

The Mineral Minutes

“What’s new with the Smithsonian Gem and Mineral collection?”

by Dr. Jeffrey Post

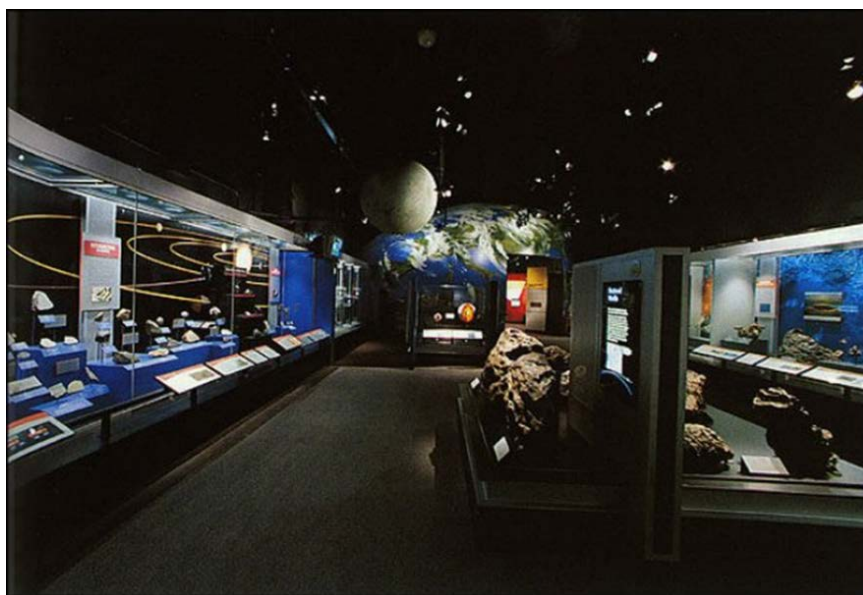
by Yury Kalish, MSDC Vice President

Our May presentation will be “What’s new with the Smithsonian Gem and Mineral collection?” by Dr. Jeffrey Post. Dr. Post is the perfect person to present on this topic, as



he is the Chair of Mineral Sciences, Mineralogist and Curator of Gems and Minerals at the National Museum of Natural History (NMNH). More importantly, Dr. Post is a long-time supporter and friend of the MSDC. He has presented regularly at our meetings, typically focusing on the new minerals at the museum, including both donations and acquisitions.

This presentation closely follows an annual trip that Dr. Post and other museum mineralogists make to the Tucson Mineral Show. As many members know from personal experiences, this show is perhaps the best forum for acquiring rare and unique mineral specimens. It turns out that the show provides acquisition opportunities not only for individual collectors, but for world-class collections such as the Gems and Minerals collection at the Smithsonian. Dr. Post’s presentation will include a discussion of new acquisitions from Tucson and other sources, some of which may soon find their way to display cases at the Janet Annenberg Hooker Hall of Geology, Gems, and Minerals at the museum.



Please join us in taking Dr. Post to dinner on May 1st at 6:00 pm at the Elephant and Castle at 1201 Pennsylvania Avenue, NW. If you cannot make it to dinner, please go directly to the lobby of the Natural History museum (Constitution Avenue entrance) at 7:30 pm. We will head upstairs to the Cathy Kerby Room at 7:45 pm for Dr. Post’s presentation.



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Prez Says...

by Dave Hennessey
MSDC President

MSDC’s long association with the Smithsonian’s Institution National Museum of Natural History has served us well over the years. It has provided us sponsorship, a place for our meetings, and world class speakers from the ranks of the curatorial staff. This month’s

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MSDC's April Business Meeting Report

by Andy Thompson, MSDC Secretary

President Dave Hennessey opened the well-attended gathering by welcoming everyone and acknowledging the past service of the former club presidents in attendance. The only persons new to the group were Herwig Pelckmans our presenter, visiting from Belgium, along with his wife Christine.

