SHELL-O-GRAM

Published By The Jacksonville Shell Club, Inc.

May-June, 1999 **Volume 40(3)**

May Meeting

The May 26th meeting of the Jacksonville Shell Club will be held at the Southeast Branch Library at 7:00 PM.

The month's educational slide program will be presented by Charlotte Lloyd chronicling her recent collecting trip to Eleuthera Island in the Bahamas.

The Shell-Of-The Month will be given by Harry Lee on *Prunum roosevelti* Bartsch & Rehder, 1939 – Roosevelt's Marginalla – an attractive species found in the Bahamas.

As is customary, refreshments will be served and guests are cordially invited to attend.

June Meeting

The June 23rd meeting of the Jacksonville Shell Club will be held at the usual time and place.

The month's educational slide program will be presented by Charlotte Lloyd and Bill Frank on the club's May 15th field trip to Cumberland Island, Georgia.

The Shell-Of-The-Month will be given by Rob Jewell on a species collected by the Jewell family during the Cumberland Island trip.

Refreshments will be served. Plan now to attend and bring a friend.

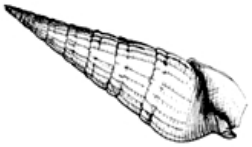
A Day At The Beach

On Thursday April 15th your editor, accompanied by fellow shell enthusiast Jim Miller from Tallahassee, traveled to Cumberland Island, Georgia to take advantage of the afternoon's nearly minus one-foot tide. After meeting at the ranger station in St. Marys, we boarded the Cumberland Queen for a crowded but enjoyable 45-minute ferry ride to the island.

After disembarking at the Sea Camp Dock, we immediately spotted club member and island resident Carol Ruckdeschel sitting on the porch at the ranger station awaiting the ferry's arrival. I had written Carol a week previous advising her of our trip. But as it turned out, Carol was at the dock to pick up her once a week mail delivery which obviously included the aforementioned letter. Much to our chagrin, Carol advised that the Cumberland beaches were virtually devoid of shells - a situation vastly different from that encountered during previous visits to the island. Due to other commitments, Carol was unable to accompany us on our sojourn to the beach.

Following a brisk ten-minute walk to the beach, we quickly confirmed Carol's diagnosis – the beach was in fact bare and the wrack line contained nothing. However, a "stiff" offshore wind had produced an early low tide so to the water's edge we went and the search was on.

Jim specifically had wanted to visit the island to collect *Busycon carica eliceans* (Montfort, 1810), and he was not to be disappointed. We had walked less than 20 feet before the first buried specimen was found with only its siphon showing above the sand. We decided to head northward and walked several miles before retracing our steps back to Sea Camp for lunch and desperately in need of liquid refreshment.



During this first trip, we dug-up and examined hundreds of *Busycon* specimens – culling and keeping only the best. Other species seen living or collected alive included *Neverita duplicata* (Say, 1822) (a modest number), *Oliva sayana* Ravenel, 1834 (one small one), *Terebra dislocata* (Say, 1822) (millions), *Sinum perspectivum* (Say, 1831) (a modest number), *Tellina alternata* Say, 1822 (a few), and sand dollars (hundreds).

Following lunch while the tide was ebbing still further, it was time to head toward the south end of the island. The same species in similar or slightly greater numbers were found on the several miles of beach which we covered before our return to Sea Camp to do a final cull of the days catch. **(Continued on page 5.)**

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The Shell-O-Gram is issued bimonthly and mailed to all regular members. Annual membership dues are $12.50 individual and $15.00 family. Lifetime membership is available.

Send dues to: Teresa St. John, Treasurer
2605 Emily Court
Jacksonville, FL 32216-5101

The club meets the fourth Wednesday of each month, 7:00 PM at the Southeast Branch Library, 10599 Deerwood Park Boulevard, Jacksonville Florida. Please address any correspondence to the club's address shown above.

Closing date for article submission is two weeks prior to the first of each month of publication. Articles may be republished provided full credit is given the author and this newsletter and one copy of the complete publication in which the article appears is mailed to Editor at the above address.

In Appreciation

The club would like to express its appreciation to Nancy Gilfillan of Germantown, Maryland for her support of the Jacksonville Shell Club through the recent upgrade of her membership to a "Life Member."

Thanks Nancy!

