

Vol. 42, No. 1, March 2014

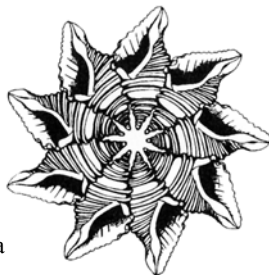
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# *American* **CONCHOLOGIST**



Quarterly Journal of the Conchologists of America, Inc.

# 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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AMERICAN CONCHOLOGIST, the official publication of the Conchologists of America, Inc., and issued as part of membership dues, is published quarterly in March, June, September, and December, printed by JOHNSON PRESS OF AMERICA, INC. (JPA), 800 N. Court St., P.O. Box 592, Pontiac, IL 61764. All correspondence should go to the Editor. ISSN 1072-2440.

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José Leal, President  
Conchologists of America (COA)

Dear José:

A nominating committee was constituted by COA Vice-President Harry G. Lee MD at the 2013 Sarasota COA convention and consists of Alan Gettleman, Chair, of Florida, Lucy Clampit of Texas, and Everett Long of North Carolina. The following individuals were contacted by members of the committee and have agreed to be nominated for COA elected offices to be voted upon at the 2014 Wilmington, North Carolina COA Convention:

President, José Leal, PhD  
Vice-President, Harry G. Lee, MD  
Treasurer, Steven Coker  
Secretary, Phyllis Gray  
Trustee, Bill Lyons

We are pleased the slate offered are talented and dedicated individuals who are already serving as COA Officers, and represents considerable management and conchological experience.

Thank you.

Sincerely,

Alan Gettleman, Chair

**Front Cover:** *Ficus ventricosa* (G.B. Sowerby I, 1825) on Isla Gubernadora, Panama. Sometimes called the swollen fig shell, this distinctive species is found from the Pacific coast of Mexico to Peru. Fossil specimens of a *Ficus ventricosa*-like fig shell have been found as far back as the late Oligocene (33.9-23 mya) in the Gatun Lake area of Panama.\* Photograph courtesy of Simon's Speciality Shells, Ltd (<http://www.simons-specimen-shells.com/>). Simon says the photo was taken at night as the *F. ventricosa* 'popped' out of the sand as the tide was turning.

**Back Cover:** Freshwater gastropods by Nuimal Bahar. This is a group often overlooked by collectors, and yet there are plenty of interesting species to be found in the world's freshwater streams, lakes, and rivers.

\* Woodring, W.P. 1957. Geology and Paleontology of Canal Zone and Adjoining Parts of Panama, *Geological Survey Professional Paper* 306-A, US Printing Office, Wash. D.C.

# WALTER'S STORY

## WALTER PAINE DONATES LIFE-LONG SHELL COLLECTION TO COA

By Edward and Gayle Nieburger

With immeasurable help from Editor-in-chief W. C. Paine

At the end of a mile long dirt road on the side of a hill sits a large white house surrounded by over three hundred acres of conserved land teeming with wildlife that recognize this area as a safe haven. 213 Palmer Road, Enfield, is located in Grafton County, New Hampshire, about fifty miles north of Concord, the state capital. Enfield was named in 1761 by settlers from Enfield, Connecticut, and became the site of a Shaker Community in the early 1800's. It is the heart of the Upper Valley region of New Hampshire and Vermont, and has benefitted from the fast moving waters of the Mascoma River. The house was built in 1803 by Benjamin Choate and his wife Mehitable, who lie nearby under a double headstone in a small well-kept graveyard. For the last forty years Walter Cabot Paine and his wife Barbara have treasured this location and protected its wildlife inhabitants.

At only ninety years of age, Walter's life has been a full one. He has managed to be the editor/publisher of a daily newspaper, a writer, a conchologist, an entomologist, a museum co-founder and board chair, a curator, a fund raiser for non-profit organizations, a philanthropist, a life-long sailor, and a licensed skipper. In his spare time, he enjoys building furniture in his workshop, skiing, hiking, and other outdoor activities.

Walter was born on May 9, 1923, in Chestnut Hill, Massachusetts, and grew up in the family home at 325 Heath Street in Chestnut Hill. Walter describes the house as "deceptively large: lengthy but much of it only one room wide." He was the eldest son of Richard Cushing Paine (1893-1966) and Ellen Peabody Eliot (1894-1987). He was named for his Uncle Walter, his dad's elder brother, who died tragically in a freak automobile accident shortly after graduating from Harvard. Walter's sister, Sheila Paine, was born in May of 1927. Another sister, Silvia Paine Constable and her twin, Richard Cushing Paine, were born on December 23, 1928. Richard became a collector of automobiles, especially brass-era cars, housed in his Seal Cove Auto Museum on Mt. Desert Island, Maine. After his death in 2007, a large part of his extensive collection was auctioned by Bonham's, at Maine's Owl's Head Museum. Walter's youngest brother, Charles William Eliot Paine, a noted horticulturist, directed the Cleveland Botanical Gardens from 1970-1983 and the Holden Arboretum from 1983-1995.

When these younger siblings came along, Walter was moved up to the third floor of the Chestnut Hill home where there was a spare room for his growing interest in nature. Here he discovered that night creatures were signifi-



Walter Paine and a few of his expertly curated shells.

cantly different from those seen by day. Placing a light in an open window, he learned, would attract all sorts of new insects. Unfortunately, one night he forgot to close the door to his sanctum. Instantly, all sorts of flying creatures, including a bat, invaded his parents' bedroom, to their great annoyance. Walter was busy wondering how the bat could fly so fast indoors without hitting anything. Looking back, he says such nocturnal adventures were what fired his life-long curiosity about nature.

The family property had a barn that Walter's rabbit, "Whiskers," shared with some lambs, Rhode Island red hens, and a goat called "Greenhorn" from his constant butting against his green-painted enclosure. The property as a whole became Walter's "magic kingdom" where the



real world often merged with the imaginary. He became a quiet, tireless observer, often oblivious of time. Early on, he learned not to intrude upon creatures' lives, but to allow them to gradually become accustomed to his presence. He still recalls the "shame and sorrow" of taking an innocent squirrel's life with a BB gun.

Walter is a direct descendant of Robert Treat Paine (1731-1814), a signer of the Declaration of Independence as a Representative from Massachusetts, who is buried in Boston's Granary Burying Ground with Paul Revere and other notables. Walter's maternal great-grandfather was Charles William Eliot (1834-1926), the longest serving President of Harvard University, who instituted the elective system and changed Harvard into a research institution. His son (Walter's maternal grandfather) was Charles Eliot, a noted landscape architect who assisted Frederick Law Olmstead with the design and creation of public reservations around Boston and in other cities. Walter's father, Richard Cushing Paine, financier and philanthropist, was a founding partner of State Street Research Investment Trust, the country's second incorporated mutual fund.

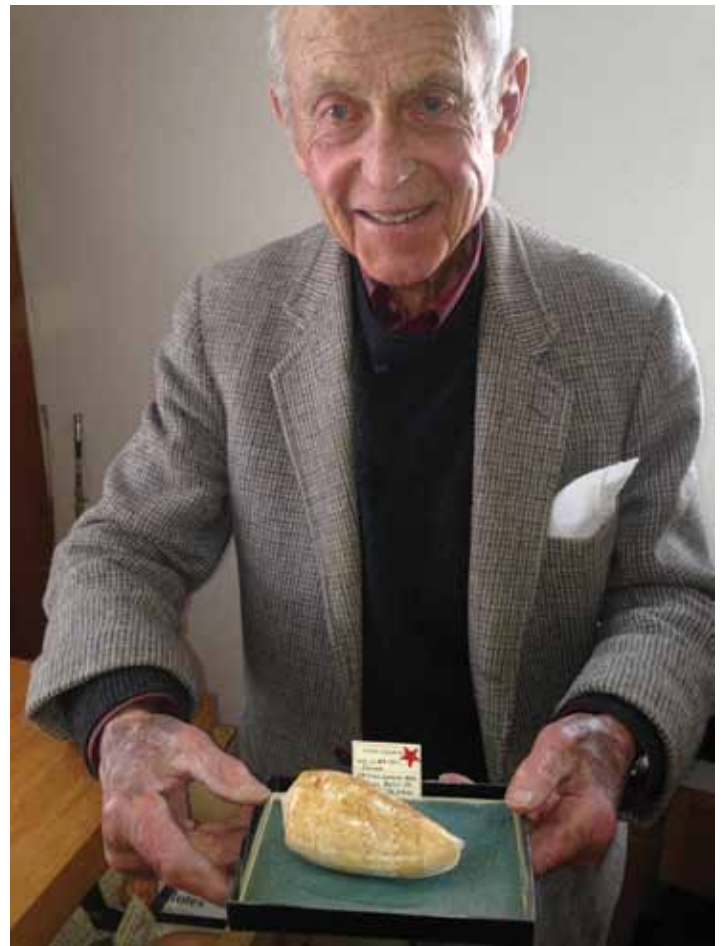
When the children were young, the Paine family summered at Manchester-by-the-Sea, on the North Shore of Massachusetts. Later, summers were spent in a cottage only a few feet from the sea at Seal Cove, West Tremont, Maine, on the southwest side of Mount Desert Island known as the "quiet side." It was during these summers that Walter began to explore life in and around the tide pools on Maine's rocky shores.

When he was twelve years old, Walter developed a kidney ailment. The family decided that the warm climate at his grandfather's house at Boca Grande, Florida, might do him some good. This was to be the start of something big! One night, as Walter was investigating the beach, he noticed someone with a light slowly walking towards him. Coming closer, he realized that the person was a stout lady who paused, from time to time, to pick up something with what looked like a bent spoon attached to a pole.

"So," she said, "I see that you too are looking for shells. I am Mrs. Crowninshield. Who are you?"

By a happy chance, Walter had met Louise Evelina Dupont Crowninshield, (August 3, 1877-July 11, 1958), the daughter of Henry A. DuPont and granddaughter of Eleuthere Irenee DuPont, the founder of the DuPont deNemours Company, and wife of Francis Boardman Crowninshield, a renowned yachtsman and member of the Boston Crowninshield family. Louise was born and raised at Winterthur, the family estate in Delaware. Although the Crowninshields had no children, her fondness for them was well known. Walter has fond memories of her kindness to him, especially because she gave him a beautiful *Junonia*, washed in after a storm. Still in his collection, it was the beginning of a life-time passion. Mrs. Crowninshield introduced young Walter to shell collecting and, possibly at that impressionable age, to something about kindness and generosity as well.

Walter attended schools in Brookline, Massachu-



**Walter Paine and a truly spectacular *Conus cervus* Lamarck, 1822.**

setts, until his early teens, when he was packed off for six years of boarding school. After that, he spent a year and a half at St. John's College in Annapolis, Maryland, before being called to active duty with the Army Air Corps. Brief though it was, Walter credits his time at St. John's with its all-required curriculum based on close reading of the Great Books of Western Civilization, as having taught him, (as he puts it) "Not *what* to think but *how* to think" about any given question. After St. John's, Walter served from 1944 to 1947 as a member of a gun crew aboard an aircraft repair ship attached to the 20th Air Force in the Southwest Pacific. Always one to take advantage of opportunities, Walter joined his buddies on shore leave, diving for cowries to make trinkets for the girls back home and learning the basics of SCUBA. Returning to the United States, he decided that, instead of finishing at St. John's, he would enter Harvard with advance standing and live at home, to be close to his family after such a long absence. Graduating with honors, he attended Columbia for graduate study in government and, newly married, he and his first wife settled into a New York apartment.

"In those days, I was always writing something," Walter recalls, "and had begun to seriously consider writing as a career." In one war-time letter home, he had described

how his ship managed to survive a particularly vicious typhoon off Okinawa. Believing it worthy, his father sent it to Ed Weeks, editor of *The Atlantic Monthly*, who published it. On the strength of that, Walter sought editor Weeks's advice. "You can write," Weeks told him "but you need the discipline of writing for a newspaper." This prompted a long and seemingly hopeless job search, until he reached Baltimore where, by a stroke of luck, the *Baltimore Sun* had just said goodbye to an editorial writer. Walter was given a chance to try out for the job and, to his surprise, was hired.

After three years, Walter decided to partner with another newsman, James D. Ewing, and go in search of a small daily newspaper that they could acquire. When nothing desirable turned up, after searching as far as the West Coast, the pair returned to New Hampshire where, owing to a death, the *Keene Evening Sentinel*, an old and respected daily, was rumored to be for sale. After some months of dickering, it was. Pooling their resources, Walter and Jim acquired it. It soon became apparent, despite their liking for each other, that their management styles differed. Leaving Jim to run the *Sentinel*, Walter left to find another opportunity. He found one not far from Keene: the *Valley News* in Lebanon, New Hampshire, circulation 3,000, back then the nation's youngest daily, covering the Upper Valley region of New Hampshire and Vermont. The paper was hemorrhaging red ink and the owner wanted out. In a leap of faith, Walter bought it, despite the departing publisher's unnerving assurance that, should the paper go under, he had "designed the building for easy conversion to an automobile showroom"!

Walter credits the paper's eventual survival to three things. First, he was able to come up with enough cash to cover annual losses. Second, he "beefed up" sports coverage, a common interest among readers in the thirty plus communities served by the paper on both sides of the river. And finally, the coming of Interstates 89 and 91, intersecting at White River Junction, soon attracted "big box" stores and ever increasing revenue from local advertising. Of the three, Walter believes the "open sesame" was the paper's heavy emphasis on covering sports. Each of the thirty-odd towns in the valley had its own sports team, and every parent wanted recognition for their child's accomplishments.

Over the succeeding years, circulation grew to 17,000, all the while being in competition, and sometimes in conflict, with the famous William Loeb of the much larger Manchester *Union-Leader*, to the south. Eighteen years after identifying the *Valley News*, as "The Newspaper of the Upper Valley," Walter realized that his concept of the Upper Valley as a region had become a reality. Dozens of regional businesses and institutions adopted the description "Upper Valley." In 1971, the first phone book for the "Upper Valley" came out, with just eight Upper Valley listings. Twenty years later the telephone book had almost a hundred and counting. Clearly the region's firm sense of place owes something to Walter's vision.

Walter spent twenty-four lively years as Editor-in-Chief and Publisher. Among other things, he mounted an

investigation into the accountability and practices of Lebanon's selectmen, which led voters to "throw the rascals out" and adopt a town council form of government. He retired in 1980, when the paper was sold to a small chain, Newspapers of New England.

Walter transitioned from his major career in newspapering to that of Museum Founder, Director, and Curator. His active interest in natural science overlapped his final seven years with the *Valley News*. One day, while trying to net some beetles on his lunch hour, Bob Chaffee, retiring director of the Dartmouth Science Museum, pursued him to voice his concern about the college's extensive natural science collections, then moldering away in the bowels of several campus buildings. Chaffee persuaded Walter to help him form a group to find a good use for them, possibly in the public schools. Walter ran with the idea, most likely because he knew the collections included a large number of mollusks! He assembled a small group of individuals interested in natural science to negotiate with the college. Happily, Dartmouth agreed to relinquish the collections to a volunteer group prepared to house and display them in an old Hanover bowling alley, where volunteers were soon busy making educational kits for circulation among public school science classes. With Bob's help, Walter recruited a board of individuals interested in science and Walter agreed to become chairman. One day, as Walter and Bob stood outside the new "museum," Bob asked "What shall we call it?" "Suddenly it came to me," Paine remembers, "why not call it the Montshire Museum of Science, based on the last syllables of VerMONT and New Hampshire?" "You've got it" Chaffee replied grinning. After several years, the bowling alley museum was overrun with visitors and obviously more spacious quarters were urgently needed. If a newspaper could succeed in two states, divided by a major river, Walter reasoned, why not a regional museum?

He envisioned a place where young and old could touch, feel, and learn about nature just as he had by being able to physically experience it. A visit to the "Exploratorium" in San Francisco confirmed the popularity of hands-on experience. Testing the idea with local leaders of hi-tech industry back home drew a positive response, encouraging Walter to spearhead a campaign that raised \$4.2 million to construct an inviting, barn-like building, filled with intriguing interactive exhibits for all ages.

As it happened, a hundred acre parcel of farmland, a perfect riverside site for the new museum, became available in Norwich, Vermont, just across the river from Dartmouth and very near the bridge to Hanover, New Hampshire. Today Montshire is a runaway success with 150,000 visitors last year, many of them from out of state. It has become one of the region's major attractions and is considered one of the anchor institutions of the Upper Valley. The name "Montshire" has proven so popular that it has been copied by multiple businesses in the area including, much to Walter's amusement, the water-treatment facility! Walter served as Chairman of the Board for sixteen years while helping to cu-



**Walter is Chairman Emeritus of the Montshire Museum of Science, Norwich, Vermont. He was also key in its founding, funding, and success.**

rate the beetle and mollusk collections. He is now Chairman Emeritus.

In July of 1979, Walter entered his 44' sailboat, *ALITA*, in a transatlantic race from Marblehead, Massachusetts, to Cork, Ireland, jointly sponsored by The Irish Cruising Club and the Cruising Club of America, of which he is a member.

"After close study of the monthly oceanographic charts," Walter recalls, "we decided to position *ALITA* as far to the Northeast as possible, where we would be most likely to catch the strongest following wind enroute to the infamous Fastnet Rock, a lighthouse marking the entrance to the Irish Channel."

"One doesn't forget the penetrating cold, the dungeon fog, and the awkward layers of clothing (in July!) off Cape Race," Walter recalls. "We were pushing *ALITA* hard downwind, safely south of the charted line, warning mariners of possible floating ice, when a large and smelly Russian fish-processing vessel suddenly popped from the dense fog. Hefty, female fish cutters lined her rails, shouting and waving in their babushkas, as we swept by."

Walter kept *ALITA* close to her top speed for most of the 3,000 plus miles to the Fastnet Rock where, maddeningly, the wind died, leaving her to struggle slowly up-channel to the finish line at Cork, escorted by a pod of small whales.

"We were very discouraged," he recalls, "having come so far, so fast. But in the end, we were delighted to learn that we were still first to finish in our class and a close second on "corrected time" (a method of making allowance for differences in boat size and age, intended to give all participants an equal chance).

"It was a great experience," says Walter, "and an outstanding performance by boat and crew, followed by a memorable cruise-in-company with warm and wonderfully



**The *MITRA*, Walter's 42,000 lb, 46 foot means of trawling, collecting, sorting, and cleaning in comfort and safety for 22 years. Taken at Sanibel, Florida, 1992.**



**A trawl haul on the *MITRA* off Boca Grande, Florida, 1972. Despite appearances, the net contains shells other than *Strombus pugilis* Linnaeus, 1758.**

hospitable Irish and British sailors along Ireland's picturesque but hazardous west coast."

Roughly half of Walter's shell-collection is self-collected. The rest were either purchased or traded with other enthusiasts on Pacific shelling trips. Walter has live-collected in Hawaii, the Fijis, the Marianas, Okinawa, the Solomons, Australia, Bermuda, Costa Rica, Spain, the Channel Islands, as well as the United States.

In 1984, Walter says, "having sold my sailboat, I decided to have a boat built that could be cruised by Barbara and myself and would also serve as an offshore research vessel, specifically equipped to trawl and dredge for mollusks." He had a boat built in Manset, Maine, by his friend Lee S. Wilbur, based on a proven offshore hull design, the Jarvis Newman 46 footer. Walter named the new boat *MITRA* after his favorite group of shells. With her hefty 42,000 lb. displacement, *MITRA* readily carried the





Walter collecting miters at low tide in the Solomons.

weight of a crow's nest for shallow water piloting and whale watching, a hydraulic A-frame to handle a dredge or trawl, a two-man wash table with changeable screens, and a small lab, equipped with freezer and aquarium, for onboard study. Walter adds, "Dredging is a slow, tedious business; we lost a dredge off the Tortugas, but still managed to bring home a number of smaller uncommon species. I gave whatever we found to my crew of shell enthusiasts in recognition of their hard work. The large trawl, much easier to manhandle than a 90lb dredge, proved very productive, especially in water under 100 feet, as for example, off Sanibel, where one haul produced a fine growth series of *Strombus pugilis* Linnaeus, 1758 and two *Mitra florida* (Gould, 1856) – one live and one dead."

"With 1000 gallons of fuel, a powerful Diesel and a water maker," Walter says, "I figured *MITRA* would take us to wherever and back in safety and comfort, thanks especially to her excellent double bed!" He describes this double bed as the most comfortable he has ever slept on. He had Barbara sleep on the inside so she would not roll out. The *MITRA* was used for twenty-two years, logging thousands of miles between Gray River, Newfoundland, and the Dry Tortugas, Florida, with Walter as her 100 ton licensed skipper. For their final cruise, Walter and Barbara completed a leisurely circumnavigation of New England, via the St. Lawrence River and Great Lakes, down through New York's system of locks and canals, thence to the Hudson River and back to Maine by sea.

In the fall of 2006, Walter sold *MITRA* to Walt and Kip Jones who had her rebuilt by Wilbur Yachts to face her next adventure, an east-west transit of the Northwest Passage that connects the Atlantic and Pacific Oceans. Renamed *GERALDINE*, her bow was reinforced with stainless steel to deal with surface ice. Her lab was converted into an area with a freezer and washer/dryer. She had a four hundred gallon water maker, a large furnace and defrost system, and new electronics. The Northwest Passage was first traversed in a three-year voyage by Danish Captain Roald Amundsen from 1903-1906 after many years of failed attempts. Af-

ter three and a half months and 7,666.4 nautical miles, the Jones' Family and *GERALDINE* made it to the West Coast, an outstanding achievement for a small boat, aided in part, by a softening of the ice from rising ambient temperatures.

In addition to his amazing shell-collection, Walter has maintained a keen interest in insects, especially Coleoptera (beetles). Some of these are on display at the Montshire Museum. The remaining collection, stored in 24 pest-proof drawers, has been given to the museum for research purposes.

Walter's curatorial skills show most clearly in his carefully organized cabinet drawers, where each specimen has a uniform identification card, with name, date, and place of collection firmly attached to each tray. It is much the same with his extensive collection of beetles, now over fifty years old. He learned early on to make labels resembling those he saw at the Boston Museum of Natural History. Friends of his parents often brought him back specimens from their travels. Particularly noteworthy was world-renowned herpetologist Dr. Tom Barbour (1884-1946) from Harvard's Museum of Comparative Zoology. He brought back colorful tree snails from Cuba and some weird insects from his tropical travels. Often, having downed a fulsome dinner and several glasses of wine, he would patiently puff his way up two flights of stairs to show young Walter the right way to mount, label, and conserve the critters he had collected. "Mother always looked a bit concerned when Barbour was coming to dinner," Walter recalls. "She worried about which dining room chair was most likely to support our large and demonstrative friend." Included in the shell collection are *Cypraea aurantium*, *Harpa costata*, *Lambis violacea*, *Strombus taurus*, *Eudolium bairdii*, and from the famous Riley Black dredgings, *Paziella pazi*. Self-collected specimens include *Purpura persica* from Apra Harbor, Guam, Mariana Islands, Southwest Pacific; *Purpura planospira* (eye of Judas) from Pacific Panama; and a fine, as yet unidentified, miter from the Solomons.

In May 1988, Walter was invited by his sailing friend, George Nichols, M.D., to join a research expedition to the Marquesas aboard *RAMBLER II*, a three-masted auxiliary schooner, in the capacity of reserve captain. As Walter says, "It was the chance of a lifetime, especially because several researchers from the Smithsonian were going along. Unfortunately, the sailing date was changed, and I couldn't make the trip. I lent them a small dredge, however, with instructions, and some strong advice about keeping good data. Some months later, I received a large box, together with a letter saying, 'sorry we lost your dredge, but we hope you'll like the enclosed results from diving among the islands.'" Inside were a great many shells in whirl packs, each with good data referenced to a more detailed notebook. I am happy that these specimens, from truly remote places, are included in my gift to COA."

In September of 1993, Walter had the rare opportunity to go down in the Smithsonian submersible, "*Johnson Sea Link II*," out of Harbor Branch, Florida, to San Salvador,



**Walter and Ed (one of your authors) in Walter's shell room, looking over material to be donated to COA.**

Bahamas, with Jerry Harasewych, to collect slit shells. With pilot and photographer also on board, they were successful during several dives per day and by night, over a two-day period off Egg Island, Bahamas. From the examples collected, it seemed that the varied color of the shells was the effect of diet. Walter added *Entemnotrochus adansonianus* (Crosse & Fischer, 1861) and two beautiful specimens of the rare slit shell *Bayerotrochus midas* (F.M. Bayer, 1965) to his collection from this wonderful opportunity.

Walter describes the deep-water experience as “altogether magical; gradually you leave the world you know to enter another, where it is very cold, very dark, and one has brief but startling glimpses of some very eerie creatures which appear to be ‘communicating’ with intermittent flashes of self-generated light. When the sub switches on its powerful lights, the picture changes, revealing steep canyon walls clothed in parti-colored algae under a soft rain of detritus from the world above and where, here and there, one can make out the exciting outline of a slit shell.” In addition to the remarkable shells, Walter has an ordinary styrofoam cup that was fastened to the sub's exterior for the dive. When the sub resurfaced, the cup was reduced to mini-size by 1112.52 pounds per square inch pressure at a depth of 2500 feet!

In addition to his other attributes, Walter has written for diverse publications including *The Atlantic Monthly*, *Harvard Magazine* (poetry), *Sail*, *Boston Globe*, and *Christian Science Monitor*. My favorite is his memoir: *Cousin John: The Story of a Boy and a Small Smart Pig* (Bunker Hill Publishing Company, December 15, 2012, Illustrated by Bert Dodson). This delightful story was written for his grandchildren, but readers of any age would enjoy it. Unlike the cool relationship Walter's dad had with his own father, he tried to build a warmer one with his “naturalist” son by bringing home a “runt” pig as a gift for Walter's tenth birthday. Together, they named him “Cousin John.” CJ soon became a constant companion on Walter's excursions, and, as Walter says, “I learned how smart pigs really are.”

Walter has been broadly involved in the develop-



**Walter and Barbara have downsized from their home on over three hundred acres of conserved land.**

ment and integration of the Upper Valley. In addition to his years as founding chairman of the Montshire Museum of Science, he has served on the governing boards of the United Way, Hitchcock Foundation, Vital Communities, Ellis Phillips Foundation, and more recently as Vice President and Treasurer of the Lebanon Public Libraries Foundation, the funding arm of the new Kilton Library. He walked up and down West Lebanon's Main Street urging merchants to support the new library, despite the recession. He established a fund at the New Hampshire Charitable Foundation, which provides unrestricted dollars for statewide projects. He also served eight years as the Vermont Governor's appointee to the Board of the University of Vermont, where he chaired the Education Committee. In 1991, he received the Granite State Award for Outstanding Public Service from the New Hampshire University System. This was followed, in 2009, by the Elizabeth McLane Bradley Award for his service with non-profits in the Upper Valley.

Walter says that “public service continues to be its own reward and my greatest satisfaction.” In donating his remarkable shell collection to COA, he hopes that “it will increase the amount of support available to students and researchers in the intriguing realm of conchology.” On behalf of COA, we thank him for this most generous gift.

Walter is the father of five grown children and grandfather of eight grandchildren scattered across the country. He and his wife, Barbara, have moved down the hill to a recently completed single-floor, state-of-the-art home with cork floors and radiant heat, across the road from a large pond where they can continue to observe and protect the wildlife. When we were told they were moving to smaller quarters, we erroneously thought that meant some sort of senior housing. It was Barbara who set us straight: “not for me --- ever,” she said. Bravo to a remarkable and determined couple! May they have many more years of health and happiness in their cozy quarters!

*The authors thank Harry Lee and Tom Eichhorst for their assistance in proof-reading.*



## Some of the COA auction shells, all but the

Clockwise from upper left: *Strombus goliath*, *Conus excelsus*,  
*Chicoreus ramosus* (donated by Sue Hobbs), & *Lyria cloveriana*.



## *Chicoreus ramosus* are from Walter Paine

Clockwise from upper left: *Conus nobilis victor*, *Conus granulatus*, *Mitra inquinata*, *Conus nocturnus*, *Conus thailandis*, & *Lambis violacea*. Photographs by John Timmerman.



# The protoconch and early teleoconch whorls of *Cerithiopsis greenii* (C. B. Adams, 1839) (Mollusca, Cerithiopsidae)

Marlo F. Krisberg and Harry G. Lee

Recently Rolán, Lee, Krisberg, & Fernández-Garcés (2012) published a review of the brownish *Cerithiopsis* in the Caribbean and adjacent regions that focused on the protoconch and initial teleoconch whorls to distinguish among species. Since the lectotype of *Cerithiopsis greenii* (C. B. Adams, 1839) is decollate, the authors relied upon a specimen with a complete protoconch collected in 2010 from Weekapaug Point, Rhode Island, located about 65 km from Adams's type locality (Dartmouth Harbor, Massachusetts, USA) that they believed was indeed Adams's taxon. They presented SEM images of the Weekapaug specimen with descriptive comments of the protoconch and early teleoconch whorls. At the time the review was published, there remained some doubt in one author's mind (Krisberg) that the lectotype and the Weekapaug specimen were the same taxon. The doubt arose from Adams's description to the effect that the first teleoconch whorl displayed only two elevated spiral lines, whereas the SEM images of the Weekapaug specimen clearly show three. The purpose of this paper is to recount the subsequent research to resolve this discrepancy and validate that the Weekapaug specimen conforms exactly to the lectotype regarding the key sculptural characters of the first teleoconch whorls and, therefore, can be confidently relied upon to form the basis of a more comprehensive description of *Cerithiopsis greenii* (C. B. Adams, 1839).

*Cerithiopsis greenii* (C. B. Adams, 1839) was described from "several specimens" from "seaweed ... rinsed in a bucket of water." The seaweed was "obtained ... in the harbor of Dartmouth" on Aug. 29, 1838. Adams's description was apparently derived from this group of syntypes. Clench & Turner (1950) [hereafter C&T] confirmed that, "When several specimens of a species were involved, (Adams) drew upon all of them for his diagnoses" and he did not "set aside the specimen ... to be the holotype ... to represent the species." Regarding specifically the material Adams collected and described as *C. greenii*, he indicated that the several specimens were divided between the "Cabinet of the Boston Society of Natural History, and my own." The Boston Society of Natural History eventually became The Museum of Science (Boston), which to our knowledge does not have a mollusk collection, and we could not find records of them having had Adams's material or disposition of it. C&T indicate that Adams's "collection, which was at his alma mater, Amherst College, for nearly ninety years, was

Search My Stuff Help

Malacology 156202 in Dartmouth North America, United States, Massachusetts [date unknown] (1700-01-01 - 2100-01-01)

shell (dry) Login or Create Account [Return to results]

Identifiers malacology accession number: 1173

Part Name	Condition	Disposition	Remarks
shell (dry)	unchecked	in collection 1	

reference: Adams, C.B. 1839. Bos. J. Nat. Hist. 2: 287-288, pl. 4, fig. 12. Clench, W.J. & R.D. Turner. 1950. Occ. Pap. Mus. 1 (15): 289-290, pl. 37, figs. 17, 18.

Remarks: Three photographs of specimen in lot

Media

Continent/Ocean: North America  
Country: United States  
State/Province: Massachusetts  
Specific Locality: Dartmouth  
Verbatim Locality: USA, Massachusetts, Dartmouth  
Collecting Source: wild caught  
Collecting Date: [date unknown] (1700-01-01 - 2100-01-01)

Fig. 1 - Lectotype specimen record, *Cerithiopsis greenii*.

deposited in the Museum of Comparative Zoology in 1942." In preparing their 1950 paper, C&T relied upon Adams's collection at the Museum of Comparative Zoology (MCZ), where William Clench was at the time Curator of Mollusks, and material not extant in the Adams collection, which at that time resided at the United States National Museum (the Smithsonian Institution). As part of their effort, for many species, C&T designated a specimen from Adams's type series to be a lectotype. In the case of *C. greenii*, Adams appears to have relied upon a type series he divided between the "Cabinet of the Boston Society of Natural History and his own collection, with only a single specimen remaining in his collection when it was deposited in the MCZ. This specimen is the lectotype of *C. greenii* designated and photographed by C&T (see Fig. 1 - a screen shot of the MCZ record extant on October 31, 2013). It is C&T's black and white photographs noted in the "Remarks" section of the MCZ record that have been presented by so many workers to illustrate *C. greenii* (see Fig. 2, with permission Museum of Comparative Zoology, Harvard University - ©President and Fellows of Harvard College).

So, with the publication of C&T we had Adams's original description of *C. greenii*, his drawing and C&T's photos of the lectotype, which was decollate.

*Cerithiopsis* is a rather speciose genus along the US Atlantic coastline, and many of the species have very, very similar sculpture subsequent to the first two teleoconch whorls, especially given the within-species variations that





Fig. 2 - Clench & Turner photos of lectotype, *C. greenii*.

can occur. For this reason, distinguishing *Cerithiopsis* requires detailed knowledge of the sculpture of the protoconch and first two teleoconch whorls. In the absence of type material that can be examined to verify or question Adams's description of the "apical [sic]" whorls (protoconch) of *C. greenii* as "nearly white and pearly," we have to accept this description of such a key character as accurate and question any shell that lacks such a protoconch as being conspecific. We accepted the task of locating specimens from the type or a proximate locality that matched this character. As part of this effort, we also reviewed popular presentations of "*C. greenii*" published subsequent to C&T to see if they presented illustrations or descriptions consistent with Adams.

Abbott (1974) presented a *C. greenii* with C&T's photo of the lectotype, but a description that is inconsistent with Adams's in several respects. Abbott described his taxon as "glossy-brown" (vs Adams's "blackish red"), "9 whorls" (vs Adams's "about twelve," although Adams appeared to have included the protoconch whorls in his count and Abbott probably did not), and protoconch "translucent-brown" (vs Adams's "nearly white and pearly"). Abbott reported his taxon as "Common in shallow water" with a range that includes "both sides of Florida." Despite extensive collections throughout Florida over the past few decades, we have not been able to document specimens from Florida that conform to Adams's description, particularly regarding the protoconch and first teleoconch whorl, which are the essential characters in distinguishing *Cerithiopsis*.

Rehder (1981) presented a *C. greenii* with a photo of three specimens without collection data. The specimens in the photo resemble the lectotype of *C. greenii*, but

lack sufficient detail to clearly distinguish the protoconchs, except that they clearly are not "nearly white," but translucent brown to dark brown. Rehder's description ignores the protoconch and indicates the color to be "shiny brown" as opposed to dark brown or blackish red, which would be closer to Adams's taxon. Rehder's taxon (which he placed in Florida as did Abbott) may be the same as Abbott's, but we doubt either is Adams's *C. greenii*.

Rolán and Espinosa (1995) (R&E) presented a review of brown *Cerithiopsis* of Cuba that included many U.S. Atlantic coast species. They reported a taxon as *Cerithiopsis* cf. *greenii*, shells of which "agree with the characters mentioned in the original description" and "is closer to that of the original figure, but they differ slightly from the lectotype..." Because the lectotype differed from the Cuban specimens by being "lighter in color and has the lower series of nodules larger," and the inability to compare protoconchs (the lectotype is decollate), R&E could not conclude the two were conspecific. R&E's paper is also mentioned because it illustrates the difficulties when an original description is based upon syntypes (generalized descriptions of characters varying among several specimens) rather than a single specimen representing the most typical characters. These difficulties are aggravated when a lectotype is designated that may vary in characters (or have missing parts) from the generalized or typical characters described in the original description. In the case of *C. greenii* the protoconch is illustrative. For *Cerithiopsis*, the features of the protoconch are absolutely essential in distinguishing among species. Adams reported that the material he used to describe his taxon were "several specimens" from "seaweed ... rinsed in a bucket of water." It is clear his specimens were live collected and not beach shells. Since he collected and described his material within several months, it is unlikely the color of the protoconchs would have changed significantly. Adams reported the "apical [sic]" whorls as "nearly white and pearly." R&E commented that the protoconchs of the beach shells they collected "might be seen as being nearly white and pearly." R&E reported that the decollate lectotype retained a "small part of the protoconch" and was a "light brown colour." It should be noted here that Adam J. Baldinger, Curatorial Associate/Collection Manager, Malacology Department, Museum of Comparative Zoology, Harvard University, examined the records with the lectotype for us and confirmed that the photos utilized were black and whites and, based upon the hand writing on the back of the photos, were taken by Ruth Turner. Therefore, since R&E reported a light brown color for the remaining portion of the protoconch, we have to conclude that their observations about the lectotype were based upon examination of the actual type specimen. R&E indicated that while most of the shells in their material had the protoconch totally or partially broken, "the visible part ... is light brown." They did not report the color of the en-

tire protoconch of their specimens. Since Adams used the plural in describing the apical whorls of *C. greenii*, could it be that the upper ones were “nearly white,” the final one or final portion of it was light brown, and he did not make this fine a distinction in his description? A change in color on the final protoconch whorl occurs in other brown *Cerithiopsis* along the Atlantic coast (Rolán & Espinosa, 1995). There is just no way to know for sure if the lectotype is typical for Adams’s taxon regarding the protoconch or if it was atypical with the last whorl being light brown. Another difficulty with Adams’s description as compared to the lectotype was also noted by R&E. Adams commented regarding the teleoconch that it had “three revolving elevated lines” with granules, where the granules on the lower line were rather large and those on the upper line “less than the middle series; the upper series nearer to the middle one, and **obsolete on the upper whorls; the lower series appearing first in the progress of growth** (emphasis added).” This language is interpreted to mean Adams discerned only two nodose spiral cords on the first, or first and second teleoconch whorls. In describing their taxon, R&E emphasized the difference in size of the spiral nodules and did not specifically address the number of spiral cords on the critical first two teleoconch whorls. In comparing their taxon to the lectotype of *C. greenii* and other similar *Cerithiopsis*, however, R&E implied there were three on the lectotype with the words “... the lectotype of *C. greenii* shows the middle and upper spiral cords to be closer together on the early whorls.” Unfortunately, R&E used the term “early whorls” and did not specifically identify the critical first or first two teleoconch whorls. At this point in the story, we agree with R&E and doubt their specimens are conspecific with *C. greenii*.

Redfern (2001) presented specimens from Abaco, Bahamas, he labeled as *C. greenii* with “a pale brown protoconch.” Otherwise, the description of his specimens closely fits Adams’s taxon. Redfern commented, “other workers have questioned the range of true *C. greenii*, which was described from Massachusetts, and this name is applied very tentatively to Bahamian material.” We share Redfern’s doubts that his specimens are Adams’s *C. greenii*.

Tunnell, Andrews, Barrera & Moretzsohn (2010) presented a taxon as *C. greenii*. Its “brownish” protoconch and the disparity of description with the photo (described as having two cords on first teleoconch whorl, but the photo appears to show three) makes us lack confidence that the use of the label *C. greenii* was appropriate. We doubt that Tunnell, Andrews, Barrera & Moretzsohn’s taxon is Adams’s *C. greenii*.

L. Perry (1940: 129; pl. 27, fig. 190) shows a shell, presumably from southwest Florida, sculptured with fine, closely-spaced granules and only the final (dark) protoconch whorl persistent. The detail of the earliest teleoconch is not evident, but the three spiral rows of beads are mutually equidistant on the last three whorls, the beads of each are of es-



Fig. 3 - Specimens of *C. greenii* from Weekapaug.

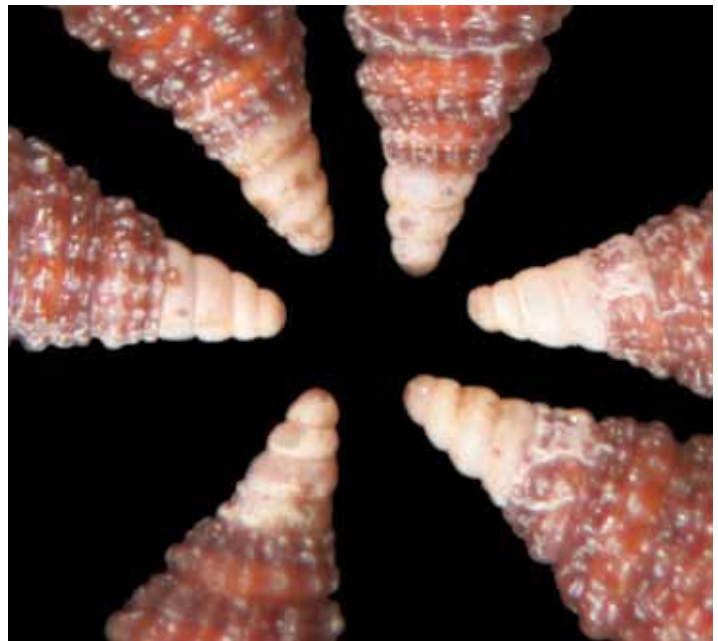


Fig. 4 - Close up view of the protoconchs on specimens of *C. greenii* from Weekapaug.

entially the same size. Given the protoconch coloration and the marked sculptural differences, we conclude that is not *Cerithiopsis greenii* (C. B. Adams), Perry’s identification notwithstanding.

We note that De Jong & Coomans (1988), reporting on Gastropods from Curacao, Aruba and Bonaire, Lyons (1989), reporting on Mollusks from the middle eastern Florida coast, Lee (2009), reporting on mollusks from north-eastern Florida, and Zang (2011), who treated the marine shells of Antigua and Barbuda, did not report taxa as, or being similar to, *C. greenii*.

Rolán, Lee, Krisberg & Fernández-Garcés (2012) published a review of all the then named brownish *Cerithi-*





**Fig. 5 - *C. greenii* lectotype (MCZ). Photo by Jennifer Lenihan, courtesy of Malacology Department, Museum of Comparative Zoology, Harvard University.**

*opsis* from the NE USA to Brazil, including specimens considered to be the true *C. greenii*. To our knowledge, prior to this time, there had not been a successful effort to collect specimens from the type or a proximate locality and to accurately validate, document and illustrate specimens that matched Adams's description, particularly with "apical [sic]" whorls "nearly white and pearly." Fortunately, Lee had secured a substantial lot of *Cerithiopsis* specimens collected in September of 2010 from Weekapaug Point, Rhode Island, located about 65 km from the type locality (Dartmouth Harbor, Massachusetts, USA). The specimens in the lot very closely fit Adams's description of *C. greenii*, including all those with complete protoconchs that were "nearly white and pearly" (Figs. 3 and 4). The only discrepancy was that the Weekapaug specimens have three spiral cords on the first and second teleoconch whorls versus Adams's description of only two revolving elevated lines on the upper whorls. We also had R&E's intimation that the lectotype had three. We use the word "intimation" because Rolán indicated in personal correspondence (Nov 2013) that he could not locate his pertinent notes and could not definitively recall if his 1995 report implying three spiral cords on "the early whorls" of the lectotype indeed included the first teleoconch whorl. The R&E findings regarding the number of cords on the early whorls and our interpretation of C&T's photos gave us sufficient confidence that Adams may have erred, and we were satisfied that the Weekapaug specimens



**Fig. 6 - Lectotype of *C. greenii* (left) compared directly with Weekapaug specimen.**



**Fig. 7 - Views of protoconchs of three specimens of *C. greenii* from Weekapaug.**

were indeed Adams's taxon, and that *C. greenii* is a valid species distinguishable from those similar specimens with light brown protoconchs from Florida and south reported by others. Krisberg, however, had reservations and sought to confirm the characters on the first few whorls of the lectotype in order to erase any doubt. Adam J. Baldinger, Curatorial Associate/Collection Manager, Malacology Department, Museum of Comparative Zoology, Harvard University, was contacted, and he agreed to provide new photos of the lectotype for our analysis. Photos taken by Ms. Jennifer Lenihan were provided, one of which is presented in Figure 5 with permission of the Museum of Comparative Zoology, Harvard University - ©President and Fellows of Harvard College. The photo of the first two teleoconch whorls (Fig. 5) confirms R&E's observation that there are three spiral cords on each with, as Adams described, "the upper series nearer to the middle one." This confirmation that Adams erred in his observation and that his taxon does indeed have three spiral cords beginning on the first teleoconch whorls eliminated any doubt that the Weekapaug specimens were indeed

Adams's *C. greenii*. Figure 6 provides a direct comparison of a Weekapaug specimen with the lectotype showing essentially identical sculpture on the first three teleoconch whorls, including the same color emphasis and "rather broad, impressed (suture), divided by a revolving black ridge, which is obsolete between the upper whorl..."

With confidence that the Weekapaug specimens are indeed Adams's *C. greenii*, and our closer examination of the lectotype, we have corrected Adams's error regarding the sculpture on the "upper whorls" and can expand the description of the protoconch. Figure 6 presents a direct comparison of the decollate lectotype of *C. greenii* to a Weekapaug specimen with a complete protoconch. Figure 7 presents several more photos of the protoconchs of the Weekapaug specimens. The protoconch of *C. greenii* consists of 4 to 4½ smooth, "nearly white and pearly" whorls. The tip of the protoconch has a reddish brown coloration, and the final protoconch whorl may be colored with light brown or reddish brown.

Based upon a review of the literature cited and our own collections, we can find no evidence for the occurrence of *C. greenii* in the SE USA or Caribbean waters and suspect it to be limited to a portion of the NE coast of the USA and possibly adjacent Canadian waters.

#### Acknowledgements

Adam J. Baldinger, Curatorial Associate/Collection Manager, Malacology Department, Museum of Comparative Zoology, Harvard University, provided up-to-date information on the lectotype records, and Ms. Jennifer Lenihan, Assistant to Mr. Baldinger, took the photo of the early whorls of the lectotype. Dr. James T. Carlton and R. Rock-Blake of Williams College, Mystic, Connecticut, collected the Weekapaug specimens and shared them with us. We thank them all for making this analysis and improved understanding of *C. greenii* possible.

#### References:


- Abbott, R. Tucker. 1974.** American Seashells, Second Edition, Van Nostrand Reinhold Company.
- Adams, C. B. 1839.** Observations on some species of the marine shells of Massachusetts, with descriptions of five new species. *Boston Journal of Natural History* 2: 262-288, pl. 4. <<http://www.biodiversitylibrary.org/item/100573#page/264/mode/1up>>
- Clench, William J. and Turner, Ruth D. 1950.** The Western Atlantic Marine Mollusks Described By C. B. Adams. *Occasional Papers On Mollusks*. Vol 1, No. 15: 233-403 incl. pls. 29-49. 26 June. <<http://www.biodiversitylibrary.org/item/32851#page/251/mode/1up>>
- De Jong, K. M. and Coomans, H. E. 1988.** Marine Gastropods from Curacao, Aruba and Bonaire. Institute of Taxonomic Zoology, University of Amsterdam.
- Zhang, Deng Yan. 2011.** Antiguan shallow-water Seashells. MdM Publishing, Wellington, Florida. [vii] + 1-190

+ [xx].

- Lee, Harry G. 2009.** Marine Shells of Northeast Florida. Jacksonville Shell Club, Jacksonville, Florida.
- Lyons, William G. November 1989.** Nearshore Marine Ecology at Hutchinson Island, Florida: 1971-1974, XI. Mollusks. Florida Marine Research Institute No. 47.
- Perry, Louise M. 1940.** Marine Shells of the Southwest Coast of Florida. *Bulletins of American Paleontology*, V26, No. 95. Ithaca, NY.
- Redfern, Colin. 2001.** Bahamian Seashells: A Thousand Species from Abaco, Bahamas. Bahamianseashells.com, Inc: Boca Raton, Florida.
- Rehder, Harald A. 1981.** The Audubon Society Field Guide to North American Seashells. Alfred A. Knopf, New York.
- Rolán, Emilio & Espinosa, José 1995.** The Family Cerithiopsidae (Mollusca: Gastropoda) in Cuba 3. The genus *Cerithiopsis* s. l., species with brown shells. *Iberus* 13: 129-147. <<http://www.biodiversitylibrary.org/item/101509#page/447/mode/1up>>
- Rolán, E., Lee H., Krisberg, M. & Fernández-Garcés, R. 2012.** The Protoconch and Early Teleoconch Whorls of the Brownish *Cerithiopsis* (Mollusca, Cerithiopsidae) in the Caribbean and Adjacent Regions. *Xenophora* 139:11-16.
- Tunnell, John W. Jr.; Andrews, Jean; Barrera, Noe C.; and Moretzson, Fabio. 2010.** Encyclopedia of Texas Seashells: Identification, Ecology, Distribution, and History. Texas A & M University Press.

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**Quarterly devoted  
to Malacology**  
Edited by the  
**Société Belge de Malacologie**  
[Belgian Malacological Society]  
Founded in 1966

**Rue de Hermalle 113  
B-4680 Oupeye – Belgium**

Subscription (yearly)  
**Belgium: 43 EURO**  
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## *Neptunea Award*

Many of us are beginning plans for the 2014 COA Convention in Wilmington, NC. One of the many events on the agenda is the annual COA *Neptunea* Award(s), and it is once again my privilege to call for nominations.

The consensus of the COA Board is to reopen nominations with a “clean slate” annually. Nominees not selected in previous years are certainly welcome for consideration if re-nominated - in fact their re-nomination is encouraged. For the present cycle, nominations will close on June 1, 2014 so as to allow ample time for deliberation before the convention.

By way of background, the *Neptunea* Award (Brunner, 2000; Lipe, 2000) was established at the midyear (1999-2000) meeting of the COA Board in order to recognize outstanding and distinguished service to conchologists and malacologists in recognition of:

1. Service to the Conchologists of America.  
AND/OR
2. Service to the scientific interests of Conchologists of America.  
AND/OR
3. Service to the science of Malacology as it applies to conchologists anywhere.

Although notable exceptions have been made, the COA Board, which serves as the jury for the *Neptunea* Award, has traditionally weighed its consideration for award recipients toward (1) amateurs: those not currently pursuing a principal career involving collection, study, or commerce involving mollusks, (2) individuals “working behind the scenes” and relatively unrecognized, in the COA world, for their contributions, and (3) active members of the COA. Up to three awards have been made at our annual conventions beginning with the Houston event in 2000 (see below). Nomination(s) for the *Neptunea* Award may be made by any COA member, and the format is simple:

**Name of nominee:**

*This person deserves this award because* (Here a somewhat detailed paragraph will suffice.)

..... **Signed** .....

and either snailmail or email that nomination to the COA *Neptunea* Award Coordinator.

[currently Harry G. Lee / 4132 Ortega Forest Drive / Jacksonville, FL 32210 / shells@hglee.com]

**Previous *Neptunea* Award winners:**

2000 (Houston, TX): Ross Gunderson, Ben and Josy Wiener, Debbie Wills  
 2001 (Port Canaveral, FL): Emilio Garcia, Harry Lee, Lynn Scheu  
 2002 (Sarasota, FL): Richard Petit, Bernard and Phyllis Pipher  
 2003 (Tacoma, WA) Jim and Linda Brunner, Kevin Lamprell, Doris Underwood  
 2004 (Tampa, FL): Bobbi Houchin  
 2005 (Punta Rassa, FL): Richard Forbush, Anne Joffe, William Lyons  
 2006 (Mobile, AL): Jack Lightbourn, Betty Lipe  
 2007 (Portland, OR): none given  
 2008 (San Antonio, TX): Bill Frank, Archie Jones  
 2009 (Clearwater, FL) none given  
 2010 (Boston, MA): none given  
 2011 (Port Canaveral, FL): Alan Gettleman  
 2012 (Cherry Hill, NJ): Gary Rosenberg, Martin Avery Snyder  
 2013 (Sarasota, FL): David and Lucille Green, Marlo Krisberg, and Charles Rawlings

Brunner, L., 2000. The *Neptunea* Award. *American Conchologist* 28(3): 3. Sept.

Lipe, B[etty], 2000. Presidents Message. *American Conchologist* 28(4): 2. Dec.

Harry G. Lee  
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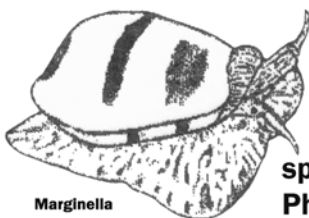


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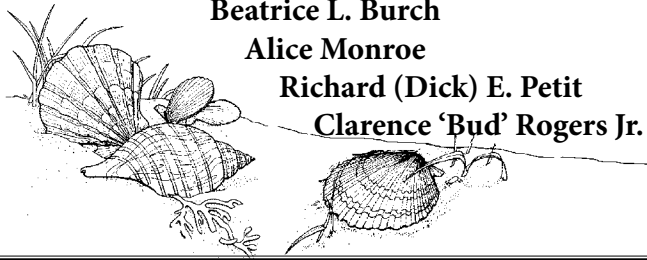
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*Our 31st Year*



**In Memoriam:****Dr. Roland Corey Anderson****Beatrice L. Burch****Alice Monroe****Richard (Dick) E. Petit****Clarence 'Bud' Rogers Jr.****Dr. Roland C. Anderson**

**(1946-2014)** was the son of a sea captain and grew up on the Kitsap Peninsula (across Puget Sound, west of Seattle). He became an avid naturalist and scuba diver, becoming fascinated with malacology - observing and studying octopi in the wild and in captivity for more than 30 years. Dr. Anderson received his undergraduate degree in biology from University of Washington, and his PhD in Marine Biology from Greenwich University. He served as a biologist at the Seattle Aquarium, retiring in 2009 after 31 years. He was an internationally recognized authority on cephalopods and author or co-author of more than 200 articles in scientific journals, including the book, "Octopus: The Ocean's Intelligent Invertebrate." He served as president for the Western Society of Malacologists, president of the American Malacological Society, a guest-editor for the journal, "Diseases of Aquatic Organisms," and was an avid member of the Pacific Northwest Shell Club. His wit and good nature will be missed, his practical jokes, maybe not so much. Dr. Anderson's ashes were scattered at sea.



**Beatrice L. Burch (1917-2013)** was born to Edith May and John Henry LaRue. Her parent's honeymoon in 1900 was to the Grand Canyon, where her mother then spent the next three years photographing the scenery of the canyon. This seems to have set the stage for Beatrice's interest in zoology and the natural world. She received her BA at the University of California, Los Angeles, in 1939, and her MS at the University of California, Berkeley, in 1941. While at Berkeley, her zoology professor told her to "look up and marry Tom Burch. The result was a wedding on Valentine's Day, 14 February 1942, a happy marriage for 72 years, with two wonderful children and a variety of assignments with her husband in the US Public Health Service to Guatemala, Liberia,

Venezuela, Mexico, Maryland, Arizona, and Hawaii. While in the Washington DC area, she became Chief of Laboratory for testing Salk Polio Vaccine at National Institutes of Health (1955-1960). Then she worked as a Zoologist at the Smithsonian Institution (1960-1965), where she set up the Smithsonian's Oceanic Sorting Center making marine animal collections available to scientists all over the world. She was the first woman to be sent to the Antarctic for the Smithsonian Institution to collect marine invertebrates - twice! She became an Instructor in Museum Methods at Arizona State University in Tempe, Arizona (1965-1970) and later in Hawaii she did environmental research for Hawaiian Electric Company and Chevron Oil, set up the Naval Oceanographic data center, and did shipboard collecting trips on the University research ship, NOAA vessels, and was chief scientist on several National Marine Fisheries vessels. She was a Zoologist at Bishop Museum in Honolulu (1980 -2001) before moving to Bremerton, Washington, to be near her children and their families.

**Alice Monroe (1957-**

**2013)** was born in Jackson, Tennessee, and earned her bachelor's degree from Duke University and master's from the University of South Florida. Her work towards a doctorate was cut short when she had to help care for her ailing father. She moved to Florida and along with her family duties she began her life-long interest in shells. Alice spent years as a counselor and eventually a director of youth camps in Wisconsin. She enjoyed working with high school and young college age kids and more than once commented on the joy of making something a student thought "too complex" into an understandable concept. A note for a resumé found by her family stated, "My life's goal is to distinguish myself as an educator with the unique ability to communicate seemingly complex material with elegant simplicity." In Florida this teaching desire brought her to the St. Petersburg Junior College. When it became a four-year institution, St. Petersburg College, Clearwater, she moved up to an associate professorship in biology. Of course, we knew she loved to teach because of the many varied and interesting programs she presented over the years at different COA conventions. She would take a complex subject like the chemistry of shell color and pattern and make it understandable. Alice helped out at shell shows, taught at local shell clubs, and won many awards for her shell displays. She was fascinated by the really unusual or fake shell. She was also willing to wear some unbelievably silly costumes to bring humor and fun to the opening ceremonies at our conventions. Alice was buried at sea, of course. She will be missed.





**Richard (Dick) E. Petit (1931-2013)** was born in Sumter, South Carolina, to James Thomas and Kate Paret Petit. He attended Clemson University and enlisted in the US Army, serving in Korea and Japan in the 1950s.

In 1956 he and his wife Elizabeth moved to North Myrtle Beach where he began a career in the insurance and real estate. His passion, however, was conchology or malacology - he could argue the case either way. He purchased a shell book dealership in 1965 and was soon the most knowledgeable and respected dealer of used shell books and periodicals. Shell collectors around the world looked forward to his catalogs in the mail. His shell family of choice was Cancellariidae, the nutmegs, but perhaps his most valuable works were his reports on the early luminaries of malacology. His works on the G.B. Sowerbys, Lowell Augustus Reeve, John Edward Gray, and others, not only shed light on the lives of these individuals, but more importantly answered many questions about their collected works. On the Internet, Dick authored *Conchologia Ingrata*, a website where critical works could be published on line. Dick was an elected fellow of the Linnaean Society of London and a life member of MENSA. Dick was a long-time supporter of COA and of this publication, offering critique and suggestion, and always willing to do his best to help improve our product. Dick leaves his wife of 57 years, Elizabeth, his daughter, Elizabeth, and a sister, Jennie, and brother, James.



**Clarence 'Bud' Rogers Jr. (1927-2013)** started shell collecting in the 1970's when work related trips to the Philippines introduced him to the beauty of sea-shells. He was instantly hooked and swapped clothing out of his luggage for *Charonia trito-*

*nis* and *Cypraea tigris*, as well as various *Murex*, *Voluta* and *Tridacna*. He earned a Masters Degree in Electrical Engineering from the University of Akron in Ohio and served

as an officer in the US Navy after WWII. Bud worked for Goodrich, Uniroyal, and Michelin Tire Companies and has several tire machine patents in his name. He was cofounder of Monitor Systems Engineering Corporation. Early in his career Bud and his colleagues at Goodyear Aerospace and NASA wrote a proposal to test the effects of space on early satellites and astronomical physics theory. The group received support and spent time building a mobile radio telescope satellite observatory.

