



JANUS

The Newsletter
of the
North Carolina
Fossil Club

www.ncfossilclub.org

2009 Number 4

2010 Spring Calendar

January

17 NCFC Meeting - NCMNS, 11 West Jones Street, Raleigh.
1:30 pm, Level A conference room.

March

21 NCFC Meeting - NCMNS, 11 West Jones Street, Raleigh.
1:30 pm, Level A conference room.

April

24 Norwood Arbor Day and Fossil Fair Contact: Ruffin Tucker
at 704-784-1672 or paleotck@netscape.net.

Our complete Spring calendar will be in *Janus* 2010#1, in March

Time to Renew your Membership.

Some things to remember: Memberships are for a calendar year. (January 1 until December 31) Renewals after the last outing will apply to the next year. You do not have to wait until after New Year's Day to send renewals in. If your address, names, phone numbers, and email addresses have not changed then you can write, or print, your name and write «SAME» in one of the address fields and we will use the same information we used last year. If your dues have not been paid before that issue then your name will not be in the membership list. Email addresses are hard to read when they are written well. Please write them clearly. Membership cards are sent with the first *JANUS* of the year (the newsletter with the membership list: around 03/2010) If your dues have not been paid before that issue then your name will not be in the membership list.

Roxada & Robert Story

Sharron Edwards, wife and loving childhood sweetheart of Ron Edwards, died peacefully in the morning hours of November 1st, 2009. Married to Ron for forty years, she was a devoted mother and grandmother. After Ron retired from the military they settled in Richlands, NC, where she worked, helped with grandchild care, and used her spare time to collect fossils. She and Ron became guides for fossil hunters in the PCS Mine in Aurora and spent many happy weekends searching for fossils and helping visitors in the mine. Her enthusiasm and love showed in her associations with members of the North Carolina Fossil Club, members of the Friends of the Aurora Fossil Museum, and fossil hunters in the PCS mine. She became a NCFC Board Member and faithfully travelled from Richlands to Raleigh for meetings. Some time ago she was diagnosed with cancer. She and Ron traveled, sometimes daily, to Duke Hospital for her cancer treatments. In spite of her illness she continued to display fossils, participate in other NCFC events, and go into the mine at Aurora. One of my last memories of her, in the mine, was of her sitting on a large rock, barely moving, watching Ron look for fossils. She is missed by all who knew her. Remembrances may be made to the Aurora Fossil Museum.

Roxada Story



Sharron & Ron with part of their exceptional exhibit at the 2009 Aurora Fossil Festival. Sharron, it just won't be the same, without you.



Marsha Johnson (1944 - 2009)

If you purchased a bag, cap, collection apron, or a shirt with a fossil or shark design on it from the Aurora Fossil Museum, other NC museums or local shops, the artist probably was Marsha Johnson. Her wonderful designs (below) have received a lot of attention. She was a very outgoing person who always offered a friendly greeting with a smile on her face. The fossil world intrigued her and she enjoyed searching the various North Carolina mines and the Calvert Cliffs area. An excellent photographer, she brought her camera on fossil digs. She was a member of the Aurora Fossil Club and the NC Fossil Club.

Doris Speicher



Book Review

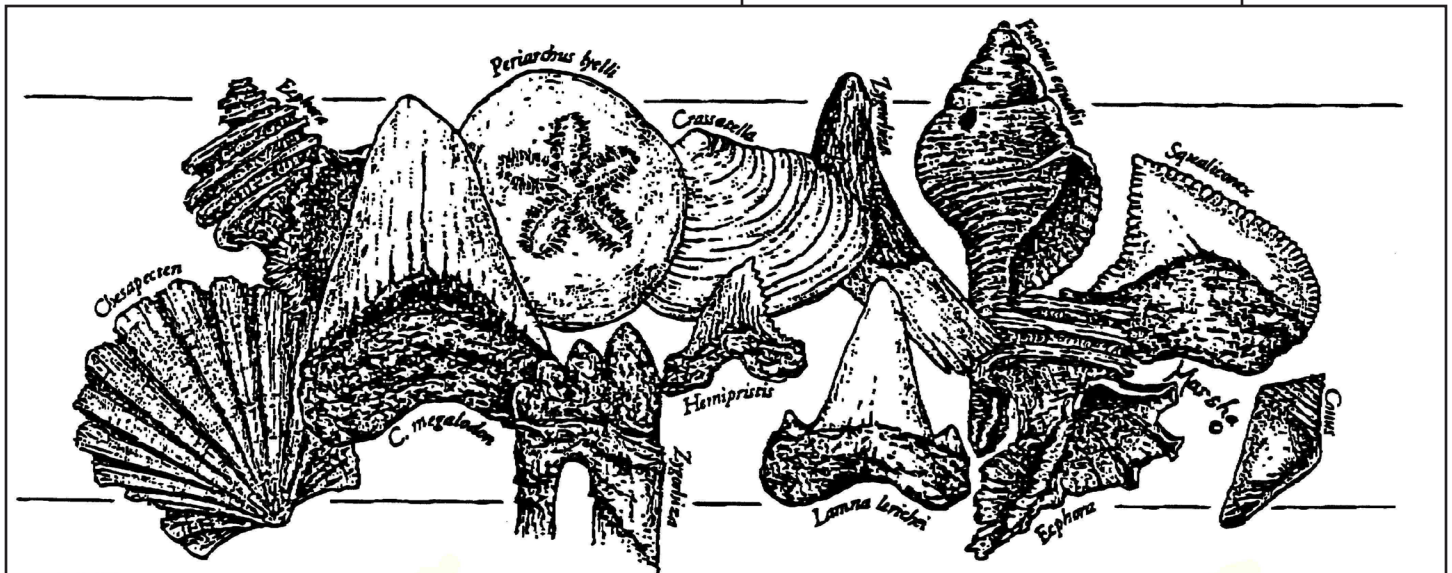
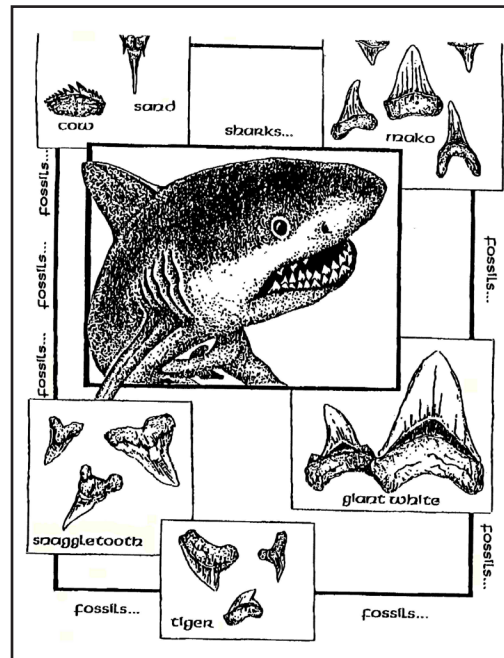
Islands in the Cosmos: The Evolution of Life on Land, Dale Russel (2009), Indiana University Press, Bloomington, IN.

