



JANUS

The Newsletter
of the
North Carolina
Fossil Club
www.ncfossilclub.org

2015 Number 4

2016 Spring Calendar

January

17 NCFC Meeting - NCMNS, 11 West Jones Street, Raleigh.
1:30 pm, Level A conference room. Speaker: Dr. Michelle Stocker, Virginia Tech.

23 Dino Day Festival - 10:00 - 3:00, Virginia Museum Of Natural History, 21 Starling Avenue, Martinsville, VA 24112

February

20 Schiele Museum Fossil Fair - 1500 Garrison Blvd., Gastonia, NC 28054 from 9 am to 4 to 9 pm. Contact: Tony Pasour: tony@cityofgastoniam.com. or 704-866-6900.

March

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

31 - 1 South Eastern Geological Society of America Annual Meeting - Columbia, SC. See Linda's "President's Note" (right) for more details.

April

?? Norwood Arbor Day and Fossil Fair 10:00 - 4:00 (tentative) Contact: Ruffin Tucker at 704-784-1672 or fossiler77@msn.com. Probably on the 30th.

Ediacaran Fossil Field Trip, Jacobs Creek Quarry, 2081 West Slate Mine Road, Denton, NC 28239. Dates to be announced, depending on weather and mine conditions in February and/or March, 2016. When dates are advertised then contact: Ruffin Tucker, email: fossiler77@msn.com.

President's Note

The old year is done and the new one is here. We reflect on last year fondly, with its many field trips, outreach opportunities, Fossil Fairs and Festivals, conventions, picnics and more. I hope everyone had a chance to participate – and, I hope this year will be even better! I encourage everyone to get out there and volunteer and try to do at least a little outreach this year. You don't have to be an expert; in fact, you don't have to know anything at all – just have a passion for fossils and off you go.

This year I encourage you all to think about attending the South Eastern Geological Society of America (SEGSA) Annual Meeting in Columbia, SC on March 31 - April 1. The FOSSIL Project was asked to participate in the professional conference and created a FOSSIL Project theme session on Synergistic Paleontology entitled: The FOSSIL Project and Amateur Contributions to the Field. They in turn invited clubs and their members to participate and give talks or do posters on different aspects of their various clubs. As a result, there are 18 talks planned dealing with amateur/avocational paleontology, and several posters. AFM Director, Cynthia Crane and 9 other professional paleontologists will present as well as non-professionals Lee Cone, Chuck Ferrara, Jayson Kowinsky (webmaster for fossilguy.com), George Powell, Greta Polites, Walter Stein, Dean Hart, and yours truly, Linda McCall. There is still time for any of you to register for the two-day meeting, and you can also attend the field trips that have been made available if interested. South Carolina is close by, and a great opportunity to learn what other clubs do and support your fellow amateurs as they present at a professional conference (many for the first time) and also to listen to professionals and attend their talks on their sessions as well. One session: "Fossil Vertebrates of the Southeastern United States" looks like it might interest a lot of you. Here is a link to the conference and the various sessions.

<http://www.geosociety.org/Sections/se/2016mtg/>

If you are interested in attending, the link to the registration form is below:

<http://www.geosociety.org/Sections/se/2016mtg/documents/16seRegForm.pdf>

The Fossil Project negotiated amateurs only having to pay the Student Fee (\$85) for the 2-day sessions – which is awesome, but if you are interested in attending, please contact me at: lndmccall02@yahoo.com for other information on how to get the special rates before you complete your form.

Hope to see you at a meeting, in the field or at an event!

Happy Hunting,

Linda



Part of the crew at the Onslow County quarry, Nov. 20.
Photo by Trish Kohler

Last issue of 2015

It's time to renew your membership. Use the form on the next-to-last page here or download it from our website:
www.ncfossilclub.org/node/33

Regarding “Thomas Jefferson and the Dawn of Vertebrate Paleontology in America”

The last issue of Janus had a short article with the above title. In it I quoted Jefferson: “These bones only enable us to class the animal with the unguiculated quadrupeds” I then wondered about the word “unquiculated”, interpreting it as “dead”. I recently got an email from Dr. David Campbell indicating that he thought the word should have been “unguiculated”. I checked back with Jefferson’s original letter as published in the *Transactions of the American Philosophical Society* (1799), thinking perhaps I had misread. I had not:

These bones only enable us to class the animal with the unguiculated quadrupeds ; and of these the lion being nearest to him in size, we will compare him with that animal.

