

Highlights

- A Tribute to Joe Miller
- Seal Jaw in the St. Marys Formation

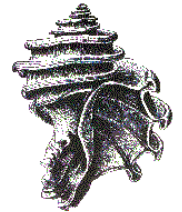
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The Newsletter of
Calvert Marine Museum
Fossil Club

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The ECPHORA



CURRENT HAPPENINGS IN PALEONTOLOGY AT THE CALVERT MARINE MUSEUM

FROM THE CURATOR

Upcoming club event:

Dr. Matt Carrano, the new dinosaur curator at the Smithsonian will be our guest lecturer on Saturday, September 6th, 2003. The title of his lecture is "**Exploring the Past on the Great Red Island: New Dinosaurs from Madagascar,**" and will begin at 2:30 pm in the Museum's auditorium.

A tribute to Joe Miller...

I learned about 6 months ago, that long-time club member, **Joe Miller** (Figure 1) was very sick. The news came as a great shock because according to his relatives, "Joe had never been sick a day in his life." From conversations that I had with Joe's niece, Brenda Retallick, I learned that he wanted his fossil collection to be donated to the Calvert Marine Museum. When Bill Counterman and I visited with him, he expressed the same desire.



Figure 1. **Joe Miller**, fossil finder extraordinaire while on vacation (collecting fossils and sea shells) on Sanibel Island in Florida, 1998.

On Saturday, June 21st, 2003, some of Joe's relatives, **Jean Banz, Chet Beatty, Jewel Beatty, Jeffrey Humphrey, Nathan Marando, Brenda Retallick, Judy Siwinski, Beverly Wiley, and Janice Wiley** (Figure 2) drove from Baltimore with his collection filling the back of a pickup truck. It would not be an exaggeration to say that Joe Miller's shark-tooth collection will more than double our current holding of fossil shark teeth! Needless to say, we are truly fortunate to have been the recipient of his large collection of fossils. From a survey of

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his collection, it is clear that he loves paleontology and took the greatest care both in collecting and in documenting his finds, something many of us already knew from the finds he'd bring to club meetings. His donation is by far the largest and most taxonomically diverse collection that has ever been received by the Calvert Marine Museum. The Calvert Marine Museum, the Department of Paleontology, and the Fossil Club, are grateful to Joe for his generosity and also to his family for their efforts on his behalf!



Figure 2. Relatives of Joe Miller who came to donate his fossil collection to the Calvert Marine Museum. Top Row: Chet Beatty and Jeffrey Humphrey. Middle Row: Jewel Beatty, Janice Wiley, Beverly Wiley, and Jean Banz. Bottom Row: Nathan Marando, Brenda Retallick, and Judy Siwinski.

Before **Pat Fink** catalogues Joe's collection, it is being inventoried by paleontology volunteer, **Wanda Florence**. This will give us a complete listing of everything he donated...the shark teeth will number in the thousands. A small selection of his

shark teeth is presently on display in the paleontology gallery at the Calvert Marine Museum and will remain there for the next four months.

Several important factors contribute to making Joe's collection so scientifically valuable. First, he was interested in shark teeth from many localities. Second, he collected both the large showy teeth as well as the tiny and hard-to-find ones, and third, and most importantly, **he kept locality data with all his finds.**

Here is a lesson we can all learn from Joe Miller. If you would like to leave your fossil collection to the Calvert Marine Museum, great, but if you want to ensure that your fossils are added to our permanent collection and preserved in perpetuity (like a large majority of Joe's will be), be sure to include specific bed and locality data with every specimen. Without that data, most of your collection will be used in the Museum's Discovery Room, donated to other museum's for exhibit purposes, or to schools to be used as teaching aids. However, do not try to force a fossil to have come from a bed or other specific location if you are not sure. From time to time, I do include float specimens in our permanent collection if they are sufficiently unique and we know where they were collected as float. Just so you know...I can count on one hand the number of specimens in our permanent collection that do not include locality data!!! In paleontology, as in retailing, location, location, location is everything!

SharkFest...

SharkFest was as much fun as ever. My sincerest thanks go out to **Bill Counterman, Pat Fink, Steve Grossman, Kathy Haberny, Pam** and **Bob Platt, Sandy Roberts, and Flo Strean**, for taking most or all of their Saturday to help show off fossil shark teeth to museum visitors. Special thanks to **Steve Grossman, Sandy Roberts, and Flo Strean** for sharing parts of their collections with **Sharkfesters** (Figures 3-8).



