President’s Column

Hello everyone! I hope your summers are going well and everyone’s anticipating the fall collecting season. I am working with the staff at the North Carolina Museum of Forestry in Whiteville to transform their museum into a fossil wonderland this November. I would like to see the November fossil fair be the biggest and best to date. Plans are in the works to have the September meeting focus on ideas on how to display fossils. I encourage members who have a desire to display their collections but are unsure of how to put a display together (or to just get started putting one together) to join us at the September meeting. Also at the September meeting the November Fossil Fair signup will be available. I encourage everyone who wants to display or help to come out and sign up. Now on to more recent events, the Aurora Fossil Festival was a huge success and I would like to thank all who helped out and /or displayed. It was good seeing each and every one of you.

Our next meeting will be July 18th at the Aurora Fossil Museum from 11am until 3pm. We will be having a picnic and a brief meeting. Curtis Ormond Jr. has been gracious enough to open the museum for us that Sunday for members to visit the museum. (Thanks, Curtis.) I would like to get a general number of members joining us that day, so if you can, please drop me a line (fossilgal@hotmail.com / 910-353-8897) and let me know if you’re planning on coming and how many are joining you. Also, if anyone would like to bring a dish that would be great as well. With that said, I look forward to seeing everyone July 18th. Till then take care and happy fossil hunting!  

Cindy Muston

Trip Reports

On March 25 thirty-four members of the NCFC gathered at the Martin Marietta Quarry at Castle Hayne for a great day of fossil hunting. The weather was perfect and after signing in and filling out the release forms we headed for the designated parking area. From there we all took off for our favorite hunting area. In and after signing in and filling out the release forms we headed for the hunting area. After filling out the release forms we headed for the hunting area. The following was reported or observed.

Cindy Muston along with her son, Nathan, had 3 Hardouinia mortonis. Bobby Tant found 2 Unifascia carolinensis, a 7” Pleurotomaria sp. slit shell, Eutrephoceras carolinensis, and other echinoids. Ron Edwards reported a Linthia wilmingtonensis while Sharon reported an Atruria sp. Dana Priddy wrote he was skunked. Earl Guertin reported a drum fish skull. Lillian Corkum reported lots of small teeth. Diane Willis had Hardouinia mortonis, nautiloid chamber casts and belosaepid guards. Ramona Kralier had a lower Cosmopolitodus praecursor, a beautiful Centronea micropora (bryozoa) and belosaepid guards. Trish Kohler had 4 belosaepid guards and coral - you can tell that Diane, Ramona and Trish were at the NCFC meeting and were attentive to the lecture on belosaepids. Robert Story reported small teeth and echinoids while Roxada reported several Cretolamna biauriculata and other small teeth. Rita McCabe - it was nice that Rita could join us - found a nice auriculatus and a variety of small teeth. Joann Panek-DuBrock reported 25 Plicatigoria wilmingtonensis brachiopods and a Maretia subrostrata echinoid. Jennifer Harper reported a Xantilithes sp. crab carapace - those of us that saw her carapace were impressed with its completeness. There were quite a few hunters that did not report their finds.

After leaving the mine 14 of us went for seafood - what a way to complete the day.

John Everett

Nineteen members of the NCFC gathered at the Martin Marietta Quarry at Rocky Point on April 29 for a day of fossil hunting. The weather couldn’t have been nicer and after signing in and filling out the release forms we headed for the designated parking area. From there we all took off for our favorite hunting places with the following being reported or observed.

Cindy Muston reported that she found a pathological echinoid, rear auriculatus and a juvenile auriculatus. Bobby Tant had a nice 2” auriculatus, many echinoids, Isurus praecursor and a variety of small teeth. Rich Olsen had a beautiful Linthia wilmingtonensis, other echinoids and a 2” lower auriculatus with a damaged tip. Ron Edwards continues his good luck run on auriculatus with finds of 3½”, 2½”, and 3”. Sharon Edwards had 1 auriculatus, 4 shark vertebra and a variety of echinoids. JoAnn Beitz had 3 small auriculatus and echinoids. Peggy Willis found a ray barb and echinoids. Darla Liles reported a Unifascia carolinensis and 2 shark vertebra. Charlie Knupp had ray and shark vertebra, Cylindracanthus and many small echinoids. John Steffensen had a variety of small teeth. Marshall Tillett reported 4 shark vertebra, a Pristis lathami rostral tooth and echinoids.

