



Spring Calendar

March

Outreach - Early March. Volunteers needed. **Cub Scout Pack 214**, Matthews, NC. Contact Outreach Coordinator, outreach@ncfossil.org.

6 **Castle Hayne**- Full.

14 **Greens Mill Run** (Pitt co) - Sign up begins at 9am on March 9. Contact Rick Trone on that date and time at richard.trone@gmail.com

15 **NCFC Meeting**- 11 West Jones Steet, Raleigh, 1:30 pm, Level A conference room. Title of talk: "Hunting Dinosaurs in Alberta" Terry Denny is the speaker.

20 **Belgrade Quarry**- Open quarry day, 9:30 arrive time NO ONE EARLIER

27 **Clark's Quarry**- (email Monica Spence monica.spence@martinmarietta.com starting at 8:00 am on March 13). Must be 18 and older.

April

2 **Creekside Elementary Science Week** - Science Night, Durham. Contact Outreach Coordinator, outreach@ncfossil.org.

3 **Onslow Quarry**- Open quarry day. No limits.

11 **Greens Mill Run** (Pitt co) - Sign up begins at 9am on April 6. Contact Rick Trone on that date and time at richard.trone@gmail.com

18 **Tar River** (Edgecombe Co.) - Sign up begins at 9am on April 13. Contact Rick Trone on that date and time at richard.trone@gmail.com

25 **Norwood Arbor Day and Fossil Fair**. 9:00 - 4:00 at the new Norwood Town Hall, 212 South Main St., Norwood, NC. Contact Ruffin Tucker at fossiler77@msn.com or call (404) 784-1672.

May

15 **Belgrade Quarry**- Open quarry day, 8:30.

17 **NCFC Meeting**- 11 West Jones Steet, Raleigh, 1:30 pm, Level A conference room. Dr. Bruce MacFadden speaker.

23 **Aurora Fossil Festival**. Aurora, NC.

29 **Clark's Quarry**- (email Monica Spence monica.spence@martinmarietta.com starting at 8:00 am on May 14). Must be 18 and older.

President's Message

Our club is a compilation of people with a wide array of interests regarding paleontology. Though we do have a number of professional paleontologists, geologists, and other scientists, many of us are considered amateur or avocational paleontologists because we like the science and enjoy learning more by discovering fossil specimens in the field, hearing about all aspects of paleontology in the talks we have at meetings, and gathering/giving information at fossil fairs and festivals. However, as amateurs, we don't make our living working full-time in paleontology.

Wherever your interests in paleontology lie, one way you can keep up with recent research is to become a member of the Paleontological Society. You can even join in the special categories of Amateur/Avocational or K-12 Educators for only \$30 per year and get online access to both the Journal of Paleontology and another journal, Paleobiology. (As a professional, you would pay \$65 per year.) This way you can learn the latest thinking about paleontological topics. If you'd like to attend a professional meeting, the Paleontological Society now has its meetings in conjunction with the annual and regional meetings of the Geological Society of America (GSA). Do have a look at those websites: <https://www.paleosoc.org/benefits-of-membership-in-the-paleontological-society/> and <https://www.geosociety.org/>. Last year, our own Linda McCall was named the Avocational Liaison for the Paleontological Society, so if you have questions about it, ask her!

There are always outreach events at which you can lend your paleontological expertise, and we keep getting more and more requests. Many many thanks to everyone who volunteers for these! Please keep doing so and encouraging others! Schools, libraries, museums, outdoor events, fossil fairs and festivals, and various groups ask us to give programs and/or exhibits. Darryl Grater is our Outreach Coordinator (Outreach@ncfossilclub.org) so do let him know if you have a program requiring volunteers or if you'd like to be a volunteer!

continued next page

Another fun way you can share your interest in paleontology is to write an article for Janus! Perhaps you can tell how you became interested in fossils, or where you've been on collecting trips, or why you want to have someone lead a trip to a certain locality!