Figure 4. *Steve Grossman regales visitors with his impressive collection.*



Figure 5. *Visitors marvel at the minute shark teeth in Joe Miller's collection.*

This year 'my' contribution to **SharkFest** was a no-brainer. We had just received the incomparable shark-tooth collection from **Joe Miller**. I pulled out numerous Riker-mount boxes filled with both common and exotic shark teeth. There were spread out over two table tops (Figure 5).

Dave Bohaska's effervescent presence was marred only by the fact that he pulled a gem-specimen stingray dental plate (Figure 6) from his pocket and proceeded to recount, with obvious glee how he had just collected it that morning on the beach at Scientist's Cliffs while we were slaving away setting up the displays for **SkarkFest**.



Figure 6. *Dave Bohaska's fossil stingray dental plate from Scientist's Cliffs, Maryland.*

Several other visitors to SharkFest brought in some amazing fossils. These included a partial *Carcharodon carcharias* tooth that had been collected as float from one of the Calvert Beaches, a *Squalodon calvertensis* tooth, and a possible juvenile gomphothere tooth.



Figure 7. From left to right, **Flo Streat**, **Bill Counterman**, and **Steve Grossman**, share their knowledge of fossil shark teeth with Sharkfesters .



Figure 8. **Sandy Roberts** helps to make the connection between fossil shark teeth and overall shark body form with plastic models

Terry Cirrincione, The Passing of a Mover and Shaker.

The Club was saddened to learn of the death of Terry Cirrincione. She died of a heart ailment on June 27th at Suburban Hospital. Theresa M. Cirrincione, 68, taught business and other subjects at Montgomery College for over two decades and conducted field trips for area fossil and mineral organizations.

Terry was a native of Washington D.C. and a graduate of Central High School. She received a bachelor's degree with honors, was elected there to Phi Beta Kappa at Wilson Teacher's College, now part of the University of the District of Columbia.

She was a newsletter editor for Montgomery County and Maryland state PTAs and wrote for mineral and fossil journals and newsletters including *The Ecphora*. She was a member of organizations that included the Eastern Federation of Mineralogical Societies and the American Fossil Federation. She was field trip coordinator for half a dozen local fossil and mineral groups.

Survivors include her husband of 44 years, Rosario Cirrincione of Washington; three children, Resa Schaffer of Wentworth, N.H., Joseph Cirrincione of Kensington and Toni Marie Church of Silver Spring; three sisters, Mary Mattie of North Haven, Conn., Frances Hartman of Manassas and Norma Derickson of Woodbridge; a brother, Joseph Colaizzi of Morristown, Tenn.; and two granddaughters.

There can be no doubt that Terry loved collecting fossils. In addition to which, she was zealous in regards to the preservation of collecting localities, so that future generations of collectors would have access to these sites.

The Department of Paleontology at the Calvert Marine Museum has received numerous monetary gifts in her memory. These will be used to purchase hard-to-find paleontological works on fossils from Calvert Cliffs or equivalent formations elsewhere in the world. Many thanks to everyone who contributed to this memorial for Terry.

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Editor's Note: Portions of this obituary were taken from the Washington Post.

Fascinating Fossil Finds...

A Baleen Whale Jaw from the Calvert Formation

On Tuesday, June 3rd, **Bill Counterman** and I removed a baleen whale jaw from the first cliff north of Parkers Creek. **David Rhea** found the specimen and brought it to my attention, for which we are most grateful. **Tim Larney**, at Maryland's Department of Natural Resources kindly granted permission for us to remove the baleen whale jaw from Bed 12 of the Calvert Formation (Figures 9-10).



Figure 9. Perched atop a ladder anchored to the cliff at the contact between Beds 11 and 12, **Bill Counterman** poses with the isolated baleen whale jaw before we began to remove it from the cliff. The mandible was relatively easy to remove because it ran parallel to the cliff face.

Remember...it is illegal to quarry in the cliffs without prior permission.



Figure 10. Although the Bay was calm when we started to quarry, by mid-afternoon squall-driven waves were crashing against the clayey base of the cliffs drenching us with wind-driven spray.