Dan Shuller had a 2½” auriculatus and 2 Galeocerdo eaglesomei. Trish Kohler, after many trips, found her first auriculatus - a 2” lateral - congratulations to Trish !!!!!!!!!!!!!! She also reported a Linthia wilmingtonensis, Linthia harmatuki, Eurhodia rugosa ideali and other echinoids. Dana Priddy had a small auriculatus. Joanne Dubrock had 3 Maretia subrostrata, 3 Agassizia porifera and she says a really weird one. Earl Guertin had an Isurus praecursor, Pristis lathami spinal disk and a tooth that definitely need more attention. To me the tooth has to be a cat canine as it is exactly like my Nebraska cat tooth except it is probably a quarter of the size.

After leaving the parking area some of us met at the Recreation Area to see what others found and for identification. Afterwards some of us went for seafood - a good day in my book was had by all.

John Everett
Trip Reports, cont.

The weather leading up to the Green’s Mill Run trip was wet and threatening. The day (June 4) turned out very good with low water, good temperatures and a mix of sun and clouds. Fourteen fossil hunters headed for the creek and we all had a good day.

Bobby Tant: whale earbones and pottery shards.
Rich Olson: 2½” Mako and several Pristiodontus teeth.
Todd and Heather Power: Tiger, Meg, modern white and Mako.
George Oliver and son: 2½” Meg and Mako.
Gael Decoudu and Anna Le Moigne: whale tooth and part of a whale skull.

Everyone found a collection of fossils; these were the best of the bunch. Hunting at the creek was very pleasant and the source of fossils renews the creek with each rain. John Steffensen

Tall Tales from the Trails, No. 5

Triassic Petrified Wood at Joseph City, Navajo County, Northern Arizona

James R. Bain, Bahama, NC

Summary: Petrified wood and a good place to stretch your legs.

Difficulty: One on a scale of five (when clay is dry).

Alongside Interstate 40 at an exit. You might high-center your car if you venture too far afield in the Ice Cream Hills just north of the collecting site.

Geology: Clays and gravels of the Petrified Forest Member and the Shinarump Conglomerate, both in the Triassic Chinle Formation, deposited roughly 200-225 million years ago. Note that the Shinarump contains reworked cobbles of Paleozoic marine fossils. These strata of Arizona’s Petrified Forest and Painted Desert are similar in age to North Carolina’s Boren Clay site in Chatham County (Carter et al. 1988). Nearby outcrops of brick-red sandstone are in the Triassic Moenkopi Formation.

Fossicking for fossils: Despite heavy collecting at this site for more than a century, you will have no trouble finding chips of petrified wood (Simpson and Mitchell 1989: 46-47, Blair 1992: 75-76). This is a great spot for kids (see photo), but keep an eye on them, lest they wander off in the rolling clay and gravel hills. Rattlesnakes, wasps, biting ants, tarantulas, and scorpions are present, but the plant community is not very productive, so the creepy crawlers are sparse. Do examine the Harvester Ant mounds for tiny fossils (Pogonomyrmex; Janus 2003, No. 3).

The Ice Cream Hills, my name for the clay beds of the Painted Desert just north of the area shown on the map, contain big logs of silicified wood in the Chinle’s Petrified Forest Member. Beware! In wet weather, the expansive bentonite clay will build up on your boots and tires with great tenacity. Attempting to walk with a big clot of clay on each of your feet, followed by the pleasures of getting your car stuck in the clay, will make you skittish about future wet-weather ventures into the clay beds that helped to create (and protect) so many of the West’s fossil “treasures.”

As at the Fort Wingate, NM, site we recently discussed (Janus 2004, No. 1), most wood here is nominally the conifer, Araucarioxylon, but Schilderia and Woodworthia are probably present, as well. Some of the material is colorful, but most is off-white on the outside and black or gray or off-white when polished or freshly chipped. Many logs appear to have been weathered as driftwood in rivers or lakes before petrifaction. Note the absence of small branches and twigs, and the local alignment of big logs, as by riverine flood currents or waves on a lakeshore. Pre-fossilization damage by fire, fungus, and termites is sometimes apparent. I like specimens with knot holes and crystal-lined cavities.

