



# The Rostrum

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

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## President's Message

Happy New Year! This year looks to be a promising one with new volunteers stepping up to fill our open positions. I'm especially happy to report that Marci has agreed to continue helping with meeting minutes and she and David have volunteered to coordinate field trips. David, as many of you remember, stood up to testify against the proposed ivory-ban legislation in Annapolis last year that would have made fossil shark teeth illegal to collect, own, or trade. He is looking forward to setting up junior rock hound field trips. His mother has agreed to help coordinate our adult field trips. I've spoken with field trip leaders from our neighboring EFMLS clubs. They are interested in pooling resources to offer joint field trips. Marci is excited to learn about possible collecting sites from members and eager to organize and coordinate trips. It is important those of us who know of sites and contacts help point Marci in the right direction. David has already been forming his own network of professionals from academia and museums. I can easily see him leading field trips this year and taking my job as president next year! It is heartwarming to see our young rock hounds getting so involved.

On that note, I want to take this opportunity to thank Rick Smith and all he has done to get our young rock hound program up and running. Their presentations and enthusiasm at each meeting is contagious. I want to thank other members, including Eric, Bob and Flo, who have generously donated specimens and spent time with our young rock hounds. These junior rock hounds represent the future of the hobby we all love. They will carry the torch and, as business and government leaders, will one day make critical policy decisions that impact all future amateur fossil and mineral collectors. As part of our club's mission, it is important to pass on the knowledge and love of our hobby. (continued on page 8)

## Dates to Remember

January 17<sup>th</sup>, 2016  
Meeting Time and Location

11:00 AM to 3:00 PM

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

## General Meeting

Mineral of the Meeting - Andalusite. Bring a few choice specimens to the meeting.



I have no special talents. I am only passionately curious.

Albert Einstein



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		<u>Board of Directors</u>	
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		Mel Hurd (301) 580-5612	Michael Hutchins (301) 625-9545
		Mike Folmer (410) 850-0193	Rick Smith (410) 247-2190

#### **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

**July 17:** General Meeting

**March 20:** General Meeting

**September 18:** Annual Auction

**May 15:** Joint meeting with AFF

**November 20:** Elections & Holiday Party

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#### **The Rostrum**

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

#### **Website**

[www.ecphora.net/mgs/](http://www.ecphora.net/mgs/)  
Material for the website should be sent to Jim Stedman at [stedmanjim@gmail.com](mailto:stedmanjim@gmail.com).

## Mineral of the Meeting: Andalusite

Bob Farrar

The Mineral of the Meeting for the January MGS meeting will be andalusite. Named for the locality where it was discovered, Andalusia, Spain, andalusite can be both an interesting mineral specimen and an interesting gemstone.

Andalusite consists of aluminum silicate,  $Al_2SiO_5$ . It crystallizes in the orthorhombic system. Crystals are usually elongated, square in cross section, with blunt ends. In the variety "chiastolite", cross sections of crystals show a cross-like pattern, caused by the concentration of carbonaceous dark material in alternating zones during crystallization. Andalusite ranges from opaque to transparent. Transparent material typically shows strong *pleochroism*, meaning that the color differs depending on the direction from which it is viewed. Color varies from gray to brown, violet, pink, white, reddish, and green. Gem andalusite is usually reddish in one direction and greenish in another. Other physical properties include a hardness of 7.5, specific gravity of 3.1 to 3.2, glassy luster, and prismatic cleavage. Chiastolite is very distinctive when cut and polished in cross sections. Crystal form and pleochroism help distinguish other andalusite crystals.

Andalusite typically occurs in metamorphic rocks such as schists, and in alluvial deposits derived from these formations. It is more rarely found in granitic pegmatites. The most important localities for gem quality andalusite are in the state of Minas Gerais, Brazil, as well as in the neighboring state of Bahia. Gemmy material is also found in Sri Lanka. A well-known locality for chiastolite is Lancaster, Massachusetts. Chiastolite is also found in California, Maine, Australia, and China. Andalusite crystals up to 30 cm long have been found in Altavista, Campbell Co., Virginia. It has also be found in Delaware Co., Pennsylvania. Other important localities for andalusite include France and Russia.

Andalusite is sometimes mined for industrial uses. It can be used in certain ceramic materials, such as in spark plugs, that require high heat resistance. It is also of some importance as a gemstone. Because of its apparent color change when viewed from different angles, it is sometimes called the "poor man's alexandrite". Gemstones are typically faceted, but fibrous material also occurs that can be cut into cabochons that show a cat's eye effect.

