snails are moderately-sized (20mm) and nicely colored and patterned. Photo by Marty Frentzel.



Fig. 10 *Sonorella painteri*, 20mm, talus slope, San Luis Mountains, Hidalgo Co., New Mexico. Family: Helminthoglyptidae. The genus *Sonorella* is found "...from the Grand Canyon area of Arizona, southeastward across Arizona, and into north-eastern Sonora, Mexico. The genus also occurs, but with far fewer species, in southwestern and south-central New Mexico, Trans-Pecos Texas, and northern Chihuahua." (Metcalf & Smartt, 1997). The 25 paratypes range in size from 19 to 24mm. Image a composite of photos by Dan Williams.

one (Bruce) being able to find, much less identify, such small specimens. I have walked that same trail dozens of times, never suspecting what was underfoot. I do own the book on our state's land snails and it does have an excellent key and maybe one day I will brave the heat, treacherous footing, thunderstorms, and rattlers to find a *Sonorella* species or two. It should be noted that collecting on a talus slope usually involves a bit more than turning over a few rocks. To quote Brian Lang, "You have to dig two to six feet into the talus before you even start to find snails." (in Williams, 2010) For anyone interested, the rattlesnakes are much more accessible and usually spotted under and around the top layer of rocks.

Finally, to the 117 native land snails native to New Mexico, may be added 9 introduced species (3 are slugs and all originated in Europe) (Metcalf & Smartt, 1997):

Ceciloides acicula (Müller, 1774) (blind awlslug)
Cornu aspersum (Müller, 1774) (brown garden snail)
Oxychilus draparnaudi (Beck, 1837) (black-bodied glass snail)
Polygyra septemvolva Say, 1818 (Florida flatcoil)
Rumina decollata (Linnaeus, 1758) (decollate snail)
Vallonia pulchella (Müller, 1774) (lovely vallonia)

Slugs:

Arion fasciatus (Nilsson, 1823) (orange-banded arion)
Lehmannia valentiana (Férussac, 1821) (three band garden slug)
Limax flavus (Linnaeus, 1758) (yellow garden slug)

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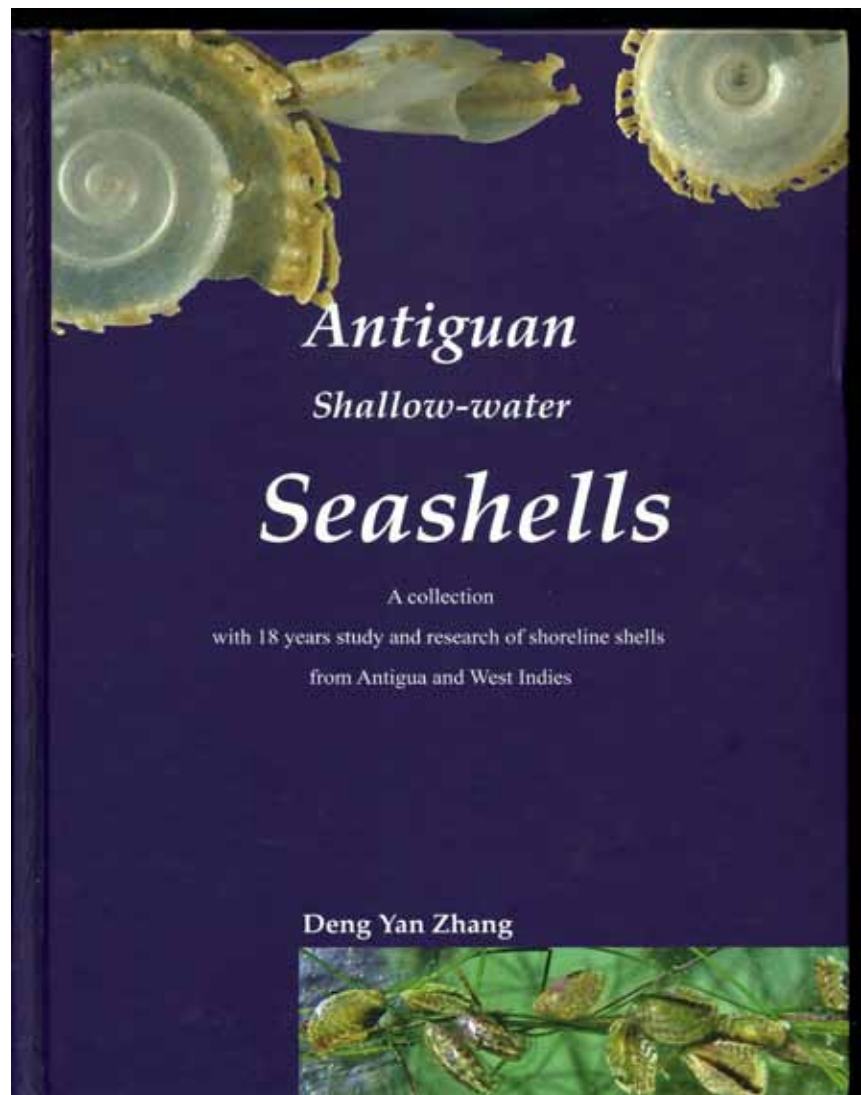
Antiguan Shallow-water seashells: A collection with 18 years study and research of shoreline shells from Antigua and West Indies

Deng Yan Zhang, 2012

MdM Publishing, Wellington, FL. xi + 1-(211) + 22 item errata sheet, March, ISBN 978-0-615-34335-8. 8 1/4 by 11 3/4 in; hardbound. Available from the publisher <<http://www.mdmshellbooks.com/>> and ConchBooks <<http://www.conchbooks.de/>>