See you out in the field, at meetings, or while doing outreach!

Diane Chapman Willis
President, NCFC

Why genus *Jacquhermania*?

By Dominique M. Joos de ter Beerst

My curiosity of the genus named after a very good friend of mine, felt the need to be explored and also sharing the outcome with others. I therefore contacted Dr. Jacques Herman, retired, living in the outskirts of Brussels, Belgium. For many years, Dr. J. Herman worked as the Head of the Department of Geology at the Ministry of Interior in Belgium. Dr. J. Herman has a PhD in geology. He discovered his love for fossils through his studies, later on, by examining works done in the field, like digging new canals, roads, buildings, etc., all approved by the Ministry of Interior. The nomenclature of *Jacquhermania duponti* used a formal system of naming genera and species called binary nomenclature in zoology since 1953 or upper case for the genus, lower case for the species.

The events of naming a particular ray tooth *Jacquhermania duponti* started with Tiberius Cornelius Winkler (1822-1897), a Dutch scientist. His numerous interests were anatomy, zoology, natural history, geology, paleontology and mineralogy at the Teylers Museum in Haarlem, Netherlands. This brilliant scientist developed a great interest, mainly in paleontology and geology. Although, T. Winkler had originally studied medicine in order to become a surgeon. His destiny changed when a fisherman complaining of being stung by a weever fish. This fish has poisonous spines on its first dorsal fin and gills. His article, "Album der Natuur" (Nature's Album") ended up making him a fish expert. The curator of the museum, Professor Van Breda was aware of his numerous interests and asked T. Winkler to identify his personal fossilized fish collection and that of the museum. His work was published in 1859 in the *Verhandelingen* ("Transactions") of Teylers Society. Even so, he continued his medical career, he was asked to become the curator of Teyler's paleontological and geological cabinet, a post he kept until his death in 1897.

At the end, in 1896, he published 6 volumes and 5 supplement works documented for a total of 15,458 fossils. He catalogued the museum's mineral collection too. In his work, he stumbled

on a few specimens he named *Cestracion duponti*, Winkler 1874. Nobody argued the nomenclature of the specimens until 1905, when Maurice Leriche (1875-1948) French scientist, realized that the specimens were improperly identified by T. Winkler. Maurice Leriche believed that the teeth belonged to the genus *Raja*. M. Leriche in his paper "Middle Eocene of Belgium" published in 1905 (see pages 112 and 179) did not realize either, that both were dealing with new genera. The specimens from the Bruxellien, a lower geological time of the Eocene were found in Woluwe-Saint-Lambert, a suburb of Brussels, Belgium and changed to "*Raja duponti*" by M. Leriche. It became very tricky, but with Henri Cappetta's knowledge over the years exposed to too many challenges, was able to figure this enigma of T. Winkler and M. Leriche in 1982. He wrote a scientific paper named "Revision de *Cestracion duponti* Winkler, 1874 (Selachii, Batomorphii) de Woluwe-St-Lambert (Eocene Moyen de Belgique)". Henri Cappetta, working at the Paleontological Laboratories of Montpellier, France explained that both scientists of the past, allowed to place in evidence the heterogeneity (made of parts that are different) of this taxon (group of one or more populations of an organism or organisms). As per H. Cappetta, the teeth described and figured by Winkler represent a new genus, *Jacquhermania*, and can be put among the *Gymnuridae*. The teeth that M. Leriche studied belong to the female of *Cestracion duponti* represent in reality a new genus and a new species, *Coupatezia woutersi*, attributable to the family *Dasyatidae*. In fact, P. Coupatez and G. Wouters contributed a lot of material to H. Cappetta from the Woluwe-Saint-Lambert site for his research in 1982; both paleontologists are from Brussels area, Belgium. *Derivatio nominis*, Latin words, meaning "origin of a name", genus *Jacquhermania* is dedicated to Dr. Jacques Herman, a well-known paleontologist known around the world, specializing in elasmobranchs. In the past, Dr. J. Herman had furnished to H. Cappetta many SEM photographs of the specimens in question for his paper written in December 1982. Often, scientists name a genus and/or species after a person or persons who contributed to their work, if not the location where the specimens were found. SEM stands for Scanning Electron Microscope. The term "SEM" is actually used to describe a microscope used to create high magnification in black and white images of devices with dimensions from a few tenths of a micron to several millimeters in diameter. The term "SEM" is also used to describe the photographs taken by the SEM. Hence, SEM refers both to the microscope, and the photographs created by the microscope.