Treasurer John Weidner reported the club's fiscal balance was sufficient to cover the anticipated expenses for the year and that at this time he welcomed members' payment of their annual dues for 2019.

The March Business Minutes summary provided by Amanda Parker was accepted unanimously and without any recommended edits. Dave thanked her for the excellent work she did as editor of the monthly Mineral Minutes newsletter and encouraged club members to consider if they could volunteer to step into Amanda's shoes to continue this important work. Interested persons should notify Dave (DavidHennessey@comcast.net).

For an update on "Calendar Events," Dave reported that on the prior weekend, five MSDC members participated in a field trip to Vulcan Quarry in Manassas, VA and they acquired specimens of prehnite, apophyllite, stilbite, chabazite, heulandite, calcite and magnetite. Kathy Hrechka then invited everyone to consider attending the annual Atlantic Micromounters' Conference which takes place on April 5th and 6th. She highlighted three presentations which Dr. Robert Lauf will give. For further information on the club, visit dcmicrominerals.org.

Dave Nanney then invited everyone to the Nanney's annual open house on Sunday, April 28th, between 1 and 5 pm. Their garden displays 2,500 azaleas and this year's abundant buds promise the flowering should be spectacular. If you plan to attend, Dave would appreciate your giving him a heads-up so he can plan for the necessary parking arrangements, etc.

The President then asked for any recent mineral news of interest and Dave Nanney referenced the Washington Post article of 1 April: "Fossils show catastrophe when the dinosaurs died." The Post article reported on scientists working in the North Dakota Hell Creek Formation and their claim to have discovered fish fossils and other 65 million-year-old remnants deposited the day the famous Chicxulub massive asteroid crashed into a shallow sea near what today is Mexico's Yucatan peninsula. These recent reports of discoveries by Ph.D. candidate Robert DePalma have drawn skepticism from some and applause from others, including congratulations from Walter Alvarez, who, with his father, Luis, both of the Univ. of CA, Berkeley, promoted the scientific understanding of the world-wide Cretaceous-Tertiary (K-T) boundary and the extinction event related to the meteor impact about 65 million years ago.

MSDC members added to Dave's Washington Post reference as Kathy cited the substantial 8 April New Yorker article by Douglas Preston who had quietly followed DePalma's discoveries since 2013. To some extent, MSDC members' brief discussion echoed the media's more nuanced arguments pro and con DePalma's interpretation of the fossil record. Jeff recommended members consult the most recent issue of the Proceedings of the National Academy of Sciences which also discusses the discoveries and controversy.

Tim Rose, Smithsonian geologist and club sponsor suggested MSDC members go slow in coming to any conclusions. He noted that fossil records of vertebrates, such as T-Rex dinosaurs, are few and far between in sharp contrast to the abundance of invertebrate and plant fossils. In the most recent four decades, he noted, the number of intact T-Rex fossils has risen from only six to twenty. So further examination of the South Dakota Hell Creek Formation findings and the scientists' theories are needed

(cont. on p. 3)

program is always one of my favorites as Dr. Jeff Post, Curator of Gems and Minerals, gives us his yearly post-Tucson update. What gem and mineral wonders did the Smithsonian treasure hunters find this year? This program is not to be missed.

Another great strength of the club is our membership. We have it all, from young enthusiastic newcomers to the hobby to equally enthusiastic graybeards who have been with the club for decades. I think we are a welcoming and friendly bunch and I encourage every member to bring their friends and neighbors to our meetings. We share a fascinating hobby and there is room for many more in our ranks. Spread the word.

