The Rostrum

The Newsletter of the Maryland Geological Society
Baltimore, Maryland
Established 1991

Volume 25, Number 5 **September, 2016**

Important Messages Regarding the September Meeting

At the September meeting the Maryland Geological Society will hold its 14th annual auction. This auction features fossils, minerals, archaeological artifacts, and meteorites and provides members an avenue to both sell and buy specimens. More information is detailed in this issue of the newsletter. Additionally, in the past some members have generously donated items for the auction and have designated that 100% of the selling price be donated to MGS. Generous gifts of this type will be extremely helpful in keeping our organization financially sound.

Reminder about the 25th Anniversary Celebration Dinner to be held on Sunday, October 9th. If you have signed up to attend and have not already done so, please make your payment at the September meeting or mail your check to Dave Anderson, 402 Belle Grove Road Gaithersburg, MD 20877. Make checks payable to The Maryland Geological Society. Cost per person $10, BYOB, casual attire.

Dates to Remember

September 18th, 2016

Meeting Time and Location

11:00 AM to 3:00 PM

Bowie Community Center, 3209 Stonybrook Drive, Bowie, MD 20715

14th Annual MGS Auction

Mineral of the Meeting – Pollucite. Bring a few choice specimens to the meeting.

"Theory helps us bear our ignorance of facts."

George Santayana
***The Sense of Beauty*, 1896.**

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Maryland Geological Society

Founded in 1991, MGS is comprised of both amateur and professional mineral and fossil collectors. The organization emphasizes collecting, identification, study and display aspects of the geological sciences. MGS is a nonprofit organization affiliated with the American Federation of Mineralogical Societies (AFMS) and the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS).

Dues

Annual dues are $15.00 per individual adult member. Applications for membership may be obtained from the MGS website or by contacting the Membership Chairman, Mike Folmer, at 417 West Maple Road, Linthicum, MD 21090, (410) 850-0193. Dues are payable by January 1st of each year.

Meetings

Meetings are held bimonthly, beginning in January at the Bowie Community Center, located at 3209 Stonybrook Drive, Bowie, MD - (301) 464-1737. The doors open at 11:00 AM and the meetings are completed by 3:00 PM. Club meetings will be held as scheduled so long as the Bowie Community Center is open.

Meeting Dates & Programs for 2016

January 17: General Meeting

March 20: General Meeting

May 15: Joint meeting with AFF

July 17: General Meeting

September 18: Annual Auction

November 20: Elections & Holiday Party

Correspondence

Direct mail to Gary Lohman, 21995 Barkentine Court, Great Mills, MD 20634. Phone: (301) 862-1957.

The Rostrum

Published bimonthly beginning in January. Submit material for publication electronically to rick.smith.mgs@gmail.com or by mail to Rick Smith, 1253 Brewster St, Baltimore, MD 21227.

Website

www.ecphora.net/mgs/

Material for the website should be sent to Jim Stedman at jbstedman@verizon.net.

Mineral of the Meeting: Pollucite
Bob Farrar

The Mineral of the Meeting for the September meeting of MGS will be pollucite. Pollucite is one of two minerals named for the Gemini twins, Castor and Pollux. (The other, castonite, was later renamed petalite.) Pollucite is a very interesting mineral, and has been of some economic importance.

Pollucite is a cesium silicate with the formula $(Cs, Na)AlSi_2O_6 \cdot nH_2O$. It is a member of the zeolite group. Zeolites are a large group of silicate minerals with an open crystal structure into which water or various elements can fit. There are over 50 zeolite minerals, but pollucite is the only one of which cesium is an essential component. It crystallizes in the cubic system, but distinct crystals are rare. Pollucite is usually colorless, but can also be pale pink or greenish. It is a fairly hard mineral, 6.5 on the Mohs scale. Other physical properties include a density of 2.94 and a glassy luster. Pollucite can be difficult to recognize when it is not in crystal form. It is usually necessary to rely on an expert to identify it.