With a combination of current scientific research and a lifetime of philosophical inquiry, Dr. Dale Russell takes us on an epic journey through the natural history of terrestrial life on earth. The reader is treated to a step by step, era by era, account of what the earth was like starting with the "big bang", through the development of bacteria, eventually reaching our modern world. Along the way, Dr. Russell paints for his readers a truly awesome respect for the power and grandeur of evolution. Complex life, according to Dr. Russell, could only develop on a planet, like earth, that provides a stable environment. Factors like Earth's size, its distance from the sun, the lunar gravitational effect, and an active inner core, create this environment. Without these factors, our Earth would be no different from Venus or Mars. If we hope to find complex life, intelligent life, we need to look on other "islands" (planets) that provide this stability. Dr. Russell, not stopping with scientific theories, interjects philosophical inquiries. For Dr. Russell, life has a purpose and a reason for being. Life is not a cosmic accident.

I found the book interesting. There are points in this book where you actually feel like you are in that particular era. At

times, the scientific references and concepts can be rather difficult to understand; however, it does not make the book an impossible read. With a little effort, any scientific difficulties can be overcome. This is why I give this book 4 1/2 Meg teeth out of 5.

Jonathan Fain



FOSSILS THAT GOT AWAY

David Grabda

We like to brag about our great fossil finds but I hauntingly think about several fossils I let slip thru my fingers for one reason or another.

When I was in my late teens I would drive from Detroit to Medusa Limestone Quarry, Sylvania, Ohio to look for Brachiopods and Trilobites. A friend wasn't working that weekend and asked if he could ride along and help me look for whatever I was looking for? "Sure," I said, "Glad to have your help and company." After a two hour drive we were in the quarry finding lots of Brachiopods but no Trilobites. My friend settled down on a bank above a pond pulling pieces of slate off the ledge and throwing them into the water as I watched a ten year old destroying a small trilobite he found in a flat area with a hammer and chisel. From the corner of my eye I watched my friend pull up a piece of slate, began to toss it then took a better look at the underside. Keeping his eyes on the mad rock he got up and walked over to me. "Dave", he asked, "Is this what you're looking for?" In his hand was a two inch flattened *Phacops rana milleri* Trilobite. All of a sudden we were surrounded by at least a dozen fossil hunters. One guy offered him his whole bag of Brachiopods and another guy offered him three rolled up Trilobites. My friend looked me in the eye with a little smile on his face and I knew that what was coming. He said, "I think I'll keep this for awhile," and that was the last time I saw that Trilobite.

In the Lee Creek Mine I caught up with Lucille as she rested on a low rock eating a cracker. I asked her if she'd made any neat finds. "No", she said, then reached down to pick up something between us and asked, "What are these things?" I stumbled backwards in astonishment and asked her, "Do you have anymore crackers? I'd like to find some Crocodile teeth too!" "No", she said, "Ate the last one."

