

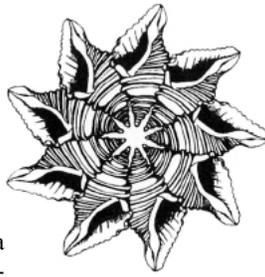
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*American*  
**CONCHOLOGIST**

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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*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 Over Seas 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.

-----  
 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.  
 -----

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. Salvadero, 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, *Eurochatella 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 alleni*. 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 alleni*. 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 "caracolles" [*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 "caracolles, caracolles" 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.

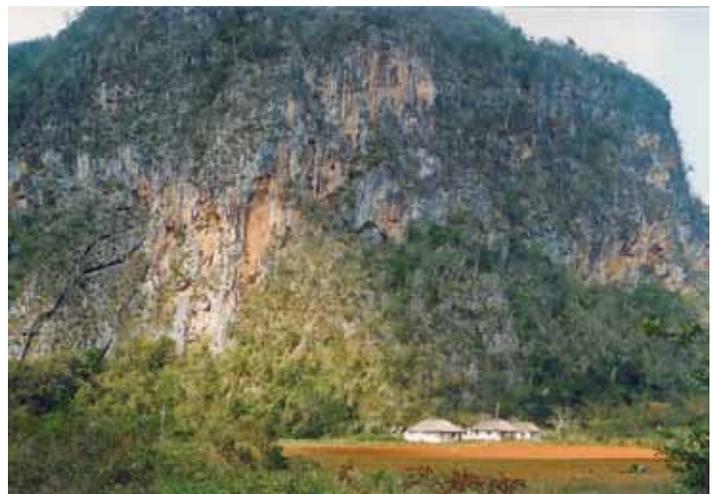
The next important point to understand is the almost complete isolation of each mogote. From the level floor of a valley



**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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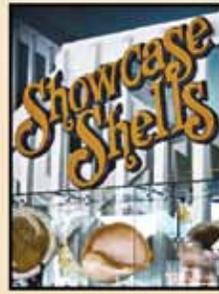
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# The noble volute (*Cymbiola nobilis*) of Vietnam

