

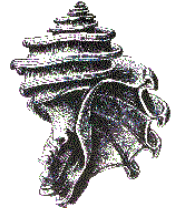
Highlights

- Bowhead Support Services Sponsors New Whale Exhibit
- The Margaret Clark Smith Collection on Display
- *Miocene Rhino tooth from Calvert Cliffs*

Inside

- Reinecke's Gomphothere Art
- *Gomphotherium calvertensis*
- Upcoming Field Trips

The ECPHORA



Bowhead Support Services, an Alaska Native Corporation (www.Bowhead.com), deriving its name from the Bowhead Whale, has partnered with the Calvert Marine Museum to sponsor a new exhibit on the fossil baleen whale found by **Jeff DiMeglio** last year after Hurricane Isabel. Their two year sponsorship will fund the preparation of the skull as well as the development of an exhibit on this lovely specimen. Our sincerest thanks go out to **Bowhead** for their interest in furthering our understanding of the history and diversity of prehistoric whales! ☀

Former Calvert Marine Museum Director and Vertebrate Paleontologist, **Dr. Ralph Eshelman** has added numerous valuable and important paleontology publications to the Museum's rapidly growing paleontology library...many thanks indeed. ☀

Long-time resident of the Willows, **Margaret Clark Smith** recently donated most of her fossil collection to the Calvert Marine Museum. Her collection includes a lovely cross-section of the diversity of both marine and terrestrial fossils found along that section of Calvert Cliffs. Be sure to see her display at the entrance to the Paleontology Gallery in the Museum. Keep in mind that this kind of collection did not happen over night! It represents 30 years of casual collecting while walking the

beach at the Willows. (Editor's Note: The Willows is a private access beach community.) ☀

Carcharodon megalodon in a Time Capsule

As part of Calvert County's 350th Anniversary celebrations, a time capsule was just buried in the Courthouse to be opened 100 years from now. I suggested they include a *Carcharodon megalodon* tooth, with which they agreed. Chris O. Donaldson donated the tooth that was "reburied," to the Museum in 1998. He found it by flashlight early one morning in 1998 as float along Scientists Cliffs. **Pat Fink** catalogued the tooth, giving it CMM-V-10,000 (highest vertebrate number now is CMM-V-2400) with the expectation that the tooth will be returned to our permanent collections in 100 years (at which time I'll throw a really big party for surviving members of the fossil club). ☀



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*CMM-V-10,000 Carcharodon megalodon tooth included in Calvert County's 350th anniversary time capsule. Donated to the Calvert Marine Museum by **Chris Donaldson**.*

Miocene Elephants from Calvert Cliffs

During the Miocene epoch (23.8 to 5.3 million years ago), there were many terrestrial mammals living in Maryland that are now extinct. Among these were prehistoric rhinos (see **Paul Murdoch's** feature article below), tapirs, peccaries, camels, smaller horses, and elephants - to mention a few. As one would expect, because the sediments that now make up Calvert Cliffs were laid down on the bottom of a deeper prehistoric Atlantic Ocean that covered southern Maryland, the vast majority of the fossils are of marine organisms. However, from time to time, the fossilized remains of large terrestrial animals surface, and those of prehistoric elephants are amongst the most exciting because of their large size.

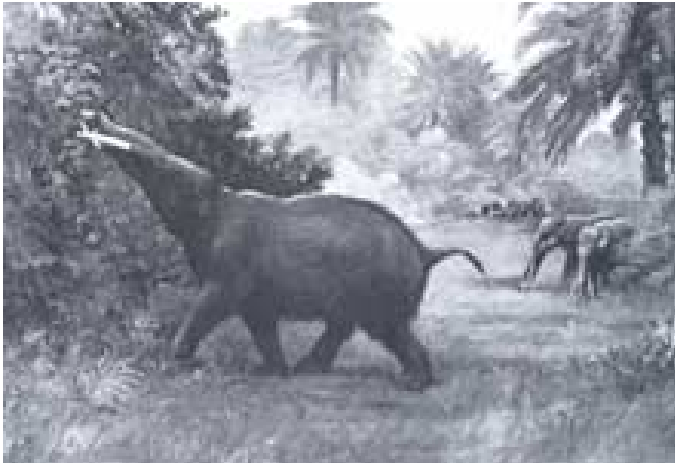


Figure 1. A Miocene Gomphotherium. From Osborn, 1936, Fig 169.

Gomphotheres (Figure 1) are one of the entirely extinct groups of prehistoric elephants. They first show up in the North American fossil record about 17 million years ago, a rough estimate of when they first immigrated from Asia (Hulbert 2001). By about 13 million years ago, they had spread across North America to inhabit the forests of Maryland.

Perhaps the most conspicuous way in which gomphotheres differ from living elephants is that they retain tusks in their lower jaws (Figure 1). In addition to which, notice how the upper tusks retain

a strip of enamel that runs lengthwise along the outside surface of the ivory tusk. Until very recently, although gomphotheres molars were known from Calvert Cliffs, no gomphotheres tusks, or parts thereof had ever been found. Through the collecting efforts of long-time fossil hound, **William (Doggie) Douglass**, we now preserve in our collection several handsome sections of a gomphotheres tusk (Figure 2).