None of the specimens I have collected here over the years has proved radioactive, but one should always be alert for radiation hazards (Janus 2003, No. 1) in the Chinle and Moenkopi Formations.

Walk gently upon the land, and do not collect plants. Please, please do not drive off established roads. The fragile vegetation here has been damaged by trampling by cattle and fossil collectors. In view of the scant plant cover, I am amazed at the number of cattle that are still permitted to graze at this site. You might meet a few bovine friends, especially among the Ice Cream Hills, and you will certainly see the dung Frisbees they leave behind. Pelt your friends with a few of these Frisbees to liven up your outing. Off-road vehicles, gravel quarrying, and soil compaction by cattle and fossil collectors in this vicinity are real threats to the endangered little Navajo Pincushion Cactus, Pediocactus peeblesianus (Croizat) L. Benson var. peeblesianus. Despite extensive searches, only about one thousand living specimens of these cacti are known to science (Arizona Game and Fish Department 2004). Their geographic range is extremely limited. Some authorities believe that this subspecies is declining toward extinction.

Ethics and laws: As an incentive to the builders of the first transcontinental railroads, Congress granted the companies wide swaths of land on either side of the tracks. Unfortunately, this was often in a checkerboard pattern. That pattern makes land management difficult for us in the 21st Century. Land ownership near Joseph City is a crazy quilt-work of federal, state, and private land, and boundaries are rarely marked or fenced. Land swaps are common among government agencies, and public land is occasionally sold to private developers. The Navajo Nation, just to the north, continues to acquire land on the open market, with an apparent long-term goal of asking Congress to add most of those acquisitions to its Reservation. Fossil collecting is forbidden on Navajo lands. When last I looked, the Bureau of Land Management (BLM) administered the specific site shown on the map. BLM allows limited collection of petrified wood for personal use (Janus 2003, No. 1). I know I sound like a stuck record, but when collecting on public lands in the American West, you should expend effort to keep abreast of land-ownership patterns and regulations governing collecting. A good map and a global positioning system (GPS) will help keep you out of mischief. BLM’s 1:100000 map Holbrook, Surface Management Status, gives an explicit view of land tenure in the vicinity, and BLM’s Web site (http://www.az.blm.gov/) has up-to-date data.

Navigation: From I-40 in Arizona, take exit 277. Just north of the exit, turn right (east) on O’Connell Road, the freeway...
frontage road. Head east alongside the freeway. Soon, you will come to a red pipeline carrying ash sludge uphill from the power plant to the settling ponds. Do not cross that pipeline. Instead, turn left (north) on the unmarked dirt road at 34° 56' 50" N, 110° 17' 49" W (see map). As you proceed uphill to the north, the collecting site is on your left (west). If you want to visit the Ice Cream Hills and see the big logs there, keep heading north over the ridge (just off the map) and down into the clay bottom beyond.

Power plant workers told me of a big fish skeleton discovered when the sludge pond was excavated. They also directed me to prehistoric inscriptions on sandstone outcrops southeast of the pond.

Expect scrutiny when homeland security is at an elevated state. Note that you have, within a mile or two, an interstate highway, a transcontinental railroad, a buried telephone trunk line, a natural gas pipeline, an aqueduct, a power plant, the Little Colorado River, and several big power lines.

What else to see: A fossil bug could spend an entire week in the Holbrook region and not get bored. Petrified Forest National Park will give pause to even the most jaded fans of things paleontological. Take it slow and soak it up. I am especially fond of the vistas of the Painted Desert in that portion of the Park north of I-40. Interpretive displays of Triassic flora and fauna in the main Visitor Center (just off I-40 at exit 311) and the Rainbow Forest Museum just keep getting better and better. Early mammals (or mammal-like reptiles, as you wish) have been found here. One caution for rockhounds: Park Rangers are understandably militant about theft of fossils from the Park. They estimate that more than twelve tons are stolen each year. Yes, twelve tons. Legend holds that misfortune befalls those who steal wood from the Park. See the display of returned wood and letters of woe from around the world. You will almost certainly be checked by Rangers when entering and leaving the Park. Every single time I have visited the Park, I have been asked if I collected any petrified wood. Of course, collecting in the Park is illegal, and they do prosecute scofflaws. So if you collect legally before entering the Park, take care to label and stow your specimens to avoid unpleasant misunderstandings.