The Oxford English Dictionary gives: unguiculated: *Zool.* Of quadrupeds: Furnished with nails or claws; belonging to the order Unguiculata.

Unguiculata was part of the original Linnaean classification system. The word’s root is the Latin *unguis*, a nail or claw. So David had it exactly right: after all, Jefferson was writing about the “Giant Claw”. I think the typesetter back in 1799 must have misread Jefferson’s “g” as a “q”. A very, very good catch, David.

Rankin Museum Mini Fossil Fair

The Rankin Museum Fossil Fair was held in a misty rain Saturday, September 26, 2015. Richard Chandler, Joy Harrington, Jonathan Fain, and Ruffin Tucker provided tables of animal, shells, plant and especially shark fossils to show what the kids (signed up in 4 groups of 25 to 30 and their adult helpers) could find in salted buckets of Aurora fossil material from their pile and additional material brought by James, Mary Boulton, and myself. James and Mary worked with the members of the museum board under a large tent with a trailer holding James’ large mobile screen and two hoses to wash material as needed and help the kids to find and identify specimens. Even with constant rain, we had 200 attendees and everyone had a great time. This museum is a little-known North Carolina treasure. It houses the collection of Preston Rankin, a deceased doctor in Montgomery County, NC. He collected local history items from the NC Indians, U. S. Wars, and traveled the world collecting animals he had stuffed from Africa, South America, North America. The museum has the best collection of Amazonia material in the southeast. Go to www.rankinmuseum.org to preview a visit. Being in the small town of Ellerbe, NC limits the numbers of visitors per year (only 3710 last year). Check it out!

Ruffin Tucker



A small segment of the 200 collectors at the Rankin

Belgrade Quarry - October 9

Walking through the washed out area, a large triangular shape jumped into my sight. Picking it up, I was holding the largest tooth I had ever found at this quarry, a 3½ inch *megalodon*. All serrations present, full root with a feeding damaged tip. Barely a foot away I spotted something else partially buried. Unearthing it, I realized it was the largest whale vertebrae I had ever seen from here. These were just two of the many great finds during our club trip to Belgrade on October 9th.

It was a beautiful day for collecting and everyone left happy. New friendships formed and old ones rekindled. The trip was attended by 16 current club members and most everyone found something nice. David Sanderson left with a rare *Mareta carolinensis*; a spatangoid echinoid that has been found in huge numbers on Topsail Beach recently, but a rare find for the quarry. Other echinoids found were a few *Echinocyamus wilsoni* and *Psammechinus carolinensis*. Cindi Watt found a large spectacular *Turritella fuerta*, a very nice *Carcharocles angustidens* and a sawfish vert. Almost everyone found a *Carcharocles angustidens* tooth. Wayne Schutts found a beautiful mako tooth, probably *Isurus hastalis*. Mary Harbison found some nice *Anoxypristis* (sawfish) rostral teeth. There were many *Hemipristis* and sand tigers found. One lucky member went home with a *Galeocerdo casei*, a rare Oligocene Tiger Shark found only in the Belgrade Formation. Croc teeth, shark verts and a variety of bivalves and gastropods filled out the collecting pouches.

There was also a father and son visiting the quarry from Virginia that found a very nice mammal molar and an exquisite *Nebrius* sp. Tooth. Though not club members, we all reveled in their finds.

Many thanks to the employees at the Belgrade quarry, especially Milton who sets the trips up for us and Ricky who oversees the event. Over the years they have bent over backwards to accommodate us and make sure access is there for the club. So the next time you are on a trip there, take the time to personally tell them thank you.

Happy Hunting,

Don Rideout

Discovery Place

After receiving an e-mail from Discovery Place in Charlotte on September 25th that they would have their fossil day on October 3rd, I debated between the field trips or being at Discovery Place. The weather made the decision for me. I was still packed up from the Rankin Museum Fossil Fair from the week before. Rain was very heavy on the way to the museum but it lightened up and I returned home in light sun. Many events had been cancelled including the Susan G. Komen 5K Race. This allowed a very good day to take the kids to Discovery Place. The museum looked after me and I was busy all day answering questions and pointing out specimens that would keep them interested. I had a great time and we had a few short of 2000 visitors!