A dolphin skull from the Calvert Formation

With permission from the owner of the cliffs, **Bill Counterman** and I removed a partial dolphin skull (Figure 11) from the base of the cliffs at the Willows, on Thursday, July 31st. Fossil Club member, **Jayson Kowinsky** spied the occipital condyle that had just become exposed. Many thanks for your speedy notification! The isolated skull was preserved lying on its left side. The identity of this dolphin must await preparation of the skull.



Figure 11. Wielding a marsh pick, **Bill Counterman** works to expose a partial dolphin skull in the cliff at the Willows.

A Seal Jaw from the St. Mary's Formation

Another exciting discovery was made more recently by **Bill Counterman** in sediments derived from the St. Marys Formation. His initial finds consisted of an articular condyle, plus the process to which the digastric muscle attaches and the tiniest fragment of the symphysis of a lower jaw. In spite of the fragmentary nature of these finds, they were sufficiently diagnostic to allow us to identify his finds as having come from the lower jaw of a Miocene seal. Because of their rarity, we both returned to screen wash the slumped sediments in the hopes of finding more. While washing his first batch of mud, he triumphantly called out "bingo" as he carefully lifted most of the length of the right mandible from up off his screen (Figure 12). Fortunately, a single posterior molar was also preserved intact in this section of jaw. We were further rewarded for screen washing by finding a few more pieces of the jaw.

We must now determine what seal species this partial mandible belongs to.



Figure 12. A partial seal lower jaw from the St. Marys Formation.

Stephen Godfrey

The **CMM Shark Tooth Poster** is available in the Calvert Marine Museum Gift Shop and on line at www.Calvertmarinemuseum.com.

Caught in the Act: A Miocene Molluscan Predator and its Apparent Prey

Introduction

Many species of molluscan Miocene fossil shells from the Calvert Cliffs Formations along the western shore of Chesapeake Bay are frequently encountered bearing bore or drill holes, indicating that these individuals were killed and eaten by predatory gastropods. These snail predators are known to select their prey based on both size and shell morphology, and such predation can affect the evolution of their prey species (Kelley 1988, 1989, 1991a). The accumulation of hard dead calcareous shells on the shallow mud or sandy sea floor can in turn affect the living molluscan community by altering the texture of the bottom sediments themselves, a process termed "taphonomic feedback" (Kidwell 1986). Kidwell 1989 also has reviewed the cyclic stratigraphic and transgressive nature of the many-layered Maryland Miocene shell deposits.

Bivalve genera commonly found with bore holes in these deposits include *Astarte*, *Chesapecten*, *Crassatella*, *Dallarca*, *Dosinia*, *Glycymeris*, *Lucinoma*, and *Mercenaria*, among others. Some of these bore holes are cylindrical (that is, their walls are parallel), whereas, others are conical, becoming narrower, as the holes penetrate more deeply into the shells. Many young (small) individuals exhibit such drill holes. Some of the holes penetrate heavily calcified pelecypod shells more than ¼ in. (6.35mm) thick. Not infrequently, several such holes even may be found on the conch of known predatory gastropods, such as *Lunatia* and *Polynices*, some undoubtedly indicating cannibalism among the predatory snails themselves (Kelley 1991b).

The snail predators make these holes using their toothed and chitinized radula (or molluscan "tongue" equivalent) as a drill bit, along with secreted acidic digestive enzymes, which help to dissolve the calcium carbonate (CaCO₃) during the

abrasive process. Once the shell has been penetrated, the snail's enzymes begin to digest the soft-bodied prey within its shell. These holes often can be located anywhere on the valve but often occur near the beak, hinge-line, or the middle of the shell, but with their frequency tending to decrease toward the valve's margins.

capturing prey, and those trying to avoid being eaten (Jablonski 1986, Kelley and Hansen 1993, Roopnarine and Beussink 1999). Locally, interspecific relationships such as these can lead to extinction of certain prey species through time, and the need for the predators to shift to other forms of prey. In particular, naticid snails and their molluscan prey species have provided systems which have been widely studied in the works cited above. This note will report the finding of a small Miocene predatory snail in close association with its apparent bivalve prey. I also shall briefly discuss the systematics and morphology of the small pelecypod constituting the gastropod's apparent prey.