I didn't know it at the time but one of my biggest regrets happened on my first trip into the Lee Creek Mine. We got to the gate and signed in and drove caravan style into the mine following Pete Harmatuk's truck. He picked a spot where the tallest hill came closest to the outer cliff but we still had about twenty feet to climb down. I took two steps down then slid the rest of the way on the wet sandy bank saying a little prayer on the way down that the cliff would dry up a bit before we had to climb back out. A rope magically appeared and our back packs were lowered to us. It was a bit cool so we gathered in the valley between the two hills waiting for the last fossil hunter. There were small shark teeth, fish parts and whale or dolphin bone sticking out everywhere. Pete came down and told us the rules. Keep our hard hats on, stay out of the water, three hills away from draglines, be back by three and have fun! We were then channeled down the valley 'til another hill blocked our way and we would have to go left or right. In the middle of that hill about head high the sun glinted off what looked like a rectangular three by six inch piece of mauve-tan "tile". Now I had been hunting in the Intercoastal Waterway at Myrtle Beach for a few months and saw plenty of dumped building parts there* I was sure the piece of "tile" came from maybe a kitchen counter of a farm house that got torn down above the mine and had worked its way down here so "I didn't pick it up!" The guy behind me did pick it up and I watched as he bagged it and placed it into his backpack. Later as we waited for the last straggler to come out of the mine the guy took out the piece of "tile" and asked Pete what it was? He explained that it was a full Eagle Ray mouth crusher dental battery, and "I didn't pick it up." Well, I thought, I'll just have to find one next trip into the mine! Twenty six years later I'm still looking for a whole specimen. We have half of a specimen and that's Lucille's.

Lessons Learned!

Have a contract ready to be signed by friends and neighbors who offer to help you collect fossils. Find out what fossils are available at a site before visiting it. In the case of Lee Creek Mine a trip to the Aurora Fossil Museum the day before would be a great help. Take plenty of pictures with your digital camera. Something we didn't have twenty six years ago. Last of all, bring plenty of crackers with you and share. Good hunting out there!



Crocodylidae teeth: *Thecachampsa antiqua*
Eagle Ray dental battery: *Aetobatus* sp.

Message from our President

We're coming off an eventful 2009 - a whole slew of outreach events, the reopening of the Dinosaur Trail at the NC Museum of Life & Science, season cancellations at PCS, a wonderful welcome for our annual fair, and a series of great presentations at the meetings. Our 2010 looks to be as active, with continued involvement with outreach activities, ideas for out-of-state digs being booted around, and the return of our fair to the NC Museum of Natural Sciences.

And, once again, I am issuing a call to action - our club benefits from the activities of all of our members. We have a wealth of expertise, creative ideas, and energy (but never enough time!) - bring them up, and let's see how we can enrich ourselves and our communities while having a great time doing what we love.

I'm honored to be asked to serve this club again, and extend my gratitude to the folks who serve as officers and on the board of directors. Without their continued support and indefatigable efforts, none of these good things would happen. Please take a minute to thank them when you see them.

I'm looking forward to a great year!

Mary Boulton

Pterorytis in North Carolina

Richard Chandler

[*ptero* = wing/fin; *rhytis* = fold/wrinkle (Greek)]

Pterorytis is the small, very attractive murex that even dyed-in-the-wool, shark-tooth-only collectors will pick up. In working with John Timmerman on the Mollusk Section of our project on the Fossils of North Carolina I have discovered several interesting things about this genus. First of all note the correct spelling (John and I misspelled it as *Pterorhytis* in our *Neogene Fossils of North Carolina*, as have a myriad of others before and since). *Pterorytis* was named by Timothy Abbott Conrad in 1862 (*Proceedings of The Academy of Natural Sciences of Philadelphia*, p. 560) as a subspecies of *Murex*. The type specimen, *Pterorytis umbrifer*, is described as “fusiform; six prominent recurved foliated ribs; aperture ovate; channel closed.” Conrad had already described and illustrated *Murex umbrifer* in 1832 (*Fossil shells of the Tertiary formations of North America*. Philadelphia, vol. 1, pp. 1-28, pls. 1-14.): “Fusiform, with six foliated reflected laminae; whorls angular and carinated; aperture obovate; beak recurved. *Localities*. James River; York Town, Va. Upper Tertiary.” The 1862 paper simply assigned *M. umbrifer* to a new subgenus, *Pterorytis*.

Conrad himself had second thoughts about the spelling. In 1868 he proposed the etymologically more satisfactory *Pterorhytis* but he was too late: the standard rules of nomenclature specify that the original published spelling of 1862 must be kept. In Greek *Ptero* means wing or fin and *rhytis* means a fold or wrinkle.

The next species of *Pterorytis* to be defined and illustrated was “*Murex (Pterorhytis) Conradi*”, by William Healy Dall in 1890:

Miocene of St. Mary’s River, Maryland (Clark), and of South Carolina at Goose Creek.

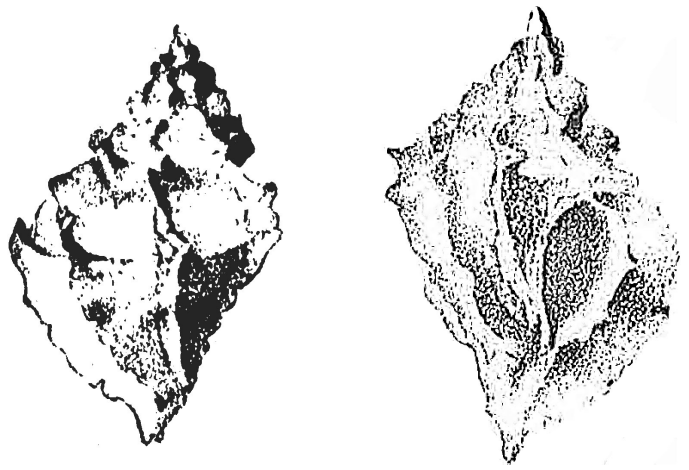
This fine species has, like most of the species of this genus, only four varices. The spire is much shorter than in *M. umbrifer* and the form of the varices is different. Tuomey and Holmes have figured a broken specimen under the name of *umbrifer*, though they give as diagnostic “six foliated reflected laminae,” when their specimen had only four; and this may have been in Conrad’s mind when, in his last description of *umbrifer* in 1868, he allowed it “four lamelliform ribs,” while his figure shows six!