Ruffin Tucker



The crew at the Rankin

Outreach Highlights for 2015

Outreach is an important part of the NC Fossil Club's mission. People reached ranged in size from thousands to as few as one or two. Outreach occurs at museum events (PaleoPalooza, Aurora Fossil Festival, Dino Days, Schiele Museum Fossil Fair, Norwood Arbor Day Festival and Fossil Fair, etc.); schools and libraries; and even at the smaller, individual group level. Everyone's contribution is important. While an effort has been made to recognize everyone's contribution, we know there are still some that we missed. If you performed outreach during 2015 and are not recognized below, send us an e-mail and we'll make sure you're recognized in the online website post.

Ten members exhibited at the NC Museum of Natural Sciences PaleoPalooza 2015. Over 6000 visitors learned about fossils from NCFC exhibitors: Richard Marshall, Terry Denny (The Dinosaur Hunters), Trish Kohler (ancient Seals, Walruses and Manatees), Richard Chandler (Photography), Joy Herrington (Backyard Quarries), Joanne Panek-Dubrock (Whales, Shells and all things tiny), Ruffin Tucker (NC Ediacaran and SC Fossils), Charley Causey (Fossils Large and Small), Ramona Krailler (The Hunt for the perfect *Auriculatus* Tooth), Dan Peters (Fossils of the East Coast) and James Mickle (Fossil Plants). Members continued to be a strong presence at the Aurora Fossil Museum's annual Fossil Festival. Over 15 members (Ruffin Tucker, Dan Peters, Don Rideout, Heather & Todd Power, Trish Kohler, Diane Willis, Jonathan and Kathy Fain, Joanne Panek-Dubrock, Don Clements, Richard Marshall, Eric and Teri Sadorf and Joy Herrington) displayed at the annual Aurora Fossil Festival. Later in the year, Julie Niederkorn and Mary Harbison sold NCFC publications at the Museum's National Fossil Day event. Jonathan, Kathy & Arianna Fain, Trish Kohler, Julie Niederkorn, and Roxada Story displayed fossils and Ruffin Tucker worked with the Museum to set up a semi-permanent display of Ediacaran Fossils.

Members Jonathan, Kathy and Arianna Fain, and Ruffin Tucker represented the Club for the 6th year with their fossil displays at the Norwood Arbor Day Festival and Fossil Fair; while Dr. James Bain and Mary Boulton set up the Aurora dirt outside under a large tent.

Members Ruffin Tucker, Joy Herrington, and Trish Kohler set up displays at the Discovery Place in Charlotte for World Oceans Day, and later in the year, Ruffin Tucker returned to display for the museum's fossil fair.

Members James Bain, Mary Boulton, Richard Chandler, Jonathan Fain, and Joy Herrington, led by Ruffin Tucker participated in the Rankin Museum Mini Fossil Fair. Ruffin was also joined earlier in the year by Richard Marshall at the Schiele Museum Fossil Fair where they displayed and talked about fossils.

Members Diane Willis, Gary and Alex Lewis, Mike and Emily Bruff, Jacob Simpson, Trish Kohler, Louis Kohler, George Klein, Jonathan and Kathy Fain, Julie Niederkorn and Ramona Krailler assisted Museum of Life and Science staff in Durham for their annual Dino Days 2015 event by overseeing "excavations" at the museum's Aurora dirt pile.

With a new emphasis on fossils, members are being called on more and more to not only train coaches for the Science Olympiad, but to provide teaching and assistance in classrooms across the state. In October, James Bain, Vince Schneider and Richard Chandler provided training for approximately 150 Science Olympiad Coaches (High School, Middle School, and Elementary) for Fossil Science Olympiad teams across the state. Members Tom Hoane and Dan Peters are two of the many that helped teams prepare for the upcoming competitions. Outreach to schools reached over a thousand students. Highlights include: Don Clements presented to about 20 students at Cape Fear Middle School; Cheryl Gourley talked to 75 fourth graders at North Ridge Elementary about what fossils are, the main types