Methods and Results

The species described in this note were identified by referring to Clark et al. 1904, Vokes 1957, Ashby 1979, Glaser 1979, Ward and Blackwelder 1987, and Ward 1992. All four specimens discussed and illustrated in this paper were placed in the invertebrate collection of the Calvert Marine Museum, Solomons, Md. on 15 July, 2003. Their individual CMM-I (invertebrate) collection numbers are given in the list reported below.

On 7 May, 1994 my wife Pam and I drove from Baltimore down to St. Leonard in Calvert Co. to search for fossils along the western shore of Chesapeake Bay at the Matoaka Cottages. During this trip I collected a good-sized specimen of *Lunatia heros* Say (Naticidae), from a large slump block. This shell is one of the larger, more common Miocene snail species in the Drum Cliff Member (the lower portions of Shattuck's Zone 17) of the Choptank Formation (Figs. 1A and B). Upon returning home, and after permitting the specimen to dry, I cleaned out 46.5 cc of fine gray-tan matrix packed within the shell. Inside the larger snail were two remarkable smaller fossils (Figs. 2A and 2B, and Figs. 3A - 3D), which were adjacent to each other, and in contact, in such relative positions that I immediately inferred that they represented a predator and prey species "caught in the act" at the time of preservation (Fig. 5). The small predatory snail was *Ecphora* sp.: Muricidae. The valves of the small *Corbula* (*Caryocorbula*) *inaequalis* Say: Corbulidae



Figures 1-4. Associated common Miocene mollusks collected from the Drum Cliff Member of the Choptank Formation (lower Zone 17). 1A and 1B. *Lunatia heros* Say (Naticidae), which was filled with Choptank matrix. 2A and B. *Ecphora* sp. (Muricidae) found in contact with right valve of *Corbula inaequalis* (Corbulidae). 3A and 3C. Exterior and interior of drilled right valve of *C. inaequalis*. 3B and 3D. Exterior and interior of intact left valve of *C. inaequalis*. 4. Unassociated *Turritella* sp. (Turritellidae), also found within the matrix of the larger *Lunatia* shell.

Throughout geologic time, predator and prey species in molluscan communities have engaged in escalating "arms races" between those species

were closed. The aperture of the *Ecphora* was appressed to the right valve of the *Corbula*. Further examination of the *Corbula*'s right valve revealed two conical bore (or drilled) holes, one of which was partial, and the other complete (Figs. 3A and 3C). The borings had identical surface diameters (about 2.0 mm), suggesting that they most likely had been made by the same small *Ecphora*. The only other shell contained therein was a small partial *Turritella* sp.: Turritellidae (Fig. 4), which was not in close proximity to the other two species.

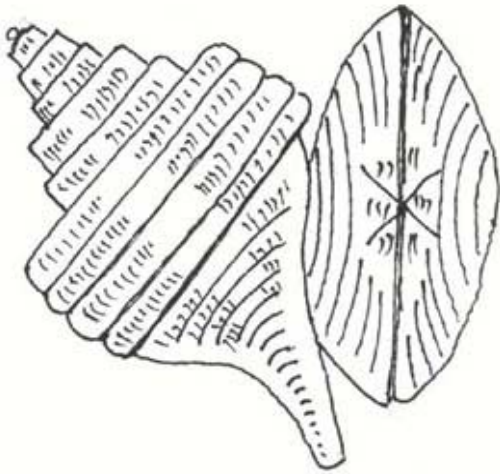


Figure 5. Diagram showing the original relative positions of the predatory *Ecphora* (left) and its bivalve prey *Corbula* (right) as found within the larger shell of the snail *Lunatia*. The aperture of the *Ecphora* was in contact with the drill hole area of the *Corbula*'s right valve. Both the partial hole and the more marginal complete one are believed to have been made by this single small predatory gastropod.

Table 1: The length, width, and height measurements of these shells (in mm) are as follows:

Species	Length	Diameter/Width	Height
<i>Lunatia heros</i>	50.0	67.0	69.0
<i>Ecphora</i> sp.	14.0	19.0	6.0
<i>C. inaequalis</i>	7.2	6.0	4.5
<i>Turritella</i> sp.	6.5	2.5	3.0

The Calvert Marine Museum Invertebrate Catalogue numbers are as follows: *L. heros*, CMM-I-2949; *Ecphora* sp., CMM-I-2951; *C. inaequalis*, CMM-I-2950; *Turritella* sp., CMM-I-2952.