Bud's wife, Ruth, took to shells as well and realized that it simply became a 'way of life.' In retrospect, Ruth could not imagine life without shells as they were the vector for so many good friends, memories and wonderful adventures. Bud became a member of the Cleveland Shell Club in 1991 and served as an officer for many years. He shared his knowledge and passion with fellow collectors and became a friend to many, opening his home and sharing his collection with CSC members. He traveled in search of shells and was often found in Florida at his winter home in Bonita Springs. Though fishing was a daily event, he often traveled to nearby shoals and the Florida Keys to collect shells. While in Florida, Bud became a regular at many of the south Florida shell shows. He even had a stint as a shell dealer. Bud competed and won awards at many shows. His interest in shells grew and at 65 he decided to get certified in scuba diving.

Bud's collection grew with the acquisition of the John Sennott collection and the June Huie collection, among others. He also became the recipient of a portion of the Harvey Bullis collection. This included a selection of Caribbean *Fusinus* and marked the start of two decades of focus on *Fusinus*, including a friendship and collaboration with Roland Hadorn of Switzerland, a *Fusinus* specialist. They published "Revision of recent *Fusinus* (Gastropoda: Fasciolaridae) from tropical western Atlantic, with description of six new species," in *Argonauta* in May 2000. Their revision included naming several species including: *Fusinus josei*, *F. marcusi*, and *F. coltrorum* in honor of the Coltro brothers of Brazil, as well as *Fusinus blakensis* and *F. harveyi*. In 1999 Roland published in *Vita Marina* a description of *Fusinus rogersi* to recognize Bud's contributions to Conchology and Malacology.

Bud's careers, hobby and life experiences took him to the Bahamas, Canada, Colombia, Cuba, France, Greece, Haiti, Honduras, Indonesia, Italy, Japan, Marshall Islands, Mediterranean Sea, Mexico, Philippines, Portugal, St. Vincent, Trieste, Turkey, and Venezuela - an impressive life of world travel. He was a dear friend, a mentor, a generous dealer and customer, a scientific contributor to the shell community, and an enthusiastic collecting 'buddy' always willing to go on the hunt. The conchology world will miss you, Bud. Sail on, sailor boy.

Louie Rundo  
rundol@bbhcsd.org



# 2014 COA Convention

**A North Carolina WHELKome  
Convention August 11 to 15, 2014**

**Tours & Dinner Cruises August 9 & 10  
Wilmington, NC**

**By Jeannette Tysor & Ed Shuller**

The Convention Hotel is the **Hilton Wilmington Riverside** on the Cape Fear River boardwalk. Room rates are \$114 per night (parking included) plus 13% tax. The rate is good for 3 days on both ends of the convention period. A limited number of one bedroom condos are available at the same rate in the **Riverview Suites**, a short block from the Hilton. Deadline for reservations at the convention rate is July 12, 2014. Group Code: COA. Group Name: Conchologists of America.

## Hotel Reservations

**Hilton Wilmington Riverside:** Local reservation number - 910-763-5900, or on line at - <http://www.hilton.com/en/hi/groups/personalized/I/ILMNCHF-COA-20140808/index.jhtml?WT.mc.id=POG>

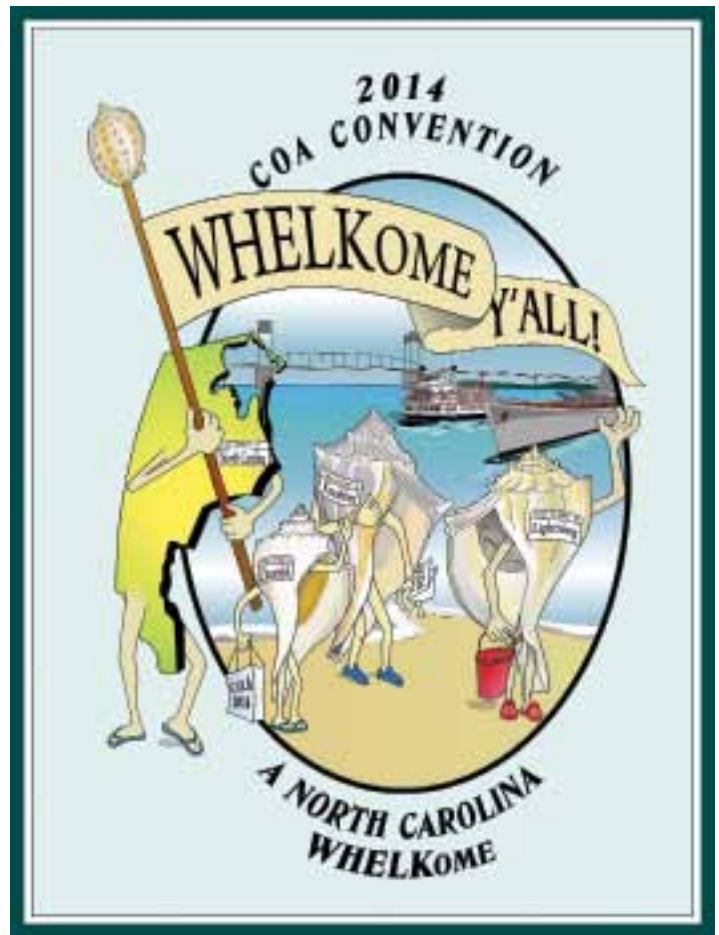
**Riverview Suites:** Local reservation number: 910-772-9988

For the Convention room rate **do not** use the Hilton Worldwide Reservation number.

Wilmington's history began prior to the American Revolution. Come early and enjoy discovering one of the South's earliest towns.

Saturday, Aug. 9: Dive trip, tour historic mansions, tour Civil War Ft. Fisher and NC Aquarium. In the evening relax aboard the catamaran *Wilmington* for an eco-tour of the Cape Fear River and a black water tributary with on-board picnic and cash bar.

Sunday, Aug. 10: Airlie Gardens and Cameron Art Museum and Bob Jenkins historical walking tour. The weekend highlight will be an elegant dinner cruise aboard the *Henrietta III*. Enjoy a delicious Southern buffet on our private deck. Cash bar.



**Above: the Hilton Wilmington Riverside.**

**Below: the catamaran tour boat *Wilmington*.**





Enjoy an elegant dinner cruise aboard the *Henrietta III*.

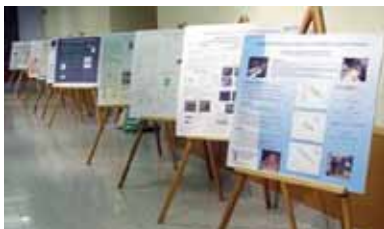
### Programs

We have an outstanding lineup of programs and speakers. Programs will include a mini-symposium on the molluscan diversity of North Carolina. Presentations will cover the terrestrial mollusks, freshwater mollusks, paleo-marine mollusks, and the Recent species found in the marine molluscan communities offshore in the convergent Virginian, Carolinian, and Caribbean Provinces. Other programs will provide updates on specific taxonomic groups including the Strombidae and Fasciariidae, and depict fascinating collecting experiences and specimens from around the globe. Our program chairman is still seeking a few more speakers to fill out the program. If you are interested in making a presentation, contact Doug Wolfe with your proposed title and a synopsis of the content. Presentations are restricted to 25 minutes maximum. email: dawolfe@ec.rr.com telephone: 252-728-3501



### Poster Session

Want to be an informal presenter at COA 2014? If so, you can be one of our Poster Presenters on Wednesday. Describe your research or mollusk related subject on a large poster board and display it in the general meeting room that day. Attendees will be able to peruse the presentations during breaks, lunch, and after the close of the business meeting. During viewing opportunities you should be available by your poster for discussion. Set up will be 8 AM



to 9 AM Wednesday; take down by 4 PM that afternoon. No audiovisual equipment allowed. If you have handouts, bring a sufficient supply. To reserve your space contact Douglas Wolfe at dawolfe@ec.rr.com, (252) 728-3501. Deadline: July 1, 2014.

### Welcome Party

Come prepared for a fun-filled Monday evening at our "Scotch Bonnet" Fling! *Semicassis granulata* was chosen as the official NC State Shell to honor the strong Scots-Irish heritage of the state, particularly of the Wilmington-Cape Fear River valley area where so many people settled. A Southern Comfort Buffet will be provided with BBQ and southern fried chicken. Cash bar. **Wear your kilts, skirts, sashes, knee socks, ties, or anything plaid for the Welcome Party. Special prizes will be awarded - don't miss it!**



### Banquet

For the first time ever, the banquet is included in your full registration fee. We anticipate a large crowd at the North Carolina lighthouse-themed banquet on Wednesday evening. You have four delicious meals to choose from: fish, chicken, beef, or vegetarian. Cash bar. An entertaining program is planned with after-dinner speaker, presentation of Mini Shell Show trophies and drawing for raffle prizes. There will be favors and door prizes. Come join all your friends for a festive evening of food and fellowship. For information contact Hazel Andress at hcaadress@triad.rr.com, (336) 449-6313.



### Auctions

**ORAL:** The Tuesday night oral auction will feature the most desirable selection of specimen shells, books, and other items in years. Highlighting the offerings are a selection of 40 items from the Walter Paine collection (see page 4). Among these are a number of rare, hard-to-find shells including: *Conus deburghiae*, *Conus excelsus*, *Conus granulatus*, *Conus*





*thailandis*, *Conus nobilis victor*, a very nice *Strombus goliath*, and a beautiful example of the volute *Livonia nodiplicata*. Other offerings include outstanding examples of *Entemnotrochus rumphii* and *Nodipecten magnificus*, a pair of lamps, each containing more than 50 *Scaphella dorni*, (not specimen quality) and a collection of North Carolina gastropods (horseconchs, whelks and tulips). Check the COA website for additional announcements.

**SILENT:** There will be five silent auction sessions. The quality and variety of material received so far promises something for everyone. All it takes is the winning bid.

### Mini Shell Show

Participate in the Mini Shell Show. With 10 categories from shells to crafts, there is a niche for everyone. Enter 1 or all 10. Exhibits must be small so you should have no problem bringing them. Fill out the Mini Shell Show entry form and return it with your registration. A trophy will be awarded in all 10 categories and presented at the Banquet. For information contact John Timmerman at njredstone2gr@hotmail.com, (910) 452-0943 (home). Deadline: July 31, 2014.



### Bourse

Leaving the best for last, we will have scores of dealers in over 10,000 square feet of floor space with shells and shell related items from around the world. The bourse will be from 1:00 PM to 7:00 PM on Thursday the 14th and 9:00 AM to 3:00 PM on Friday the 15th. Prices will undoubtedly range from less than \$1 to shells worth more than the average car in the driveway.



### COA 2014 Convention Schedule

Sat 09

6:30 AM to 3:00 PM - Dive trip - Limit 18, 2 dives, gear available for rent

9:00 AM to 4:00 PM - Ft. Fisher/NC Aquarium tour

11:30 AM to 3:00 PM - Mansions tour

5:30 AM to 9:30 AM - Black River eco-tour and picnic on the catamaran *Wilmington*

Sun 10

9:00 AM to 3:30 PM - Airlie Gardens and Cameron Art Museum tour

9:00 AM to 11:00 PM - Bob Jenkins historical walking tour

1:00 PM to 5:00 PM - Registration

5:30 PM to 8:00 PM - Dinner cruise on the *Henrietta*

Mon 11

8:00 AM to 10:15 AM - Registration

9:15 AM to 5:00 AM - Silent Auction 1

10:15 AM - Opening Ceremonies

11:00 AM to 4:30 PM - Programs, with break for lunch

6:00 PM to 9:00 PM - Welcome Party: "A Scotch Bonnet Fling"

Tues 12

7:00 AM to 8:45 AM - Mini Shell Show set-up, viewing

9:00 AM to 5:00 PM

7:30 AM to 8:45 AM - Club Tables

8:00 AM to 1:15 PM - Silent Auction 2

9:15 AM to 4:30 PM - Programs, with break for lunch

2:45 PM to 5:00 PM - Silent Auction 3

6:00 PM to 10:00 PM - Oral Auction

Wed 13

8:00 AM to 1:15 PM - Silent Auction 4

8:00 AM to 9:00 AM - Poster set-up

9:00 AM to 1:30 PM - Mini Shell Show, pick up exhibits

3:15 PM to 4:00 PM

9:15 AM to 3:15 PM - Programs and business meeting, with break for lunch

10:15 AM to 4:00 PM - Poster sessions during breaks

3:15 PM to 4:15 PM - Silent Auction 5

6:00 PM to 10:00 PM - Banquet

Thur 14

7:00 AM to 8:45 AM - Club rep meeting (continental breakfast)

7:30 AM to 12:30 PM - Bourse set-up

9:00 AM to 12:00 AM - 25¢ to \$1 sale

1:00 PM to 7:00 PM - Bourse

Fri 15

9:00 AM to 3:00 PM - Bourse

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Quarterly Journal of the Conchologists of America, Inc.

## It happened again!

**Paul Kanner**

This December 2013 I returned to Nuka Hiva, Marquesas (French - Îles Marquises), French Polynesia. My dive buddies this time were Marty Beals, Harry Bedell, Carl Ehrlich, and Dave Lum. This was my second visit this year. I was there in January. On both trips our host and guide was Xavier Curvat of Marquisis Dives. On our last visit I observed a *Conus adamsonii* regurgitating a small fish after being collected on a night dive. The image of the shell and little fish were published in *American Conchologist* (Vol.41, No.3, Sept.2013). Well it happened again. This time it was a *Conus bullatus*. We took a small aquarium with us to observe and photograph live specimens. We collected a *Conus bullatus* on a night dive returned from a night dive and I put it in the little aquarium to watch. As it was crawling around, it hesitated, extended its stomach, and regurgitated a little fish. I didn't have my camera ready but was able to get off a quick shot of the shell and fish just after it was spit out. The accompanying images are of the *C. bullatus* and fish in the aquarium and an image of both after being removed from the aquarium. The little fish was identified as a *Pseudanthius* species. I retained the fish in a small vile of alcohol along with the *Conus bullatus*.

Paul Kanner  
[paulkanner@yahoo.com](mailto:paulkanner@yahoo.com)



# 34th Astronaut Trail Shell Club Seashell Festival

## 11-12 Jan 2014



The attendees at the 34th Astronaut Trail Shell Club Seashell Festival had some exciting times this year - not all related to shell displays and camaraderie. An exhibitor from Boynton Beach was prevented from attending by a flood resulting from 18 inches of rain (this is normally the Florida dry season). Another reported windows shaking in Key West from the earthquake that hit Cuba the day before the show. Sheila Nugent (winner of the COA Award) braved snow, ice, blocked roads, and generally miserable conditions travelling to the show from New England. For those who did attend, it was a great show.

Show judges this year included Dr. Harry Lee of Jacksonville, FL (his 12th time as judge for this event), and Bob Janowsky of Wellington, FL (an original member of COA). Artistic judges were Ruth Abramson of Jacksonville, FL, and Anne Joffe of Sanibel, FL. Anne served previously as a scientific judge and in 2013 won the COA Award for her display at the Astronaut Trail Shell Club Seashell Festival

### Results

#### SCIENTIFIC:

- One Minor Family: 1st Ribbon, Norm Terry, Port St. Lucie, FL, Ranellidae.
- One Genus: 1st Ribbon, Gregory Curry, Sr., Key West, FL, Genus *Athleta*.
- One Species: 1st Ribbon, Charles Barr, Boca Grande, FL, *Canarium urceus*.
- One Geographical Area: 1st Ribbon, Harry Berryman, North Port, FL. Seldom Seen Cones of Cape Verde.
- Self Collected Single Specimen: 1st Ribbon, Gene Everson, Louisville, KY. 2nd Ribbon, BJ Shouppé, Palm Bay, FL *Vokesinotus lepidotus*.
- Single Specimen - Any Manner: 1st Ribbon, Gregory Curry, Sr., Key West, FL. *Tenebricola cukri*. 2nd Ribbon, Gene Everson, Louisville, KY, *Crassiborgia hediae*. 3rd Ribbon, Gene Everson, Louisville, KY, *Turbo (Bolma) johnstoni*.
- Educational: 1st Ribbon and CONCHOLGISTS OF AMERICAN AWARD, Sheila Nugent, N. Waterboro, ME, "Native Americans: The First Shell Collectors of North America."
- Self Collected: Jim Cordy, Merritt Island, FL, 1st Ribbon, "Shells of Guaymas-San Carlos, Mexico." 2nd Ribbon, Charles Barr, Boca Grande, FL, *Mazatlantica cosentini*.
- Fossil: Dr. Ron Bopp, Bradenton, FL, 1st Ribbon and DU PONT TROPHY, "Alum Bluff Group." 2nd Ribbon, Italian Fossil *Xenophora*, Doris Underwood, Melbourne, FL.
- Land and/or Fresh Water Shells: 1st Ribbon, and ATSC R. Tucker Abbott Trophy-Best Self Collected Sheila Nugent, N. Waterboro, ME, "Red Truck Adventures Seeking Maine Fresh Water Mussels."
- Sea Life Exhibit: 1st Ribbon, Phyllis Gray, Orlando, FL, "Seabeans Reprised."

- Shoreline: 1st Ribbon, Eleanor Hillman, Indiatlantic, FL, Shoreline.
- Masters Award: Gene Everson, Louisville, KY, MASTERS AWARD "The Shell Collector's Hobby."
- Shell of the Show: Exhibit 8, Single Specimen—Any Manner, Gregory Curry, Sr., Key West, FL *Tenebricola cukri*.
- Florida Self Collected Shell of Show: Exhibit 12 Fossil, Dr. Ron Bopp, *Aurinia mutabilis*.
- Self Collected Shell of Show: Exhibit 8, Single Specimen - Any Manner, Gene Everson, Louisville, KY, *Conus theodorei*.

#### ARTISTIC:

Division 22: The Ultimate Arts and Craft Award.  
Charles Barr, Boca Grande, FL, Silver King.

Division 23: Shell arts and Crafts all work done by exhibitor  
- Pictures constructed of shells, sea life: 1st Ribbon, Charles Barr, Boca Grande, FL, Dandelion and Judges Commendation. 2nd Ribbon, Roger & Carolen Bailey, Melbourne FL. "Deadly Creatures of the Sea." 3rd Ribbon, Margaret V. Goembel, Vero Beach, FL, Lanai #1.

23 C Pictures (Paintings, sketches of mollusks or sea life: 1st Ribbon. Charles Barr, Boca Grande, FL, Lion Lips. 2nd Ribbon, Charles Barr, Boca Grande, FL, Big Eye.

- Shell Mirrors: 1st Ribbon, Charles Barr, Boca Grande, FL, Fight Club. 2nd Ribbon, Charles Barr, Boca Grande, FL

- Shell Wreath: 1st Ribbon, Roger & Carolen Bailey, Melbourne, FL.

- Holiday Motif: 1st Ribbon, Vicky Reiordan, Satellite Beach, FL, White Christmas Tree. 2nd Ribbon, Annie Willem, Vero Beach, FL, Snowflake.

- Shell Trays and Boxes: Lu An Lorensen, Vero Beach, FL, "Kleenex Box with stained glass."

- Double Valentine: 1st Ribbon and Judges Commendation Ribbon, Hans Hoppenbrouwers, Provincetown, RI.

- 2nd Ribbon, Wendy Marshall, Yarmouth Port, MA, "My Little Valentine."

- Novelties: 1st Ribbon, Rosie Garrison, Vero Beach, FL, "Shell Hats and Hairdos."

- Needlework: 1st Ribbon, Linda Koestel, Apopka, FL, "Knitted Lace Shawl."

- Miscellaneous: 1st Ribbon and ATSC ARTS & CRAFTS TROPHY Shell Table, Debbie Freeman, Englewood, FL

- Photos: 1st Ribbon, Sheila Nugent, N. Waterboro, ME, "Mussels in a Stream", 2nd Ribbon, Margaret V. Goembel, Vero Beach, FL.

Division 24: Collectible and Antique - not the work of the exhibitor but must be owned by the exhibitor.



- Jewelry: 1st Ribbon and ATSC COLLECTIBLE OR ANTIQUE TROPHY. "Mother of Pearl." Gloria Tinker, Cocoa Beach, FL. 2nd Ribbon. Gloria Tinker, Cocoa Beach, FL Shell Jewelry 1940-1950's.

- Ceramics/China: 1st Ribbon, BJ Shouppé, Palm Bay, FL. Glass Star Fish Collection.

- Miscellaneous: 1st Ribbon, Charles Barr, Boca Grande, FL, Chess Pieces. 2nd Ribbon, Sheila Nugent, North Waterboro, ME, Banjara Indian People Cowry. 3rd Ribbon, Eleanor Hillman, Figurines with shells.

(excerpted from *The Capsule*, Jan 2014)



Dr. Harry Lee presents the Du Pont Trophy to Dr. Ron Bopp for his fossil display, "Alum Bluff Group." He also won a 1st ribbon for this display.



Judge Harry Lee presents the COA Award to Sheila Nugent for her display: "Native Americans: The First Shell Collectors of North America." She also won the 1st Ribbon and ATSC R. Tucker Abbott Trophy for the Best Self Collected Shell Display ("Red Truck Adventures Seeking Maine Freshwater Mussels") and an artistic 1st ribbon for "Mussels in a Stream".



Gloria Tinker (a first time exhibitor) won 1st Ribbon and ATSC COLLECTIBLE OR ANTIQUE TROPHY for "Shell Jewelry of the 1940s and 1950s."



Scientific judges Bob Janowsky (in Day-Glo orange) and Harry Lee (in Yule-Tide red) present the Master's Award to Gene Everson for "The Shell Collector's Hobby." He also won Self Collected - Any Manner (*Conus theodori*) and Self Collected - Single Specimen (*Vokesinotus lepidotus*).



This massive (22+ lbs) Italian Fossil *Xenophora* garnered Doris Underwood a Judge's Commendation and a 2nd place ribbon.



# 2014 Broward Shell Show

Nancy Galdo

The well-attended 2014 Broward Shell Show, held on January 18-19, 2014, was an excellent show featuring 292 feet of Scientific Exhibits! Our membership increased by 23 members and many newcomers attended, discovering the wonder of shells for the first time! Thanks and appreciation go to the Scientific Judges, Jerry Harasewych, Edward Petuch, and Wayne Harland, as well as Artistic Judges, Anne Joffe and Jae Kellogg. A special thank you to Shell Show Chairperson, Alice Pace and her production assistant, Bob Pace, for a job well done. Kudos and thanks go to all the exhibitors, dealers, and club members participating in our beloved Shell Show!

Congratulations to the trophy winners, especially to Sheila Nugent who won the COA Award with her "Red Truck Adventures Seeking Maine Freshwater Mussels." Her unique exhibit is the culmination of the events of several summers in Maine, searching for the 10 species of freshwater mussels reported to be found in that area.

## 2014 Broward Shell Show Award winners

### SCIENTIFIC:

- American Museum of Natural History Award - Tom Grace, "Family Calliostomatidae - Pacific/Pacific Rim Region" (Superfamily One Region Any Manner)
- Conchologists of America Award - Sheila Nugent, "Red Truck Adventures Seeking Maine Freshwater Mussels," (Land/Fresh Water Shells Any Manner)
- The Du Pont Award - Norman Terry, "Family Ranellidae" (One Family, Minor, Any Manner)
- "Best of the Best" - Gene Everson, "The Shell Collecting Hobby"
- Len Hill Memorial - Pat & Bob Linn, "Tibias of the World" (Super 10)
- Shell of Show - Gene Everson, *Conus theodorei* (Single Shell FL/Carib. Self Collected)
- Shell of Show - Greg Curry, Sr., *Tenebrincola cukri* (Single Shell Worldwide Any Manner)
- Jim Vunkannon Memorial Florida/Caribbean Trophy - Linda Shockley, "Marco Island Area Bivalves" (Beach Shells Self Collected)
- Gerrit de Graff Memorial - Amy Tripp, "Double-Row-Spined *Busyson* in Lighting Whelks" (One Species Any Manner)
- Neil Helper Memorial Trophy for Educational Excellence - Harry Berryman, "Seldom Seen Cones of Cape Verde" (One Region Any Manner)
- Betty Hamann Fossil Trophy - Greg Curry, Sr., "*Athleta spinos* in Genus *Athleta*" (One Genus Any Manner)
- Best Student Exhibit, Scientific - Marissa Linn, "Equestrian Conch (Horse Conch)" (Student 7-12 Grade Any Manner)

- Best Sea Life - Phyllis Gray, "Sea Beans Reprised" (Sea Life)
- Exhibitor's Choice Award - Linda Shockley, "Marco Island Area Bivalves" (Beach Shells Self Collected)

### ARTISTIC:

- Best Student Exhibitor Trophy (Artistic) - Marissa Linn, "Greeting With Echinoderms" (Hobbyist Student Grades 7-12)
- Best in Show Trophy (Hobbyist) - Pat Linn, "Whelks in the Round" (Hobbyist Décor Wall Hung Only)
- Best in Show Trophy (Professional) - Marci Chamberlain, "Princess Periwinkle" (Professional Special)
- Best in Show Trophy (Sailor's Valentine) - Hans Hoppenbouwers, "Flora" (Hobbyist Sailor's Valentine - Single Octagonal Case)
- Best Tabletop Shell Craft - Marci Chamberlain, "Princess Periwinkle" (Professional Special)
- Best Wall Hung Shell Craft - Heather Strawbridge, "Coquina Garden" (Professional Mirror)
- Fay Mucha Memorial Best Collectibles - Sheila Nugent, "Banjara Pot-Ring Cowrie Headdresses" (Collectibles)
- Exhibitor's Choice Award - Marci Chamberlain, "Princess Periwinkle" (Professional Special)

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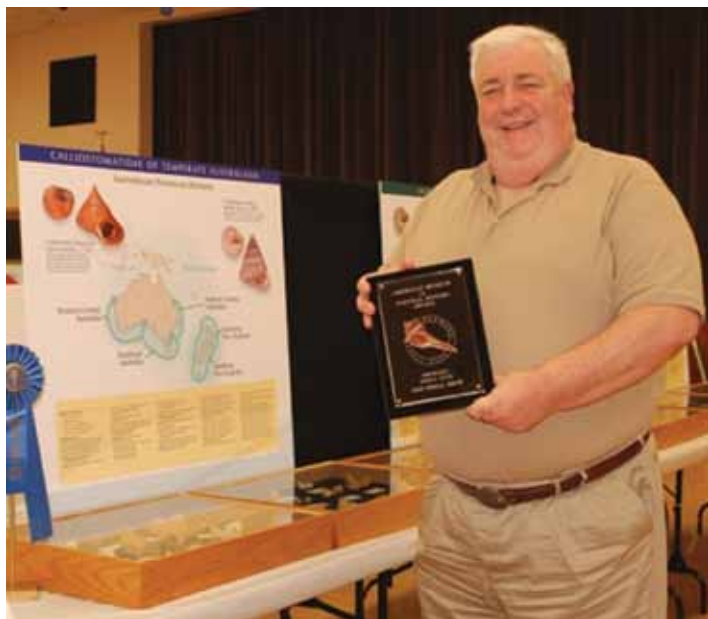
Shell of Show - Greg Curry, Sr.,  
*Tenebrincola cukri*



Conchologists of America Award winner Sheila Nugent for her display "Red Truck Adventures Seeking Maine Freshwater Mussels."



Norman Terry won the Du Pont Award for his presentation of the "Family Ranellidae." One of the more spectacular members of that family, *Charonia tritonis* can be seen behind him.



Tom Grace (former COA President) was awarded the American Museum of Natural History Award for his "Family Calliostomatidae - Pacific/Pacific Rim Region."



Gene Everson won "Best of the Best" for his display titled "The Shell Collecting Hobby." His display of the ins and outs of shell collecting was featured in the September 2013 issue of American Conchologist.



# Sarasota Shell Club Shell Show

## 14-16 Feb 2014

The Sarasota Shell Club (SSC) started off 2014 with a great shell show - lots of participants and some really fantastic displays. The highlights are shown here in images.



**COA Award: "Meet Mr. and Mrs. Cockle & Family";**  
Martin Tremor & Conrad Forler.



**SSC's Charles & Violet Hetweck Fossil Trophy:** Ron Bopp "Alum Bluff Group."



**SSC's Best Small Scientific:** Harry Barryman (right) for "Seldom Seen Cones of Cape Verde." Standing with him is award sponsor, Bruce Paulsen. Harry also won the Mote Gold Award for his display "Philippine Cones."



**SSC's Best Self-Collected Trophy:** Sally Peppitoni "Palma Sola Causeway."



**SSC's Members Trophy;** Dwayne Kaufmann; "Identification of Small Gastropods."



**Our very capable judges (left to right):** Bill Jordon, Audrey O'Donnell, Harry Lee, and Anne Joffe.





**Best of Art with Shell Motif: Pat Linn "Whelks in the Round."**



**The Terri Gosselin Excellence in Shell Flower Making: Fran Schlusemann "Copper Pot Purple White."**

## St. Petersburg Shell Club Shell Show 22-23 Feb 2014



The attendees numbered more than 550 this year at the St. Petersburg Shell Show. There was a total of 220 feet of scientific display cases and at least that much in the artistic category. Our scientific judges were Bill Lyons and Wayne Harland, and they had an impressive display of superb exhibits to examine and evaluate. The Shell Show Chair was Betty Lipe (who has not yet learned to say "No," to volunteer requests - thankfully, as she runs the advertising for this magazine and has for many years. Thanks Betty!).

The COA Award was won this year by Wayne and Patty Humbird from Lake Jackson, Texas. Their display was titled, "Memories of Panama," and was exhibited in 12 cases. Greg Curry won the Du Pont Trophy for his display, "Genus *Athleta*." Harry Berryman was awarded the National Museum of Natural History Award for "Samples of Philippine Cones." Martin Tremor and Conrad Furler won the Florida Museum of Natural History Award for "Meet Mr. & Mrs. Cockle & Family." Greg Curry had the Shell of the Show (any manner) with *Tenebricola cukri* and Carolyn Petrikin had Shell of the Show (self-collected) with a record-sized *Mercenaria campechiensis*. Sandy Boddy won 1st Place In Beachlife for her "Horseshoe Crabs" and a first place for her "Seashells on Stamps." Bob and Pat Linn won took a second place ribbon for "Tibias of the World." Dorothy Hanssler



**Patty and Wayne Humbird brought that special Texas flair to their display, "Memories of Panama," and it won them the COA Award.**

took a 2nd place ribbon for "Florida Bivalves." Other awards included Charles Barr for Best Scientific Exhibit, and Judges Special Ribbons to Harry Berryman, Patty Humbird, and Jeannette Tysor.

(excerpted from *Tidelines*, March 2014)

# The Hebrew Volute *Voluta ebraea* Linnaeus, 1758

Martin E. Tremor, Jr.

(reprinted with permission from *Tidelines*, Nov 2013)

A truly magnificent mollusk by any standard, the Hebrew volute is an endemic species of Brazil. This sea snail is found only along the north and northeastern Brazilian coast. The shell length of this species may reach and exceed 200 mm up to 220 mm, although lengths from 100 mm to 150 mm are more common. *Voluta ebraea* has a somewhat robust and solid shell, with a slightly elongate contour. It is colored cream externally, with a complex series of darker-reddish brown markings and lines that are said to resemble Hebraic figures. The interior of the shell can vary in color from pale to strong orange. The protoconch is rounded and presents two whorls. The shell as a whole has seven slightly convex whorls. These whorls (including the body whorl) are ornamented by several posteriorly oriented sharp spines. The outer lip is thick and the aperture is relatively long and narrow. As is the case in other volutes, the columella presents an array of strong oblique columellar folds (also known as plicae, 9 to 11 of them in this species), which are more conspicuous anteriorly. The corneous, claw-like operculum partially covers the shell aperture. Sexual dimorphism can be observed in the shells of this species: the shells of the males tend to be more elongate with a smoother outer surface, whereas the shells of the females are generally wider and more nodulose. The angle of the spire also differs between males and females.

The animal of the Hebrew volute has a pale ivory colored body, ornamented by numerous irregular and intertwined thin dark-red to brown colored lines, and several small spots of the same color along the sides of the foot. Some of the most distinctive external features are its very large foot and a long siphon. This species presents a radula composed of a single row of rachidian or central teeth. Each one of these teeth exhibits several smaller acute denticles or cusps. The radula is considered to be similar, though larger, than that of the music volute, *Voluta musica* Linnaeus, 1758, a similar but distinct species.

This beautiful volute dwells on sandy bottoms, among coral and rocks, and usually shows a preference for sandy substrata. It may be found from shallow water to depths around 40 - 70 meters and is commonly taken by shrimp trawlers.

As is the case in several other volutids, the Hebrew volute is carnivorous and predatory. It is known to feed on the cardiid bivalve *Trachycardium muricatum* (Linnaeus, 1758), the yellow cockle. The Hebrew volute is also known to be a prey of a fish, the Bocon toadfish, *Amphichthys cryptocentrus* (Valenciennes, 1837).

Though little is known about the conservation status of this species, it is believed that both over-fishing and over-exploitation are having a negative effect on its natural



populations. Being a creature of the shallow waters tends to facilitate its harvesting by the locals. Thus it is currently not observed in many areas where it was previously numerous. It is also not uncommon for Hebrew volutes to be accidentally caught in bottom gill fishing nets and traps set by commercial fishing boats. Adding to the conservation problem is the so called "imposex phenomenon" which has been observed in *Voluta ebraea*. The development of masculine sexual organs in the females exposed to organic tin compounds, such as tributyltin (TBT), may have several negative consequences for entire populations of this species, from sterilization of individuals to the complete extinction of those populations. Such compounds are biocide and antifouling agents commonly mixed in paints to prevent marine encrustations on boats and ships. Therefore it is not uncommon for high concentrations of such compounds to be present in the sea water near shipyards and docking areas, consequently exposing the nearby marine life to its deleterious effects.

## References:

- Bail, P., Bouchet, P., Gofas, S., & Rosenberg, G. 2009. "World Register of Marine Species." [http://www.marinespecies.org/Voluta\\_ebraea](http://www.marinespecies.org/Voluta_ebraea) Linnaeus, 1758. Retrieved 18 February 2010.
- Castro, Í.B., Oliveira de Meirelles, C.A., Matthews-Cascon, H., Rocha-Barreira, C.A., Penchaszadeh, P., & Bigatti, G. (2008). "Imposex in endemic volutid from Northeast Brazil (Mollusca: Gastropoda)." *Brazilian Archives of Biology and Technology* (Brazil) 51 (5): 1065–1069. ISSN 1516-8913.
- Clench, W.J. & Turner, R.D. 1964. "The subfamilies Volutinae, Zidoninae, Odontocymbiolinae and Calliotectinae in the Western Atlantic." *Johnsonia* (Massachusetts: Cambridge) 4 (43): 144–145.
- "Conquiliologistas do Brasil." <http://www.conchasbrasil.org.br/> Retrieved 28 September 2009.





*Voluta ebraea* in its natural habitat. Photo courtesy of Thelma Lúcia Pereira Dias.

**Dias, T.L.P. 2009.** "First field study of the Brazilian endemic marine gastropod *Voluta ebraea* (Mollusca: Volutidae)." *Marine Biodiversity Records* (United Kingdom: Cambridge University Press).

**Kiener, L.C. 1839.** "Genre Volute. (Voluta, Lam.)" *Spécies Général et Iconographie des Coquilles Vivantes* 3: 70 pp., 52 pls.

**Lamarck, J.B. 1811.** "Suite de la détermination des espèces de Mollusques Testacés. Volute. (Voluta.)" *Annales du Muséum d'Histoire Naturelle* 17: 54-80.

**Linnaeus, C. 1758.** *Systema Naturae*. 10th ed., vol. 1: 824 pp. Laurentii Salvii, Holmiae.

**Martinez, A.S., Mendes, L.F., & Leite, T.S. (2009).** "Richness and distribution of epibenthic molluscs on a sandstone reef in the northeast of Brazil." *Anais do III Congresso Latino Americano de Ecologia*.

**Matthews, H.R. 1968.** (Introduction) "Molluscs found in the digestive tract of the fish *Amphichthys cryptocentrus* (Valenciennes, 1837)." *Proceedings of the Malacological Society of London* 38 (3): 247-250.

**Motta, S.S., Pinheiro, J.C.L., & Mathews-Cascon, H. 2004.** "Comportamento predatório de *Voluta ebraea* Linnaeus, 1758 MOLLUSCA: GASTROPODA: VOLUTIDAE em condições de laboratório." *Resumos do XXV Congresso Brasileiro de Zoologia* (in Portuguese) (Brasília): 292.

**Rios, E.C. 1990.** "Gastrópodes endêmicos do Brasil." *Siratus* (in Portuguese) (São Paulo, Brasil: Conchiliologistas do Brasil) 1 (4): 7-10. ISSN 0103-5606.

**Rios, E.C. 1994.** *Seashells of Brazil* (2nd ed.). Rio Grande: FURG. ISBN 85-85042-36-2.

**Rocha, C.A. & Wilson, F. 1997.** "Fauna e flora acompanhantes da pesca da lagosta no nordeste do Brasil". *Boletim Técnico-Científico do CEPENE* (in Portuguese) (Pernambuco, Brasil: CEPENE) 5 (1): 11-22.

**Rosenberg, G. 2009.** "Malacolog 4.1.1: A Database of Western Atlantic Marine Mollusca." <http://www.malacolog.org/> Retrieved 25 October 2009.





# Size matters! II

Moshe Erlendur Okon

As mentioned in Part I (American Conchologist vol. 41, no. 4, Dec 2013, page 30), certain mollusks continue growing throughout their lives, while others reach their final size and then cease growing. One example of the latter group is the family Cypraeidae, the cowries. So, what does 'big' or 'small' actually mean when discussing such a group? Is a 60 mm *Macrocypraea cervus* 'big' and is a 15 mm *Purpuradusta minoridens* 'small'? Perhaps some information on the growth of cowries and guidelines regarding size could be of use.

When a young cowrie hatches from its egg, it either settles down immediately on the sea bottom (direct development), or floats freely for a period of time – hours to days (veliger stage) – before settling (see Lorenz & Hubert, 2000). Once the young cowrie has settled, it begins forming its juvenile bulla shell. This bulla, resembling an olive shell, grows for several weeks to months until the cowrie reaches its final size, and only then does the outer lip turn inward, extremities are produced, the base thickens, teeth are formed, and the characteristic colors and pattern laid.

Once the cowrie has reached its adult size, it will no longer grow in length, but can increase its volume, weight, and callosity. This is unlike other gastropod families (Conidae, for instance) in which the shell can continue growing in size by adding whorls for the entire life of the animal, albeit at a slower pace once maturity is reached. Therefore, an adult live taken 60 mm *Cypraea tigris*, for example, would not have grown further, and may have even been much older than an 80 mm specimen taken alongside. Cowries can live for several years after reaching their adult stage (see Burgess, 1985).

As with the human race, individuals of a cowrie species are normally distributed on a Gaussian curve. This means that about 70% of the shells of a species will be within the range of their average length + the standard deviation (S). 95% of them can be expected to be within the range of their average length + 2S, and 2.5% are at the dwarf or giant extremities, meaning their average shell length + 3S (see Heiman, 2010).

Please feel free to contact me at [mosherlend@gmail.com](mailto:mosherlend@gmail.com) with suggestions or if you have any particular shells of unique size in your collections you wish to share.

*Erosaria miliaris* (Gmelin, 1791)

The cowrie I chose is *Erosaria miliaris* (Gmelin, 1791), or *Naria miliaris*, if we go by a recent convincing article (Bergonzoni, 2012). This common cowrie is found in the West Pacific (mostly Japan to Indonesia) but has been reported from as far west as Thailand. Its average length is 36 mm, with a standard deviation of 7 mm.



**Fig. 1: The bulla stage of *Erosaria spurca* (L., 1758) 18 mm, collected in rock pools at Blata Steps, limits of Bahrija, Malta, where it is very common. Image courtesy of Constantine Mifsud.**

The shell is pyriform, the base and teeth are white and the extremities often sharply rostrated. The dorsum is pale green to yellow and freckled with white spots (hence the name, derived from *millet*). The animal is usually black or dark colored and the mantle has long and branched papillae.

The two specimens illustrated here are from my personal collection. The small one is from Java, Indonesia, and the large from Manila Bay, Philippines. Although they do not represent the utmost extremities of this species, they are certainly indicative of the size range, the length of the smaller one being 40% that of the larger.

\* An earlier version of this article was published in Beautifulcowries Magazine No. 3 May 2013.

## References:

- Bergonzoni, M. 2012.** *Erosaria irrorata* of *Naria erosa*? *Beautifulcowries Magazine* No. 2, December 2012, p. 61.
- Burgess, C.M. 1985.** *Cowries of the World*, Gordon Verhoef, Seacomber Publications, South Africa, pp 289.
- Heiman, E.L. 2010.** Diagnostic Characteristics of Cowry Populations 1. The Average Shell Length, *Triton Journal of the Israel Malacological Society* No. 22, September 2010, p.13.
- Lorenz, F. & Hubert, A. 2000.** A Guide to Worldwide Cowries, ConchBooks, Hackenheim, Germany, pp. 584.
- Okon, M.E. 2013.** Size Matters! I, *American Conchologist* Vol 41, No. 4, Dec. 2013, pp. 30-31.



Fig. 2: *Erosaria miliaris*, small 21 mm, large 52 mm. Both are adult.

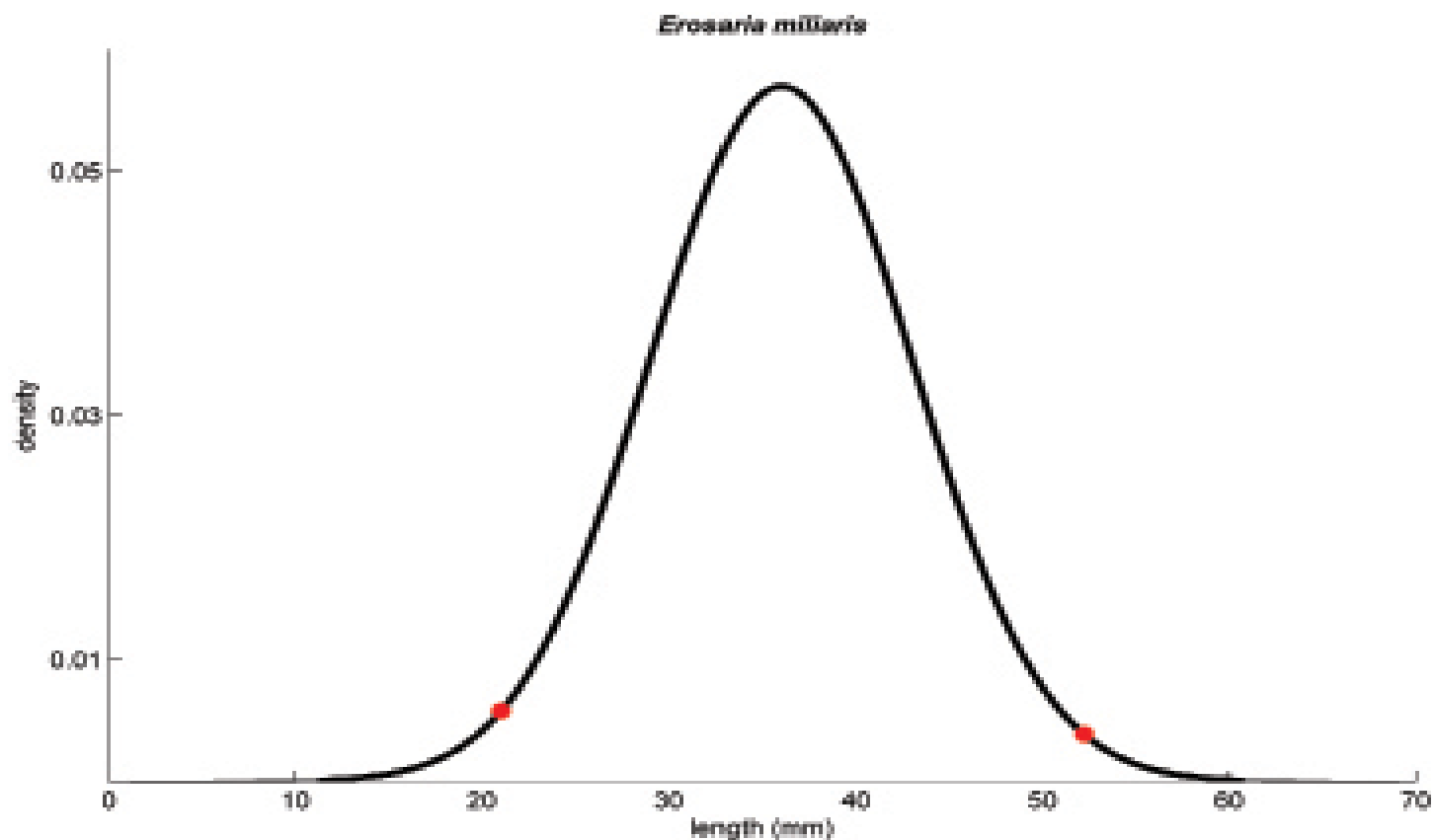


Fig. 3: Size distribution of *Erosaria miliaris* in mm based on data from several publications. The two red dots indicate the sizes of the illustrated specimens in figure 2.

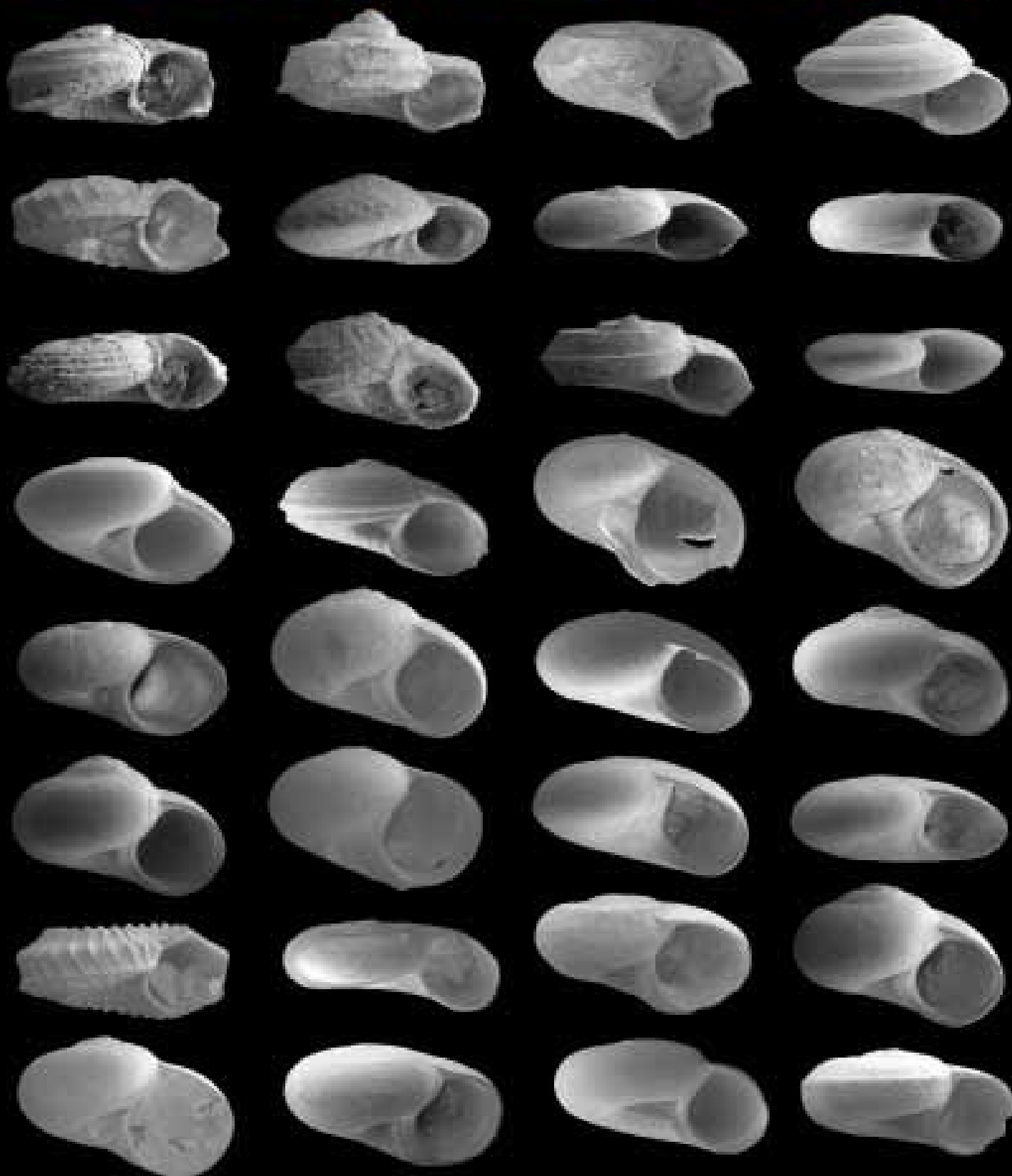




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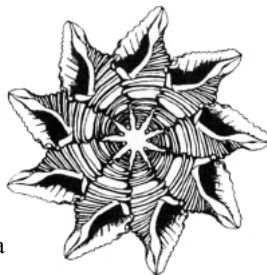
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# *American* CONCHOLOGIST



Quarterly Journal of the Conchologists of America, Inc.

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AMERICAN CONCHOLOGIST, the official publication of the Conchologists of America, Inc., and issued as part of membership dues, is published quarterly in March, June, September, and December, printed by JOHNSON PRESS OF AMERICA, INC. (JPA), 800 N. Court St., P.O. Box 592, Pontiac, IL 61764. All correspondence should go to the Editor. ISSN 1072-2440.

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## Editor comments:

This issue of *American Conchologist* has the usual eclectic gathering of shell-related articles, plus a couple of departures. Both the front and back covers are black and white, something not seen for the last couple of decades, but they do serve as a nice lead-in to the microfossil findings by Harry Lee in the Pliocene Pinecrest Beds during the last convention. Dr. Lee points out some fascinating shells that would probably be overlooked by 99% of shell collectors.

We also have an article on a shell collection database program developed by David Berschauer. While his article can be construed as an “infomercial,” I felt that the “info” part was important enough to print as an article rather than a 1/4 page advertisement. There are a number of methods to electronically catalog a shell collection (MS Excel, MS Word, MS Access). I personally use MS Access. David’s program is yet another option, cheaper than Access and most likely easier to use than any of the other programs I mentioned. A word of caution is in order for any electronic database program - operating systems change every few years and this can leave you with an unsupported system. Hard copy backups are still a good idea.

**Front Cover:** Assorted shells of species in the family Tornidae. The species depicted have a median maximum dimension of about 2 mm. All specimens were collected at the SMR Aggregates mining operation in northern Sarasota Co., Florida, and most during the pre-COA field trip on 14 July 2013, led by Dr. Ron Bopp and Roger Portell. Consequent to these collections a total of 38 species of tornids (also called vitrinellids) are now recognized in this exposure of the Pliocene Lower Pinecrest Beds in the Upper Tamiami Formation. See page 4 for an elaboration on the unexpectedly rich element of this 3,000,000 year old fauna, of which about 70% is extinct. SEM’s by Dr. Ann Heatherington (University of Florida Dept. Geology) and Harry G. Lee; images edited with the assistance of Bill Frank.

**Back Cover:** Thirteen species of the family Caecidae (Gastropoda: Rissooidea). These 2-3 mm microfossils were collected along with over 200 other micromollusks (less than 5 mm in maximum dimension) from the 3,000,000 year-old Lower Pinecrest Beds (Upper Pliocene) near the 2014 COA Convention site. Only a small fraction of this microfauna is recorded in the literature. See p. 35 for a species list and key. SEM’s by Dr. Ann Heatherington (University of Florida Dept. Geology) and Harry G. Lee; images edited with the assistance of Bill Frank.



# A “gap in the fossil record” bridged: the Tornidae of the Lower Pinecrest Beds, exemplar of paleoconchological neglect

Harry G. Lee

I have always found COA Conventions to be most enjoyable – start to finish. Yet some of them incorporated a very special experience, more memorable and resonant, as with the Claiborne Bluff field trip (Mobile, 2006; Lee, 2006) and the 2011 bourse at Port Canaveral (Lee, 2012). Last July it was the field trip to the SMR [I’ve not unraveled this acronym, probably because it’s intended not to be] Aggregates Phase 10 shell and sand pit mines in Sarasota, just a few miles from the convention venue.

Under the guidance of Dr. Ron Bopp (Sarasota Shell Club) and Roger Portell (Invertebrate Paleontology, Florida Museum of Natural History [FLMNH]), a group of about forty conventioners collected fossil shells brought to the surface by the mining operations of Phase 10 of the SMR Aggregates operation. Here the Upper Tamiami Formation is composed of material belonging to the Lower Pinecrest Beds. Both conchologists and miners are rewarded by a great abundance of shells, often in a fine state of preservation. Various bits of evidence indicate this fauna lived in the Late Pliocene Epoch (Cenozoic Era, Neogene Period) ca. 3,000,000 years ago (MYA).

After recoiling from my initial amazement at this conchological cornucopia [Fig. 1] and immediate preoccupation with the charismatic megafauna, I turned my attention to the smaller shells, with which I’ve made no secret of my abiding fascination. In certain areas of the piles of excavated spoil, recent rains had culled and accumulated smaller particles much in the way that a shoreline sorts drift by the winnowing effect of the swash. As I’d hoped, smaller shells [Fig. 2] were no less abundant than the eye-catching macromollusks.

Over most of our 2-3 hour reconnaissance, I set out to capture as much of this selective “grunge” as I anticipated I could haul and later scour for the little shells. Fifteen gallons seemed sufficiently ambitious. Nonetheless, weeks later I realized it wasn’t. The stuff was chock full of micro- (< 5 mm maximum dimension [MaxD]) and meso-mollusks (> 5, < 10 mm MaxD) as well as assorted juvenile specimens and fragments of ‘macros’ (> 10 mm MaxD).

Being a real paleomalacology piker, I sought advice from a few experts and immersed myself in the relevant literature. This autodidactic campaign soon revealed that I had half-witting(witted)ly blundered into not only a Lilliputian melting pot, but *terra incognita*. A benchmark study (Allmon, Rosenberg, Portell, and Schindler, 1993;



**Fig. 1. COA conventioners collecting fossils at the SMR Aggregate pit mine. This 2013 Sarasota COA convention field trip provided a plethora of fossil micro-shells.**



**Fig. 2. Smaller mollusk shell fossils were in abundance.**

reviewed by Lee, 1993) reported an alarming lack of micromollusk species diversity known from the Pinecrest Beds. The numbers reported, vs. elements > 5 mm MaxD, were so disproportionately low (40 spp. *in toto*; 0 from SMR) that clever strategic multipliers had to be applied to allow rigorous comparisons with other faunas, particularly the Recent (hereafter referred to as Holocene), which analysis was central to the theme of their study.

Over the ensuing months, ongoing study of samples taken before and after our July 14, 2013, epiphany, this

SMR exposure has continued to bear fruit. Although many of the species are > 5 mm MaxD, the micromollusk species inventory has inexorably grown as I and colleague Rick Edwards (Jacksonville Shell Club member and fellow 2013 COA fossil field-tripper) have logged about 200 man-hours at the microscopes in our homes and at FLMNH.

Presently, close to 200 species of micromollusks have been identified from our SMR samples, and about half have been imaged at least once by scanning electron microscopy [SEM] though the cooperation of the Department of Geology, University of Florida.

To illuminate this newfound diversity, I have chosen to present an element of this fauna, the Tornidae, of which all but one species is a micromollusk by our definition. Tornids (Prosobranchia: Risssoidea) have minute, depressed to globose helicoid shells and possess non-cirriiform pedal appendages as well as a taeniglossate radula. The group arose in the Upper Cretaceous, quite possibly in eastern North America. Today they are circumglobal in distribution, only slightly more speciose in tropical than temperate seas, mostly living in shallow water (< 30 m). There are forty genera, most of them extant; thirteen of them (101 spp., all 4 subfamilies) are Holocene in the western Atlantic (Rubio, Fernández-Garcés, and Rolán, 2011). Here is a run-down of their taxonomy and nomenclature:

Tornidae Sacco, 1896 [Type genus (TG) *Tornus* Turton & Kingston, 1830]\*

= Adeorbidae Monterosato, 1884 [TG *Adeorbis* S.V. Wood, 1842]\*

+ Vitrinellinae Bush, 1897 [TG *Vitrinella* C.B. Adams, 1850]

- Subfamily Torninae Sacco, 1896
- Subfamily Circulinae Fretter and Graham, 1962
- Subfamily Teinostomatinae Cossmann, 1917
- Subfamily Vitrinellinae Bush, 1897

\* Objective synonyms; the type genus of each is based on *Helix subcarinata* Montagu, 1803. The reversal of priority of Tornidae over Adeorbidae, based on the priority of the respective type genera (Iredale, 1915: 344), is a valid action under the provisions of Article 40 paragraph 2 of the Code (ICZN, 1999), which reads: "Names replaced before 1961. If, however, a family-group name was replaced before 1961 because of the synonymy of the type genus, the substitute name is to be maintained if it is in prevailing usage. A name maintained by virtue of this Article retains its own author but takes the priority of the replaced name, of which it is deemed to be the senior synonym." I have followed Recommendation 40A: "Citation of author and date. If the author and date are cited, a family-group name maintained under the provisions [above] ... should be cited with its original author and date...followed by the date of its priority

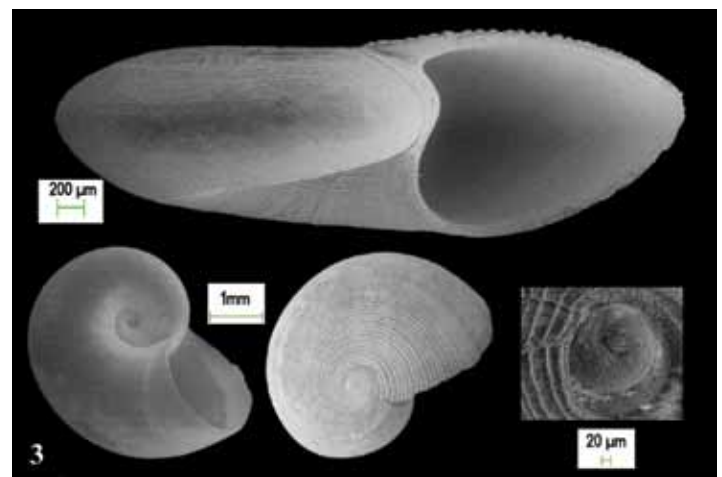
as determined by this Article; the date of priority should be enclosed in parentheses." Ergo 'Tornidae [and Torninae] Sacco, 1896 (1884).'