of fossils (cast, mold, true form, trace), the fossil record in NC, and fossil collecting and safety; Terry Denny exhibited fossils to over 150 students and parents at the Lacy Elementary School Science Night; Ralph Brinton spoke to about 100 students at Southern Pines Elementary School about the geological time chart and the different fossil records that might be in each; Dan Peters displayed and talked about fossils to 300-400 students and parents at the Leesville Elementary School Raleigh Science Night and to about 35 students at a Cardinal Gibbons High School Raleigh Biology Club Meeting; Richard Marshall displayed and talked about fossils to about 125 8th graders in 4 science classes regarding geology and paleontology; Jim Mahoney presented to four 8th grade classes (about 150 students) about geology and paleontology; and finally, members Trish Kohler, Diane Willis and Jonathan Fain set up fossil displays and talked about fossils at the Creekside Elementary School Science Night. Jonathan also set up fossil displays and talked about fossils to 80 fourth graders at Louisburg Elementary School and over 300 students at Fletcher Elementary School.

Other Outreach was provided by Lynn Moore who visited an elderly gentleman to talk about fossils and took a small group of middle-aged "students" on a collecting trip to Columbus County. Jonathan Fain set up his fossil display and talked about fossils at 8 Wake County libraries reaching over 800 students.

Mike Bruff

PaleoPalooza (aka Fossil Festival) 2015

Photos by Trish Kohler



Terry Denny explains



Heather & Todd Power with book sales



Joy Herrington & Mike Bruff



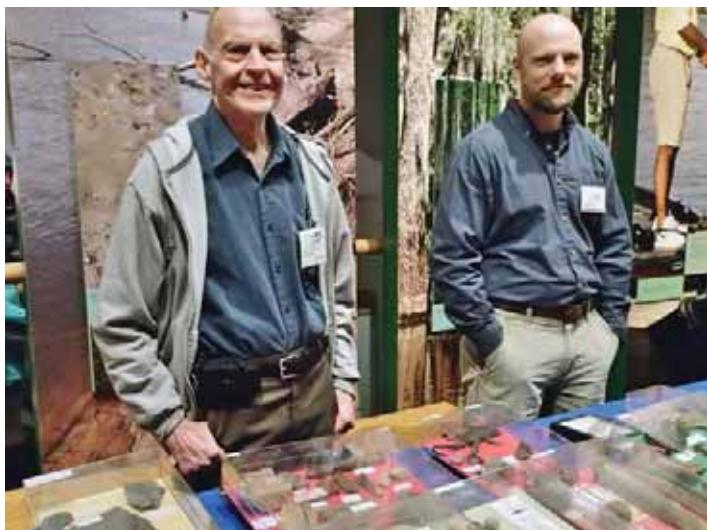
Role Model (Emily Bruff)



Dan Peters with some of his "Fossils of the East Coast"



Charlie Causey & Todd Power



Ruffin Tucker & Museum volunteer



Joanne Panek-Dubrock & Ramona Krailler



Periarchus lyelli with at least 3 different species of bryozoa

These photos (by Trish Kohler) are of a few of the wonderful finds made during the Club's fall trip to the Castle Hayne quarry.



A very cute, tiny *Euterephoceras carolinensis*



An unusually clean *Echinolampas appendiculata*

1. Dolphin chevron bone (maybe?)
2. *Caretta caretta* (turtle) pygal bone
3. *Pinguinus* sp. (auk) coracoid
4. Dolphin carpal (wrist) bone
5. Squid cephalopod cheek tooth
6. Felidae (cat) carnassial tooth
7. *Trichechus manatus* (sea cow) vertebra
8. Tapirus (tapir) lower jaw
9. *Alca antarctica* (auk) sternum
10. Hadrosauridae (dinosaur) tooth
11. *Palaeophis grandis* (sea snake) vertebra
12. *Syllomus agyptricus* (turtle) humerus
13. *Pelagornis* (pseudo-toothed bird) jaw fragment
14. Baleenopteridae (whale) incus (ear bone)
15. *Phalacrocorax* sp. (cormorant) tarsometatarsus
16. *Cannis latrans* (coyote) lower jaw
17. *Thoracosaurus* sp. (giant or gavial) vertebra
18. *Phocaenella* sp. (seal) lower jaw fragment
19. *Dennosuchus rugosus* (giant alligator) tooth
20. "Phocoetus vasconum" early mysticete whale tooth