Pollucite is found in rare earth-rich granitic pegmatites. In this respect, it differs from other zeolites, which typically occur in basalts or traprocks. Cesium is used in the vacuum tubes found in old radios and TVs. As a result, pollucite was mined extensively as an ore of this element. Numerous pegmatites in Maine and other parts of New England were exploited for pollucite. Notable localities include the General Electric Mine, the Emmons Quarry, The Bennett Quarry, and Mt. Mica, all in Maine, Lithia in Massachusetts, and the Walden Prospect in Connecticut. Many of these localities have later become important sources of other minerals, such as tourmaline, beryl, and apatite. Pollucite is also found in the pegmatites of South Dakota and southern California. Thousands of tons were mined at Bernic Lake, Manitoba, Canada.

The most important localities for well-formed crystals of pollucite are in Afghanistan and northern Pakistan. Paprok, Afghanistan, has produced crystals up to 50 cm in diameter. Gilgit, Pakistan is known for fine crystals almost up to baseball size. Crystals up to 5.5 cm. Have been found at the Malkhane Field in Siberia. Pollucite crystals are also known from Madagascar and the island of Elba, Italy.

Aside from its use as an ore of cesium, pollucite is not of much economic importance. Transparent pieces can be cut into gemstones, but these are rare and of interest mostly to gemstone collectors. Pollucite is not a major part of the mineral specimen market. Ore-grade pieces are sometimes seen for sale, but are not particularly attractive. However, when crystals are found, they can be very interesting and command high prices. If you own one, consider yourself lucky.

Pollucite from Afghanistan. Image by Rob Lavinsky, iRocks.com, and reproduced under Creative Commons Attribution-Share Alike 3.0 Unported license. Image is available at Wikimedia Commons.

Minutes of the Meeting for July 17, 2016
Jim Stedman

President's Report: MGS President **Gary Lohman** called the meeting to order at 12:15 pm. He recognized new members and visitors.
Vice President's Report: Vice President **Eric Seifter** described the new "Dollar Store" table (next to the silent auction table) where fossil and mineral bargains could be had.
Field Trips: **Marci Shore** said that the trip planned to Brownies Beach in May had been rained out. It is being rescheduled for after Labor Day. Another trip may be planned to the Matoaka Cabins in August.
Treasurer's Report: **Dave Andersen** reported that the club has $2,692.84 in savings, $1,799.76 in checking, and $145.42 in cash, for a total of $4,638.02.
Membership: Dave reported for Membership Chair **Mike Folmer** that the club has 63 adult members (including 14 life members) and 15 junior members.
Newsletter: **Rick Smith**, Editor of *The Rostrum*, noted that the current issue came out late with copies emailed on Saturday. Rick also announced that *Rostrum* articles by junior MGS members **Brooke** and **David** are among the 10 best junior articles entered in the American Federation of Mineralogical Societies' national competition for all member club newsletters.
EFMLS: EFMLS Representative **Cindy Lohman** announced that the annual convention of the Eastern Federation of Mineralogical and Lapidary Societies will be held in Rochester, NY, on October 22-23. The EFMLS annual meeting will be held there the day before on October 21. She also noted that the EFMLS Wild Acres Workshops for the Fall will be held in NC on September 5 – 11. Gary reported on the Region 4 EFMLS potluck and rock swap hosted by the Southern Maryland Rock and Mineral Club in June. Clubs came from as far away as NC and NY.
Website: Webmaster **Jim Stedman** reported that he believed the website was current and that all of its parts were working. He asked members to let him know if they encountered any issues with the website.
Social Media: Chair **Michael Hutchins** reported that the MGS Facebook page has 430 followers. Rick noted that the page hosts some beautiful pictures of minerals. Michael acknowledged that photos of minerals were the most popular pictures on the page.
Future Rockhounds of America: Sponsor Rick Smith awarded the Earth Processes badge and the Rocking on the Computer badge to Brooke. He said he would be leading FRA members through the AFMS code of field trip conduct.
Mineral of the Meeting: **Bob Farrar** gave a talk on the mineral variscite.
Fossils of the Meeting: Eric presented several of the trilobites that he had brought to the meeting, noting that trilobites had gone extinct at the end of the Permian, leaving the planet with just three groups of arthropods.
Old Business: Gary read a message from **Mel Hurd** about the plans, so far, for the 25th anniversary dinner. Mel stressed three topics: (1) a firm count of the number of MGS members who would be attending, (2) how the club will subsidize the cost of the meal, and (3) whether junior members will be invited. No date has been set for the dinner, though the current plan is that it will be held during the first two weeks in October. Mel will be sending out an email to the members shortly in order to get a head count of attendees. Members voted to keep the price for the dinner at $10 and for the club to subsidize the rest. It was noted that twice as much food as needed was ordered for the 20th anniversary dinner. So, securing a good head count was deemed critical to keeping costs in line with the previous dinner. As to junior members, Michael Hutchins, who would be hosting, said he would welcome junior members as long as they were monitored given the many artifacts he has displayed in his home. The members voted to invite junior members and their parents to the dinner. Gary asked that members email him or Mel about possible activities for the dinner.
New Business: Gary proposed that the club subsidize some of the cost for MGS junior members and parents attending the EFMLS regional conference in October. After some discussion, the members voted in favor of a $200 stipend for each junior member attending. In other new business, Rick asked members to share with him, after the meeting, some of the history of efforts to create a Maryland state rock and a state mineral. Junior member David is researching this issue.
Adjournment: The meeting was adjourned at 1:05 pm.