The following species have been identified thus far (alphabetical order with fig. no.). † indicates extinct (absent from the Holocene; 27 spp.; 71%) and **boldface signifies probably un-named** (20 spp.; 53%). Scales are in micrometers (thousandths of a mm).



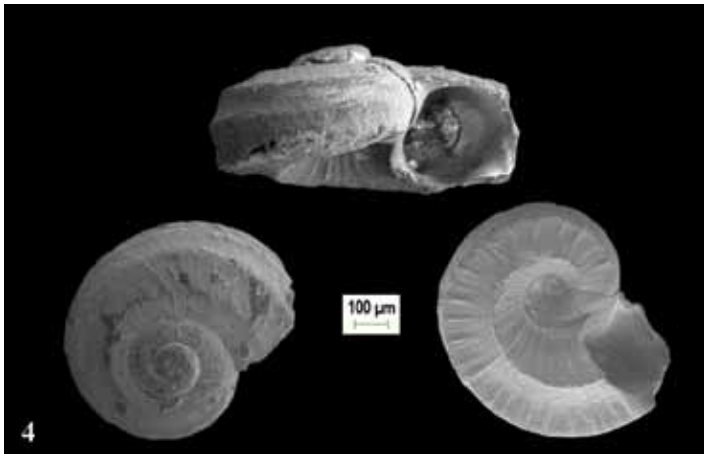
1. (left) *Cochliolepis holmesii* (Dall, 1889). Dall (1889: 360, 392) rendered the species epithet "*Holmesii*" and "*Holmesii*" respectively. The First Reviser (Dall, 1892: 419) fixed the latter orthography.

2. (right) †*Cochliolepis* n. sp. cf. *C. planispiralis* Rubio, Fernández-Garcés, and Rolán, 2011. SMR shells are more tightly coiled with less deflected apertures than the Holocene species.



3. *Cochliolepis striata* Dall, 1889. One of our specimens exceeds 5.0 mm in MaxD; it is the only non-micromollusk in this tornid assemblage.





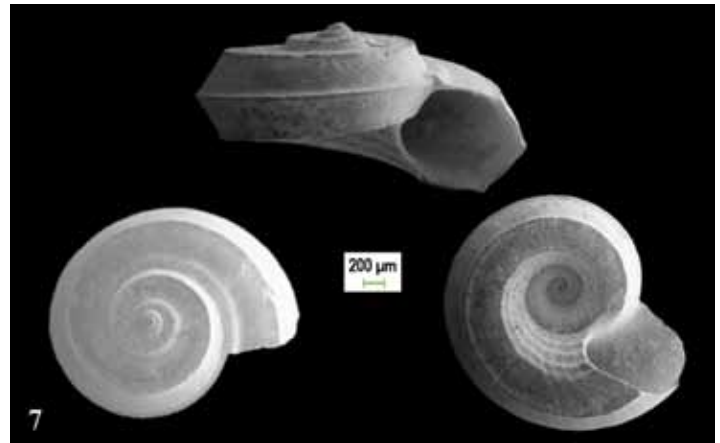
4. *Cyclostremiscus bartschi* (Mansfield, 1936). Described from the Neogene but survives in the Holocene (Rubio, Fernández-Garcés, and Rolán, 2011).



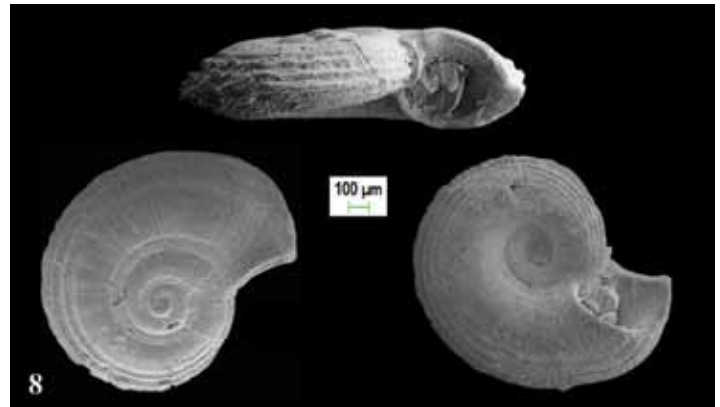
5. †*Cyclostremiscus fargo* Pilsbry in Olsson and Harbison, 1953. The figure captioned *C. fargo* is actually *Solariorbis eugenes*, and vice-versa, in Rubio, Fernández-Garcés, and Rolán (2011; figs. 110, 111).



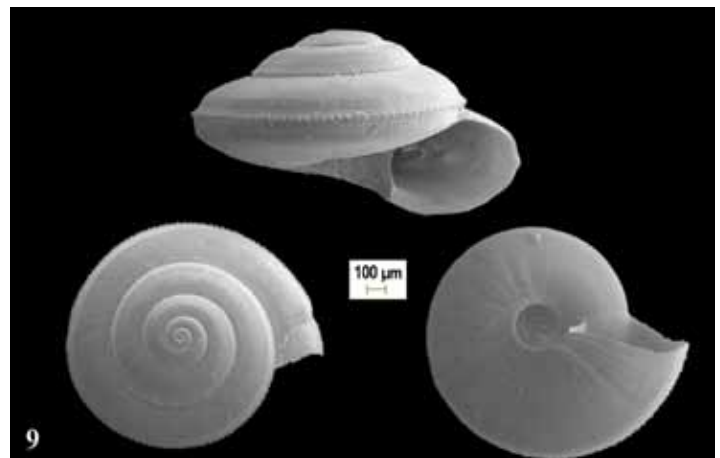
6. †*Cyclostremiscus gunteri* (Mansfield, 1930).



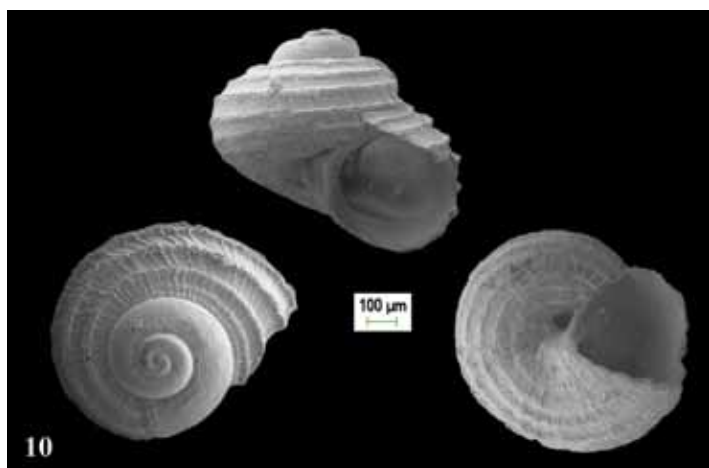
7. *Cyclostremiscus trilix* (Bush, 1885). Described from the Holocene. Rubio, Fernández-Garcés, and Rolán (2011) distinguish between this taxon and *C. pentagonus* (Gabb, 1873), described from the Neogene of the Dominican Republic, based on the latter's protoconch ornamentation and secondary spiral sculpture.



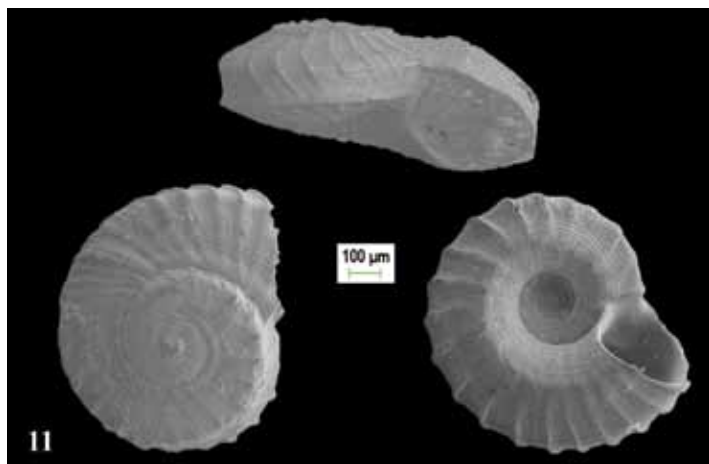
8. †*Cyclostremiscus* n. sp. cf. *C. microstriatus* Rubio, Rolán, and Lee in Rubio, Fernández-Garcés, and Rolán, 2011. This otherwise distinctive shell is quite similar to the Holocene species, but it has a significantly reduced H/D ratio and is more widely umbilicate. The two are almost certainly ancestor and descendant.



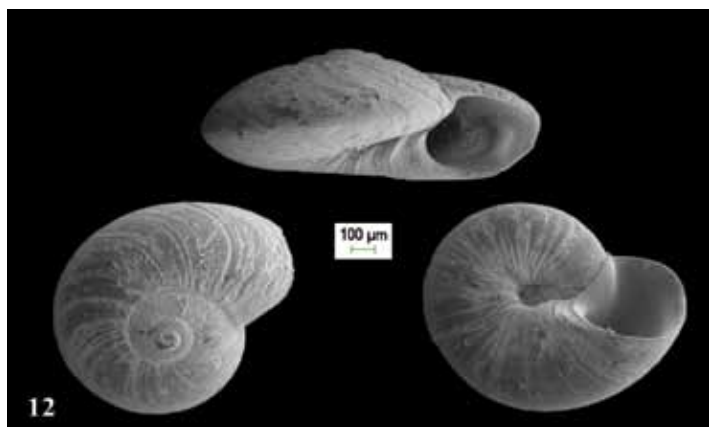
9. *Episcynia inornata* (d'Orbigny, 1842).



10. *Parviturboides interruptus* (C.B. Adams, 1850). Caloosahatchee material was been referred to *P. avitus* Pilsbry in Olsson and Harbison, 1953 based on their imperforate condition. SMR shells are umbilicate and closely resemble Holocene material.

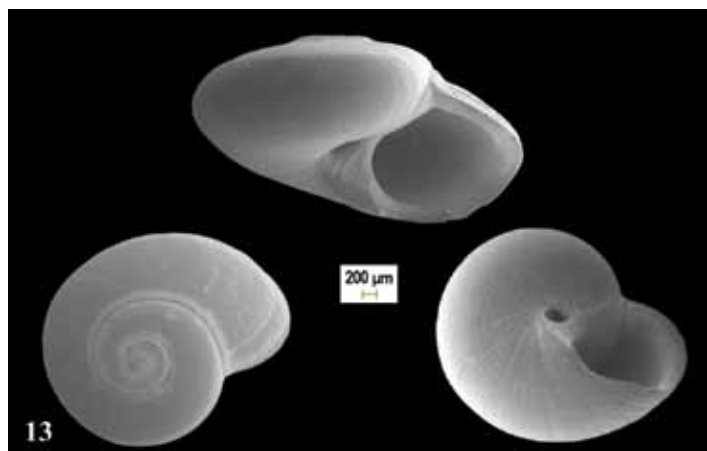


11. †*Pleuromalaxis* n. sp. cf. *P. balesi* Pilsbry and McGinty, 1945 [+ *P. olssoni* (Pilsbry in Olsson and Harbison, 1953)]. SMR shells have higher spires and much weaker peripheral keels whereas the Caloosahatchee *P. olssoni* is indistinguishable from the Holocene *P. balesi*.



12. †*Solariorbis* n. sp. cf. *S. depressus* (I. Lea, 1833). The Eocene *S. depressus*, the type species of *Solariorbis* Conrad,

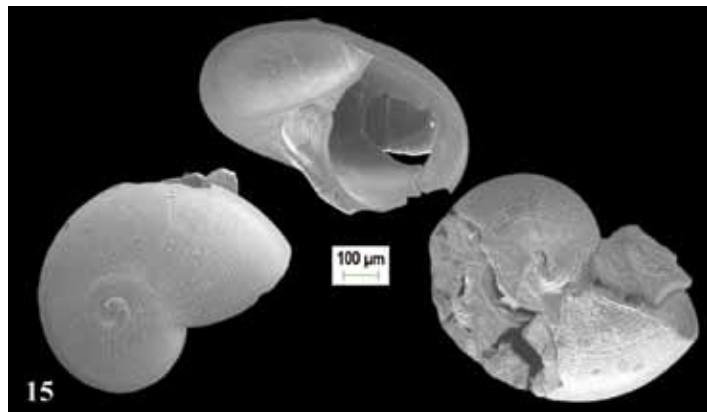
1865 (monotypy), is less angulate and domelike as are the Holocene *S. blakei* (Rehder, 1944) and *S. antillensis* deJong and Coomans, 1988.



13. †*Solariorbis eugenes* Pilsbry in Olsson and Harbison, 1953. The figure captioned *S. eugenes* is actually *Cyclostremiscus fargoi*, and vice-versa, in Rubio, Fernández-Garcés, and Rolán (2011; figs. 110, 111). Until the work of the latter authors, this species was considered extinct.

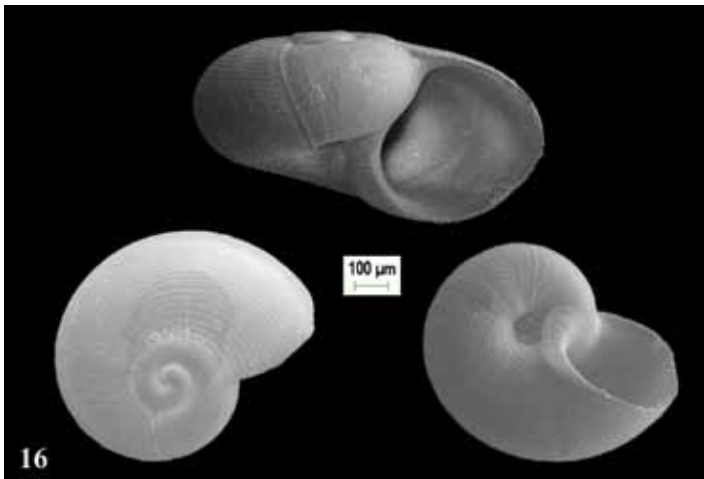


14. *Solariorbis infracarinatus* (Gabb, 1881). This is a very common species in multiple strata.

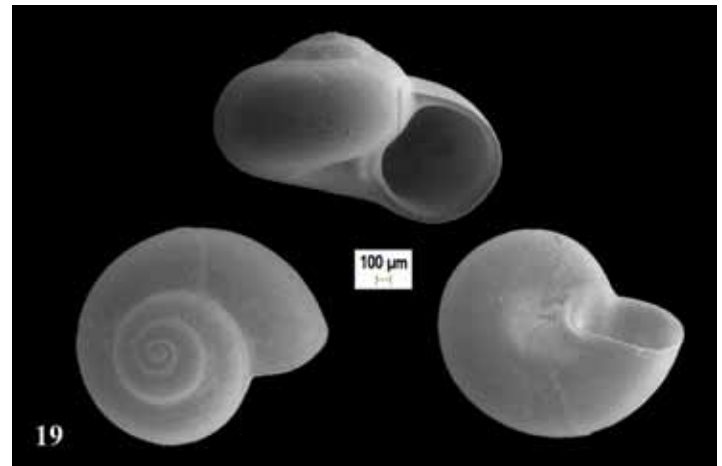


15. †*Solariorbis* n. sp. cf. *S. multistriatus* (A.E. Verrill, 1884). Greater H/D ratio and looser coil than the Holocene species.

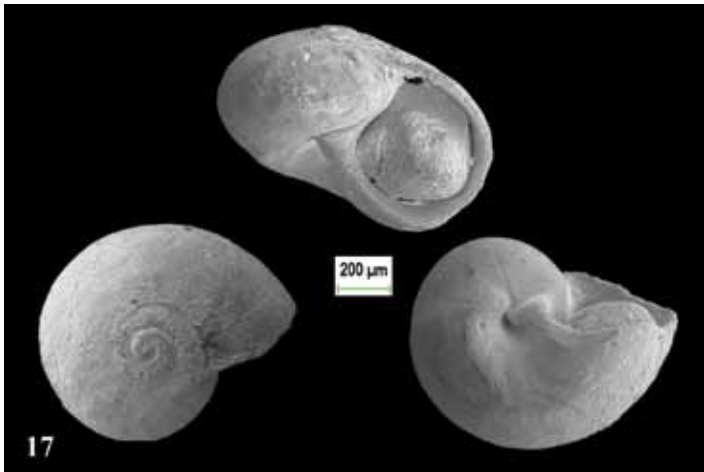




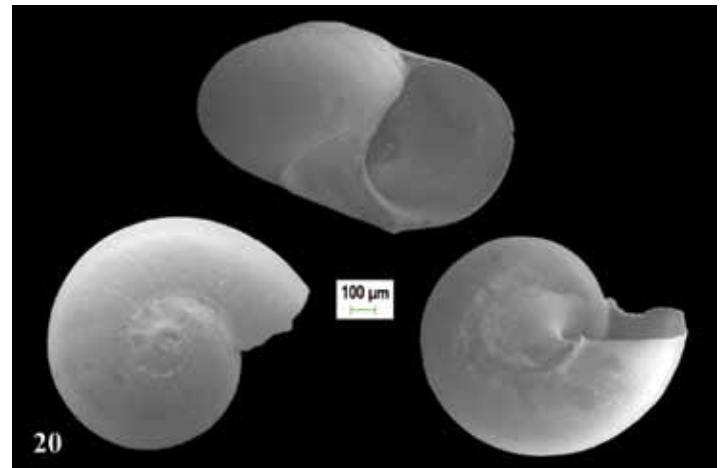
16. †*Solariorbis* n. sp. cf. *S. raris* Rubio, Fernández-Garcés, and Rolán, 2011. Has a wider umbilicus than the Holocene species.



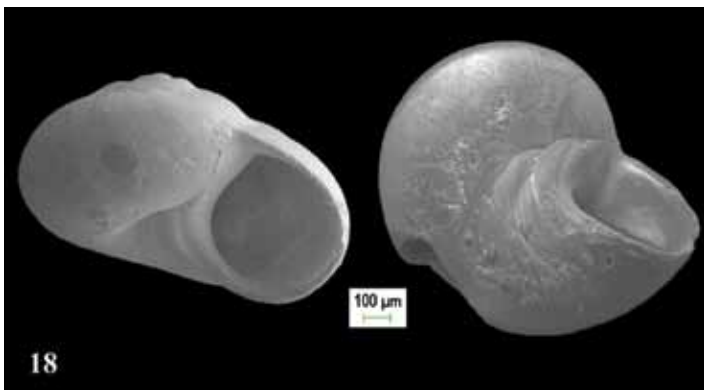
19. †*Teinostoma* n. sp. cf. *T. anastomosis* Rubio, Rolán, and Lee in Rubio, Fernández-Garcés, and Rolán, 2011. Spiral sculpture on early teleoconch is far less vermiculate (less “anastomotic”) than the Holocene species.



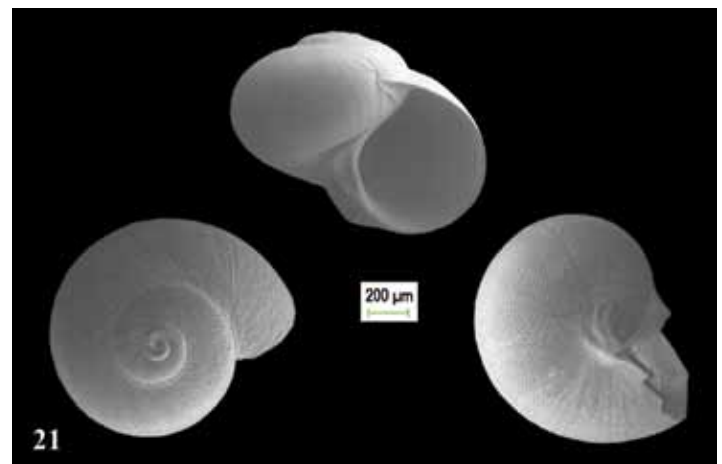
17. †*Solariorbis* n. sp. cf. *S. schumoi* (Vanatta, 1913). Material is juvenile and poorly-preserved, but absence of major and presence of fine minor spiral sculpture distinguish this taxon from the Holocene *S. schumoi*.



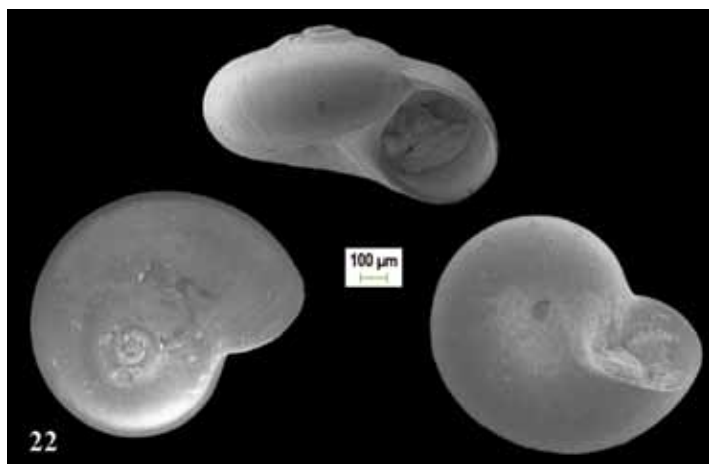
20. *Teinostoma carinicalus* (Pilsbry and McGinty, 1946).



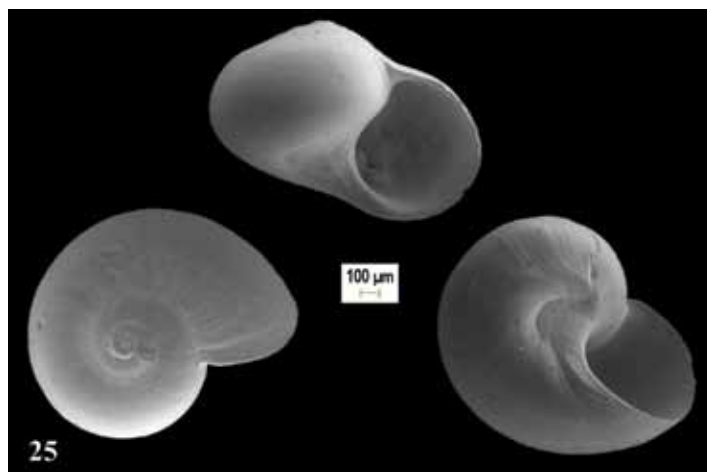
18. †*Teinostoma* n. sp. cf. *T. altum* Pilsbry in Olsson and Harbison, 1953. Our material has a consistently lower spire and H/D ratio than *T. altum*, named from the Caloosahatchee Beds and occurring in the Holocene.



21. *Teinostoma ciskae* Faber, 1995. This is the most distinctive of its congeners in this and the Holocene faunas. The conchological features may reflect a “deeper” evolutionary origin.



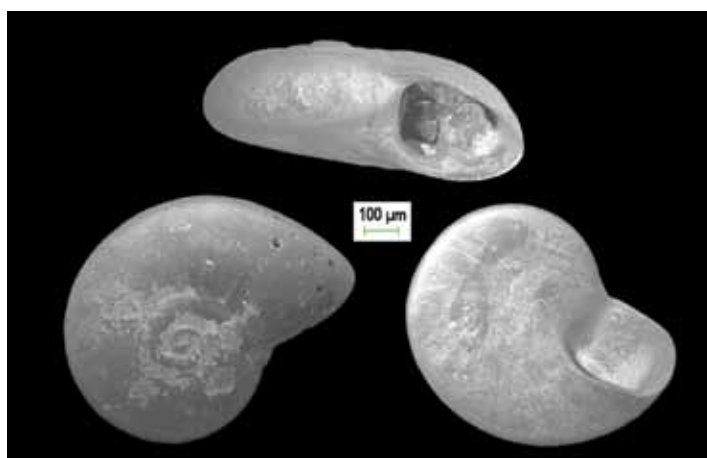
22. †*Teinostoma* n. sp. cf. *T. helicinum* Rubio, Fernández-Garcés, and Rolán, 2011. Similar in apertural view, but sutures of SMR shells are overlain with reflected callus and obscured. Sutures of the Holocene species are impressed and distinct.



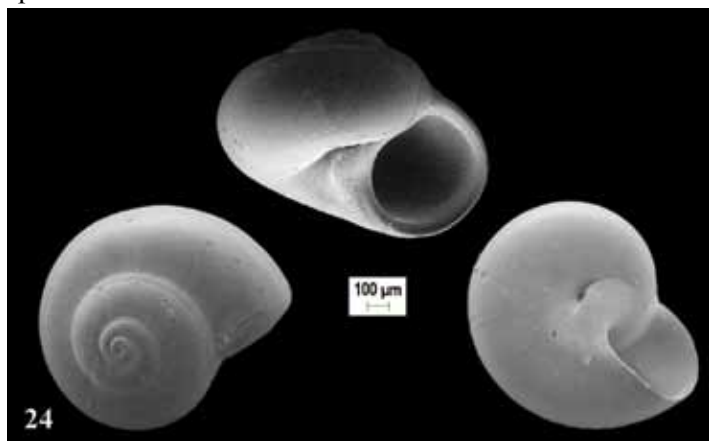
25. †*Teinostoma* n. sp. cf. *T. megastoma* (C.B. Adams, 1850). The Holocene species has a lesser H/D ratio and is less compact.



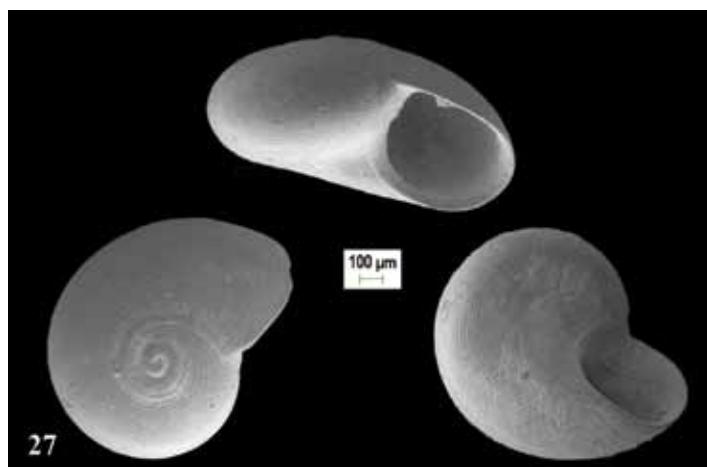
23. †*Teinostoma* n. sp. cf. *T. incertum* Pilsbry and McGinty, 1945. SMR shells have lower H/D ratio, less deflected aperture, and open umbilicus vs. the Holocene species.



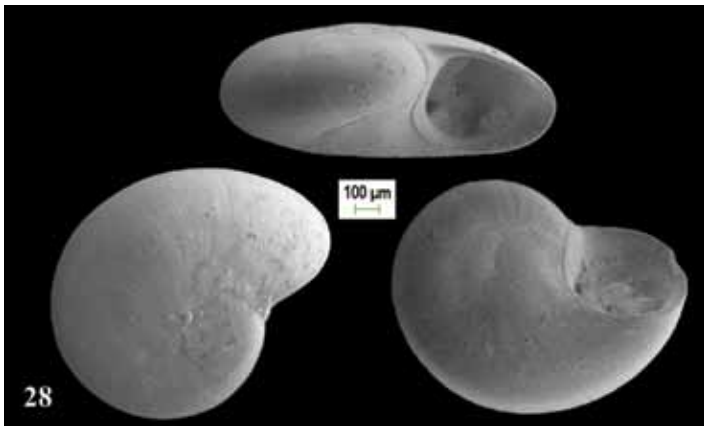
26. †*Teinostoma* n. sp. cf. *T. minusculum* (Bush, 1897). The two taxa differ, the SMR shells having a lower whorl periphery and larger, more oblique aperture.



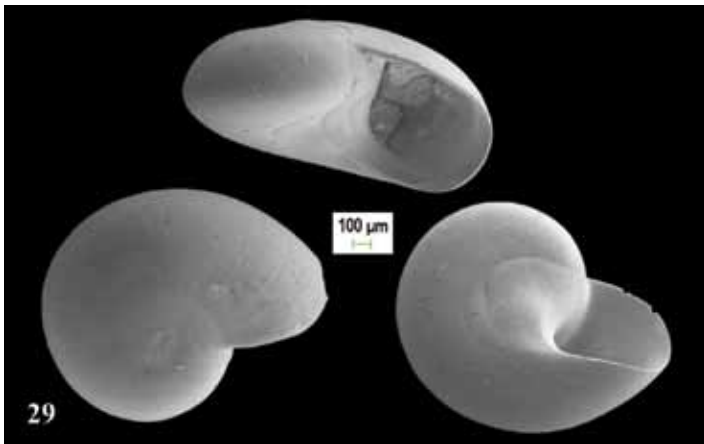
24. †*Teinostoma* n. sp. cf. *T. lunense* Rubio, Fernández-Garcés, and Rolán, 2011. Our material has tubercles on the protoconch and distinct sutures, lacking the reflected callus of the Holocene species.



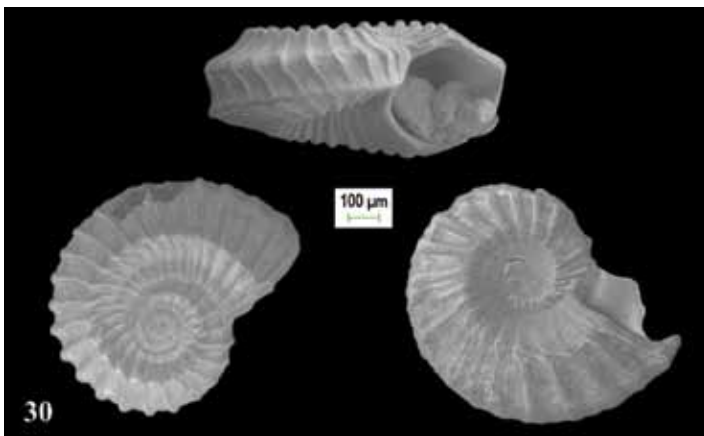
27. *Teinostoma semistriatum* (d'Orbigny, 1842).



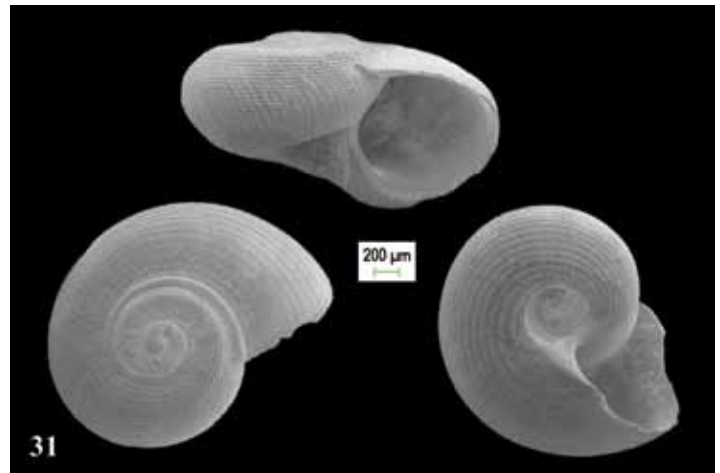
28. †*Teinostoma tectispira* Pilsbry in Olsson and Harbison, 1953. The Holocene *T. obtectum* Pilsbry and McGinty, 1945, a probable descendant, has a more deflected aperture and lower whorl periphery.



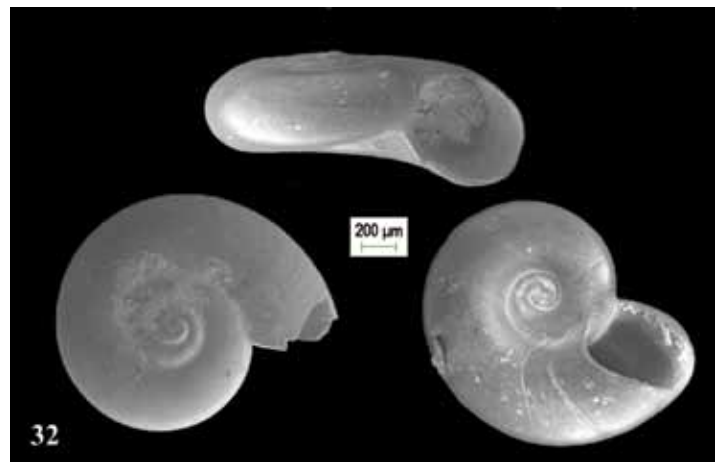
29. †*Teinostoma umbilicatum* (H.C. Lea, 1843). The Holocene *T. cryptospira* (A.E. Verrill, 1884) has a more deflected, oblique aperture. Rubio, Fernández-Garcés, and Rolán (2011) synonymized the two.



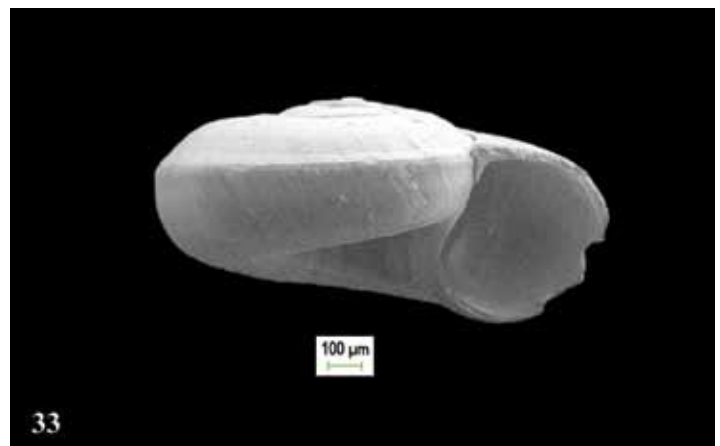
30. †*Tornus* n. sp. cf. *T. schrammi* (P. Fischer, 1857). The two are close, but the apical spiral cord in SMR shells is placed more laterally from the suture than is the case in the Holocene shells.



31. †*Vitrinella* n. sp. cf. *V. aguayoi* (Corgan, 1968). SMR shells have a much smaller umbilicus than the Holocene species.

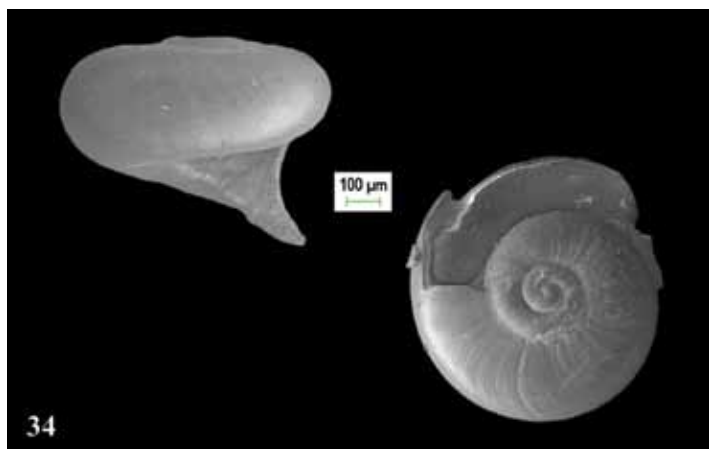


32. †*Vitrinella* n. sp. cf. *Cochliolepis* sp. I can find nothing close to this species. Possibly it's a tightly-coiled member of the latter genus.

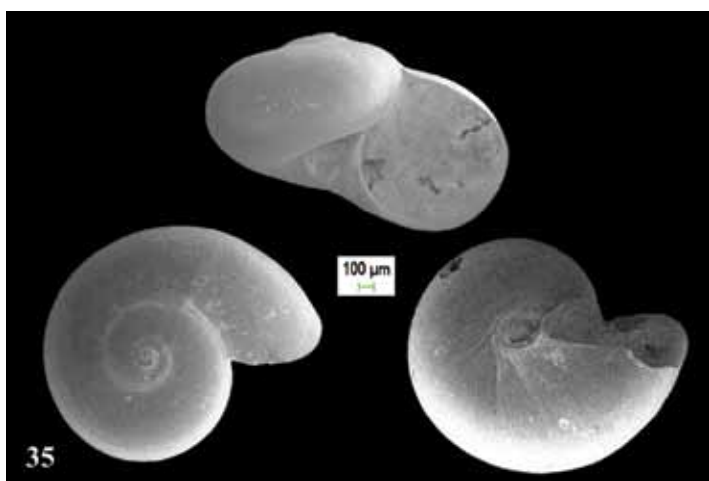


33. †*Vitrinella funiculus* (Dall, 1892).

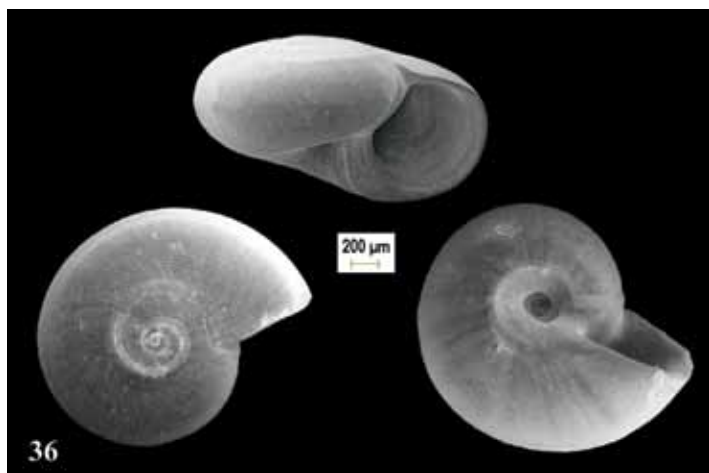




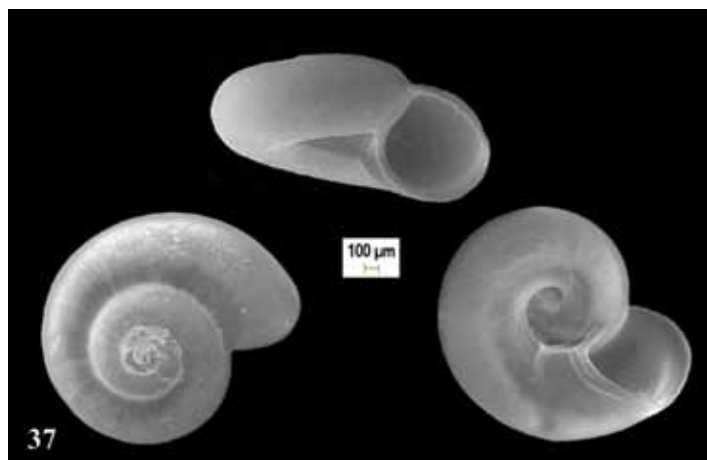
34. *Vitrinella helicoidea* C.B. Adams, 1850.



35. †*Vitrinella* n. sp. cf. *V. helicoidea* C.B. Adams, 1850. More globose with a narrower, umbilicus than the preceding.



36. †*Vitrinella opitelotus* (Dall, 1892).



37. †*Vitrinella* n. sp. cf. *V. pseudoaristata* Rubio, Fernández-Garcés, and Rolán, 2011. Wider umbilicus and flatter spire than the Holocene species, which is likely descendant.



38. †*Vitrinorbis* n. sp. Distinctive peripheral carina and regular, pitted secondary spiral sculpture.

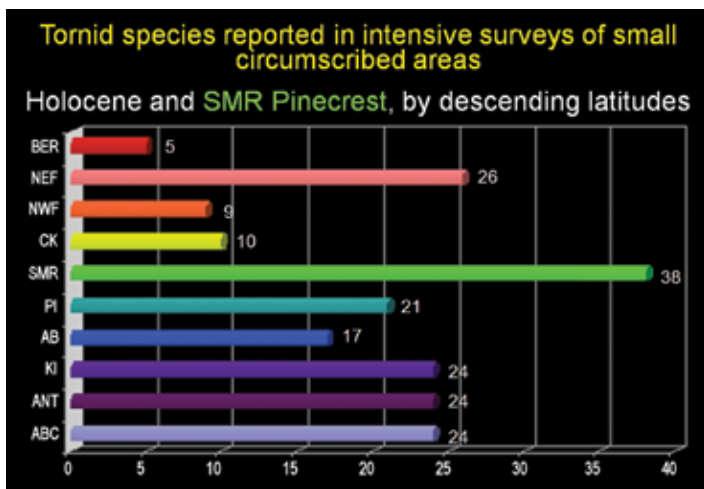
The following tabulation puts the above assemblage in context with what we know/did know of five well-studied Florida horizons:

Holocene, **all** FL records < 30 m (Rubio *et al.*, 2011): 49  
 Upper Caloosahatchee (Campbell, 1993: 141-142): 28  
 Lower Caloosahatchee (Campbell, *Idem*): 26  
 Upper Pinecrest (Campbell, *Idem*): 16  
 Lower Pinecrest (Campbell, *Idem*): 0  
 Lower Pinecrest, present study: 38

The comparison of diversity of living faunas with fossil ones is fraught with a number of apples and oranges disconnects. For instance, how do we relate a collection of shells that accumulated over, say, a few hundred thousand years with what has been gathered over a mere two hundred years? What role does preservation (or its lack) play on

the fidelity of apparent fossil assemblages? On the other hand, the variety of habitats, geographic extent, and sheer numbers of collectors and collecting events should favor the Holocene. The latter advantage, termed the “pull of the Recent” by comparative paleontologists, is generally conceded to outweigh the stratigraphic advantage, i.e., space trumps time.

Looking at the comparison a little differently, one may contrast the present results and reports of Holocene assemblages well-studied for tornids (and not many are thus-powered) [Fig. 3]. This approach confirms the prodigious species richness of this exposure of the Lower Pinecrest. The Holocene coastline lengths studied range from 1 to 1000 km, which dimension is generally one or more orders of magnitude greater than that of the present study area.



**Fig. 3.** BER: Bermuda (Jensen and Pearce, 2009); NEF: northeast Florida [FL] (Lee, 2009, also <<http://www.jaxshells.org/marine.htm>>); NWF: northwest FL [central Panhandle] (Brunner, J. L. Brunner, J. Keeler, and J. Robertson [H.G. Lee ed.] <<http://www.jaxshells.org/nwfla.htm>>); CK: Cedar Key, FL (H.G. Lee [ed.] <<http://www.jaxshells.org/cedarkey.htm>>); SMR: the present study; PI: Peanut Is., Palm Beach Co., southeast FL (H.G. Lee [ed.] <<http://www.jaxshells.org/peanut.htm>>); AB: Abaco, Bahamas (Redfern, 2013); KI: Kice Island, near Marco, southwest FL (H.G. Lee [ed.] <<http://www.jaxshells.org/kice.htm>>); ANT: Antigua [and Barbuda] (Deng, 2012); ABC: Aruba, Bonaire, and Curaçao (deJong and Coomans, 1988).]

In conclusion, I admit that the “gap in the fossil record” addressed in this chronicle is not the customary “missing link” lamentation of creationists and paleontologists alike. Just the same, it reveals some interesting facts (1) we **can and must** shore up our knowledge of biodiversity if we are going to understand the vagaries of the evolutionary process. This consideration has particular currency as we face another potential extinction event, and (2) amateurs are

**able and needed** to help remediate our ignorance in such matters. I also suggest a more subjective conclusion to this report: “Nature is to be found in her entirety nowhere more than in her smallest creatures” (Pliny, 0077).

**Acknowledgements:** The author thanks Roger W. Portell for logistical and intellectual support, the Sanibel-Captiva Shell Club for financial support, and Dr. Anne Heatherington for exceptional technical support at the helm of the SEM. Bill Frank provided image-editing, Dr. Jeff Schroeder created the graphic, and Alan Gettleman contributed the light photographs. Dr. Gary Schmelz kindly lent valuable comparative SMR material, Rick Edwards has provided immense assistance in the discovery of small SMR 10 mollusks, including a substantial number of the shells depicted in this report. Finally I acknowledge deep appreciation to Drs. Federico Rubio, Raúl Fernández-Garcés, and Emilio Rolán for their timely provision of a monograph that greatly facilitated this analysis.

**Literature cited:**

**Allmon, W.D., G. Rosenberg, R.W. Portell, and K.S. Schindler. 1993.** Diversity of Atlantic coastal plain mollusks since the Pliocene. *Science* 260: 1626-1629. 11 June.

**Campbell, L.D. 1993.** Pliocene mollusks from the Yorktown and Chowan River Formations in Virginia. Virginia Division of Mineral Resources Publication 127: 1-259.

**Dall, W.H. 1889.** Reports on the results of dredgings, under the supervision of Alexander Agassiz, in the Gulf of Mexico (1877-78) and in the Caribbean Sea (1879-80), by the U. S. Coast Survey Steamer ‘Blake.’ *Bulletin of the Museum of Comparative Zoology* 18: 1-492, pls. 10-40. 8 Jun. <<http://www.biodiversitylibrary.org/item/25505#page/5/mode/1up>>

**Dall, W.H. 1892.** Contributions to the Tertiary fauna of Florida, with especial reference to the Miocene silex-beds of Tampa and the Pliocene beds of the Caloosahatchie River. Part II. Streptodont and other gastropods, concluded. *Transactions of the Wagner Free Institute of Science of Philadelphia* 3: [i-vii], 201-473, 1 fold-out map, pls. 13-22. December. <<http://www.biodiversitylibrary.org/item/98240#page/7/mode/1up>>

**Deng Yan Zhang. 2012.** *Antiguan Shallow-water Seashells-A collection with 18 years study and research of shoreline shells from Antigua and West Indies.* MdM Publishing, Wellington, FL. xi + 1-(211).+ 22 item errata sheet. March.

**deJong, K.M. and H.E. Coomans. 1988.** Marine gastropods from Curaçao, Aruba and Bonaire. *Studies on the Fauna of Curaçao and other Caribbean Islands* 69: 1-261, 47 pls.

**ICZN (International Commission on Zoological Nomenclature). 1999.** *International Code of Zoological Nomenclature. Fourth edition.* International Trust for Zoological Nomenclature, London. Pp. xxix + 1-306. <<http://www.nhm.ac.uk/hosted-sites/iczn/code/>>

**Iredale, T. 1915.** The nomenclature of British marine Mollusca. *Journal of Conchology* 14(11): 341-346. July. <<http://www.biodiversitylibrary.org/item/98719#page/393/mode/1up>>

**Jensen, R.H., and T.A. Pearce. 2009.** *Marine Mollusks of Bermuda.* Delaware Museum of Natural History, Wilmington. [i]-x + 1-473 (incl. 16 color plate ensembles).

**Lee, H.G. 1993.** Book Review. *Science* 260: 1533-1662. *American Conchologist* 21(3): 11-12. September.

**Lee, H.G. 2006.** Landsnails of Claiborne Bluff. *American Conchologist* 34(3): 30-31. September.

**Lee, H.G. 2009.** *Marine Shells of Northeast Florida.* Jacksonville Shell Club, Inc. 204 pp. + 19 color plates. 28 May.

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

**Pliny (the Elder). AD 77.** *Naturalis Historiae, Book 11: 4.*

**Redfern, C. 2013.** *Bahamian Seashells: 1161 Species from Abaco, Bahamas.* Bahamianseashells.com, Inc: Boca Raton, FL. 501 pp.

**Rubio, F., R. Fernández-Garcés, and E. Rolán. 2011.** The family Tornidae (Gastropoda: Rissooidea) in the Caribbean and neighboring areas. *Iberus* 29(2): vii + 1-230. December.



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# The long and the short of it: Cypraeoidea of Pacific Panamá

Simon Aiken

At first sight, it's an unlikely place to collect shells: the center of a city of 900,000 people, with a beach visibly affected by raw sewage runoff. Icons of Central American banking tower 60 stories overhead. This is the middle of Panamá City, and the 'beach' is called Punta Paitilla. The locals know it as "Poo Poo Beach" and the Panamá Tourist Authority won't tell you much about it.

I was on the Pacific side of Panamá in early February 2014 and had the opportunity to visit this unprepossessing spot. An outlet of untreated sewage is clearly visible on Google Earth and the whole area is caked in several centimeters of effluent. The only access is by pulling up on the shoulder of the main highway and vaulting the crash barrier. Small wonder that tourists avoid Punta Paitilla. Shell collectors take a different attitude however, and my enthusiasm was buoyed by the lowest tides in a decade.

High boots are essential for collecting here, and prophylactic antibiotics might be a good idea. It doesn't take long to realize that this badly polluted area is in fact teeming with molluscan life. Different color forms of the nerite *Vitta luteofasciata* (Müller, 1776) are living right in the sewage at the high tide level. Chitons are abundant on the rocky areas, including *Chaetopleura lurida* Sowerby, 1832, *C. roddai* Ferreira, 1983, and *Callistochiton pulchrior* Carpenter & Pilsbry, 1893.

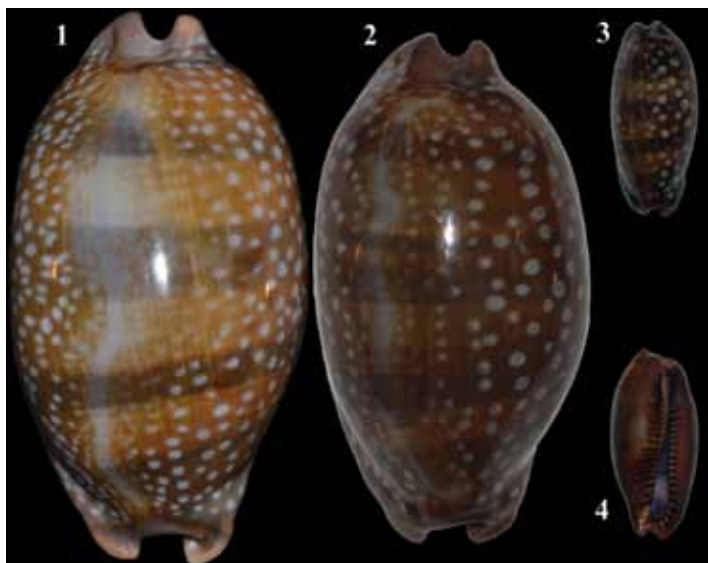
My particular interest was in the cowries at Punta Paitilla. Most of the cowries here were significantly larger than the normal populations, and crevices in large rocks contained exceptionally large individuals. *Macrocypraea cervinetta* (Kiener, 1843) sometimes exceeded 90mm and this may be the only place in the world where such a size is known to live. I collected several *Pseudozonaria arabicula* (Lamarck, 1811) measuring 31mm, and several *Pseudozonaria robertsi* (Hidalgo, 1906) measuring 32mm. I was able to collect all three species at other localities in Panamá, but the size of the Punta Paitilla specimens was striking. The *Calliostoma antonii* (Koch in Philippi, 1843) were also unusually large at this locality.



Local shell collectors turn rocks at low tide at Punta Paitilla, Panamá City.

Within a geographical radius of some 100 miles, Panamá hosts cowrie populations that show far more size variation than in other parts of the world. *Luria isabellamexicana* (Stearns, 1893) and *Talostolida pellucens panamensis* (Lorenz, 2002) are further examples. The ovulid species *Jenneria pustulata* (Lightfoot, 1786) exceeds 30mm in some Panamic populations, and yet exists only as a 'dwarf'





Comparison of *Macrocypraea cervinetta* from Punta Paitilla (1,2) and from Isla Cebaco (3,4). Sizes: (1) 94.3mm, (2) 87.0mm, (3) 33.4mm, (4) 32.1mm.



Comparison of *Pseudozonaria arabicula* from Punta Paitilla (1) and from the reef between Isla Cebaco and Isla Naranjo (2,3). Sizes: (1) 31.8mm, (2) 21.8mm, (3) 21.1mm.



While collecting these shells I heard several volleys of gunshots from the neighboring housing development, obliging me to shelter behind rocks. Meanwhile, this living *P. robertsi* glides serenely across a rock at Punta Paitilla.



Comparison of *Pseudozonaria robertsi* from Punta Paitilla (1) and from the reef between Isla Cebaco and Isla Naranjo (2). Sizes: (1) 32.4mm, (2) 19.0mm.

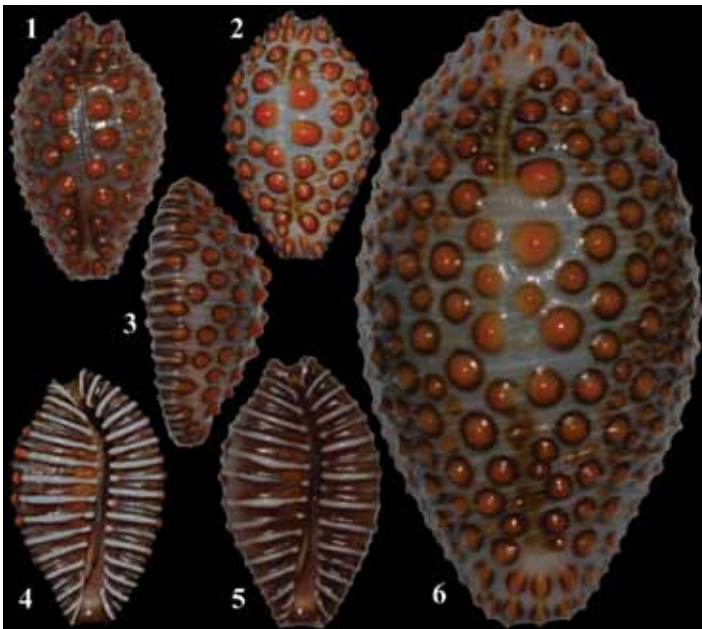
form in one of Panama's most famous collecting localities – Isla Gobernadora.

I am not aware of any direct explanations in the literature, but presumably the populations respond to local environmental factors. For instance, the unusually small *P. robertsi* that I collected between Isla Cebaco and Isla Naranjo were living in a fast-moving current, and with more coral substrate than around Panamá City. In the case of Punta

Paitilla, it is tempting to speculate that the sewage has created a nutrient-rich environment that favors certain molluscan species. The negative effects of pollution on coral growth are well documented (e.g. Pastorok & Bilyard, 1985), but there are anecdotal reports of mollusks flourishing in badly polluted areas. Yet, there are few quantitative data linking pollution with size. There was a report from the Californian coast that *Neobernaya spadicea* (Swainson, 1823) is more



(left) Size variation in *Luria isabellamexicana* from Isla Cebaco. Sizes: (1) 26.7mm, (2) 40.7mm. (right) Size variation in *Talostolida pellucens panamensis* from Isla Cebaco. Sizes (3) 38.8mm, (4) 22.8mm.



Size comparison of *Jenneria pustulata* from Isla Gobernadora and Isla Cebaco. Isla Gobernadora sizes: (1) 12.3mm, (2) 11.5mm, (3) 12.2mm, (4) 11.8mm, (5) 12.9mm, and Isla Cebaco (6) 28.3mm. According to local collectors, the specimens from Isla Gobernadora are always 'dwarf', and there has been no obvious drift in the typical size over the last two decades.

abundant near municipal wastewater outfalls (Grigg, 1979). Increased *diversity* of marine gastropods was noted in the vicinity of a sewage outfall in Broward County, Florida (Wayne Harland, personal communication), however, this may have been due to the construction process of the pipes themselves, effectively creating artificial reefs. Cabral-Oliveira *et al.* (2009) studied the effect of sewage effluent on the littorinid *Melarhaphe neritoides* (Linnaeus, 1758) in



*Jenneria pustulata* on coral between Cebaco Island and Naranjo Island, exposed at minus tide. The orange spots on the mantle mimic the orange pustules of the shell. The shell on the right is a juvenile and lacks the pustules, and yet with its mantle extended it appears very similar to an adult (left).

Portugal, and found that the population density was higher in polluted areas. Adult size was *smaller* however, and juvenile mortality was higher.

A new sewage treatment plant has been promised for this part of Panamá City. It will be very interesting to try to correlate sewage treatment to a change in the size of the shells. In the meantime, "Poo Poo Beach" embodies our lack of understanding of complex ecosystems.





*Macrocypraea cervinetta* from Isla Gobernadora, exposed at low tide. Specimens from this area and other localities are nowhere near the size of specimens from Punta Paitilla.



The *Trivia solandri* Sowerby, 1832, at Punta Paitilla are also quite large, typically 20mm.

#### References:

- Cabral-Oliveira, J., P. Maranhão, M.A. Pardal. (2009).** The effect of sewage discharge on *Melarhaphe neritoides* (Gastropoda: Littorinidae) population dynamics. *Scientia Marina* 73; 259–267.
- Grigg, R.W. (1979).** Long-term changes in rocky bottom communities off Palo Verdes. *Coastal Water Research Project Annual Report 1978*. Southern California Coastal Water Research Project (US Department of Commerce, Springfield, VA) pp. 157–184.
- Pastorok, R.A., G.R. Bilyard. (1985).** Effect of sewage pollution on coral-reef communities. *Marine Ecology – Progress Series* 21; 175–189.

The photographs in this article appear courtesy of Simon's Specimen Shells Ltd.

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Punta Paitilla has a high concentration of molluscan life. Here, *Pseudozonaria robertsi* (right) passes *Trivia solandri* (left). Other species found on a single visit to Punta Paitilla included *Diodora inaequalis* (Sowerby, 1835), *Erato scabriuscula* Sowerby, 1832, *Trivia pacifica* (Sowerby, 1832), *Trivia sanguinea* Sowerby, 1832, *Engina pulchra* Reeve, 1846, *Anachis varia* (Sowerby, 1832), *Anachis fluctuata* (Sowerby, 1832), *Eupleura nitida* (Broderip, 1833), and *Trachypollia lugubris* C.B. Adams, 1852.