Membership List

Welcome New/Rejoined Members

Joseph & Harriet Sasser
1020 Florida Blvd.
Neptune Beach, FL 32266-3614
Phone: 241-9279

Karen Vander Ven
6670 Kinsman Rd.
Pittsburgh, PA 15217

Marjorie L. Jennings
3630 Galicia Rd. #219
Jacksonville, FL 32217
Phone: 739-2741

Additions

Mr. William A. Conklin
1571 Marshall St. N.E.
Orangeburg, SC 29118-2416
Phone: (803) 534-8980

President's Message

I want to welcome back former members Joe and Harriett Sasser and Marjorie Jennings. We are so glad you have returned to the club to join in the fun activities we have scheduled for this year.

We have 12 signed-up and paid for the Cumberland Island field trip on May 15th. Anyone else interested in participating should call the ranger station in St. Marys, GA direct at (912) 882-4335 to inquire about reservations. Also remember that June is Peanut Island field trip month. We have always had a great time and shelling success at that location and expect the same for this year. It is a wading, rock turning and snorkeling (if desired) trip. The dates are June 12th through 13th and it is not too early to make your room reservations. Call the Tropical Isle Resort on Singer Island at (561) 842-2447. They have furnished studios and one and two bedroom apartments. Another lodging possibility is the Sailfish Marina and Resort, also on Singer Island, directly across from Peanut Island. Their number is (561) 844-6305. We will discuss this trip at the May club meeting. Please be present if you plan to go to Peanut Island.

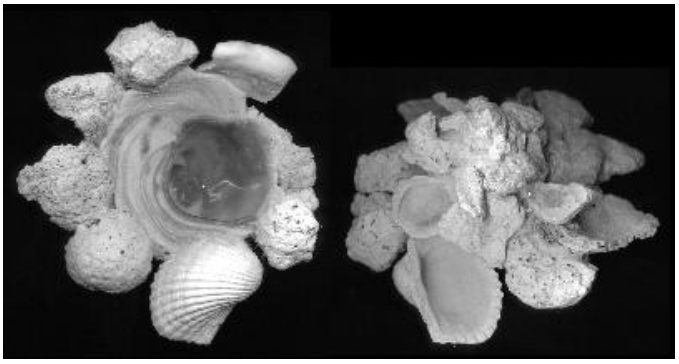
Please contact our Shell Show Chairman John Fatu (221-4230) to volunteer to help at the shell show. I know that he has a job for everyone.

See you at the meeting if not at Cumberland Island.

Gone But Not Forgotten

Sally Diana Kaicher passed away on March 20th at the age of 77 following a short illness. Mrs. Kaicher, who had an interesting and varied career as a scientific illustrator and artist, is probably best known as the author of "Indo-Pacific Sea Shells" and her "Card Catalog of Worldwide Shells" which she privately published between 1973-1992. The latter was a monumental work that totaled some 6214 numbered cards, issued in 60 lots, and illustrated many primary museum types.

The Atlantic Carrier Shell
Xenophora conchyliophora (Born, 1780)



Middle Sambo Reef, Florida Keys (101 mm.)

Xenophoridae are perhaps the first shell collectors. The fossil record from as far back as the Devonian Period (350-400 million years ago) has hints of *Xenophora* like gastropods but the first generally acknowledged specimens come from the early Cretaceous Period (65-140 million years ago). The name *Xenophora* is derived from the Greek words *xeno* meaning "strangers" and *phora* meaning "bearer of."

The range of *Xenophora conchyliophora* extends from North Carolina to the West Indies, Bermuda and Brazil. It is typically found at depths of from 6-30 feet with specimens also occasionally collected at depths of 50 feet or more.

The species is usually found on rough bottoms, is covered with the materials which are at hand, and its general appearance has been described as a "small heap of trash." In addition to pieces of broken shell, the majority of the attachments are coral and other calcareous material.

Affixing an attachment to the shell isn't simply a matter of placing it against the shell and cementing it into place. The carrier shell turns the new material over, twisting it until it is in the exact position with a downward slope in relation to the shell. It then uses it's head and proboscis placed below the material to raise it into place and its foot to raise and lower its shell at the same time to jockey it into the correct position. The material is clasped between the base of the antennae and the proboscis. Up to an hour and a half is sometimes spent attaining the exact position. Sand is then raked from beneath the rubble with the proboscis for more slope and to leave more space beneath the shell.