A new shell book arrived this past week and I feel compelled to post a short review of it since it deals with a subject close to home, both in terms of geography and topic. The standard for excellence in combining (1) the interpretation of a regional malacofauna and (2) one man desk-top publishing was set over a decade ago by Colin Redfern's work on the shells of Abaco, Bahamas (Redfern, 2001). Deng yan Zhang has followed this paradigm very closely with his treatment of the shoreline shells of a 281 km² constituent of the Leeward Island archipelago. The author, known to many of us COA conventioners as "Deane," has spent most of the last two decades on Antigua after emigrating from China. At the time of his arrival on this anglophone West Indian tourist mecca, he had never collected a shell, could neither read, write, nor speak English, had no formal training in marine biology, taxonomy, or curation, could not use a computer, and knew very little about photography. Early on, however, providence intervened and Deane met Antiguan Ickford Reid whom he credits for fueling the conchological impulse and providing guidance, particularly in the field.

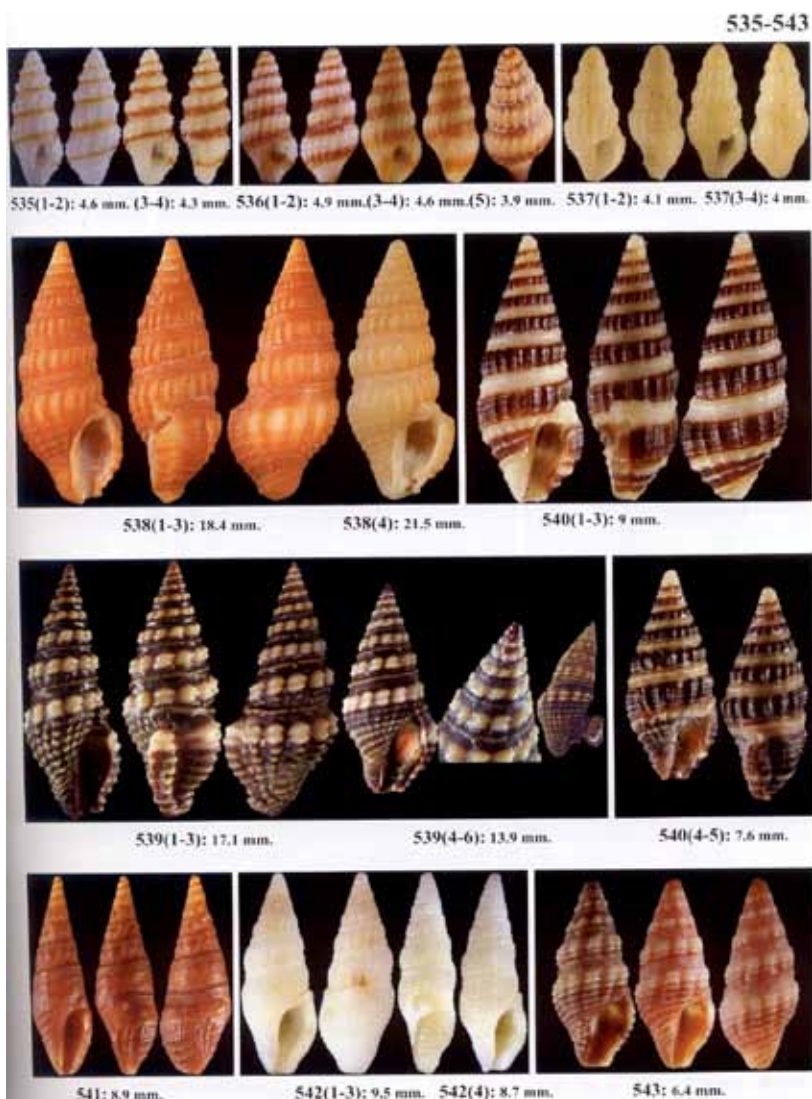
This book is a testimonial to Deane's essentially incredible journey into malacology. Without the support of institutional resources and funding - not to mention the preparation cited above, he has accomplished an exhaustive, accurate, and well-presented treatment of the topic defined in the book's title. Just the amount of field work needed to have accomplished this thorough a sampling virtually on a shoreline anywhere is mind-boggling. And then there's the challenge of assembling and interpreting the literature! Perhaps Bob Janowsky's comment in the foreword: "Deane does not so much as read books as he devours them" gives an indication to the devotion and intensity of the author's research.



One can only speculate how the mastery of computer and photographic skills was wrought, but this work gives attestation to those accomplishments, and Janowsky assures us there was no *deus ex machina* at work here - just an ample volume of midnight oil.

Inside a handsome and durable cover is Janowsky's foreword, a short table of contents, a regional and a more detailed map depicting Antigua, and a brief introduction by the author. Here for the first time we encounter a most interesting style of writing, which those familiar with Chinese-to-English prose will probably recognize. Janowsky's reasoned analysis: "In Chinese each 'word' is a combination of pictographs that establish a thought... you must see the words in the entire context of what he is saying and the meaning will be there" seems to be on the mark as I had little difficulty comprehending Deane's written word.