# Size Matters! III

Moshe Erlendur Okon



**Fig. 1. *Tonna melanostoma* (Jay, 1839) Poindimie, New Caledonia, taken at 10 meters. This is the largest and rarest in the family. It inhabits the intertidal zone in an area around New Caledonia and Tonga. The giant specimen shown here is a 300 mm (11.8") female and perhaps only 1 mm (!) smaller than the world record size. The abrasion in the aperture was probably caused by the gelatinous egg mass the animal laid just before being caught. The shell is in the collection of Chris Vos, who has also written the extensive and up-to-date Conchological Iconography on Tonnidae. Courtesy of Chris Vos.**

In Part II, I discussed the cowries, a group in which it is quite easy to determine maturity by the morphology of the shell. The tun shells – family Tonnidae Suter, 1913 – are quite different in this regard. This is because growth does not cease upon reaching sexual maturity (which happens rather early) and can continue long afterwards.

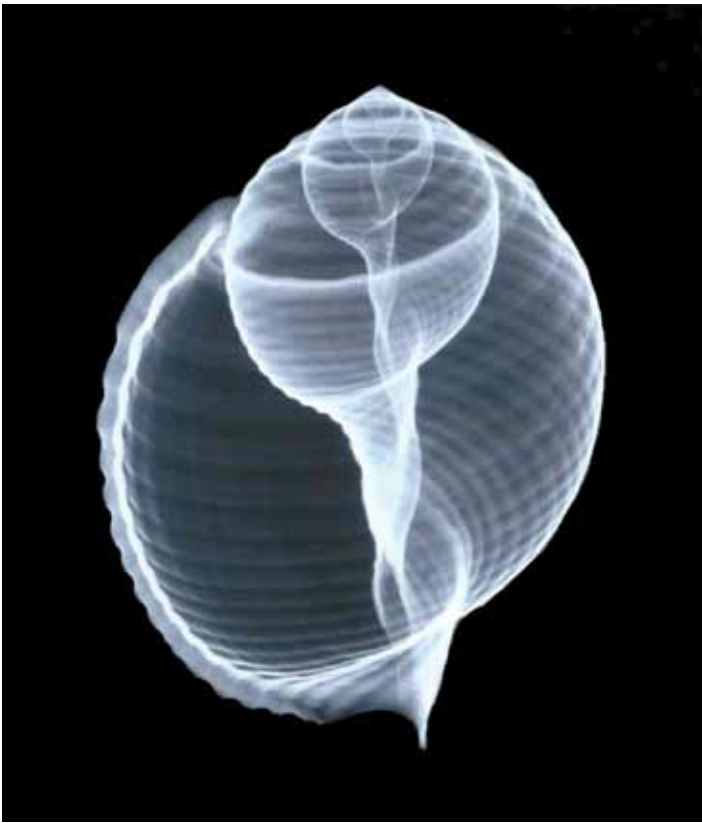
Tun shells are formed episodically, as with certain Muricidae, Cassididae and Ranellidae. Between growth periods, there is a rest period used for thickening the outer lip (and the formation of denticles in the genus *Malea*) and reproduction. Then growth resumes, but since the animal dissolves the outer lip when starting a new growth phase, it is very difficult to tell how many phases took place and whether or not the shell has indeed reached its full size.

The spire on these shells is short and the body whorl

comprises most of the shell. Spiral sculpture is rather elaborate and forms ridges and canals of differing depths and widths. There is often an impressed suture as well as a prominent fasciole (spiral bands, raised or impressed, at the anterior portion of the shell near the siphonal canal). Some young specimens may also possess an operculum.

The animals prey on holothurians, such as sea cucumbers, and do so by paralyzing them with a salivary secretion containing 3-5% sulfuric acid. They then use a strong radula and hooked jaws to wholly begin ingesting the food into the proboscis. This is probably why the aperture is so large and wide. When fully extended, the animal is much larger than its shell.

There are three genera in the family: *Tonna*, *Malea* and *Eudolium* (which has only two species). Average size is



**Fig. 2.** An X-ray image of *Tonna sulcosa* (Born, 1778). Courtesy of Emanuel Lattes.



**Fig. 3.** A hand colored lithograph from 1867 by Dunker of his "*Dolium japonicum*" (now *Tonna luteostoma* (Küster, 1857)). Notice the healed break indicating the fragility of the shell.



**Fig. 4.** A live fully extended *Tonna perdux* (L., 1758) photographed at 9 meters, Tubod, Siquijor, Philippines. Courtesy of Guido T. Poppe.

between 60-200 mm, and females are larger than males. Tun shells can be found in temperate and tropical seas, in shallow water (*Tonna* & *Malea*) and down to 600 meters depth (*Eudolium*).

These shells (named for their tun, cask, or barrel shape) have been known for hundreds of years. Vos (2007) tells of a shell known from Roman times, and Dance (1986) depicts an engraving of *Tonna galea* from 1622. Linnaeus named a few tun species under different genera (*Bulla*, *Buccinum*) in his 1758 Systema Naturae. Since that time many additional species have been named.

Please feel free to contact me at [mosherlend@gmail.com](mailto:mosherlend@gmail.com) with suggestions or if you have any particular shells of unique size in your collections you wish to share.

#### References:

- Dance, S. Peter. 1986.** A History of Shell Collecting, E.J. Brill, Leiden, The Netherlands, pp. 265.
- Dunker, W.B.R.H. 1858-1870.** Mollusca marina: Beschreibung und Abbildung neuer oder wenig gekannter Meeres-Conchylien, Cassel, pp. 144, plus 45 color plates.
- Okon, M.E. 2014.** Size Matters II, *American Conchologist*, vol. 42, No. 1, March 2014, p. 34.

**Vos, Chris & Yves Terryn. 2007.** The Family Tonidae, in Poppe, Guido T. & Klaus Groh, *A Conchological Iconography*, edited and published by ConchBooks, Germany, pp. 58 (text) plus 130 color plates.



## Marco Island Shell Show - 13-15 March 2014



**Jim Cordy with his COA Award-winning display at the Marco Island Shell Show.**

Longtime COA member James (Jim) Cordy won the COA Award at this year's Marco Island Shell Show. His exhibit was titled "Guaymas San Carlos Déja Vu" and was in 7 cases over 15 feet. Jim is a member of the Astronaut Trail Shell Club and has more than 40 years experience scouring all areas of the globe in a search for specimen seashells. He has one of the largest private Caribbean shell collections in the world, with hundreds of his shells on display in the Brevard Museum, where he is curator of mollusks. In his display for the Marco Island event he highlighted shells from Guaymas, Mexico, and the local populace who collect (and eat) many of the mollusk species he displayed.

This year's show had almost 2,000 visitors and marked a real high point for the club. Other winners included:

**Shell of Show** - Phil Miller with the volute *Livonia nodipli-cata* (Cox, 1910).

**Florida Gulf Coast University Trophy** (most outstanding single self-collected Marco Island shell) - Sue Goril with a right-handed lightning whelk, *Busycon sinistrum* Hollister, 1958.

**Best Miniature Shells Trophy** - Phyllis Gray.

**Dr. William Reid Plaque** (best combination of scientific and esthetic aspects of conchology) - Pat and Bob Linn with "*Tibias of the World*."

**Scribner Trophy** (most outstanding Marco Island self-collected shells) - Bruce and Paulette Carabelli with lettered olives, *Oliva sayana* Ravenel, 1834.



**(above) Some shells in Jim's award winning display.**

**Natural History Photographic Award** - Bruce Carabelli with "How a Clam Actually Deposits Material to Make a Shell."

**Judges Special Merit** - Rodger and Kris Woods with "Endemic Shells of New Zealand." The couple were visiting the US from New Zealand and brought the shells along for the show.

**Judges Special Merit** - Greg Curry with *Athleta* of Africa and Australia.



## 77th Annual Sanibel-Captiva Shell Show - 6-8 March 2014



**Ron Bopp, winner of the COA Award at the 77th annual 2014 Sanibel-Captiva Shell Show.**

Despite weather that resulted in tornado warning sirens and horrendous thunderstorms that caused power outages and pretty much shut down the first day of the show, the 77th annual Sanibel-Captiva Shell Show finished with success for the remaining two days of the show. The COA Award was won by Ron Bopp of Bradenton, Florida. His exhibit was titled the "Alum Bluff Group" and was displayed in 16 cases over 36 feet. He also won for best single fossil shell. Scientific judges were Gary Schmelz PhD and Harry Lee MD.

Other winners included:

**DuPont Trophy** - Gene Everson for "Everything You Need To Know About The Shell Collecting Hobby."

**Anne Joffe Sanibel Superstar Award** - Jim and Linda Brunner for "Seashells of NW Florida: A Reference Set."

**People's Choice Award** (scientific division) - Leroy Neitzel, Harold (Smokey) Payson, and Jim Scatterday for "In the Belly of the Batfish."

**Best Student Exhibit** - Bethany Namour.



**Anne Joffe Sanibel Superstar Award winners, Jim and Linda Brunner.**



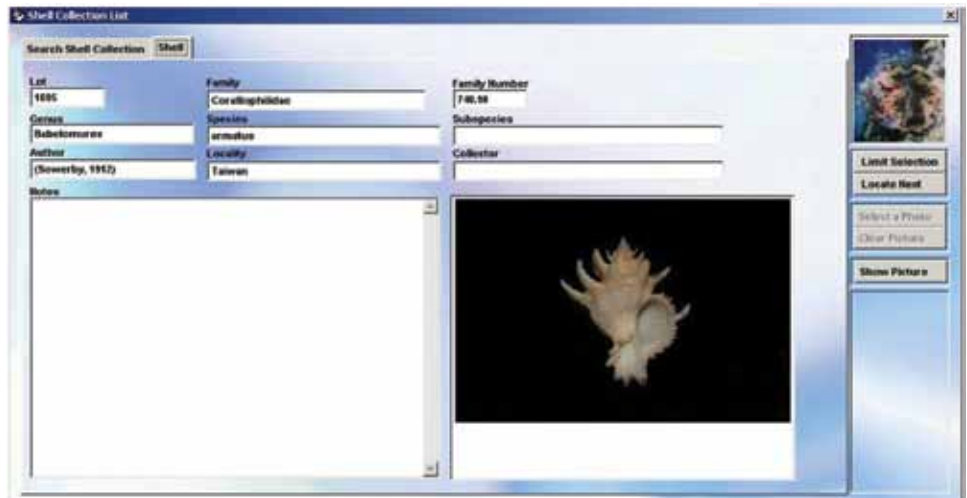
**DuPont Trophy winner, Gene Everson**

# How we organize our shell collections; log books, card catalogues, and computers

David P. Berschauer

As shell collectors we tend to spend more of our time, energy and efforts with the shells in our collections, as we should, because they are the beautiful creations that got us interested in this hobby to begin with. Sadly, the hard work of curating a collection is often neglected. Curating includes acquisition, care, cleaning, organization, and preservation of both the shell and, most importantly, the data associated with the shell. Collecting, cleaning, touching, and handling the shells are the fun parts of our hobby. Keeping and maintaining a scientifically organized collection with full locality data in a manner so that data can be recalled and used at a later date is the hard part. So, why do it? The scientists and museums will tell you that a pretty shell without complete locality data is of little value – scientifically. Nevertheless, we all know that a rare and beautiful shell in gem condition will still sell for serious money to collectors at an auction. Some people just want pretty shells to decorate their homes. Others use shells in arts and crafts. Many of us appreciate having a museum style collection, arranged in a systematic manner, in drawers, easy to access and work with, however we chose to do so.

Many books have been written about shells, and most of them start with a section about how to organize a collection and maintain your collection's data. Back in the "good old days," before computers, all the data on a grouping of shells acquired at a given time (i.e. a lot) was maintained in an acquisition log book or in a card catalogue. Some collectors even kept their data in their shell identification books, handwritten in the margins. Whatever method chosen was personal to the collector. A problem arises when the collector dies and the collection is broken up, transferred, or sold. Then the shell books and the shells are usually separated and either sold, given away, or thrown out. Shells that find their way to museums without accurate data are usually not included in the collection and may be discarded. Shells that find their way to collectors, either in a bulk sale or through a shell club, often face the same fate if they do not have complete data. The best way to prevent this is to ensure that your shells and data are kept together, and that you maintain a complete record of your collection in an easily retrievable location – hence the use of computers.



Computers are wonderful tools to keep, maintain, and organize data of all kinds. There are a lot of readily available computer programs on the market for keeping track of numbers and financial data, as well as word processors for writing. Database programs are often very technical and seem to be written for computer programmers, but they are versatile and can be adapted to organizing a collection. Most shell collectors are not computer programmers, therefore using database programs as a tool has traditionally been out of reach for most of us. Museums usually have excellent computer database programs, proprietary software written for each institution. One might ask, what is your everyday collector to do?

I was weaned on computers since the mid 1970s. My father worked for IBM, and back when computers were mainframes the size of an office building I was learning to write computer programs that were fed into the computer through a punch card reader. By the mid-1980s personal computers had become fairly commonplace and I had been programming computers for almost ten years. As a shell collector, I realized that a computer database program to keep track of my shell collection data was an absolute necessity, so I set about writing my own database program. By 1987 the database program I had written in dBase programming language was as complete as I felt it needed to be and it kept track of all of my shells and data. I put all the data from my card catalogue into the computer database program, printed out data tags and threw away the cards. At the time, I had never met another shell collector and did not know that what I had would be useful to anyone else.

Fast forward to the new century, computers are now commonplace. We all communicate via e-mail, text messages, instant messaging, Skype, and Facebook. My dBase shell collection program that I wrote in the 1980s was DOS based software and would only run on older Windows operating systems. I hired a computer programmer in Hawaii who specialized in updating older database applications and brought my program up to modern standards for the 21<sup>st</sup> century, realizing its potential for other shell collectors like myself. I still regularly find shells from deceased club members in the “Silent Auction” or on the “Dollar Table” that have been separated from their data, yet have interesting notes that hint at the collector’s data – now never to be found as the old card catalogues or log books have been lost or discarded. This is sad as those shells were loved and cared for by someone for many years, and undoubtedly the collector would have wanted their shells to be treasured by someone else.

I believe that an “easy-to-use” computer program for collectors is sorely needed. Often the best use of computers by collectors is that some are using spread sheet programs (designed for accounting, not a natural history collection) to keep track of their shell collections. A good computer program for shell collectors would mimic a card catalogue, with a single entry (like a card) for each species or lot of shells in the same species collected at the same time and place.

Such a program would enable the collector to keep, organize, and maintain the individual records and data from their shell collection in a readily accessible manner, would be easy to use and menu driven by self-explanatory pull tabs. Such a program should be versatile and allow the collector using the more detailed features of the program to make searches, prepare reports, or to make global corrections to their database affecting the fields for Family, Genus, Species, Subspecies, Author, Locality, and Collector. Such a program should also assign lot numbers to each data entry, much like the old fashioned card catalogues or museum acquisition systems. What a collector needs is in essence a database program, customized for a natural history collection – similar to that used in modern museums but at an affordable cost. I searched for an available database program that would fit my needs and help me organize my shell collection, but was unable to find one. This led me to write my own program. I have made changes and upgrades to it over the years to make it easier to use and to enhance its ability to perform searches and reports.

The Shell Collection Management Program™ is easy to use, and can be personalized by adding the name



of the collector to the main screen. The collector can also add digital macro photos of their shells to individual records which enhances the utility and enjoyment of the program. One of the benefits of this program is that the collector can also print labels for use in their collection, perform a limited search report by one or more than one criteria (*i.e.*, Family, Genus and Locality, or a range of Lot Numbers), or a detailed report of the entire collection. Computers can arrange data in alphabetical order or in numerical order. As a systematic order arrangement is preferred in a natural history collection, merely being able to keep track of one’s shell collection in alphabetical order is not enough. This problem was solved by assigning an arbitrary number, a “family number”, to each family of shells so that the computer could sort and list the entries in systematic order by using the “family number” data field. The program is so versatile that it can also be easily used by Entomologists and other collectors by simply editing the “look up lists”, deleting the data for Mollusks and adding in Family names and “family numbers” for Lepidoptera, Hemiptera, Coleoptera, and other insect orders to maintain their entomology data in systematic order.

The Shell Collection Management Program™ is the culmination of many years of work to make a stream lined, easy to use collection database management system, and makes the job of curating a collection easy and fun. Things certainly have come a long way from log books and card catalogues. This database is available to collectors and may be purchased online at [www.shellcollections.com](http://www.shellcollections.com).

Happy shelling!

David P. Berschauer  
[www.shellcollections.com](http://www.shellcollections.com)



# A North Carolina WHELKome

## 2014 COA Convention

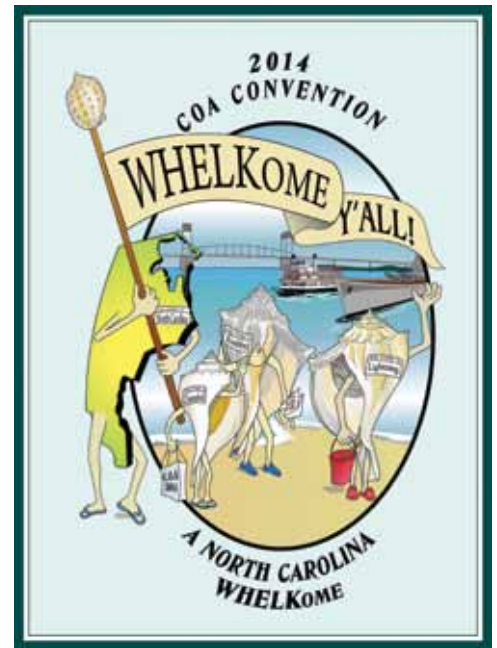
### 11 to 15 August 2014

Tours & Dinner Cruises 9 & 10 August  
Wilmington, NC

By Jeannette Tysor & Ed Shuller

Convention Hotel: Hilton Wilmington Riverside 910-763-5900

The North Carolina Shell Club, host for the 2014 Convention, has arranged an outstanding week of activities including tours, programs, Welcome Party and Banquet, raffle, silent and oral auctions and mini-shell show; concluding with the annual bourse in both ballrooms in the Hilton. Whether you are a serious collector, professional malacologist or just a lover of shells, there is something for everyone!



#### Programs

Thanks to our Program Chair, Doug Wolfe, we have an outstanding line-up of speakers and topics. Several presentations will feature the diversity and distribution of North Carolina mollusks from the mountains to the sea. There will be updates on the Fasciolarinae and Pectinidae, a report on the geographic distribution of Brazilian Conidae, and a discussion of trumpet tritons. As always there will be a number of general interest presentations.

#### Poster Session

A new feature at this Convention is the addition of a Poster Session. This is a chance for you to discuss a topic of your choice with others in a very informal setting. Thus far we have presenters ranging from a Junior NC Shell Club member, to a couple of NC Shell Club Scholarship recipients, to the Curator of Aquatic Invertebrates at the NC Museum of Natural Sciences. Contact Doug Wolfe, 252-728-3501 or [dawolfe@ec.rr.com](mailto:dawolfe@ec.rr.com), if you are interested in more information. There may still be openings for this activity.

#### Welcome Party

The Monday night welcome party has a Scots theme to honor the strong Scots-Irish heritage of the state and participants are encouraged to wear something plaid. Costumes will be judged and prizes given. A special feature will be the appearance of the Port City Pipes & Drums led by Pipe-Major Andy Simpson, a native Scot who was formerly a member of the 1st Battalion Scots Guards.

#### Banquet

The Wednesday night banquet is the final activity before the eagerly awaited opening of the Bourse on Thursday. Raffle winners will be announced and trophies

given to winners in the Mini Shell Show. The speaker for the evening is Charles Rawlings who will share with us pictures of living mollusks from around the world.

#### Raffle

Thanks to our generous donors, we have the most exquisite raffle items with something for everyone! With the winning ticket one of these could be yours:

- A freak *Chicoreus ramosus*, 227 mm, 5 fingers on each spine. Valued at \$750. Donated by Donald Dan.
- Crystal beadwork scallop by renowned North Carolina fashion designer, Eric Ennis. For 30 years Mr. Ennis made gowns for governors' wives, debutantes, beauty queens, and opera divas. After retiring he began making textile art by hand-beading patterns onto fabric. The piece in our raffle, created using Swarovski crystals, was donated by NC Shell Club member Mary Louise Spain and is valued at \$300.
- A gorgeous Shell mirror created by NC Shell Club member Harold Brown, valued in excess of \$200.
- A lovely freshwater pearl and amethyst necklace donated by Charlotte Thorpe and valued in excess of \$150.
- A framed lithograph of *Pterynotus loebbeckei* (1/1) by Anthony D'Attilio, acclaimed author, illustrator and long-time contributor to the San Diego Shell Club newsletter, *The Festivus*. Donated by Don Pisor, the lithograph is valued in excess of \$100.

#### Door Prizes

Highly desirable items will be given as door prizes at all program sessions. We have a number of North Carolina collected shells including *Busycon carica* with apertures in brilliant colors ranging from yellow, to purple,

to deep reddish-orange. Also several North Carolina collected *Triplofusus giganteus*. There is a *Neptunia lyrata decemcostata*, an *Epitonium rugosum*, a necklace and earrings, a wine basket, and much more. You will not want to miss a single program session and take a chance of not getting a great gift.

### Bargain Shell Sale

Thursday morning in the lower lobby area outside the Grand Ballroom will be our Bargain Sale. Shells and other items from 25¢ to \$1. Spend some time hunting for great deals while waiting for the bourse to open.

### Bourse

Thursday and Friday the much anticipated shell market will be in full swing in both ballrooms at the Hilton; more than 10,000 square feet of shells. Dealers from all over the world will offer specimen shells, many of which you may never see except at this event.

### Tours

Come early and join your friends, old and new, on our pre-Convention tours. You will especially enjoy the Saturday and Sunday night cruises. For those arriving early the Black River Eco Cruise on Saturday will be a great choice. The catamaran "Wilmington" leaves from the hotel dock for a 4 hour trip up-river to one of the tributaries of the Cape Fear River. There will be an on-board picnic and cash bar. Sunday evening is an elegant dinner cruise on the "Henrietta" also with cash bar and a door prize. Don't miss either.

### Wilmington Information

Monday morning the Wilmington and Beaches Convention and Visitors Bureau will be on hand to give out information and answer questions about the area. Their desk will be near the Convention Registration desk in the lower lobby of the Hotel.

### Thanks to Our Most Recent Donors:

Terry Benczik  
Karen VanderVen  
Bob & Alice Pace  
Alice Monroe estate  
Mr. & Mrs. Marvin Chaikin  
Mique Pinkerton

Emily Vokes  
Glenn Duffy  
Phil Clover  
Hank Chaney  
Larry Tysor

**At publication time 59 dealers and individuals had donated items for our raffle, door prizes, and various auctions. We are most grateful for the response we have received.**

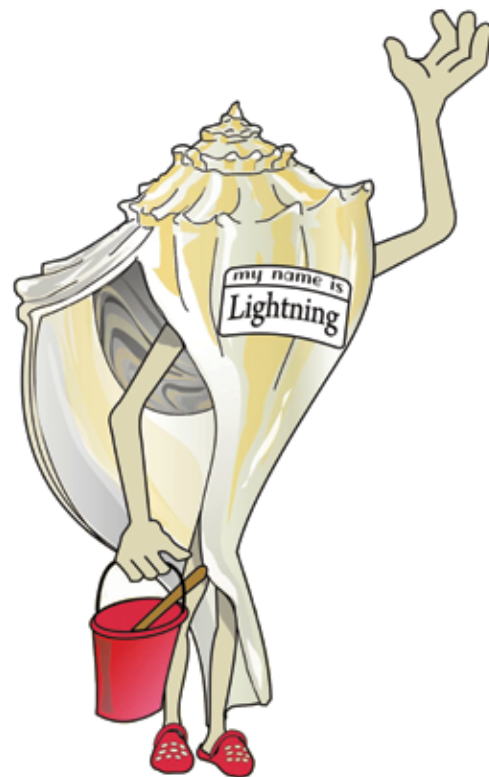
We are pleased to continue receiving donations for the Oral Auction. Cash Contributions are always appreciated.



**Hilton Wilmington Riverside 910-763-5900**



**Black River Eco Cruise**



**See ya'll in Wilmington  
9-15 August**



## ORAL AUCTION

In addition to a long list of highly desirable items from a wide range of donors the Oral Auction this year includes many rare, difficult to find species donated by Walter Paine. On the open market many of our offerings would be valued in the hundreds of dollars. Here is your chance to add to your collection at bargain prices. Take a look at these beauties:



*Cymatium ranzanii*  
Muscat, Oman,  
donated by Jeannette Tysor &  
Ed Shuller.



Pair of *Scaphella dohrni* lamps.  
Shells dredged off the Florida Keys.  
Yes - both lamps are filled with *S. dohrni*.  
Donated by  
Harold Brown and Ed Shuller.



*Entemnotrochus rumphii* 183 mm dia.  
Northeast Taiwan. Donated by  
Stephen Ko, C&S Shell Cabinet.



*Nodipecten magnificus* 183 mm Galapagos Is.,  
donated by Marcus & Jose Coltro, Femorale.



*Amoria macandrewi*  
54 mm, from the Walter  
Paine collection.



*Lambis digitata* 130 mm,  
from the Walter Paine  
collection.



*Siratus motacilla* 64  
mm, from the Walter  
Paine collection.



*Ptdrynotus elongatus* 69  
mm Philippines,  
donated by Al & Bev  
Deynzer, Showcase Shells.



*Mitra hayashii* 60 mm,  
from the Walter Paine  
collection.



*Amoria turneri* 75 mm  
form *newmanae*,  
Walter Paine  
collection.



*Pleiotygma helenae*  
89 mm,  
from the Walter  
Paine collection.



*Busycon carica* 204 mm  
Shackleford Banks,  
Harkers I, NC,  
donated by the NC  
Shell Club.





*Colobostylus humphreysianus*  
17 mm,  
Hanover Parish, Jamaica,  
donated by Rich Goldberg.



*Luria tessellata* 30 mm,  
donated by  
John Timmerman.



Antique cameo 20 mm,  
"Rebecca at the Well,"  
donated by  
Charlotte Thorpe.



*Cypraea cervus f. peilei*  
53 mm,  
Cienfuegos, Cuba,  
donated by Glenn Duffy.



*Zoila friendii vercoi* 73 mm  
Breaksea Island, SW  
Western Australia,  
donated by  
Hugh Morrison &  
Simone Pfuetzner,  
Australian Seashells.



*Fulgoraria kaneko* 174 mm  
Tsuchima Island, Japan,  
donated by Marcus & Jose  
Coltro, Femorale.



*Guivillea corderoi* 45 mm,  
Trawled between Uruguay &  
Argentina, donated by  
Don Pisor.



*Lobatus gallus* 90 mm pink dwarf,  
La Parguera, Puerto Rico,  
donated by the Alice Monroe estate.



*Amoria exoptanda* 96 mm,  
donated by  
John Timmerman.



*Lyncina leucodon* 81 mm,  
donated by Mique Pinkerton.



*Benthovoluta claydoni* 80 mm,  
from the Walter Paine collection.



*Alcithoe wilsonae* 90 mm,  
donated by Mique Pinkerton.

# SCUM XVIII: Southern California Unified Malacologists

by Lindsey T. Groves, Natural History Museum of Los Angeles County, Malacology  
Section, 900 Exposition Blvd., Los Angeles, CA 90007

lgroves@nhm.org

The 18<sup>th</sup> annual gathering of Southern California Unified Malacologists (SCUM) was held at the City of San Diego Marine Biology Laboratory and attended by twenty-five professional, amateur, and student malacologists and paleontologists on Saturday, January 25<sup>th</sup>, 2014. This informal group continues to meet on an annual basis to facilitate contact and keep attendees informed of research activities and opportunities. In keeping these gatherings informal, there are no dues, officers, or publications. The ongoing success of informal groups including SCUM, Bay Area Malacologists (BAM), Mid-Atlantic Malacologists (MAM), Ohio Valley Unified Malacologists (OVUM), and FUM (Florida Unified Malacologists) will hopefully encourage more regional groups of malacologists and paleontologists to meet in a likewise manner.

SCUM XVIII co-hosts George L. Kennedy and Wendy Enright greeted pre-meeting attendees with a variety of breakfast goodies. In continuing SCUM tradition all present were given the opportunity to introduce themselves and give a short update about current mollusk related activities. Most presentations were informal but eight attendees gave more detailed talks. It was particularly refreshing to have eight first-time SCUM attendees including five students from California State University, Fullerton. Noteworthy presentations included the 17-year history of SCUM by unofficial historian Lindsey Groves, autotomy in octopod arms by Jean Alupay, the description of a new semi-cryptic species of *Cahuillus* (Helminthoglyptidae) by Lance Gilbertson, and the continued enthusiastic malacological research by Sean Wiedrick.

SCUM XIX will be hosted by Carol Stadum at the Laguna Hills Community Center in January of 2015. Many thanks to Quinn Enright for providing security for the meeting and he is now an honorary SCUM member.

## SCUM XVIII participants and their respective interests and/or activities:

**Jean Alupay** (Univ. So. Calif.): Currently on a post-doc position studying autotomy in octopod arms. Her research includes ontogeny, evolutionary adaptation, arm regeneration, and whether or not arms are shed in response to predation. Arms appear to be shed along cleavage plains and need 2 to 3 months to regenerate.

**Kelvin Barwick** (Orange County Sanitation District): Current Western Society of Malacologists treasurer. Also conducts monitoring surveys for OCSD, particularly near outfalls, and identifies mollusks and polychaetes.

**Hans Bertsch** (San Diego Shell Club): Researching the Tritoniidae and Bornellidae of the NE Pacific. The results

will unscramble the out-of-date taxonomic nomenclature of these families and establish systematic stability.

**Doug Eernisse** (Calif. St. Univ., Fullerton): In addition to teaching, Doug has a myriad of research projects with professional and grad student colleagues including: phylogeny and biogeography of the shell-eyed chitons, molecular phylogeny in *Acanthochitona*, phylogeny of oysters of the Gulf of California, trans-Pacific and invasions of north Pacific limpet species.

**Wendy Enright** (City of San Diego): Continues work as marine invertebrate taxonomist for the city of San Diego Marine Biology Lab. Current work on and off the continental shelf includes faunas as deep as 5000 meters. Her son Quinn is now honorary SCUM.

**Wes Farmer** (San Diego Shell Club): Reported on past docent work at Torrey Pines State Preserve, including photography of whales and dolphins and sea slug research.

**Lance Gilbertson** (Newport Beach, CA): Research Associate at the Nat. Hist. Mus. L.A. Co., continues research on terrestrial mollusks of the southwest. Published a paper with Doug Eernisse (CSUF) on a new species of *Cahuillus* (Helminthoglyptidae), a semi-cryptic species, from Soda Dry Lake in the Mojave Desert using molecular techniques.

**Lindsey Groves** (Nat. Hist. Mus. L.A. Co.): Collection manager of Malacology at NHMLAC. Part of a group documenting the presence of Potomac Equine fever in California by identifying and illustrating freshwater mollusks that were vectors for disease carrying nematodes. Participated in a field trip for the annual Society of Vertebrate Paleontologists meeting in Los Angeles and wrote sections on southern California geologic evolution and tectonics for a fieldtrip guidebook. Identifies fossil invertebrates for publications on Channel Island Pleistocene terrace deposits with Daniel Muhs (US Geol. Survey, Denver).

**Carole Hertz** (San Diego Shell Club): Editor of *The Festivus*.

**Jules Hertz** (San Diego Shell Club): Business manager of *The Festivus*.

**Seth Jones** (Marine Taxonomic Services, San Marcos, CA): Conducts marine taxonomic work for MTS, San Marcos, California.

**George L. Kennedy** (Brain F. Smith & Associates, La Mesa, CA): Conducts paleo-monitoring in San Diego County and researches marine terraces in California. Formally passed the duty of the WSM reprint sale to Sean Wiedrick.

**Pat LaFollette** (Nat. Hist. Mus. L.A. Co.): Continues with rearrangement of the Pyramidellidae in the NHMLAC



**Back row:** (upper left to lower right): Jim McLean, Kenny McCurre, George Kennedy, Doug Eernisse, Lance Gilbertson, W. Britt Leatham, James Verhoff, James Smith, Kelvin Barwick.

**Front row:** (upper left to lower right): Jean Alupay, Jann Vendetti, Jules Hertz, Carol Hertz, Wendy Enright, Seth Jones, Quin Enright, Sabrina Marquez, Carol Stadum, Thomas Parker, Nicole Tronske, Wes Farmer, Lawrence Moser.

**Bottom row:** (left to right): Pat LaFollette, Shawn Wiedrick, Hans Bertsch, Lindsey Groves.

malacology collection. Works with micromollusks from the Pleistocene Lake Cahuila sediments and Miocene and Pliocene Imperial and Brawley formations in the Whitewater Canyon area of Riverside County. Reported that *The Veliger* is available on line via the Biodiversity Heritage Library

**W. Britt Leatham** (Calif. St. Univ., San Bernardino): First time SCUM attendee with an interest in mollusks.

**Sabrina Marquez** (Calif. St. Univ., Fullerton): Grad student with Doug Eernisse.

**Kenny McCurre** (Calif. St. Univ., Fullerton): Researches phylogenetics of cryptic limpet species in California.

**Jim McLean** (Nat. Hist. Mus. L.A. Co.): Jim, a Research Associate at NHMLAC, continues work on a monograph of worldwide Liotiidae, which will be published by the Natural History Museum in Paris. He will next work on the eagerly awaited volumes on northeast Pacific shelled gastropods.

**Lawrence Moser** (Pac. Conch. Club): General shell collector and vice-president of the Pacific Conchological Club. Also works for the Los Angeles County Sheriff's Department.

**Thomas Parker** (Calif. St. Univ., Fullerton): Working with Danielle Zacherl on recruitment and growth of native and non-native oysters.

**James Smith** (Calif. St. Univ., Fullerton): Currently researching *Megathura crenulata* at CSUF.

**Carol Stadum** (San Diego Nat. Hist. Mus.): Associate in the IP section at the SDNHM. Working on a publication on Miocene "Fossil Reef," which includes over one hundred species of invertebrates and marine mammals.

**Nicole Tronske** (Calif. St. Univ., Fullerton): Conducting undergraduate research under Doug Eernisse.

**Jann Vendetti** (Calif. St. Univ., L.A.): First time SCUM attendee. Conducted PhD research on invertebrate fossils of the Pacific northwest at UC Berkeley. On a post-doc at Calif. St. Univ., L.A., researching saccoglossan phylogeny.

**James Verhoff** (CH2M Hill): Conducts local salvage paleontological and is searching for research projects.

**Shawn Wiedrick** (Pac. Conch. Club): President of PCC and interested in all areas of shell collecting. Volunteers at the Nat. Hist. Mus. of L.A. Co. identifying micro-turrids of the Indo-Pacific. Discussed a collecting trip to Costa Rica (published in the Jan. 2014 *Festivus*). Elaborated on his extensive collection including self-constructed cabinetry, database techniques, and library. Working on an illustrated guide to Panamic Province micromollusks, especially those not illustrated by Keen (1971).



# Donn Lloyd Tippet

## (January 14, 1924 – January 29, 2014)

Alan R. Kabat

Donn Tippet made significant contributions to the systematics of the gastropod family Turridae *sensu lato*, in curating the turrid collections in the National Museum of Natural History (Smithsonian Institution) and in helping numerous other researchers and collectors with this diverse and difficult family. Given Donn's extensive work on the turrids, it may come as a surprise to learn that his day job was as a psychiatrist. A native of Ohio, he obtained his medical degree from the Ohio State University College of Medicine in 1947, and practiced in both Ohio and Illinois, including serving as a clinical faculty member at the medical schools of Ohio State University and the University of Illinois. He also served with the U.S. Navy from 1950 to 1952.

While in Ohio, Donn published two psychiatric papers from his professional work (1957; 1958). Both were co-authored with Irving Pine, who one decade previously was the last psychiatrist for the author Zelda Fitzgerald (1900-1948) (Cline, 2003: 286-287, 359, 362, 375, 400-402).

In 1962, Donn moved to the Washington, D.C., area, where he lived the rest of his long life. Donn started a private psychiatric practice in the Woodley Park neighborhood, with his office located across the street from the National Zoo. Perhaps because the nature of that practice would be mostly rich neurotic women and their spoiled children, Donn spent one day a week working for the federal government at St. Elizabeths Hospital, the mental hospital, which has a more realistic spectrum of mental patients. Donn formally retired from both positions in 1989, although he continued a part-time consultancy until 1997. He later recounted that a favorite topic of discussion among the older psychiatrists at St. Elizabeths was Ezra Pound (1885-1972), who was incarcerated there from 1946 to 1958 for committing treason during World War II by making numerous radio broadcasts in support of Mussolini. According to Donn, the older psychiatrists were never able to decide whether Pound was faking his insanity (so that he would not be sentenced to the maximum security federal prisons at Leavenworth or Alcatraz) or whether he was truly insane.

Sometime around 2005 or 2006, Donn prepared an autobiographical sketch, which included a section titled "The Shell Game" that explained how his malacological interests began:

Sea shells were a source of little familiarity or knowledge to me prior to the summer of 1967 or 1968, at which time I was in a "touristy" store in Bethany Beach.

There, accompanying a friend looking for a gift, I came across the standard display of shells, laid out to show the shapes, colors and sizes of these objects. At once, taken by them, I had to have something of this fascinating conglomeration of nature's wares. "Something" grew to about \$100.00 worth, which included only a beginning of the profuse varieties available. The clerk, a seasoned student and dealer, explained much about them in the course of capturing my fancy. A beginner's book accompanied the shells, and this provided study and a beginning to the field of what I soon learned is the field of Malacology.

Before long I received a copy of Tucker Abbott's first edition of *American Seashells*. I was now hooked for sure. With this I began a program of collecting. How naïve it was, I learned later, to think I could collect a specimen of every shell. So my original plan to collect shells world-wide was gradually reduced to collecting just Atlantic shells, and then to just collecting Western Atlantic shells, then to Caribbean shells, and then to collecting only shells known as gastropods. From there I gradually began to specialize in collecting only the family Turridae – but I did begin to collect them world-wide bringing me full circle. Naturally, I had to make the transition from common names to learning the scientific names plus the classification and taxonomy involved. From a short-term intensive hobby that captured my attention and took time and money it gradually evolved into a long term, serious, and, life-long labor.

Donn focused his malacological interests on the turrids, perhaps the most speciose of marine gastropod groups, and even today, one that is particularly difficult for species identification. Although the Turridae is now divided into about a half-dozen families, that split did not make species identification or generic assignments any easier. As Tucker (2004: 4) wrote, turrids "are perceived to be the most difficult gastropod group to study," due to "the large number

of supraspecific taxa that have been described” and “the extraordinary species diversity,” all of which “complicates their systematics.” Fortunately, the turrids did not drive Donn crazy, although he was assuredly frustrated at times with the problems created by the proliferation of names and the very real biological diversity of this group.

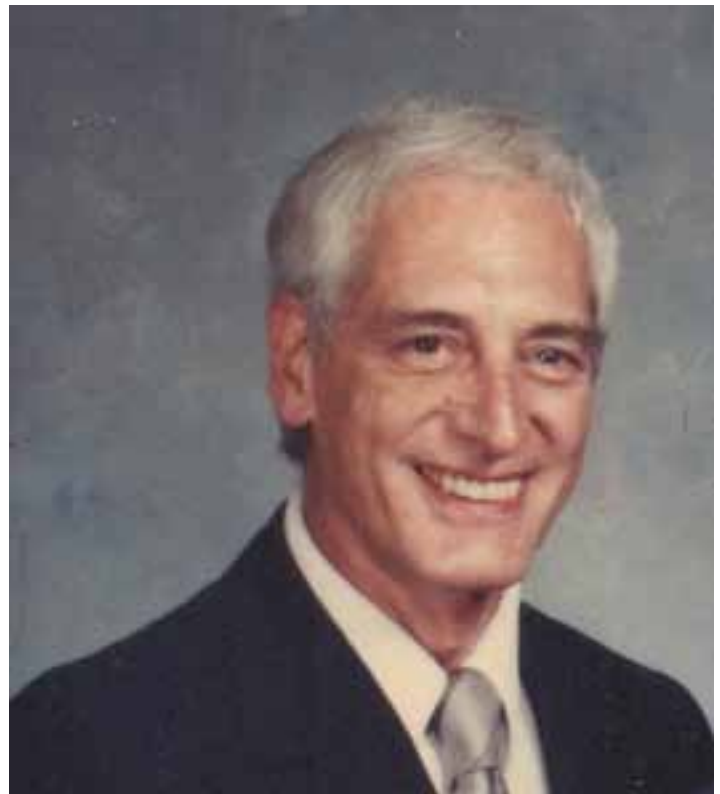
Donn was active in the National Capital Shell Club, serving as its President for two terms, and in 1978, he became a volunteer research associate at the National Museum of Natural History. Those of us who worked there fondly remember his weekly visits – always on Tuesdays – where he could faithfully be found identifying the voluminous unsorted material, updating the systematic arrangement of the turrids, and reconciling the conflicting interpretations in the malacological literature. Two long-time curators at the Smithsonian – Paul Bartsch and Joe Morrison – were both enamored of the turrids, and made extensive collections that were inadequately curated until Donn arrived on the scene. In 1995, Donn donated his turrid collection to the museum, after cataloging it in the museum’s database.

Donn went out of his way to make other visitors to the Mollusk collection feel welcome, and took an interest in their work. Paul Callomon (Academy of Natural Sciences) aptly wrote on the Conch-L list serve (Feb. 24, 2014), that “I used to greatly enjoy spending time with him, as he represented an earlier, gentlemanly age, very much like his SI [Smithsonian] contemporary Fred Bayer. He epitomized the meticulous approach that was characteristic of medical doctors in those days.”

On March 23, 2011, Donn wrote to me that he was “still curating the collection – all these years and am not done yet. But who was it said ‘a complete collection is a dead collection?’” While that aphorism about collections that Donn quoted sounds like something that W.H. Dall of the Smithsonian might have written, it appears that the literary critic Susan Sontag, in her book *The Volcano Lover*, about Sir William Hamilton (1731-1803), the inveterate collector of antiquities and paintings, was the first to popularize it:

A complete collection is a dead collection. It has no posterity. After having built it, you would love it less each year. Before long, you would want to sell or donate it, and embark on a new chase.

The great collections are vast, not complete. Incomplete: motivated by the desire for completeness. There is always one more. And even if you had everything – whatever that might be – then you will perhaps want a better copy (version, edition) of what you have; or . . . simply an extra copy, just in case the one you possess is lost or stolen or broken or damaged. . . . The



**Donn Tippet, circa 1980. Photograph courtesy Kathy Tippet.**

collector’s need is precisely for excess, for surfeit, for profusion. It’s too much – and it’s just enough for me. Someone who hesitates, who asks, Do I need this? Is this really necessary? is not a collector. A collection is always more than is necessary. (Sontag, 1992: 72).

Donn published nine papers on turrids, starting with the description of a rare sinistral species from Brazil (Tippet, 1983). As his confidence and expertise grew, he wrote increasingly detailed papers that discussed the generic relationships among species, and he did much to clarify the systematics of several problematic genera. He described twelve new species, mostly from the western Atlantic, and also established two replacement names for junior homonyms.

Donn was also an invaluable resource on the turrids for other malacologists and collectors, as demonstrated by the fact that many authors acknowledged his contributions to their research, and that at least four turrid species were named after him. Perhaps the most fitting dedication was that of John Tucker, whose 1,259 page catalog of over 11,350 species-group names in the Turridae *sensu lato* has this dedication: “This book is dedicated to Donn Tippet for all the efforts he made to keep me at this” (Tucker, 2004: 2).

Donn was a long-time member of the American Malacological Society, the Conchologists of America, and

the National Capital Shell Club (before it disbanded). He was also active in his community, including the River Road Unitarian Universalist Congregation (Bethesda, Maryland).

Donn leaves his wife, Kathy Tippet (also a shell collector), and his son, Gregory Nelson Tippet.

Donn's life and work demonstrate how a dedicated amateur, through research, curation, and assisting others, can make significant contributions to the study of mollusks.

### Acknowledgements

Kathy Tippet kindly provided me with the excerpt on mollusks from Donn's autobiographical sketch, the photograph, and additional information on his retirement from psychiatry.

### List of New Taxa:

*blakensis*, *Drillia* (*Clathrodrillia*) – Tippet, 2007: 210-211, figs. 1-3, 8 [400-450 m, Blake Plateau, northwestern Atlantic].

*brasiliensis*, *Borsonia* – Tippet, 1983: 136, figs. 1-5 [150 fm, 200 miles north of Sao Luis, Brazil].

*coltrorum*, *Strictispira* – Tippet, 2006a: 45-47, figs. 1-3, 19, 25, 36 [25-30 m, Escavada Island, Guarapari, Brasil].

*dautzenbergi*, *Drillia* (*Clathrodrillia*) – Tippet, 1995b: 129, figs. 4-5 [Isla Margarita, Venezuela]. Replacement name for *Drillia gibbosa* (Born, 1778), var. *minor* Dautzenberg, 1900, non *Drillia minor* Seguenza, 1880.

*eversoni*, *Clathurella* – Tippet, 1995b: 135, figs. 10-11 [21 m, off Dania Beach, Florida].

*hedlandensis*, *Bathytoma* – Tippet & Kosuge, 1994: 19-20, pl. 8, figs. 5-8 [260-340 m, northwest of Port Hedland, Western Australia].

*kathyae*, *Fenimorea* – Tippet, 1995b: 132, figs. 14, 32 [152 m, Barbados].

*knudseni*, *Drillia* – Tippet, 2006b: 20. Replacement name for *Drillia dunkeri* Knudsen, 1952, non Weinkauff, 1876.

*petiti*, *Fenimorea* – Tippet, 1995b: 133, figs. 17, 33 [30 fm, west of Crystal River, Florida].

*petuchi*, *Drillia* (*Clathrodrillia*) – Tippet, 1995b: 130, fig. 18 [Barbados].

*redferni*, *Strictispira* – Tippet, 2006a: 54-60, figs. 4-8, 23, 29, 31-35 [12 feet, Guana Cay, Abaco Island, Bahamas].

*riosi*, *Sediliopsis* – Tippet, 1995b: 133, figs. 6-7 [250 m, off Sao Paulo, Brazil].

*rosenstielanus*, *Hindsiclava* – Tippet, 2007: 211-213, figs. 4-6, 9-10 [549 m, west of Riohacha, Colombia].

*wolfei*, *Drillia* (*Drillia*) – Tippet, 1995b: 127, figs. 1, 28, 31 [20 fm, 15 km east of Cape Lookout, North Carolina].

### Eponyms:

*tippet*, *Bathytoma* (*Bathytoma*) – Vera-Pelaez, 2004: 12 [Philippines].

*tippet*, *Hindsiclava* – Petuch, 1987: 76, pl. 13, figs. 12-13 [Honduras].

*tippet*, *Kermia* – Chang, 2001: 3, figs. 5A, B [Taiwan].

*tippet*, *Turricula* – Tucker & Le Renard, 1993: 2 [Eocene, France]. Replacement name for *Surcula multiflora* Cossman, 1923, non Bellardi, 1877.

### Publications by Donn Tippet:

Tippet, D. L. & Pine, I. 1957 [July]. Denial mechanisms in masked epilepsy. *Psychosomatic Medicine* 19(4): 326-331.

Pine, I., Gardner, M., & Tippet, D. L. 1958 [July]. Experiences with short-term group psychotherapy. *International Journal of Group Psychotherapy* 8(3): 276-284.

Tippet, D. L. 1983 [28 October]. A new sinistral turrid from Brazil (Gastropoda: Turridae). *The Nautilus* 97(4): 135-138.

Tippet, D. L. 1992 [25 June]. Comment on the proposal to remove the homonymy between Clavidae McCrady, 1859 (Cnidaria, Hydrozoa) and Clavinae Casey, 1904 (Mollusca, Gastropoda). *Bulletin of Zoological Nomenclature* 49(2): 144-145.

Tippet, D. L. & Kosuge, S. 1994 [30 April]. Descriptions of a new species and a recently described species of the genus *Bathytoma* from the West Australia and the Philippines (Gastropoda Turridae). *Bulletin of the Institute of Malacology Tokyo* 3(2): 19-21, pls. 8-9.

Tippet, D. L. & Tucker, J. K. 1995 [7 March]. Taxonomic notes on *Kenyonia* Brazier and *Conopleura* Hinds (Gastropoda: Conoidea). *The Nautilus* 108(2): 37-38.

Tippet, D. L. 1995a [March]. [Letter to the editor]. *American Conchologist* 23(1): 14-15 [*Pleurotoma ebur* and *P. opalus*].

Tippet, D. L. 1995b [29 December]. Taxonomic notes on the western Atlantic Turridae (Gastropoda: Conoidea). *The Nautilus* 109(4): 127-138.

Tippet, D. L. 2006a [16 February]. The genus *Strictispira* in the western Atlantic (Gastropoda: Conoidea). *Malacologia* 48(1-2): 43-64.

Tippet, D. L. 2006b [June]. Taxonomic notes on some Indo-Pacific and West African *Drillia* species (Conoidea: Drilliidae). *Iberus* 24(1): 13-21.

Tippet, D. L. 2007 [21 December]. Two new gastropod species (Neogastropoda: Drilliidae, Turridae) from the western Atlantic Ocean. *The Nautilus* 121(4): 210-213.

Tippet, D. L. [undated, probably written around 2005-2006]. The shell game. Manuscript, 1 page [extracted from longer life history].



## References:

**Chang, C. K. 2001.** New turrid taxonomy and three new species. *Bulletin of Malacology* (Taiwan) 25: 1-4.

**Cline, S. 2003.** *Zelda Fitzgerald: Her Voice in Paradise*. New York: Arcade Publishing, xx + 492 pp., 16 pls.

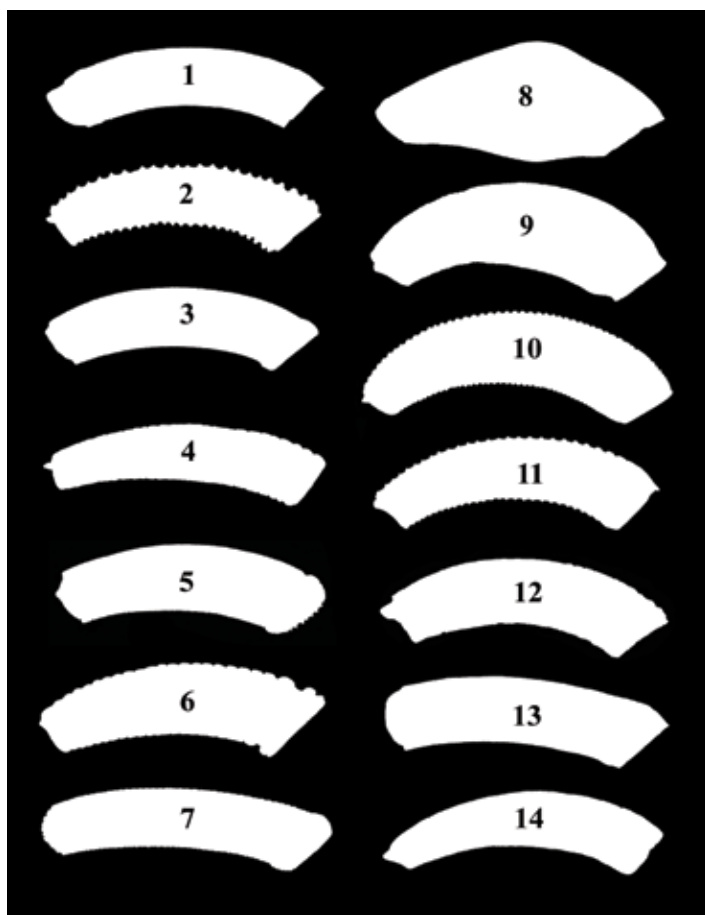
**Petuch, E. J. 1987.** *New Caribbean Molluscan Faunas*. The Coastal Education and Research Foundation, Charlottesville, Virginia, 154 pp.

**Sontag, S. 1992.** *The Volcano Lover*. New York: Farrar Straus Giroux, iv + 419 pp.

**Tucker, J. K. 2004.** Catalog of Recent and fossil turrids (Mollusca: Gastropoda). *Zootaxa* 682: 1-1295.

**Tucker, J. K. & J. Le Renard. 1993.** Liste bibliographique des Turridae (Gastropoda, Conacea) du Paléogène de l'Angleterre, de la Belgique et de la France. *Cossmanniana* 2(1/2): 1-66.

**Vera-Pelaez, J. L. 2004.** Contribution al conocimiento del genero *Bathytoma* Harris & Burrows, 1891 (Gastropoda, Turridae, Borsoniinae) en Japon, Taiwan y Filipinas con la description de tres especies nuevas. *Pliocenica* 4: 107-125.



## Key to the Caecidae on the back cover

1. *Caecum* n. sp. cf. *C. achirona* (de Folin, 1867)
2. *Caecum* n. sp. cf. *C. brasiliicum* de Folin, 1874
3. *Caecum circumvolutum* de Folin, 1867
4. *Caecum imbricatum* Carpenter, 1858
5. *Caecum cycloferum* de Folin, 1867
6. *Caecum floridanum* Stimpson, 1851
7. *Caecum heladum* Olsson & Harbison, 1953
8. *Meioceras cingulatum* Dall, 1892
9. *Caecum* n. sp. cf. *C. cinctum* Olsson, & Harbison, 1953  
(an extremely variable, common species)
10. *Caecum* n. sp. cf. *C. cinctum* Olsson, & Harbison, 1953  
(an extremely variable, common species)
11. *Caecum* n. sp. cf. *C. regulare* Carpenter, 1858
12. *Caecum* n. sp. cf. *C. plicatum* Carpenter, 1858
13. *Caecum* n. sp. cf. *Caecum* sp., 203 of Redfern, 2013
14. *Caecum tortile* Dall, 1892

## In memoriam:

Ken Boss

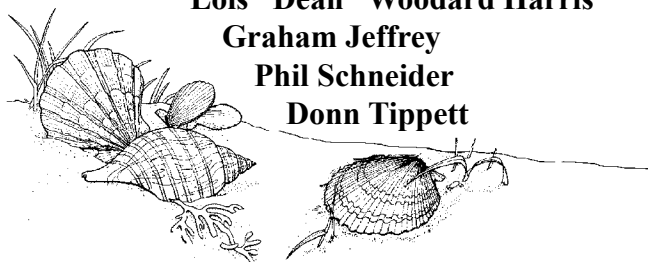
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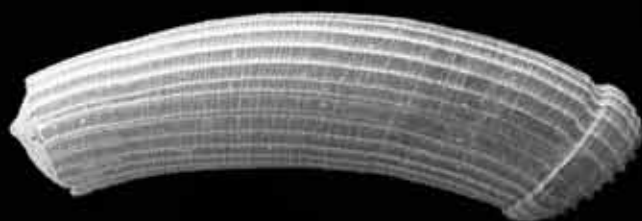
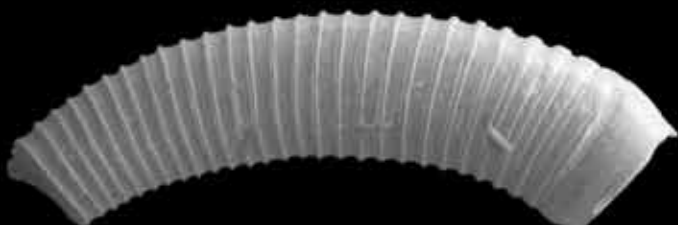
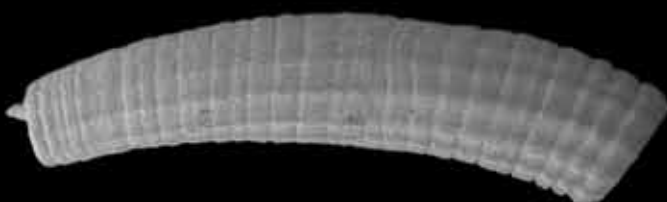
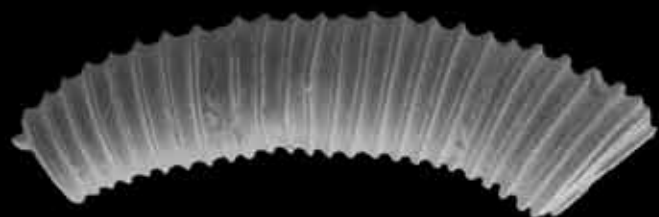
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Vol 42, No. 3, September 2014

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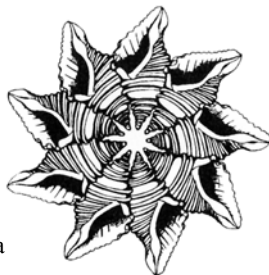
# *American* **CONCHOLOGIST**



**Quarterly Journal of the Conchologists of America, Inc.**



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AMERICAN CONCHOLOGIST, the official publication of the Conchologists of America, Inc., and issued as part of membership dues, is published quarterly in March, June, September, and December, printed by JOHNSON PRESS OF AMERICA, INC. (JPA), 800 N. Court St., P.O. Box 592, Pontiac, IL 61764. All correspondence should go to the Editor. ISSN 1072-2440.

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Editor's comments: This seems to be another eclectic issue. We begin with some great cover images. On the front cover is a bright and colorful *Lobatus gigas* from Ellen Bulger. On the back cover is an unusual and quite striking photo of a living *Nodipecten nodosus fragosus* by Viky Wall. Then we get another great article by Andre Meredith, this time covering the elegant but large and solid, *Thersistrombus thersites*. Definitely a prize for a stromb collector. Lindsey Dougherty (a COA grant recipient) provides a review of her research into the life of the “disco clam.” Linda Zylman Holzinger shares her experience with lots of stranded *Janthina*, and Joquin Inchaustegui finds hidden treasure at a shell auction. A new contributor, Sylvia M. Vélez-Villamil, shares her experience, including some great photos, with a three-eyed queen conch. Marcus Coltro then shares another of his shelling adventures. This time we travel with Marcus on a ‘well-planned’ trip through South Korea. We next have the award of the *Neptunea* (Colin Redfern and Tom Rice), a couple of shell show results (Gulf Coast and Keppel Bay), and a report on the 2014 COA convention by Jeannette Tysor and Ed Schuller. We close off the issue with a report of a mystery epitoniid species by Len-ny Brown.