Over the years, members have stood up to take on the various roles that must be assumed to have a first rate club. Running the meetings, recording the minutes, finding the program presenters, keeping the club website/Facebook Page up to date, keeping the financial books, editing the newsletter, bringing snacks for our socializing time following the presentations, etc. From the membership ranks, people step up to fill these roles. At this time, one of these roles is looking for its next hero. Our club has a pressing need for someone to take on the role of newsletter editor. This month our VP, Yury Kalish, has pulled together the inputs to help out, but Yury's effort is only a temporary solution. At the last meeting I asked for a volunteer to take on the newsletter editor role, but have not heard from anyone yet. I will ask again at the upcoming meeting or better yet, someone send me an e-mail (davidhennessey@comcast.net) indicating they are willing to take on the job and I will announce it at the meeting, to great applause.

This month's program does not suggest any particular theme for our show-and-tell sharing, so bring whatever you want that you think other members will enjoy seeing or that fascinates you. I'm going to bring some pieces I can't identify. Maybe the membership or Dr. Post can help me figure out what they are.

before we can have an adequate context in order to come to a conclusion about the validity of DePalma's interpretations of his findings.

President Dave Hennessey thanked everyone for their contributions to the discussion and invited a motion to close the business meeting. That motion being received, seconded and unanimously approved, he gave the floor to V.P. for programs, Yury Kalish, who then introduced the evening's presenter, Herwig Pelckmans.

April 3rd Program Presented by Herwig Pelckmans "The Many Faces of Fluoride"

by **Andy Thompson, MSDC Secretary**

Yury Kalish, MSDC V.P. for Programs, introduced Herwig Pelckmans as an international mineral collector from Belgium where he serves as president of the Antwerp mineral club. Herwig said he was visiting the U.S. to make presentations at several mineral conferences. This evening's presentation to MSDC at the Smithsonian Natural History Museum was the first of three stops along his journey, with speaking engagements at the Atlantic Micromineralists' Conference in Alexandria, VA and Rochester Mineralogical Symposium. As a life-long collector and serious student of mineralogy, he has spoken on a wide range of mineral topics, with tonight's being fluorite and its diverse crystal structures.

He began by noting that a visit to mindat.org, with its 22,500 photos of diverse fluorite crystals found in over 10,000 localities, raises the question of why there are so many different types of fluorite crystal shapes and colors. Specifically, his presentation focused on two questions: what exactly characterizes the structure of these different crystal forms of fluorite and how do those diverse shapes come about?

By way of a brief historical review of this mineral, Herwig noted that Agricola, the famous father of modern metallurgy, in the early 1500s, used the Latin word "fluores" to identify what today we call fluorite. By 1797, chemist Carlo Napione had named it fluorite, supporting Agricola's recognition that the mineral is well-known for its use as a flux in enabling iron ore to melt at lower temperatures and increase iron's fluidity. The speaker suggested not only that the name "fluorite" derived from the fact that the mineral increases fluidity in processing iron ore but he also implied that because fluorite, a.k.a. fluorspar, responds to U.V. light, the word "fluoresce" was subsequently applied to any mineral that similarly responded to U.V. light.

On the Mohs scale, its hardness level is 4, confirming what early jewelry makers knew, that it was too soft to serve as a gemstone. So beyond its industrial usefulness, it fell to serious mineral collectors to explore the crystal structure of fluorite.

Due to scientific advances since the above early chemists, we now know that fluorite is a composite mineral made of one calcium and two fluorine ions, CaF₂. Because the element fluorine, F, does not exist as a solitary element by itself in nature, its existence as an element was slow to be recognized. Today it is clear that fluorine has always had an abundant presence as an ion in combination with other elements such as iron, copper, silver and gold, including with calcium as in calcium fluorite (CaF₂), the subject of tonight's presentation.

Antoine de Lavoisier (1789) was the first scientist to speculate about the existence of fluorine as a single element. But it would take another century until Henri Moisson (1886) synthesized fluorine gas and the element fluorite was given its rightful place on the Periodic Table with 9 as its atomic number. For that discovery he was awarded the Nobel prize in chemistry in 1906.