The mollusk then carefully cleans the area that comes in contact with the mantle to ensure a tight joint. Gaps are checked and filled by sticking pieces of sand and tiny pieces of debris to the mantle edge by placing them there one piece at a time with the proboscis. It sometimes uses its head and proboscis to gently rock to-and-fro to check the security of the attachment. The mollusk then remains stationary to assure a tight bond. With larger attachments this can require a period of over ten hours.

Upon occasion live shells are cemented into place. In one case, two live *Turritella* were found attached. Since they are filter feeders they were able to ride along and graze with the *Xenophora.*

There are several logical explanations as to why members of the Xenophoridae attach the various materials to their shells – all relating to survival:

Tactile - Where animals find their prey by touch, the attachments might confuse them.

Armor - In some cases, as with *Xenophora conchyliophora*, the attachments would be of some use against drilling gastropods but as for fish that routinely crush far more durable shells, this would be no value.

Functional Support - Lightweight items affixed to the bottom edge may keep them from sinking and suffocating in the soft bottom. It provides a snowshoe effect.

Stability - Shells with heavy attachments tend to be top heavy. By strategically placing their collection of attachments they are provided with a broader base making them less likely to tip over exposing their vulnerable underside to predators.

The animal itself is a deep maroon red, strongly resembling the Strombs except that the operculum is not sickle shaped and is wider. As with the Strombs, the foot is used for jumping and not crawling. This jumping or leaping motion allows the shell to move over the debris covered ocean floor where crawling would be hampered. The foot is said to be able to extend to a height equal to that of the shell and lift up to three times the weight of the shell using its trunk. It moves by trusting forward about half its diameter and then falling forward using its operculum to some extent.

As for diet, *Xenophora conchyliophora* prefers microscopic algae. When it feeds on the fine algae, which it rasps off in an intermittent patchwork pattern, it leaves no noticeable trail for a predator to follow. This method of gathering food is possibly a means of limiting any olfactory evidence of the mollusks presence. If there is plenty of food it never reaches beyond the limit of its shell and its foot never comes in contact with the substrate. Only after it has depleted the food in one area does it place its foot on the substrate in order to raise up and move to a new area. Once it reaches the new area, it then retracts its foot back into the shell and begins feeding.

If it finds itself upside down on a sandy bottom, *Xenophora conchyliophora* reaches around the edge of its shell, forces its propodium into the sand and pulls to right itself. On smoother surfaces, it reaches with its entire foot over the edge of the shell and slides to a place

where it can locate a crack to force its propodium into before tugging.

One of the most interesting aspects of the species is its habit of burying its feces. The propodium and proboscis are forced into the bottom. It then forces them apart leaving a hollow in the sand. Brown fecal pellets, which are extremely small like termite droppings, flow into the hollow that is then covered using the proboscis. Only after checking to make certain that its droppings are completely covered does it move on or continue feeding.

Other Xenophoridae species present in the Western Atlantic include *Xenophora caribaea* (Petit, 1856) and *Xenophora longleyi* (Bartsch, 1931*)* – both in the subgenus *Onustus*.

*Based on articles from the High Desert Shell Club Newsletter, Vol. 1, Issue 1, Jan., 1999 and The Beaui, Mar., 1999 - newsletter of the Sarasota Shell Club.

Club News

By Billie Brown

Hi everybody! The year is moving right along. It will soon be shell show time. Have you volunteered? Remember to pick up shell-related things for door prizes and do some craft items for the store. Go through your shells, and donate. Plan to be available to help where you are needed. It takes everyone. Arts and crafts and scientific exhibits should be well beyond the planning stage and under construction. If not – get busy!

Had a nice visit (by telephone) with Hazel Walker. Hazel fell and broke/fractured her pelvis. She is mending nicely and is once again caring for herself and Allan. Family and friends pitched in to help in various ways and they were much appreciated.

Charlotte Lloyd got an unexpected treat. Peggy Williams (a shelling friend and shelling tour leader from Sarasota) was to guide a group of shellers to Eleuthera but unexpectedly had a health problem that came up at the last minute. She would have had to cancel the trip unless - you guessed it – Charlotte could fill in. After all, somebody had to do it! Have heard it was a great trip. Our best wishes to Peggy. The next trip is to Fiji. Don't wish Peggy any hard luck, but I bet Charlotte could handle that one too!

Speaking of filling in, Gertrude was preparing to go to Sanibel to exhibit one of her lovely mirrors and visit their show when she received a call from Anne Joffee asking if she would fill in for an arts and crafts judge who was ill. Gertrude agreed, and it was a monumental task – nine hours to judge – but our talented Gertrude came through like a champ.