The main problem with Dall’s new species was that he used a preoccupied name, *Conradi*. Undoubtedly he didn’t know (or had forgotten) that Alcide d’Orbigny had renamed *Murex Mantelli* as *Murex Conradi* in 1850. Standard rules of nomenclature did not then (and do not now) allow different species within the same genus to have the same name. Finally, in 1903, Dall illustrated, but never described, “*Pterorhytis (Conradiana* Dall var.?) *fluviana*”.

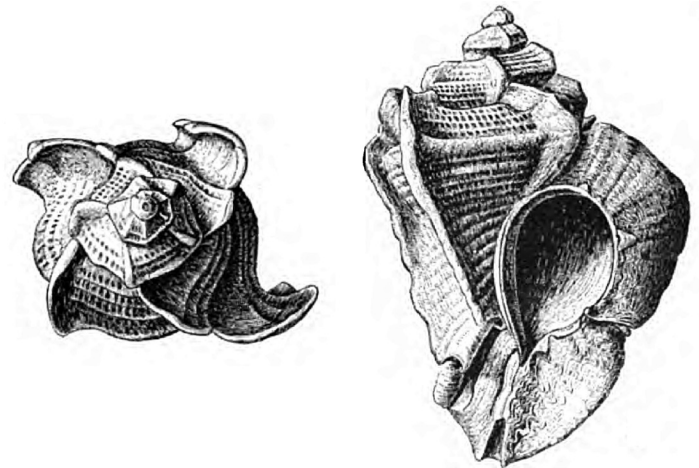
This water (© *fluvi* = river in Latin) was pretty muddy by then: Conrad’s two spellings (*Pterorytis* and *Pterorhytis*), Dall’s two spellings (*Conradi* and *Conradiana*), Dall’s preoccupied name (*Conradi*), Dall’s misspelling (*Pterorhytis*), and Dall’s failure to describe his presumably new species *fluviana*.

Fortunately for us, Geerat J. Vermeij and Emily H. Vokes published a very thorough and scholarly study in 1997 concerning the Ocenebrinae, one of the ten or so subfamilies of Muricidae. After examining many specimens of *Pterorytis* (they had access to collections at the Museum of Comparative Zoology at Harvard; the Naturhistorisches Museum in Basel, Switzerland; the Paleontological Research Institution in Ithaca, NY; Tulane University; University of California’s Museum of Paleontology in Berkeley; the Florida Museum of Natural History in Gainesville; and the United States National Museum of Natural History in Washington) they came to the following conclusions:

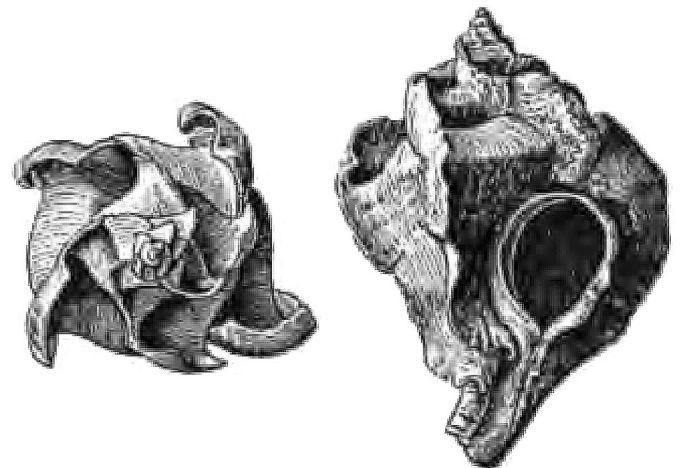
- “*Pterorhytis Conradi* (Dall, 1890)” and “*Pterorhytis (Conradiana* Dall var.?) *fluviana* (Dall, 1903)” are actually the same species and should be synonymized.
- Its name should be *Pterorytis fluviana* (Dall, 1903).



Murex umbrifer - Conrad (1832)



Murex (Pterorhytis) Conradi - Dall (1890)



Pterorhytis (Conradiana Dall var.?) *fluviana* - Dall (1903)

- *Pterorytis umbrifer* (Conrad, 1832) is a separate species.
- Because of tremendous specific variability, distinguishing *P. umbrifer* and *P. fluviana* is difficult but possible, using a combination of stratigraphic and morphological differences.

Stratigraphic Differences. *P. umbrifer* occurs in the Late Miocene - Pliocene (Yorktown, Raysor, Lower Goose Creek, Jackson Bluff, and Lower Pinecrest Formations) and *P. fluviana* occurs later (Lower Caloosahatchee, Lower Waccamaw, and James City Formations) although with some minimal overlap.