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As far as the distribution of the *Jacquhermania duponti* is concerned, only a few countries are involved producing these very small fossils like Belgium, Egypt, United Kingdom and USA. The age range of appearance of the *Jacquhermania duponti* is between 55.8 and 50.3 million years. Also, one has to take into consideration, due to their small size, these specimens are difficult to find.

I would like to thank my friend Dr. Jacques Herman who provided the information of the origin of his name passed on to the genus of a ray, in recognition of his work by his colleague H. Cappetta, Montpellier, France. I also wish to thank my other friend Juergen Pollerspoeck, located in Munich, Germany who emailed me right away a copy of Henri Cappetta's paper of 1982 of the "Revision of the *Cestracion duponti*, Winkler 1874, in the French language. I visit his great website on a regular basis to obtain the proper nomenclature of elasmobranches when I create my labels for each specimen or www.shark-references.com. I am truly grateful to both scientists for their support and encouragements. I would like to thank my friend Gerard R. Case of Little River, SC, for reviewing my work. I feel very privileged to receive help from three great professional scientists from around the world.

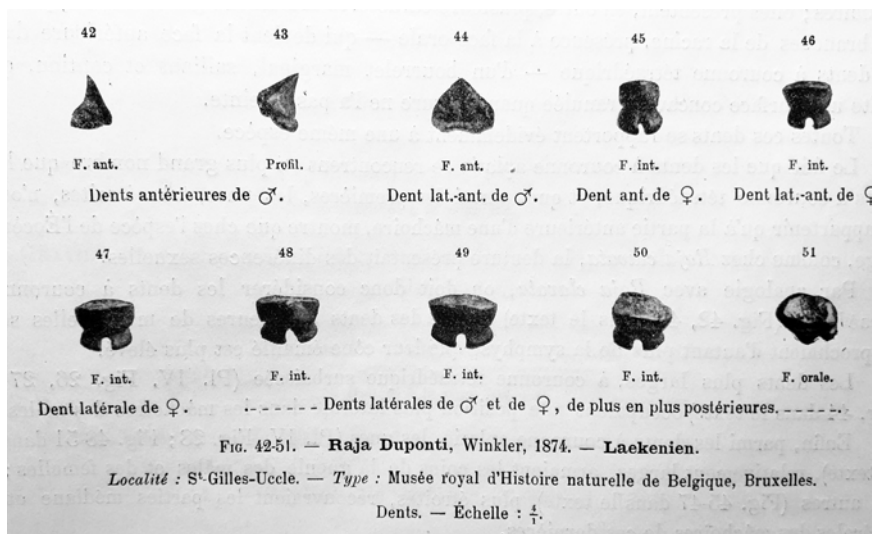
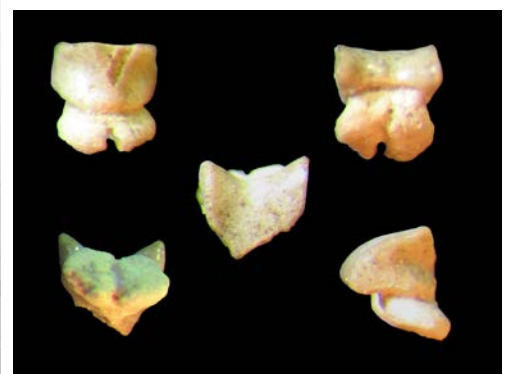


Image from Maurice Leriche's 1905 publication.