Special Effects

Brooke King, MGS Junior Member

The Earth is a very strange place. From unknown wonders to simple natural activities, there is always something weird going on. Many rocks and minerals on earth can also have spectacular effects in and/or on them.

Phantoms and Inclusions

Phantoms are a single crystal that another crystal grew over top of. Usually, the crystal inside of the crystal that it grew over top of it will take the shape of the crystal on top. Many of these crystals are polished so you can see the phantom effect. The most common material to have a phantom inside of it is a quartz crystal (Figure 1)[1].

Figure 1

Inclusions are crystals that have other minerals inside, scattered all around the crystal. The inclusion can also be water or air bubbles as well. There are three ways the minerals, water, or air could have gotten into the crystal. The ways that the three states of matter got into the crystals have names: Protogentic inclusion, Syngenetic inclusion, and Epigenetic inclusion.

Epigenetic inclusions are inclusions that got into the crystal after the crystal was formed (Figure 2).[2] This means that the state of matter is younger than the crystal. The way that the state of matter could get inside the crystal is by small cracks or fractures. Usually the state of matter is water or air.

Syngenetic inclusions are inclusions that were formed at the same time as the crystal. This means that the state of matter is the same age as the crystal. The state of matter starts to grow, and the crystal grows over it. Though it sounds similar, syngenetic inclusions aren't phantoms. Though, in a quartz crystal, there is something called syngenetical formation that got overgrown. This "overgrown" crystal inside makes a quartz crystal have a phantom instead of an inclusion.

Protogenetic inclusions are inclusions that were formed before the crystal was formed. This means that the inclusion is older than the crystal. The inclusion grew, and then a crystal started to form. The crystal grew over top of the inclusion, making the premade inclusion become trapped inside (Figure 3).[3] The state of matter could also be water. The water was above the unformed crystal. As the crystal grew, the water was trapped inside and it couldn't evaporate. This meant that the water turned to water bubbles, making the crystal turn into an inclusion crystal.

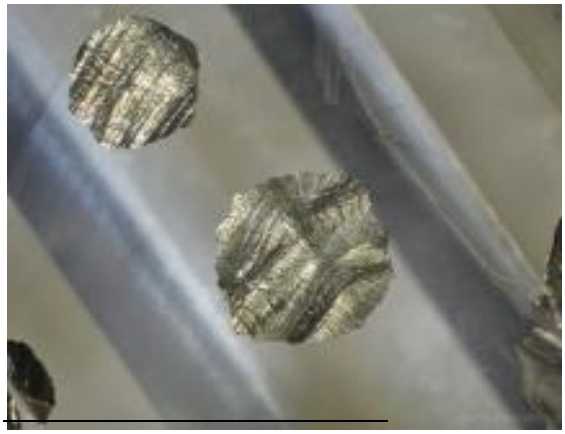

Figure 2

Figure 3

Magnetism

Everyone knows magnetism from their earlier years in elementary school. Those small bar magnets that you picked up pencils with and thought it was magic. Well, magnetism is not magic. It's a physical phenomenon caused by an electric charge. That electric charge then makes an attractive and repulsive force between objects. When a magnet is not magnetized, the atoms move around in random directions. But, when the magnet finds an attractive force, for example, North Pole finding the south pole of a magnet, the atoms react and make them all go in the same direction so that the two magnets can stick together.