Next year's convention will be in Broward County, Florida (see page 31). The venue of the Bonaventure looks to be a special one, so plan now on spending 14-19 July 2015 in sunny south Florida.

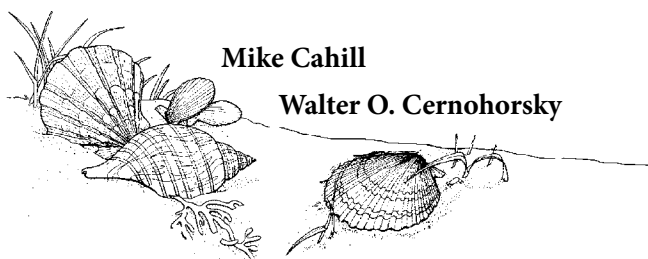
Finally, my annual request for articles for upcoming issues. The well is pretty much dry (or there would have been more pages this time). Remember, the readership of American Conchologist is varied and it seems every facet of conchology appeals to some of our readers. So keep those cards and letters coming in!

*Tom Eichhorst*

### In memoriam:

Mike Cahill

Walter O. Cernohorsky



**Front Cover:** This image of *Lobatus gigas* (Linnaeus, 1758), the pink or queen conch, is adapted from a photograph taken by Ellen Bulger at Tarpum Bay, Eleuthra, Bahamas, in 2013. The vivid aperture colors of this shell will quickly fade until only the typical pink remains. Still a prize shell.

**Back Cover:** *Nodipecten nodosus fragosus* (Conrad, 1849), hard limestone reef bottom, Panama City, Florida, by Vicky Wall from Mayodan, North Carolina. I have wanted to use this superb photograph for a cover for quite some time, but the image orientation was wrong for a front cover, so this is the next best thing, a back cover to show the details of this very interesting scallop.

# *Thersistrombus thersites*: Ivory Gem of the Pacific

Andre Meredith

*Thersistrombus thersites* (Swainson, 1823) is the sole species attributed to subgenus *Thersistrombus* Bandel, 2007, within the Strombidae family. Up until around 2010, the species was known under the taxonomic name *Strombus thersites* Swainson, 1823, but unique genetic and morphologic characters provided sufficient merit for it to be placed within its own genus.

*T. thersites* is one of two very similar, sought-after species of “strombids” found within the western Pacific, the other being *Sinustrombus taurus* (Reeve, 1857). Both species inhabit the western Pacific (although *T. thersites* seems to have much a wider distribution), both are solid for their size (but *T. thersites* trumps out here), both exhibit similar problems with dorsal erosion, and both exhibit similar behavior regarding “herding,” habitat and feeding.

Of the two, *S. taurus* is most popular with collectors, primarily due to its elegant shape, resplendent with its two posterior spines, and its more vibrant dorsal coloration in uneroded specimens. *T. thersites*, however, presents its own allure:

- It is less “popular,” so fewer are in circulation with shell vendors, making finding one more of a challenge and a “rarer find,” with the exception of self-collecting.
- Finding a true “gem” specimen can be a major challenge, whether shopping on-line or self-collecting – acquiring one is a rare find indeed.
- The sheer weight and solidity adds to its desire.
- The species exudes elegance, with its shiny aperture, white porcelain-like appearance, ivory coloration, slender body, and long spire.
- Its tropical habitat is reminiscent of island wonderlands and oceanic splendor – it is a true treasure!

The type locality is New Caledonia. The species inhabits the tropics of the western Pacific and has been reported from the following areas:

- The Coral Sea
- Eastern Great Barrier Reef
- Coral Sea Islands
- New Caledonia regions
- Eastern Papua New Guinea
- Solomon Islands
- Philippine Sea

- Mariana Islands
- East China Sea
- Ryukyu Islands
- Southern Japan
- Taiwan
- Kermadec Islands
- Vanuatu
- Fiji
- Tonga
- Niue Island
- Cooks Islands
- Society Islands
- Tuamotu Archipelago

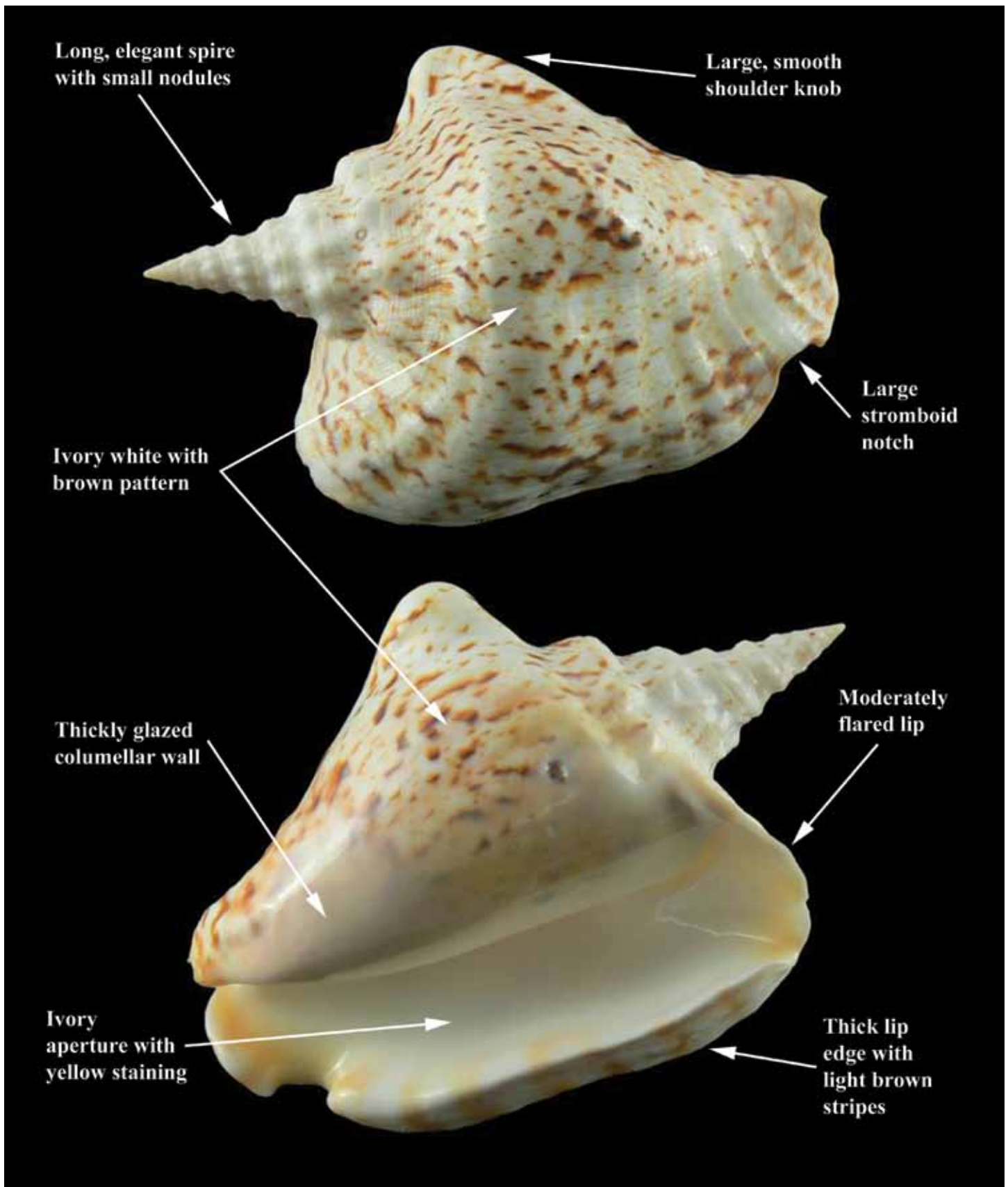
*T. thersites* seems to be constrained to the southwestern and western Pacific, travelling northward from the south Coral Sea, past eastern Papua New Guinea, towards the East China Sea, around the southern extremities of Japan, typically Okinawa. A few specimens have been reported from southeastern Vietnam, but specimens from the South China Sea area (including the Philippines) are undoubtedly very rare.

As far as the eastern distribution is concerned, specimens have been reported from the Society Islands and Mururoa Atoll, making this a very remote location for the species. One Society Island specimen used to belong in the collection of Hugh Cuming, and now resides in the British Museum, so authenticity should be affirmed (as there have been issues concerning the locality data of some Cuming specimens). It is therefore possible that the southern distribution is from the southwestern Coral Sea area, all the way to the Tuamotu Archipelago, and perhaps beyond.

*T. thersites* lives at a moderately shallow depth of around 8 to 30 meters. Adult shell sizes range from around 120 to 160mm, the current reported and registered World Record Size measures 170mm. It is predominantly associated with coral reefs, coral rubble, and sand. It has been reported that the species often congregates in large “herds,” that move en masse across the sea floor, similar to behavior seen with *S. taurus*.

As far as identifying characters are concerned, the shell body is ovoid in shape, with a long, rather slender spire. The spire is adorned with small nodules, becoming fewer but larger towards the body whorl. The body whorl contains three large, smooth nodules, two of which are very flat and





*Thersistrombus thersites*, gem, 152mm, Marion Reef, Coral Sea, Queensland, Australia (coll. Andre Meredith); an example of a gem-grade specimen with perfect spire and clean, well patterned dorsum.

barely visible. The middle one often very pronounced, but smooth. The columella is pronounced and thickly glazed, often reaching onto the side of the dorsum. The lip is moderately flaring; adult specimens display a very thick lip edge, often adorned with broad, light brown stripes perpendicular to the aperture. It has a large stromboid notch. The color is predominantly ivory white, and good quality specimens, without erosion, display narrow, irregular brown markings on the dorsum, often repeating all the way to the columellar wall. The inner aperture is white to yellow, the columella white to yellow and sometimes peach, and at times revealing the underlying shell pattern. *T. thersites* is a very heavy, solid shell for its size.

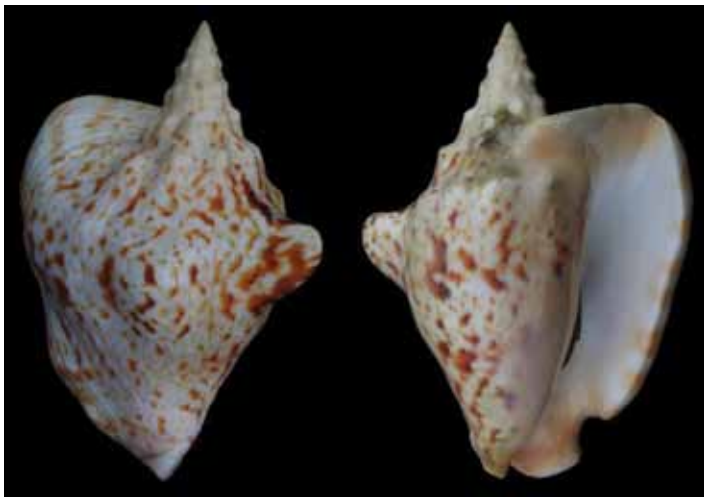
*T. thersites* thrives on calcareous algae, and, as such, is predominantly found in calcium-rich water. As a result, most specimens exhibit a heavily eroded dorsum and spire, thickly coated with calcifications or eaten away by calcium deposits. Spires are also very often chipped or broken off. On rare occasions, the shells are free of encrustations, calcifications, and erosion, displaying perfect spires and a clean, smooth, well-patterned dorsum. These are true rarities and sought-after oceanic treasures. Acquiring such specimens from the most remote of islands or atolls is truly special, and can be likened to finding a true oceanic gem. No wonder it has been aptly named one of the "Princes of the Pacific."



*Thersistrombus thersites*, 139 mm, Dumbéa Passage, Nouméa, New Caledonia (coll. Andre Meredith); this specimen is solid and vividly patterned, but the last spire whorl was evidently damaged at some point, or it could be due to a growth defect.



*Thersistrombus thersites*, 145 mm, Poindimié, New Caledonia (coll. Andre Meredith); this is an example of a very heavy, solid specimen adorned with strong spire nodules.



*Thersistrombus thersites*, 126 mm, Lihou Reef, Coral Sea, Queensland, Australia (coll. Andre Meredith); this gem-grade specimen displays some algal discoloration where the lip merges with the spire, which has been completely covered over with shell material by the animal.



## References

- Abbott, R.T. 1960.** *Indo-Pacific Mollusca*, vol.1, no. 2, pp. 55-56.
- Alf, A., K. Kreipl, & N. Thach. 2000.** Some Remarkable Mollusc Species from Viet Nam, *La Conchiglia*, vol. XXXII, no.294-295, January-June, p. 58-65.
- Bouchet, P. & G. Kronenberg. 2013.** *Thersistrombus* Bandel, 2007. accessed through: World Register of Marine Species at <http://www.marinespecies.org/aphia.php?p=taxdetails&id=465409> on 2013-11-20.
- Cernohorsky, W.O. 1966.** New Geographical Records of Molluscan Gastropods from the Tonga Islands, *Hawaiian Shell News*, vol. XIV, no. 12, October, New Series 82, p. 3.
- Cornfield, G. 1986.** Afloat and Ashore in the South Pacific, *Hawaiian Shell News*, vol. XXXIII, No. 2, February, New Series 314, p. 9.
- Cothran, V.K. & S. Lovingood. 1991.** Okinawa: In Search of *Strombus thersites*, *Hawaiian Shell News*, vol. XXXIX, no. 9, September, New Series 381, pp. 5-6.
- De Carteret, N. 1993.** Niue Island Adventures, *Hawaiian Shell News*, vol. XLI, no. 2, February, New Series 398, p. 12.
- Fair, R. 1972.** Shell Habitats of Tonga, *Hawaiian Shell News*, vol. XX, no. 10, October, New Series 154, p. 4.
- Gay, H.C. 1970.** The Cowries of Tonga, *Hawaiian Shell News*, vol. XVIII, no. 2, February, New Series 122, p. 4.
- Lillico, S. 1984.** Adventures on the Great Barrier Reef, *Hawaiian Shell News*, vol. XXXI, no.1, January, New Series 289, p. 11.
- Poppe, G.M. & P. Poppe.** "*Tricornis thersites*." Conchology Inc Shell Encyclopedia. accessed at: <http://www.conchology.be/?t=66&family=STROMBIDAE&species=Tricornis%20thersites>.
- Quiquandon, P.** Registry of World Record Size Shells. Accessed at <http://www.wrsshells.com>
- Romagna-Manoja, E. 1976.** Superfamily Strombacea, Familia Strombidae, Genus *Strombus*, part III: Subgenus *Tricornis* (Jousseaume 1886), *La Conchiglia* vol. VIII no. 83/84, p. 3-13.
- Ulrich W., H. Stoutjesdijk, P. Simonet & V. Liverani. 2013.** (Eds.), "*Thersistrombus thersites*." In: *Gastropoda Stromboidea*. modified November 01, 2013, 07:21 PM accessed at: <http://www.stromboidea.de/?n=Species.ThersistrombusThersites>
- Wagner, R.J.L. & R.T. Abbott. 1978.** *Standard Catalog of Shells*, p. 09-658.
- Wilkins, G.L. 1951.** *Strombus thersites* Swainson: Designation of Lectotype (read December 1950), *Proceedings of the Malacological Society of London*, Volume 28, Part 6, June, pp 237-240.

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## A plethora of *Janthina*

Linda Zylman Holzinger



In late March, my husband David and I were walking the beach with our house guests, on Hutchinson Island, off Stuart, Florida. It was a fresh and windy day, with the wind coming straight off the ocean. The "Portuguese man o' war" (*Physalia physalis*) were plentiful on the beach, along with many "by-the-wind-sailors" (*Velella velella*). We were thrilled to see that there were also *Janthin*as, with their bubble rafts still attached, washed up all over the beach! We walked for 2 hours, continually picking up *Janthin*as. David and I could have stayed for many more hours, but our guests were less enthused! We ended up collecting 182 *Janthina janthina* (Linnaeus, 1758) and 5 *Janthina pallida* W. Thompson, 1840. I sent the attached photos to our friend Sue Hobbs and she suggested that I share the photos with the readers of *American Conchologist*, as they would enjoy seeing the unique structure of these shells and their little bubble rafts.

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# Mechanisms, ultrastructure and behavioral flashing in *Ctenoides ales*: “disco clams”

Published Manuscript:

Dougherty LF, Johnsen S, Caldwell RL, Marshall NJ. 2014 A dynamic broadband reflector built from microscopic silica spheres in the ‘disco’ clam *Ctenoides ales*. J. R. Soc. Interface 11: 20140407.

<http://dx.doi.org/10.1098/rsif.2014.0407>

*The Conchologists of America Grant I received in June of 2013 enabled me to conduct field work in Indonesia and Australia during the summer of 2013. What follows is a description of both lab and field work results obtained as a result of my funding.*

## Summary

Dynamic visual displays throughout the animal kingdom are often bright and dramatic. They can be produced through a variety of photic processes including bioluminescence, the use of chromatophores, and structural coloration. Here we describe the mechanism underlying the striking display of the “disco” or “electric” clam, *Ctenoides ales* (Limidae), the only species of bivalve known to have a behaviorally mediated photic display and whose flashing is so vivid that it has been repeatedly confused for bioluminescence. The flashing display occurs on the mantle lip, where electron microscopy revealed two distinct tissue sides; one highly scattering side containing dense aggregations of spheres composed of silica, and one side containing a strongly absorbing pigment. High-speed video confirmed that the two sides of the mantle lip act in concert to create a vivid broadband reflectance that rapidly alternates with strong absorption in the blue region of the spectrum. Optical modeling suggests that the diameter of the spheres, but not their packing density, is nearly optimal for scattering visible light. This simple mechanism produces a remarkable optical effect that may function as a signal.

The photonics of structural coloration are of particular interest in biomimetics, where nanostructure influences countless technologies derived from natural design. The use of structural coloration and scattering by various taxa in the ocean’s euphotic zone is especially interesting as long wavelengths are absorbed rapidly with depth, light attenuates with suspended solids, and available light varies between habitats. *Ctenoides ales* lives as deep as 50m underwater and inside small crevices, where ambient light is dim and wavelength-restricted. Despite this, the species evolved a reflective mantle edge that emits vivid light, resulting in the common name “disco” or “electric” clam. Preliminary research in spectrometry (Figure 3), high speed video, electron microscopy (Figure 4), elemental analysis (Figure 5) and particle modeling (Figure 6) has deduced how the photic display is produced; tissue composed of silica nanospheres is rapidly exposed then concealed to create a dynamic broadband reflectance that is optimized for a light-restricted environment. The behavioral purpose of the flashing display, however, remains unknown. Three hypotheses are being tested - that the display acts as (i) a signal facilitating the recruitment of conspecifics, (ii) a phototactic prey lure, and/

or (iii) a deimatic anti-predator display. Research interests center around the proximate mechanisms that produce the display (how) and the ultimate behavioral purpose of the flashing display (why).

Behavioral observations and ecological analysis in 2013 provided a solid context within which to conduct follow-up experiments in the field in 2014. Behavioral observations showed that organisms lived in clumped situations, which may result from conspecific recruitment. Predatory encounters were never observed, although valves with obvious whelk or octopus predation were common. The study sites, population densities, operational setup plans and data analysis were cemented after exploratory dives last summer. Additionally, the 2013 summer field season resulted in several new collaborations, including stable isotope analysis of silica origins and optical research into the clams’ visual abilities.

In addition to the field work on behavior, a collaboration investigating the optical capabilities of the species has been established with researchers at the University of Wisconsin and the University of Maryland. TEM (Transmission electron microscopy) analysis of the eyes, and molecular



**Fig. 1.** *Ctenoides ales* (Finlay, 1927) is called the “electric clam” or “disco clam” by divers because of its flashing display that looks like bioluminescence. It is in the family Limidae (file clams) and is typically around 50-60 mm in size. It is found throughout the tropical waters of the central Indo-Pacific, from Indonesia to New Caledonia. Photo from Wikipedia.com.



**Fig. 2.** *Ctenoides ales* as it is more commonly encountered in shell collections. While the dried and cleaned shell lacks the color, flashing display, and wavy tentacles of the living animal, it still has an interesting sculpture and classic overall shape.

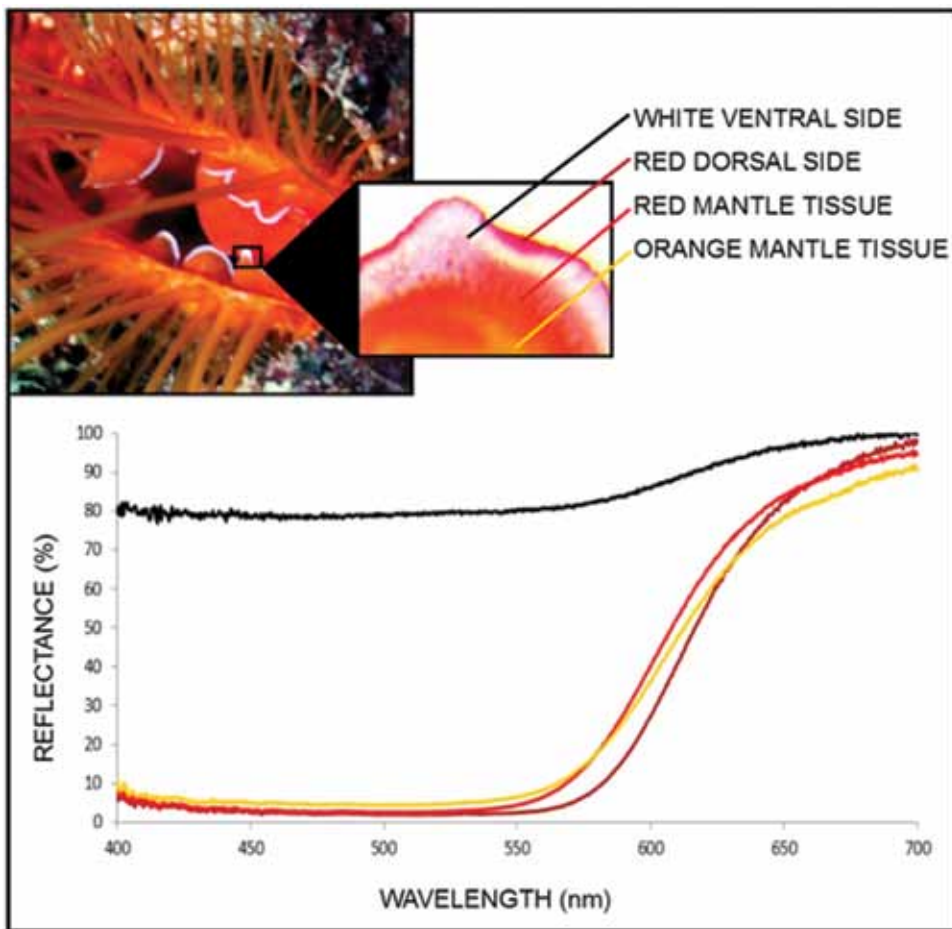
testing for the expression of opsins will be conducted. The visual abilities of the clam are important when considering potential communication with conspecifics.

### Significance of Research

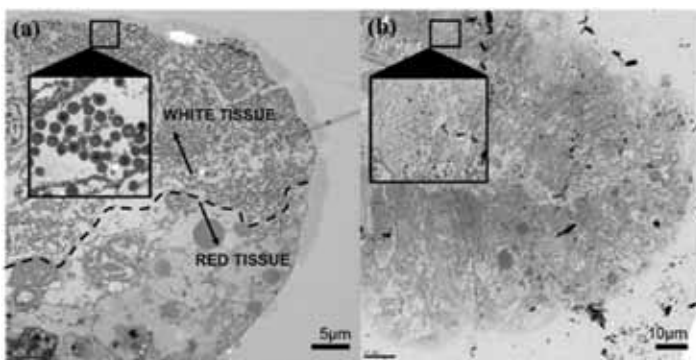
Optical biomimetics focuses on structurally-based coloration produced by photonic nanostructures. Research in this area has broad applications including anti-reflective lenses, solar panel surfacing, polarization and angular anti-counterfeiting devices, paints, coatings, tuneable lasers, and cell culturing for nanostructures. Behavioral uses of structural colors are diverse, including species and sex recognition, mate choice, ornamentation, aposematic coloration and orientation, and schooling and flocking behavior. Structural colors have also been proposed to result in non-communicative functions, including thermoregulation, friction reduction in burrowing organisms, water repellency, structural strengthening, photoprotection and vision enhancement. There is a wide diversity of organismal light use in the euphotic zone of the ocean, ranging from circularly polarized light signals in stomatopods, which led to the commercial development of quarter-wave retarder plates, to the use of reflective

proteins by *Tridacna* giant clams to optimize the photosynthesis of symbiotic algae.

Expected outcomes of this research include insight into the behavioral function of the photic display as well as comprehension of the molecular and evolutionary position and radiation of *C. ales*. This research involves a unique type of reflective structure that operates in conditions atypical of traditional reflectance, and it has the potential to advance the field in low-light and restricted wavelength reflectance potential. The widespread occurrence of structural colors coupled with their diverse functionality make this an important research area, contributing insight into biological function, physical optics, and biomimetic technological applications for society. With a broad array of biological and engineering applications and a study organism popular in aquaria and with associated conservation implications, this research appears to be of great public interest.



**Fig. 3. Spectrometry on Mantle and Lip Tissue. Top: *C. ales* and microscope photo of tissue (inset) showing points of measurement for spectrometry. Bottom: Percent Reflectance for points of measurement. The white wavy areas in the above image are the flashing displays.**



**Fig. 4. Transmission Electron Microscopy Species Comparison (A) TEM of *C. ales* inner mantle fold marginal edge showing electron-dense spheres (inset) in the white ventral side, and a lack thereof in the red dorsal side. (B) TEM of congener *C. scaber* lacks any similar electron-dense spheres.**

### Acknowledgments

The authors thank the Lizard Island Research Station, J. Auchterlonie, R. Templin and J. Drennan at the Center for Microscopy and Microanalysis at the University of Queensland, M. Zelman of Surface Optics Corporation (San Diego, CA, USA), D. Elias for High Speed Video assistance and R. Zalpuri of the Electron Microscopy Lab, both of the University of California Berkeley. This work was supported by the University of California Museum of Paleontology Palmer Fund, the NSF East Asia and Pacific Summer Institutes (EAPSI) Award, the Professional Association of Diving International (PADI) Foundation Award, the Animal Behavior Society Student Research Grant, the Conchologists of America Grant and the Lerner Gray Memorial Fund from the American Museum of Natural History.

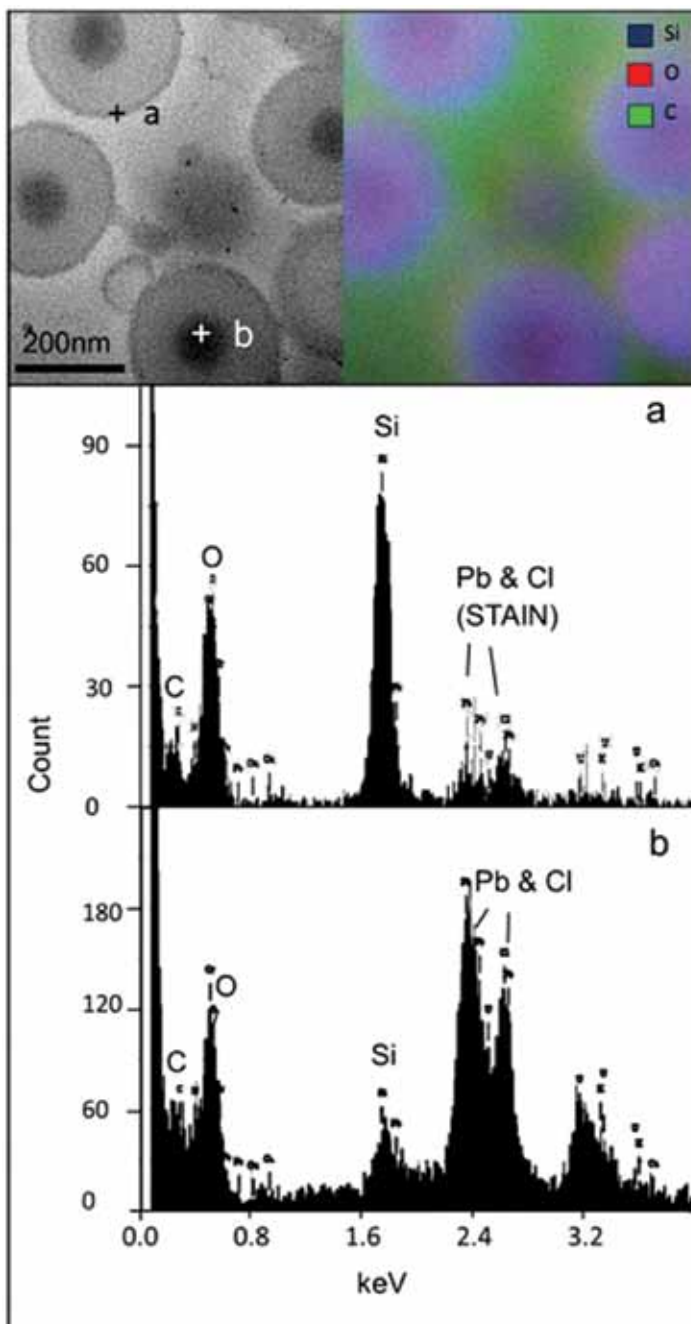
Lindsey Dougherty

### Disco Clams

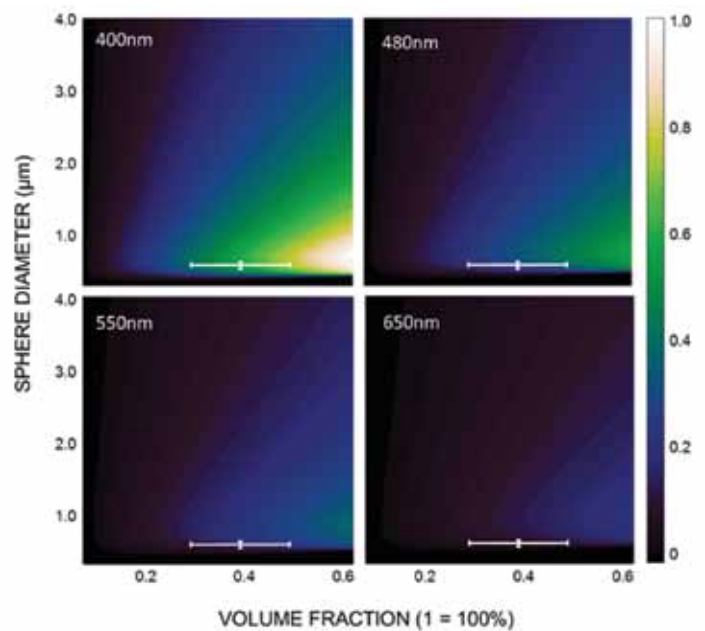
Editor's comments: For more on the disco clam and the research and discoveries by Lindsey Dougherty, visit the University of California Museum of Paleontology website at: <http://ucmp.berkeley.edu/blog/archives/3831>

On the UCMP website are several links, including one that shows a short video that includes images of the actual flashing by these clams. The link is available on the UCMP website or you can go directly to the ABC website at: <http://abc7news.com/science/uc-berkeley-researchers-study-colorful-disco-clams/210149/#&cmp=fb-kgo-post-210149>





**Fig. 5. Energy Dispersive X-Ray Spectroscopy (EDS).** EDS elemental analysis shows the composition of the reflective spheres. Blue (Silicon) and red (Oxygen) combine to form the purple, amorphous silica spheres ( $\text{SiO}_2$ ), while green (carbon) composes the underlying tissue. Both the outer shells (A) and the cores (B) of the spheres are composed of silica (silicon 1.70-1.80 keV, oxygen 0.40-0.60keV).



**Fig. 6. The Effect of Sphere Diameter and Density on the Total Amount of 400nm, 480nm, 550nm and 650nm Angle-Weighted Scattered Light from a Dense Collection of Spheres (arbitrary units).** The mean values (dots) and error bars show the range of the parameters found in *C. ales* tissue at four different wavelengths. The size of the spheres found in *C. ales* is close to optimal for maximal light scattering at 400nm and 480nm. Units are normalized to one for the maximum angle weighted scattering for 400 nm light.



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# Does lightning strike twice?

Joaquin M. Inchaustegui

At the annual auction of the Houston Conchologist Society I was the only bidder for a bag labeled “#84 Cerith Collection.” I won the bag for a bid of \$1.00 and when I got the 10 or so shells home I identified and labeled most of them, but one of the larger shells that at first glance looked like the ceriths I had collected in French Polynesia, Fiji, Tahiti, and Tonga, in the 1970s puzzled me. I searched through all my books for that area of the South Pacific and, sure enough, there were several ceriths that looked similar to my mystery shell, but none matched exactly, so I labeled it “*Cerithium* sp., H.M.S. #84 Cerith Collection.” I put it in one of the boxes with the shells obtained at the auction for further study at a later time. By taking an average I estimate this shell cost me about 10 cents.

There the unknown cerith remained until months later when Dr. Emilio Fabian García traveled from his home in Lafayette, La., to my home in Sugar Land, TX. to spend some time helping me with my shell identification. He brought with him a gift box with rare or uncommon shells valued at approximately \$600. These were: *Schilderia achatidea* (Sowerby, 1837); *Morum dennisoni* (Reeve, 1842); *Acesta rathbuni* (Bartsch, 1913); *Murexiella hidalgoi* (Crosse, 1869); *Pterynotus bednalli* (Brazier, 1877); *Pterynotus miyokoae* Kosuge, 1979; *Ancilla rubiginosa* Swainson, 1823; and *Perotrochus teramachi* Kuroda, 1955. Truly a generous house guest.

He worked with my collection for six days, examining each of my unidentified shells, determining the genus and species, and then I would complete the label with the family, the author and date, the collector (if known), and the date I obtained the shell. In the six days we completed the I.D. of about 50 shells. This would have taken me about a month of Sundays without Emilio's help.

During one of our rest breaks, we examined some of the shells named after Dr. Garcia. These include: *Conus garciai* da Motta, 1982; *Vokesimurex garciai* Petuch, 1986; *Cerithioclava garciai* Houbriek, 1986; *Voluta garciai* (Petuch, 1987); *Opalia garciai* Kilburn, 1994; *Sinezona garciai* Geiger, 2006; *Scaphella garciai* Bail, 2007; *Vexillum garciai* Salisbury & Wolff, 2009; *Stocisia garciai* Rolan, Fernandez-Garces, & Lee, 2009; *Anatoma emilioi* Geiger, 2011; *Haplocochlias garciai* Rubio, Fernandez-Garces, & Rolan, 2013; *Fusilaria garciai* Snyder, 2013; and *Ferrocina garciai* Taylor & Glover, 2013. He then opened a file in my computer and showed me how to navigate the P.C. to access images of these, and other, shells. My first interest was to find an image of *Conus garciai*, which we did, and then on the screen was a large view of a *Cerithioclava* and I immediately

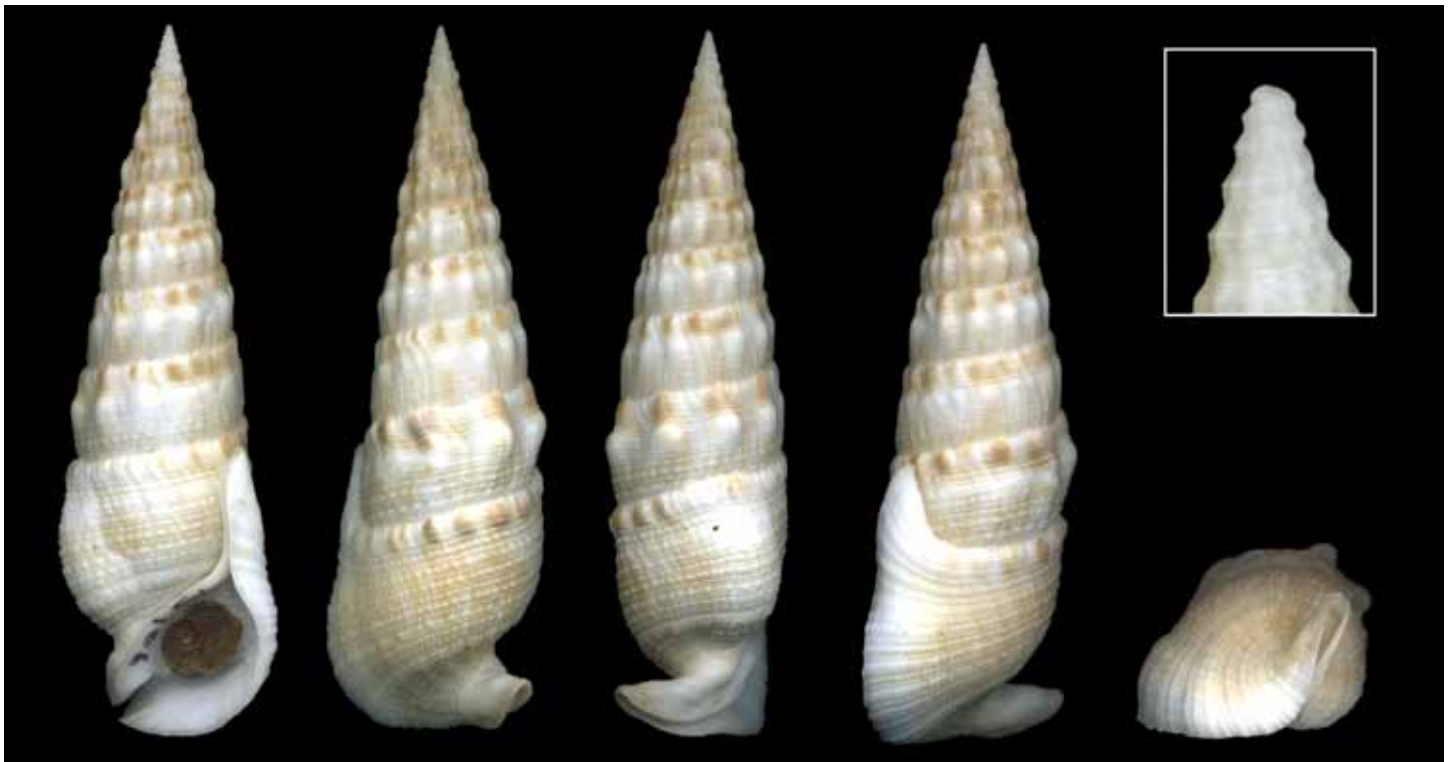
recognized it, practically yelling as I jumped to my feet. “I have that shell!” Emilio was incredulous and asked to see it. I went to the large box where I believed I had put it and after a minute or so I dug out the mystery cerith from the auction and handed it to him to compare with the *Cerithioclava* on the P.C. screen. After a few moments he said “Joaquin, there you go again, jumping to conclusions! This is not ‘*Cerithium* sp.’ with an unknown locality somewhere in the South Pacific, at all! You have an \$80 to \$100 shell, if you can find one for sale. It is *Cerithioclava garciai* Houbriek, 1986, and there are not many to be found for sale, especially one like this, gem quality and with its operculum”. He then explained that it is found only in a restricted area east of Roatan, Honduras. The genus was considered extinct by many experts for years and that when Dr. Houbriek saw the specimens sent to him by Dr. García, he was amazed that it was a Recent shell from the Western Caribbean and not a fossil. It represented a totally new, living example of the genus *Cerithioclava* that had, up to that time, only been known from fossil records of the Tertiary Caloosahatchian Province of Florida. Dr. Houbriek published in 1985, “The discovery of a new living *Cerithioclava* species in the Caribbean (Mollusca: Prosobranchia: Cerithiidae)” with nine pictures of *C. garciai* from Nicaragua and Honduras.

On a closing note, when Emilio was finished up and prepared to leave for Houston and then on to his home in Lafayette, he promised to send me an article prepared by Dr. Houbriek on *Cerithioclava garciai* and one prepared by A.J. da Motta on *Conus garciai*. I had no literature on either of these species and I was quite interested in both as well as the men who first described them.

*Conus garciai* (now placed in *Gradiconus* by some authorities) is compared by da Motta to *Conus angulatus* Lamarck, 1810, but it differs by having distinct channeled sutures and other distinct characters. Da Motta lists *Conus cancellatus* Hwass, 1792, and *Conus floridensis* Sowerby, 1870, as similar to *Conus garciai* with “...an equally pronounced turreted spire, but which is sharply crenated at the shoulder.”

In “The Cone Collector” issue #0 dated October, 2006, Antonio Monteiro wrote an “obituary” for his friend Antonio Jose da Motta, (almost 3 years after his death) who he describes as “...dynamic, kind and of convivial nature, with a genuine love for shells and for their study.” Da Motta's family originated in northern Portugal. Monteiro goes on to say “Da Motta described a number of species, not all of them accepted by the international community as valid...”

Dr. Richard S. Houbriek (1937-1993) entered a



*Cerithioclava garciai* Houbrick, 1986, 70.1 mm, from the Caribbean. This was thought to be a fossil genus until the discovery of this species by Emilio García. Photo by Tom Eichhorst.

seminary and was ordained a Catholic Priest in 1964 and was a monk for eleven years. He later left the seminary to pursue his doctorate in biology which he achieved in 1971. He specialized in the systematics, anatomy and reproductive biology of prosobranchs, especially the Cerithiidae. I also have in my literature file "The family Cerithiidae in the Indo-Pacific Part 1: The Genera *Rhinoclavis*, *Pseudovertagus* and *Clavocerithium*" by Richard S. Houbrick, published December 15, 1978. Therein are many pictures of *Rhinoclavis*, *Pseudovertagus* and *Clavocerithium* but naturally none of *Cerithioclava*, believed by many experts for many years to be an extinct fossil genus.

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#### References:

**da Motta, A.J. 1982.** Seventeen New Cone Shell Names (Gastropoda: Conidae). *Publicacoes Ocasionais de Sociedade Portuguesa de Malacologia*. no. 1 p. 18, f. 17

**Houbrick, R.S. 1986.** The discovery of a new living *Cerithioclava* species in the Caribbean (Mollusca: Prosobranchia: Cerithiidae). *Proceedings of the Biological Society of Washington*, 99: 257-260.



*Conus garciai* da Motta, 1982, 42mm, from Nicaragua (?). Maybe the second lightning strike? Image by Alexander Medvedev, on Wikipedia Commons.

**Tucker J.K. & M.J. Tenorio. 2009.** *Systematic classification of Recent and fossil conoidean gastropods*. Hackenheim, Conchbooks. 296 pp.



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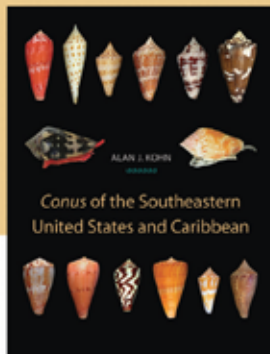
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Edited by the  
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[Belgian Malacological Society]  
Founded in 1966

Rue de Hermalle 113  
B-4680 Oupeye – Belgium

Subscription (yearly)  
Belgium: 43 EURO  
Other countries: 58 EURO  
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**GLORIA MARIS**



A magazine dedicated to the study of shells.

Edited by the Belgian Society for Conchology,  
organizers of the Belgian Shellshow

Subscription: Belgium: €30 - The Netherlands: €33  
Other countries: €40

Members account manager: J. Wuyts Koningsarendlaan 82 B 2100 Belgium  
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## The three-eyed *Lobatus gigas*

Sylvia M. Vélez-Villamil

I am a professor of marine botany and I took my class on a field trip last March to Las Cabezas de San Juan, Fajardo, Puerto Rico. The purpose was to collect and study some marine algae and to give the students the opportunity to participate in fieldwork. We spent some time snorkeling, as I usually search for other things to show the students. In all honesty I enjoy the “ooh” and “wow” when I show them something different. On this occasion I collected a young *Lobatus gigas* or queen conch (in Puerto Rico it is commonly called “carrucho”). When the animal extended its head, it was evident it had three eyes. I do not have to mention who said “woooow” this time. I took a couple of photographs of this interesting creature and then released it (local law forbids the killings of these animals).

Sylvia M. Vélez-Villamil  
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**Juvenile *Lobatus gigas* (Linnaeus, 1758) with three eyes, see close up below. Older references will be *Strombus gigas*. Photos by author.**



# A Korean shelling adventure

Marcus Coltro

Have you noticed that there are almost no shells from South Korea offered by the various shell dealers? It seemed to be a good place to go and look for shells! I went via Dallas – a 14 hour flight. Thank God I was able to fly business class using my mileage with American Airlines.

My travel agent suffered a bit to get me hotels and a car at Incheon Airport since he had never before sold any tickets to South Korea. Unfortunately, I was not able to get the car as they require an international driver's license, which I do not have, so I had to change my plans completely. I got information on how to get to Busan, South Korea's second largest city, located in the south end of the country. The best travel alternative was by bus, since the train station was in Seoul, some 40 km away.

I took a cab to a hotel near the airport and quickly realized that most people do not speak any English at all, even taxi drivers. I showed him my reservation and he did not understand anything, the same way westerners do not understand the Korean alphabet, but he was able to call the hotel and get directions. By the way, it was a very good thing that he called as the "hotel" was not a hotel per se, but rather an apartment rented by a guy who lives in the building. He asked the taxi driver to talk to me so he could give me a password to open the door (no physical key to open the door).

## Busan

The next morning I went back to the airport where I took a bus to Busan, about 6 hours on a very comfortable bus. I expected that people would understand a bit English, but nope, in most cases they did not understand a word, not even the basics. Well, I needed to expand my mimic abilities anyway! I arrived at the hotel in Busan. It was an old place, but very well located. The nearby streets were packed with restaurants and stores, and it was fairly close to Jagalchi Fish Market – the main reason for going to Busan.

Jagalchi is a big fish market, with several booths offering all sorts of fishes, shells, urchins, and other marine animals to locals and restaurants – all live in tanks filled with running refrigerated salt water. I was the only westerner there and they barely looked at me, until I bought some shells and had a plastic bag in my hands. Then all of them



Jagalchi Fish Market in Busan. Image from Wikipedia Commons.





Some shells from the Jagalchi Fish Market. Image by author.



One of the vendors in the fish market on Yeongdo-gu Island, south Busan. Image by author.

started “talking” to me (I looked back and smiled in Korean). People walk up to a stand and choose a live fish from the tank, then take it and kill with a club. I guess it is quite inconvenient to carry home something struggling inside a bag.

All the streets around the market have shops selling the same type of live “merchandise.” There is that odor in the air that we collectors are used to smelling when cleaning our catch. I bought several bivalves, as well as *Haliotis*, *Buccinum*, and other shells. The problem is that 90% of the material is badly broken, and to pick the good ones you must stick your hands inside the tanks, prompting some of the sellers to yell “no touchy!” Or something to that effect. After I had some bags filled with shells from other sellers they got easier on me and allowed my western hands inside the tanks to pick the best specimens (and to freeze my fingers).

It was my intention to fly to the Philippines in a week to participate in the anniversary of Conchology Inc., with my friend Guido Poppe, and of course to buy a lot of shells there as well. I could not fill my luggage with heavy and large bivalves since I needed the space for shells from the Philippines. I had to carefully choose each species and not take all that many. I would also have to clean all of the shells and there was no microwave at the hotel. The most expensive shell was the *Haliotis discus*; most restaurants have it on their menus. I’ve tasted it and found it was not very good, chewy and served whole with the guts. Not like the ones from California, tender and delicious. The most expensive of the bivalves was *Meretrix lusoria*. The taste must be good, although I did not find any restaurant offering it on their menus. Well, to be honest, I was not able to communicate very well in any restaurant to order something specific, so I always ordered based on pictures on the menu and I did not see anything that looked like a *Meretrix*.

I went back to the hotel and tried to buy some isopropyl alcohol, but no one knew what I was talking about, even after I showed them the translation on my cell phone. So I bought vodka instead, which did not work quite as well. It was so cheap that I did not dare take a taste. The night life around the hotel was very active, with lots of tourists on the street buying at shops and eating at restaurants or at a street fair with many food carts. To western eyes, most of the food looked like something found in an Indiana Jones movie, dried squids, fishes, and other things I was not able to identify. I tasted some and most was very good.

The next day I went to Yeongdo-gu Island, just in front of Jagalchi market. I checked a map and wanted to go to the furthest point of the island. I took a map with me and showed it to a taxi driver. He looked at the map and drove 5 minutes, then stopped the car and “told” me he did not know how to get there, so I had to leave the cab. Yes...communication can be a problem. I did not give up, however, and tried another taxi. I showed him the map and he “mimically” explained to me that there were no roads that went that far, so I asked him to get me as close as possible to a marine museum on the island, which he did. The museum looked very nice, too bad it was Monday and most museums are not open, but I looked once again at the map and it seemed it was not too far to a beach, about 2 km. To walk 2 km is not much, except for the fact that it was very hot. It seemed the sun was melting the asphalt. I got to the beach, a rocky place with many kiosks selling basically the same things I found at the Jagalchi market. I saw some rocks at the end of the beach and went there, finding only a few *Littorina*. I spotted a trail going up the mountain and went there looking for land shells. None. I guess they were all cooked by the sun. After losing most of the water from my body I decided to go back. I stopped at a small restaurant on the way and



had a delicious octopus stew. Again, no one spoke any word in English. When I signaled that the food was very good at the end, she misunderstood thinking I wanted to smoke and pointed to the door.



Small bowls with various types of food are called “banchan.” Image by author.

### Ulsan

Back in Busan, I called a dealer in Ulsan (someone had given me the phone number). I took a bus and went to downtown Ulsan. It took a lot of time since it was an urban bus, stopping at every single bus stop on the way. Too bad I did not know that his store was actually much closer to Busan than to Ulsan’s downtown area. The cab I took cost much more than the bus trip and as much time, much of it retracing my earlier route. Ulsan’s Maritime Museum and shop is a very nice place, well organized by Mr. Han-ho Park and his son Choong-hoon. Mr. Park has collected shells and corals his whole life and in 2010 he inaugurated his nice museum. Sadly, the only shells I could find in his store were from the Philippines. Choong-hoon took me to lunch in a very nice restaurant, where we ate crabs and other sea food. At most Korean restaurants they serve banchan, small bowls with various types of food such as algae, dried fish, peanuts, and kimchi, a very spicy way to prepare some vegetables. I love spicy food, so I was quite happy!

After lunch Choong-hoon left me at a beach near his shop where I collected several small shells on the rocks and saw several large orange jellyfish near the shore. It was very windy and felt much nicer than the previous day on Yeongdo-gu Island. Choong-hoon offered to drive me half-way to Busan, where I could take a local bus and it would be much faster than going back to Ulsan.



Above: The Maritime Museum in Ulsan. The *Tridacna* shells are really quite large, but nothing like the gastropods at the top of the steps!

Below: A closer look at the helmet shell. Images by author.



### Danyang

I stayed one more night in Busan and then went to Danyang the next day, where I wanted to look for land shells. The city is near Gosu Cave ([http://en.wikipedia.org/wiki/Gosu\\_cave](http://en.wikipedia.org/wiki/Gosu_cave)), one of many caves in the region. The place receives many tourists and has small shops and restaurants. I visited the cave and then walked down a road to a small nearby river where I found some thiarids and on the side of the road I found some tiny land shells. The heat was again quite intense, so I had to stop for a beer, and lunch of course. This time it was a bit more difficult to order since the restaurant did not have a menu with pictures, only a banner on the wall with the name of the meals and the price below. The waiter (an elderly man) did not understand even the word “beer.” I had to go with him to the fridge and point to a beer. He asked me what I wanted to eat (I think), and since I do not know anything but “bulgogi” (meat prepared in a sweet



**A large formation inside the Gosu Cave in Danyang. Image from Wikipedia Commons.**

sauce) that was what I asked for. He yelled at the kitchen, where the cook then yelled louder, something I imagine was close to “tell this crazy foreigner we do not have such thing.” After all of this, I simply pointed to something on the wall and hoped I was not ordering anything that had once barked or meowed. It was a soup with meat and very good, as was the banchan that came with it.

Leaving the restaurant, I found a few more land snails and decided to walk further along the road. I saw another smaller road going up the mountain and followed it. It was abandoned and very steep. I did not find a single shell and was starting to feel dizzy due to the heat, so I returned to the main road. I stayed there the whole day and had to go back to the hotel to clean a few more shells I had purchased in Busan. They were quite rotten by then. I wonder what the cleaners thought after I left my room... “this stinky westerner!”

I intended to stay one more day in Danyang, but the next morning started with a thunderstorm so I went back to Seoul, from where I would fly to the Philippines in a couple of days. In Seoul I went to another fish market and bought several shells. I had to resist purchasing too many since I would only have a few hours to clean them before



**Last minute shell cleaning behind the locked bathroom door at the Seoul Airport. Image by author.**

leaving the country. I put them in alcohol (which I was able to purchase at a drugstore) so I could clean them the next day at the airport. Yes, the only place I would have time to do it was at the airport. I found a restroom with a sink and locked myself in for one hour. People must have thought I was not feeling well due to the smell and the time I spent behind the locked door. After I cleaned all of the shells I packed them and went to the line to take my flight to Cebu.

As usual my trip was less than perfectly planned. I had booked everything one week earlier, but to my surprise the attendant at Korean Airlines told me I could not board the plane because my passport was valid for only five months, instead of the six months required by the Philippines! The worse thing is that even my travel agent was not able to find this requirement on the internet. It was only after I got back to Brazil that I found a website where I could confirm this information. So now what? I am used to changing plans at the last minute, so I was not too stressed. I went to an information booth at the airport and talked to a very nice girl (who thankfully spoke perfect English). She booked a hotel for me in Seoul and suggested going to Sokcho, a large and beautiful city in the northwest.

### **Sokcho**

Of course I was very sad to miss out on the 10th anniversary of Conchology Inc., but at least I was able to find another interesting place to look for shells. Sokcho is very beautiful, has many things to do, including a fantastic park, Seoraksan National Park. Thousands of tourists go there every year to climb or simply walk on its nice trails along the small stream inside the park.

When I arrived at the bus station I found an information booth for tourists – and another nice English speaking attendant who was very helpful, setting me up with the best hotel on the trip for only US \$85 per night! The Class





**Expo Tower in Sokcho. It looks like a giant, twisted “Slinky.” Image from Wikipedia Commons.**

300 Hotel is a relatively new hotel with modern and spacious rooms. The bathroom was fantastic, with a full electronic toilet (heated seat, washes and dries your...) and with a window to the room so you could take a bath looking at the beautiful view of the sea! The top floor restaurant is another place worth the stay, for US \$18 dollars you eat as much as you want for breakfast, a delicious buffet!

Sokcho is the capital of dried fish of South Korea. They have a huge market selling all sorts of dried fish and squid, live as well. I found several species of *Buccinum* and many bivalves at a fish market downtown and at another one near the sea. I also collected several shells near the place where they dump dead shells, but it was near a sewer, stinky and with rats...so I soon had to give it some distance, or risk losing my lunch. I walked all over the city, quite a nice place. I have never seen so much dried sea food in my life!

Another interesting place was Dae-po Port, where you can eat raw fish and other specialties from the region. On the last day I went to a small museum near the beach. It had lots of interesting minerals and a collection of shells - all from the Philippines and arranged in an aesthetic manner (lots of incorrect names though), but worth a visit.



**Above: Some of the dried fish in the Sokcho Market. Image by author.**

**Below: The Sokcho Natural History Museum. Image by author.**



**The shells I picked up at the Sokcho Market. Image by author.**





**Above: A nice view of Seoraksan Park, unfortunately it is often over-crowded with tourists. Image anon.**

**Below: Crowds of people climbing the rocks for a view in Seoraksan Park. Image from Wikipedia Commons.**



### **Seoraksan Park**

On the second day in Sokcho I went to Seoraksan Park. The first thing I did was take a cable car to visit one of the peaks. I was impressed to see many elderly people climbing to the top – a very dangerous, steep rock! I am used to this kind of thing and I was concerned for myself. After coming back down, I knew I would not have time enough to see much, so I picked a trail on the map (they have great maps everywhere in Korea!) to follow until I was tired enough to go back. At the entrance there was a chart with a toughness scale for each of the trails. It advises that elderly people and pregnant woman should skip the more difficult trails. On the first part of the trail I saw many people – too many for the kind of trip I am used to, but as I went on the fewer people I saw. When the sky got dark with thunder rumbling, I saw many people coming back and the trail looked much better. I was able to walk in parts without



**Above: Assorted bivalves at the Sorae Market in Incheon. Image by author.**

**Below: More assorted bivalves on display with a spray of cold water. Image by author.**



any tourists at all, but I had to return as the rain was getting stronger. I stopped at a shop about halfway back, where many other tourists were waiting for the rain to stop. Instead it got worse and they sounded a siren to make sure everyone got to a safe place. After the rain stopped the sun came out and it was like nothing had happened, even the birds started to chirp again!

I walked for seven hours and just saw a small part of the park, so I imagine it would take at least a week to visit most of it.

It was then back to Seoul where I only had a few hours to prepare the shells for the trip. I was going to stop for a couple days in Miami, so I did not want to get expelled from my condominium due to the “parfum” coming from the apartment! All worked out well. South Korea is a beautiful country and worth a visit for a longer period!

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## 2014 *Neptunea* Awards



Colin and Janet Redfern, enjoying life on a boat in the Bahamas.



Tom Rice with one of his many parrots, in this case a rainbow lorikeet (*Trichoglossus haematodus*), in Rawai Beach, Thailand.

The 2014 *Neptunea* Awards were presented to Colin Redfern and Tom Rice. Both of these individuals are well known to members of COA and over the years have contributed greatly to the advancement of our organization as well as the knowledge of conchology and malacology. Both gentlemen are well-deserving of this recognition. Tom's award is shown below as an example of the *Neptunea*.