Possible *Jacquhermania duponti* from the Castle Hayne Formation of NC. Width about 1 mm.

Shark Remains Found in Mammoth Cave, Kentucky

Article from Emma Austin, Louisville Courier Journal, USA TODAY

<https://www.yahoo.com/news/sharks-kentucky-researchers-minds-blown-103002195.html>

LOUISVILLE, Ky. – During a November trip to Mammoth Cave National Park in Kentucky, paleontologist John-Paul Hodnett was stunned.

Preserved in the walls of the cave were parts of a large, fossilized shark head – from a shark that lived about 330 million years ago.

The discovery began when Mammoth Cave specialists Rick Olson and Rick Toomey came across the fossils as they explored and mapped the cave system. They sent photos to Vincent Santucci, the senior paleontologist for the National Park Service in Washington, D.C., for help identifying the fossils.

Santucci then sent Hodnett, a paleontologist and program coordinator at Dinosaur Park in Maryland, to help with what became the "Mammoth Cave National Park Fossil Shark Research Project."

Some of the shark fossils in the photos were identifiable, but

Hodnett said what got him really excited was something else. "One set of photos showed a number of shark teeth associated with large sections of fossilized cartilage, suggesting there might be a shark skeleton preserved in the cave," he said. Fossils of shark skeletons are rare because cartilage does not typically survive fossilization. Shark teeth, however, are made of bone and enamel and preserve well. Since sharks replace their teeth throughout their lives, shark teeth are one of the most common fossils on the planet, Hodnett said. "I wasn't exactly sure what I was going to see in the cave during my trip in November," Hodnett said. "When we got to our target specimen, my mind was blown."

The fossils weren't parts to a full skeleton, but parts of a head that belonged to a shark, about the size of a Great White Shark, which ranges in length from 11 feet to 21 feet. Based on what was exposed in the cave wall, Hodnett said the find includes a lower jaw, skull cartilage and several teeth.

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Hodnett determined the shark belonged to a species called "Saivodus striatus" from the Late Mississippian period, about 330 to 340 million years ago.

Hodnett said the time period is not well-represented in North America but is well known in Europe.

"Most significantly, the majority of the shark fossils we discovered come from a layer of rock that extends from Missouri to Virginia but never documented the presence of sharks, until now," he said. "It's like finding a missing puzzle piece to a very big picture."

Thanks to the slow erosion of the limestone in the cave, the shark teeth are mostly intact and extremely detailed.

More than 100 individual specimens have been discovered during the project. Hodnett said teeth and dorsal fins of other

shark species are also exposed in the cave ceiling and walls. "We've just scratched the surface," Hodnett said. "But already it's showing that Mammoth Cave has a rich fossil shark record."

Because the National Park Service has experienced fossil theft and vandalism in the past, it does not release information about the specific location of fossils found in its parks.

"We want the public to benefit from the scientific information, but at the same time we have a duty to protect these non-renewable resources," Santucci said.

Hodnett said the team is working on presenting a preliminary account of the project in October at the Society of Vertebrate Paleontology meeting in Cincinnati.



Shark remains eroding from the wall of the cave.

Some fossil discoveries from North Carolina published in 2019

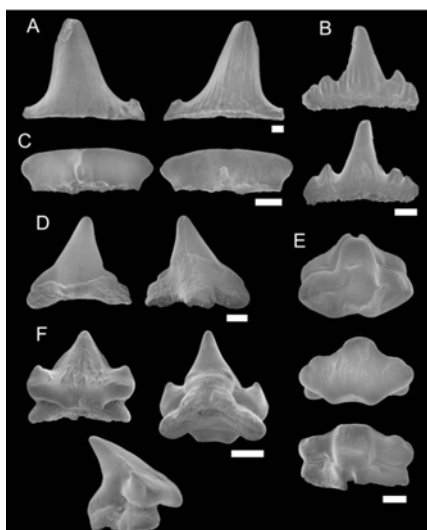
Boessenecker, R.W. 2019. **Problematic archaic whale *Phococetus* (Cetacea: Odontoceti) from the Lee Creek Mine, North Carolina, USA, with comments on geochronology of the Pungo River Formation.** PalZ vol. 93, issue 1, pp 93-103.