Morphological Differences. Quoting from Vermeij and Vokes:

With so much variability in both *P. umbrifer* and *P. fluviana*, one wonders where to draw the line between the two species. And the only absolute means of separation is the fact that in *P. umbrifer* the intervarical area is always completely smooth, even though there may be a fimbriate adapertural face to the varices. In *P. fluviana*, the intervarical area may be relatively smooth, but faint fimbriations are always present. In *P. umbrifer* the varices are thinner, and almost invariably there is a abapertural fold at the shoulder, even on those specimens where the shoulder cord is barely present. In *P. fluviana* the varices have no fold at the shoulder and they are more abaperturally recurved.

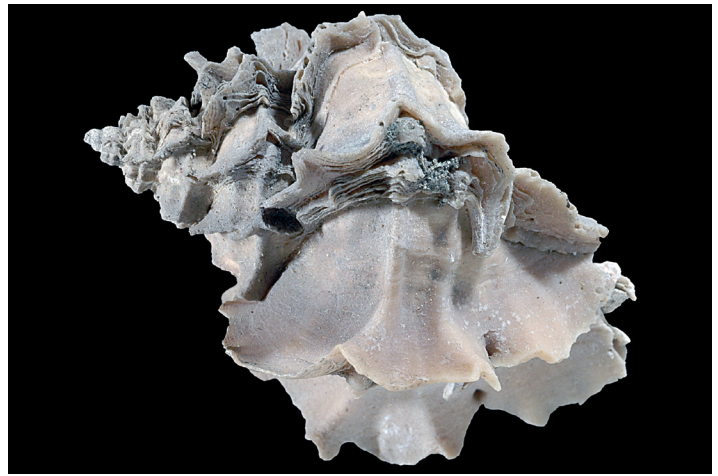
Some of this technical terminology needs translation:

- *varix* (plural *varices*): a periodic longitudinal rib originating as a flared lip at the aperture.
- *intervarical area*: a region of the shell between the varices.
- *fimbriations*: a fringe or thread-like structure.
- *adaptural*: toward the aperture.
- *abaptural*: away from the aperture.

Conrad described *P. umbrifer* as having six varices but Vermeij and Vokes note that the number of varices is not a species-defining characteristic, having seen between 4 and 9 on various specimens. Generally, juveniles have more varices with adults typically having 4 or 5 on the final whorl.

Pterorhytis umbrifer is rare in North Carolina. I have seen none from the Lee Creek Mine, our best source of Yorktown Formation material. The one unequivocal example in the NC Museum of Natural Sciences' extensive collection of *Pterorhytis* specimens is from a sand and gravel pit in Edgecombe County. *Pterorhytis* from the Waccamaw Formation typically have reduced fimbriations but definitively lack the varicial shoulder fold; they are surely *P. fluviana*.

About 4 million years ago the Isthmus of Panama rose, separating the Atlantic and Pacific Oceans. The Atlantic population of *Pterorhytis* became extinct, perhaps a million years ago. The Pacific population still exists with at least in one Ecuadorian species, *Pterorhytis hamatas*. *Cerastostoma* is another Pacific genus, very similar to *Pterorhytis*, even to having the little 'tooth' on the aperture (see below). It typically has only 3 varices.



Pterorhytis umbrifer - Edgecombe County (Yorktown Fm) NCMNS



Pterorhytis fluviana - Lee Creek Mine (James City Fm) REC



Cerastostoma foliatum - Extant, Pacific Coast, AL to CA REC



Pterorhytis fluviana - Old Dock (Waccamaw Fm) Kim Greene

References

[All are available online at Google Books except Emerson and Vermeij & Vokes. Emerson (1959) is available at the American Museum's web site.]

CONRAD, T.A. (1832). *Fossil shells of the Tertiary formations of North America*. Philadelphia, vol. 1, pp. 1-28, pls. 1-14.

CONRAD, T.A. (1862). Catalogue of the Miocene shells of the Atlantic slope. *Proceedings of the Academy of Natural Sciences of Philadelphia*, vol. 14, pp. 559-586.

DALL, W.H. (1890-03). Contributions to the Tertiary fauna of Florida. . . . *Transactions of Wagner Free Institute of Science of Philadelphia*, v. 3, parts I-VI, 1654 pp. + 60 plates.

EMERSON, W.K. (1959). The Gastropod Genus *Pterorhytis*. *American Museum Novitates*, #1974, 8 pp.

EMERSON, W.K. (1985). *Murex hamatas* Hinds, 1844, a living west American species. . . . *The Nautilus*, v. 99(1), pp. 14-17.

VERMEIJ, G.J. & VOKES, E.H. (1997). Cenozoic Muricidae of the western Atlantic region. Part XII *Tulane Studies in Geology and Paleontology*, v. 29(3), pp. 69-118.

Book Review

JONATHAN R. HENDRICKS (2008): The genus *Conus* (Mollusca: Neogastropoda) in the Plio-Pleistocene of the Southeastern United States, *Bulletins of American Paleontology* #375, 178 pages + 20 plates.

Available (\$60): <http://www.museumoftheearth.org/>

This very welcome volume brings a little order to the chaos of NC fossil cone recognition, at least so far as Plio-Pleistocene species are concerned. For almost 200 years many researchers seemed to identify each new specimen as a new species rather than trying to find a previously assigned identity. As a consequence Hendricks lists 84 putative species which he is able to synonymize down to 20. He carefully describes his criteria and provides a binary key for determining those 20. The plates provide many excellent b&w photographs of all 20 species.