Yorktown Formation - very porous bone - 54 mm
NCMNS (donated by Judy Stiles)



Yorktown Formation - sutures on edges - 58 mm
NCMNS #29257 (donated by Judy Stiles)

Fossil ID Quiz

The photo on the back cover is of a unidentified cetacean caudal vertebra. To whet your appetite, I've put together a little quiz, consisting of 20 more photographs of some of the very striking specimens pictured in the upcoming *Volume IV: Reptiles, Birds, Mammals*. Warning: this is a very difficult quiz. There are almost certainly photos of things you have never seen before.

Answers (upside down) below.



3.

Yorktown Formation - Isn't it weird looking? - 50 mm
Judy Stiles



4.

Yorktown Formation - porous bone - 64 mm
NCMNS (donated by Judy Stiles)



5.

Pungo River Formation - the best I've ever seen - 60 mm
Becky Hyne



6.

Greens Mill Run - perhaps a first for NC! - 22 mm
NCMNS (donated by Judy Stiles)



7.

NC Pleistocene - dense, hard bone - 71 mm
John Timmerman



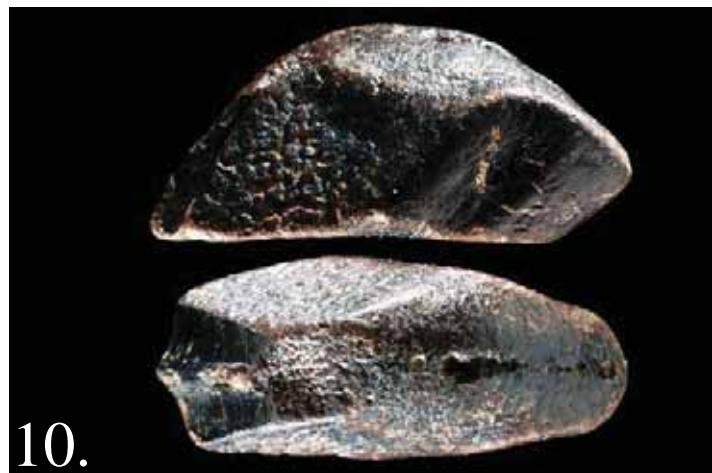
8.

NC Pleistocene - lower jaw - 230 mm
NCMNS #28897 (donated by David Sanderson)



9.

Yorktown Formation - Holotype! - 150 mm
NCMNS #13734



10.

Bladen Formation - tooth (hint ☺) - 24 mm
Richard Chandler



11.

Castle Hayne Formation - somewhat porous bone - 25 mm
Richard Chandler



12.

Yorktown Formation - right (distal) end missing - 84 mm
Rick Bennett



13.

Pungo River Formation - dense, hard bone - 42 mm
Becky Hyne



14.

Yorktown Formation - small within large - 10 mm
Joy Herrington



15.

Yorktown Formation - complete bone (rare) - 57 mm
Richard Chandler



16.

Greens Mill Run - impressive, even missing teeth- 140 mm
Sharon Mozingo



17.

Peedee Formation - scarce reptile vertebra - 82 mm
David Sanderson



18.

Yorktown Formation - one of the best ever - 118 mm
John Timmerman



19.

Bladen Formation - tooth (hint ☺) - 54 mm
Tom Burns



20.

Pungo River Formation - NOT an archaeocete - 48 mm
Tom Stafford

NORTH CAROLINA FOSSIL CLUB, INC.

(Founded 1977)

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2016 MEMBERSHIP APPLICATION - NORTH CAROLINA FOSSIL CLUB

NAME(S) _____

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.

The Fossil Club's newsletter, *JANUS*, is mailed out four times a year. You may download it from the website (and opt out of the paper copy, if interested) by creating a member login on the website. If you wish to do this, please send an email to ncfossilclub@gmail.com with "newsletter" in the subject line. The electronic copy generally has colored photos; the printed copy only black & white.

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 25276, RALEIGH, NC 27611-5276

North Carolina Fossil Club
P.O. Box 25276
Raleigh, NC 27611-5276

What is it? 70 mm x 64 mm (it's not Chewbacca!)

See inside, page 5, for the answer and more!