The *Ecphora* shell was perfect when first collected, but its delicate spire was broken during handling, and examination under the dissecting microscope. The total length of the *Turritella* shell, if it had been complete would have been about 9.0 mm.

Discussion and Conclusions

Kelley 1988 states that snail predation on corbulids shows little size and site specificity when compared to the positioning of bore holes on the shells of other bivalve and gastropod species. She attributes this "poor predictability" of predation to the presence of a resistant conchiolin layer within the corbulid shells (Lewy and Samtleben 1979), which possibly could deter the boring predators. (Conchiolin is an insoluble, chemical-resistant fibrous scleroprotein found within the shells of certain mollusks). The structure and significance of this rather "elastic" and impenetrable shell layer has been studied in detail by the above authors. Such layers evolved among corbulids as far back as early Cretaceous times, most likely as a defensive measure among these in-faunal (burrowing) bivalves. Perhaps this is why the *Corbula inaequalis* described here possesses both the more central partial and the completed bore holes, the latter being closer to the shell's margin.

Acknowledgements

I wish to thank G. C. Ford, Coordinator, Illustrative Services, Biological Sciences, U.M.B.C. for preparing the digital photographs accompanying this note. Also, Pat Fink, of the Calvert Marine Museum confirmed the small bivalve's identity and provided me with her unpublished preliminary list of fossil and extant Maryland Miocene invertebrate species and several other key references used in this report. Finally, I wish to thank Stephen Godfrey,

(Curator of Paleontology) Pat Fink (Collections Manager) of the Department of Paleontology, Calvert Marine Museum, and my wife, Pam Platt, for providing both helpful comments, thoughtful discussions, and substantive revisions of the topics considered above.

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Austin P. Platt, Emeritus
Dept. of Biological Sciences,
University of Maryland Baltimore County,
Baltimore, Maryland 21250-0001

Cast Basilosaurus Tooth

The raffle for the Basilosaurus tooth will be held at the next meeting on September 6th. If anyone would like to purchase tickets for the specimen the meeting will be your last chance to do so. They are still available from Paul Murdoch and are \$0.50 each or 3 for \$1.00. The proceeds from the raffle will go to support the activities of the Calvert Marine Museum Fossil Club.

News Links

Chromosomal gene study suggests historical whale populations were much larger than thought: Find out more at:

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<http://dsc.discovery.com/news/afp/20030721/whale.html>

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

Recent Calvert Cliff Articulated Porpoise Skeleton Quarried

Over the course of several days in October, 2001, the Calvert Marine Museum excavated, from zone 13 of the Calvert Formation along the Western shores of the Chesapeake Bay, what has been preliminarily identified as a juvenile specimen of the Miocene porpoise *Eurhinodelphis bossi*. This specimen is rumored to have been eroding out of the cliff for the last 2 years, yet was only recently brought to the attention of the museum. The following is its story.



Several damaged lumbar vertebra of the Eurhinodelphis are visible immediately above the posted sign in Bed 13 of the Calvert Formation.

In late May and early June 2001 the CMM was in the same immediate area excavating a baleen whale (probably juvenile, species yet undetermined). The group was informed by long time CMM volunteer Pam Platt that a string of vertebrae, most likely lumbar and/or tail, had been brought to her attention by another fossil hunter, and was eroding out of the cliffs south of the whale site. The group decided to take a look at them the following day to see if enough of the animal was present to warrant an attempt at extracting them. However, on the following morning's walk down from the whale site to the vertebrae, Pam met us on the way and informed the group that, overnight, some person or persons had hacked into the vertebrae destroying Club website: <http://www.calvertmarinemuseum.com/cmmfc/index.html> Club email: CMMFossilclub@hotmail.com

and/or removing all previously visible pieces of the specimen. This made the journey moot and no one bothered to investigate it further and we all returned to a very productive whale excavation. That find may become a working display at the CMM at some point in the first quarter 2002. It was shortly thereafter that I decided to keep an eye on the spot whenever I could get to it and see if more of the find would later erode out over time.