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

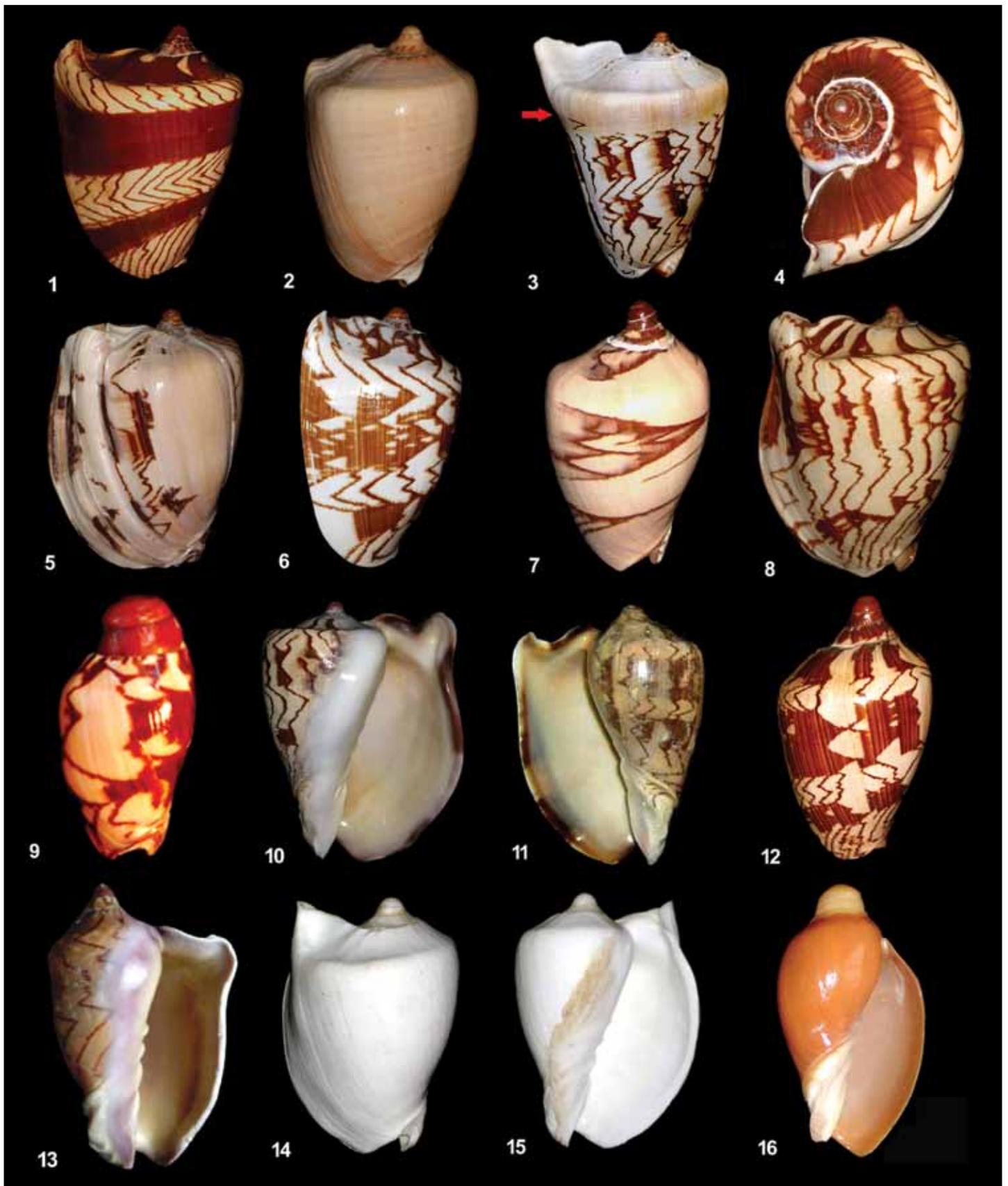
*Cymbiola nobilis* is a useful volute as its foot is edible (a delicious seafood) and it has many uses in shellcraft. Craftsmen can polish it and send it to souvenir shops for tourists. It is one of the best-sellers due to the large size and smooth shining surface ornamented with beautiful patterns. 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.