The most striking is that of a standard left-handed cone, *Conus adversarius*, which is 218 mm (= 8½") high!!! (This monster came from Hendry County, FL, where I lived from age 6 to 16.)

Checking North Carolina, we find only 6 species of Plio-Pleistocene cones here:

Species	Formations
<i>C. adversarius</i>	Yorktown, Duplin, James City, Waccamaw
<i>C. delessertii</i>	Duplin, Waccamaw
<i>C. jaspideus</i>	Waccamaw
<i>C. cf C. largillierti</i>	Duplin, James City, Waccamaw
<i>C. marylandicus</i>	Yorktown, Duplin
<i>C. oniscus</i>	James City, Waccamaw

Although *C. delessertii*, *C. jaspideus*, and *C. largillierti* exist as fossils (and subfossils), they are currently extant as well:



Left to right: *Conus delessertii*, *jaspideus*, and *largillierti*.

From data given by Hendricks we can calculate the average size of the specimens he used in his study. His large sample sizes should give us some confidence the average sizes indicated are actually near average for the whole fossil populations. Unfortunately, there is not enough information given to calculate the standard deviations for these data sets so we cannot tell how spread out the heights really are.

Species	Average Height (number of specimens)
<i>C. adversarius</i>	50.64 mm (n = 707)
<i>C. delessertii</i>	54.45 mm (n = 48)
<i>C. jaspideus</i>	20.17 mm (n = 136)
<i>C. cf C. largillierti</i>	31.74 mm (n = 239)
<i>C. marylandicus</i>	26.30 mm (n = 52)
<i>C. oniscus</i>	27.75 mm (n = 97)



L – R: *Conus marylandicus* (40 mm), *C. largillierti* (41 mm).



L – R: *Conus jaspideus* (22.3 mm), *C. oniscus* (40 mm)



Conus adversarius (91 mm)

With hardly a nick or ding, this is one of the finest fossil mollusks in the NCMNS collection (Duplin Fm of Bladen County).

Observations: The five species of North Carolina right-handed fossil cones are very difficult to distinguish. While most past identifications seem to have been as *C. marylandicus*, this is usually incorrect: this species occurs only in the later Pliocene deposits. The very mollusk-heavy James City and Waccamaw Formations do not contain *C. marylandicus*; in my rather limited experience *C. largillierti* and *C. oniscus* are the common species in those deposits. I have seen no unequivocal examples of fossil specimens of *C. delessertii* or *C. jaspideus* from North Carolina. The specimen of *C. jaspideus* in the above photograph is from Florida.

Richard Chandler

Fossil Fair - 2009

The NCFC Fossil Fair was held at the Rocky Mount Children's Museum and Science Center on November 7. Exhibitors:

Rick Bennett
Pam & Charlie Causey
Richard Chandler
Don Clements
Cindy Crane-Muston
Jonathan Fain
Tony Furr
Joy Herrington
Rufus Johnson
Trish Kohler
Renee & W.R. Long
Jodie McDaniel
Joanne Panek-Dubrock
Heather & Todd Power (membership/books)
John Steffensen
Roxada & Robert Story
Ruffin Tucker
Diane Willis
Judy & Vince Schneider and Sam Schmidt (NCMNS)
Andrea Stille (Aurora Museum)
Schiele Museum
Dave Bohaska, Fred Grady, and Bob Purdy (Smithsonian)

As you can tell by the participants, the exhibits were pretty spectacular. Turnout was good but not outstanding: one of the Museum personnel told me we were competing with two other civic events that day, The facility (Imperial Centre for the Arts and Sciences) was outstanding and could have easily accommodated half again as many more exhibits.

In the brief meeting which followed Rick Bennett, Joy Herrington, Jim Mahoney, and Diane Willis were re-elected to the Board and Cindy Crane-Muston was appointed to fill the remainder of Sharron Edwards' term on the Board.

James Bain and Roxada & Robert Story were elected to (well-deserved) Honorary Membership. James was cited for:

Member of the Board, 2004-2006
President, 2007-2008
Immediate Past President, 2009 - present
Many articles for *Janus*
Oodles of door prizes for meetings
Indefatigable outreach activity

Roxada and Robert were cited for:

Membership Chairmen for 10 years
Maintaining our official post office box
Participating in fossil fairs sponsored by the NCFC, the AFM, Hope Plantation, Topsail Island, Creekside Elementary, etc.
Keeping Topsail gift shops stocked with NCFC publications
Supervision of zillions of kids at the Richlands Quarry

Richard Chandler

Belgrade Quarry Trips - 10/01 & 10/02

On Thursday we were restricted to the upper level since the trucks were hauling and there were two blasts. Some folks found stuff--mostly small teeth, ray teeth, turtle pieces, clam casts, big oyster shells. Eric Wilkinson, the newest member of NCFC, found around a third of a crusher plate, three pieces of petrified wood, a shark vertebra, and some teeth. Slim pickings for most of us.