On the local TV news a few weeks ago, the station was promoting the organ donor program. The studio had a bank of telephones manned by volunteer recipients of the program to give information and answer questions. One of them was our own Bill Lyerly. As you may or may not know, Bill has had a heart transplant. What a wonderful thing to be able to help another human being. You only have to talk with Bill, hear him laugh and see him smile to realize the importance of the donor program. Bill looked great on television!

I know everybody is busier than ever these days. However, we as a club are missing a lot of opportunities to bring the Jacksonville Shell Club (JSC) to the attention of our community. When was the last time we were invited to a school or festival? The University of North Florida invited us to their Reggae Festival for Earth Day. We were not invited to participate in the festival at the landing - we've been there in other years. In the fall is a seafood festival that is on the Southbank River Walk. We previously have participated but did not receive an invitation last year. Nearly every other weekend at the beaches is an opportunity for us to be involved in and make the public aware of the JSC. We often complain that we get hardly any publicity from the Florida Times-Union for our club or shell show. Maybe we need to be more visible during the year. All sorts of clubs, societies and for-profit organizations receive wonderful promotions from the paper. But not the JSC. Wonder why? Think about it.

In March there was an article reporting a record die-off of coral (one of my personal favorites). Last year was reportedly the hottest in six centuries. The warm water has affected coral reefs from the Caribbean to the Eastern Pacific. Corals bleach or loose pigment when stressed and are the foundation of a productive and diverse ecosystem that provides food and shelter for at least one million species of living organisms. *El Nino* is partially to blame. While we can't do anything about the elements, our living coral reefs need to be protected from humans before it is too late.

Don't see anyone on my birthday list in May but "Happy Birthday" to Gertrude Moller on June 15th and me on June 10th. If I don't know your "special" day, send me a postcard or call. Your shell club friends might like to wish you well. Best, Billie (241-3755).

Skinny-dippers Kill Hundreds Of Rare Snails

Five young hotel workers from Lake Louise were each fined $1,000 for causing the death of hundreds of rare snails in Banff, Alberta. On February 1st they ignored a warning sign and climbed a two meter high fence to take a late night skinny-dip in Banff's historic Cave and Basin hot springs pool. Two others who were

with them but did not go in the water were each fined $100 for trespassing.

The Cave and Basin is home to the Banff Springs Snail, *Physella johnsoni* Clench, 1926, which is listed as "threatened" by the Committee on the Status of Endangered Wildlife in Canada. It is found in only five hot pools in the national park, including the Cave and Basin, and it has disappeared from four other park locations since the 1920's.

Dwayne Lepitzki, an independent national park biologist who has studied the snail for three years, surveyed the Cave and Basin several hours after the swimming intrusion and found that the snail numbers were down to 5,984 from 6,580 he counted on January 20th. A sign posted by Parks Canada at the Cave and Basin says human activity is the "biggest threat" to the snail and that illegal swimming has been responsible for the destruction of mats of algae on which the snails lay their eggs.

The judge who heard the charges against the intruders suggested "more efforts ought to be made" by Parks Canada to ensure the snails' continued protection, including higher fencing around the hot pool. The trespassers said that they were "very, very sorry about the snails," that they "didn't know about the existence of the threatened snail" and suggested "maybe they can put up a bigger sign."

*From the Dredgings, Vol. 39, No. 2, March-April, 1999, newsletter of the Pacific Northwest Shell Club - originally published in the Vancouver Sun, Feb. 19, 1999.

In The Yard

***Bradybaena similaris* (Férussac, 1821)**

As has been reported many times in the past in this forum by Assistant Editor Harry Lee, one never knows what terrestrial species may turn up in one's own yard if one is observant and takes the time to do a little investigation.

Recently while sitting in my own backyard enjoying the unseasonably warm weather and a beautiful sunset, a snail caught my eye as it was devouring an ornamental plant. Although being quite "snail conscious" and having lived in the same home for eight years, the species was unlike anything previously observed.

I collected the specimen, rushed it inside, and did a three-view scan with my flatbed scanner. Alas, despite the little fellow being quite active, I was unable to obtain a scan of the actual animal despite several tries - an event which might have been a first in regards to scanning shells with a flatbed scanner. The resulting image was sent via electronic mail to Harry who immediately identified the species in question as *Bradybaena similaris* (Férussac, 1821) - commonly known as the Asian Trampsnail and considered by many as an agricultral pest. Since my collection of the first specimen, two additional living specimens have also been found.