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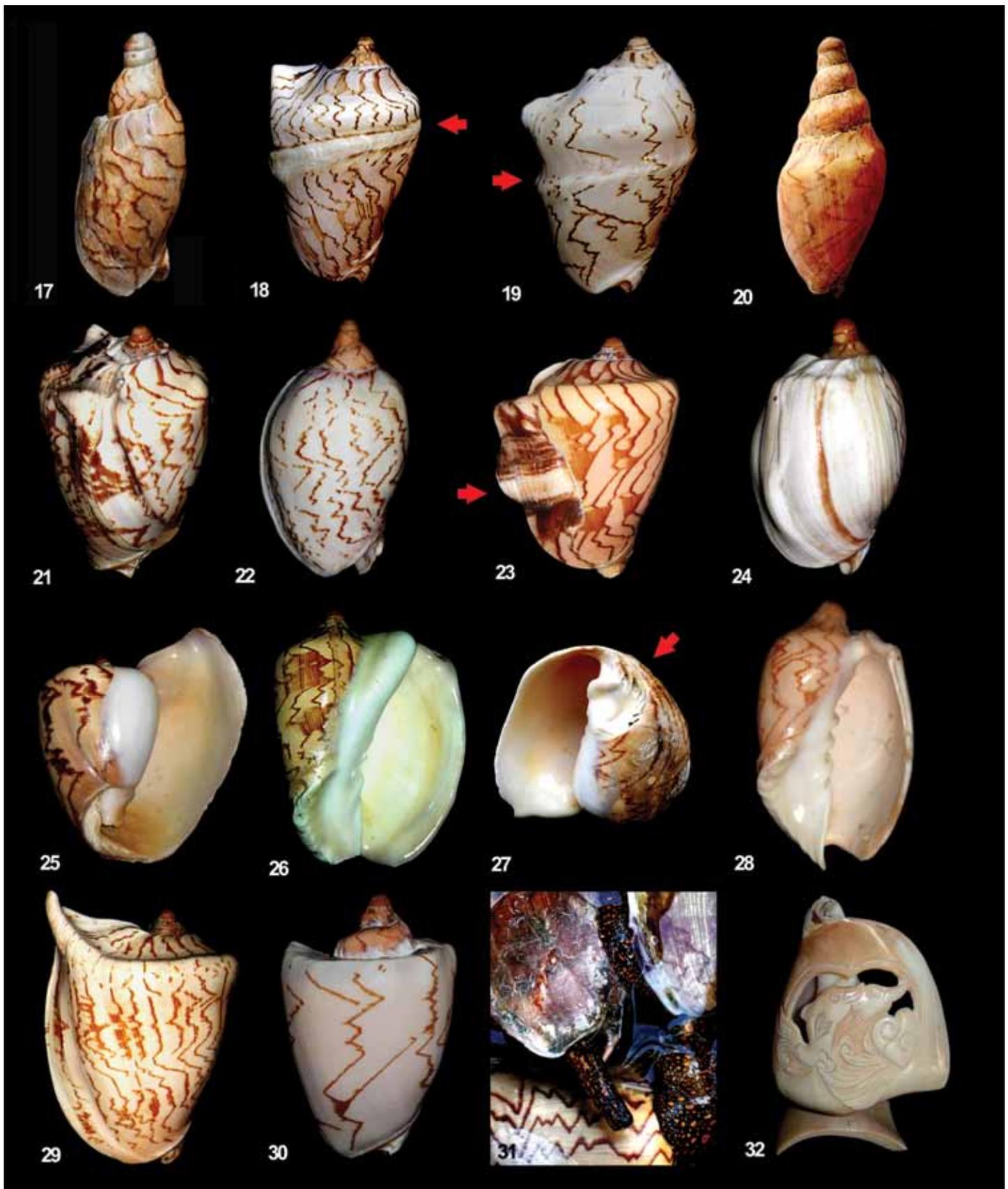
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1-16: *Cymbiola nobilis* - 1: 184mm, 2: 118mm, 3: 163mm, 4: 160mm, 5: 169mm, 6: 154mm, 7: 104mm, 8: 198mm, 9: 25mm, 10: 199mm, 11: 113mm, 12: 129mm, 13: 113mm, 14: 140mm, 15: 140mm, 16: 62mm.



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.

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**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/>.