Figure 2. A section of tusk from an extinct Miocene mastodont, Gomphotherium. The dark shiny material is the very hard enamel band retained along the tusk of these prehistoric elephants. This lovely specimen came to the Calvert Marine Museum through the collecting efforts of **William (Doggie) Douglass**.



Figure 3. **Sandy Roberts** holds the two halves of the Miocene elephant partial tusk that she recently donated to the Calvert Marine Museum.

More recently, long-time volunteer, **Sandy Roberts** donated the second known gomphothere partial tusk to the Museum (Figure 3). This tusk is split lengthwise revealing its internal structure.

Although exceedingly rare, the large and robust molars of these elephants are more commonly found than are their tusks. We can now claim to have in our collection the largest and most complete gomphothere molar known from Calvert Cliffs (Figure 4). **David Rhea** collected this superbly well-preserved molar!

Some days are just like Christmas around here!



Figure 4. A superbly well-preserved molar of the extinct Miocene mastodont, Gomphotherium. This lovely specimen came to the Calvert Marine Museum through the collecting efforts of **David Rhea**.

Reference

Hulbert, Jr. R.C. (Editor). 2001. Proboscideans. In, The Fossil Vertebrates of Florida, Chapter 15, Mammalia 7, pp 307-321. University Press of Florida, Gainesville, Florida.

Osborn, H.F. 1936. Proboscidea, A Monograph of the Discovery, Evolution, Migration and Extinction of the Mastodons and Elephants of the World. American Museum of Natural History. Volume 1: 802pp.

Club website: <http://www.calvertmarinemuseum.com/cmmfc/index.html> Club email: CMMFossilclub@hotmail.com

Stephen Godfrey ☼



Fossil Club member **Sam Doxzon** (13) displayed his collection of Miocene fossils at the Carroll County Public Library. Photo from the Carroll County Times; Friday, December 19th, 2003.

Here's something that **Bill Keegan** put on the Florida Museum's web page.

The First Documented

**SHARK
ATTACK**

in the Americas, cal AD 789-1033

Read all about it at:

<http://www.flmnh.ufl.edu/anthro/caribarch/sharks.htm>

An Early Platt...



This partial baleen whale, tentatively identified as *Cetotherium megalophysum*, was one of the first fossils ever collected by **Pam Platt**. This partial skull from the Chesapeake Ranch Estates is from the St. Marys Formation. Now a Smithsonian Institution specimen, it remained unstudied for many years, until **Dr. T. Demere** very recently borrowed it to assess its taxonomic significance. There is a chance that it is con specific with the now-famous skull that was airlifted out of the St. Marys Formation by the Navy after we quarried it following Hurricane Isabel. ☀

Another Modern Shark Tooth

Pam Platt

On a recent field trip to Scientist's Cliffs, **Herb Ermler** found a shark tooth that is obviously not a fossil and appears to be derived from one of the gray sharks (*Carcharhinus sp.*).



Although several types of sharks are known to be fairly common in the

Chesapeake Bay, their shed teeth are rarely found. In the August 2003 Ecphora, another modern gray shark tooth was reported.

The most commonly found shark in the Chesapeake Bay according to www.TheChesapeakeBay.com is the sandbar shark, *Carcharhinus plumbeus*. Also common are smooth and spiny dogfish sharks. Occasionally Gray and Bull sharks are seen, usually in the fall. All sharks are most frequently seen in the southern part of the bay where the salinity is higher. Most of these are small (2-3 feet) sharks that pose no threat to humans and are caught by fishermen. In spite of this, about 20 years ago a neighbor of mine in Baltimore caught a shark (species unknown) purported to be 5 feet long while fishing under the Bay Bridge.

It is staggering to think of the number and size of the sharks that must have inhabited the ocean in this area during the Miocene and have left the incredible number of fossil teeth that we find today. ☀

A Baby Gomphothere Tooth

Illustrations by Melody Reinecke



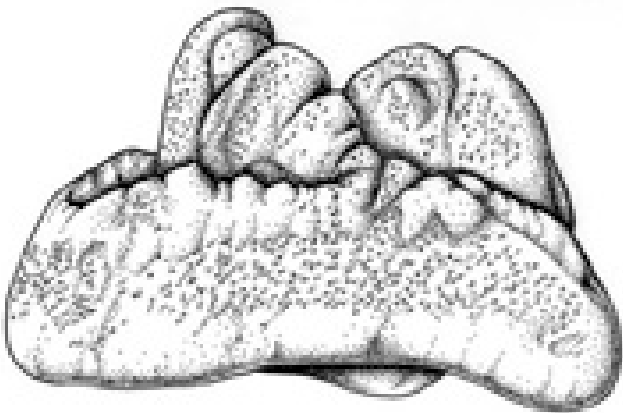
Scientific Illustrator, **Melody Reinecke** (far right).