Herwig asked his audience: "What color is fluorite?" Collectors know it is found having a wide diversity of colors. But he surprised many by answering: "It is colorless" referring to fluorite in its pure state. The color, he said, comes from impurities and inclusions in the crystal structure. Similarly, the phenomenon of fluorescing was so named because fluorite minerals exhibit that quality, except for pure fluorite which does not react to ultraviolet light. For collectors particularly interested in fluorescent specimens, Herwig recommended a Belgium colleague's website, www.fluomin.org as having a wealth of information on fluorescent minerals.

With that reference to crystal structures, Herwig segued into the heart of his presentation, the isometric cubic system of fluorite and its seven basic forms. Starting with its most simple and most prevalent form as a cube, he pointed out that this hexahedron shape has 6 faces, 8 corners and 12 edges. Crystal growth takes place the fastest at their corners and slowest on their faces. Depending on the rate of the crystals' growth, it can develop multiples of the faces, corners and edges. Those modifications result in fluorite having 6 additional basic structures beyond that of the simple cube. Herwig used photos of specimens exemplifying each of those distinct structures and drawings to highlight the faces, corners and edges. Those additional six structures included shapes as an octahedron, the rarely found dodecahedron, cuboctahedron, tetrahedron, trapezohedron, trisoctahedron and hexactahedron. In summary, those 7 crystal shapes have respectively the following number of faces: 6, 8, 12, 24, 24, 24, and 48. When a collector examines a multi-faced fluorite specimen, it

is may not be obvious which of the six basic complex crystal shapes is present. So serious collectors often sketch their specimen to map its faces, corners and edges, thereby exposing its true structure.

He then showed unusual variations of fluorite specimens including phantoms in which a crystal formation stopped at some point in its growth and was then overtaken by new growth which encapsulated the early crystal. One striking example was the “Green Spiderman Mystery” in which an original green cube crystal stopped its formation which was then engulfed by a translucent second crystal growth. Another odd variation was that of a specimen having one edge which grew into multiple edges. When that happens, the number of crystal-faces and edges can be much higher than is found in the above seven basic crystal structures. As the number of sides increases toward 98, the specimen takes on a rounded shape. He showed a photo of a specimen holding the world record of 338 faces and its accompanying drawing which was made in 1908.

He also showed examples of fluorite images having the appearance of common objects such as an egg sunny side up, a cocoon, eyeballs and a perfectly rounded pearl perhaps made by ejection from a volcano. More exotic forms included a hollow stalactite cylinder, an Aztec-like stacked angular structure which, he said was one crystal. Specimen shapes also included a botryoidal bubble, spaghetti stalks, a Christmas tree, Buddha, and a cork screw, to name just a few. Herwig concluded by recommending two books, Fluorite and Crystal Forms of Fluorite.

Dave Hennessey thanked Herwig for his excellent presentation which received abundant grateful applause. Dave also thanked those MSDC members who brought snacks for the post-presentation socializing and thanked members who brought in their own fluorite specimens for an informal, post-presentation show-and-tell sharing.

Field Trip Opportunity - June 1st, 2019

by Dave Hennessey, MSDC President

One of our area EFMLS sister clubs, the Southern Maryland Rock and Mineral Club (SMRMC), has invited us to participate in a field trip they have scheduled to the Vulcan Manassas Quarry on Saturday, June 1st. We had the opportunity to visit this quarry at the end of March; and there were five MSDC members along on the trip. I don't know how others did, but I found a big boulder that had split in two in one of the berms, revealing vuggy prehnite seams. I beat apart one of the two sides of the boulder and got several very nice prehnite specimens, with apophyllite, calcite, and babingtonite. I'm hoping the other half of the boulder will still be there on June 1st. I'm bringing a bigger sledge hammer this time.

SMRMC would like a count of our members who plan to participate by May 22nd, so please send me an e-mail (davidhennessey@comcast.net) if you want to attend. Time to meet at the quarry is 7:15 am and appropriate quarry attire is necessary (steel toed boots, hard hat, eye protection, long pants, work gloves, brightly colored safety vest). I have some gear to lend if anyone needs anything.