Chatoyane, or cat's eye

The word chatoyane comes from the French word "chatoyeo", which means "to shine like a cat's eye." A cat's eye (Figure 4)[4] is an effect on a gemstone that is actually an optical phenomenon. The phenomenon is caused by a band of reflected light that moves beneath the surface of a cabochon-cut gemstone. Many of the gemstones are a greenish to yellowish color, but they can be a rainbow of colors. The cat's eye effect can also be found in some kids' marbles. The only gemstones that can have this effect, in alphabetical order are: actinolite, apatitc, aquamarine, beryllonite, cerussite, chrysoberyl, danborite, diaspore, diopside, emerald, enststite, garnet, heliodor, iolite, kyantie, moonstone, peridot, pezzottaite, prennite, quartz, rutile, scapolite, sillmantle, spinel, tiger's eye, topaz, tourmaline and zircon.

Figure 4

This is only a small fraction of some of the special effects that you can find in minerals or rocks on Earth. From the most deserted islands to the busiest cities in the world, there is always something spectacular to see in rocks and minerals.

[1]"Phantom Quartz Crystals and Spheres." *Phantom Quartz Crystals*. N.p., n.d. Web. 09 Aug. 2016.
[2]"Gems-inclusions." *Gemsinclusions*. N.p., n.d. Web. 09 Aug. 2016.
[3]"Research." *Research*. N.p., n.d. Web. 14 Aug. 2016.
[4]"Stones - Cat's Eye (the Gemstone of Confidence)." *Stones - Cat's Eye (the Gemstone of Confidence)*. N.p., n.d. Web. 14 Aug. 2016.

Resources:

"Chatoyant Gems - The Cat's-Eye Phenomenon." *Chatoyant Gems: The Mystery of Cat's-Eye Gems Explained*. N.p., n.d. Web. 14 Aug. 2016.

"General Material - The Otago Rock and Mineral Club." *General Material - The Otago Rock and Mineral Club*. N.p., n.d. Web. 14 Aug. 2016.

Lett, L. *Physical Geology*. 3rd ed. Englewood Cliffs: Prentice Hall, 1958. Print.

Merriam-Webster. Merriam-Webster, n.d. Web. 14 Aug. 2016.

"RocksInMyHeadToo! Rocks Minerals Crystals Gems & Much More!" *RocksInMyHeadToo! Rocks Minerals Crystals Gems & Much More!* N.p., n.d. Web. 14 Aug. 2016.

Spock, L. *Guide to the Study of Rocks*. New York: Harper and Brothers, 1953. Print.

Why, When, and Where The Turtle Got Its Shell
~"It All Depends on Where You Want to Start"
Jim Stedman

> Because they are still living, turtles are commonplace objects to us; were they entirely extinct, their shells – the most remarkable defensive armor ever assembled by a tetrapod – would be a cause for wonder.
> ~ Alfred Sherwood Romer, *Vertebrate Paleontology*, 3rd edition, 1966, p. 112

For me, the great paleontologist Alfred Sherwood Romer got it wrong. I have had a long love affair with turtles, living or fossil, and any turtle, such as the Eastern Box Turtle (*Terrapene carolina*), pictured here, is an endless source of wonder. That many fundamental questions about their evolution remain unresolved only adds to my sense of amazement about these reptiles.

In the past couple of months, the popular press has proclaimed several of these questions settled, asserting that we now know why the turtle got its shell, when the shell evolved and where (see, for example, Ed Yong's piece in *The Atlantic* titled Why Turtles Evolved Shells: It Wasn't for Protection, July 14, 2016.) Driving all of this attention is a recent article by paleontologist Tyler R. Lyson and his colleagues who advance a provocative hypothesis about the genesis of the turtle's shell (Fossorial Origin of the Turtle Shell, *Current Biology*, July 14, 2016). They seek to overthrow the common understanding that the shell arose for defense. Instead, they posit that the earliest steps in fashioning a turtle shell supported a burrowing (i.e., fossorial) lifestyle. They don't deny the obvious role currently of the shell in protecting the animal, but assert that defense is an "exaptation," a function that the shell acquired *later*.