As part of her scientific illustration course, St. Mary's College art student, **Melody Reinecke**, (above) drafted the following four illustrations of a baby *Gomphotherium calvertensis* deciduous tooth – CMM-V-2389. This partial tooth was collected as float along Cove Point Beach, Calvert County, and donated to the CMM by **Fay Fratz**.

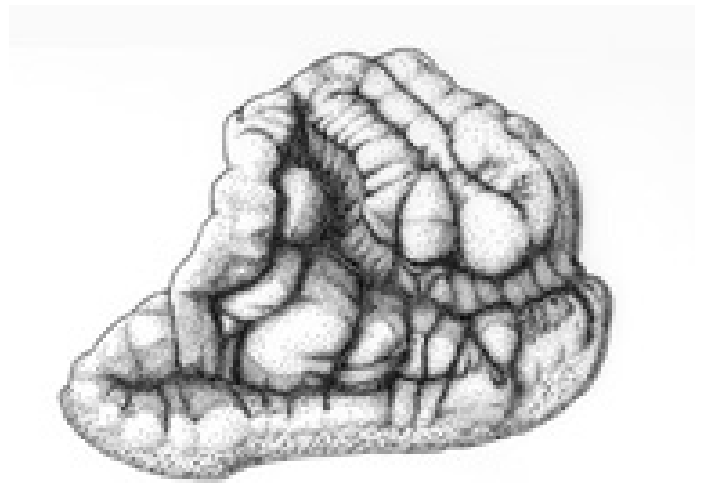
The tooth is drawn in two views; lateral and occlusal. There are two drawings of the two views. The first scientific illustration was stippled; the second was completed using a watercolor pencil.

As one would expect in a deciduous tooth, the root was absorbed prior to the tooth being shed.

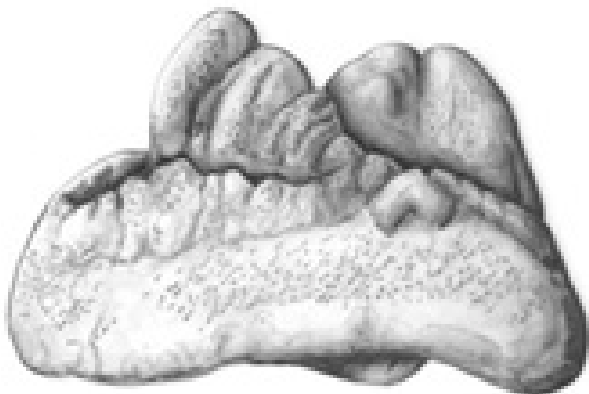
In the following two occlusal views, the upper left quadrant of the tooth is missing.



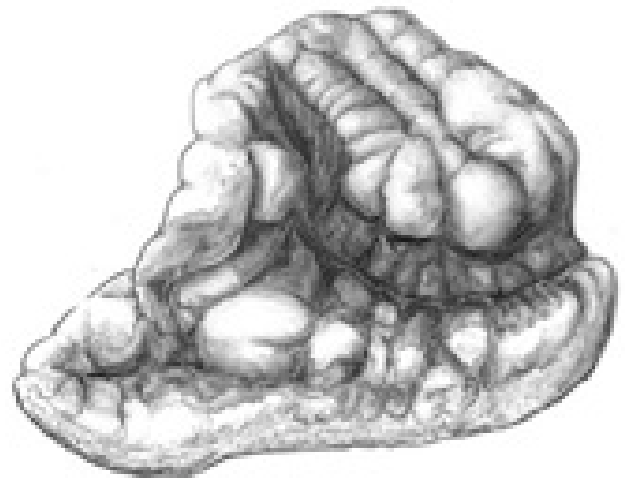
Gomphotherium calvertensis – CMM-V-2389.



Gomphotherium calvertensis – CMM-V-2389.



Gomphotherium calvertensis – CMM-V-2389.



Gomphotherium calvertensis – CMM-V-2389.

On behalf of the club and the Department of Paleontology at the Calvert Marine Museum, allow me to express our sincerest thanks to Melody for drawing these superb illustrations, and for permission to publish them in *The Ecphora*.

A Rhinoceros Tooth Fossil From the Calvert Cliffs of Maryland

By Paul R. Murdoch, Jr.

In the late spring of 2004, I made the fortuitous discovery of a partial rhinoceros tooth while on a CMMFC club trip. My good fortune was further enhanced by the fact that David Bohaska of the Smithsonian was within earshot of my discovery and was able to make an immediate, although not a species specific, identification of the specimen.

In fact, David and I had just finished talking about how we were looking forward to having some archeological finds identified by **Wayne Clark** at the upcoming Community Day event at Plum Point. It was, in truth, David's educational comments about pottery that was the catalyst for my discovery. If not for our talk, I would have passed right over the find. But, with our discussion just completed, I noticed the jet-black side of the tooth and then the next wave flipped it over to its enamel side. I thought for sure when I first saw it that I had just found my first piece of Indian pottery. Only after I held it in my hand and the water ran off the slightly crossed enamel design did I realize that it was instead a tooth shard.