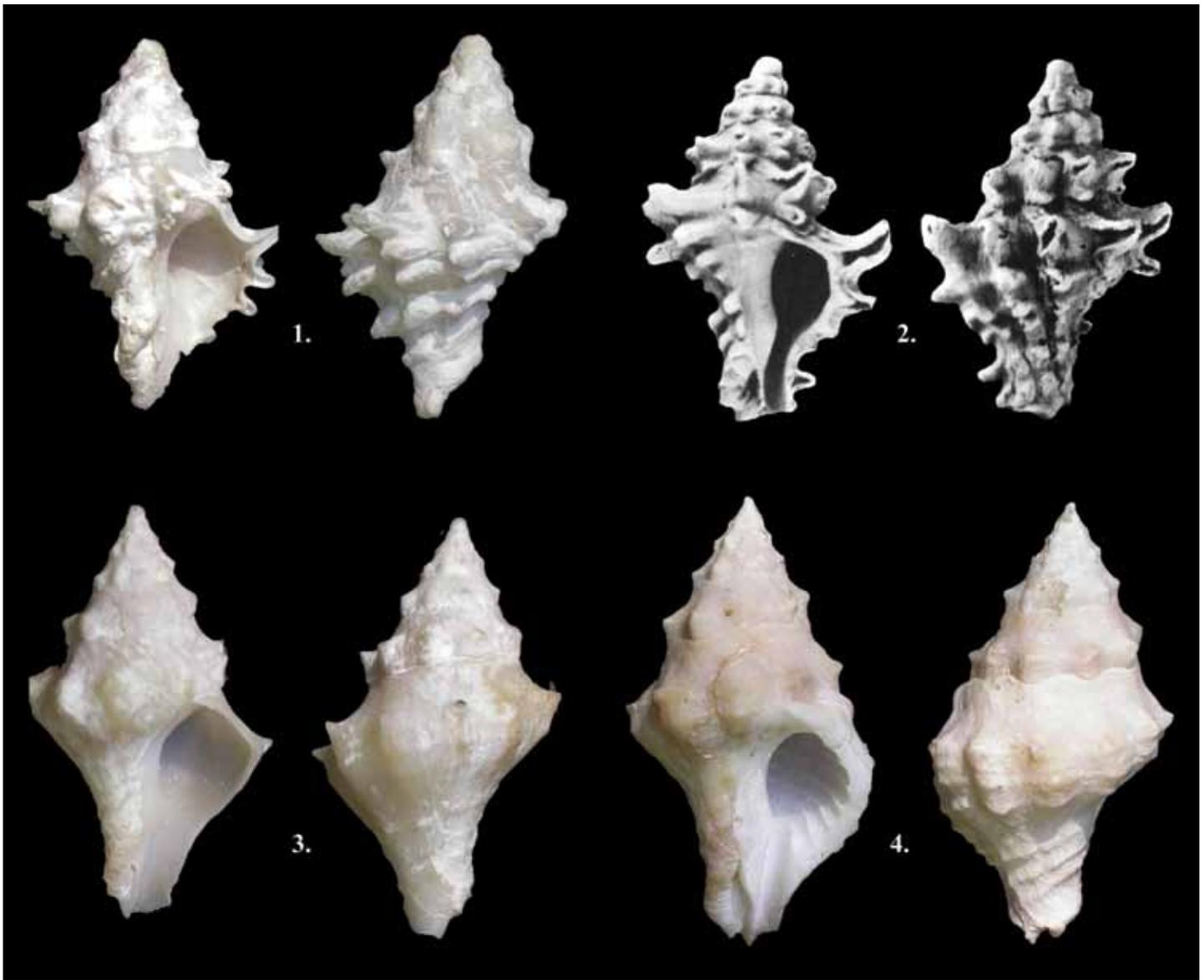
**Vokes, Emily H. 1992.** Cenozoic Muricidae of the western Atlantic. Part IX -- *Pterynotus*, *Poirieria*, *Aspella*, *Dermomurex*, *Acantholabia*, and *Attiliosa*; additions and corrections: *Tulane Stud. Geol. Paleont.*, v. 25, nos. 1-3, p. 1-108, pls. 1-20, 10 text figs., 2 tables.

**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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\* 115 Oak Crest Dr., Lafayette LA 70503

\*\* 165 S. Sixth St., Ponchatoula LA 70454

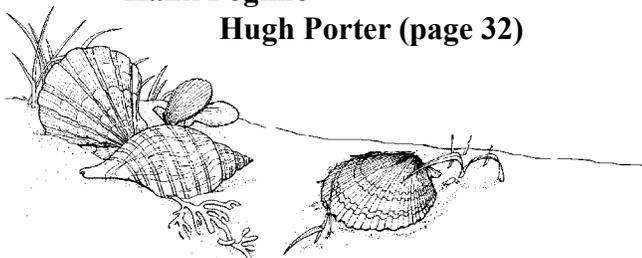


1-2. *Acanthotrophon* sp. 1. 24°25.043'N, 83°41.011'W to 24°23.463'N, 83°38.820'W. Dredged in 762-753 m; 18.8 mm by 11.8 mm. 2. Locality unknown; 14.0 mm by 10.0 mm.