Colin Redfern lives in Boca Raton, Florida, and is perhaps best known for two superb volumes on Bahamian mollusks. The first, titled "Bahamian Seashells: A Thousand Species from Abaco, Bahamas," was published in 2001 and set a new and very high benchmark for area molluscan studies. Aside from great illustrations (many a particular species for the first time and all by the author, except the SEM images), over half the book contains descriptive text covering each species. This book quickly became THE reference for western Atlantic and northern Caribbean Mollusca. Then, in 2013 came, "Bahamian Seashells: 1161 Species from Abaco, Bahamas." This is much more than a revision of the first book; black and white photos became color photos, species were added, images were added, the format was redesigned to make it more user friendly, and many of the species are now shown as living creatures, not just dried shells. Colin truly surpassed himself. Colin also maintains a web site for updates and errata for both books. As a closing remark, Colin recently donated his shell collection (including voucher specimens from the books) to the Bailey-Matthews National Shell Museum in Sanibel, Florida.



Tom Rice lives in Rawai Beach, near Phuket, Thailand, and is perhaps best known for publication of the shell magazine, *Of Sea And Shore*, (108 issues, 1970-2007). During this period, *Of Sea And Shore* was THE shell magazine and has now been digitized on disc. He also published: *The Catalog of Dealers Prices for Shells: Marine, Freshwater and Land* (23 editions, 1965-2007), *A Sheller's Directory of Clubs, Books, Periodicals and Dealers 1965-2007* (27 editions), *Directory of Conchologists/Malacologists* (6 editions); *Additions and Corrections to A. Myra Keen: Seashells of Tropical West America* (1968), *Checklist of the Marine Gastropods from the Puget Sound Region* (1968), *A Checklist of Mollusks on Postage Stamps* (6 editions), *A Checklist of the Shelled Marine Molluscs of the Oregonian Faunal Province* (2000), *Marine Shells of the Pacific Northwest* (1972), *What is a Shell* (1972), and *Beach Banquet* (1993). Tom is a founding member of COA, hosted two COA conventions, and served as President in 1974. Tom moved to Thailand after retirement. Before that he lived in Port Gamble, Washington, where he was a drawbridge tender and proprietor of the "Of Sea and Shore Shell Museum" in Port Gamble.



## 2014 Gulf Coast Shell Show

The COA Award at the 2014 Gulf Coast Shell Show went to Vicky Wall for her exhibit, "The Family Personidae." Her display covered 10 feet in 5 cases and presented a comprehensive view of the shells and characteristics of this family, with its often bizarrely-shaped shells. This year's show was attended by almost 400 people and had over 200 feet of display area. Judges were Dr. Emily Vokes and Dr. Emilio García. The shell show chairpersons were Jim and Linda Brunner. The show was held on 19-20 July 2014 at the Panama Beach Senior Center in Panama City Beach, Florida. The shell of the show was *Stellaria lamberti* (Souverbie, 1871). This New Caledonia endemic is the rarest (at least in terms of availability to collectors) of the Xenophoridae (carrier shells). The self-collected shell of show was *Hexaplex fulvescens* (G.B. Sowerby II, 1834), one of the more impressive shells from Florida waters. The DuPont Trophy was won by Jim and Linda Brunner for "Fossils of the Chipola Formation." Linda Bruuner won the "most educational" exhibit for "The eye of the sheller."

The Gulf Coast Shell Club meets at 7:00 pm on the second Tuesday of each month (except June and December, which are reserved for social activities) at the Lake Huntington Club House, 3504 W. 15th Street, Panama City, FL. Annual dues are \$8 for a single and \$12 for a family. New members are always welcome and can participate in several field trips as well as the meetings and shell show.



Dr. Emilio García (L) presents the COA Award to Vicky Wall (C), who is holding the Helen Norton Award, while Dr. Emily Vokes (R) presents Vicky with the "Shell of Show."



The beginning case for the winning display by Vicky Wall. The x-ray image certainly shows the twisted nature of the shells in this family.



Left: An example of *Stellaria lamberti* (Souverbie, 1871), 50mm, New Caledonia, the species selected as "Shell of Show." *S. lamberti* is found on seamounts around New Caledonia, and much of this area is now closed to fishing.



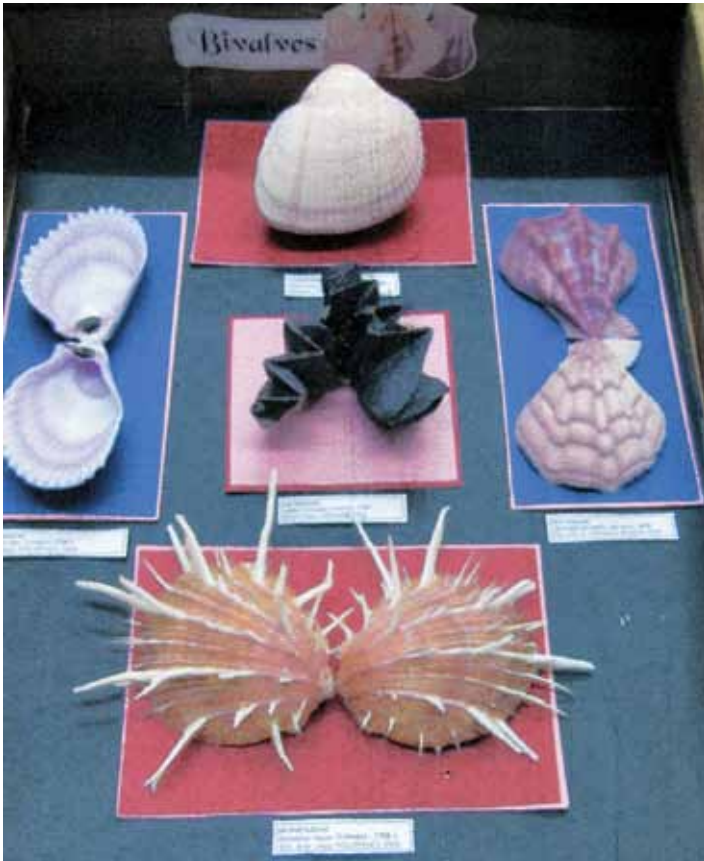
## 2014 Keppel Bay Shell Show

This year's winner of the COA Award at the annual Keppel Bay Shell Show was Heather Smith with her display of "Worldwide Large Bivalves." It was a well-attended event and featured over 25 categories of competitive events. Some categories were restricted to a molluscan family like Cypraeidae or Conidae, or a genus like *Lambis*, while others were more general like bivalves or land snails. Shells of the show included the gastropod *Trigonostoma milleri* Burch, 1949, displayed by Robert Ellis, and the bivalve *Amiantis purpurata* (Lamarck, 1818), displayed by Thora Whitehead.

The Keppel Bay Shell Club was formed in 1962 with 39 members. The first shell show was held in 1967 and took place over an eight day period! The club membership is now approximately 150 and this year's show, held on 12 and 13 July 2014, celebrated the club's 50th anniversary. The event was held at the Yeppoon Show Grounds in Central Queensland, an area renowned for its tropical climate and beautiful beaches. The club publishes a newsletter, the *Keppel Bay Tidings*. Membership is Au\$20 for single or a family of two. Junior membership is Au\$3.



Heather Smith (R) is presented with the COA Award by club President Ena Coucom (L).



Part of Heather Smith's display of large bivalves at the 2014 Keppel Bay Shell Show.



The Keppel Bay Shell Club meets in this dedicated facility in Yeppoon, Central Queensland, Australia.

# A North Carolina Whelkome at the COA Convention

by Jeannette Tysor and Ed Shuller

The 2014 COA Convention hosted by the North Carolina Shell Club and held in Wilmington, North Carolina, was a tremendous success with 204 registered attendees and 36 guests. More than 160 people participated in the pre-convention tours featuring two historical tours, two dinner cruises, a tour of Airlie Gardens, and a visit to Cameron Art Museum, which features works of local artists. A tour of Fort Fisher and the NC Aquarium was a “washout” due to a strong storm. In the spirit of generosity, the group chose to donate their refund to COA.

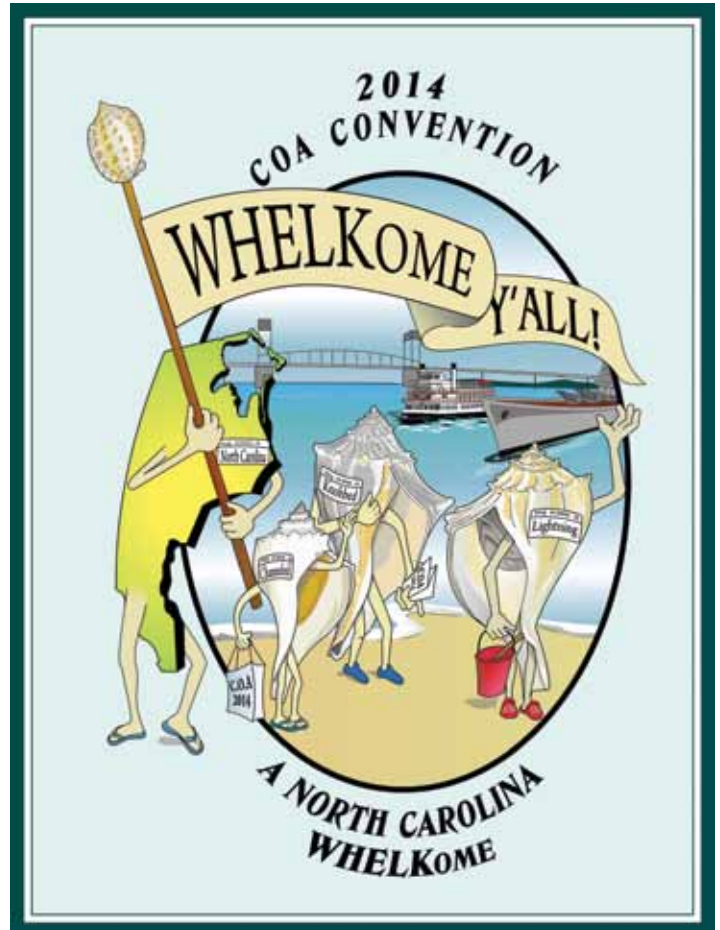
The Convention officially opened Monday morning with remarks by Jose Leal, COA President, and NC Shell Club President, Susan O'Connor. The first three days featured a series of outstanding programs and all were well attended. Included in the presentations was a 6-part symposium on the molluscan diversity of North Carolina. Other programs provided updates on taxonomic changes, foreign shell shows and museums, interesting shelling trips, and travel in exotic lands.

New to COA this year was a Poster Session presented by students and members on their research or other shell related topics. Eight posters were entered with themes such as a rare shell find by a NC Shell Club junior member, the Herb Athern collection of freshwater mollusks at the NC Museum of Natural Sciences, oyster reef restoration, the terrestrial molluscan fauna of Vietnam, and shell club pins.

Monday evening's Welcoming Party with its “Scotch Bonnet Fling” theme honored the NC state shell and the Scots-Irish heritage of North Carolina. The costume contest was great fun. Judges Mary Louise Spain and Jean Newell presented winners Anne Joffe, Linda Sunderland, Betsy Bluethenthal, Matt Blaine, and Bob Pace, with Scotch Bonnets filled with tiny “shell flowers.” A unique musical presentation by the pipers and drummers of the Port City Pipers was both moving and inspiring.

The Mini-Shell Show on Tuesday and Wednesday had an impressive 71 entries in nine categories. Expert Judges Anne Joffe and Hank Chaney had a difficult job. Winners were Vicky Wall, John Timmerman, Betsy Bluethenthal, Amy Dick, Tom Grace, Richard Edwards, Karlynn Morgan, Nancy Timmmerman and Irmgard Cate. Trophies were awarded by John Timmerman at the Wednesday night banquet.

Tuesday evening the widely advertised and much anticipated Oral Auction was held. Featured were over 40 items donated from the Walter Paine collection with many



One of the winning entries in the Mini-Shell Show was this *Cancellaria (Sveltia) gladiator* (Petit, 1976) (gladiator nutmeg) from Isla Santa Cruz, the Galapagos Islands. The shell was dredged at 200 meters and was displayed at the show by Tom Grace. Photo by John Jacobs.

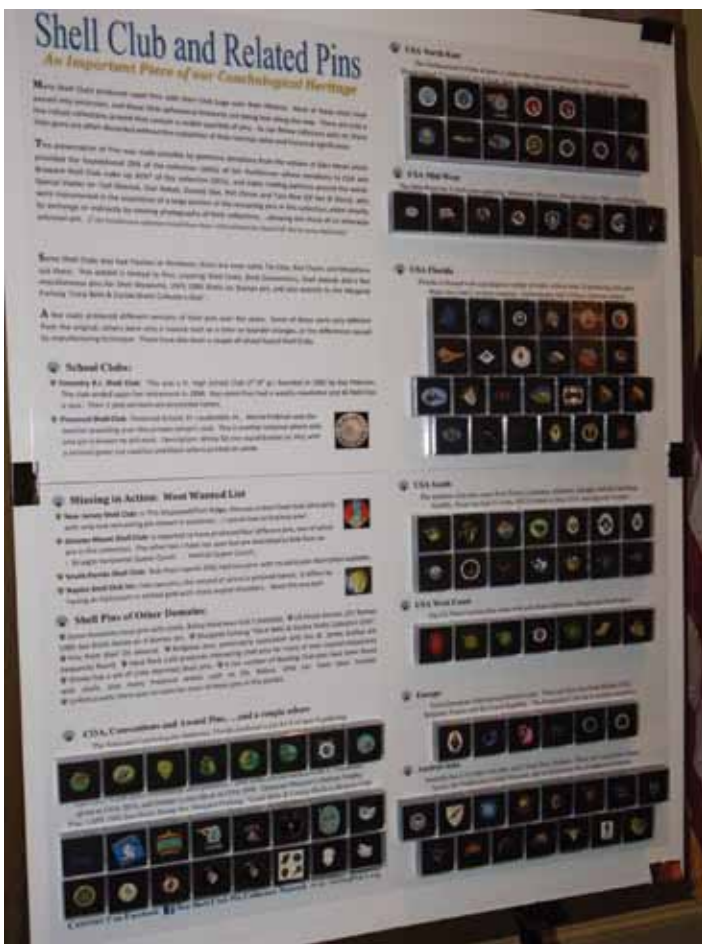




The USS North Carolina was moored across the river from the hotel. This is one of eight US battleships on display as floating museums. The 16-inch guns (inside diameter of each tube) fired a round equivalent to the weight of a Volkswagen beetle. Photo by John Jacobs.



The entrance to the Cotton Exchange, one of many interesting stops on the historical tour of downtown Wilmington. Photo by John Jacobs.



There were many superb posters at the convention. One of the more unusual posters was this entry by Leslie Crnkovic on shell club pins from around the world. Those are the actual pins on display. Photo by John Jacobs.

rare and seldom-seen shells. Amazing donations were also received from the Alice Monroe estate, vendors, and members. The quality of offerings made for lively bidding and premium prices. Harry Lee, Charlotte Thorpe, and Paul Callomon did a fantastic job as auctioneers bringing in more than \$14,600 for COA's scholarship and grant programs.

On Wednesday the program sessions concluded with the COA Business Meeting. After the reading of the minutes, financial reports and announcement of 2014 grant recipients, the session ended with a promotional presentation for the "Gala in the Glades," the 2015 COA Convention to be held July 14-19 at the Bonaventure Resort & Spa in Weston, FL.

Wednesday night's Lighthouse Banquet was a big hit. After a delicious meal, Charles Rawlings, one of last year's *Neptunea* Award winners, awed the audience with his wonderful photographs of living mollusks in situ. Following the program Harry Lee announced the 2014 winners of the *Neptunea* Award: Tom Rice and Colin Redfern. Raffle winners were drawn, mini-shell show trophies presented, and lighthouse favors and table prizes given. The evening concluded with many thanks to all participants, contributors, organizers, and to the host club. Co-Chairs Ed Shuller and Jeannette Tysor were presented copies of the convention logo printed on canvas from their shell club in appreciation for their work on the event.

Silent Auctions were held Monday, Tuesday, and Wednesday, with the final auction comprised entirely of items from the Walter Paine Collection. So much material was donated for auctions that on Thursday morning a "Cheap Shell Sale" was held prior to the opening of the bourse. Also a used book sale was held in the bourse room on Thursday and Friday. Together the silent auctions and sales tables raised more than \$10,000.



The last two days of the Convention were devoted to the bourse. There were 34 dealers from the US and abroad, in two ballrooms, offering shells, jewelry, fossils, paintings, books, and most everything else shell related. There was lots of activity in both rooms.

What a wonderful fun filled week! Wilmington, NC was an ideal place to hold a convention with lots to see and do. It was a great time to visit and share with old and new friends. The COA Convention offers all this and more! Start planning now to attend "Gala in the Glades" in 2015. See Y'All there!



Dorrie Hipschman (L) from Sanibel, Florida, and Bob Lipe (R) from St. Petersburg, Florida, examine some of the items prior to the auction. Photo by John Jacobs.



The auction this year had some real treasures with the addition of 40 specimens from the Walter Paine collection. At the lectern is one of our hosts from North Carolina, John Timmerman. John is introducing this year's auctioneers, Charlotte Thorpe (L), Harry Lee (M), and Paul Callomon (R). Photo by John Jacobs.



Doris Underwood (L), COA Membership Director, and Steven Coker (R), COA Treasurer, keep the accounts as the auction tally mounts. Photo by John Jacobs.



These two lamps, filled with specimens of *Scaphella dohrni*, were donated by Harold Brown and Ed Schuller. They were sold separately and caused quite a storm of bidding. Photo by John Timmerman.



Some auction items, including: several *Melo* shells and a *Syrinx aruanus* donated by John Timmerman and a large bright red *Nodipecten magnificus* donated by Marcus and Jose Coltro of Femorale. Photo by John Jacobs.



Looking down the Cape Fear River from the hotel. Photo by John Jacobs.



One of the two rooms with bourse tables. Photo by John Jacobs.



Above: sculpture of the carnivorous Venus flytrap (*Dionaea muscipula*) on the river walk by the hotel. Although this plant is now grown in green houses around the world, its original habitat is in poor wet sandy or peaty soil in North and South Carolina - within a 60 mile radius of Wilmington! Photo by John Jacobs.

Right: Dennis Sergeant (L) and Larry Strange (R) sit back and relax after a tough day of talking, showing, buying, and selling shells at the bourse. By all accounts this was a great convention. Make plans now to attend next year, 14-19 July 2015 at the Bonaventure in Broward County, Florida. Photo by John Jacobs.



New to the bourse this year, John Taylor with fossil *Megalodon* teeth. Photo by John Jacobs.







## 2015 CONCHOLOGISTS OF AMERICA CONVENTION

**Dates: Tuesday-Saturday, July 14-19, 2015    Field Trips: July 12-13, 2015**  
**Hotel: Bonaventure Resort & Spa, Weston, Broward County, Florida**

The Broward Shell Club cordially invites you to attend the 2015 COA Convention in Weston, Florida on the edge of the unique Florida Everglades. The Bonaventure Resort & Spa, a AAA Diamond Award Hotel, with its beautiful rooms and excellent convention facilities, will provide a wonderful setting for our exciting week of shells and friends. Set on 23 acres, the Bonaventure has a full service spa, three pools, fitness facilities, two golf courses and four in-house eating establishments, including the AAA Four Diamond Ireland's Steak House.

COA planned field trips will include a snorkeling trip, an Everglades/land snail adventure and an Everglades/airboat ride adventure. Additionally, there are many exciting attractions and restaurants to take advantage of including beautiful Ft. Lauderdale beaches and the Seminole Hard Rock Casino/concert hall. Sawgrass Mills, the largest outlet and value retail shopping destination in the United States with more than 350 stores, is located five miles from the hotel.

We look forward to sharing our beautiful South Florida weather and warm hospitality with you for a memorable week in paradise!! See you there!!



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# Some notes on an interesting epitoniid species from the eastern Pacific

Leonard Brown

## Introduction

In 2011, Mr. George Sangioulglou contacted me and requested I look at an unidentified epitonium he acquired from Cocos Island, an island off Costa Rica. Since Helen DuShane had spent years studying the Epitoniidae found in the Panamic-Galapagan faunal province and published a series of papers summarizing her findings, I expected it would be a straightforward matter to identify his specimen. To my considerable surprise, I received the specimen pictured in fig. 1. According to the data accompanying the shell, it was collected by a diver at a depth of 10 ft. and was found at the base of an anemone. This is typical habitat for epitoniids since they are predators or parasites of corals and anemones.

Bruce D. Neville subsequently sent me, on loan, specimens from his collection including a second example of this unidentified epitoniid. His specimen came from Las Perlas Islands in the Gulf of Panama. See fig. 2.

## Taxonomy

The combination of well-rounded non-lamellar costae, spiral cords, and the strong basal ridge present in this unidentified epitoniid is unlike any species I have seen from the eastern Pacific. I initially thought this specimen might be an example of *Epitonium rhytidum* Dall, 1917, a species known from a single specimen dredged off the Galapagos at a depth of 40 to 634 fathoms [73-1160 m]. I obtained photographs of the holotype of *E. rhytidum* that are reproduced in Fig. 3. While both *E. rhytidum* and this unidentified epitoniid from the eastern Pacific are strongly sculptured, they are clearly not the same species. The spiral sculpture on the teleoconch whorls of *E. rhytidum* is much weaker and it has a basal disk whereas the specimen from Cocos Is. has a strong basal ridge and the costae continue across the base of the shell. Another difference is the costae themselves. Under magnification, one can see the costae of this unidentified epitoniid consist of numerous thin plates fused together.

This unidentified epitonium most closely resembles *Scalaria zeleborei* Dunker, 1866, a common species found intertidally in the southwestern Pacific and *Epitonium (Boreoscala) blainei* Clench & Turner, 1953, from the western Atlantic. Neither one of these latter two species was reported by DuShane from the eastern Pacific.

Dunker in Dunker & Zeebe (1866: 912) described *Scalaria zeleborei* from New Zealand. The whereabouts of the type material is unknown. Clench and Turner (1953: 361) described *Epitonium (Boreoscala) blainei* from Florida. The holotype in the Museum of Comparative Zoology, no. 189246, was found 45 miles southwest of the lighthouse,

Boca Grande Florida at a depth of 22 fathoms [= 40 m]. A paratype was found at Bear Cut, Crandon Park, Miami, Florida.

I compared the unidentified specimens from the eastern Pacific with the examples of *zeleborei* (n=16) as well as examples of *blainei* (n=6). They were indistinguishable. See fig. 4 and 5 for representative examples of *zeleborei* from New Zealand and *blainei* from Florida, respectively.

The fact that costae consist of numerous fused plates, together with the strong spiral cords and the basal ridge led me to conclude that this unidentified species appears to be referable to *Cirsotrema* Mörch, 1852 (type species *Scalaria varicosa* Lamarck, 1822). This is consistent with Beu (2011: 22) who referred *Scalaria zeleborei* Dunker, 1866 to *Cirsotrema*. Since both *Epitonium blainei* and the austral species *Scalaria magellanica* Philippi, 1845 have similar sculpture, it is my opinion these latter two species are also referable to *Cirsotrema* Mörch, 1852.

## Concluding Remarks

The relationship between *C. zeleborei*, *C. blainei*, and this *Cirsotrema* species from the eastern Pacific is an unresolved question.

The maps on page 35 illustrate documented records of these species in my collection as well as Bruce D. Neville's collection. While certainly not definitive range maps, they illustrate nicely the apparently discontinuous ranges of these species.

Per Beu (2011: 25), *C. zeleborei* is known "... throughout New Zealand." Bruce D. Neville has acquired voucher specimens documenting that *C. zeleborei* occurs off New Caledonia and Vava'u, Tonga, sites northwest of New Zealand. See fig. 6 and 7. To date, however, *C. zeleborei* has not been reported from Hawaii or other sites in the central and eastern Indo-Pacific faunal province. That suggests *C. zeleborei* is restricted to the southwestern Pacific. Per the MALACOG database, *C. blainei* is known from east Florida, the Florida Keys, and west Florida, USA, a range that is completely disjunct from the range of *C. zeleborei*. Therefore, I consider *C. blainei* and *C. zeleborei* to be different species with similar shells. This is in contrast to *Gyroscala lamellosa* (Lamarck, 1822), and *Gyroscala xenicima* (Melville & Standen, 1903), two species widely distributed across the Indo-Pacific faunal province from Hawaii, west to South Africa, as well as the western Atlantic. See Kilburn (1985: 261) for comments on the distribution of *G. lamellosa* and Garcia (2003: 21) for comments on the distribution of *G. xenicima*.



1. *Cirsotrema* sp. Cocos Island, Costa Rica. Diver, 3 m, at base of anemone. Length, 11.8 mm. L. Brown collection no. 1018.



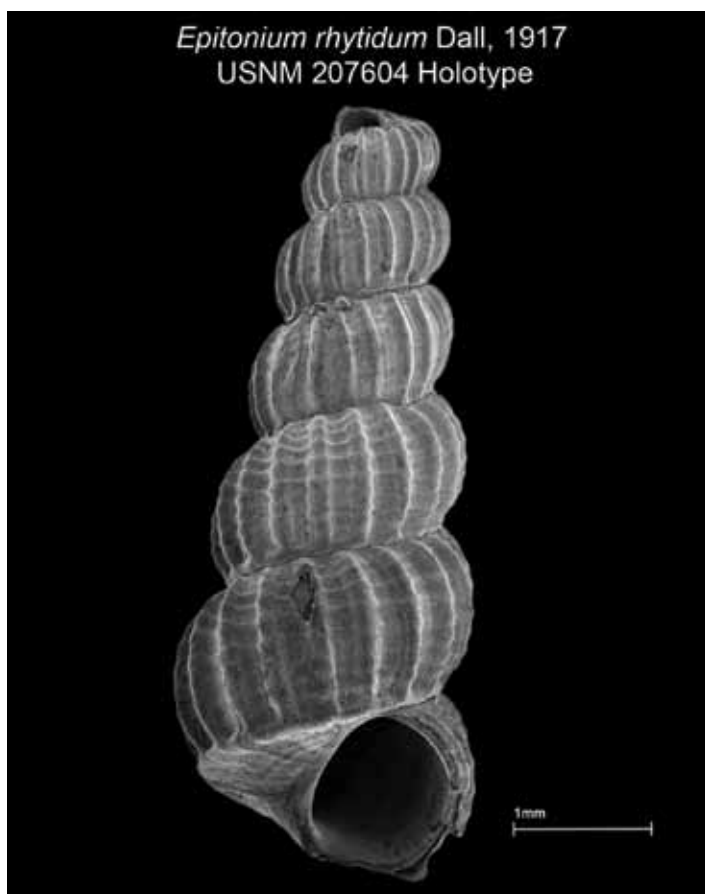
2. *Cirsotrema* sp. Las Perlas Islands, Gulf of Panama, Panama. Dredged in mud/sand, 25 m. Length, 18.6 mm. B. Neville collection no. 6833.



4. *Cirsotrema zelebori* (Dunker, 1866), Mount Maganui, Bay of Plenty, North Island, New Zealand. Length 21 mm. L. Brown collection no. 21.



5. *Cirsotrema blainei* (Clench & Turner, 1953), Dry Tortugas, Florida, USA. Lobster trap, 12 m. Length 12.9 mm. L. Brown collection no. 843.



3. *Epitonium rhytidum* Dall, 1917, length, 5.2 mm. USNM 207604 (holotype).



6. *Cirсотrema zeleborei* (Dunker, 1866), southwest lagoon, Grande Coude, New Caledonia. Diver, 10-25 m, sand. Length 26.2 mm. B. Neville collection.



7. *Cirсотrema zeleborei* (Dunker, 1866), Vava'u, Tonga, dredged, coral rubble bottom, 3-8 m. Length 13.8 mm. B. Neville collection no. 5898.

While this *Cirсотrema* sp. from the eastern Pacific could be *C. blainei* that was transported through the Panama Canal, or, in a less plausible scenario, *C. zeleborei* that was transported from the southwest Pacific, there is another possibility.

The closure of the Isthmus of Panama separating the Caribbean from the Pacific Ocean resulted in a number of cognate molluscan species, species known to occur in the Caribbean that have an analog in the eastern Pacific. In the Epitoniidae, such cognate species pairs include *Amaea retifera* (Dall, 1889), *Gyroscala rupicola* (Kurtz, 1860) and *Epitonium novangliae* (Couthouy, 1838), all from the western Atlantic, and their eastern Pacific counterparts, *Amaea deroyae* DuShane, 1970, *Gyroscala purpurata* (Dall, 1917) and *Epitonium minuticostatum* (de Boury, 1921), respectively.

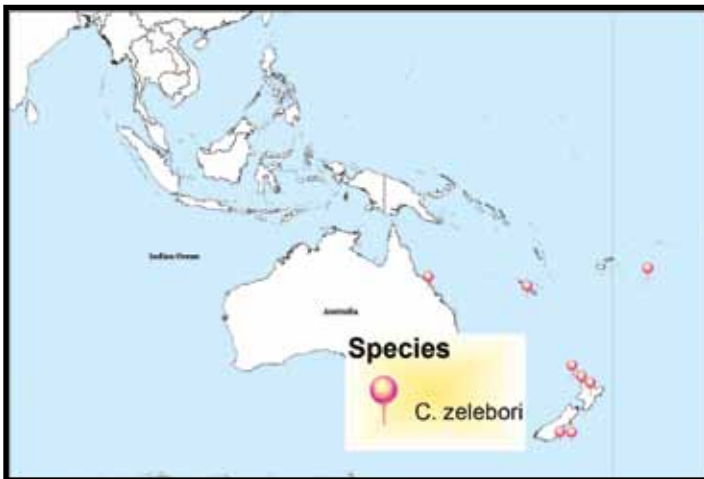
It is possible this *Cirсотrema* species from eastern Pacific is the Panamic-Galapagan analog of *C. blainei* from the western Atlantic. Clearly, further research is needed to resolve the questions posed in this article.

Acknowledgements: I want to thank George Saniouloglou who brought this *Cirсотrema* species to my attention, Ms. Yolanda Villacampa, Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution ("USNM") who photographed the holotype of *Epitonium rhytidum*, Bruce D. Neville who made voucher specimens available for study including a second example of this *Cirсотrema* sp. and compiled data for the maps, Elvis Takow of the TAMU Map & GIS library who created the three maps and last, but not least, Tom Eichhorst who photographed the illustrated specimens and prepared the plates for this article.

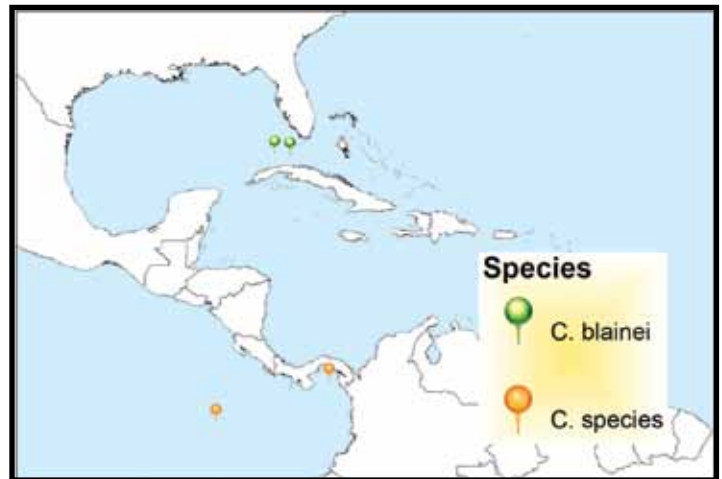
#### Literature cited:

- Beu, Alan G. 2011.** Marine Mollusca of isotope stages of the last 2 million years in New Zealand. Part 4. Gastropoda (Ptenoglossa, Neogastropoda, Heterobranchia). *Journal of the Royal Society of New Zealand* 41 (1): 1-153.
- Clench, William J., and Turner, Ruth D. 1953.** The genera *Epitonium*, *Opalia* and *Cylindriscala* in the western Atlantic. *Johnsonia* 2 (32): 361-363.
- Dunker, Dr., and Zeebor, Joh. 1866.** Bericht über die von der Novara-Expedition mitgebrachten Mollusken. *Verhandlungen der Kaiserlich-Königlichen Zoologisch-botanischen Gesellschaft in Wien* 16: 909-916.
- García, Emilio Fabián. 2003.** *Gyroscala turnerae* (Altena, 1971) (Gastropoda: Epitoniidae), a western Atlantic junior synonym of the Indo-Pacific *Gyroscala xenicima* (Melvill & Standen, 1903). *American Conchologist* 31 (2): 21-25.
- Kilburn, Richard N. 1985.** The family Epitoniidae (Mollusca: Gastropoda) in southern Africa and Mozambique. *Annals of the Natal Museum* 27 (1): 239-337.
- Rosenberg, Gary. 2009.** Malacolog 4.1.1: A database of western Atlantic marine Mollusca [WWW database (version 4.1.1)]. URL <http://malacolog.org>.

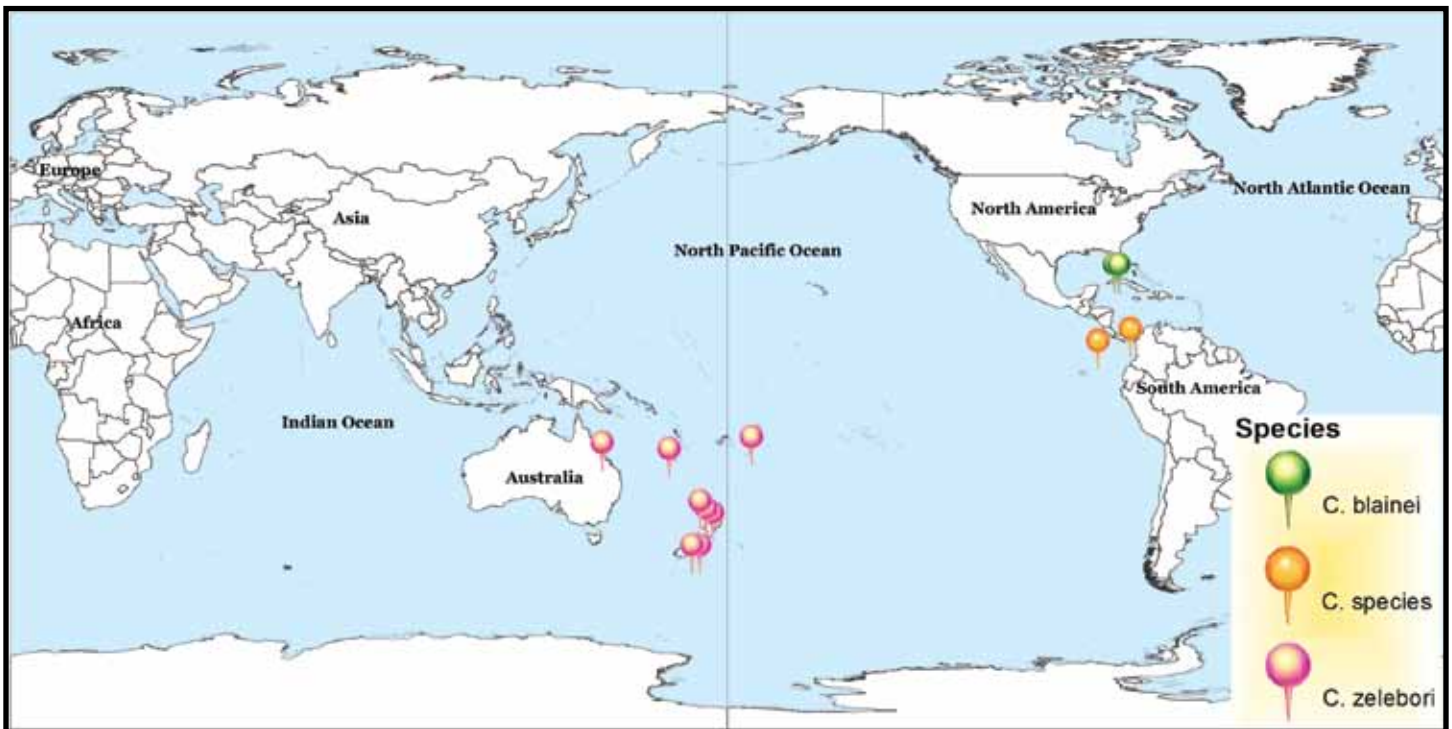




Documented occurrences of *Cirsotrema zelebori* based upon specimens in the author's and Bruce D. Neville's collections.



Documented occurrences of *Cirsotrema blainei* and *Cirsotrema* species, based upon specimens in the author's and Bruce D. Neville's collections.



Documented occurrences of *Cirsotrema blainei*, *Cirsotrema zelebori*, and *Cirsotrema* species, based upon specimens in the author's and Bruce D. Neville's collections.







Vol. 42, No. 4, December 2014

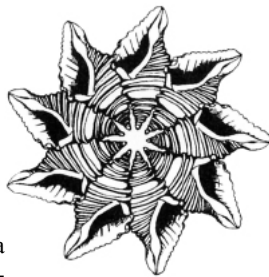
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# *American* CONCHOLOGIST

Quarterly Journal of the Conchologists of America, Inc.



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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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AMERICAN CONCHOLOGIST, the official publication of the Conchologists of America, Inc., and issued as part of membership dues, is published quarterly in March, June, September, and December, printed by JOHNSON PRESS OF AMERICA, INC. (JPA), 800 N. Court St., P.O. Box 592, Pontiac, IL 61764. All correspondence should go to the Editor. ISSN 1072-2440.

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*Liguus fasciatus archeri* Clench, 1934, 62mm,  
Pinar del Rio, Cuba. See more on Cuban landsnails  
in the next issue of *American Conchologist*.

Editor's comments: This issue contains the inserts for the **2015 COA Convention at Weston, Florida, 14-19 July**. You can also find all of the forms you need online at: [www.conchologistsofamerica.org](http://www.conchologistsofamerica.org). Every convention is different and each offers something special to remember for years to come. Yes, the cost of airfare, hotel, meals, and conference registration would buy a lot of shells, but sometimes it is better to trade an interesting time and rich experience for those lumps of calcium (no matter how nicely sculptured or colored) to be put in a drawer. And if you still have a few bucks to spare, the COA Bourse is second to none in quantity and quality of shells. Come to Florida! The venue looks to be second to none and many of your friends will be there - some you have not yet met.

We have a special treat in this issue that will carry into the next two issues: an original, unpublished (until now) article on collecting in Cuba in the 1930s by Paul McGinty. This manuscript was recovered from a museum archive and transcribed by Dick Petit, cleaned up and clarified, where needed, by Drs. Emily Vokes and Emilio García, and is presented here for COA readers. I hope you enjoy this window into the past.

For the rest of the issue we have some amazing photos of *Cymbiola nobilis* from Vietnam by Dr. Thach, a muricid taxonomic mystery by Drs. Emily Vokes and Emilio García, three book reviews, two COA Award shell show results, and Donald Dan's listing of upcoming shell shows. The front and back covers are both showcases for the amazing photographic skills of Charles Rawlings (not to mention his generous sharing of same with us). Finally, I had to hold back a couple of interesting articles because of weight concerns with the convention inserts, but they will make the next issue.

*Tom Eichhorst*

**Front Cover:** *Ceratosotma foliatum* (Gmelin, 1791), (leafy or foliate hornmouth, leafy murex, leafy thorn purpura), about 65mm in length, night off Catalina Island, California, USA, by Charles Rawlings, 2013. The colors can vary from white, to white with brown stripes, to solid brown, to brown with white "wings."

**Back Cover:** *Neobernaya spadicea* (Swainson, 1823), (chestnut cowrie), about 40 & 55mm in length, night off Catalina Island, California, USA, by Charles Rawlings, 2013. The only living species in the genus *Neobernaya* and the only cowrie found on the west coast of the USA. It is often seen with the mantle retracted.



# SHELL COLLECTING IN CUBA

## NOVEMBER 1930

Paul L. McGinty

as transcribed by Richard E. Petit

and edited by Emilio F. García and Emily H. Vokes

### Introduction by the editors:

This most readable narrative of Paul L. McGinty would still be in a museum archive were it not for the persistence of Richard (Dick) E. Petit who, for some years before his death in December 2013, had become very interested in the life and work of the McGinty family. With the help of Roger W. Portell, Director of the Invertebrate Paleontology Collections at the Florida Museum of Natural History, Dick obtained photocopies of diaries and narratives of the McGinty's adventures in the Bahamas, the Gulf of Mexico, the Tortugas, and even *Liguus* collecting in southern Florida. The narrative that interested him the most, however, was Paul's "Shell collecting in Cuba," which Paul wrote following their trip in November, 1930. Since Dick only had a photocopy of the manuscript, he had it re-typed in an electronic format so that it could be edited. And here we are.

Unlike many collecting narratives, "Shell collecting in Cuba" is not a litany of places and corresponding species encountered by the McGinty's (father and sons), their good friend Maxwell Smith, and another young man, a friend of the family. Paul's enthusiastic account of the trip gives us a splendid image of the Cuba of 1930; the interaction of the travelers with Cuban scientists, with country people, with curious children, even with helpful soldiers. The author's admiration for the gregarious, hospitable Cubans that the expeditioners encounter during their journey is a *leitmotif* in the narrative, as is his awe for the beauty of the island, which touches him deeply. For example, when he first visits the now famous Viñales Valley, he predicts: "Someday the beauties of this valley will become better known and tourists from all over the world will travel here to enjoy the pleasures of this delightful spot." And it has come to pass. [The Viñales Valley photographs were taken by such a tourist in 2003.]

No, this is not just a travelling journal. We are sure that Paul's high-gear, adventuresome enthusiasm that permeates these pages will be transferred to the reader. Dick Petit felt it, and so have we, the editors.

As this is a historical account not a scientific paper, no attempt has been made to modernize the taxonomy or the rendition of "scientific" names, which have been left as the author wrote them. There has been a minimum of editorial corrections, principally typographical errors and misspellings, the latter primarily correcting the orthography of Spanish names. Minor additions by the editors are given in brackets. Those of the author are in parentheses. Footnotes are by the editors and provide a few explanatory notes and comments relevant to the paper.

Emilio F. García and Emily H. Vokes

### Personnel:

- Mr. Paul P. McGinty, father of the other McGinty's in the party, and owner of the automobile. Organizer and leader of party.
- Mr. Maxwell Smith, a close friend and the one responsible for the introduction of the McGinty family to scientific conchology.
- Mr. Thomas L. McGinty, ardent collector and curator par excellence of the McGinty collection.
- Mr. Frederic J. Barcroft, friend of the McGinty's, not a collector but willing and able assistant to the conchologists ["Bud" in the text].
- Mr. Paul L. McGinty, the writer, just out for a good time.

Cuba, so often and justly so, called by writers "The Pearl of the Antilles" offers more than an inspiring scenic beauty. To a naturalist it is a veritable paradise. Its flora and fauna is known as West Indian and is thought by scientists to have been derived by a remote association with the tropical American mainland. For some unknown reason there are very few species of mammals living upon the island. There are no large or dangerous animals. While the American tropics are notorious for many extremely poisonous and dangerous reptiles, Cuba, as well as the other large islands of the West Indies, has none.

Thus, the naturalist in the field need have no misgivings as to a sudden death from an encounter with a savage beast or a strike from a deadly viper. Botanists have discovered that the island supports a great wealth of plant-life but to the conchologist it is truly a gold mine. More species of land Mollusca are living in Cuba than in any other part of the world of a like area. New varieties are found with startling frequency. No doubt many more await discovery.

With these facts in mind the reader may well visualize the enthusiasm of our party as we made plans for a month of shell collecting in the Cuban field. All available literature upon the island was eagerly devoured. Large-scale maps of regions we particularly wished to visit were made. Credentials were procured. Necessary field equipment was gathered together. Sun helmets and sturdy khaki clothes were purchased. The problem of seating our five passengers and making room in the little automobile for all of our luggage was finally solved. At last we were ready. Excitement ran high that morning as we bade the folks at Boynton good-bye and headed the faithful Chevrolet southward. It was a pleasant drive down thru Miami and thence onto the Overseas Highway of the Keys. Upon Upper Matecumbe Key we saw a magnificent cluster of coconut trees. They were the finest that we had ever seen in Florida and to judge by their size must have been

very old. As we crossed over the causeway between Upper and Lower Matecumbe Key we noted the beautiful varicolored water for which the Keys are so famous. The water is quite shallow and due to the different forms of growth upon the bottom amazing color variations result. Not far off could be seen beautiful Lignumvitae Key, which we had visited upon an excursion the previous year. It was here the huge Galapagos turtles were thriving. The ferry-dock at Lower Matecumbe Key was reached almost an hour before sailing time so we all turned out to eat our picnic lunches and lounge as leisurely as possible upon the rail-ties of the Florida East Coast Railroad. Finally the ferry came in and after placing the car upon the lower deck the party secured chairs above. Comfortably seated and with a fresh breeze to

keep us cool we watched the many small keys drift by. At times the most ardent shell collecting members of the group expressed a desire to swim from the boat over to nearby islands upon which they had heard *Liguus* had been found. However, with great effort they were restrained from so doing. In the distance we could see that remarkable feat of modern engineering, Flagler's Overseas Railroad. At places the concrete bridges of the railroad seemed to extend to the very horizon they were so long. The ferry had left at about one o'clock and arrived at No Name Key at dusk. At last we were upon the lower Florida Keys. As we drove over Big Pine Key soon after our leaving the boat all eyes were strained to discover traces of the extremely rare *Liguus solidus graphicus*. Apparently no "hammock-land" is in sight of the highway for the land was low and flat. Bordering the road was an almost continuous swampy territory in which giant ferns grew in great numbers. From our previous experience in gathering *Liguus* in Florida we knew that none would be found here. There were few places which resembled in the slightest the beautiful "hammocks" in which the snails live.

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 Note. A "hammock" is an "island" of higher land composed of rich loam, usually upon a limestone foundation. The rich soil supports a luxurious growth of West Indian plants and hardwoods. In such jungles the Florida tree snail, *Liguus*, lives.  
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The road passed thru similar country for the rest of the journey to Key West, which was reached after dark. Here was a quaint old town which resembled no other we had ever visited in this country. The Spanish or Cuban influence is marked. Both languages are used on the streets and many of the public buildings have a distinctly Cuban appearance. Most of the private residences are large frame buildings of about the vintage of 1890. Ornate affairs they were with antique looking iron fences bordering the lawns. Beautiful tall coconuts grew about the houses. Time seemed to have forgotten Key West for she is today quite as she



was many years ago. Perhaps there is less business and fewer people live there today than in years past but to the eye of a casual observer things certainly cannot have changed very much. The railroad now connects the city with the mainland but that strong feeling of isolation still lingers. Here was another land. So near, and yet, so far away.

Gone were the hustle and bustle of the rest of the state. Key West thrives no more. Gone are the mighty sailing ships which made her a port of call. They made her what she was and even the railroad could not bring her back to her former importance. She sleeps now but what tales she could tell of her heyday. Pirates, buccaneers, men-o'-war, -- all were frequent callers in those bloody days of strife and grief. We liked Key West. Perhaps someday we may be able to return.

The steamer left in the morning and after a pleasant voyage of seven hours over the deep blue waters of the Gulf Stream we were in the harbor of Havana. Havana, with old Morro Castle. We were in Cuba at last. Our car was taken off the ship and we waited patiently for the customs investigation. During the wait we noticed that we were attracting quite some attention. It must have been our Indian pith helmets for no doubt the Cubans were as unfamiliar with such headwear as we were. It was not long before newspaper photographers were trying to catch our pictures and reporters were asking for interviews. Judging by the notices which soon appeared in the Havana papers we had not made ourselves very clear to them. One paper stated that we were professors from the University of Detroit while another paper stated that we were visiting the island to gather rare plants. At that the Cuban papers had probably done as well as most American papers would have done for misinformation seems to be their specialty. It might be mentioned here that the tropical heat which we expected to encounter during our stay did not materialize. We found it pleasantly cool most of the time.

Excellent quarters were soon engaged at the Maison Royale, a French Hotel in the Vedado section of Havana. Needless to say, we were more than pleased to learn that evening that the residence

of the famous Dr. Carlos de la Torre<sup>1</sup> was only a couple of blocks away. Here was luck indeed! But then, good luck seemed to follow us all thru the duration of the expedition. None could rest until Dr. Torre was called on the telephone and arrangements made for calling upon him at his home. He very graciously suggested that we call that very evening and thus it came to pass that we had the pleasure of knowing this splendid gentleman, the Dean of all the Cuban Naturalists. While we had many visits to follow none stand out in our memories quite as vividly as this first one with the kind old Doctor greeting us at the door of his beautiful residence as if we had been long lost friends. After exchanging the usual pleasantries he turned to that subject which was of such interest to all of us: Conchology. He first showed the magnificent collection of Cuban Shells which he has spent his entire life in collecting. Particularly appealing to us were the beautiful "painted snails" or *Polymita picta*. The Doctor showed us the colored plates which had just been painted by the artist and which are to be used in the treatise on *Polymita* which the Doctor is preparing for publication by the Carnegie Institute in the near future<sup>2</sup>. He then showed us the very specimens in his own collection from which the artist had painted the previously mentioned plates. What gorgeous shells and what an interesting and enthusiastic way the Doctor described them to us and told us of the relationship between the various species, etc. We all agreed that it would be simply impossible for anyone to listen to the Doctor talk about shells and not become a shell-enthusiast. Enthusiasm is the word that best describes Dr. Torre. Not a young man in years, but with all the fire of youth in his very active body, a smile that seems to make his eyes actually twinkle when he talks to you, and a rare sense of humor which gives ample opportunity for using that most attractive smile. We agreed unanimously that never before had we come in contact with such a lovable personality. The Doctor's actual knowledge of all branches of Cuban Natural History seemed to be as boundless as his wonderful friendliness. He knows off-hand the actual locality from which every shell in his vast collection was taken. One of his favorite tricks is to have a visitor take at random any specimen from his collection and solely by the sense of touch the Doctor (with his eyes closed) casually tells the name of the specimen and exactly where it was found, that is, its habitat. We were actually astounded by such a demonstration. The Doctor informed us that it was with deep regret that he has been obliged to cease most of his correspondence with collectors in other parts of the world for his time is almost entirely taken by the duties which he performs at the University.

The greater part of the next morning was spent in securing boxes and packages into which we could pack specimens once taken. Rather late in the afternoon we drove out to Marianao, a suburb of Havana. About a mile east we found a likely looking spot for collecting and by prying up stones about the ruins of an old stone foundation we took our first specimens of Cuban shells, including *Obeliscus*, *Pleurodonte* and *Urocoptis*. Not being dressed for fieldwork we were a rather sorry looking group that returned to the hotel for dinner that evening. We had specimens



**Above:** collection of *Polymita* sp. (family Xanthonychidae) collected in the late 1940s. These "painted snails" (also called the Cuban landsnail, although they are arboreal) are prized by coffee growers as the snails eat the lichens and fungus that grow on and harm the coffee plants.

**Below:** Despite laws protecting Cuba's *Polymita* snails, lack of enforcement, habitat destruction, and unscrupulous collecting have taken a serious toll on this colorful snail.



1) For more information on this eminent Cuban malacologist see: Alvarez-Conde, José. 1951. Carlos de la Torre y Huerta. Su vida y su obra. El siglo XX; La Habana, 233 pp. (in Spanish).

2) ? Not published until 1950, El género *Polymita*, Mem. Soc. Cubana Hist. Nat. "Felipe Poey," v. 20 (1).



anyway, even if clothing did suffer a bit.

Bright and early, the next morning found us skimming over the beautiful new highway to Matanzas, where we hoped to gather some of the typical *Liguus fasciatus*. On the way we passed thru Loma de Camoa and Madruga, real beauty spots where we had heard the collecting was very fine but did not stop because of limited time. Matanzas is about 65 miles east of Havana and since we expected to return to Havana that evening we must postpone the collecting here. Arriving at Matanzas and armed with a note of introduction from good Dr. Torre we hunted up a Sr. Portuondo, an entertaining gentleman who had been quite badly bitten by the bug of Conchology. We were soon completely surrounded by a swarming mass of Cuban youths showing great curiosity in “los Americanos” and making us feel as if we rightly belonged in a zoo or museum. for very strange creatures we must have seemed to them.

Sr. Portuondo was expecting us and after learning what we wished to collect first, directed us to a road off the Central Highway. It was a very pretty country road lined on either side by large spine-barked trees. Salvadera, I think he called them<sup>3</sup>. On these very trees we could see, from our car even, many specimens of the beautiful *Liguus fasciatus*. Everyone tumbled out and started to gather them. It was not long, however, before the Cuban children learned what we were after and went on ahead of us and stripped all of the trees of their precious fruit. It was useless to collect from then on for the children had taken practically all of the shells within reach. It was not long before they came back to “do business” with us. Some had old tin cans, some old paper-bags, some had the “caracoles” in their caps and others just drew the pretty specimens from their pockets. Collecting then became a purely commercial proposition. It must be said, however, that the Cuban children certainly seemed to be natural born collectors.

We continued on this winding and picturesque road until we reached the famous old Monserrate Hermitage where we were amply repaid for our exertion by a gorgeous view of the city of Matanzas and the Bay which also bears its name. From the other side of the Hermitage one overlooked the beautiful Yumurí Valley which is truly one of the beauty spots of this fair Isle. Also, it was here that we obtained a small colored lad to assist us in the days collecting. He was a queer little fellow who knew no English but was very willing to aid us in any way that he could. When he first saw us he produced an old piece of red flannel and in a very professional way proceeded to shine the shoes of the various members of the party. All efforts by us to explain that we did not wish a “shine” were utterly without effect upon him and when we gave him a small fee he seemed more than anxious to become our helper in the collecting.

It was near the Hermitage that we found another colony of the typical *Liguus fasciatus*. Here they seemed to live mostly on the bushes and small trees and consequently were easier to obtain but unfortunately the shells were scarcer.

After lunch at the Hotel in Matanzas, Sr. Portuondo suggested that we attempt to locate a colony of *Cepolis bonplandi*.



A postcard showing the Maison Royale in Havana, from about the time Paul McGinty and party were guests.

We found them, shortly after, living beside the road leading to the Bellamar Caves. The snails seemed to prefer the Salvadera trees which border the highway and to take every advantage which the villainous spines of the trees could offer them in the way of protection from enemies, shell collectors included. Sr. Portuondo received a rather painful wound from the spines of one of these trees while capturing a small but very beautiful Cuban tree snake. (If the sap of this tree comes in contact with the eyes blindness results, I am told.) We were anxious to take in as much territory as possible so as soon as we had obtained a number of the *bonplandi* we returned to the Central Highway and drove east of the Bay where we found a path leading down to the Ocean. It was here that the members of the party experienced their first collecting of the Cerions in Cuba. We found a colony of the *Cerion magister* living on the sea-grapes and on the debris which always is scattered upon a rocky beach. It might be mentioned here that we found the collecting of Cerions to be the pleasantest collecting from the standpoint of comfort. While collecting, one was cooled by a fresh sea breeze and there was no dense jungle to crash thru as one so often must encounter in gathering other forms of land shells. We returned to Havana rather late that same evening feeling rather tired after our first day of real collecting but very grateful to Sr. Portuondo for the assistance he had so kindly given us in locating various colonies of shells.

It had been previously arranged by Dr. Torre that his assistant at the University, Dr. Aguayo<sup>4</sup>, would accompany us on a collecting trip on the following day. We planned to gather Cerions and *Urocoptis* in the vicinity of Havana and to drive out to Peña Blanca, about 20 miles west, which is the habitat of the very unusual *Urocoptis alleni*. The nights in Havana are always cool and conducive to a very restful sleep so we awakened the next morning quite rested from our exertions of the previous day's collecting. Everyone was on hand for the excursion but Bud, who stayed in Havana to do some shopping. Soon the little blue Chevrolet was loaded with passengers and equipment and we were on our way.

3) Salvadera (*Hura crepitans*), the sandbox tree.

4) Born in Havana in 1899, Dr. Carlos G. Aguayo became an internationally known malacologist. In 1931, the year after the McGinty expedition, he was invited to conduct malacological studies at Harvard University.



**The Cuban royal palm (*Roystonea regia*) covers many of the hillsides, looking like “miniature feather dusters.”**

We paused at Miramar, a suburb of Havana, to collect a number of specimens of *Cerion mumia mumia* Brug. They were easily taken for they lived very close to the sidewalk near the seashore. It is very strange to note that these interesting mollusks, which are really “land shells,” are always found in such close proximity to the ocean. Almost without exception we found them only living on a narrow strip of ground extending back, let us say, from ten to fifteen yards from what one would judge to be high water in a heavy sea. It is of interest to note here that these mollusks seem to have more or less dislike for the bright sunshine for they are usually found concealed under bits of rock, moist pieces of scattered drift-wood, or perhaps enjoying the shaded protection which the “sea-grape” plant with its very large and numerous leaves so well affords. Near Mariel we found *Cerion* attached to the trees like *Liguus* but then the exception only proves the rule!

Our next pause for collecting was near the Havana Yacht Club, a famous rendezvous for the socially elite. Searching upon a small “coquina” hill almost across the street from the Club we were very fortunate to find a few specimens of *Urocoptis sinistra*. The snails seemed to live upon scattered bits of rock at the foot of the hill. This snail is one of the few sinistral or “left-handed” *Urocoptis*. A few specimens of another form were also taken, *Urocoptis poeyana*. The shells were quite scarce and Dr. Aguayo claimed that many students from the University had collected before us and no doubt had somewhat reduced the stock.

Leaving the *Urocoptis* group for the time being we all returned to the car and drove to a point near the Military Yacht Club. Dr. Aguayo soon pointed out to us a colony of the *Cerion salvatori*. We found a variety for this form also represented in the colony. Almost in the shadow of the old Spanish Watch-Tower, the ruins of which look boldly out to sea, we found a still different form, *Cerion chrysalis*. It is very curious to note how restricted and extremely local these colonies of *Cerion* always seem to be. There is apparently no barrier to prevent them from extending the confines of the colony nor to prevent the different races from intermingling but still it just doesn’t seem to be done.