Although the exact stratigraphic horizon of the find cannot be determined, as it was found as float in the inter-tidal zone, David was quick to educate me on the significance of the find. He informed me that, to his knowledge, only two other occurrences of rhinoceros teeth have ever been documented along the Calvert Cliffs. Further, he paced off the spot to the nearest cliff and promised to make a field note entry on the find, documenting the

occurrence as best as possible under the circumstances.



Figure 1. Rhinoceros tooth fragment found by **Paul R. Murdoch, Jr.** on a CMMFC field trip; Saturday, May 15th, 2004. Photo by **Paul R. Murdoch, Jr.**

Still stunned by my good fortune, I began to ponder the chance of ever making such a find. I am still looking for a four inch or larger *C. megalodon* from the Bay after all of these years, so I was willing to settle for this find as being just a fluke. I just walked at the right spot at the right time.

Over the next couple of days, I searched the web looking for information on Miocene rhinoceros. The lack of information on rhinoceroses from The Cliffs was a shock.

David informed me that the best rhinoceros specimen from the Calvert Cliffs was in private hands and still in the area. The **Nice and Fleazy Antique Center**, North Beach, Maryland (which was judged by the *Bay Weekly On-line* as the best antique store in 2001!) had purchased a section of lower jaw containing two teeth, an unattached third tooth and a fragment of a fourth, which were all found by fossil collector **Harry Pruitt** in 1991 s at Brownies Beach over the course of several days.



Figure 2. *Aphelops* sp. teeth and lower jaw section on display at **Nice and Fleazy Antique Center** in North Beach, Maryland. These were found in 1991 at Brownies Beach, now known as Bay Front Park, by fossil hunter **Harry Pruitt**. Also pictured in the upper left corner is the tooth fragment discovered by Paul. The tooth below Paul's tooth fragment is not a rhino tooth, but an **artiodactyl** tooth - probably a type of camel. The fourth fragmented tooth mentioned in the text was not on display. Photo by **Paul R. Murdoch, Jr.**

The owner, **Mr. Dale Thomas**, was nice enough to allow me to view the specimen and take some comparative pictures of it with my tooth fragment. The specimen in his possession had already been previously identified as a section of lower jaw from *Aphelops* sp.

I could tell just from looking at the teeth in front of me that my find was different. Although I was comparing what was a fragment of a probable upper tooth to a pair of complete lower teeth, (upper teeth are quite different from lower teeth in most mammals) I felt that the size and structure strongly indicated a different animal. This was exciting - maybe I've come across a rhinoceros species new to the fauna list for the cliffs!!

I expanded my search on the web and emailed numerous identification requests to experts far and wide. Of the several that responded, the consensus (besides that the tooth was fragmentary and not of good enough quality for a positive ID - (do even paleontologists now have disclaimer statements?!)) was that my hunch was right!! The

tooth represented the right, upper molar (M2) from the skull of a *Teleoceras* sp. possibly *Teleoceras major*.

OK, Great!! - What's that?? Back to the web to research these critters. Turns out that rhinoceros remains are few and far between from these marine exposures. I found this especially strange for *Teleoceras*; since I discovered that they probably behaved more like hippos at this point in their development than the modern rhinoceros that exist today.

Most of the rhinoceros fossils found in marine sediments, as is the case with other land animal fossils, were probably the result of "bloat and float"- meaning that the animal perished on land, yet close to or in a waterway. If a flood event occurred very soon after the animal's demise, the body would be transported along the waterway and out into the embayment. Here the animal's body cavity burst (either by the force of the gases created during the body's own decomposition or by predators feeding on the carcass) and eventually sunk and became buried in the sediments on the Bay floor. This process usually results in fossils that are extremely fragmentary and therefore usually only found as isolated pieces. It is extremely rare and next to impossible for a land animal to survive this process intact.

For rhinoceroses, Florida has a fair share of remains, New Jersey, Maryland, Delaware and Tennessee even had some too, but for your best chance at finding rhinoceros fossils - the west is the place to be.

Two sites that I found have an extraordinary tale to tell about fossil rhinoceroses. The first is <http://www.fossilnews.com/1999/rhinoceros.html> Here is an excellent story about a Miocene rhinoceros that was encased in a 14.5 million-year-old lava flow. The result was that a body mold, similar to those created of *Homo sapiens* at Pompeii and Herculaneum from the eruption of Mt. Vesuvius on August 24th, 79AD, was created as the animal's flesh decayed. The impression that the body left has been cast and is on display at the **University of Washington Burke Museum in Seattle, Washington**. Unfortunately, most of the fossilized bones have been picked up by numerous collectors throughout the years and will never be reassembled. Although this fossil is most likely not the same

species of the tooth fragment that I discovered, the story was amazing.

The second is <http://www.ashfall.unl.edu/> This site is about a mass grave primarily containing the same species of rhinoceros that my tooth possibly came from as well as the numerous remains of many other mammals. Several of the younger animals were found facing their mothers, snouts touching, or in a nursing position. The adults have grass, and other remains of their last meals, still in their mouths.