Case closed? Well, not so fast. The fossil record, though very much fuller and much more useful than Charles Darwin anticipated it ever could be, is still hard pressed to provide conclusive explanations for some fundamental issues concerning transitions among species. Critical to Lyson's hypothesis is the identification of so-called "stem turtles," those species that we consider antecedents to "crown turtles." A stem turtle shares some, but not all, of the traits we deem necessary for a species to be considered a true or crown turtle.

We think we know a turtle when we see it; there's that essential "turtleness" about it. Biologists Carl H. Ernst and Jeffrey E. Lovich have observed, "The single feature that most defines living turtles is their bony shell." (*Turtles of the United States and Canada*, 2009, p. 3.) The shell consists of two principal elements: the arched carapace on the dorsal side of the animal, and the flat shield-like plastron on its ventral side. The shell is not enough to make a species a crown turtle. The first complete turtle shell in the fossil record appears in *Proganochelys quenstedti* (see Figure 1 below) which lived about 215 million years ago, during the Triassic. Nevertheless, it's considered a *stem* turtle, sporting, as it did, some rudimentary teeth.

Lyson and his colleagues believe that the turtle shell began to evolve about 260 million years ago during the Permian in what they identify as the oldest stem turtle, a lizard-like creature, *Eunotosaurus africanus*. This incipient shell helped *Eunotosaurus* to burrow underground to escape the rigors of the dry, drought-stricken Karoo Basin of South Africa. Its fossils are found in an ancient floodplain where any bodies of water were certainly short-lived. Apparently the biological costs of adding rigidity to the dorsal side of the animal (thereby, sacrificing easier and more efficient breathing and locomotion) were outweighed by the advantages accruing to an incipient carapace and being able to burrow.

But, is *Eunotosaurus* actually a stem turtle? That raises a fascinating paleontological issue – where to draw the line between non-turtles and the first stem turtles. Yes, it is about where you start. If it is the earliest known stem turtle, then, not only might the fossorial hypothesis about the shell's origin prevail, but so would terrestrial and Permian beginnings for the animal with the first signs of "turtleness." The most complete *Eunotosaurus* fossils have broadened dorsal ribs and a reduced number of vertebrae and ribs (the purported incipient carapace), along with powerful

shoulders, forelimbs, and large claws. Those broadened dorsal ribs were noted more than a century ago in the first scientific article to describe *Eunotosaurus* and appeared prominently in that article's illustration of the animal's bones known to that point (at left). (D.M.S. Watson, *Eunotosaurus africanus*, *Proceedings of the Zoological Society of London*, 1914, p. 1016.) As I read Lyson, he considers those broadened ribs among the first steps in fashioning a turtle shell and perhaps the key to the morphological characteristics that say "stem turtle" to him. (Lyson has long championed this position for *Eunotosaurus*. See, for example, Lyson et al., Transitional Fossils and the Origin of Turtles, *Biology Letters*, Volume 6, 2010.)

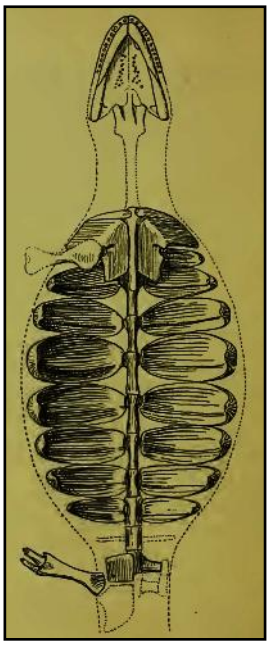

Figure 1 shows a possible evolutionary scenario for the general development of the turtle shell across four stem turtle species. This is the scenario that Lyson's hypothesis puts forward with the inclusion of *Eunotosaurus* as a stem turtle.