Thus far, 73 species of terrestrial mollusks have been recorded from Northeast Florida (Duval, Clay, Nassau, and St. Johns Counties) - six of which (including the Asian Trampsnail) are exotic imports. Club records indicate that this species was first recorded in Duval County in 1985 when a specimen was found on a head of lettuce at a local Winn-Dixie Grocery Store. It is theorized that the lettuce came from south Florida. Excluding my recent observation, the species had also been recorded from two locations in west Jacksonville, on citrus trees in Neptune Beach, and it would now seem likely that the species is widespread throughout Duval County - if not all of northeast Florida and beyond.

The species is thought to have originated in south China and spread throughout the world, initially by hitchhiking on cargo transported by ship from Asia. The species has been recorded from many locations ranging from off the east coast of Africa, Australia, South America, and the southern United States - not to mention such diverse locations as Bermuda, Barbados, and the Bahamas. The species has also been collected in Brunswick, Georgia by club member Carol Ruckdeschel.

Who knows - you too may find something in your own backyard which is a first - a species which has never before been recorded from northeast Florida - or unfortunately - a species which shouldn't be there at all.

A Day At The Beach – Continued from page 1.

We had also wanted to collect specimens of two other *Busycon* species found on the island - *Busycon sinistrum* Hollister, 1958 and *Busycotypus canaliculatus* (Linnaeus, 1758). However, despite the fact that every buried *Busycon* seen was exhumed and examined, not a single specimen of these two taxa was found.

Interestingly, the lack of fresh-dead material in the wrack line may have prompted the islands sea birds (presumably gulls) to go on the offensive to survive. Several *Busycon* which had not buried deeply enough in the sand or at an angle near perpendicular to the beach

were found *in situ* with the mollusk totally consumed and the operculum lying nearby. A similar fate was noted for one specimen of *Tellina alternata*. It should be noted that the gulls were more than happy to share our lunch – whether ham or peanut butter sandwiches.

By now we were both tired, the wind had increased to near gale force sandblasting us on the beach, and it was time to head back to the Sea Camp Dock to await the 4:45 PM ferry back to St. Marys. Our first view of the whitecaps in Cumberland Sound from the Sea Camp Dock only confirmed the obvious – it was going to be an interesting ride back to St. Marys.

The Cumberland Queen arrived from St. Marys on schedule and off we went – once again with a near full load of passengers. Because of the Queen's displacement hull and sea-state, we took a lot of spray over the starboard side that caused everyone to seek shelter on the port side. This action caused the ferry to list slight to port causing heavy spray there as well. To make a long story short – we all got wet from the spray along with our gear as the spray ran across the deck and exited through the scuppers.

Even though we didn't take all the species we had been seeking, and we sustained a somewhat wet conclusion, it was a very enjoyable trip to this pristine island off southeast Georgia – truly a special place whether you collect shells or not.

Spotlight - Our Lady On Cumberland Carol Ruckdeschel

One of the most prolific contributors of material for our newsletter is our own corresponding club member Carol Ruckdeschel – biologist and long-time resident of Cumberland Island, Georgia. Carol, in the course of her duties, patrols the expansive beaches of the island on a four-wheel all-terrain vehicle and provides the club with periodic shelling reports and tips. Carol also hosted the club's last organized field trip to the island in May of 1996 (see Shell-O-Gram Vol. 37:4, July-August, 1996) and provided the late Betty Hunter with a once in a lifetime ride on the aforementioned four-wheel beast. It was one of those special events that you had to see to really appreciate. Carol also serves as curator of the Cumberland Island Museum and produces its newsletter.

An article published in the Florida Times-Union* on March 28, 1999 is quoted below which provides an insight into the life of this unique and interesting member of our club:

CUMBERLAND ISLAND, Ga. - Hidden at the north end of Cumberland Island, amid scrub oak trees draped with Spanish moss and gnarled pine trees bowed to the west by prevailing winds, lies a small group of seemingly insignificant wooden buildings.

The first indication that there may be something out of the ordinary on the property, less than half the size of a football field, is the dolphin skeletons hanging on the porches of two small wooden frame cabins with tin roofs.