Figure 3. Fossilized fully articulated skeletons of *Teleoceras major* from the **Ash fall Fossil Beds State Historical Park** located in Royal, Nebraska. These are just two of the numerous complete specimens that have been excavated so far at the site. *Photo by **Gregory Brown; University of Nebraska State Museum** - used with permission.

Dr. Mike Voorhies first discovered this site in 1971 when he found a rhinoceros calf skull eroding out of the ash layer in a ravine. The skull was complete and, as digging proceeded, the rest of the body was discovered, completely articulated.

Many more finds started to be made by Dr. Voorhies and his volunteers and soon the tremendous magnitude of the discovery was realized. The site is now a joint project between the **University of Nebraska State Museum** and the **Nebraska Game and Parks Commission**. Now known as **Ashfall Fossil Beds State Historical Park**, a “Rhino Barn” has been erected over the site so that visitors can see the still ongoing excavation.

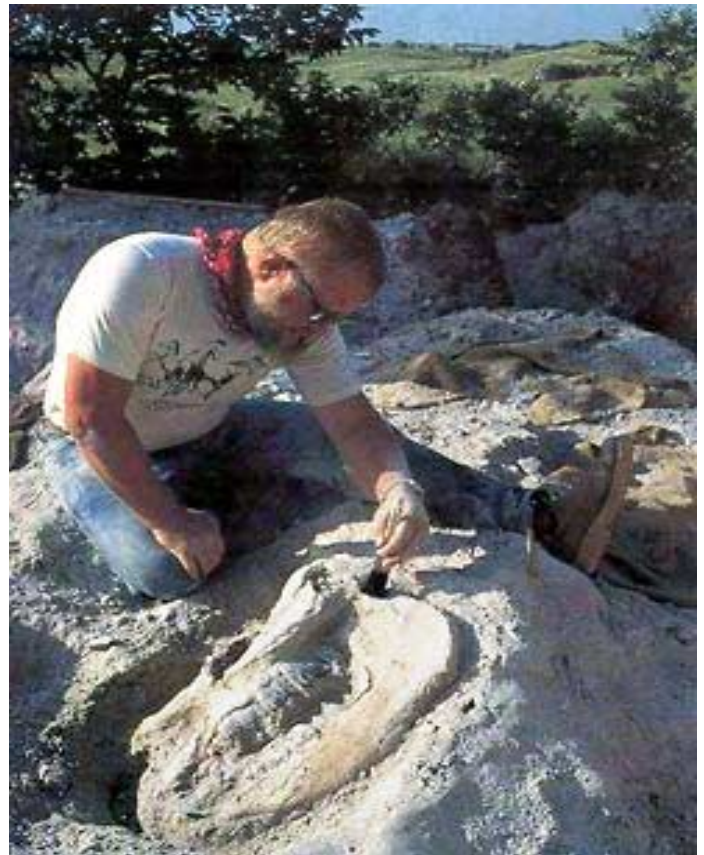


Figure 4. Paleontologist **Dr. Mike Voorhies** excavating a skull of *Teleoceras major* from what is now the **Ashfall Fossil Beds State Historical Park**. What an incredible find of a lifetime - to find a death site that preserves an entire ecosystem, including footprints! * Photo used with the permission of the **University of Nebraska State Museum**.

In addition to the numerous *Teleoceras major* skeletons, numerous other animal remains have been found. A partial list of animals found so far at the site includes: Horses - *Cormohipparion occidentale*, *Neohipparion affine* and *Pseudhipparion grattum*; Camel - *Procamelus grandis*; Sabre-toothed deer – *Longirostromeryx wellsi* and Raccoon-Dog - *Cynarctus*. In total, the species list of the site is impressive: three camels, five horses, three birds, two turtles, and one type of a fox-sized dog, a raccoon-dog a bone-crushing dog, a sabre-toothed deer and, of course, one species of rhinoceros.

It’s been hypothesized that the animals at this site were slowly killed at a water hole from breathing in fine volcanic ash particles, which were the result of a volcanic eruption that occurred about 1,100 miles away in Idaho, 12 million years ago. The

smaller animals probably died first, since their small lungs held a smaller air capacity, followed by the larger animals, some of which survived for three to five weeks after the eruption. Incidentally, the same “hot spot” responsible for that eruption preserving the animals at Ashfall is still active today - and better known as **Yellowstone National Park**.



Figure 5. The “Rhino Barn” at the **Ashfall Fossil Beds State Historical Park**. Seventeen vertebrate species have been found at this site, including twelve land mammals. Visitors observe first hand the ongoing excavation. Each “mound” represents a fossil that has been delicately excavated and left where it was found for visitors to enjoy. *Teleoceras major* is by far the most common animal at the site. *Photo used with the permission of the **University of Nebraska State Museum**.

This was an amazing story, but still I was not finding a lot of information on Miocene Rhinoceroses. More emails were sent and replies received. Seems that *Teleoceras* was a barrel-chested animal, with short legs that might have had problems with arthritic hips. Interesting, but not very helpful.