Pages 1 through 190 are devoted to the taxonomic treatment of the fauna. The format is almost uniformly verso figure explanations with facing (recto) composite **color** images - 95 couplets, as it were. The photography is good to distinctly excellent, and magnification of the many micromollusks is quite adequate in almost all cases. Because of the great difference in actual specimen size, the measurement (mm) is captioned in juxtaposition with the image. In a class, each image and species-level taxon has a unique and consecutive number (almost, anyway; see next sen-



This is a reproduction of page 146. These are Crassispirinae, a subfamily of Turridae that are small and very difficult to identify. This color plate is a full 8 1/4 by 11 3/4 inches, which means each image is large enough to show detailed shell structure and, because Zhang provides multiple viewing aspects, what was difficult to identify becomes almost easy.

tence) in the now familiar style pioneered by the late Myra Keen (1971). Deane writes that there are 2,860 color illustrations, and I have no reason to dispute that since I counted the number of species-level taxa featured and his "963" was right on the mark. Although a total of the last taxon number within each class adds up to 972, there are three additional listings (bivalve 165a; gastropods 182a, and 431a), and twelve nos. are skipped (bivalve 113; gastropods 136, 193, 207, 307, 348, 336, 428, 438, 512, 591, and 662). The figure explanations include the scientific name, author and date; a common name when available in the literature, a short description focused on differential diagnosis; maximum size; locality(-ies) in Antigua; "occurrence" (frequency of collection); occasionally a final entry, "Formerly," indicating a previous generic placement. In this portion of the book, Deane's English is quite constrained, scientifically measured, and apt. I had no more trouble comprehending it than my own productions of this genre.

The testy family groups (e.g., Galeommatidae, Cerithiopsidae, Triphoridae, Eulimidae, Marginellidae, Pyramidellidae, and

the shell-less gastropods), like the push-overs, are tackled with gusto and treated well with sound illustrations, descriptions, identifications, up-to-date nomenclature, and (for the later group in particular) live animal images. In testimony to the cumulative virtue of science, many of the innominate taxa treated by Redfern (*loc. cit.*) have, in good part due to his labors, subsequently been described in a number of works by Rolán and his collaborators, Faber and others, and found their way into the present work.

There are a small number of type-style, spacing, and other formatting peccadilloes, but I only found one misspelled taxonomic name: *Rissoina canbcellina* [sic]. As it turns out that actually originated on the same keyboard I am using for this report; it was taken from an email from me to Deane! Here the reader might wonder by what authority I deign to write this critique!

Some readers might dispute the splitting of *Modulus* and *Oliva* spp. and attention to "forms" of *Vasum globulus*, but the images and descriptions are there to support the author's decisions.

Short version: the book is a masterpiece, a special tribute to a phenomenal, self-taught, gifted dynamo, and it is absolutely a necessity for the bookshelf of every serious student of the tropical western Atlantic marine malacofauna. The price, \$99.95, is a bit steep, but, aside from the excellent science, the shopper must factor the 2860 color images into the decision tree.

Keen, A.M. 1971. *Sea shells of tropical west America*. Stanford Univ. Press, CA, pp. 1-1064 incl. numerous figs. + 22 pls. 1 Sept.

Redfern, C. 2001. *Bahamian seashells a thousand species from Abaco, Bahamas*. Bahamianseashells.com, Inc., Boca Raton, pp. 1-280 + ix + 120 pls.

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An Index for G.T. Pope's PHILIPPINE MARINE MOLLUSKS

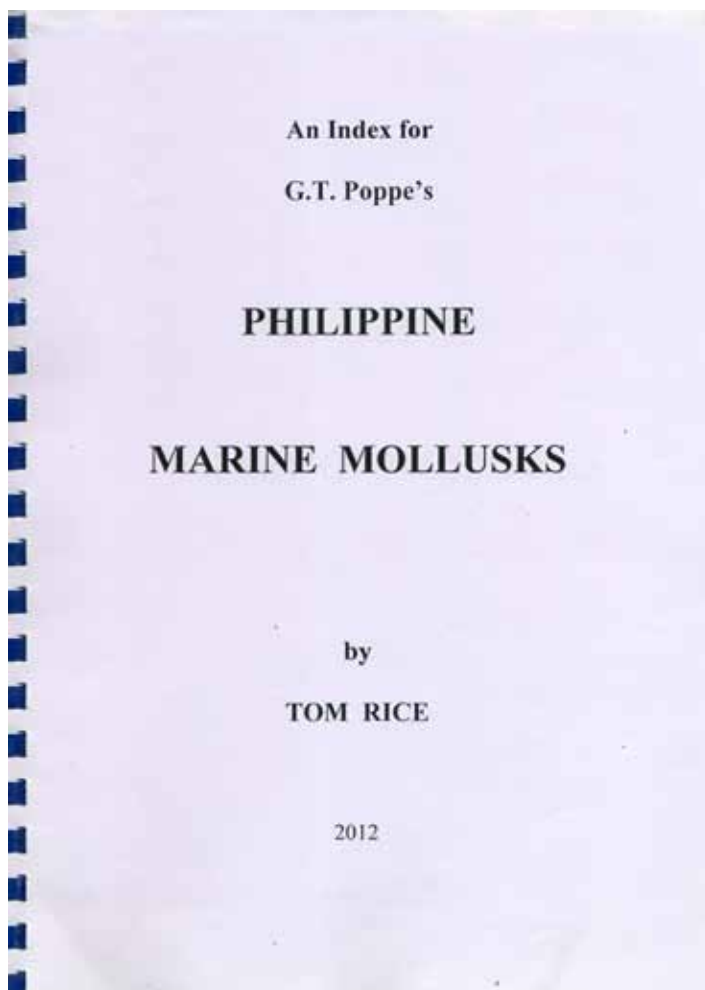
Tom Rice, 2012

Of Sea and Shore Publications, Phuket,
Thailand. 222 pages, price \$25 plus ship-
ping, available from ofseaandshore@gmail.
com (see ad on page 13)