As we continued our drive towards Marianao we were greatly impressed by the many elaborate residential estates with their beautiful displays of tropical plants and shrubs, and by the

many well kept parks which we passed. Some were provided with bridle-paths appropriately shaded by great rows of tall bamboo, which surely did add to the exotic charm of the countryside. Being quite used to lower East Coast Florida and its dry sandy soil we were pleased to find here a rich reddish earth covered everywhere by a thick carpet of emerald green grass. Many beautiful tropical and sub-tropical plants, some of them flowering even at this season of the year, were growing in great profusion all about us. The Cuban royal palm grows everywhere. It is as common as a weed could be in our country. The trees are extremely graceful, much larger and taller than the Floridian royal, and more graceful in shape. Some of them have quite a lean and others have graceful bends to relieve the monotony of all straight trunks. Occasionally one would sight a long row of them evidently planted with great care many years ago upon the borderline of some vast estate. The original planters have no doubt long since passed away but they have indeed left a fitting memorial. What a beautiful picture they make for the traveler of today who views these magnificent trees as they stand out upon the sky-line -- like long rows of Gargantuan warriors, their great plumes gently waving in the caressing breezes which so bless this fair island.

Leaving the Central Highway and its splendid pavement we turned off to the left upon a narrow dirt road over which many old trees stretched their knurled branches forming a veritable tunnel of green over our heads. Our nostrils were filled with that fresh damp odor of moist earth upon which the morning dew still lingers. As we drove very slowly up the aisle of beautiful green trees all eyes were on the alert to sight a possible specimen of *Liguus*. It was not until we had gone about five miles and reached the vicinity of a small settlement called Ceiba del Agua that our efforts bore fruit. Here we found a single specimen of the rather rare *Liguus fasciatus marreus* and nearby upon a cluster of trees we turned up the real find of the day. It was a pure white *Liguus crenatus*. A few other *Liguus* with white, except for pink tips, were taken from the same locality. Dr. Clench, of Harvard, later informed us that this all white shell was something quite new and very rare. The shells had been very scarce and altogether we had only taken about a half dozen specimens but then it was lots of fun to hunt for them.

It was also near here that we located a colony of very small but interesting mollusk, *Eutrochatella conica*, living upon a stone fence which separated a rather prosperous farm from the road. The shells of this family always seem to live upon exposed rock faces.

About three miles further along the road Dr. Aguayo suggested that we stop the car and search upon a loosely piled stone fence for specimens of *Urocoptis oviedoiana*, known to live nearby. By carefully lifting and examining the stones along the top of the fence we found a number of these rather large *Urocoptis*. Our queer antics soon attracted the attention of a number of Cubans who gathered in front of a small palm-thatched farm hut to view the strange proceedings. Two very pretty Señoritas were finally able to induce a young man to approach us and ask what it was we found so valuable under the stones. Dr. Aguayo showed him some of the specimens and explained in Spanish that we were naturalists and sought the shells for scientific study. This explanation seemed to satisfy him and he at once started lifting stones and helping us to collect. Such is the typical Cuban countryman. Very inquisitive, he must know what is going on around him, but when his curios-

ity is satisfied and he deems the cause worthy he is always glad to pitch in and help.

Continuing along this same road in the direction of Artemisa we discovered another colony of the white *Liguus* with pink tips quite like the ones found a little earlier in the morning. Only about a half dozen specimens were taken, this form seemingly always quite scarce. We finally came back to the Central Highway at a point about three miles east of Artemisa and stopped in the town to have our lunch.

Continuing westward on the Central Highway we saw *Liguus* upon the trees of a large royal palm grove alongside the road. This was in the vicinity of Las Mangas. From some passing men Dr. Aguayo inquired as to the owner of the land and being directed to a farmhouse not far away soon had met the owner and received permission to collect. He not only offered permission but insisted that we all return to his home after our work was done and enjoy a bit of rest there. We thanked him as best we could in our very restricted Spanish and struck off thru his farm in the direction of the Royal Palm Grove which we had seen from the highway. Here, clinging to the undergrowth which was everywhere about the tall trees we were fortunate in finding a few specimens of the form of *Liguus* which we had noticed from the automobile. Most of the snails, unfortunately for us, had climbed high up on the trunks of the palms and since all attempts to climb these smooth trees were unsuccessful, as far as we were concerned, not as many specimens were taken as we would have liked. Upon returning to the farmhouse, we were surprised to find Maxwell, whom we thought to be still searching for the shells, having a very confidential chat with the gentlemanly owner of the farm. It seems that Maxwell was making himself understood quite well by speaking in Italian which he had learned during his several years stay in Italy while searching for Mollusca there. The two of them seemed to be having a wonderful time together and we hated to interrupt them but as the time was flying we felt that we must hurry on if more collecting was to be done that day.

About five miles further along the road we noticed some more of the *Liguus* clinging to trees along-side the ditch and upon stopping found them somewhat more plentiful than at our last collecting station. It was always a great thrill to collect at each new stop for the shells almost invariably were something quite different. Then too, there was that feeling that at any one we might discover some form quite new to science. These shells were a variety of the form just taken, a very pretty shell indeed. Just enough for a good representation in our collections were taken and once more we returned to the car.

About two miles beyond the pretty little town of Candelaria we discovered another colony of the *Liguus* living upon the trees along the roadside. They were quite numerous here and we immediately proceeded to gather a good supply for this was an unusually pretty shell. It was here that we saw the *Liguus* living even upon bare telegraph poles along the road and it was also here that "yours truly" became over enthusiastic in the search for the snails and after climbing up such a telegraph pole found upon his return to the earth that most of the hide had been barked off his shins. The specimens had been such fine ones that even at the time the effort and discomfort seemed well repaid. Mr. Mc was having a great time collecting. Numbers of shells were quite near the ground and he was busy knocking these down with a long

stick. Before long he had acquired the help of a number of Cuban children, and seeing such a crowd soon more and more people gathered. Even some soldiers came over to watch us and becoming interested had started to poke off the higher snails with long poles which they brought from the barracks house nearby. It was very amusing to see so many collectors at one time and when we said goodbye to our friendly helpers almost an hour later, a splendid series of these fine shells had been taken.

It was later than we realized by this time so our original plan to visit Rangel Hill and search for the rare and beautiful *Liguus blainianus* was necessarily postponed. The car was turned about and headed back towards Havana once more. It was a very pleasant drive, fine smooth highway, and everywhere magnificent royals seemed to meet the eye. Here and there we could see the quaint and picturesque palm-thatched huts of the poorer Cuban farmers with their ever present groups of brown-skinned naked children playing about them. The picture was constantly changing. It was all so new to us; so strange and beautiful at the same time, that it seemed like a fantastic dream from which we were not anxious to awaken. We passed thru Artemisa once more and soon after leaving the town of Guanajay we saw looming in the distance the white face of the cliff of Peña Blanca. Upon its rocky surfaces lived that very unusual shell, *Urocoptis allenii*. Dr. Aguayo led us back thru a large field, upon which a number of oxen were contentedly grazing, towards the great hill or mountain which lay about a mile or so from the highway. Peña Blanca, meaning "white stone," I believe, is so called because of the white limestone cliff extending down from the summit for some hundreds of feet. No doubt, at some former time Peña Blanca was a great rounding hill and the present cliffs are the result of a great landslide which resulted from the formation of some great cave near the summit. Erosion caused the cave to grow until it gradually undermined the support of the rocky peak above. With a terrific crash this great portion forming the roof of the cave must have split away from the rest of the mountain and gone tumbling down the slope. Everywhere in western Cuba are evidences of such great caves forming and it really gives one a rather queer feeling to stand under one of these projecting mountain-slides and imagine what would happen if it should "let go" at just that moment.

Finally, after a rather strenuous climb up the steep approach to the face of the cliff we arrived, more or less panting, at the foot of the great rocky wall which now towered high above our heads. After searching for some time along the foot of the cliff and not finding any specimens of the rare *Urocoptis*, which was the purpose of our search, we decided to make an attempt to climb up a way on the face of the cliff. It was rather dangerous climbing, so say the least, but fortunately everyone was careful and no accidents resulted. About halfway up the face we discovered a shallow cave and in this we at last found what we searched for, *Urocoptis allenii*. They lived here in abundance and all hands were turned towards the gathering of as many specimens as our time permitted. By now the sun was dropping behind the distant hills and the light upon our rocky perch was fast failing. Realizing the long trip back to the car should be made before darkness fell, one by one the members of the party started the climb down. The writer, in the fervor of gathering just a few more specimens, suddenly found himself all alone on the darkening mountainside and with none too clear an idea of where the path leading down should



lay. Shouts brought no responses so a search was started for the path. There were numerous paths about but each one seemed to lead to piles of chopped firewood and there end. It was almost impossible to make headway unless a path was followed because all over the mountainside grew a terrible thorny bush so thick as to be all but impenetrable. Continuing to search for the path, with the ever present thought of spending a night upon the slope all alone and it becoming darker with every minute, was to the say the least rather disconcerting. However, by changing from one path to another and breaking thru brush here and scrambling over the rocks there and always continuing in the general direction of the road and always downhill the writer, finally, after what had seemed hours reached the open plain and found the other members of the party resting upon the ground. It had been quite strenuous and took us a few minutes to get our breath again, but after rubbing ourselves where the many thorns had penetrated our hides and the rocks had bruised our bodies we continued back to the car. Here as we leisurely puffed on our cigarettes we compared the specimens which the various collectors had taken and were very pleased to find that besides the *Urocoptis alleni*, a number of other forms had been found, including a fine variety of *Chondropoma*. Dr. Aguayo informed us that he had once climbed to the top of Peña Blanca from where on a clear day it is possible to see the sea at both the north and south coasts of Cuba. We had climbed within almost a hundred feet of the summit where the cliff-wall had become more or less overhanging and the footing too insecure to make it possible to climb higher. The summit can be reached by climbing from the eastern slope without too great difficulty, however.

We were a tired lot when we drove back to Havana that night but we all knew that we had packed about as much collecting into one single day as was humanly possible and since our results had been so gratifying, the country thru which we had travelled so new to us and extraordinarily beautiful, and since we had been honored by the presence of Dr. Aguayo, under whose very able guidance the locating of these many colonies of Mollusca had been possible, we felt that the memory of this splendid excursion would linger with us for many days to come.

The two days to follow were spent in preparation for our trip to Viñales. We purchased great quantities of glass jars to store our specimens in and alcohol to be acquired, for the use of snails only! In the 10 cent store<sup>5</sup> there were many odds and ends which we felt would be useful to us in our collecting. We found a very handy tool here in the form of a small garden rake which we thought would prove very fine for raking the shells into piles should they be as numerous as some of the information acquired thru reading books describing this region of Cuba would have led us to believe. Frankly, the rake was never used but then perhaps we were collecting during the winter season when the molluscan life is less active than in the damp summer season. While still in the "Five and Ten" Maxwell suddenly remembered that he needed a pair of hose supporters, his other pair having been misplaced or lost in some unaccountable manner. The only counter which bore even a possible likelihood of carrying such supplies was well stocked with

many forms of ladies wearing apparel and unmentionable undergarments. No one about the place seemed to understand English so inquiries were quite useless. Maxwell hesitated and seemed reluctant to attempt the purchase but under our constant encouragement finally "took the bull by the horns" and stepped shyly up to the counter. The demure, black-haired Señorita behind the counter was seemingly very anxious to please him but unfortunately she knew no English so things did not progress so well. At last, Maxwell, having exhausted all the Spanish at his command, decided to resort to the only other method of making himself understood, namely, by gestures. At first he pointed down to his socks and after a very clearly enunciated "por hombre" [*sic*, *para* hombre] awaited results. Even this meant nothing to the young lady behind the counter so Maxwell decided to do the only other thing that he could think of and that was to raise his trouser-leg and point to the bare calf of his leg. He did look strange, balancing on one foot, the other raised high to give the girl a better view. The dark-eyed Señorita leaned far over the counter, raised her eyes to his with a very sweet smile, and then poor Maxwell lost his courage and beat a very hasty retreat without any garters!

More film was needed for Maxwell's Leica camera. Standard motion picture film was available but we had visited a dozen supply houses before he at last was able to get the panchromatic film he desired. Later, the Santa Clara Battery, a decaying old fortress situated on the waterfront in the western section of the city, was visited and a supply of *Cerion mumia fastigata* Maynard was taken nearby.

The second day was spent by Bud and myself in an extensive sightseeing trip thru Havana. We visited the old Fortress at the entrance to the harbor; a large prison situated upon a hill commanding a magnificent view of Havana from the Vedado section; and altogether tramped about so much of the town that we felt sure nothing worth viewing had been overlooked. Maxwell, Tom and Dad spent most of the day with Dr. Torre who furnished them with a very complete set of maps and instructions as to finding the localities in which the most desirable specimens could be taken. He also gave them numerous notes of introduction to his friends in the region which we would visit.

At this time Dr. Torre strongly advised against our attempting to visit the eastern part of Cuba because of the political unrest and revolutionary tendencies known to exist in these remote sections<sup>6</sup>. "But never mind where," said the good Doctor "we will go to 'Eastern Cuba' right here in Havana!" He then led the collectors down into a special room in his basement, the walls of which were lined with cabinets containing shells from the most remote parts of this inaccessible region, and with evident pleasure he proceeded to distribute many splendid specimens from his own collections. He was more than generous in passing out shells and judging by the twinkle in his eyes he was enjoying the affair as much as the recipients and they were not exactly unhappy to say the least. The Doctor suggested that we commission a man named Nateson, a Russian exile and former Colonel in the Czarist forces, to visit the remote Pan de Guajabón and collect specimens for us.

5) The "10 cent store" was arguably the most popular store in Havana up to Castro's Cuba. Everyone went to the "Tencen" for bargains.

6) It is interesting to note that "Eastern Cuba" (Oriente Province until 1976), the habitat of *Polymita picta* and the most rugged mountainous region of the island (where Castro began his revolution), was already an area of "political unrest and revolutionary tendencies" in 1930.

Soon Nateson called and things were satisfactorily arranged. He was a hardy soul, good collector and thought nothing of sleeping in the caves and living upon wild fruit and honey while out in the field. To reach Pan de Guajabón, a mountain, he would have to ride on horseback for there were no roads leading there.

Dr. Torre then invited the collectors to visit the Hotel Florida to have a typically Cuban noon meal, very much enjoyed by all. Everywhere, the Doctor was recognized by admirers and friends and so numerous were those who paused to greet him that the members of our party were astounded. After the meal Dr. Torre conducted the conchologists thru the Museum in downtown Havana. Of particular interest was the splendid old shell-collection of the famous old German naturalist, [Johannes/Juan] Gundlach, who came to Cuba with Louis Pfeiffer in 1830 contemplating a short visit but who became so attracted by the island that he remained the rest of his life only leaving to make a few short visits. He was able to amass a wonderful collection of Cuban shells during his many years of industry. It is said that after he had become very old he sold his entire collection to raise money to present to a needy family whose members had at one time befriended him. It proved to be an extremely interesting hour indeed. There were also many other specimens of natural history to be viewed which were very interesting and worthwhile.

Both sections of our party met later in the day at our hotel and since Dr. Torre had now presented us with all of the necessary papers from the Cuban Army Officials we were about ready to leave for our collecting trip to Viñales and western Cuba. We all retired rather early that night after taking a number of packages containing specimens, etc., to Dr. Torre's home to be stored there pending our return.

Following an early breakfast at our hotel the next morning we loaded our necessary equipment into the little Chevrolet car and headed westward towards Pinar del Rio and Viñales. All members of the party were in the best of spirits and the drive proved extremely pleasant. We traveled over the same Central Highway, a beautiful drive, that we had used during the trip made with Dr. Aguayo a few days before. Upon reaching Candelaria, once more the temptation to stop and collect a few more of those beautiful *Liguus* proved too great and consequently all hands piled out and we collected a few additional specimens of this very pretty form. We did not spend as much time as before for we had a long day ahead of us. Plans had been made to visit Rangel on the way and search for *Liguus blainianus*.

Arriving at Sta. Cruz about ten or twelve miles from Candelaria we turned north upon a narrow dirt country road. Progress was very slow due to the very poor condition of this road. Finally it became so bad that we felt apprehensive lest we had made a wrong turn and started inquiring as to our whereabouts. We asked pedestrians, farmers working in the fields, horsemen, and even stopped and asked at a small country school-house if anyone knew where the "caracoles" [*sic*, caracoles] could be found in this neighborhood and as usual each one in succession pointed on and on. Continuing on the same road we finally came to an abrupt end at the foot of a very large hill or wooded mountain where the auto tracks ended and a horse trail led on to Bahia Honda, a small seaport on the north coast. Near here, in a clearing, were some men working upon a large charcoal mound. Upon inquiring about the shells two of them became interested at once and seemed anxious

to act as our guides. They assured us that they knew what we were seeking by saying "caracoles, caracoles" and then pointing to our neckties, the striping of which suggested the banding of *Liguus* to them, no doubt. We followed them thru a tobacco field and started up the side of the large hill which we learned was Rangel Hill. The smaller of the two guides seemed to think that the best chance to find the shells would be fairly low down on the hillside but the larger of the two men, armed with a very business-like looking machete and an extraordinarily villainous countenance to cope with it, seemed to think that the shells would only be found higher on the mountain side. Consequently the party became divided and the smaller guide stayed with Maxwell while the others started upon a "wild-goose" chase led by the big fellow to the top of the mountain. While we found many very fine things upon the rocks and under stones, including *Eutrochatella*, *Chondropoma*, *Urocoptis*, *Megalomastoma*, etc., only dead specimens of the *Liguus* could be found. Evidently this was the right locality for the shells and they certainly must have lived here because of the many dead specimens found upon the ground but try as we would we could not uncover a single living shell. The guide kept pointing ahead and led us on but we began to doubt his knowledge of *Liguus*. Realizing that the time was flying and that we must take leave of this beautiful collecting territory if we expected to reach the city of Pinar del Rio that night, we at last, to his very evident disappointment, signified that we wished to be directed back to our car.

We found Maxwell back by the automobile and engaged in making snap-shots with the Leica. He had taken a number of the smaller forms of shells, no *Liguus*, and was very well pleased. Paying our guides a small fee and giving them several packages of cigarettes, we thanked them, and turning our car about drove back to the Central Highway. Heading west once more we soon caught glimpses of the distant mountain ranges to the north of us. As we drove on, passing thru constantly changing and ever beautiful scenery, we noticed a fairly large type of tree growing along the side of the road and upon the hillsides. It presented a very pleasing appearance when the wind played upon it, for the underside of its broad leaves were a silvery-white and the effect produced was quite startling. The tree was *Cecropia peltata* and is quite common in Pinar del Rio Province and elsewhere in Cuba, I believe. Not far from the city of Pinar del Rio we passed a field in which a very grotesque sort of palm was growing. It was the bottle-palm (*Colpothrinax wrightii*), which is found only in this particular locality. The trees with their spindly trunks bulging out beyond all proportion in the middle and then tapering off abruptly towards the top like the neck of a bottle are certainly natural freaks and of course we stopped to allow Maxwell to put his camera into action. These palms we later learned are confined to this extremely narrow strip of land bordering the rich-soiled Vuelta Abajo, world famous for the superb quality of tobacco it produces. The soil where the bottle-palms grow, however, is so poor that even the royal palms are absent and it is not unlikely that the condition of the soil has something to do with the peculiar malformation of these interesting trees. Elsewhere on the great Vuelta Abajo the royals grow in great profusion.

The pavement stopped on the outskirts of Pinar Del Rio and the next few miles gave us our first idea as to how bad Cuban roads can really be. However, we finally did reach the city and proceeded at once to locate Sr. Loreano Pequeño, a resident to

whom we had been given a note of introduction by the good Dr. Torre in Havana. After the usual difficulties which one encounters when trying to make himself understood when he does not know the language of the one he addresses we were directed to his home. In front of his residence a great crowd of Cuban youngsters gathered about our car. There was great jabbering in loud Spanish for they seemed to be taking a tremendous interest in us.

Sr. Pequeño, who was the superintendent of schools in this section, was not at home but two Cuban ladies, who turned out to be the Señora Pequeño and her sister – a Mrs. Kampmeyer, very kindly invited us to enter the house and await his return. Once inside, they tried very hard to be polite and to entertain us but inasmuch as they knew no English and we knew no Spanish the conversation was, one might say, rather limited. The Señora was quite interested in shells and took pleasure in showing us some which she and her husband had collected and mounted very attractively in small trays covered with a sheet of glass. She explained to us that she was a schoolteacher and had made another collection which she kept at the school. She was a very proficient amateur taxidermist besides and showed us a number of natural history specimens which she had but recently finished mounting. The collection, which was to be shown at the school, included a number of rare Cuban birds and was handily prepared and beautifully arranged. Tied in the patio was a very odd looking owl which made a terrible screeching each time anyone approached it. The poor bird had been brought in by some friend and was doomed to shortly become a stuffed museum piece.

Soon a very pleasant gentleman who spoke English fluently entered and introduced himself as Mr. Kampmeyer, the husband of one of the ladies. He told us that he had come to the United States from Germany when a young man and had lived there for about ten years, when he moved to Cuba and entered business there. Having married a Cuban he used Spanish in his home but by constant reading in both German and English he had managed to retain his knowledge of these languages as well. With the gentleman acting as interpreter we were able to thank the ladies for their hospitality and kindness and since Señor Pequeño had not arrived we arranged to return later in the evening to meet him.

Mr. Kampmeyer insisted upon taking us to the Hotel and seeing that we were properly taken care of by the proprietor. Not only that, but he sat at the dinner table with us and helped us order the meal. He did not eat with us for he claimed that his wife would expect him at home but remained until our meal was finished and the bill settled. Of course this made him very late for his own dinner but nothing else would do for he must see that his friends were comfortable and not taken advantage of. Such kindness and unselfishness would seldom be seen in our own country, I rather fear, especially shown to foreigners.

Later in the evening we returned to the Pequeño residence where we found Mr. and Mrs. Kampmeyer, Mrs. and Sr. Pequeño. The Señor proved to be a very fine gentleman indeed. He apologized for his lack of English but did everything he could to make us feel at home. Mr. Kampmeyer took apparent pleasure in acting as interpreter once more and we spent a very pleasant evening together.

Our hotel was the old Ricardo, the front part of which was fairly new looking while the rear part was very old and dilapidated. Our accommodations were necessarily in the rear part because

all other rooms were occupied. There was apparently some sort of a tobacco buyers convention being held and the building was packed. We did not complain but made the best of what we could get and prepared for bed. Over each bed was a contraption called a “mosquitero.” It folded back out of the way when not in use but could be pulled down over the sleeper to offer him a protection of mosquito-netting something like the top of a baby carriage.

In the middle of the night we were awakened by a terrific crashing in the room next to ours. It was Maxwell, bed, mosquitero and everything collapsed to the floor. The bed was beyond Maxwell’s ability to repair so the rest of this night he spent upon the mattress spread out upon the floor.

We awakened the next morning quite refreshed, at that, and after a bit of good-natured joking with Maxwell about his sleeping peculiarities ordered breakfast in the hotel. On the way through the town we stopped at a store to buy some bread and fruit which we could eat on the way to Viñales. Maxwell spied a large, luscious looking, green fruit, which he purchased for use as our luncheon dessert. The girl behind the counter rather smiled at the time but Maxwell thought nothing of it, apparently. In the highest spirits we all piled into the little car that bright November morning and headed back over that terrible unfinished portion of the main highway in the eastern part of the city.

The road to Viñales turned off to the north from the main highway a short distance out of Pinar del Rio. It was not long before we realized that if we ever did reach Viñales it would probably only be after every tooth in our heads had been shaken loose by the constant bumping and jolting to which we were subjected by these really bad roads. At times all but the driver would have to get out of the car to lighten the load lest the under part of the car be seriously damaged by striking the great rocks which seemed to project from the road bed in great abundance. Frequently we could hear the rocks scraping upon the axle of the car and it was not surprising that at times we questioned whether the car would survive the strain. It is really too bad that so many of the country roads in Cuba are in such terrible condition. It seems that in making the original roads large rocks were placed for the foundation and then a dirt surface was spread over the rocks. Frequently this dirt is largely washed away by the torrential rains of the summer and the rocks are left quite exposed to make them the curse of every would be tourist who drives over them.

Finally, after much bumping and jolting we drew up alongside our first “mogote” which was known as “Kilometer 14.” The mollusca found here differ from those of the not distant Viñales mogotes and scientists believe that Kilometer 14 is more associated with the Cerro de Cabras hills farther west. Originally these were probably connected by a great mountain chain. Time and erosion have worn away all of the mountains between but has not completely destroyed these last remaining vestiges of the whole. Kilometer 14 is a fairly good-sized mogote and nearby are a couple of smaller detached mogotes. We were soon clambering upon its rocky sides hunting for shells. Unfortunately we did not find them plentiful for most of the Cuban land mollusca are securely hidden away in the crevices in the rocks during the winter and are only active during the wet rainy summer season when they come forth from their rocky habitats to do whatever brings happiness to the heart of a snail. We did, however, find quite a number of operculate shells which were found attached to the rock in more



exposed places. *Liguus* proved to be extremely scarce here. Returning to the car after about an hour of collecting we were quite concerned to find that our gasoline supply was running low and wonder was raised in our minds as to whether we would be able to reach Viñales before our supply became exhausted. There was a gasoline pump nearby which was used to supply the machinery running a quarry, which is very evidently much more rapidly destroying Kilometer 14 than time has ever done. We inquired here about buying a little gasoline but were informed that since the company held no license to sell gasoline upon the road, this could not be done. Finally, the kind Cuban who was in charge of the pump fixed things up by giving us two gallons and positively refusing to take any payment from us for the exchange. We thanked him as best we could, thinking at the same time how different things would have been had we run out of gasoline back in the U.S.A.

The road continued to be as bad as ever and since the car was running up and down hill in low gear we thought it advisable to stop from time to time to permit the motor to cool off somewhat. During one of these pauses we ate our lunch. It consisted of a long loaf of Cuban bread from which each person in the party broke off his share, a number of crackers, some Cuban buns, fine Cuban bananas, and for dessert we were to have that luscious looking green thing Maxwell had bought that morning. Everything went along fine until we were ready for the dessert. Upon slicing the "thing" into sections we were all dismayed to find that it was without any taste and was very hard. As near as we could make out it smelled like an ordinary American squash. Poor Maxwell's choice of exotic fruit had not turned out so well but at any rate it had afforded us another good laugh at his expense. After drinking our fill of nice cool water, which we carried in a gallon sized thermos jug, we climbed into the car once more and were on our way. The riders in the rumble seat made good use of their "African Explorer's" helmets for the sun was becoming frightfully hot.

Perhaps, since we shall shortly be speaking more frequently of "mogotes" it might be well to attempt a fuller explanation of just what they are, how they were formed, and why they are of such particular scientific interest in a zoographical study of Mollusca. A mogote is a limestone elevation more or less isolated from a main mountain range and standing alone or at least semi-detached. The word "mogote" is used to describe such a formation only in the western part of Cuba. These mogotes in western Cuba were once joined together to form mountain ranges but the rest of the ranges have eroded away leaving only these isolated remnants or ruins of what had once extended for miles and miles. They are usually weathered into a more or less precipitous mass of white limestone and because of the extremely rich soil found upon them plant life flourishes to a richness almost beyond conception. Everywhere that any soil remains on the rocks one will find plants growing. Frequently, upon the almost perpendicular sides of these mogotes strange fern-like trees seem to be growing from the very wall of rock while all about these queer trees are clusters of numerous smaller varieties of plant life which seem to thrive upon such a precarious habitat. It may readily be seen that since these great limestone masses offer such fertile soil and support such a rich lush vegetation that snails particularly would thrive.

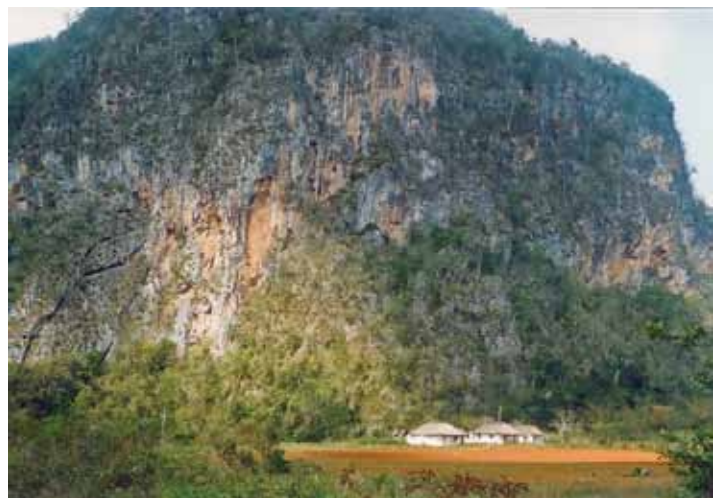
The next important point to understand is the almost complete isolation of each mogote. From the level floor of a valley



**Valle de Viñales, looking north to Puerto de Ancón, on the road to San Vicente.**



**Mogotes north of Viñales, on the road to San Vicente.**



**A closer view of a steep-sided limestone mogote. The buildings at the foot of the mogote provide a sense of the massive scale of these outcroppings.**



**The little town of Viñales in 2003, probably not greatly different from 1930.**



**Typical farm at the base of a mogote, showing rich red soil from weathering limestone.**

would tower a great rocky mass, perhaps with a more or less vertical limestone cliff reaching to an elevation of five hundred feet or more. They are like great ships in an ever motionless sea. Now, since at one time geologists maintain that all related mogotes were joined together as part of one great range, it may readily be seen that at that remote period in the earth's history certain forms of life were probably, more or less, living widespread over the entire range. With the passing of millions of years, however, erosion has removed all traces of the "connecting-links" between mogotes and left them totally unconnected in any way. This all perfectly sets the stage for that eternal masterpiece -- Evolution. With the molluscan life upon each mogote descended from the same common stock we have a wonderful opportunity to observe the evolutionary changes which have taken place thru the ages. The shells gathered upon one mogote are seldom quite like those of any other mogote and to top it all off the shells from this general region differ from those of any other part of the world.

As we draw nearer to the town of Viñales we passed thru what is called the "loma" country by the Cubans. Lomas are distinct from mogotes in that they are hills of a rounding smooth outline over which the soil is usually poor. Upon this sand and clay grows a coarse grass with now and then a few scattered pine trees in vivid contrast to the tropical splendor of the mogotes with giant royal palms to replace the stunted pines. It was altogether so unlike the rest of Cuba that very little imagination would be needed to picture it as a part of our own north country.

At last we began to catch glimpses of the mountain ranges north of Viñales, the Sierra de los Organos or as we would say -- the Organ Pipe Mountains. It was easy to tell why the early Spanish explorers had so named them. As one gazed upon them from this great distance they were bathed in a bluish haze revealing only a bare outline of strangely symmetrically shaped peaks of slightly varying elevation, indeed resembling the pipes of some gigantic organ. We paused to allow Maxwell to make a picture.

The blue of the distant mountains had been gradually changing into green but still we had not been able to see anything of the Viñales Valley, the superb beauty of which we had heard so much. Finally we crossed over the last loma and as the auto road made an abrupt turn we were suddenly confronted by the most

beautiful sight that any of us had ever beheld. The Viñales Valley was there before us. The car was stopped and everyone gazed in silence upon this masterpiece of Nature. It was so fantastic and beautiful at the same time that it is impossible to describe it in a manner to do it justice, even as photography fails to picture its true beauty and grandeur. Far below us lay the valley with a lovely carpet of green, dotted here and there with a little thatched hut. Scattered royal palms, which probably stood 125 feet tall or more, looked like miniature feather dusters, so far below, while the verdure clad mogotes rising abruptly from the very floor of the valley were as the ruins of so many ancient castles. Winding wagon trails were but narrow red ribbons laid upon the green. To the northward were the Sierras, steep and sharply defined, while still farther beyond lay another range, forest covered and higher, brilliant in white and green. To the right, on the level floor of the valley, rested the little village of Viñales with its many tile roofs glistening in the sun. Amid the foliage of its trees could be seen the bell-tower of its very ancient looking cathedral, none too large but most easily seen, while towering above all was the massive bulk of Mogote El Queque.

What a picture that was! I am sure none of us will ever forget it as long as we live. Of course we made many photographs, but then, no camera ever made can portray that scene adequately. The magnificent coloring and depth of perspective must actually be seen to be appreciated. Some day the beauties of this valley will become better known and tourists from all over the world will travel here to enjoy the pleasures of this delightful spot.

Reluctantly we returned to the car and started the long steep ride down into the village. The winding road eventually brought us to the level of the valley and to the town of Viñales. It was a quaint, sleepy little place nestling so securely on this level plain while surrounding it were the cliffs and green slopes of the distant mogotes. Just to the north was that great mound called Mogote El Queque or "cake" because of its peculiar shape. Everything in Cuba, incidentally, has a name. Nothing is deemed too unimportant or remote to be given at least this little consideration. It was extremely warm in Viñales when we arrived and after pausing to refuel the car all hands donned the sun helmets. To say that we attracted the local Cubans is putting it mildly for they swarmed



about us in great mobs. Some were only curious to learn what such strange looking Americanos were visiting Viñales for; others grasped a possible opportunity to commercialize the incident and endeavored to sell us all varieties of trinkets, even lottery tickets were waved in our faces. We had with us a letter of introduction to the town physician, a Dr. Valle, and after some futile attempts to have members of the crowd lead us to his home we were surprised to be greeted by a man struggling thru the crowd. It was Dr. Valle and he told us that we had been expected for Dr. Torre had written to him about our plans. Dr. Valle spoke English moderately well because he had spent a year or so studying medicine in the United States. He was a very active man, rather young, and seemed anxious to do everything in his power to make us feel at ease. We had a pleasant visit together, mostly talking "shells" for the Doctor was an ardent collector. We were told that the little hotel at San Vicente de los Baños (the place mentioned in Henderson's "The Cruise of the Tomas Barrera") was probably not in operation at this season but that possibly arrangements could be made with the caretaker to allow us to stay there for a few days.

After leaving Dr. Valle we decided to drive out to inquire at San Vicente. It proved to be a most pleasant drive and afforded us an opportunity to view the famous Puerta del Ancón, a narrow gateway thru the mountain chain with mammoth cliffs towering high above our heads on either side. Here was a splendid example of the geological action of erosion. It was quite evident that at some previous time that which is now the Gateway or Puerta del Ancón was a giant cave. In fact, the cliffs on either side of the road are slightly concave and remnants of huge stalactites may be seen along their faces, while great boulders without doubt a part of the roof of the collapsed cave are to be seen strewn over the floor of the pass on either side of the road. Here is graphically illustrated the manner in which a chain is broken up into mogotes and it is not difficult to credit the scientific belief that all of the mogotes in the valley of Viñales are fragments of the main sierra.

It was near this huge portal that Dr. Torre had discovered his famous fossil ammonites; one of the most notable of all Cuban geological finds for it indicates a probable Jurassic origin for the limestone and much older than scientists believed it to be.

A few miles further and we arrived at San Vicente de los Baños. It was a quaint little place, quite deserted, and not unlike one of our frame country school houses in general appearance. We peeped thru the windows and saw what we could of the interior of the building and then went to the rear to look at the river which flowed under some smaller bath-houses. It was here that the guests indulged in the beneficial medicinal baths the little stream was supposed to afford. Not far away this little stream issued, as if by magic, from under a great mountain.

On the way back to Viñales we stopped to collect upon the west side of the road about three quarters of a mile south of the Baths. *Urocoptis* were clinging to the rocks and it was not long before we had taken a fair number of specimens.

**(This ends part one (of three) of McGinty's article on collecting in Cuba. It will continue with part two in the next issue)**

## Earliest human-modified shells

The first human use of shells as jewelry has been discussed in numerous publications. The date was first established at 40,000 to 30,000 years ago with various findings of beads made from *Nassarius* shells. These were found in Europe and Africa and linked to the Cro-Magnon culture (*Homo sapiens*). Then a number of findings of drilled and painted shells in Neanderthal sites (*Homo neanderthalensis* or *H. sapiens neanderthalensis*, depending upon the authority cited) pushed the date back to 100,000 to 75,000 years ago. Scientific interest in this has little to do with the shells (sorry shell enthusiasts), but rather the modification of the shells into personal adornment - jewelry. This is thought to be an indication of symbolic communication and advancing culture - maybe the creative explosion that brought early man out of caves. While authorities are still arguing over many of these findings and associated dates (not to mention the taxonomy of the Neanderthals), a new discovery in Indonesia has pushed back the date by an order of magnitude. As reported by Kate Wong on 3 December 2014 in the Scientific American Blog Network (<http://blogs.scientificamerican.com/observations/2014/12/03/worlds-oldest-engraving-upends-theory-of-homo-sapiens-uniqueness/>), a freshwater mussel shell engraved with a geometric pattern has been found in a site called Trinil, on Java, Indonesia. This newest find is a *Homo erectus* site and dates from 540,000 to 430,000 years ago. What does this say about the culture and communication of this ancestor of *H. sapiens*? The find was originally reported online on 3 December 2014 in *Nature* by Josephine C. A. Joordens of Leiden University in The Netherlands. The pundits can start sharpening their pencils.



**Freshwater mussel carved with symetric zig zga lines by *Homo erectus*, 540,000 to 430,000 years ago. Original photo by Wim Lusten, University of Amsterdam.**





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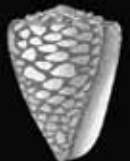
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# The noble volute (*Cymbiola nobilis*) of Vietnam

Nguyen Ngoc Thach

*Cymbiola nobilis* (Lightfoot, 1786) is a member of the genus *Cymbiola* Swainson, 1831 and family Volutidae Rafinesque, 1815. It can be found along most coastal cities of South Vietnam, especially occurring in large quantities in Bình Thuận & Kiên Giang provinces. This volute lives on soft bottoms, at depths of 5-80m, where it feeds on other mollusks or crustaceans, and is usually collected by trawling operations. It has no operculum. Specimens collected in Vietnam are typically larger than those collected in adjacent countries. The animal has a colorful body with both foot and siphon bearing many small orange dots on a black background (fig. 31). In Vietnam, this species displays many attractive patterns and colors on the shell as well as numerous interesting shapes. I have illustrated some typical and some atypical specimens on Plates 1 and 2.

## Patterns

The shell pattern is variable, sometimes ornamented with parallel zigzag axial lines (fig. 8) or broad spiral bands (fig. 1). Sometimes both patterns are mixed with intermittent bands (fig. 12) or tent patterns resembling mountains (fig. 6) or even trees (fig. 5). A very small number of specimens are uniformly orange in color (fig. 16) or pure white (figs. 14 & 15). Specimens without a pattern (fig. 2) or with a pattern only on the anterior part of the shell (fig. 3) are rarely seen. Radial stripes are often present on the posterior part of the body whorl (beyond the shoulder), but in rare cases, these are replaced by broad spiral banding (fig. 4). fig. 7 illustrates a volute with a very special, previously unseen pattern. The aperture is typically off-white, tan, orange, or light brown, but purple apertures (fig. 13) are sometimes encountered. The outer lip can be regularly convex (fig. 15) or wavy with intermittent brown bars (fig. 10). Juvenile specimens (fig. 9) have a large apex or protoconch. Sinistral specimens (fig. 11) with left-handed apertures are extremely rare and nearly always damaged at siphonal canal or outer lip. The probability of obtaining a top quality sinistral specimen is perhaps only one per million! Sinistral specimens are much sought-after by collectors of the world. A left-handed *Cymbiola nobilis* with a world record size (179.23mm) was collected in Vietnamese waters.

## Shape

*Cymbiola nobilis* is usually rectangular-quadrate in outline with a low spire, but elongate spires are sometimes seen (figs. 17, 20, & 22). A moderately inflated but swollen specimen (lacking the typical angulate shoulder) (fig. 22) is

rare. The outer surface of the shell is smooth, but a small number of noble volutes in Vietnam display a strong spiral ridge (fig. 17) or a deep spiral groove (fig. 18) across the dorsum. Spiral sculpture is usually lacking or very weak (fig. 2), except when the shell has been damaged by sea creatures and the broken area replaced by new shell (fig. 23). Axial sculpture is obsolete in most specimens and is only occasionally seen in the form of broad rounded ridges (fig. 24) or sharp sharp-edged ridges (fig. 21). Shoulders are variable, from sharply angulate (fig. 30) to rounded (fig. 7, 16, & 22). A callus is occasionally deposited in very thick layers on the parietal shelf (fig. 25 & 26). The obsolete siphonal fasciole can rarely become oversized (fig. 26 & 28). A specimen without a siphonal canal is illustrated in fig. 27. A giant noble volute was recorded in Vietnam (fig. 29) with a size of 239mm (World Record Size 2014).

## Uses

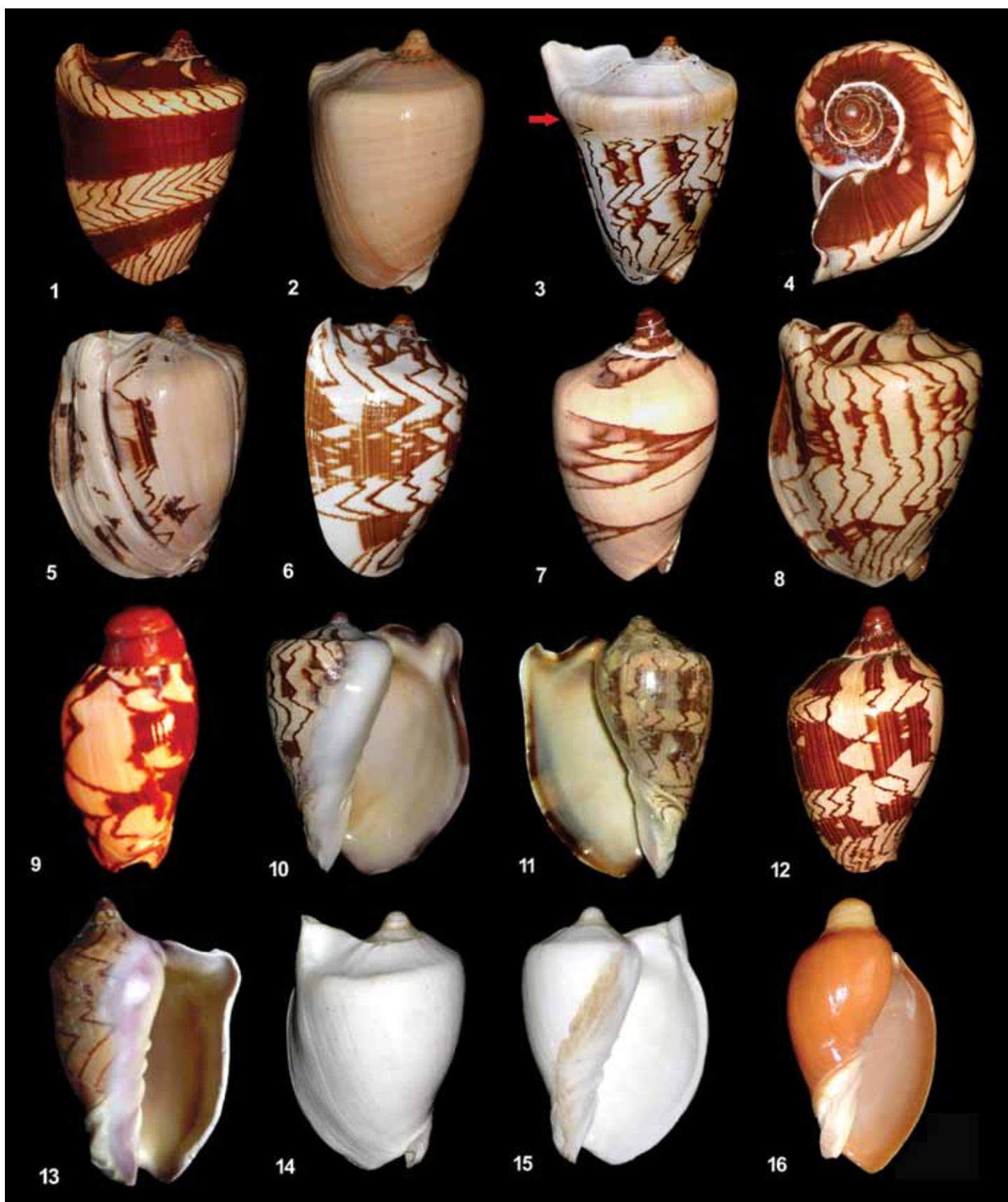
*Cymbiola nobilis* is a useful volute as its foot is edible (a delicious seafood) and it has many uses in shellcraft. Craftsmen can polish it and send it to souvenir shops for tourists. It is one of the best-sellers due to the large size and smooth shining surface ornamented with beautiful patterns. At a more artistic level, they carve two dolphins (fig. 32), or a sea horse, or palm tree, and have for sale a more valued item. Fishermen also use the noble volute shell. They drill a hole in the shell and attach a long string to it before throwing it into the sea. After a day, they return to the same location and pull back the shell to recover an octopus inside the aperture! This is an old fishing technique and has been used in Vietnam for generations. The large apertures of *Cymbiola nobilis* and *Rapana rapiformis*, as well as jars, are used to take advantage of this cephalopod's hiding behavior.

## References:

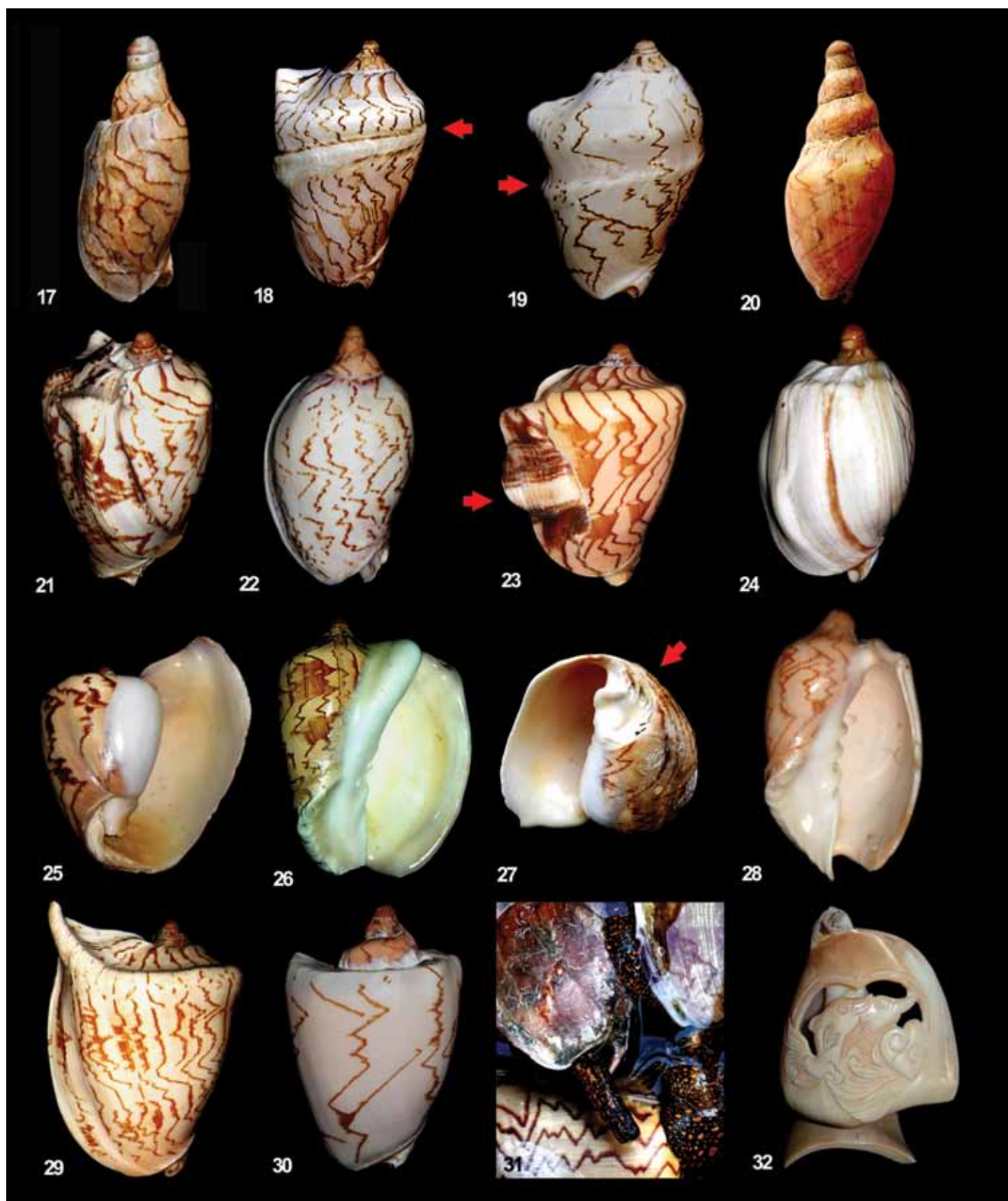
- Poppe, G.T. & Y. Goto. 1992.** *Volutes*. L'Informatore Piceno, Ancona, Italy, 348pp.
- Shells Passion and Topseashells. 2014.** *Registry of World Record Size Shells*. 11<sup>th</sup> Edition, France.
- Thach, N.N. 2012.** *New Records of Molluscs from Vietnam*. 48HrBooks Co., USA, 276 pp. Plate 71.

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1-16: *Cymbiola nobilis* - 1: 184mm, 2: 118mm, 3: 163mm, 4: 160mm, 5: 169mm, 6: 154mm, 7: 104mm, 8: 198mm, 9: 25mm, 10: 199mm, 11: 113mm, 12: 129mm, 13: 113mm, 14: 140mm, 15: 140mm, 16: 62mm.



17-32: *Cymbiola nobilis* - 17: 87mm, 18: 192mm, 19: 120mm, 20: 110mm, 21: 136mm, 22: 127.3mm, 23: 160mm, 24: 94mm, 25: 170mm, 26: 123mm, 27: 170mm, 28: 95.7mm, 29: 239mm, 30: 142mm, 31: about 130mm, 32: 135mm.



# The Masters Award trophy - a new design

Donald Dan

The year 2015 will be the 26<sup>th</sup> anniversary of the Masters Award given by the Bailey-Matthews National Shell Museum of Sanibel, Florida. It will also be the year for a new design of the award. The previous colorful carved stone obelisk (shown on the right) will be duplicated in brilliant crystal glass (shown below). The need for a replacement design was necessitated by a shortage of the specific stone in China used in carving the trophy, resulting in the drastic increase in the cost of the base material. Before the colorful carved stone statue, a similarly shaped trophy of clear acrylic material was given.

The concept of the Masters Award was originally proposed by R. Tucker Abbott, establishing a top layer of competition among very high quality exhibits. It is conceived as a “Grand Prix.” To be eligible to compete for the Masters Award, the exhibit must have already won any of the “broad category” major awards. Those “broad category” awards include: the American Museum of Natural History Award, the Conchologists of America Award, the Dupont Trophy, the R. Tucker Abbott Award (Jacksonville), and the Smithsonian Award.

The first Masters Award trophy was given at the 1990 Sanibel Shell Fair, and won by Roberta Cranmer for her exhibit “Molluscan Treasures from World Oceans.” Currently, the Masters Award is given at two shell shows, the Astronaut Trail Shell Show (Jan. 10-11, 2015) and the 2015 Philadelphia shell Show.





# A mystery solved

Emilio F. García\* & Emily H. Vokes\*\*

Radwin and D'Attilio (1976, p. 31) in their discussion of *Panamurex*, noted that "We have examined the supposed holotype of *P. carnicolor* on loan from the Museum of Comparative Zoology, and have concluded that it does not represent the specimen figured with the original description; indeed, it may not even represent the same species." This statement led Vokes (1992, p. 50) to add: "Examination of the 'holotype' in the MCZ collections shows they are absolutely correct. The specimen is not *P. carnicolor*; it is neither the shell figured nor described...It is a specimen of the muricopsine genus *Acanthotrophon*..." This mystery specimen was subsequently figured by Vokes (1994, p. 93, pl. 10, fig. 6) as *Acanthotrophon* sp. cf. *ascensus* (see fig. 2) with the hope that by calling attention to the shell, someone might recognize the species in another collection.

Unfortunately no one did. That is until 20 years later when a second specimen was collected.

Last September the first author participated in a dredging cruise on the R/V *Pelican* in the Gulf of Mexico. In one of the hauls made west of Dry Tortugas, in approximately 760 m, a single specimen of an *Acanthotrophon* was dredged (fig. 1). When searching the literature, this specimen matched the *Acanthotrophon* figured by Vokes (1994).

There is only one Recent species of *Acanthotrophon* described from the western Atlantic: *Acanthotrophon striatoides* Vokes, 1980. The two specimens under discussion, however, are proportionately narrower and have a differently disposed, heavier sculpture. Moreover, the species inhabits much deeper waters (760 m) than that of *Acanthotrophon striatoides*. Rosenberg (2009) reports this species to inhabit waters no deeper than 55 m. There are two specimens of *A. striatoides* in the first author's collection (EFG 21872; fig. 3 and EFG 25104; fig. 4) obtained in the general vicinity of the newly dredged form that were dredged no deeper than 67 m.

So one part of our mystery is resolved, the location of the strange shell. But the second part of the mystery remains to tantalize us. How did the specimen of *Acanthotrophon* get into the box that was supposed to contain the holotype of *Murex carnicolor* Clench and Perez Farfante, 1945? In the Summer of 1993, the second author visited the Museum of Comparative Zoology for the purpose of searching the collection for the missing holotype, in the hope that it was simply in the wrong box somewhere. In spite of a diligent search the holotype was not uncovered. From the appearance of the "ringer" that was in the box (the *Acanthotrophon*, which bears a slight resemblance to the missing holotype), it seems very likely that a deliberate substitution was made at

some time between 1945, when Clench and Perez Farfante studied it, and 1976, when Radwin and D'Attilio tried to study it. Our hope is that somewhere, in some collection, the true holotype of *Murex carnicolor* lurks, to be recognized by some future student of the Muricidae.

In a new book (*Living Muricidae of the World - Muricinae*: Conchbooks, 2014) Roland Houart notes that the holotype of *Murex aguoyoi*, also described by Clench and Perez Farfante in 1945, and supposedly in the MCZ collections, is also missing and replaced by a damaged specimen of *Siratus articulatus*. It does make you think.

## Literature cited:

**Houart, Roland. 2014.** *Living Muricidae of the World - Muricinae*. Conchbooks, Harxheim, Germany, 197 p., 81 color pls., figs. A-C, 37 text-figs., 2 tables.

**Radwin, George E., and Anthony D'Attilio. 1976.** *Murex shells of the world; an illustrated guide to the Muricidae*. Stanford University Press, Stanford, California, 284 p., 32 color pls., 192 text-figs.

**Rosenberg, Gary. 2009.** Malacolog 4.1.1: A Database of Western Atlantic Marine Mollusca. [WWW database (version 4.1.1)] URL <http://www.malacolog.org/>.

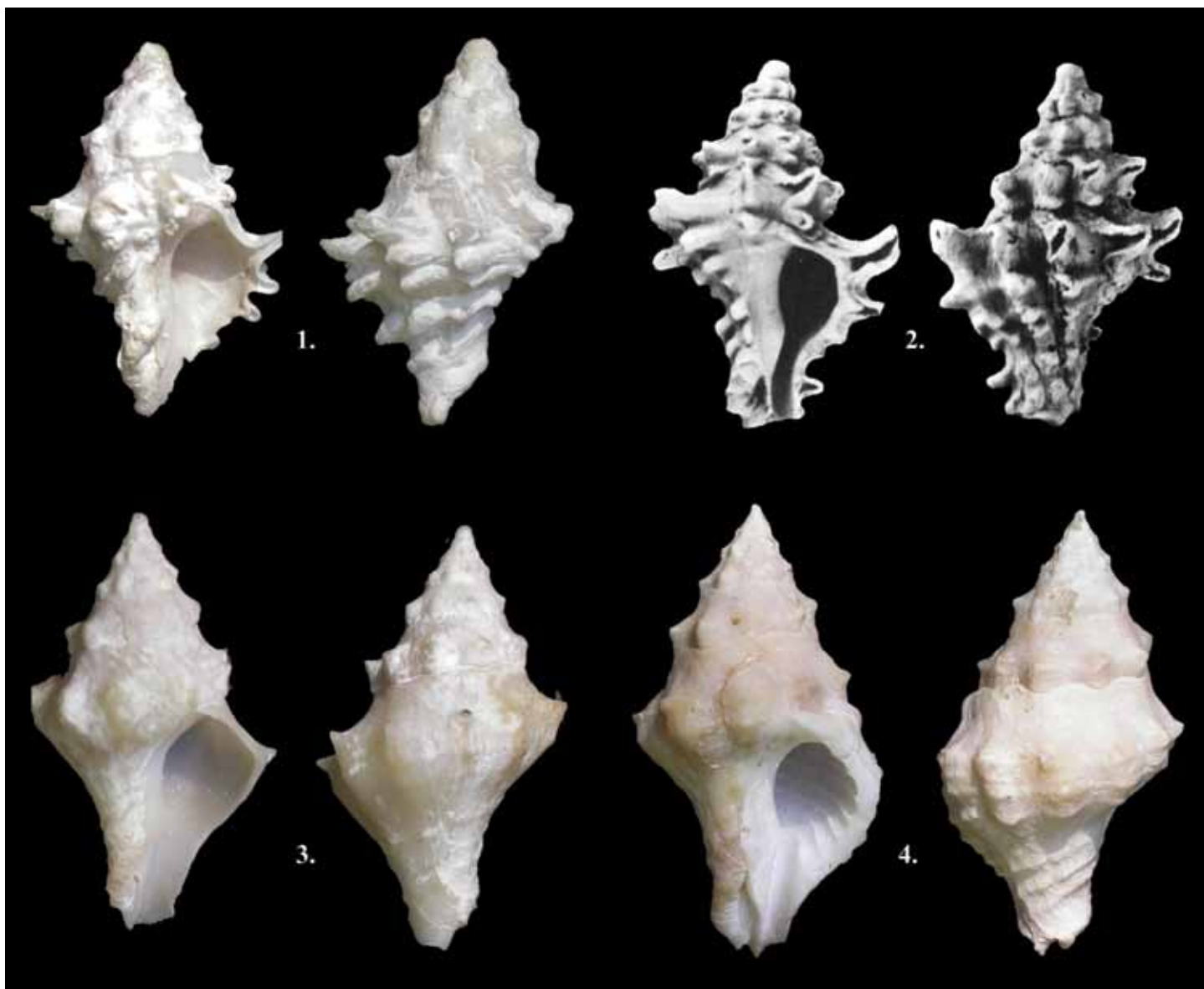
**Vokes, Emily H. 1992.** Cenozoic Muricidae of the western Atlantic. Part IX -- *Pterynotus*, *Poirieria*, *Aspella*, *Dermomurex*, *Acantholabia*, and *Attiliosa*; additions and corrections: *Tulane Stud. Geol. Paleont.*, v. 25, nos. 1-3, p. 1-108, pls. 1-20, 10 text figs., 2 tables.