Finally though, I got lucky and was able to examine some *Teleoceras* fossils first hand while attending the 2004 Aurora Fossil Festival. As usual, I was previewing the items that would be going up for the annual auction benefiting the **Aurora Fossil Museum** and, low and behold, several jaw sections of *Teleoceras* were in the lot. I almost couldn't believe my good fortune!! What were the odds that while I was on my quest for knowledge on these animals that I would have the chance to examine such a rare fossil first hand at another spot famous for sharks' teeth, not land mammals?!!



Figure 6. *Teleoceras fossiger* right lower jaw section with two teeth. This specimen was auctioned off at the 2004 Aurora Fossil Festival. I was told that this specimen was from a very large, mature adult that was discovered in Clark County, Kansas in 1952. Again, also pictured for comparison in the upper left corner is the tooth fragment discovered by Paul. Photo by **Paul R. Murdoch Jr.**

Again, as with the specimen from Brownies Beach, the specimens were from the lower jaws and an exact match could not be made. However, these specimens were the closest that I have found to date to which I could match my partial tooth. I'm now confident that my tooth represents the Miocene Rhinoceros *Teleoceras*. If this is true, it will greatly expand the known range of *Teleoceras*. At this time, there is no published occurrence of any of the eleven named species of *Teleoceras* in the entire North Eastern United States!

For now, all of my attempts are exhausted. My best bet is now to wait for a book this Fall by **Dr. Donald R. Prothero** from Cambridge University Press that promises to discuss and illustrate all North American Rhinoceroses. I can hardly wait!!!

***Lessons Learned** – While sharing this article during its draft stage, I was urged by those paleo professionals that I had contacted to for an identification of the specimen to stress the importance of conserving fossils. Remains such as this find that, although fragmentary, and whose exact point of origin cannot be established, still can expand the knowledge base for all by providing a new understanding of the habitat and range of the animal. So, even small, fragmented pieces should be brought to the attention of a paleontologist so their uniqueness and existence can be documented and will not be lost to science. If you think you have such an item, please bring it to a paleontologist's attention.

Further, with the continued assistance during this article from David Bohaska, it seems that I am not the first person, nor even the first member of the CMMFC to have found a probable *Teleoceras* tooth along the Calvert Cliffs. Past members **Jeff O'Neil** and **Betty Cridlin** have both found probable *Teleoceras* teeth, an upper molar and canine tusk respectively, but from the St. Mary's formation. At this time, my find represents the oldest known *Teleoceras* tooth from the cliffs, probably from the Choptank formation. Maybe my article (and all of the emails I sent to gather information for it) will inspire someone to do a more thorough paper on the remains of rhinoceros from the Calvert Cliffs and share this knowledge with the rest of the paleontological community.☺

Community Day at Plum Point a Success!!!

The event was held on Sunday, June 27th, and was a great success. There was a steady flow of visitors throughout the day and even up to the last

minute. Lots of great fossils and artifacts were on display and were identified by the experts on hand.

But, I'm getting a little ahead of myself. Something like this takes time and it was over two years ago that **Chuck Soares** and myself, while on a club fossil hunting trip, brainstormed the idea of creating a community event. The idea was simple – give back to the communities that support the club by having us and some experts come to them so that they can have their finds identified. Easier said than done!



Dr. Bretton Kent, fossil shark tooth expert and Professor at the University of Maryland, lectured at the Hilltop House at Neeld Estates on what can be gleaned from the fossil record on the lifestyles of long dead animals. That's a photo of a five plus inch *C. megalodon* tooth on the screen!

It was the enthusiastic input of **Marty Meyer**, a fossil friendly cottage owner at Neeld Estates, who truly was the source for making the idea into a reality. There were also several others who chipped in along the way and during the event and I would be negligent if I failed to mention them here so, that said, **Thanks to:**

1) Club members **Sandy Roberts, Pam and Bob Platt, Debbie Burdette, Chuck Soares, Steven Grossman, Kathy Haberny** and non-member **Marty Meyer** for displaying their fossils at the event.

2) **Hillary Murdoch** and non-member **Robert Hall** for preparing and dispersing food and beverages.

- 3) **Pam Platt, Flo Strean, Jayson Kowinsky** and **Chuck Soares** for the food items/containers.
- 4) Our special guests: **David Bohaska, Wayne Clark** and **Bretton Kent** for taking time to be part of the event.
- 5) Neeld Estates President **Janet Kirby** and resident **Marty Meyer** for hosting the event at the community's beautiful Hilltop House.
- 6) **Safeway Foods** for a \$50 gift card donation towards the cause.
- 7) **Giant foods** for a \$10 reimbursement on food costs.
- 8) The **Plum Point resident** who allowed the club and event attendees access to the cliffs from their property.



The CMM's own Dr. Stephen Godfrey and CMMFC President Grenda Dennis manning the club table with a very interested onlooker. But wait, is that Stephen preparing a fossil or enjoying lunch? I think only he and Grenda will ever really know! (Editor's Note: Stephen was gulping down his lunch).