The Holbrook region probably has one of the densest concentrations of rock shops in the world. Explore a few. My favorite is the ambitiously named “International Petrified Forest Museum of the Americas and Dinosaur Park” at exit 292 on I-40, which some of us locals call “Triassic Park.” [I am from Flagstaff in nearby Coconino County.] You cannot miss their dinosaur statues and (real) petrified logs, set along a mile or more of the freeway right-of-way. Pay the fee and drive their dirt road loop. Back your car up to an attacking dinosaur for a memorable photo. If you ask, they might let you collect wood and other fossils in the desert and pay for it by the pound. Their store and museum are good, but the eye-popper for me is the big yard out back, where you can purchase colorful, rough petrified wood at a reasonable price. Most seems to come from the Adamana-Holbrook region, where private ranchers use ground-penetrating radar to locate logs before they are exposed by erosion and mangled by freeze-thaw action on the surface. “Triassic Park” also has Cenozoic wood from central and southern Arizona.
Talk with the elderly gentleman working the yard. He is a true authority on petrified wood and other Triassic fossils, and he was one of the discoverers of a unique site with green petrified wood. Ask about private ranches nearby where you can camp at large and collect, for a fee.

Downtown Winslow is one Old West city with historic charm that has NOT yet been heavily sanitized and gentrified. I love it. See it while it lasts. The luxurious La Posada Hotel, on historic Route 66 and the [former] Santa Fe Railroad in the center of town, has been tastefully restored. Ask for a tour of its guest rooms and restaurant. My grandfather, James Morrison Bain, after immigrating from Scotland, might well have taken liquid refreshment at La Posada’s bar while working as a barber on the railroad. And who could bypass the statue of the rock musician, “standing on a corner in Winslow, Arizona”?

For tacky-junky kitsch, Holbrook cannot be beat. And quite close to the collecting site, I command you to take exit 269 near Joseph City and visit the Jackrabbit Trading Post, just south of I-40 on the freeway/railroad frontage road. They have lots of good, inexpensive tourist loot, and children of all ages will want to climb onto the giant, saddled Jackrabbit (Lepus californicus) for snapshots.

Looking south from the collecting site in the Shinarump gravels, one gets a good view of the coal-fired Cholla power plant across I-40 at exit 277. This is a good site for collecting with kids. Edward Bain (right) and his friend Tyler did well that day.

The rest area on I-40 between exits 233 and 239 is a good place to unpack your plastic dinosaurs and play with them on brick-red ledges of the Moenkopi sandstone. From atop the highest ledges here, one can see the lip of the great Meteor Crater, five miles south of the freeway, and San Francisco Mountain (extinct stratovolcano) to the west, Arizona’s highest peak. In the Moenkopi, be alert for ripple marks, impressions of raindrops, preserved mud cracks, and animal tracks.

Literature cited:


Volunteers Needed!

Kathy Fain is seeking volunteers to help at a class on fossils, to be held at the public library in Wake Forest, in Wake County north of Raleigh, between 5 and 6 PM on Thursday, July 22nd. An estimated 50 to 60 students will be seeking fossils in screen-washed gravel from Aurora, NC. If you can help out, please call Kathy at (919) 554-8498 or contact her by e-mail at Mary.Fain@co.wake.nc.us.
Map of the collecting site, based on the *Joseph City* topographic quadrangle (US Geological Survey, 7.5-minute series, provisional edition, 1986). I call the clay beds in the Petrified Forest Member just north of here the “Ice Cream Hills.”
LAST DAY TO PHOTOGRAPH FOSSILS: AUGUST 30TH, 2004
E-MAIL: JAMES.BAIN@DURHAM.EDU
Dr. James Bain in Durham, AT (919) 479-2222
IF YOU HAVE FOSSILS TO SHARE, PLEASE CONTACT

FEW FOSSILS OR LAND-DEWELLING MAMMALS HAVE BEEN FOUND IN NORTH CAROLINA. A COMPACT DISK ILLUSTRATING THE STATE'S FOSSILS IS PRODUCING THE NORTH CAROLINA FOSSIL CLUB. WANTED FOSSILS OF TERRESTRIAL MAMMALS FROM NORTH CAROLINA.
What is it?