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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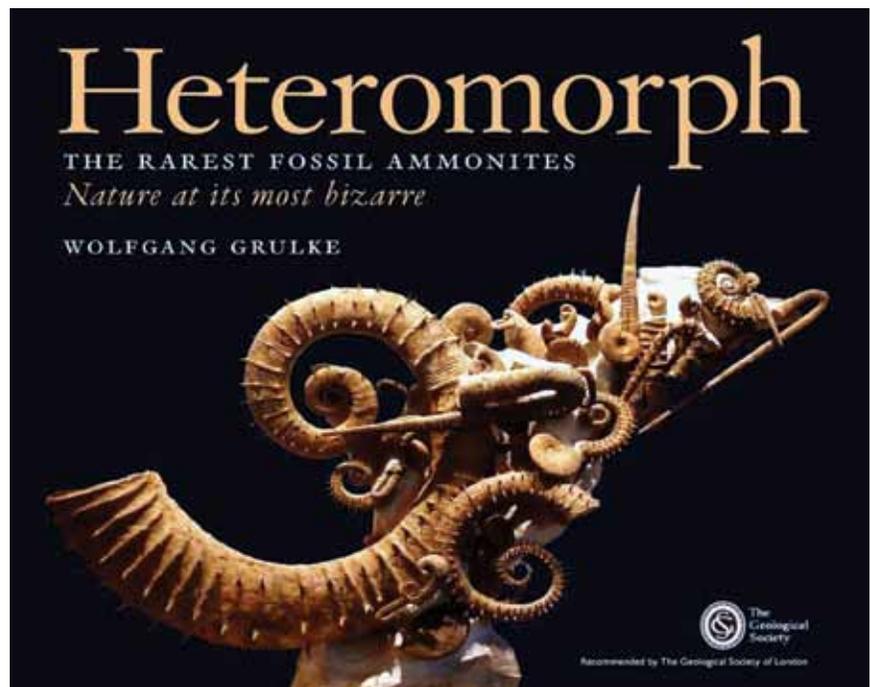
**Review of: *Heteromorph: The Rarest Fossil Ammonites, Nature at its Most Bizarre*, by Wolfgang Grulke, At One Communications, 2014, 224 pp., hardcover, ISBN-10: 0992974003, ISBN-13: 978-0992974008 (about \$50.00)**

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 *Pravitoceras 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



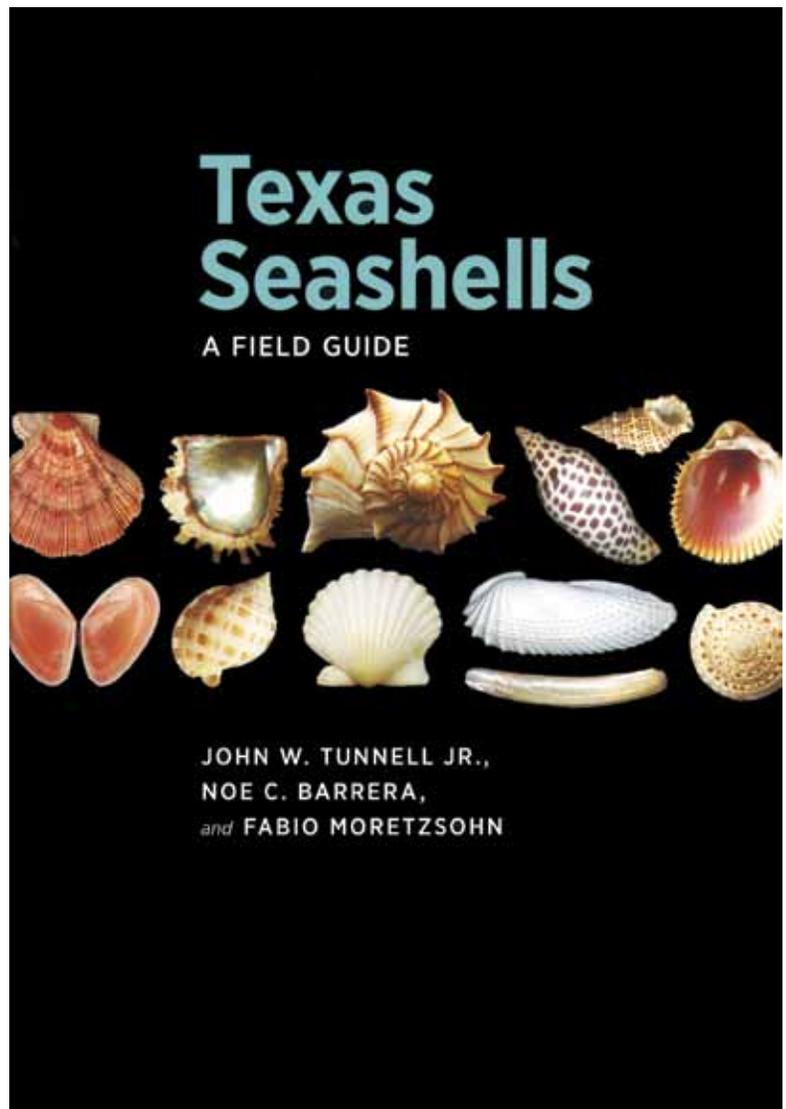
The Recent terrestrial microshell mentioned in the book and Jose Leal's review is *Opisthostoma vermiculum* Clements & Vermeulen, 2008. It is only slightly more than 1mm in length and is only known from the type locality: Gunung Rapat, Perak, Malaysia. Apparently no living snail has yet been observed. 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*