**Vokes, Emily H. 1994.** Cenozoic Muricidae of the western Atlantic region. Part X – the subfamily Muricopsinae: *Tulane Stud. Geol. Paleont.*, v. 26, nos. 2-4, p. 49-160, pls. 1-26, 1 text-fig., 1 table.

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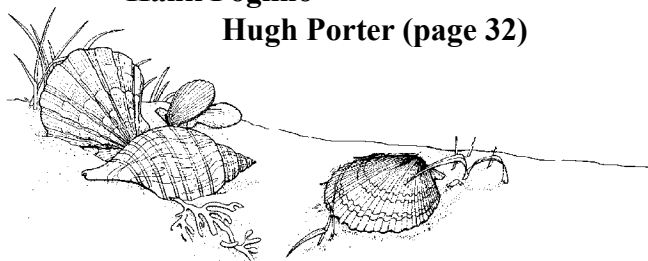
1-2. *Acanthotrophon* sp. 1. 24°25.043'N, 83°41.011'W to 24°23.463'N, 83°38.820'W. Dredged in 762-753 m; 18.8 mm by 11.8 mm. 2. Locality unknown; 14.0 mm by 10.0 mm.

3-4. *Acanthotrophon striatoides* Vokes 1980. 3. Dredged west of Cape Romano, SW Florida, in 66 m; 18.4 mm by 10.6 mm. 4. 26°46.476'N, 83°18.552'W. Dredged in 54.1- 54.3 m; 27.8 mm by 13.1 mm.

**In memoriam:**

**Hank Foglino**

**Hugh Porter (page 32)**



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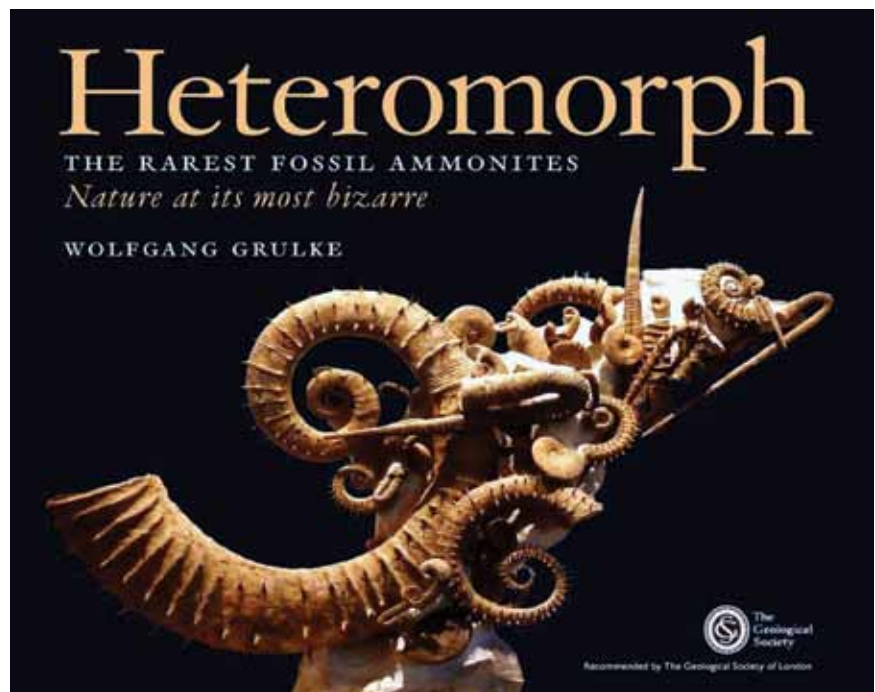
**Review of: *Heteromorph: The Rarest Fossil Ammonites, Nature at its Most Bizarre*, by Wolfgang Grulke, At One Communications, 2014, 224 pp., hardcover, ISBN-10: 0992974003, ISBN-13: 978-0992974008 (about \$50.00)**

I balked when first invited to review the stunning, lavishly illustrated tome on heteromorph ammonites by Wolfgang Grulke; after all, despite a lifetime dedicated to mollusks, I am neither a paleontologist nor “cephalopodologist.” After a brief perusal of the volume, however, I decided I really wanted to know more about the subject and write about the book. One of the concepts that makes this book so attractive in the first place is that author Grulke, through the judicious choice of interrelated topics to construct the book’s different sections, renders his choice of a rather specialized topic into a delightful and well-structured volume.

Then, there is the author himself: Wolfgang Grulke is a well-known visionary, former IBM executive, and Chairman Emeritus of FutureWorld International, a global think-tank. Grulke is a futurologist whose main hobby is to study and collect heteromorph ammonite shells, some of the most remarkable and attractive objects left from the deep past. Grulke has established what is now regarded as the world’s foremost collection of these rare heteromorphs. (The trend-setter in Grulke comes through on the copyright page of the book, which is licensed under the relatively new Creative Commons Attributions Share-Alike license, which lets others “remix, tweak, and build upon this work, even for commercial reasons, as long as they credit the source and license their new creation under the identical terms.”)

Heteromorph ammonites were cephalopods that reached their highest diversity in the Cretaceous Period, between 145 and 65 million years before present. They had coiled shells that changed direction of coiling at least once during growth (hence the colloquial name, from the Greek *hetero*, different + *morphos*, shape), giving the impression that the animal “changed its mind” as far as the direction of shell growth is concerned. The resulting shells look unlike regularly coiled mollusks, with coiling in adult life taking place around two or more axes.

Although the astute reader will need to research elsewhere if he or she wants to learn the finest details on the latest developments in systematics and paleoecology of het-



eromorph ammonites, Grulke did a terrific job of chronicling the group and the extensive range of interest it elicits in researchers, citizen scientists, artists, and dealers specializing in fossil cephalopods.

While relatively little is known about their phylogeny, it is now accepted that the different families of heteromorph ammonites may have evolved a few times, independently, from ancestors with planispiral shells. With the largest number of species and degree of morphological variation occurring in the Cretaceous, Grulke naturally focuses his approach on the diversity of that period, presenting, among other perks, an excellently illustrated “Gallery of Cretaceous Heteromorphs.”

There are sections that will certainly stimulate the interest of readers of all persuasions (and not only a paleocollector or student). “Lifestyle” is where Grulke describes in broad strokes what is known and what is speculation about the biology, habitats, reproduction, and feeding of heteromorph ammonites. “Curiouser & Curiouser,” is a smorgasbord of super-rare, unusual, strange, and questionable heteromorphs. In this section, Grulke describes *Praviloceras sigmoidale*, which he considers to be the weirdest of all ammonites, a “perfect blend of a planispiral and heteromorph ammonite.” Also in this section, Grulke reminds us that heteromorphic shells are not the exclusive domain of fossil ammonites: for example, he presents and illustrates the exquisite terrestrial microsnail *Opisthostoma vermiculum*, a limestone-loving pulmonate whose shell may change coiling direction as many as four times in the snail’s lifetime!

Those interested in the history of the study of heteromorphs will enjoy “From Old to New,” where Grulke introduces selected heteromorph enthusiasts, past and present, discusses existing controversy between professional pa-





**Wolfgang Grulke and a museum collection of ammonites.**

leontologists and commercial dealers, and emphasizes the importance of citizen scientists and private collectors in the development of academic paleontology (“Changing Attitudes,” page 190.)

A little hiccup is found on page 94, with the inclusion of the names of two purported new species of the genus *Hyphantoceras*, prior to their formal description elsewhere, qualifying them as “nude names” (*nomina nuda*) from the standpoint of formal zoological nomenclature. (Had Grulke added more information differentiating the two taxa and naming a depository collection for the specimens illustrated, those could then be considered formal, albeit most likely unintentional, descriptions of the two species.) Although it is always preferable that scientific names never be publicized or written prior to the formal description of the taxa they represent, the names in this case can be made available if they are formally described following the appropriate criteria.

On the whole, “Heteromorph” is a book worth belonging in a shell collector’s library. The exquisite nature of heteromorph ammonites, Grulke’s comprehensive approach, and the quality of the illustrations in the volume are in my opinion excellent reasons for that. I strongly recommend it!

José H. Leal, Ph.D.  
Science Director & Curator  
The Bailey-Matthews National Shell Museum  
Sanibel, Florida, USA



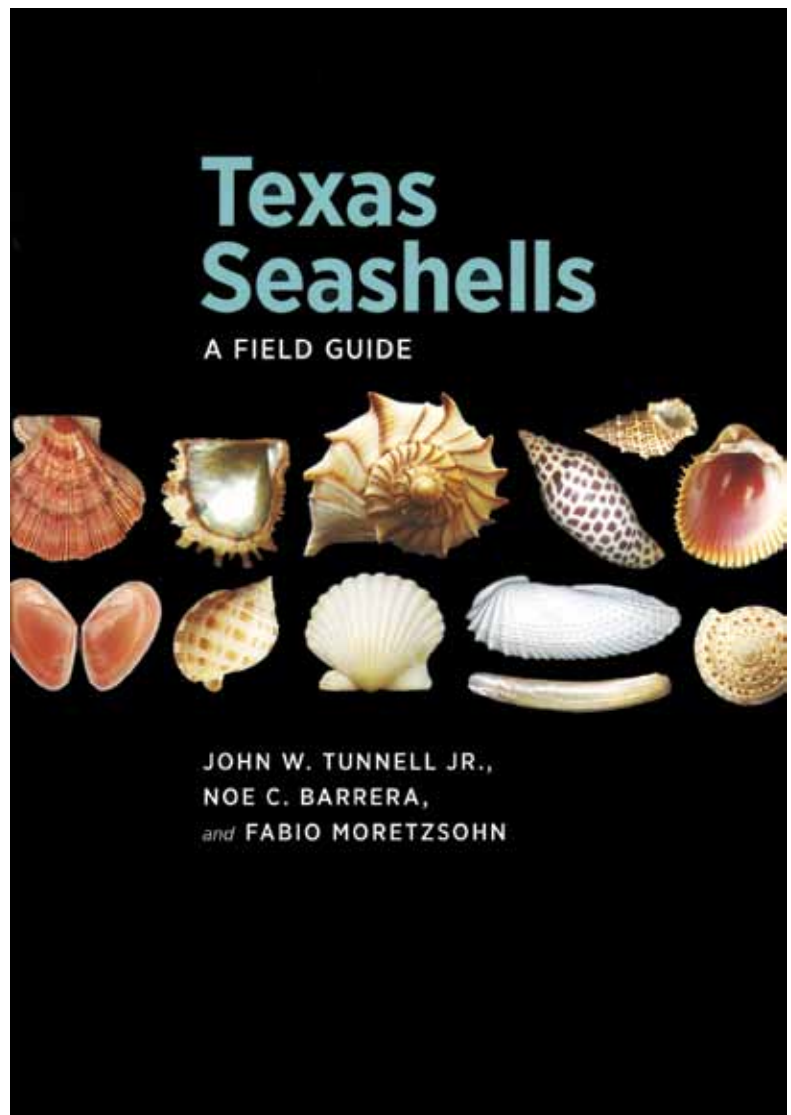
The Recent terrestrial microshell mentioned in the book and Jose Leal's review is *Opisthostoma vermiculum* Clements & Vermeulen, 2008. It is only slightly more than 1mm in length and is only known from the type locality: Gunung Rapat, Perak, Malaysia. Apparently no living snail has yet been observed. The image here is from Lifedesk: <http://opisthostoma.lifedesks.org/pages/759>, and clearly shows the four different coiling axes.

## Review of: *Texas Seashells - A Field Guide* by John W. Tunnell, Jr., Noe C. Barrera, & Fabio Moretzsohn

Texas A&M University Press, Texas,  
2014, 279 pp.,  
flexbound ISBN978-1-62349-167-3,  
e-book - ISBN978-1-62349-1967-3,  
(about \$25.00)

First, a confession. I love field guides. My oldest daughter (a university biology professor) recently remarked that she had over 70 field guides. I counted mine and stopped when I hit 125. Second, a shell identification book is not necessarily a field guide. There is both a size component (you do not want to carry Abbott and Dance's *Compendium* in a backpack) and a descriptive conciseness requirement. This field guide to Texas shells is the right size and it is wonderfully concise. The authors cover 300 Molluscan species found on Texas coastlines. This includes every common shell a beach comber is likely to find as well as many that require a bit more of a dedicated collecting effort. Each shell is presented in a full color image, most with multiple views, and many with close up views of important features. Yes, there are more than 300 mollusk species found on the Texas coastline, but those not in this field guide are truly of a more specialized nature.

The book begins with general advise on shell collecting and collection curating, as well as a discussion of local shell clubs, international shell organizations, and Internet resources. There are then a few pages discussing shell characteristics, including clearly labeled images. The book is then divided into five Molluscan classes: 1. Polyplacophora (chitons), 2. Gastropoda (snails), 3. Cephalopoda (octopuses & squid), 4. Bivalvia (clams, oysters, & scallops), and 5. Scaphopoda (tuskshells). The section on each class begins with a fairly thorough description of the class, including the number of species in the class, the number of genera and species found in Texas, and the number illustrated and discussed in the field guide. Next the species are listed by family (again with a thorough description and specific world and Texas numbers), genera, and species. Each species description includes the species worldwide distribution and Texas range, a description of the shell, the animal's habitat, and remarks (often comparisons with shells of similar appearing species). The color photographs are only 1.5 inches or so on



a side, but they are clear and sharply focused - easy to use. The book ends with a glossary, a bibliography, and an index.

This is the point in the review where the obligatory glitch is pointed out to the prospective reader, but not this time. I am sure there are a few problems in say, taxonomy - names change and even the experts cannot always agree, but the value of this book supersedes any such finding. This field guide is clear, concise, expertly written and illustrated, and easy to use. It is even printed on thick, glossy paper stock that should withstand the travails of road trips. There is also an e-book version of this field guide. While I enjoy my e-books, I am not quite sure that format would be as easy to use for actual field identification. In any case, the option is there. This is a lot of book for the dollar and can obviously be used for areas other than Texas. Buy it. You will be glad to add this to your field guide collection.

Tom Eichhorst  
thomas@nerite.com



## Review of: *Biogeography and Biodiversity of Western Atlantic Mollusks*

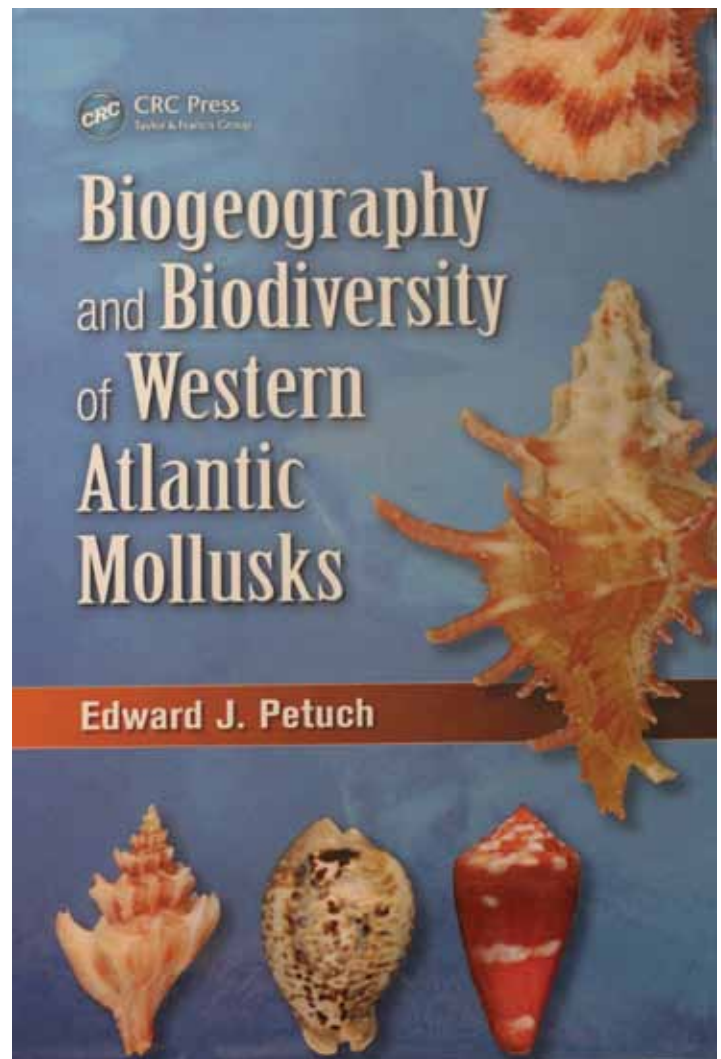
by Edward J. Petuch

CRC Press, Taylor & Francis Group, Boca Raton, Florida, 2013, 234 pp.,  
hardcover ISBN 13: 978-1-4665-7979-8,  
high color resolution photographs by  
Dennis Sargent (about \$160)

This book is the true successor to Dr. Petuch's famous work *Cenozoic Seas: The View from Eastern North America* (2003) wherein he chronicled the past thirty million years of molluscan biodiversity in a succession of fossil assemblages on the Atlantic and Gulf coasts of North America. In this newest book, Dr. Petuch places the diversity of extant molluscan species into distinctive communities of mollusks in ecological assemblages over a broad array of distinctive regions. Dr. Petuch draws upon his decades of field study and personal experiences working with both Recent and fossil mollusks in the western Atlantic and southern Caribbean and traces the development of a biogeographic framework for the temperate and tropical faunas of the region. Both qualitative and quantitative analyses are used to define three molluscan faunal provinces and fifteen subprovinces using a concise quantitative model based upon a Provincial Combined Index (using ten gastropod families and subfamilies based upon relative endemism) and Valentine's 50% rule. Illustrations of the species from each subprovince throughout the text make these communities easy to visualize and understand.

Despite being a thorough scientific work, complete with all data, formulas, and mathematical calculations, which provide a testable and repeatable hypothesis, the work is highly readable, clear, and flows well. Each province and subprovince is discussed in an interesting and detailed chapter accompanied by biogeographic maps and beautiful illustrations of the index species and other endemic species. The ecological limitations and distributions of these molluscan assemblages are described and placed in context with their evolution from the past epochs of the Cenozoic Era. Throughout the book Dr. Petuch repeatedly demonstrates that the tropical western Atlantic is a dynamic region that has undergone rapidly occurring extinctions and evolutionary explosions to produce one of the richest molluscan faunas to be found. Provinciatones, primary and secondary relict pockets are defined, discussed and woven into the fabric of the ecological and natural history of these fascinating molluscan faunas, making molluscan biogeography an understandable and fascinating topic.

New taxa are named in this book including 31 new species and subspecies and 11 new genera and subgenera, all illustrated in context of their biogeographic subprovinces and set forth in detailed descriptions in the back of the book.



While undoubtedly not everyone will agree with all of the taxonomy presented, as is common with all taxonomic works, this book presents testable hypotheses and is detailed, thorough, and contains both the data and formulas to provide a solid basis for future biogeographic and taxonomic work. I found this book to be both an enjoyable read and a useful and valuable reference guide. If you collect western Atlantic or Caribbean shells this book is a fantastic addition to your shell library.

David P. Berschauer  
shellcollection@hotmail.com

There is another review of this work by Richard E. Petit, available online at: [www.conchologia.com](http://www.conchologia.com). It is title number 13, A review of *Biogeography and biodiversity of western Atlantic mollusks* by Edward J. Petuch, 4 June 2013, 15pp. In his review, Richard (Dick) Petit points out internal inconsistencies and editing errors so that even though he believes, "...some intriguing ideas are presented in this work it is riddled with errors that cast doubt on its reliability..."



# British Shell Collector's Club Convention

## 25 October 2014 - Essex



The British Shell Show held at the Theydon Bois Community Centre in Essex, U.K., was a great success and the winner of the COA Award this year was Kevin Brown. His exhibit, running over four feet in length, was a celebration of the bicentenary of the birth of Lovell Augustus Reeve (1814 - 1865). Most every shell collector knows this name, as Reeve described some 2,000 molluscan species. He was a well-known and respected Victorian conchologist, shell dealer, writer, and publisher. His monumental "Conchologica Iconica," published in the mid-1800s, still stands today as a valuable treatise on conchology. Kevin's exhibit included biographical details about Reeve, photographs, details of his writings, and shells, both named by Reeve and named for him. Kevin also included information about Reeve's associates, such as Hugh Cuming (who provided many of the shell specimens described by Reeve and other naturalists of the time) and G.B. Sowerby II (who illustrated Reeve's work and finished the "Iconica" after Reeve's death). The British Shell Collector's Club was founded in 1972 and held its first exhibition in 1976. There are about 240 members and the club publishes the club magazine *Pallidula* twice a year.



Kevin Brown (left) receives the COA Award from the British Shell Club President, Judith Nelson.



Kevin's exhibit of shells described by Reeve (dark blue) and named for Reeve (light blue - see detail below).



Some of the shells named for Reeve, including the three colorful *Turbo reevei* Philippi, 1847 and the *Austrocypraea reevei* (Gray in G.B. Sowerby I, 1832). Kevin notes that Reeve was 18 at the time the cowrie was named and quite thrilled to have a shell named in his honor at that young age.

# North Carolina Shell Show

## 20-21 September 2014

The North Carolina Shell show is held in Wilmington, North Carolina, a beautiful riverside city familiar to the COA members who attended this year's convention. Vicky Wall won the COA Award at this year's show with an exhibit titled "Marveling at Mollusks." Her display covered 28 feet in 14 cases and showed 14 different aspects of mollusks, such as: venomous cone shells, shells with pearls, shells as inspiration, right- and left-handed shells, edible mollusks, etc. Almost 550 people attended the show and were able to enjoy Vicky's artistic and educational exhibit. John Timmerman was the shell show chairman and Charlotte Thorpe and Alan Gettleman were the show judges. Other winners included Tom Grace with the DuPont Trophy, Brady Semmel with the Hugh Porter Trophy, Doug Wolfe with *Arctomelon tamikoe* (Kosuge, 1970) as the shell of the show (any source), and Tom Grace with *Conus amphiuragus* Dall, 1889, as the shell of the show (self-collected). Scientific exhibits at the show covered more than 180 feet of display space.



Vicky Wall (center) with her new COA Award presented by show judges Charlotte Thorpe and Alan Gettleman.



Vicky's display of shells as inspiration.



Vicky's display of left- and right-handed shells.

# 2015 Shell shows & related events

(January – August) Subject to change, verify with individual organization.

## Jan. 10-11, 2015

### SPACE COAST SEASHELL FESTIVAL, Melbourne, FL

The Melbourne Auditorium, 625 E. Hibiscus Blvd.  
Alan Gettleman, 2225 Tanglewood Lane, Merritt Is., FL 32953-4287

E-mail: lychee@cfl.rr.com

Tel. (321) 454-3239

## Jun. 13-14, 2015

### GULF COAST SHELL SHOW, Panama City Beach, FL

Panama City Beach Senior Center, 423 Lyndell Lane  
Jim Brunner, 2511 Parkwood Dr., Panama City, FL 32405

Email: jili@knology.net

Tel. (850) 215-2086

## Jan. 16-18, 2015

### 50<sup>th</sup> ANNIVERSARY BROWARD SHELL SHOW, Pompano Beach, FL

Emma Lou Olson Civic Center, 1801 Northeast 6th Street  
Alice Pace, 7405 SW 128 Ct., Miami, FL 33183

E-mail: alicepace90@att.net

Tel. (305) 301-1296 (Cell)

## Jan. 17-18, 2015

### NEW ZEALAND SHELL SHOW, Wellington, New Zealand

Petone Club, 47 Udy Street, Petone

Mary Agnes Wotton www.wellingtonshellclub.org.nz

E-mail: ma.wotton@xtra.co.nz

Tel. (644) 478-5294

## Feb. 13-15, 2015

### 52<sup>nd</sup> ANNUAL SARASOTA SHELL SHOW, Palmetto, FL

Bradenton Area Convention Center, 1 Haben Blvd.  
Donna Cassin, 3432 Highlands Bridge Rd., Sarasota, FL 34235

E-mail: dcassin941@gmail.com

Tel. (941) 362-3302

## Feb. 21-22, 2015

### ST. PETERSBURG SHELL SHOW, Seminole, FL

Seminole Recreation Center, 9100 113<sup>th</sup> St. N., Seminole, FL

Bob & Betty Lipe, 348 Corey Avenue, St. Pete Beach, FL 33706

E-mail: blipe@tampabay.rr.com

Tel. (727) 391-2197

(Evening)

Exhibit form at: <http://www.stpeteshellclub.org>

## Feb. 28, 2015

### FLORIDA UNIFIED MALACOLOGISTS (FUM VI), Gainesville, FL

Florida Museum of Natural History - Exhibits  
3215 Hull Road — Powell Hall, Gainesville, FL

John Slapcinsky

E-mail: slapcin@flmnh.ufl.edu

Tel. 352-392-1721

## Mar. 5 - 7, 2015

### 78<sup>th</sup> SANIBEL SHELL SHOW, Sanibel, FL

Sanibel Community Center, 2173 Periwinkle Way

Mary Burton, 558 Foxcreek Drive, Lehigh Acres, FL 33974

E-mail: marybsanibel@hotmail.com

Tel. (239) 395-3626

[www.thesanibelcaptivevashellclub.com](http://www.thesanibelcaptivevashellclub.com)

## Mar. 12-14, 2015

### MARCO ISLAND SHELL CLUB SHOW XXXV, Marco Is., FL

United Church of Marco Island, 320 North Barfield  
Jae Kellogg, 1402 N. Collier Blvd., Slip D-6, Marco Island, FL 34145

E-mail: pjsailkw@gmail.com

Tel. (239) 253-8483

## Mar. 14-15, 2015

### XXVI PARIS INTERNATIONAL SHELL SHOW, Paris, France

Espace Charenton, 327 rue de Charenton, 75012 Paris

Perrine Dardart, 8, Rue des Tilleuls, 02190 Pignicourt, France

E-mail: perrine.dardart@gmail.com Tel. 33 (3) 23-22-46-41

## Apr. 25, 2015

### BRITISH SHELL COLLECTOR'S CLUB CONVENTION, Essex, England

Theydon Bois Community Centre, Essex

Deborah Rolfe, 15 Dene Holm Road, Northfleet, Kent DA11 8LF, UK

Email: deborah@deborahrolfe.orangehome.co.uk

Tel. 44 1474 567 827

## May 16-17, 2015

### XXV BELGIUM INTERNATIONAL SHELL SHOW, Antwerp, Belgium

"Extra Time" Sports Hall, Louisalei 24, Hoboken

Charles Krijnen, Burgemeester Jansenstraat 10, NL-5037 NC

Tilburg, Nederland

E-mail: bvc.shellshow@planet.nl

Tel. 31 (13) 463 0607

[www.bvc-gloriamaris.be/beurs\\_e.htm](http://www.bvc-gloriamaris.be/beurs_e.htm)

## Jul. 4 - 5, 2015

### TOWNSVILLE SHELL SHOW, Townsville, Queensland, Australia

Orchid Society Hall in Kirwan

Glenda Rowse, 19 Farrell Street, Kirwan 4814, Qld, Australia

Tel. 61 (7) 4773-2817

## Jul. 11-12, 2015

### KEPPEL BAY SHELL SHOW, Yeppoon, Queensland, Australia

Gus Moore Pavilion at the Yeppoon Show Ground

Jean M. Offord, 277 McDougall St., N. Rockhampton, Qld.

4701, Australia

Tel. 61 (7) 4928-3509

## Jul. (To be announced) JACKSONVILLE SHELL SHOW

## Jul. (To be announced) GULF COAST SHELL SHOW

## Jul. 14-19, 2015

### CONCHOLOGISTS OF AMERICA ANNUAL

### CONVENTION, Weston, FL

Bonaventure Resort & Spa, 250 Racquet Club Road, Weston, FL

Nancy Galdo, 4266 Chase Ave., Miami Beach, FL 33140

E-mail: 2015COA@gmail.com

Tel. (305) 467-4412

Website: [www.conchologistsofamerica.com](http://www.conchologistsofamerica.com)

## Aug. 28-31, 2015

### AMERICAN MALACOLOGICAL SOCIETY MEETING,

Pellston, MI

U. of Michigan Biological Station (UMBS), Pellston, MI

Tom Duda, 1109 Geddes Ave., Ann Arbor, MI 48109

Email: tfduda@umich.edu

Tel: 734-764-2358

[www.malacological.org](http://www.malacological.org)

## Aug. 21- 31, 2015 (subject to confirmation)

### OREGON SHELL SHOW, Salem, OR

Oregon State Fair Grounds – Jackman-Long Bldg.,

2330 17<sup>th</sup> Street NE

John Mellott, 1310 Crowley Avenue SE, Salem, OR 97302

E-mail: retheresa@comcast.net

Tel. (503) 363-5017

## Information source:

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Revised 2015-11-06



# *Neptunea Award*

Many of us are beginning plans for the 2015 COA Convention in Weston (near Ft. Lauderdale), FL. One of the many events on the agenda is the annual COA *Neptunea Award(s)*, and it is once again my privilege to call for nominations.

The consensus of the COA Board is to reopen nominations with a “clean slate” annually. Nominees not selected in previous years are certainly welcome for consideration if re-nominated - in fact their re-nomination is encouraged. For the present cycle, nominations will close on June 1, 2014 so as to allow ample time for deliberation before the convention.

By way of background, the *Neptunea Award* (Brunner, 2000; Lipe, 2000) was established at the midyear (1999-2000) meeting of the COA Board in order to recognize outstanding and distinguished service to conchologists and malacologists in recognition of:

1. Service to the Conchologists of America.  
AND/OR
2. Service to the scientific interests of Conchologists of America.  
AND/OR
3. Service to the science of malacology as it applies to conchologists anywhere.

Although notable exceptions have been made, the COA Board, which serves as the jury for the *Neptunea Award*, has traditionally weighed its consideration for award recipients toward (1) amateurs: those not currently pursuing a principal career involving collection, study, or commerce involving mollusks, (2) individuals “working behind the scenes” and relatively unrecognized, in the COA world, for their contributions, and (3) active members of the COA. Up to three awards have been made at our annual conventions beginning with the Houston event in 2000 (see below). Nomination(s) for the *Neptunea Award* may be made by any COA member and the format is simple:

Name of nominee:

This person deserves this award because (Here a somewhat detailed paragraph will suffice.) ..... Signed .....

and either snailmail or email that nomination to the COA *Neptunea Award* Coordinator [currently me; see below].

Previous *Neptunea Award* winners are:

2000 (Houston, TX): Ross Gunderson, Ben and Josy Wiener, Debbie Wills  
2001 (Port Canaveral, FL): Emilio Garcia, Harry Lee, Lynn Scheu  
2002 (Sarasota, FL): Richard Petit, Bernard and Phyllis Pipher  
2003 (Tacoma, WA) Jim and Linda Brunner, Kevin Lamprell, Doris Underwood  
2004 (Tampa, FL): Bobbi Houchin  
2005 (Punta Rassa, FL): Richard Forbush, Anne Joffe, William Lyons  
2006 (Mobile, AL): Jack Lightbourn, Betty Lipe  
2007 (Portland, OR): none given  
2008 (San Antonio, TX): Bill Frank, Archie Jones  
2009 (Clearwater, FL) none given  
2010 (Boston, MA): none given  
2011 (Port Canaveral, FL): Alan Gettleman  
2012 (Cherry Hill, NJ): Gary Rosenberg, Martin Avery Snyder  
2013 (Sarasota, FL): David and Lucille Green, Marlo Krisberg, and Charles Rawlings  
2014 (Wilmington, NC) Colin Redfern, Tom Rice

**Brunner, L. 2000.** The *Neptunea Award*. *American Conchologist* 28(3): 3. Sept.

**Lipe, B[etty]. 2000.** Presidents Message. *American Conchologist* 28(4): 2. Dec.

Harry G. Lee

Vice-President

Conchologists of America

4132 Ortega Forest Drive, Jacksonville, FL 32210

<shells@hglee.com>

# Hugh J. Porter: Contributions to Malacology & the North Carolina Shell Club\*

Douglas A. Wolfe

NOAA Beaufort Laboratory (retired)

Historian, North Carolina Shell Club

During his nearly 55-year (1955–2010) career at the University of North Carolina's Institute of Marine Sciences (IMS) in Morehead City, NC, Hugh Judson Porter earned the reputation and title of "Mr. Seashell" in North Carolina (Griffin 1982; Brady 1992; Houser 1996). Born April 10, 1928 in Bowling Green, Ohio, Hugh graduated from the State Teachers College in Millersville, Pennsylvania in 1950. He taught briefly at Margaret Brent High School in Helen, Maryland, attended Penn State University briefly, and did a stint in the Army before returning to the University of Delaware where he received his M.S. degree in 1956. He was hired in 1955 as an assistant in mollusk research at IMS; became an Instructor in 1957 and Assistant Professor in 1963. Although Hugh officially retired from the faculty at IMS in 1996, he continued to come into his office in a part-time "emeritus" status for several years after that. He initiated the IMS collection of marine mollusks in 1956 and served as curator of that collection, which grew to about 25,000 lots before its transfer (in two stages, 1996 and 2012) to the North Carolina Museum of Natural Sciences in Raleigh.

I first met Hugh in 1966. I had moved my family to Beaufort, NC in July of 1964 where I took a job as chemist at the Bureau of Commercial Fisheries' Radiobiological Laboratory, located on Pivers Island, about five miles east of IMS in Morehead City. My interest in mollusks and shells was already well developed at that time and I soon began to frequent the docks near the laboratory to collect specimens from the fishing boats that were unloading calico scallops trawled offshore. Imagine my excitement when I found several species that were outside the ranges reported by Abbott (1954), my principal authority at that time. I photographed my specimens and made a presentation on these "rare" finds at the November 1966 meeting of the Atlantic Estuarine Research Society in College Park, Maryland, and that was where I met Hugh Porter, who was in the audience. Because he was already a recognized authority on North Carolina mollusks, most of the questions raised after my presentation were addressed not to me, but to Hugh. And it was Hugh that subsequently introduced me to both the North Carolina Shell Club and the American Malacological Union (AMU, now AMS), both organizations I first joined in 1967. My first and second shell club meetings were both held at the Oceanana resort at Atlantic Beach, and my third was the 10<sup>th</sup> Anniversary banquet (2 December 1967) where R. Tucker Abbott talked about mollusks, shell collecting and shell clubs. Later Hugh and I collaborated on the description of the molluscan fauna associated with the fishery for calico scallops (Porter & Wolfe 1972), and I'm sure our collaboration would have continued had I not moved away from North Carolina in 1975.

Hugh joined the AMU in 1957, and maintained his membership in the AMS through 2009. He was also a member of the National Shellfisheries Association, the North Carolina Academy of Science, the Society of Systematic Zoologists, and Sigma Xi.

Hugh and his wife Dorothy Jane Pinkerton ("Pinky") Porter were Charter Members of the NC Shell Club, attending the first meeting held March 9, 1957, at the NC State Museum in Raleigh. At Hugh's invitation, the club held its third meeting in Morehead City, where Dr. Al Chestnut, director of the Institute of Fisheries Research (now IMS), and Dr. Mel Carriker, visiting professor from UNC-Chapel Hill, oversaw the meeting and delivered the programs (Green 1957; Porter 1963). Hugh was elected secretary-treasurer of the club in 1959 and served in that capacity until 1964, when those functions were split and Elizabeth T. Matthews became treasurer. Hugh continued as secretary through 1966, when he was elected vice-president (1967–68) and president (1969–70). Hugh served a third term as president in 1976.

As club secretary, Hugh submitted annual reports to the American Malacological Union, for publication in the section "Member Shell Clubs" of the AMU Annual Reports (Porter, 1959–1966). This function was continued by Hugh's successor, Ruth Dixon, through 1969, after which the AMU stopped including club reports in its Bulletin. In 1966, Hugh reported that the North Carolina Shell Club had 252 members and that a recent club highlight had been the banquet (Nags Head, September 1965) honoring Moncie Daniels, the North Carolina Legislator who introduced and helped enact the bill proclaiming the scotch bonnet *Phalium granulatum* (now *Semicassis granulata*) (Born, 1778), as the state shell of North Carolina.

In September of 1966, Governor Dan K. Moore recognized Hugh with membership in the Order of the Long Leaf Pine, one of North Carolina's highest honors, for his central role in attracting the AMU conference to the state, and for his involvement in selection and advocacy of the scotch bonnet as the state shell - the first state shell to be so named.

Hugh started the *North Carolina Shell Club Bulletin*, and for fifteen years served as its Editor-in-Chief (numbers 1–9, 1963–1978). Without Hugh's initiative and guidance, the *Bulletin* ceased publication completely as an outlet for member contributions and articles after no. 11 (1986), and was transformed into the club's membership list. Hugh also instigated and organized the club's first two shell shows, held at IMS in Morehead City (October 1971) and at the NC State Museum of Natural History in Raleigh (January 1973), respectively. Since the club's 9<sup>th</sup> show in 1984, the North Carolina Shell Show has been an annual event, attracting exhibitors and vendors from other states and educating the public on shells and sea life. Hugh served regularly for many years (ending in 2000) as assistant scientific judge at these shows, evaluating the merits and competitiveness of the exhibits entered. From 1990 through 2010, Hugh was listed on the Club Newsletter masthead as Historian (I believe he had assumed that function unofficially several years earlier, having served on the "Historian Committee" with Charlotte Johnson and Dr. John Ferguson in 1984). In May, 1989, Hugh and Pinky Porter were elected to honorary life mem-

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\* This account was written for this issue before Hugh Porter passed away.

bership in the NC Shell Club. Since 1996, the club has awarded the Hugh Porter Award at its annual shell shows to that exhibit which best features the mollusks of the western Atlantic, including the Boreal, Virginian, Carolinian and/or Caribbean provinces.



**Hugh J. Porter with the author and his Hugh Porter Award won at the 2002 NC Shell Club Show. Photo Nancy Wolfe.**

Hugh's publications are listed here as a bibliographical appendix, following the citation list for this article. With support from North Carolina Sea Grant, Hugh published two useful shell-identification guides - the first a 32-page pamphlet (Porter and Tyler 1971, 1981) and the second (Porter and Houser 1997), a very popular 132-page book illustrating 136 bivalves, 118 gastropods, 3 tuskshells, 2 chitons, and 1 cephalopod, all found on North Carolina beaches. Hugh was also involved in the state's efforts to identify and categorize "rarity and endangerment" among North Carolina's mollusks (Porter et al. 1977, Fuller et al. 1979, Porter 1985a,b). He conducted a major survey of molluscan fauna in the Lake Waccamaw drainage system (Porter and Horn 1980, 1981, 1983, 1984a,b,c; Horn and Porter 1981). Most of Hugh's work, however, focused on marine and brackish water fauna, which was the principal focus of the IMS collection. His *North Carolina Marine and Estuarine Mollusca: An atlas of Occurrence* (Porter 1974) provides a useful (though no longer up-to-date) summary of the known species of mollusks in the coastal and shelf waters of North Carolina. Another interesting project was his *List of Record Sizes of North Carolina Mollusks*, published in 5 parts (Porter 1968, 1971, 1973, 1975, 1983). This effort compiled records by species of the largest known specimens collected from North Carolina waters, and may have established the precedent followed by others in 1977 and later (Wagner and Abbott 1990; Pisor 2005) for world-wide mollusks. One of Hugh's final publications noted a range extension north to Cape Lookout, NC for *Littorina ziczac*, the zebra periwinkle (Porter 2008). These and many of Hugh's other publications make reference to specimens in the IMS collection; this extensive collection (about 25,000 lots and 233,000 specimens) now represents the core of the marine mollusk collection at the North Carolina State Museum of Natural Sciences in Raleigh (NCSMNS), where it is overseen by the Curator of Invertebrates

Dr. Arthur E. Bogan. (<http://naturalsciences.org/research-collections/research-specialties/invertebrates>). This collection, painstakingly assembled and curated by Hugh over the course of fifty years, will provide a lasting legacy to his dedication and service to the malacological community.

#### Text Citations

- Abbott, R. Tucker. 1954.** American Seashells. Van Nostrand, Princeton, New Jersey. 541 pp.
- Brady, Travis. 1992.** Mr. Seashell. *Tar Heel Profile. The State Magazine* (October), pp 30-31.
- Green, Charlotte Hilton, 1957.** Out of Doors In North Carolina. *Raleigh News and Observer*, Sunday 13 October.
- Griffin, C. 1982.** Ocean Treasures. *Wildlife in North Carolina* 46(6): 6-11, illustrated.
- Houser, L. 1996.** Seashell Fever. *Coastwatch* (Mar/Apr): 9-13. NC SeaGrant Program, NC State University, Raleigh.
- Phillips, Walter. 1996.** Scientists hope to save IMS specimens' collection. *Carteret County News-Times*, Sunday, July 7: pp 1A & 3A.
- Pierce, Chelsea. 2013.** A Shell's Life. *Coastwatch*. Autumn Issue 4: 21-23. NC Sea Grant Program, NC State University, Raleigh.
- Pisor, D.L. 2005.** Registry of World Record Size Shells (4<sup>th</sup> edition). Edited by Conchbooks, Hackenheim, Germany; Snail's Pace Productions, San Diego, California. 171 pp.
- Porter, H.J. 1963.** History of the North Carolina Shell Club. pp. 3-5, *North Carolina Shell Club - 1963*. Informal publ. known as "Bulletin #1," mimeo, 12 pp.
- Porter, H.J. & Wolfe, D.A. 1972.** Mollusca from the North Carolina commercial fishing grounds for the calico scallop, *Argopecten gibbus* (Linné). *Journal de Conchyliologie* 109(3): 91-109.
- Wagner, R.J.L. & R.T. Abbott. 1990.** World Size Records. Supplement 4, *Standard Catalog of Shells*. American Malacologists, Melbourne, Florida. 70 pp.

#### Bibliography: Hugh J. Porter

##### 1955

Porter, H.J. 1955. Variation in morphometry of the adult female blue crab, *Callinectes sapidus* Rathbun. Unpublished MS Thesis in zoology, University of Delaware, Newark, DE

##### 1957

Chestnut, A. F., Fahy, W. E., and H. J. Porter. 1957. Growth of young *Venus mercenaria*, *V. campechiensis* and their hybrids. *Proc. Nat. Shellfish Assn.* 7:50-56.

##### 1960

Porter, H.J. 1960. The offshore clam fishery of North Carolina. *Proceedings of the National Shellfisheries Association* 51:67-73.

Porter, H.J. and A.F. Chestnut. 1960. Zoal stages of the stone crab, *Menippe mercenaria* Say. *Chesapeake Sci.* 1(3/4):168-177.

##### 1962

Porter, H.J., 1962. Incidence of *Malacobdella* in *Mercenaria campechiensis* off Beaufort Inlet, N.C. *Proceedings of the National Shellfish Association* 53:133-145.

##### 1964

Porter, H.J., 1964. Seasonal gonadal changes of adult clams, *Mercenaria mercenaria* (L.) in, N.C. *Proceedings of the National Shellfish Association* 55:35-52.

Williams, A.B. and H.J. Porter. 1964. An unusually large turtle barnacle (*Chelonibia p. patula*) on a Blue Crab from Delaware Bay. *Chesapeake Science* 5(3):150-151.



## 1965

Porter, H.J., 1965. *Cassia madagascariensis spinella* off North Carolina coast. *The Nautilus* 78(3):106.

Porter, H.J., 1965. Report of Club activities since last Bulletin. *North Carolina Shell Club Bulletin* 2:11-13.

## 1966

Porter, H.J., 1966. Report on 1965 Shell Club Activities. *North Carolina Shell Club Bulletin* 3:2-3.

Ferguson, J., Upchurch, J., and Porter, H.J., 1966. List of Common North Carolina Marine Mollusks. *North Carolina Shell Club Bulletin* 3:23-33.

Merrill, A.S. and H.J. Porter, 1966. Further note on distribution of Cymatiidae in western Atlantic. *The Nautilus* 80(1):31-32.

## 1967

Porter, H.J., 1967. A Collecting Trip on the Neuse River Estuary. *North Carolina Shell Club Bulletin* 4:31-37.

Porter, H.J. & C.E. Jenner, 1967. Notes on some mollusca off the coast of North Carolina. *American Malacological Union, Inc. Annual Reports* for 1967:23-24.

Porter, H.J., 1968. Record sizes of North Carolina Mollusks: List No. 1: Gastropods, Scaphopods and Chitons. *North Carolina Shell Club Bulletin* 5:37-45.

## 1969

Porter, H.J., 1969. The molluscan fauna in North Carolina's Neuse River estuary. *American Malacological Union, Inc. Annual Reports* for 1969:39-40.

Kruczynski, W.L. & H.J. Porter, 1969. A new northern record for *Bursatella leachii pleii* Rang (Opisthobranchia), with notes on its biology. *The Nautilus* 83(2):40-42.

## 1970

Porter, H.J., 1970. The occurrence of Cymatiidae and Cypraeidae in North Carolina. *The Nautilus* 84(1):1-8.

## 1971

Porter, H.J., 1971. The North Carolina scallop fishery- A bonanza to Shell Collectors? *North Carolina Shell Club Bulletin* 6:24-25.

Porter, H.J., 1971. Record sizes of North Carolina Mollusks: List No. 2. *North Carolina Shell Club Bulletin* 6:29-34.

Porter, H.J. and J. Tyler. 1971. Sea Shells common to North Carolina. Information Series. NC Dept of Natural and Economic Resources, Division of Commercial and Sports Fisheries. North Carolina Sea Grant College Program Publ. UNC-SG-72-09. Published November 1971, 2<sup>nd</sup> printing 1972, 3<sup>rd</sup> printing 1974, 4<sup>th</sup> printing 1976. 36 pages.

Williams, A.B. & H.J. Porter, 1971. A ten-year study of mero-plankton in North Carolina estuaries: Occurrence of postmetamorph al bivalves. *Chesapeake Science* 12(1): 26-32.

## 1972

Porter, H.J. 1972. Recent advances in clam aquaculture. *The American Malacological Union Bulletin* for 1971:16-17. [March 1972]

Porter, H.J. 1972. Mollusks coincident with North Carolina's calico scallop fishery. *The American Malacological Union Bulletin* for 1971: 32-33. [March 1972]

Porter, H.J. 1972. Shell collecting from stomachs of the sea-star genus *Astropecten*. *New York Shell Club Notes* 180:2-4.

Porter, H.J. and D.A. Wolfe, 1972. Mollusca from the North Carolina commercial fishing grounds for the calico scallop, *Argopecten gibbus* (Linné). *Journal de Conchyliologie* 109(3): 91-109.

## 1973

Porter, H.J., 1973. Mollusks from R/V Eastward stations 11542 and 11545 east of Charleston, S.C. [bound into 1973 AMU program.] 3pp.

Porter, H.J., 1973. A Listing of Shelling Trips as Described in the New York Shell Club Notes - 1949 to 1973. *North Carolina Shell Club Bulletin* 7:37-41.

Porter, H.J., 1973. Record sizes of North Carolina Mollusks: List No. 3. *North Carolina Shell Club Bulletin* 7:42-49.

Porter, H.J. and F.J. Schwartz, 1973. Macrofauna of an offshore *Argopecten gibbus* bed, with notes on possible predators. *Journal of the Elisha Mitchell Scientific Society*. 89(4): 259-260.

## 1974

Porter, H.J., 1974. The North Carolina marine and estuarine Mollusca: An atlas of occurrence. The University of North Carolina Institute of Marine Sciences, Morehead City. 351 pages.

Porter, H.J., 1974. Mollusks from M/V Eastward stations 11542 and 11545 East of Charleston S. C. *The American Malacological Union, Inc. Bulletin* for 1973:20-24. [May 1974].

Porter, H.J. 1974. North Carolina scallop fishery 1972-1973. *The American Malacological Union, Inc. Bulletin* for 1973:40 [title of film shown with short abstract, May 1974].

## 1975

Porter, H.J., 1975. Notes on species of the family Turridae found in North Carolina waters. *N. C. Shell Club Bulletin* no.8: 32-35.

Porter, H.J., 1975. Record sizes of North Carolina mollusks: List no. 4. *North Carolina Shell Club Bulletin* no.8: 38-44.

## 1976

Porter, H.J., 1976. Spiral cord variation of *Odostomia impressa* (Say) and *O. seminuda* (C.B. Adams), Family Pyramidellidae. *Bulletin of the American Malacological Union, Inc. for* 1976:38-41.

Porter, H.J. and F.J. Schwartz. 1976. Seasonal variations in tissue weight and total solids of the calico scallop *Argopecten gibbus* and their relationship to changes in gonad condition. *Proceedings of the National Shellfisheries Association* 66:104-105.

## 1977

Porter, H.J., C. Johnson and A.B. McCrary. 1977. Marine Invertebrates. Pp. 233-249. In: J.E. Cooper, S.S. Robinson & J.S. Funderburg (eds.) *Endangered and threatened plants and animals of North Carolina*. NC Museum of Natural History, Raleigh.

Schwartz, F.J. and H.J. Porter, 1977. Fishes, macroinvertebrates, and their ecological interrelationships with a calico scallop bed off North Carolina. *Fishery Bulletin* 75(2): 427-446.

## 1978

Porter, H.J. 1978. Mollusks of Fort Macon, NC 1860-1887 and present. *The Bulletin of the American Malacological Union, Inc. for* 1978:63 [Abstract].

Porter, H.J., 1978. Shelling Beaches of North Carolina: A Rough Comparison. *North Carolina Shell Club Bulletin* 9:29-33.

Porter, H.J. and D.R. Calder, B.E. 1978. Phylum Rhynchocoela. pp.96-97. In: R.G. Zingmark (ed.) *An annotated checklist of the biota of the coastal zone of South Carolina*. University of South Carolina Press Columbia, S.C.

Shoemaker, A. H., H.J. Porter, B. Boothe, R.E. Petit, and L.S. Eyster. Free-living invertebrates, marine mollusks. Pp. 123-135. In: R.G. Zingmark (ed.) *An annotated checklist of the biota of the coastal zone of South Carolina*. University of South Carolina Press Columbia, S.C.

Thomas, F.B. and H.J. Porter, 1978. Water uptake in scallops: Methods of analysis and influencing factors. N.C.Div.Mar.Fish. Sp.Sci.Rpt. no. 29: 33pp.

## 1979

Fuller, S.L.H., F.W. Grimm, T.L. Laavy, H.J. Porter and A.H. Shoemaker. 1979. Status report: Freshwater and terrestrial mollusks. *Proceedings of the South Carolina Endangered species Symposium* 1:55-59.

Porter, H.J., L.A. Howie and R.B. Deriso, 1979. Morphometric character variation in *Boonea impressa* (Say) and *B. seminuda* (C.B. Adams) - Family Pyramidellidae. *The Bulletin of the American Malacological Union, Inc. for* 1979: 43-48.

## 1980

Porter, H.J., and K.J. Horn. 1980. Freshwater mussel glochidia

from Lake Waccamaw, Columbus County, North Carolina. *Bulletin of the American Malacological Union* 1980:13-17.

### 1981

Horn, K.J. and H.J. Porter, 1981. Correlations of shell shape of *Elliptio waccamawensis*, *Leptodea ochracea*, and *Lampsilis* sp. (Bivalvia, Unionidae) with environmental factors in Lake Waccamaw, Columbus County, North Carolina. *Bulletin of the American Malacological Union* 1981: 1-4.

Porter, H.J. and K.J. Horn, 1981. Freshwater mollusca of Upper Waccamaw River, North and South Carolina. *J. Elisha Mitchell Sci. Soc.* 97(4): 270. (abstract).

Porter, H.J. and G. Safrit, 1981. The marine faunal zones of North Carolina, with new molluscan records. *The Nautilus* 95(3): 127-130.

Porter, H.J. and F.J. Schwartz, 1981. Trawl collections of *Macoma constricta* and *Spisula raveneli* (Bivalvia: Tellinidae, Macrtridae) in vicinity of Cape Fear River, NC and their relationship to periods of environmental stress. *Bulletin of the American Malacological Union* 1981:15-19.

Porter, H.J. and J. Tyler, 1981. *Sea Shells common to North Carolina*. North Carolina Sea Grant College Program. Revised edition.

### 1983

Porter, H.J., 1983. Record sizes of North Carolina mollusks: List no. 5. *North Carolina Shell Club Bulletin* no.10: 34-41.

Porter, H.J. and K.J. Horn, 1983. Habitat distribution of sympatric populations of selected Lampsiline species (Bivalvia, Unionidae) in the Waccamaw drainage of eastern North and South Carolina. *American Malacological Bulletin* 1:61-66, 4 figs.

### 1984

Porter, H. J., and K. J. Horn. 1984a. Freshwater mollusca of upper Waccamaw River, North and South Carolina. (Abstract) *Journal Elisha Mitchell Scientific Society* 97:270.

Porter, H. J., and K. J. Horn. 1984b. Ecological aspects of the introduced "Chinese Clam", *Corbicula fluminea* (Muller) (Mollusca: Bivalvia: Corbiculidae) in Lake Waccamaw (Columbus County, NC). *Journal Elisha Mitchell Scientific Society* 97:271.

Porter, H.J. and K.J. Horn. 1984c. Habitat distribution of sympatric populations of selected Lampsiline species bivalvia unionoida in the Waccamaw drainage of eastern North Carolina and South Carolina USA. *American Malacological Bulletin* 1:61-66.

### 1985

Porter, H.J. 1985. Three year environmental atlas (1979-1981). University of North Carolina, Institute of Marine Sciences and adjoining Bogue Sound. University of North Carolina at Chapel Hill, Institute of marine Sciences, Morehead City, NC.86 pages.

Porter, Hugh J. 1985a. Rare and endangered fauna of Lake Waccamaw, North Carolina watershed system. Vols. 1 & 2. North Carolina Endangered Species Restoration : Job Title No. VI-7. N. C. (Final Report - period: 1978-1981). N.C. Wildlife Resources Commission, Raleigh. 358 pp.

Porter, H. J. 1985b. Rare and endangered fauna of Lake Waccamaw, of Lake Waccamaw, North Carolina watershed system: Molluscan census and ecological interrelationships. (North Carolina endangered species restoration. NC Wildlife Resources Commission, Raleigh, N.C.: 187 pp.

### 1986

Porter, H.J. 1986. Polyplacophora and Fissurellidae (Mollusca) in the Newport River-Bogue Sound region of North Carolina. *American Malacological Bulletin* 4:107-108. (abstract).

### 1989

Porter, H.J. 1989. Continental Shelf molluscan zoogeography of North and South Carolina. NOAA- National Undersea Research Program Research Report 89-2:231-278.

### 1990

Adams, W.F., J.M. Alderman, R.G. Biggins, A.G. Gerberich,

E.P. Keferl, H.J. Porter, and A.S. van Devender (eds.) 1990. A report on the conservation status of North Carolina's freshwater and terrestrial molluscan fauna. NC Wildlife Resources Commission, Raleigh, NC: 246 pp.

### 1997

Porter, H.J., 1997. Mollusks of Fort Macon, North Carolina, 1880-1887 and present. 14 pp. unpubl.MS copy, dated 9/11/97. [working tables used for a presentation to the NCSC during the late 1990's (and possibly also in HJP's 1978 AMU presentation?) HJP hoped to publish a historical comparison of the two eras but never got round to it.— DAW]

Porter, H.J. & L. Houser, 1997. *Sea Shells of North Carolina*. NC Sea Grant College Program, NCSU, Raleigh, NC: UNC-SG-97-03. 132 pp. illustr.

### 2001

Porter, H.J. and F.J. Schwartz. 2001. Mollusks associated with "Ghost fishing" trawl netting collected off Beaufort Inlet, North Carolina. *The Journal of the Elisha Mitchell Scientific Society* 117(4):274-279.

### 2006

Bishop, M. J., S.P. Powers, H.J. Porter, and C.H. Peterson. 2006. Benthic biological effects of seasonal hypoxia in a eutrophic estuary predate rapid coastal development. *Estuarine Coastal and Shelf Science* 70(3): 415-422.

### 2008

Porter, H.J. 2008. Range extension – Zebra Periwinkle in North Carolina [Family Littorinidae]. *Journal of the North Carolina Academy of Science* 124(1):26.

### 2013

Porter, H.J., Glen Safrit, and F.J. Schwartz. 2013. Rainfall—Ocean Faunal Interactions, Carteret County, North Carolina. *Journal of North Carolina Academy of Science*: Spring 2013, Vol. 129, No. 1, pp. 20-23.

## AMU Shell Club Reports

Porter, H.J. 1959. North Carolina Shell Club. p. 57 In: Annual Reports for 1959. *American Malacological Union Bulletin* no. 26.

Porter, H.J. 1960. North Carolina Shell Club. pp. 58-59 In: Annual Reports for 1960. *American Malacological Union Bulletin* no. 27.

Porter, H.J. 1961. North Carolina Shell Club. pp. 53-54 In: Annual Reports for 1961. *American Malacological Union Bulletin* no. 28.

Porter, H.J. 1962. North Carolina Shell Club. pp. 48-49 In: Annual Reports for 1962. *American Malacological Union Bulletin* no. 29.

Porter, H.J. 1963. North Carolina Shell Club. pp. 53-54 In: Annual Reports for 1962. *American Malacological Union Bulletin* no. 30.

Porter, H.J. 1964. North Carolina Shell Club. p. 80 In: Annual Reports for 1964. *American Malacological Union Bulletin* no. 31.

Porter, H.J. 1965. North Carolina Shell Club. p. 77 In: Annual Reports for 1965. *American Malacological Union Bulletin* no. 32.

Porter, H.J. 1966. North Carolina Shell Club. pp. 92-93 In: Annual Reports for 1966. *American Malacological Union Bulletin* no. 33.

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