Warning: Very challenging (all are invertebrates)! Answers, including back cover, on next page.

1. Height ¾". Yorktown Formation, PCS-Lee Creek.
2. Width ½" (largest). Castle Hayne Limestone.

3. Width 1". Castle Hayne Limestone.
4. Height ¼". Castle Hayne Limestone.
5. Width 1". Castle Hayne Limestone.

6. Width 1¼". Castle Hayne Limestone
7. Width ½" (largest). Pungo River Formation, PCS-Lee Creek.

8. Width ¾". Castle Hayne Limestone
9. Width 2¼". Neuse River
10. Width 2". Yorktown Formation, PCS-Lee Creek.
What is it?

Back Cover: A colonial animal, this bryozoa is very similar to the modern species, Cryptosula pallasiaina. A small colony of about a dozen individual zooids was found in a single calyx of a piece of James City coral (see below).

1. A complete pair of opercular valves (each consisting of a scutum and a tergum) from the barnacle Concavus concavus.

2. Marginal plates from the Eocene starfish, Metopaster sp.

3. A portion of the Eocene meandroid coral, Diplora sp.

4. A centrodorsal of Microcrinus conoideus, an Eocene crinoid.

5. Flabellum sp., a horn coral which is rather common in the Castle Hayne Limestone.

6. This Castle Hayne spider crab is named in honor of our own Judy and Vince Schneider: Wilsonimaia schneiderorum.

7. Pearls found in Pungo River reject material at the PCS-Lee Creek mine.

8. Two for the price of one! The branched bryozoa is Idmonea grallator while the discoidal specimen is one of the Lichenopora species.

9. A magnificent example of Coronula diademia, a barnacle specific to the humpback whale, Megaptera novaeangliae.

10. Mclellania aenigma is thought to have been a parasitic barnacle which grew on the inner shell wall of species of Mercenaria clams.

Note: I had just started working on the CD ROM section on Corals and wanted to include a close-up picture of a calyx (the flower-like opening which a single coral organism inhabits). Having recently mastered the process of digital photography through the eyepiece of a microscope, I put one of my coral specimens under the 20x microscope and focused, intending to look for a photogenic calyx. Imagine my surprise to find the ‘thing’ on the back cover staring up at me! Fortuitously, I had just “finished” the section on Bryozoa so I knew it to be one member of a colony of those creatures. Very careful searching turned up only two more colonies in the literally hundreds of calices which made up the hand-sized piece of coral. Consider the probability of finding this tiny treasure completely by accident. Fortunately (as Pasteur observed), “In the area of observation, chance favors only the prepared mind.” (Dans les champs de l’observation le hasard ne favorise que les esprits préparés.)

The experience was an epiphany for me. How many other treasures had I ignored in my perpetual quest for yet another shark tooth? My last trip to PCS-Lee Creek I spent looking for barnacles (to the vast amusement of many of my fellow members in the Aurora Fossil Club). I had a great time, quite unlike most of my recent visits there, which were consumed in fruitlessly searching for unusual shark teeth.

If you go to the Martin Marietta quarry at Castle Hayne expecting to find a perfect Carcharocles auriculatus tooth, you are going to be disappointed at least nine times out of every ten (unless you’re one of the John’s: Everette or Timmerman). If you go hoping to find a new bryozoan, you’ll be satisfied at least nine times out of every ten (at least for awhile: there are easily a hundred different species).

Richard Chandler
NORTH CAROLINA FOSSIL CLUB, INC.  
(Founded 1977)  

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2004 MEMBERSHIP APPLICATION - NORTH CAROLINA FOSSIL CLUB

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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. Only 15 positions on the PCS–Lee Creek trip are available to members who reside outside of North Carolina.

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 ____________

MAIL TO: NORTH CAROLINA FOSSIL CLUB, P.O. BOX 13075, RESEARCH TRIANGLE PARK, NC 27709
What is it? See p. 7.

(Height = ½ mm. Source: James City Formation, PCS-Lee Creek)