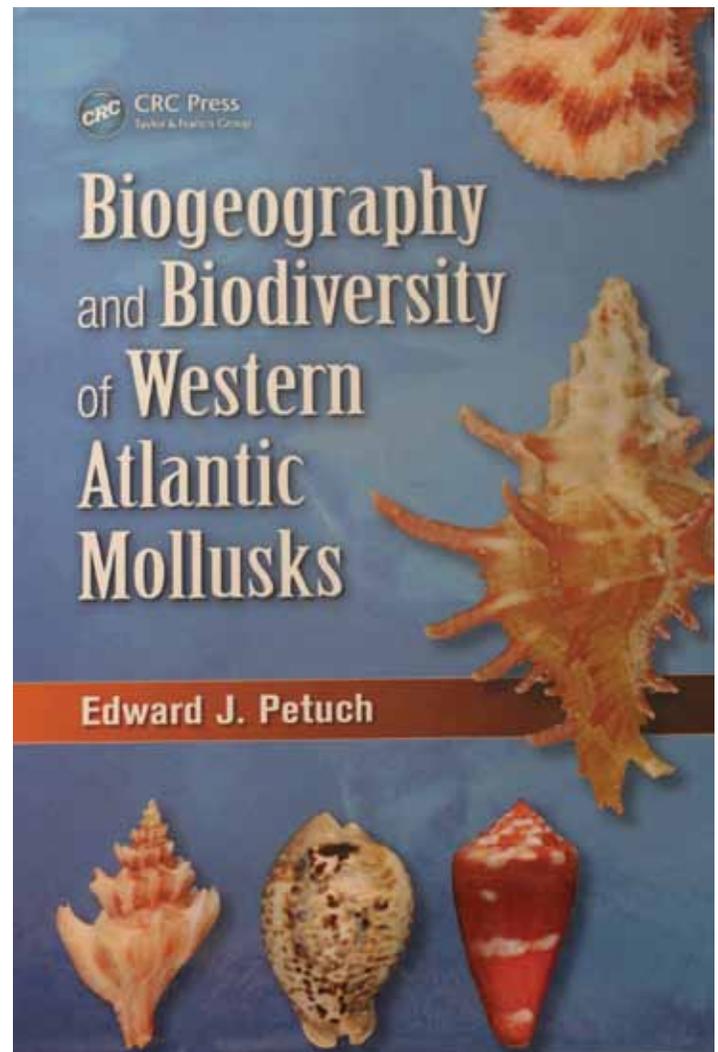
by Edward J. Petuch

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 tamikoa* (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.thesanibelcaptivashellclub.com](http://www.thesanibelcaptivashellclub.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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Tel. Voice & Fax (239) 481-6704

E-mail: donaldan@aol.com

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-

\* 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.

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