Andalusite, particularly chiastolite, is popular as a collector's mineral, and is common enough that specimens can be obtained for modest prices. It also makes an interesting gemstone, and, as its nickname suggests, is cheaper than other gems that show color changes.



**Andalusite** (var. Chiastolite) from Tyrol, Austria. Image by Rob Lavinsky and reproduced under Creative Commons Attribution-Share Alike 3.0 Unported license. Image is available at [Wikimedia Commons](#).

## Field Trips

New 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.

**Marci Shore** has agreed to be the MGS Field Trip Coordinator. In addition, junior member **David** had agreed to coordinate youth trips. President Gary Lohman suggested that the MGS coordinate trips with other clubs and will help Marci with that. There are no scheduled trips planned at this time.

## Minutes of the November 15<sup>th</sup> Meeting Marci Shore & Jim Stedman

President's Report: President **Gary Lohman** called the meeting to order. He announced that a wide array of pizzas for the MGS holiday party had just been brought in and invited members to dig in. The meeting continued while members ate. Gary noted that an important item on the meeting agenda was the election of officers for the coming year. He said that neither Vice President **Eric Seifter** nor *Rostrum* newsletter editor **Rick Smith** was in attendance.

Treasurer's Report: Treasurer **Dave Andersen** reported that the club had \$2,692.44 in savings, \$1,959.90 in checking, and \$151.36 in cash, for a total of \$4,803.70. Dave noted that he had in the previous week paid the club's liability insurance. He also asked for members to renew their membership for 2016. It is important for members to renew now so that the membership estimates submitted at the beginning of the year to the Eastern Federation of Mineralogical and Lapidary Societies will be more accurate.

Membership Report: Membership chair **Mike Folmer** reported that the club currently has 76 adult members, of whom 14 are Life Members. In addition, there are 11 junior members.

Website: Webmaster **Jim Stedman** described several new features of the MGS website. He expressed thanks to **Dr. Robert Weems** for providing PDFs of over a dozen of his articles for inclusion on the website page dedicated to his research. These articles cover a wealth of topics from dinosaur tracks to descriptions of new turtle and whale species. The members in attendance gave Rob a round of applause for his generosity. The Weems page attracts many visitors to the website. Jim also described a new search feature which allows visitors to search the entire website for items of interest. In addition, he noted that the MGS Future Rockhounds of America (FRA) webpage now has a separate link under the website menu. The two articles by FRA members that appeared in the latest issue of the newsletter will be linked on the FRA webpage. There was a discussion of ways of strengthening the website's assistance to visitors who want help identifying local fossils, rocks, and minerals. Currently, the FAQ page on the website has a small number of links to sites that can help with identification. Gary suggested that MGS members with special expertise with different kinds of specimens consider preparing identification material that could be posted on the website.

Field Trips: Gary announced that **Marci Shore** had agreed to be field trip coordinator. In addition, junior member **David** had agreed to coordinate youth trips. Gary suggested that the MGS coordinate trips with other clubs and will help Marci with that.

Old & New Business: Gary discussed the MGS participation in the Calvert County Fair. We had an MGS table. He asserted that in the future we need to plan our participation in advance and recruit members to participate. He raised the issue of being more proactive in engaging children and youth in the constellation of hobbies involving fossils, rocks, and minerals. Gary is the new chair of the Junior Activities Committee of the EFMLS. He solicited input from the membership with ideas to further this mission. He also noted that Jim Patzer of the American Fossil Federation had referred a local Cub Scout leader to him who was in need of assistance with badge activities in geology. She lives in Columbia, MD. Gary requested that MGS members consider providing the requested assistance. Anyone interested in helping should get in touch with Gary.

Elections: A motion was made that the current slate of officers be re-elected for a new term. The motion was seconded and agreed to unanimously. The position of Secretary remains vacant, but, for the interim, Marci Shore will take notes at the meeting and Jim Stedman will type them up for the newsletter.

Mineral of the Meeting: **Bob Farrar** gave a presentation on Danburite.

Silent Auction: The silent auction was to be held after the close of the business meeting. Gary thanked **Bob Asreen** for donating most of the beautiful items that were included in the auction.

Future Rockhounds of America: **Brooke** made two presentations to the meeting, one on the Maryland gemstone, the Patuxent Agate, and the other on the rock cycle.