If *Eunotosaurus* isn't a stem turtle, then other conclusions about the why, where, and when of the shell are possible. Until recently the generally accepted earliest stem turtle has been *Odontochelys semitestacea* (see Figure 1) described in 2008 by paleontologist Chun Li and colleagues (An Ancestral Turtle from the Late Triassic of Southwestern China, *Nature*, Volume 456, November 27, 2008). Li et al. claimed *Odontochelys*, which lived about 220 million years ago in the Triassic, as "basal to all other known turtles, fossil or extant" (p. 499). It is useful to see how this stem turtle differed from *Eunotosaurus*.

First, though like *Eunotosaurus*, it had an only partially evolved carapace with some broadening of the dorsal ribs, *Odontochelys* had a *fully developed plastron*. I am not certain whether paleontologists consider *Eunotosaurus* to have had the beginnings of a plastron. Lyson notes that *Eunotosaurus* lacked a "co-ossified plastron," but adds, "all of the bones that form the plastron are present . . . ." (Lyson et al., Evolutionary Origin of the Turtle Shell, *Current Biology*, Volume 23, 2013, p. 1116.) *Eunotosaurus* had paired gastralia (bones in the abdominal walls of some reptiles) which fused in younger species, becoming integral to the creation of the plastron. (Rainer R. Schoch and Hans-Dieter Sues, A Middle Triassic Stem-Turtle and the Evolution of the Turtle Body Plan, *Nature*, Volume 523, July 30, 2015.)

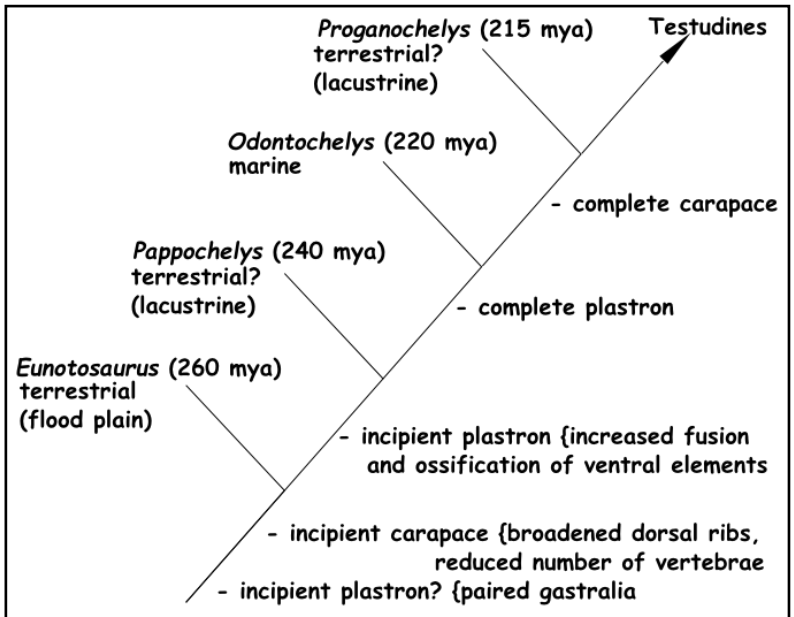

Figure 1. Early evolution of the turtle shell with inclusion of *Eunotosaurus* as stem turtle. This figure is modeled after Figure 5 in Schoch and Sues, 2015. Listing of shell features suggests the temporal order of their appearance. Identification of the environments in which these stem turtles were found is based on Lyson et al., 2016. Question marks have been added to those that are lacustrine because it is possible that these environments were partially or completely aquatic for these turtles.

Second, *Odontochelys* fossils, unlike those of *Eunotosaurus*, have been found in what was, at the time, a near-shore marine environment, which led Li et al. to conclude that the characteristics of *Odontochelys* are "indicative of primarily aquatic habits and of a possible aquatic origin of turtles." (Li et al., 2008, p. 500.) Consideration of why the plastron appears to have evolved more fully *before* the carapace may well support the contention that the shell began its evolutionary journey in support of defense. For instance, evolutionary biologist Richard Dawkins has asserted that the development of the bottom half of the shell makes sense for animals living in water; they needed protection from predators coming up *from below*. (*The Greatest Show on Earth*, 2009.) Possibly, in a marine environment, the plastron may have served a different or complementary role, acting like ballast, helping to keep the animal upright and stable.