This is actually one of the easier reviews I have had to write. If you own the four volume set of Philippine Marine Mollusks by G.T. Poppe, then you MUST buy this index by Tom Rice. Even if you do not have all four volumes, you still need this index. The Poppe tomes are superb in their coverage of Philippine mollusks, but they are massive volumes. If you want large color plates to show detail and you want coverage of the many thousands of mollusks found in the Philippines, then you end up with large heavy books. This means you do not want to pull volume one out and leaf through it only to discover that the cone you were searching for is not covered in this volume - cones are in volume two. I have gone through this process a number of times and found it frustrating, but decided it was an okay price to pay considering the value of the books. Tom Rice must have also found this an irritant and he came up with the solution - an index to all four volumes.

If this was just the standard index found in the back of most reference books, it would still be worth more than the asking price. Tom's index is, however, so much more than a 'standard index.' Listings are alphabetical (of course), and include both separate and combined entries for family, genus, and species. Each is listed with volume and page number. The genus and species also have the author and date listed. This means if you look for "Conidae" you will find it on page 43: "CONIDAE II 547-660; IV 1270-1273." The bold Roman numeral is the volume number, followed by the page number(s). If you look for "Conus" you will also find it on page 43: "**Conus** Linnaeus, 1758 II 547-660; IV 1270-1273 [Conidae]." So Tom has listed where the genus can be found, the author and date of the genus, and the family of the genus. The genus is listed in bold type and following this listing of the genus *Conus* is a listing of all of the Philippine *Conus* species in the books. So if you look for *Conus capitaneus*, you would find it further down on page 45: "*Conus capitaneus* Linnaeus, 1758 II 562(5-9); * II 534." Again, the author and date are listed, the volume, the page numbers where the species is covered (illustrated), the figure numbers of the specimens in parentheses, and in this case, an asterisk indicating the volume and page number of an image of the living animal. Finally, if you do not know the genus, or are uncertain, you can look up just the species name. If you look for *capitaneus* you will find it on page 27: "*capitaneus*, *Conus* II 562(5-9); * II 534." Reading through this description might seem a bit confusing, but in actual use it is simplicity itself.

This index is an invaluable tool, in and of itself, even without the referenced four volumes. Just a listing of Philippine




molluscan families, genera, and species, with authors and dates, is of real value. Link that with the four Philippine volumes and you have a required, must have, reference tool. I repeat, must have. Tom also promises an update when volume five is published (planned for one to three years from now). In the interim, all of the species planned for inclusion in volume five are listed in this index as: "Sup. I [2012]."

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Quarterly Journal of the Conchologists of America, Inc.

John Edward Gray (1800-1875): his malacological publications and molluscan taxa

Richard E. Petit, 2012

Zootaxa 3214, Magnolia Press, Auckland, New Zealand, pp. 1-125, ISSN: 1175-5326 (print edition), 1175-5334 (online pdf)

Richard Petit's works have been reviewed previously in this publication. Two of these reviews stand out in relevance to his present work: "Lovell Augustus Reeve (1814-1865): malacological author and publisher," published in 2007 and reviewed in the March 2008 issue; and "George Brettingham Sowerby, I, II, III: their conchological publications and Molluscan taxa," published in 2009 and reviewed in the December 2009 issue. These works profiled luminaries in the conchological universe, laying out a brief life history of each, explaining and examining their contributions to conchology (including an annotated listing of introduced taxa), and providing an inclusive and heavily annotated listing of their molluscan-related publications. Petit fleshes out what to many have been just names made familiar through data slips. He also provides corrected taxonomies, including: synonymies, spellings, and dates. We now have his newest entry on John Edward Gray, a name not quite as familiar as the Sowerbys or Reeve, but arguably, just as important.

As stated by Petit, John Edward Gray (1800-1875) was a "...prolific writer who introduced hundreds of new families, genera, and species in Mollusca. As Gray was knowledgeable in all fields of zoology, his publications on Mollusca are only a portion of his production." Gray attended medical school, but lacking the stomach for surgery, gave it up. He worked with his father on a natural history volume on botany and assisted W.E. Leach at the British Museum of Natural History. He applied in 1822 for membership in the Linnaean Society, but was refused because he did not agree with the strict ideas of taxonomy (zealously guarded by E.A. Smith) currently in vogue. His marriage to Emma Gray was fortuitous as she was also interested in science and copied his illustrations for five volumes on mollusks. She was independently wealthy, allowing them both to travel Europe and establish relationships with various museum personnel on the continent.

Gray worked diligently through many years to obtain a position as Assistant in Charge of Zoological Collections with the British Museum, only to be thwarted by petty politics and the actions of several well-placed people with an open animosity towards him. He worked voluntarily for a time and then as an assistant, not the Assistant. Gray was well respected in Europe and in 1854 was awarded the honorary degree of Doctor of Philosophy by the University of Munich. He declined a knighthood but accepted a Gold Medal of Merit from Württemberg and a Silver Medal from the Academy of Stockholm. At home in England he was ignored by the crown, the museum, and the universities, though all benefited from his support and actions.