Abstract: Heterodont cetaceans are abundant in Eocene, Oligocene, and early to middle Miocene deposits worldwide. Taxonomic practice in the 19th and early 20th centuries led to the establishment of a multitude of names based on isolated teeth. Some of these taxa, such as *Phococetus vasconum* from the lower Miocene (Burdigalian) of France, have been alternatively interpreted as archaeocetes, odontocetes, and mysticetes. Isolated teeth resembling *Phococetus vasconum* from the Pungo River Formation in the Lee Creek Mine (Beaufort County, North Carolina, USA) also share features with the enigmatic early Miocene odontocete *Inticetus vertizi*, suggesting that *Phococetus* may represent a large heterodont odontocete.

Case, G.R., T.D. Cook, T. Kightlinger and P.D. Borodin. 2019. **Middle Campanian Euselachian Diversity of the Southern Region of the Atlantic Coastal Plain of North America.** *Vertebrate Anatomy Morphology Palaeontology* 7: 69-82.

Describes sharks found at the Elizabethtown landfill site. Several current and past NC Fossil Club members donated specimens and a new species of *Cantioscyllium* was named for club member Don Clements.



Abstract: A euselachian assemblage from the middle Campanian Bladen Formation, located near Elizabethtown, Bladen County, North Carolina, USA, is described. The assemblage consists of 18 species from 17 genera, at least 14 families, and seven orders, and introduces the new taxon *Cantioscyllium clementsi* sp. nov. The recovered *Squatina*, *Plicatoscyllium*, and six lamniform species had large cosmopolitan distributions, whereas the new ginglymostomatid species and remaining hybodontid and batoid taxa were likely endemic to the waters of North America.

Feldmann, R.M., C.E. Schweitzer and G.E. Phillips. 2019. **Oligocene pagurized gastropods from the River Bend Formation, North Carolina, USA.** *Bulletin of the Mizunami Fossil Museum*, no. 45, p. 7-13.

Specimens for this study were collected by NC Fossil Club member Don Clements.

Abstract: Fourteen specimens of pagurized gastropods are completely enveloped by anascan cheilostome bryozoan colonies, and most of them bear serpulid worm tubes referred to *Hydroides* sp. These specimens from the Oligocene River Bend Formation in North Carolina constitute the first such occurrence on the Atlantic coastal region of North America.

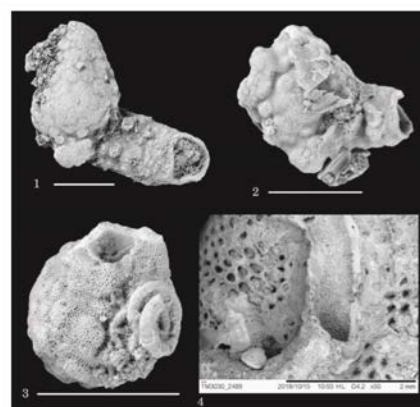


Fig. 2. *Cyprina* sp. showing a linear extension of bryozoan growth beyond the aperture. SEM2019 DP-0910. 2, thick bryozoan colony obscuring the gastropod and extending beyond the aperture. SEM2019 DP-0911. 3, nearly spherical bryozoan growth bearing the initial growth stages of *Hydroides* sp. SEM2019 DP-0911. The aperture of the gastropod is at the top of the illustration. 4, Scanning electron micrograph image of SEM2019 DP-0910 with a broken *Hydroides* tube exposing tiny fossil pellets. Scale bars for Figures 1-3 = 1 cm. Scale bar for Figure 4 = 2 mm.