Lyson argues away the importance of *Odontochely*'s marine connection by asserting that, except for *Odontochelys*, known stem turtles occurred in terrestrial environments. (Lyson et al., 2016.) Given that some of these environments were lacustrine (having to do with lakes) (see Figure 1), I would suggest that there may be some question about how these environments should be considered – terrestrial, aquatic, or some combination of both. Lyson also speculated that that *Odontochelys* "perhaps represents an early excursion of turtles into near-shore environments." (Lyson et al., 2016.) Frankly, the most conservative position is that terrestrial *and* aquatic environments both played roles in the development of the turtle and its shell. Choosing one over the other may well depend upon where we start. (That said, go back far enough and the beginning is clearly aquatic since that's where all life presumably originated on this planet.)

I am puzzled by the apparent lack of progress in developing a full carapace over the 40 million years that separated *Eunotosaurus* and *Odontochelys*, and the development, instead, of a complete plastron. One hypothesis suggests that *Odontochelys*' partial carapace was the remnant of what had been, in some older species, a complete carapace. (Robert R. Reisz and Jason Head, Turtle Origins Out to Sea, *Nature*, Volume 456, November 27, 2008.) In other words, *Odontochelys* could have been part of a fuller adaptation to marine life during a turtle radiation from land to sea. If true, that would mean there should be fossils waiting to be found of terrestrial stem turtles older than *Odontochelys* with complete shells. Finally, none of this rules out evolution of the plastron in an essentially terrestrial environment in support of burrowing.

Might the actual story be that the plastron is a more turtle-defining characteristic than the carapace? Consider *Pappochelys rosinea* (see Figure 1), dating from about 240 million years ago, which may be considered a stem turtle. In addition to paired gastralia, there was some ossification and fusion in the ventral region; though not constituting a complete plastron, it seemed headed in that direction. (Schoch and Sues, 2015.) As a consequence, biologist Ritva Rice and her colleagues observed recently, "The plastron is thought to be the oldest part of the turtle's shell as the earliest known turtles in the fossil record to date – *Odontochelys* and *Pappochelys* – had plastron-like ventral bones, but only a partial carapace." They considered it "synaptomorphic of the order Testudines," that is, the plastron is the shared, derived trait that distinguishes all crown turtles. (Development of the Turtle Plastron, the Order-Defining Skeletal Structure, *Proceedings of the National Academy of Sciences*, early edition, 2016, p. 1.)

But, lest things become too clear, *Pappochelys* is thought to have lived in a lacustrine environment, which, as already noted, raises the basic question: Where did this animal spend its time – in water or on land, or did it partake of both? Lyson has emphasized the terrestrial aspect of this environment. Schoch and Sues, who first described *Pappochelys*, concluded it probably "lived along the lakeshore or frequently entered the lake," and that its features were "consistent with aquatic or semi-aquatic habits" (Schoch and Sues, 2015, p. 587). Still, one might wonder if that necessarily precludes it also being a burrower.

Where does that leave us? Well, fundamental questions about the turtle's shell remain open and, clearly, we're in need of more transitional stem turtle fossils. This also serves to confirm, and broadly apply, what paleontologist Robert Weems asserted, when asked whether turtles originated on land or in the water, "As with many things in evolution, it all depends on where you want to start." (Personal communication.)

Acknowledgement
I want to thank Dr. Robert Weems for commenting on a draft of this article. All errors of fact and interpretation remain, of course, my own.
(Photograph by the author; figure prepared by the author.)

Field Trips
Field Trip Coordinators – Marci & David Shore

The Maryland Geological Society is an advocate of responsible collecting. The society has permission to collect in all of the sites listed that require such permission. Most trips are weather dependent and some require at least an average level of physical fitness. Field trips are restricted to MGS members only.

No field trips scheduled at this time.

14th Annual MGS Auction at the September 18th Meeting

At the September 18, 2016 meeting, the Maryland Geological Society will hold its 14th annual auction. This auction features fossils, minerals, archaeological artifacts, and meteorites. Previous auctions have been a huge success, everyone has had fun, and the money raised for the MGS Treasury has kept the club's annual dues low!

What you need to know if you want to submit specimens to the auction:

1 – Members can bring up to ten specimens of mineral, fossils, artifacts, or meteorites.