The next time that I was able to access the site was in late September. I brought a friend with me who had, as a child, dreamed of becoming a paleontologist, and this was his first-ever fossil trip. We were both in for a pleasant surprise...after nearly walking right past the spot, we could both clearly see that the find had in fact expanded. The left scapula, several ribs and multiple vertebrae with detached epiphysis were now viewable. Imagine being lucky enough to view such a sight on your first ever fossil outing! What a lucky man my friend is. I contacted the CMM and arranged to meet Stephen Godfrey over Labor Day weekend to show him the exact location. In that short span of time hackers again damaged the specimen and several vertebra and epiphysis were missing in the week between calling the CMM and being able to show them the find. Due to scheduling conflicts and the liability concerns of the property owner the dig did not proceed until October. Yet again, during this "down time" the site was vandalized. This time the CMM excavation sign was removed and arrows pointing to the exposed bones in the cliff were carved into the cliff with, apparently, a screwdriver. All of this was discouraging, especially the actions of the thoughtless clod(s) responsible for these acts; acts that put all fossil collectors in a poor light. But the find would turn out to be well worth the wait.

Digging finally proceeded in October and the specimen was indeed fairly well articulated with the body facing south. Thankfully little more had eroded out but someone did damage one new piece that had become viewable in the interim. After 2 days of quarrying, the skull was spotted a foot back into the cliff. It had spun around, facing back towards the body at approximately a 60-degree angle with the snout extending back into the cliffs. With this great news in hand, my friend and I were able to get some time off from work to assist in the excavation. We

were able to spend the better part of two days helping to extract one jacket containing the left scapula, several ribs and multiple vertebrae with detached epiphysis. Working with plaster is such fun!! I used my boat to transport it for a final time over the waters of the Chesapeake Bay up to the awaiting CMM vehicle. What a thrill and it sure beat carrying it!!! This jacket was nearly 4 feet in length and weighed close to 150 lbs. I was unable to spend any additional time assisting with the remainder of the dig but in a few days the second jacket was removed containing the skull, several possible cervical vertebra and both jaws! They both appear to be complete and the upper jaw extended nearly four feet in length!!! Several teeth were found insitu in very close proximity to the skull, but none were viewable intact in either the upper or lower jaws. This jacket was nearly five feet in length and weighed over 170 lbs.

The find itself was in great shape and no signs of predation were readily apparent. The only shark material found while excavating was a small (.35 inch) shark vertebra. It was found while pedastalling the jacket containing the scapula and was found approximately three inches underneath the bone layer, and therefore, most likely is not associated to the find. The skull jacket is currently in the prep lab of the CMM. So far the following have been exposed from that jacket: both jaws and the back of the skull, a jugal bone, 6 ribs (including the first rib), a humerus, 3 vertebra (2 are cervical), 16+ teeth not including one still present in the lower jaw and several epiphysis. The skull is believed to be completely intact, but only time and patience will tell. It will take several more weeks until it's true condition is known. The other jacket is in storage, tightly wrapped in plastic to prevent drying and will most likely follow shortly. The excavation also found some additional smaller yet mature dolphin vertebrae in the vicinity and several collectors have suggested that a small whale may have eroded out from the same spot as well over the past two years.

After the find began being prepped, several of the epiphysis that were removed from the specimen by collector(s) over these several months were donated to the CMM. I, as I'm sure are many others, am happy to see that these pieces have been reunited and hope that more of what was removed

will find it's way to the museum, but am upset that they were removed in the first place. We all must remember that if permission is not granted by a landowner we have no right to disrupt someone's private property no matter how tempting a find might be. Instead, one should contact a local museum; e.g. CMM, VMNH, or NMNH. You will be given full credit for the discovery and most likely will be allowed to participate in the excavation. In this case, the skull is in such fine condition that it may, at some point, become a permanent display at the CMM, but it's still too early to tell.

I personally consider these events to represent the whole spectrum of fossil collecting and collectors. We have the good, the bad and the ugly out there, but I chalk this one up as a big group win even considering the actions of a thoughtless few. I just happened to be the one who followed up on the find and made sure it was brought to the museum's attention. Several people not only assisted in the excavation of the find, but also in making sure it was made known to the museum, and therefore feel a special connection to the find. I hope it brings all involved a great deal of personal satisfaction to be able to say one day: "See that there, I had a part to play in it getting here so that everyone can enjoy it". To those of you who helped along the way, **Thanks!!!** It really is a fine specimen.