Adjournment: After the meeting adjourned, FRA members talked to several MGS members about rocks and minerals. The silent auction followed.

**Important Reminder - Please Pay your 2016 Membership Dues!**

Annual dues of \$15.00 (still at the amazingly low cost for an individual membership)  
were due on December 31<sup>st</sup>.

## Search Images and Their Relevance to Our Quest for Fossils

Michael Hutchins

*"How hard I find it to see what is right in front of my eyes."*

Ludwig Wittgenstein (1940)

Walking down the beach searching for fossils, such as shark teeth, can be an exceedingly difficult task, primarily because of the vast number of stimuli reaching our eyes and brains. There are multicolored rocks littering the shoreline, bits and pieces of broken shells, leaves, insects, small branches and seeds, and even human litter, such as broken glass and pieces of rusted metal or plastic. With this myriad of images, how do we focus our attention specifically on the objects of interest? And how can our knowledge of animal and human sensory perception aid us in our quest for more and better fossil finds?

As it turns out, we need to employ something called a *search image*. Essentially, our brains need to learn what the objects of interest look like and to pick them out from the multitude of other objects in our field of view. The term was originally coined by the famous ethologist Niko Tinbergen who noticed that songbirds did not prey on just any insect; instead, they tended to prefer a specific type of bug — say, a particular species of beetle — at a time. As the numbers of beetles rose through a season, the birds gorged on them, usually ignoring other available insects nearby. Tinbergen suggested that, once the birds found a nutritious food they liked, they began to focus exclusively on that food, ignoring all others. He called this mental image of a beetle (its characteristic shape, size, and color) a "search image." Once this image was formed, it allowed the bird to forage more efficiently and to save time and energy in the search (Tinbergen, L. 1960. The natural control of insects in pinewoods. I. Factors influencing the intensity of predation by song birds. *Arch. neerL Zool*, 13, 265-343.)



*Can you find the sharktooth in this complex visual image from a local beach?  
This is where having a search image can help. (Photo by M. Hutchins)*

This search image, a form of perceptual filtering, is something all of us employ when we need to narrow our attention in a goal-oriented task, like picking our loved ones out in a crowd, finding our car in a parking lot filled with other vehicles, or hunting fossils or minerals in the field. This selective concentration allows us to focus on those stimuli of immediate and vital importance, and to dismiss all others. An important part of normal human development is learning to notice less than we are able to. The world is literally awash in vast details of color, form, and sound; but, in order to function efficiently, we have to ignore some of it.

Unfortunately, the search image is only helpful or even possible if we know what to look for. So, in order to prepare oneself to be an effective fossil hunter, it is important to know what fossils are found in the area you are hunting. What do the fossils you are likely to encounter look like (shapes, colors, sizes)? For example, depending on the species in question, fossil shark teeth can be triangular or long and narrow, and they can vary greatly in size, ranging from minute to several inches long. Depending on the location, they can also vary widely in color, ranging from white to grey to brown to black and all shades in between.

So, to be an effective and efficient fossil hunter by forming strong search images, it is best to visit an area with someone who has knowledge of the types and variety of specimens that might be found there, and is familiar with the color of the most commonly found fossils. As an alternative one can visit and study collections in museums or held by private collectors from the area, or consult relevant publications if they are available. In addition if fossils can be found in soil or rock on the ground or on cliffs, it is always a good idea to look at them *in situ* (in the condition that they were found) before they are removed. That way, one can begin to form search images of partially exposed specimens. In the case of shark teeth, this may consist of an exposed blade or root.

Of course, fossil hunters face an additional perceptual challenge. Search images are helpful, but the eyes and mind can be easily fooled. Indeed, there are many other objects in the environment that may look a lot like the fossils you desire. Such ersatz (or "fake") fossils can waste a great deal of your time, drawing your attention away from the real things. For example rocks, pieces of vegetation, such as thorns, insects, broken branches or portions of leaves can look very much like fossil shark teeth, especially from a distance. Thus, efficient and effective fossil hunting necessitates beginning to learn what other objects are out there that resemble fossils, but are not, and to rapidly distinguish them from the real thing.



*Ersatz shark teeth. A sampling of some objects commonly found in nature that resemble fossil shark teeth, especially from a distance, including wood, rocks and dried leaves. (Photo by M. Hutchins)*

They often say that knowledge is power. But, in the case of field paleontology, this knowledge is not only intellectual, it is perceptual as well. By knowing how your sensory system works and how it selectively focuses its attention in order to perform goal-oriented tasks, one can become a more efficient and effective fossil hunter.