Garassino, A., P.G. Weaver, R.W. Portell and F.J. Vega. 2019. **A new homolid crab, *Lindahomola longispina* n. gen., n. sp. (Crustacea, Decapoda), from the Peedee Formation (late Maastrichtian), Rocky Point Member, North Carolina, USA.** Neues Jahrbuch für Geologie und Paläontologie - Abhandlungen, Volume 292, Number 3, June 2019, pp. 247-258(12).

Genus named for NC Fossil club member Linda McCall.

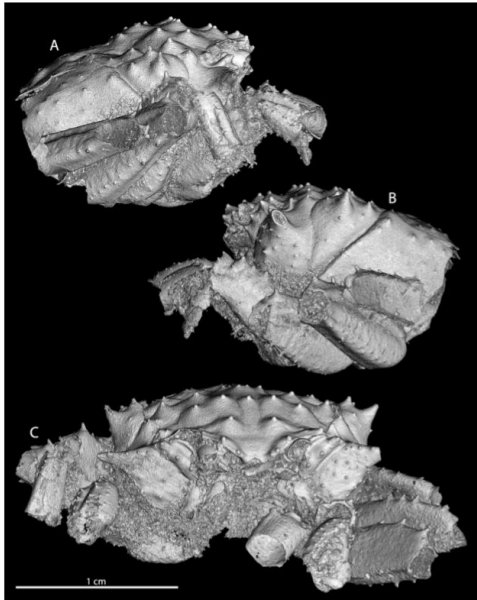
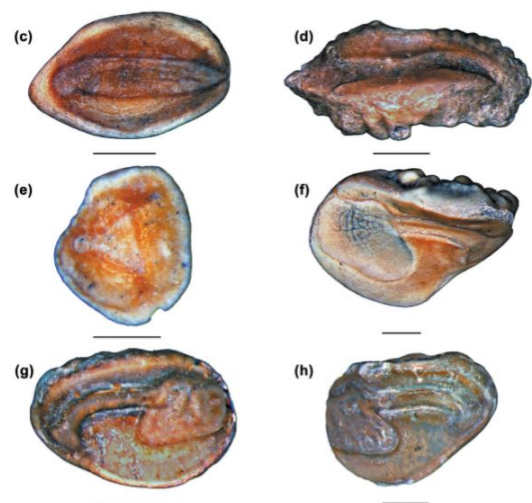


Fig. 6. *Lindahomola longispina* n. gen., n. sp., paratype UF 305717. CT images. A – Right lateral view. B – Left lateral view. C – Frontal view. Scale bar: 1 cm.

Abstract: A new homolid crab *Lindahomola* n. gen., with *Lindahomola longispina* n. sp., is reported from the Late Cretaceous (late Maastrichtian) of the Rocky Point Member of the Peedee Formation (North Carolina, USA). *Lindahomola longispina* n. gen., n. sp. possesses peculiar characters not shared with any known genus within the Homolidae. These characters include two very short pseudorostral spines, supraorbital margin continuous marked by a pair of short supraorbital spines, trifold antennal spine, one prominent anterolateral spine directed upward, with three supplementary basal spines, and one straight prominent subhepatic spine directed outward, with upper margin bearing a row of four small spines. *Lindahomola* n. gen. represents the second homolid crab from the Peedee Formation after the recent report of *Peedeehomola* Garassino, Clements & Vega, 2015.

Stringer, G. and K. Shannon. 2019. **The Pliocene Elizabethtown otolith assemblage (Bladen County, North Carolina, USA) with indications of a primary fish nursery area.** Historical Biology, Jan 2019.