Friday was the day to be at Belgrade! Some of us were there on Thursday and some additional members joined us on Friday. We were allowed to go anywhere in the mine but close to the faces and near some deep water. Never saw anyone near those places. A partial list of finds includes: turtle shells, psammichinus echinoids, fairly small shark teeth, 3 inch meg, 2.5 inch meg, broken meg, giant oysters, shark vertebra, barracuda tooth, rostral tooth, bryzoans, large porpoise vertebra, fossilized wood, heart shaped echinoid and pretty rocks. Several folks got away before I could see their finds. Generally a good day.

Robert Story

curiosities: the scientific works of LIZ BRADFORD



a collection of paintings and drawings

Opening Reception January 8th 6-9pm

light refreshments will be served

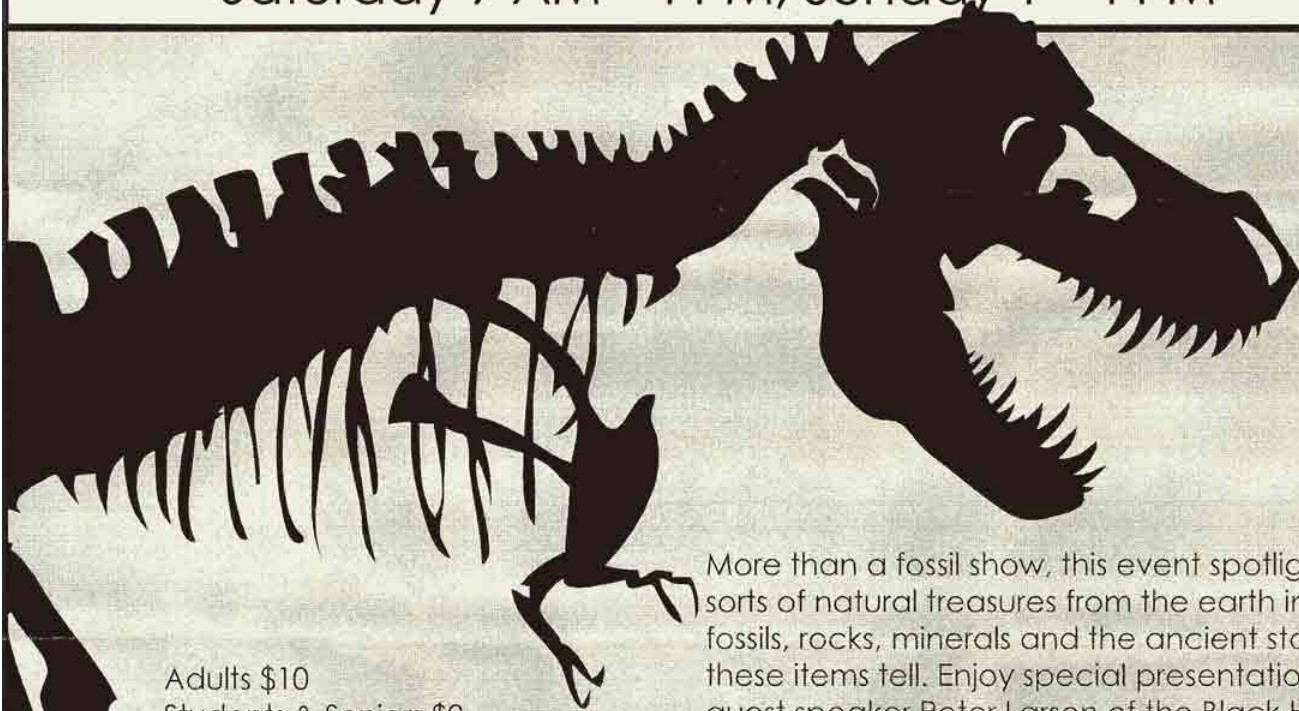
Café Helios 413 Glenwood Ave Raleigh, NC

show runs January 8 - February 4, 2010



FOSSIL FAIR

February 20 - February 21
Saturday 9 AM - 4 PM, Sunday 1 - 4 PM



Adults \$10
Students & Seniors \$9
City Resident Adults \$8
City Resident Students & Seniors \$7
Includes museum admission

Fossil and mineral collectors and vendors are invited to attend!
Call 704-866-6919 for details.

More than a fossil show, this event spotlights all sorts of natural treasures from the earth including fossils, rocks, minerals and the ancient stories that these items tell. Enjoy special presentations by guest speaker Peter Larson of the Black Hills Institute of Geological Research and excavator of the famed Tyrannosaurus "Sue". See museum and fossil club displays and purchase interesting specimens from vendors. Mine for gemstones like garnets, emeralds and amethyst. Kids can meet animated prehistoric characters, see a full-sized T. rex, make a fossil fish print, search for tiny fossils from the Carolina Coast, and much more.



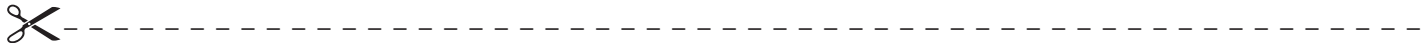
The Schiele
Museum of Natural History

WWW.SCHIELEMUSEUM.ORG | 704.866.6908 | 1500 E. GARRISON BLVD., GASTONIA, NC 28056

NORTH CAROLINA FOSSIL CLUB, INC.