2 – **Duplicate copies** of the **auction form** listing the specimens must be submitted (one is for the auctioneer and one is for the cashier). You might want to make a third copy in order to follow along with the auction. Handmade copies are accepted.

3 – Each specimen should be labeled and numbered with an identifying tag from the **identification tag form**. Proper identification and localities must be placed on the tags.

4 - Minimum bids can be placed on the item and the item will **not** be undersold.

5 – MGS will assess a 10% fee on each item sold.

6 – Both the **auction form** and the **ID tag form** can be found at the end of the newsletter and are also posted on the MGS website.

Shows & Events

September, 2016:

24-25: 52nd Annual Atlantic Coast Gem, Mineral & Jewelry Show hosted by the **Gem Cutters Guild of Baltimore**. Howard Co. Fairgrounds, West Friendship, MD. Contact gemcuttersguild@gmail.com.

24-25: 60th Annual Franklin-Sterling Gem & Mineral Show Sponsored by the **Franklin Mineral Museum.** Times: Saturday 9:00 am - 5:00 pm, Sunday 10:00 am - 4:00 pm. Franklin School - Franklin, NJ and Sterling Hill Mining Museum, Ogdensburg, NJ.

October, 2016:

15-16: **Annual Paul Desautels Micromineral Conference**. Friends School, Baltimore, MD. For info and registration: cscrystals2@gmail.com.

22: Annual "ULTRAVIOLATION" and Fluorescent Mineral Show presented by the **Rock and Mineral Club of Lower Bucks County, PA**. First United Methodist Church, 840 Trenton Road, Fairless Hills, PA. For more information contact Chuck O'Loughlin at 302-384-7876 or email ultraviolation@yahoo.com.

22-23: Rochester Gem, Mineral, Jewelry & Fossil Show & Sale and **66th Annual EFMLS Convention** hosted by the **Rochester Lapidary Society**. Main Street Armory, 900 E Main St; Rochester, NY. For more information: www.rochesterlapidary.org/show. EFMLS Annual Meeting, Friday, October 21.

29: South Penn Rock Swap, Sponsored by the **Central Pennsylvania and Franklin County Rock & Mineral Clubs** Saturday, October 29, 2016, 8 a.m. to 3 p.m., South Mountain Fairgrounds, West of Arendtsville, PA on Route 234 (For GPS, use address: 615 Narrows Road, Biglerville, PA 17307). General admissions: $1.00/person, Table for Swappers: $5.00/table. Contact: tsmith1012@comcast.net.

November 2016:

Nov 5-6: 47th Annual Fine Gem, Jewelry and Mineral Show - Gemarama 2016 presented by the **Tuscarora Lapidary Society**. HALL C, Greater Philadelphia EXPO Center at Oaks. Contact: Amy Karash at amy.karash@gmail.com.

MGS Auction Form

(submit in duplicate)

Name:_____ **Page:**____

Date: _____

Specimen	*Locality*	*Asking Price*	*Sold Price*
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			
	Total		

Tickets for Auction Items

Please fill out the tickets, cut them out, and attach them to the item to be sold.

Item # 1 **Seller:** **Description:**	**Item # 2** **Seller:** **Description:**
Item # 3 **Seller:** **Description:**	**Item # 4** **Seller:** **Description:**
Item # 5 **Seller:** **Description:**	**Item # 6** **Seller:** **Description:**
Item # 7 **Seller:** **Description:**	**Item # 8** **Seller:** **Description:**
Item # 9 **Seller:** **Description:**	**Item # 10** **Seller:** **Description:**

Dates to Remember

Sunday, September 18th, 2016 – 14th Annual Auction

Meeting Time & Location

11:00 AM to 3:00 PM

Bowie Community Center

3209 Stonybrook Drive, Bowie, MD 20715

301-464-1737

Location/Directions: The Center is located off of Route 450 in Bowie. Detailed directions and a map can be found on the MGS website (**www.ecphora.net/mgs/**).

Mineral of the Meeting: Pollucite. Bring a few choice specimens to the meeting.

The Rostrum
Rick Smith, Editor
1253 Brewster St
Baltimore, Maryland 21227

First Class Mail