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3214

John Edward Gray (1800–1875): his malacological publications and molluscan taxa

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Gray published over 1,000 papers and books and was often criticized for rushing to publication, sloppy science, lack of proof reading, etc. This caused numerous 'typos' in his work and subsequent misspellings by authors who attempted to correct what Gray had published. Families, genera, and species named by Gray are all listed by Petit and annotated with corrections as to spelling, synonymy, etc. Reading through this rather lengthy list, it seems well over a third of the entries include the phrase, "incorrect subsequent spelling." Petit also includes a number of nomenclatural actions under ICZN rules to establish precedence (both as 'First Reviser' and to establish a *nomen protectum*) and to correctly fix type species. For example, the well-established *Trochus pelliserpentis* Wood, 1828 is declared *nomen protectum* over the earlier but never used *Trochus emma* Gray, 1827, now *nomen oblitum*.

This work is astonishing in its depth and detail. Anyone conducting molluscan research would be well advised to confirm names, dates, authors, spellings, and synonymies with this present publication. Even if you have no specific interest in the taxonomic tribulations found in conchology and malacology, the history of Gray and his troubles with various contemporaries (including both G.B. Sowerby I and Reeve) are well worth the read. My copy of this publication is a pdf downloaded from Zootaxa: <http://www.mapress.com/zootaxa/> (click on the year 2012, then on publication 3214). I now plan on purchasing a hard copy, it is well worth it.

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The 75th Annual Sanibel-Captiva Shell Show

Joyce Matthys

After a year of planning, the 75th Annual Sanibel Shell Show will be looked back upon as probably one of the best, if not the best, shell show in the club's history. The scientific and artistic competitions were full and the exhibits were exceptional. The weather, though warm, provided a true Florida atmosphere and the visitors were enthused about their 'shell show' experience.

The festivities began with the Judges and Awards Reception. Usually about 65 persons attend this event, traditionally held at a local restaurant. This year we were hosted by the Bailey-Matthews Shell Museum. To say that the number of people who wanted to attend the reception this year overwhelmed the shell show committee would be an understatement. Over 130 people attended the function.

Special champagne glasses were raised for a toast to the success of the show at the beginning of the evening. Donald Dan graciously provided the champagne.

Club President and Shell Show Chairperson Anne Joffe was presented with a bouquet of flowers in appreciation for all of her work this past year to make this 75th Annual Shell Show a success. She also worked with the Sanibel Community Association to make the 'Shellabration' an island-wide event. Anne's efforts throughout the past year truly paid off. Although the numbers are not all in, it appears that the show will also be a financial success. The monies raised during the shell show will be used for academic grants and scholarships.

Such an event cannot be a success without the dedication of and hard work by a number of people. Club members worked every aspect of the show, whether selling tickets, acting as hosts or hostesses, or donating food or cash so that members and exhibitors spending the entire day at the show did not have to leave to find a bite to eat.

A special thanks goes out to the people from Periwinkle Park for their help, and to Joel Edinburg, Dave Joffe, and Mike Joffe for taking down the tables after the show.

The following members of the club worked tirelessly to ensure the show's success:

Show Chairperson - Anne Joffe
 Artistic Chairperson - Sandy Moran
 Asst. Artistic Chairperson - Mary Burton & Charles Barr
 Scientific Chairperson - Joyce Matthys
 Entries & Data - Dick Willis
 Ribbons & Trophies - Valerie Saft
 Show Finances - Linda Edinburg
 T-Shirt Sales - Dick & Freda Willis
 Vol. Coordinators - Linda Edinburg & Stacy Edinburg
 Hospitality - Dianne Zimmer
 Awards Event - Donald Dan
 Author's Table - Irene Longley
 Shell Sales - Donald Dan

The Sanibel-Captiva Shell Club meets at 2 p.m. on the third Sunday of the month at The Bailey-Matthews Shell Museum, 3075 Sanibel-Captiva Road, Sanibel, Florida, from October

through March. In addition to the business meeting and a program, the meetings include members' presentations on favorite or recently found shells, door prizes, and refreshments. To confirm the next meeting date and topic, contact President Anne Joffe at (239) 472-3151, e-mail us at sancapshellclub@gmail.com, or check the current edition of our newsletter, *The Junonia* (www.sanibel-captivashellclub.com).



This year's winners:

Scientific Division:

- Dupont Trophy - (best in class) Sheila Nugent
- COA Award - Robert & Alice Pace
- Best Sanibel-Captiva Shells, self-collected - Harold & Marguerite Pilcher
- James VunKannon Award - (best Florida-Caribbean shells, any source) Carolyn & Earl Petrikin
- Howard Sexauer Award - (best entry worldwide shells, any source) Ron & Mary Jo Bopp
- Marilyn Northrop Award - (best entry worldwide, any source) Joseph Weise
- Shell of Show - (any source) Dick Willis
- Shell of Show, fossil - Irene Longley
- Sanibel Comm - (best student exhibit) Marissa Linn
- Best of the Blues - Harry Berryman
- Sanibel Superstar Trophy - Gene Everson
- Judge's Special Awards - Ron & Mary Jo Bopp, Gregory Curry, and Bobbi & James Cordy
- Judge's Merit Ribbon - Gene Everson

Artistic Division (hobbyist):