The most significant structure, however, a culmination of more than 25 years of research, can only be identified by a small sign tacked near the door, which identifies it as the Cumberland Island Museum.

It's not to be mistaken for a museum currently under construction in St. Marys by the National Park Service, emphasizes Carol Ruckdeschel and her research partner, C. Robert Shoop, a retired professor from the University of Rhode Island who specializes in amphibians and reptiles. The St. Marys museum will feature artifacts from Cumberland Island and will be open to the public.

But the Cumberland Island Museum is a place few people outside academic circles know about and even fewer people have visited, Ruckdeschel said.

But among those who study sea turtles, Ruckdeschel and Shoop have reached "legend status" on the Atlantic Coast for their lifelong commitment to turtles, said Mark Dodd, turtle coordinator for the Georgia Department of Natural Resources.

"The data they collect for us is invaluable," Dodd said. Ruckdeschel attended Georgia State University and Shoop earned his doctoral degree in zoology and botany at Tulane University.

The name identifying the building as a museum may be a misnomer to the average person - it's probably more of storage house for museum-worthy items such as ones the couple has donated to the Smithsonian Institution and universities in California, Georgia and Rhode Island.

Inside the temperature-and humidity-controlled building, built by the couple, lie stacks of sea turtle shells. Shoop describes the museum as the "ideal research facility" because there are no distractions working in such an isolated environment.

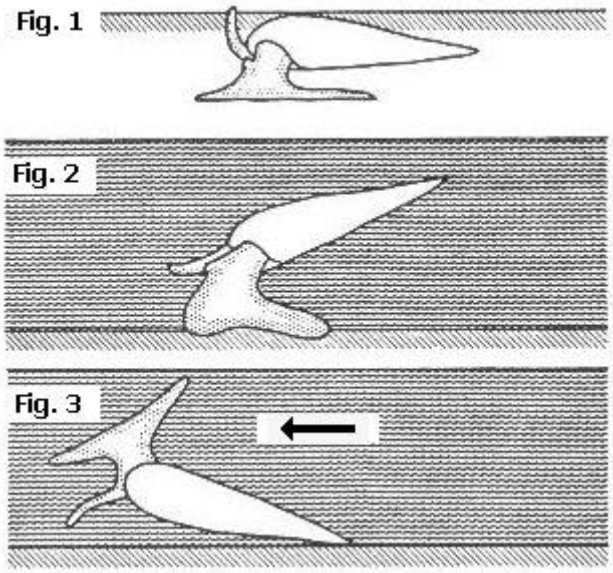
*Entitled "Not-so-typical museum can be found on Cumberland" by Gordon Jackson - republished with permission of the Times-Union.

Surf's Up!

During the spring and summer months the beaches here in northeast Florida will be alive with surfers - but not only of the human persuasion. Those other surfers are *Hastula salleana* (Deshayes, 1859) - a small (less than 50 mm.), slender, high-spired gastropod of the family Terebridae (commonly known as Augers). The species, which begins showing up in the surf here in northeast Florida as early as April, can be found from

Georgia through the Gulf of Mexico to Nicaragua. Locally, the species is particularly popular with children who like nothing better than to effect a capture as these very active mollusks literally "surf" the breakers.

Like other sand-burrowing snails, *H. salleana* has a large foot with which it ploughs through the sand. The foot of *H. salleana* is also used as a "sail" to enable the animal to move rapidly into deeper water when it is about to be stranded above the swash zone by a falling tide.



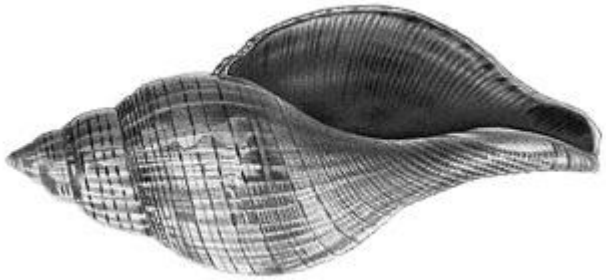
As the water recedes during a falling tide, the swash zone moves seaward and the interval of time between successive inundations of a previous swash zone becomes progressively longer. Specimens of *H. salleana* inhabiting an area being left behind by receding water remain below the sand with only the tip of the siphon exposed (Fig. 1). Then, when a wave with more than normal force pushes swash water over the area, each snail moves rapidly to the surface, raises the apex of the shell in a jerking movement (Fig 2.) and, forcefully throwing the apex to either the right or left in a twisting motion, falls on its dorsal side with the foot facing upward; the foot, held at about a 45 degree angle to the longitudinal axis of the shell, now acts as a sail, and carries the snail seaward with the outgoing swash (Fig. 3). With the foot in this position, *H. salleana* can be carried a considerable distance by slowly moving current