Paul R. Murdoch Jr.

Editor's Note: This article was first published in the February, 2002 issue of the *Rostrum*, the newsletter for the Maryland Geological Society (MGS). It is being republished now to celebrate its success. The story was nominated for and won the MGS's article of the year award. It was then forwarded by the MGS to the American Federation of Mineralogical Societies for consideration for its Editors Award National Competition in the Original Adult Article category. At the group's annual convention in California this June it won first place! Congratulations to Paul for winning this honor!

The find is no longer in the CMM prep lab, but the contents of the second "rib" jacket have not yet

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been determined so the full breathe of the find remains unknown.

Upcoming CMM Club Meetings and Field Trips, Fall 2003

All call-ins should be directed to Bob Ertman on the Tuesday evening before the trip, to his cell phone number; 410-533-4203.

Lee Creek, North Carolina: A Fall collecting schedule has not yet been received from the Lee Creek Mine. However, if you have an interest in participating in this pilgrimage, call in on Tuesday evening, September 2nd. That way, when we receive notification of when our club will have access to the mine, we will then notify interested individuals without having to do another mailing.

September 6th: Club meeting and public lecture. The club meeting will begin at 12:30pm and will be held in the 3rd floor lounge in the Exhibits Building. At 2:30pm in the Auditorium, Dr. Matt Carrano, the new Curator of Dinosaurs at the Smithsonian will speak on "Exploring the Past on the Great Red Island: New Dinosaurs from Madagascar"

September 13th: Scientists Cliffs, hosted by Dave Bohaska, this mid-Miocene site along Calvert Cliffs is a perennial favorite. The Chestnut Cabin Museum will also be open.

September 27th: Langley Bluff. This site south of Pax River Military Base nears the top of the St. Marys Formation. Lovely shells are generally common and crabs in concretions are favorite finds. Be forewarned...this site is becoming increasingly difficult to access because, the hill that we used to clamber up and down is being eroded away. Therefore, access by climbing down a tallish ladder may be the only way both up and down.

October 4th: West Virginia, Lost River & Capon Bridge Trilobite trip. Barb & Herb Ermler will lead this trilobite expedition in West Virginia. You

will want to bring a rock hammer, chisel and eye protection. Many fossils don't need to be chiseled from the stone.

October 11th and 12th, PRAD; i.e. Patuxent River Appreciation Days. Both days, our club will interpret displays of fossils. Please contact Stephen Godfrey at Godfresj@co.cal.md.us or by calling 410-326-2042 ext. 28 if you would be willing to help, for any length of time, either or both days. This is a golden opportunity for you to display some of your collection.

October 18th: Willows Beach, Calvert Cliffs. This site along the northern half of Calvert Cliffs has produced a host of Miocene invertebrate and vertebrate fossils from the Calvert Formation.

November 22nd: Pot Luck Lunch, club meeting and public lecture. Our pot luck lunch will begin at 12:00pm in the 3rd floor lounge in the Exhibits Building. The Club will provide beverages plus...

At 2:30pm in the Auditorium, Dr. Barry Knisley from Randolph-Macon College will speak on "Endangered Tiger Beetles of Calvert Cliffs."

Editor's Column

As the new editor, I am delight to acknowledge the assistance Hillary Murdoch (the previous editor of *The Ecphora*), and Paul Murdoch provided in helping me assemble this issue. Their input assured the quality that we've come to expect in our newsletter. Pat Fink's editorial comments improved my contributions. Many thanks to all.

CMMFC
P.O. Box 97
Solomons, MD 20688

2003 Elected Officers & Volunteers*	Names	Email
President	Grenda Dennis	venusdolni@earthlink.net
Vice-President	Chuck Soares	sharkmako@aol.com
Treasurer	Kathy Haberny	k.a.y@erols.com
Secretary	Flo Strean	N/A
Membership Chairperson	Pam Platt	platt@umbc.edu
Editor*	Stephen Godfrey	Godfresj@co.cal.md.us
Fall Trip Leader*	Robert Ertman	Robert.ERTMAN@usda.gov
Spring Trip Leader*	Open	N/A

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Editors Address:

Stephen Godfrey Ph.D.
Curator of Paleontology
Calvert Marine Museum
P.O. Box 97
Solomons, MD 20688
Godfresj@co.cal.md.us