- Myrtle Williams Weinstein Award - (best shell flower exhibit) Leslie Anding
- Gertrude A. Ford Perpetual Trophy - (best miniature shell flower arrangement) Peter Gabel
- Best Picture or Mosaic - Valerie Robinson
- Flo Ioreo Award - (best lamp) Donna Carey
- Wanda Will Award - (best jewelry) Judy Mackey
- Dorothy K. Putnam Trophy - (best mirror) Sally Jane Moore
- Best Single Sailor's Valentine - Donna & Rob Barnes
- Best Miniature Sailor's Valentine - Jeanne Ford
- Bettie K. McGowan Award - (best holiday exhibit) Sharon Thomas
- Best Shell Related Exhibit - Marilee McNeilus
- Daniel E. Malone Award - (best student exhibit) Emily Johnson
- Best in Show - Peter Gabel

Artistic Division (professional):

- Best Single Sailor's Valentine - Judy Dinnick
- Best Double Sailor's Valentine - David Rhyne
- Best Miniature Sailor's Valentine - Brandy Llewellyn
- Best Medium Sailor's Valentine - Judy Dinnick
- Best Flower Exhibit - Goz Gosselin
- Meta Neujahr Award - Cheryl Whitten
- Best Picture or Mosaic - Constance Marshall Miller
- Best Miscellaneous Exhibit - Hatsue Imuro
- Captain Tom Clifford Award (Best in Show) - David Rhyne

All Artistic:

Judges Special Ribbon: David Rhyne, Judy Dinnick, and Goz Gosselin

Judge's Merit Ribbon: Susan Lloyd

Special Award for "Celebrating 75": Constance Marshall Miller

Ribbons (scientific): Jeff Oths, Victoria Ross, Evelyn Spencer, Joe Anding, Dick Willis, Ron & Mary Jo Bopp, Irene Longley, Hal & Marguerite Pilcher, Dianne Zimmer, Carolyn Sudol, Sheila Nugent, Libby Grimm, Anne Joffe, and Barbara Hansen

Ribbons (artistic): Sharon Thomas, Tyler Schoenherr, Leslie Anding, Diane Zimmer, Victoria Ross, Travis Campbell, Sally Jane Moore, Brandy Llewellyn, Constance Marshall Miller, Penny Chrysler, Martha Howard, and Charles & Kristine Barr



Evelyn Spencer is shown with two of her winning ribbons. Evelyn not only exhibited at the show, but worked tirelessly every day as a volunteer. All of this at the age of 97!



Above: Bob and Alice Pace won the Conchologists of America Award for their outstanding exhibit of "Invasive Land Snails."

Below: An added bit of excitement this year was the presence of Bill Geist and a news crew from CBS's "Sunday Morning." His coverage of the show aired on 18 March 2012.



Above: Anne Joffe with her her "Celebrating 75" exhibit, a tribute to 75 persons who contributed to conchology and are no longer with us. The exhibit had a photograph of each person as well as a shell particularly meaningful to that person.

Below: Ron and Mary Jo Bopp won the Howard Sexauer Award for "Best Worldwide Shells - Any Source" with their display, "Shelling in Guaymas (and San Carlos), Mexico."



2012 Sarasota Shell Club Scientific Winners

Ron Bopp

The 2012 Sarasota Shell Club Shell Show produced many fine scientific entries for the membership and general public to enjoy. There were 42 different displays entered. Several club members as well as other exhibitors won trophies. Our scientific judges were Roger Portel and Bob Janowsky. Listed below are winners of trophies and special ribbons.



“Florida Spiny Oysters”	Doug Thompson*	COA Trophy
“Color My Fossils”	Joanne Chmielewski*	Hertweck Award (best fossil display)
“Behold the Lovely Abalone”	Martin Tremor/Conrad Forier	Mote Gold Trophy
“NW Gulf of Mexico Beauties”	Doug Thompson*	DuPont Trophy
“Living Cowries with Mantle”	Linda Greiner*	Best Small Scientific Award
“Florida Horse Conch”	Doug Thomson*	Best Self-Collected Award
“Distorsios”	Ron Bopp*	Sarasota Shell Club Award
“Fernandes’s Frog Shell”	Linda & Jim Brunner	Shell of the Show
“Florida Tree Snails”	J.R.Shafer	Judges Special Ribbon
“Bivalve Hinges”	Ron Bopp*	Judges Special Ribbon
<i>Pseudadusta metae</i>	Mike Herron*	Fossil Shell of the Show

Note: An * behind the name indicates a club member.



Above: Doug Thompson receives the COA Award from Donna Cassin.



Above: Linda Greiner with her Best Small Scientific Award display, “Living Cowries with Mantle.”

Below: A portion of Doug’s very colorful, well researched, and educational exhibit, “Florida Spiny Oysters.”



Below: The shell of the show, an uncommon *Bufo naria fernandesi* Beu, 1977, by Linda & Jim Brunner.



2012 Marco Island Shell Club Shell Show

adapted from information on the club web site:

<http://www.marcoshellclub.com/>



The highlight of the season for members of the Marco Island Shell Club is the Annual Shell Show - a truly wonderful event! This is a juried show where both fascinating scientific exhibits of shells from around the world are featured as well as breathtaking artistic creations. Ribbons and trophies are awarded for the best items submitted in a wide variety of categories. Shell flower arrangements, shell critters/caricatures, and jewelry are available for purchase as well as specimen shells. The show is a gift shop like no other! All proceeds from the show support the scholarship and grant programs for marine biology at local colleges and universities, providing scholarships annually to undergraduate and graduate students who study marine biology at local colleges and universities. Students in these programs study the environmental sciences and marine life found here in southwest Florida as close as the Ten Thousand Islands. Students at our own Florida Gulf Coast University benefit from these scholarships.