(Founded 1977)

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2010 MEMBERSHIP APPLICATION - NORTH CAROLINA FOSSIL CLUB

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ADDRESS _____

CITY, STATE, ZIP _____

PHONE(s) (INCLUDE AREA CODE) _____

E-MAIL ADDRESS _____

SELECT ONE TYPE OF MEMBERSHIP	<input type="checkbox"/> INDIVIDUAL (NEW)	\$20.00
(ENCLOSE CHECK OR MONEY ORDER	<input type="checkbox"/> INDIVIDUAL (RENEWAL)	\$15.00
FOR THE INDICATED AMOUNT.)	<input type="checkbox"/> HOUSEHOLD (NEW)	\$25.00
	<input type="checkbox"/> HOUSEHOLD (RENEWAL)	\$20.00

Children of NCFC members who are dependent minors and living at home may accompany parents on any trip *EXCEPT* PCS–Lee Creek or where otherwise noted.

Memberships are effective from January through December of the year (or portion of the year) of the date of application. For example, persons joining in August will need to renew their membership 5 months later in January.

NCFC Liability Statement

The Undersigned hereby acknowledges his/her understanding that fossil collecting is an inherently dangerous activity which can result in serious bodily injury or death, and/or property damage and hereby confirms his/her voluntary assumption of the risk of such injury, death or damage.

The Undersigned, in return for the privilege of attending field trips Related to the collection of and/or study of fossils, or any other event or activity conducted or hosted by the North Carolina Fossil Club (NCFC), hereinafter collectively and individually referred to as “NCFC Events”, hereby releases the NCFC, NCFC Board members and officers, NCFC Event leaders or organizers and hosts, landowners and mine or quarry operators from any and all liability claims resulting from injury to or death of the undersigned or his/her minor children or damage to his/her property resulting from any cause whatsoever related to participation in NCFC Events.

The Undersigned agrees to comply with any and all rules and restrictions which may be communicated to the undersigned by the NCFC Event leader and/or landowner and mine or quarry operator and acknowledges that failure to comply will result in immediate expulsion from the premises.

The Undersigned acknowledges that this release covers all NCFC Events and will remain in effect at all times unless or until it is revoked by written notice to the current President of the NCFC and receipt of such revocation is acknowledged.

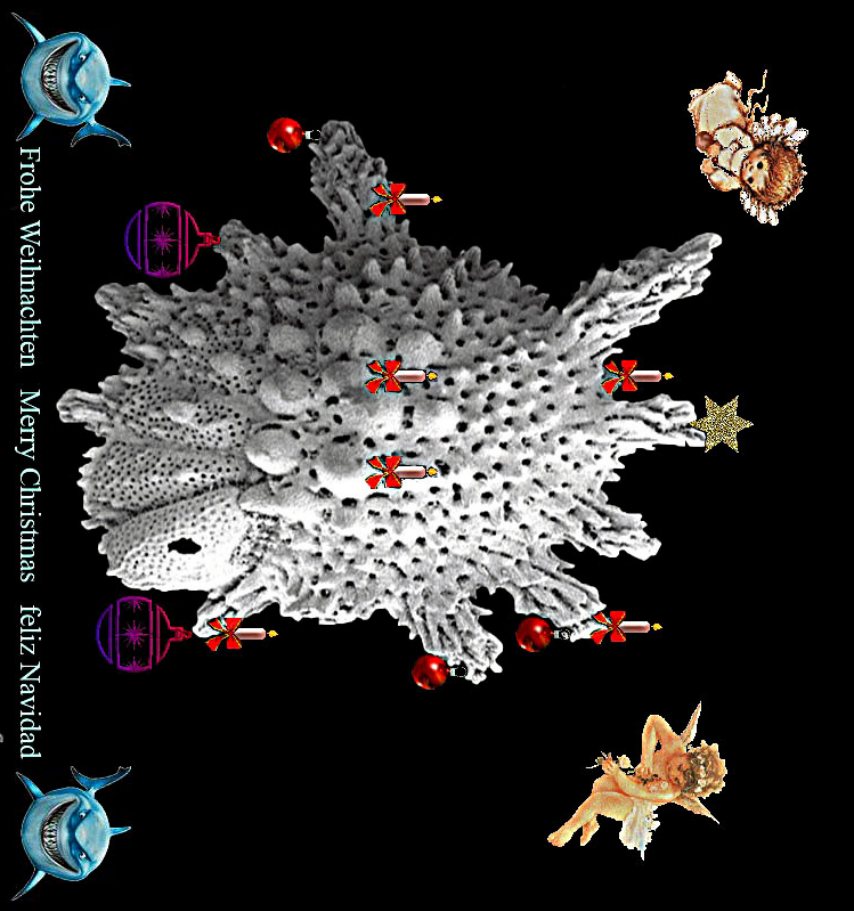
The Undersigned further attests to his/her intent to be legally bound by affixing his /her signature to this release.

Name _____ Signature _____ Date _____

Name _____ Signature _____ Date _____

MAIL To: NORTH CAROLINA FOSSIL CLUB, P.O. BOX 13075, RESEARCH TRIANGLE PARK, NC 27709

North Carolina Fossil Club
P.O. Box 13075
Research Triangle Park, NC 27709



*Dear All, Thanks for sharing the interest in Foraminifera.
Merry Christmas and a happy new Year!
Michael Hesenmann (Speaker at our September meeting).*