No one knows for sure as to what motivates *H. salleana* to leave the sand when the changing tide leaves it behind. One hypothesis is that the species, preferring a substrate frequently wetted, climbs out of the sand into the swash water whenever the intervals between inundations become too long. Since *H. salleana* have been observed mating in the surf, another possibility is that this behavior may related to location of partners.

*Based on the report "Observations on the behavior of the littoral gastropod *Terebra salleana,*" published in Ecology, Vol. 42, No.1, Jan., 1961.

Tiptoe Through the Tulips

Of the seven recognized species/subspecies of Tulips (Genus *Fasciolaria* Lamarck, 1799) found in Florida, two can be found in northeast Florida nearshore waters. These are the True Tulip (*Fasciolaria tulipa* (Linnaeus, 1758)) and the Banded Tulip (*Fasciolaria lilium hunteria* (G. Perry, 1811)). By far, the latter is the more common of the two locally - although neither can be considered particularly common.



***Fasciolaria tulipa* - True Tulip**

Both have quite extensive ranges with the True Tulip found from North Carolina to Brazil including the West Indies while the latter taxon is found from Cape Hatteras, North Carolina to Mobile Bay, Alabama including all of Florida. The True Tulip is the larger of the two, generally growing to a length of 15 cm. (6 inches) while the Banded Tulip is usually much smaller - only attaining a length of about 9 cm. (3.5 inches). Upon occasion, much larger specimens of the True Tulip (275 mm. - 11 inches), have been found - specifically offshore Jacksonville, in the Florida Keys, and in the Bahamas.

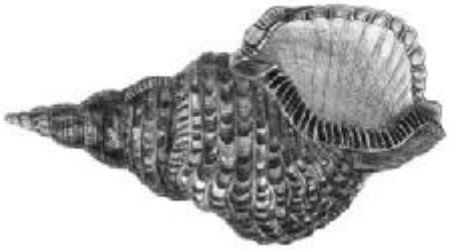
As with all *Fasciolaria*, the species found here in northeast Florida are voracious carnivores/cannibals and can usually be found in areas which support their dietary needs (oyster bars, St. Johns River Jetty, etc.). However, it is not unprecedented to find a True Tulip in the surf, where a source of nourishment is indeed in doubt, or to see a Banded Tulip on a sterile sand flat such as at Huguenot Memorial Park without another mollusk in sight.

Based upon over a decade of observations, I think that it's safe to say that Tulips are nocturnal - staying buried during the day and coming out at night to seek their prey. During three years in Key West, only an occasional True Tulip could be found during the daytime hours (buried in the substrate with only a swatch of the pattern showing) while at night they were virtually everywhere - alert and searching for their next meal.

True Tulips can be found in a variety of colors - ranging from a pattern which is nearly all black to a beautiful orange-red color - a form not uncommonly found in the lower Florida Keys. The Banded Tulip is not so brightly colored with a background ranging from ivory to bluish gray, with mauve axial flames, and having violet-brown spiral bands. There is a population of Banded Tulips found at the Matanzas Inlet area south of St. Augustine in which the spiral bands are orange to red instead of the usual violet-brown. This color variation is very rare to absent in other Florida populations.

Those collecting a live tulip for the first time could well be in for a surprise. When handled, it is not uncommon for the mollusk to extend its muscular foot and violently thrash around in an attempt to escape or right itself - a behavior it shares with the Florida Fighting Conch (*Strombus alatus* Gmelin, 1791).

The next time you see a dime-sized swatch of tulip pattern or a colorful 1/4 inch siphon protruding from the substrate near a likely food source - look closer - you have probably found a specimen sleeping-off its previous nights meal.



- Shell Show 1999 -

Ramada Inn Resort in Jacksonville Beach, Florida
Saturday, July 31st and Sunday, August 1st
Open to the public 9:00 AM to 6:00 PM on Saturday and 10:00 AM to 5:00 PM on Sunday
Send in your entry forms today!

Jacksonville Shell Club
1865 Debutante Dr.
Jacksonville, FL 32246-8645