My hope is that in the future, the club can hold this event every other year at Neeld Estates. Marty has already been asked by numerous homeowners when it will be held again.

Perhaps the club will be able to hold a similar event at another cliff front community as well. If you are willing to help make another event a reality please let the club know. We'll need all of the help

we can get to make it happen and have it be just as successful.

Paul R. Murdoch, Jr.

PS – For more pictures of the event log on to www.neeldestate.com and scroll down to Identified Day. ☀

UPCOMING FIELD TRIPS AND EVENTS

Please remember to call in for yourself and family members, or for another club member, on the date and time indicated. Current memberships in both the fossil club and the Calvert Marine Museum are needed to go on the trips. Information on directions, lodging, meeting times and meeting places will be provided at the call-in. Unless otherwise stated, all call-in's are to Kathy at (410) 549-4701.

There will be a Fall collecting season at "Lee Creek", but the exact date has not yet been set by PCS. If you are interested in attending a trip to this site, call Paul Murdoch from 7PM to 9PM on Sunday, August 15th to reserve a slot – 610-705-0161. We are hoping to get 10 to 15 slots.

*With sufficient interest, we can plan to visit one of the Martin Marietta quarries (Rocky Point or Castle Hayne) in the region, on the day before our visit to the PCS quarry. The most common fossils at these Eocene sites are echinoids, including the sea urchins (e.g., *Echinolampas appendiculata*, *Eurhodia rugosa*) and sand dollars. Crab claws, nautiloids, sharks teeth (*Carcharocles auriculatis*) and rarely archaeocete whale material (*Zygorhiza kochii*) have also been found there. The travel time from the Washington, DC area is approximately 8 hours. Call-in date and time to be announced.*

August 21, Saturday morning. Willows. Lower Calvert Formation locality in Calvert County. Shark, marine mammal and other vertebrate material have been collected here. Small shark teeth are abundant and may include cow shark (*Notorynchus* sp.), whale shark (*Rhincodon* sp.), and angel shark

(*Squatina* sp.) specimens. The distance from Calvert Marine Museum is approximately 30 miles to the north. Call-in Tuesday evening, August 17, 7:30-9:00 p.m.

August 28, Saturday morning. Ramanessian Brook. This is a late Cretaceous marine vertebrate site in Monmouth County, NJ, with an approximate age of 75 million years. The brook exposes the **Wenonah/Mt. Laurel formations.** Teeth from the Crow (*Squalicorax* sp.), Porbeagle, and the Goblin (*Scapanorhynchus* sp.) sharks, fish teeth (e.g., *Enchodus* sp., *Edaphodon* sp., *Anomaeodus* sp.), ray teeth and scutes, sawfish (*Ischyrrhiza* sp.) teeth, Chimera jaw pieces, and rarely, Mosasaur and Plesiosaur fossils can be found here. Bring a ¼-inch screen and a shovel, and wear waders or sneakers into the stream. Long pants are also recommended. The distance from Calvert Marine Museum is approximately 250 miles. Limit 12. Call-in Tuesday evening, August 24, 7:30-9:00.

September 11, Saturday. Club meeting and public lecture. Fossil club meeting to begin at 12:30pm and will be held in the 3rd floor lounge in the Exhibits Building. At 2:30pm in the Museum's auditorium **Dr. Roger Wood** (from the George Clark Wetlands Institute in Stone Harbor, New Jersey) will lecture on his work on both fossil and extant turtles.

September 25, Saturday morning. Red Hill. Devonian Catskill and Mahantango Formations. This will be a joint trip with the MGS and AFF clubs. Collecting can require climbing and rather strenuous digging and splitting of rock. However, the hard work can be rewarded with interesting fish material, including teeth, scales, fins, bones and head plates. The fauna includes paleoniscids, placoderms (armored fish), primitive chondrichthian, acanthodians (spiny sharks), actinopterygians, and sarcopterygians. We will be allowed to keep many of the collected specimens (such as scales, spines and teeth), and unusual finds will be collected for study at the Academy of Natural Sciences in Philadelphia.

If enough people are interested and would like to stay in the area overnight, we can stop at Swopes Pit on the way home on Sunday, a popular Mahantango Formation site, known for producing well preserved and abundant trilobites (*Phacops rana*) and several species of cephalopods. There may also be plans in the works for visiting another site in the area on Sunday. Distance from Calvert Marine Museum: approximately 244 miles (Swope's Pit) and 305 miles (Red Hill). Call-in Tuesday evening, September 21, 7:30-9:00.

October 9-10, 10:00 AM - 5:00 PM. Patuxent River Appreciation Days at CMM; help is always needed & appreciated. Please contact Stephen Godfrey at Godfresj@co.cal.md.us or by calling 410-326-2042 ext. 28 if you will be able to lend assistance for the event or wish to display some of your finds that day.