In 2011 The Marco Island Shell Club donated \$25,000 to fund an endowment scholarship at Florida Gulf Coast University that will generate a \$1,200 annual scholarship. In addition, \$3,000 was donated to FGCU to fund the \$500 undergraduate competitive research scholarship and the \$2,500 graduate competitive research scholarship for deserving marine biology students. In all the Marco Island Shell Club will have distributed over \$30,000 for scholarships and grants in 2011. Proceeds from the annual shell show and shell art sales fund these scholarships.

This year the shell show was held on 8 - 10 March 2012. Show Chairman was Paul Campbell. The winner of the COA Award this year was Gregory Curry, Sr. (from the Broward Shell Club) for "*Cymbium* of West Africa." His display was in four cases and extended over eight feet. The judges this year were Bob Lipe and Homer Rhodes. This year's event had over 2,000 attendees. The 'Shells of the Show' were a freak *Strombus alatus* by Amy Tripp and a *Dinocardium robustum* displayed by Charlotte Roman.

2012 Scientific Awards and Trophies:

Du Pont: Amy Tripp ("Uncommon to Rare Shells of Marco Is.")

COA: Greg Curry ("*Cymbium* of West Africa")

Board of Directors Best Shell of Show: Amy Tripp

Dr. William O. Reid (best aesthetic and scientific): Robert Pace

Jerome M. Bijur Trophy (best novice active member of MISC): Marge Tunnell

Best Exhibit of Miniature Shells: Jacob Mitchell

Scribner's Trophy (self-collected Marco Island shells): Dr. William O. Reid

Friends of Tigertail (self-collected Marco Island shell): Charlette Roman

Best Natural History Photo Display: Paulette Carabelli

Judges Merit: Bob Pace, Jacob Mitchell

2012 Artistic Awards and Trophies:

The Joyce Fitzpatrick Trophy (best novice): Carolyn Merrifield

The Bill and Edna Schwartz Hobbyist Trophy: Nancy Maney-Meer

The Floral Trophy (best commercial): Dominga Ong

The Shell Show Committee Trophy (best commercial-non floral): Constance Marshall-Miller

Best Single Sailor's Valentine: Brandy Llewellyn

Best Double Sailor's Valentine: Katie Stewart

The Mary C. Maerker Plaque (hobbyist active member): Georgia Lohmeyer

Honorable Mention: Patricia Schoonman, Patricia Shearman

Judges Merit: Sheila McFarland, Constance Marshall-Miller

Below left: Early show visitors marvel at the colorful displays.

Below right: A table of flowers - all made from sea shells.



St. Petersburg Shell Club awards list:

65th Annual shell show

25-26 February 2012 (photos courtesy of Randy Allamand)

Shell club meetings are held on the second Friday of the month at the Seminole Recreation Center, 9100 113th Street North, Seminole, Florida. The doors open at 6:30pm and the meeting starts at 7:00pm. The public is always invited.

Club President Martin Tremor thanked all participants and added, "A very special thank you for 'far beyond the call' to: Carolyn Petrikin, John and Cheryl Jacobs, Bob Horton, Peggy Dill, Bill Turner, Juliette Pastirjk, Marilyn Wall, Melanie and Ed Thoenes, Doug and Sandy Boddy, Conrad Forler, Alice Monroe, Robert Gould, and Bob and Betty Lipe (co-chairs for the show). These hard-working dedicated people made the show happen."

SCIENTIFIC JUDGES:

Jose Leal - Bailey Matthews Shell Museum
Bill Lyons - (Retired) Depart Environmental Protection

ARTISTIC JUDGES:

Kim Nealon - Graphic Artist from Sanibel
Helen Kwiat - Orlando Shell Club

NATIONAL MUSEUM OF NATURAL HISTORY AWARD: "In Search of the Acadian Sub-province" - Sheila Nugent

COA AWARD: "Florida *Liguus*" - J. R. Shaffer

DUPONT TROPHY: "Cypraeidae" - Kenneth Brown

FLORIDA MUSEUM OF NATURAL HISTORY: "Northwest Gulf of Mexico Beauties" - Doug Thompson

SHELL OF THE SHOW: "*Amoria grayi kawamurai* Habe, 1975" - Jim Cordy

SHELL OF THE SHOW - SELF-COLLECTED: "*Hexaplex fulvescens* (G.B. Sowerby II, 1834)" - Doug Thompson

SELMA LAWSON AWARD: "Self-collected Spiny Oysters of Florida" - Doug Thompson

DOROTHY HANSSLER AWARD: "Florida Caribbean Treasures" - Carolyn and Earl Petrikin

BEST EXHIBIT UNDER 10 FEET: "Apple Snails Love Cape Coral" - Sheila Nugent

EARL CLARK AWARD: "Historic Lewes" - Julia Allen Smith

JUDGES SPECIAL AWARDS:

Scientific:

"Those Amazing Conchs" - Pat and Bob Linn
"Shells Found Where?" - Carolyn Petrikin

Artistic:

"The Stars Will See Me Home" - Julia Allen Smith
"Contemporary Barbados" - Cheryl Whitten

ONE FAMILY, MAJOR: "Cypraeidae" - Kenneth Brown

ONE FAMILY, MINOR:

First - "Behold the Lovely Abalone" - Martin Tremor
Second - "Family Costellaridae McDonald, 1860" - Harry Berryman

ONE GENUS:

First - "Those Amazing Conchs" - Pat and Bob Linn
Second - "*Xenophora*, the 1st Shell Collector" - Harry Berryman
Third - "Haunting Beauty of the Harp Shells" - Martin Tremor