Thanks to Kyle Grimsley and Fred Plum for reviewing and commenting on an earlier version of this manuscript.

## Future Rockhounds of America Rick Smith

The American Federation of Mineralogical Societies (AFMS) sponsors a youth program called the Future Rockhounds of America. The first meeting of the MGS Chapter was held at the July, 2015 meeting where our founding members received their Future Rockhounds of America patch and also completed their first badge - the Collecting activity badge. At the September meeting our group of rockhounds worked on earning their Fossils badge. I was unfortunately unable to attend the November meeting at the last minute due to a family medical emergency. I am sincerely grateful and would like to thank the MGS members that brought in rock and mineral specimens and spent time with our junior members in helping them towards earning their Rocks & Minerals badge. Photos from the November meeting can be seen below.



If you and your child might have an interest in the program, please meet with me at an upcoming MGS meeting or contact me via email - [rick.smith.mgs@gmail.com](mailto:rick.smith.mgs@gmail.com). There is no cost to the program, but anyone participating in the badge program must be a junior member of MGS.

## President's Message (cont. from page 1)

I encourage all of you to help Rick with the junior rockhound program by sharing your unique knowledge and experiences as well as extra specimens that are gathering dust on all of our shelves. Speaking of those extra specimens, they can also be used for our club's door prizes and silent auctions. These auctions are a great and fun way to re-home those extra specimens, while helping to earn operating funds for the club.

I'm looking forward to a new and exciting year! Here's wishing all MGS members and their families a very happy New Year!

Dr.rer.nat. Gary E. Lohman

## Donations 2015/2016

MGS would like to thank Grady Frame for his generous monetary donation to our organization. MGS would also like to thank those members that have contributed specimens and books in 2015 to be used in our auctions and raffles. This has the net effect of keeping membership dues at the same low price for all of our members. Donations of fossils, minerals, books and other related materials are needed for our 2016 auctions and raffles. Contact any of the MGS officers if you have something to donate. Thanks again for your support of our organization.

## Shows & Events

**March, 2016:**

**5-6: 53<sup>rd</sup> Annual Earth Sciences Gem & Mineral Show** sponsored by the Delaware Mineralogical Society. Delaware Tech & Community College, 400 Stanton-Christiana Rd; Newark, DE. Information can be found at [www.delminsociety.org](http://www.delminsociety.org).

**19-20: 47<sup>th</sup> Annual Gem, Jewelry, Mineral & Fossil Show** sponsored by the Che-Hanna Rock & Mineral Club. Athens Twp. Volunteer Fire Hall, Sayre, PA. For information contact Hazel Remaley at [northridge5@verizon.net](mailto:northridge5@verizon.net) or [www.chehannarocks.com](http://www.chehannarocks.com).

**Nature Connections Series**, 1:00 - 4:00 pm, 2nd & 4th Sunday of each month, Natural History Society of Maryland, 6908 Belair Road (in Overlea), Baltimore, MD 21206, contact: [atyler@marylandnature.org](mailto:atyler@marylandnature.org)

**Sunday, Feb 14<sup>th</sup>**, the topic will be **Minerals** held in association with the **Baltimore Mineral Society and the Natural History Society of Maryland**. The program is ongoing from 1:00-4:00pm, free admission/open to the public/pre-registration is not required - just stop by at your convenience. More details at: <http://marylandnature.org/nature-connections>

## Important Reminder about Parking at the Bowie Center

Bowie Parks and Planning has informed us that there is currently **NO** parking at the Community Center from now "until certain work is completed in the shopping center lot". People can park on Sadler, Sussex, and Shawmont, which are the 3 closest streets (all are off of Stonybrook). Restricted parking zones [indicated on signs posted in these areas] will not be enforced by the city while the lot is closed.

Bowie Parks and Planning indicated that parking issues of some sort may continue for several months. Basically, no future predictions are available at this time. There is a tiny handicapped area at the street entrance to the Community Center, next to a fenced play area. It may be possible to offload people & materials here.

**Dates to Remember**

**Sunday, January 17<sup>th</sup> - General Meeting**

**Dues for 2016 are now overdue.**

**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/](http://www.ecphora.net/mgs/)).

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

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***The Rostrum***

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**First Class Mail**