Abstract: Bulk sampling of Pliocene (2.5–3.1 Ma, Piacenzian) beds at the Elizabethtown locality (Bladen County, North Carolina) produced 745 teleostean otoliths (17 taxa, representing extant fish off the U.S. Atlantic coast). Sciaenids dominate the assemblage (8 taxa; 44.4% of the total) and account for an extremely large percentage of total specimens (93.2%). The number of species (richness) at Elizabethtown is relatively small, and percentage abundance indicates a very large unevenness with *Micropogonias undulatus* and *Leiostomus* aff. *L. xanthurus* (91.4% of the specimens). Otolith assemblages from Elizabethtown and Lee Creek Mine, one of the most extensively studied North Carolina Pliocene sites, were compared. Assemblages were extremely dissimilar (percentage similarity measurement of 3.3%). Modern distributions of *M. undulatus* and *L. xanthurus* are very strong indicators of shallow, soft bottom estuarine creeks and bays. The preponderance of juvenile *M. undulatus* (99.5% represent 1-year-old or less) is a strong indicator for a primary nursery area. This specialised habitat explains the dominance of juvenile Atlantic croakers and spots, the high percentage of fishes distributed in freshwater, brackish, and marine environments, and the paucity of marine-only species. The specialised habitat indicated at Elizabethtown would also account for the pronounced difference between the Elizabethtown and Lee Creek otolith assemblages.



2020 Membership Application - North Carolina Fossil Club



Name (1) _____ email _____

(Primary adult member -18 or older for Single/HH Membership)

Name (2) _____ email _____

(Secondary adult member - 18 or older for HH Memberships)

Address _____

City, State, ZIP _____

Phone (____) _____ - _____

First names of minor (<18) children: _____

Current members need to only complete name, any changes and sign the Liability Statement.

Select **One** Type of Membership

(Enclose check or money order

for the indicated amount.)

Individual (new) \$20.00

Individual (renewal) \$15.00

Household (new) \$25.00

Household (renewal) \$20.00

Children of NCFC members who are dependent minors (<18) and living at home may accompany parents on any trip *except those with specific age restrictions*.

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 published four times a year and is available only online for members. You may read it online or download it from the website

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 Members of the Board, 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 _____

Privacy Policy: The NCFC collects contact information for purposes of contacting you regarding your membership, collecting trips you may have signed up for and for other members who may wish to contact you. Your contact information is also included on a membership list published on a secure location on the NCFC website and is available to other current NCFC members. If you do not wish for your contact information to be included on the published membership list, please send an email to membership@ncfossilclub.org with "membership list opt out" in the subject line. Please note while you will continue to receive information (electronic and paper) from the club; other members, including trip leaders may not have access to your contact information.

Mail To: North Carolina Fossil Club, P.O. Box 25276, Raleigh, NC 27611

NORTH CAROLINA FOSSIL CLUB, INC.
(Founded 1977)
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GENERAL CONTACT	paleoNC@ncfossilclub.org		

NORTH CAROLINA FOSSIL CLUB

CODE OF ETHICS AND CONDUCT

1. Please conduct yourselves in a manner that best represents the NCFC.
2. Please make a sincere effort to keep informed of all laws, regulations and rules regarding collecting on private and public lands.
3. Never use the name of the Club to gain access to lands, or scientific sites actively under study by paleontological professionals for personal gain or profit.
4. Please act responsibly and safely on all club outings so as not to bring other members or yourself into harm or danger. Parents are responsible for their children and making sure their children follow all quarry, etc. rules. Firearms are prohibited from all Club functions.
5. Always respect and cooperate with the field trip leader or designated authorities in collecting areas. Do not bring along anyone not signed up for the trip, or any non-member to a trip without clearing it with the field-trip leader first.
6. Never collect a site immediately prior to a scheduled field trip thereby preventing fair collecting opportunities for the rest of the members of the Club. "Scouting" ahead of time by the field trip leader is fine.
7. You are encouraged to contact the appropriate professionals upon discovery of what you consider to be scientifically significant fossils. This includes excavation, preparation, and documentation of the fossils in question. You are encouraged to consider donating such fossils to appropriate facilities.