ONE SPECIES: "State Shell of Florida" - Doug Thompson

SINGLE SPECIMEN SELF COLLECTED:

First - "*Muricopsis zylmanae* (Petuch, 1993)" - Jim Cordy
Second - "*Conus granulatus* Linnaeus, 1758" - Doug Thompson
Third - "*Strombus gigas* Linnaeus, 1758" - Carolyn Petrikin

SINGLE SPECIMEN:

First - "*Amoria grayi kawamurai*" - Jim Cordy
Second - Carolyn Petrikin

BIVALVES: "Self-collected Tiny Spiny Oysters" - Doug Thompson

ONE REGION:

First - "In Search of the Acadian Sub-province" - Sheila Nugent
First - "Northwest Gulf of Mexico Beauties" - Doug Thompson

FLORIDA CARIBBEAN: "Florida Caribbean Treasures" - Carolyn and Earl Petrikin

JUNIOR: "Treasures of the Beach" - Marissa Linn

LAND AND FRESH WATER:

First - "Land Snails" - J. R. Shaffer
Second - "Apple Snails Love Cape Coral" - Sheila Nugent

SPECIAL: "Shells Found Where?" - Carolyn Petrikin

PHOTOGRAPHY:

First - "Feeding Frenzy" - John Jacobs
Second - "Let's be Friends" - John Jacobs

WALL HANGINGS:

First - "Contemporary Barbados" - Cheryl Whitten
Second - "Life Cast Ashore" - Pat Linn

SAILOR'S VALENTINES:

First - "Ode to Invictus" - Jane Santini
Second - "Historic Lewes" - Julia Allen Smith

TABLE ITEMS:

First - "Gift of the Sea Nymphs" - Cheryl Whitten
Second - "Floral Arrangement" - Cheryl Whitten

NOVELTIES:

First - "My Name Is Paisley (Torso)" - Caryl Renz
Second - "Flowers" - Brandy Llewelyn





The main hall as it appeared for the 'show' part of the shell show. There were lots of quality exhibits, reflecting a lot of study and hours of preparation by our exhibitors.



J.R. Shaffer won the COA Award for an amazing display of Florida *Liguus*.



Doug Thompson won multiple awards for his self-collected spiny oysters and his spectacular *Hexaplex fulvescens*.



Speaking of spiny oysters, these colorful *Spondylus americanus* Hermann, 1781, were offered up at Randy Allamand's table.



Long-time supporter of COA Donald Dan at his booth with an ever-present smile and lots of incredible shells.

A bit of catching up

Tom Eichhorst

While putting together this issue of *American Conchologist*, I ran across some images I had filed away two years ago, with every intention of sharing them in this magazine. Those who really know me know that my main filing system consists of various piles on my desk, other handy surfaces, and yes, even the floor. One of my granddaughters recently offered, "Grandpa, if you would like, I will help you clean up your office." All of this as a *mea culpa* in bringing you this story a bit late.

In 2010, COA member Rusty Stover entered a display she had created for the Sanibel Shell Show. She deservedly won a couple of ribbons for her efforts. Thankfully, then COA member, Ardeth Harden photographed this display and sent me the images. These pictures show a miniature 'Hall of Malacology,' complete with display cases, counter, bookcases, etc., all with very small shells. Those who attended last year's COA convention might remember Rusty Stover's informative and humorous talk on photographing micro-shells, so we know she is still interested in those small bits of calcium. Keep in mind when looking at these images that this entire display is less than 2 feet on a side and that those are real shells, small but real.





Captions seemed superfluous as these images truly do speak for themselves, but a few final thoughts seemed to be in order. First, please note that you can recognize many of the books on the bookcase. Yes, that is Peter Dance's "A Collector's Encyclopedia of Seashells," (third shelf up, far right) and his Eyewitness Handbook, "Shells," (second shelf up, far right). I leave the rest to you. They are in your bookcase, just many, many times larger. Second, I apologize again for the delay getting this out. This display needs to be seen (the *Megalodon* teeth brought a chuckle).

Tom Eichhorst

More Piggy-back Shells?

J. M. Inchaustegui

At the March 20, 2012 meeting of the Houston Malacological Society I saw on the Silent Auction table a peculiar murex labeled "Murex Sp." with 2 objects attached to the fronds. Even though it was a common shell, *Chicoreus brunneus* (Link, 1807), I decided to bid on it and try to outdo the other two collectors who had already bid. When the Silent Auction was finished I saw that I was the high bidder so I took it home to examine further. The two objects were little mussels attached to the shell by their light brown byssus. I tentatively identified the hitchhikers as *Septifer bilocularis* (Linnaeus, 1758), but what do I know about bivalves?

The spire of the murex is very damaged and worn, possibly caused by the bivalves rubbing against the spire while all 3 shells grew in size. The murex measures 57 mm and the bivalves 23 mm and 18 mm respectively. The mussels have a shiny, silvery blue interior. The outside colors mimic the dark brown and some cream of the *Chicoreus* making them well-camouflaged when in place. This brings to mind the little slipper shell (Crepidulidae) I found on a *Conus* that I reported previously in "Are those Mexican slippers?" in the September 2010 *American Conchologist*.

Together with the shells there was a little piece of paper that seems to have been cut from an old envelope flap. It appears to say "Allen Moleina, Gift of C. Boone, Use current ACO #." Inside the murex is the number, 1441, but there is no date or locality

given. Any information on these shells or the two individuals mentioned on the slip will be greatly appreciated.

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