October 16, Saturday Morning. Parker's Creek/Scientists Cliffs. Miocene Calvert Formation site on the Chesapeake Bay. Invertebrate (*Anadara*, *Mercenaria*, *Nuculana*, *Ecphora*, *Crepidula*) and vertebrate material including *C. megalodon* teeth, crocodile teeth and crab claws have been found here. In past trips, several specimens of the rare Miocene brachiopod, *Discinisca lugubris* were found. Distance from Calvert Marine Museum: approximately 20 miles. Call-in Tuesday evening, October 12, 7:30-9:00 p.m.

Oct. 23, Saturday morning. Capon Bridge, and other nearby Devonian fossil sites. It's time for our traditional Fall trilobite and foliage watching expedition in West Virginia. A rock hammer, gloves, chisel & eye protection are recommended. Call-in Tuesday evening, October 19, 7:30-9:00.

November 6, Saturday Morning. Purse State Park (Nanjemoy Point). Late Paleocene site on the Potomac River in Charles County, MD. Well known for rather abundant crocodile, ray, *Turritella* sp., *Otodus* sp., and *Striatolamia* sp. material. Rare *Paraorthacodus* sp. and *Palaeocarcharodon* sp. teeth have turned up with persistence. Access to the site requires a moderate hike through the woods, and collecting is by beach combing along the riverbanks

and screening. Call in Tuesday evening, November 2, 7:30-9:00.

November 13, Saturday. Club meeting. Fossil club meeting to begin at 12:30pm and will be held in the 3rd floor lounge in the Exhibits Building.

Mark your calendars! A 4-day adventure is planned for June 10-13, 2005, to visit several fossil, mineral, and archeological sites in the area around Albany, New York.

Kathy Young ☼

CALVERT MARINE MUSEUM FOSSIL CLUB MINUTES

From the April 24, 2004, Meeting

The spring meeting of the CMM Fossil Club was held Saturday, April 24, 2004. President, Grenda Dennis, called the meeting to order at 1:00 p.m.

The minutes for the last meeting were accepted as written in the last *Ecphora*.

Grenda asked for reports.

Treasurer – Kathy Haberny stated that the current club balance is \$3,528.00. Also, there will no longer be a *Petty Cash Fund* – all money will be by official transfer. If you have a bill, send it to Kathy and she will send it to the museum, and the museum will pay you. The big expense was \$1,029.00 for the shark tooth rulers.

Membership – Pam Platt stated that we have 71 paid members with *The Ecphora* sent to 56 addresses. Also *The Ecphora* is sent to: five museums, six clubs, twelve life members, and four staff. She said she will send a postcard to members that are LATE sending in dues to say “this is your last *Ecphora*.”

Grenda reminded us – we need an Editor. Stephen has been doing this job. But, Stephen said he could continue with Paul Murdoch handling the printing and mailing. So this was settled.

Pat Fink suggested that we could change the *Ecphora* to three very short issues with only dates of meetings, trips, and shows and one big issue with articles. This could make less work for the Editor,

but Stephen said he could continue the *Ecphora* as it has been.

Stephen had two unusual displays. One was a gomphothere tooth found N. of Parkers Creek. The other was a whale rib piece with swelling spots caused by a bite that upset the bone growth – found at Lee Creek by him.

Several members also had fossil displays.

Grenda wants a Guest Column in our *Ecphora* – she said she or Paul would contact other club Editors to ask them to send us articles from their newsletters.

The subject of T-shirts was raised again. Grenda said she would work on this.

There was a short discussion and all present officers and workers agreed to continue in their jobs.

There was lots of talk about where our club can go for field trips. Several places near and far were mentioned but no definite place and time was decided. Grenda suggested a place in New York near Herkimer where eurypterids are found. This place is owned by Lang Fossil Company. You are not allowed to hunt or dig – they sell fossils in Matrix – very small and very expensive – because they are rare and in excellent condition.

Someone reminded us – we needed to get dates of meetings and trips in the previous *Ecphora*.

Someone suggested we plan more community show and tell events at beaches and at Patterson Park.

Our next meeting will be Sunday, June 27, at Plum Point in the community building. Business meeting at 9:30 a.m. – community show and tell at 10:00 a.m. There will be tables so members can bring displays.

Grenda adjourned the meeting at 1:45 p.m.

Minutes submitted by **Flo Streaan**.☼

Editor's Column

Recently, we were out along Calvert Cliffs and were appalled at the number of holes that had been dug into the cliffs by fossil thieves and vandals. We know the fossils were stolen because the landowner had not given permission to anyone else to collect! If you spy vertebrate fossils eroding from

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Calvert Cliffs, please let us know as soon as possible. Unfortunately, we will not receive permission to quarry every fossil, nevertheless, we will try hard to save as many as possible.

On a much more cheerful note, once again I am amazed at how many people contribute to the ongoing success of paleontology at the Calvert Marine Museum. They range from the volunteers who prepare fossils, catalogue our paleontology library entries, and fill positions within our Fossil Club, to those who donate fossils, books, or other artifacts to our Discovery Room and permanent collection, many thanks to all!

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