MSDC Club Information

Meetings are the First Wednesday of the Month (Jan-Jun and Sep-Dec). We meet in the lobby of the Smithsonian National Museum of Natural History at 7:30pm.

Website <http://mineralogicalsocietyofdc.org/>

Facebook www.facebook.com/Mineralogical-SocietyOfTheDistrictOfColumbia

2019 Officers and Directors

President - Dave Hennessey | davidhennessey@comcast.net

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Treasurer - John Weidner

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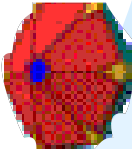

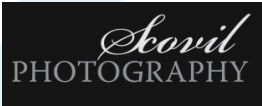


THE MINERAL MINUTES

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NEWSLETTER OF THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

Mineralogical Society of DC
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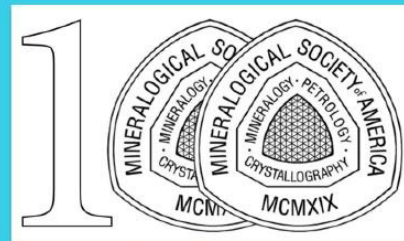
Useful Mineral Links:

	American Federation of Mineralogical Societies (AFMS)	www.amfed.org
	Eastern Federation of Mineralogical and Lapidary Societies (EFMLS)	www.amfed.org/efmls
 mindat.org	MINDAT	www.mindat.org
	Mineralogical Society of America (MSA)	www.minoscam.org
	Friends of Mineralogy	www.friendsofmineralogy.org/
	WebMineral	webmineral.com
	The Geological Society of America (GSA)	www.geosociety.org/
	Jeff Scovil Mineral Photography (not advertising - just great photos)	scovilphotography.com/
	United States Geological Survey (USGS)	www.usgs.gov
	The Geological Society of Washington (GSW)	http://www.gswweb.org/

Mineralogical Society of America Centennial (1919-2019) Symposium

Mineralogical Society of America

1919 - Centennial - 2019

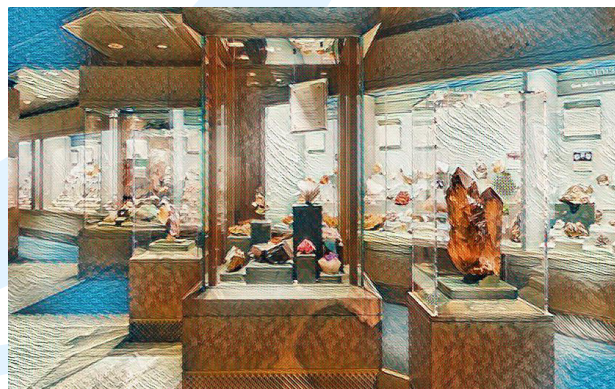


The Next 100 Years of Mineral Sciences June 20-21, 2019

MSA will hold a celebratory Centennial Symposium on June 20-21, 2019 at the Carnegie Institution for Science Building, located at 1530 P St NW, Washington, DC 20005. Fourteen theme colloquia will offer a vision for exciting new directions in mineralogy, geochemistry, and petrology as MSA begins its second century. Each theme colloquium will include two 20-minute presentations by invited speakers followed by five minutes of moderated audience discussion.

Lunches will be included with your registration fee, and attendees are invited for a private evening reception in the Janet Annenberg Hooker Hall of Geology, Gems, and Minerals in the US National Museum of Natural History, Smithsonian Institution. We thank the Gemological Institute of America for sponsoring this evening reception. Please join us for this once-in-a-century event!

http://www.minoscam.org/MSA/Centennial/MSA_Centennial_index.html Submitted to Micromineralogists of the National Capitol Area, Inc. Newsletter by Herwig Pelckmans





AFMS Code of Ethics



- I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.
- I will keep informed on all laws, regulations of rules governing collecting on public lands and will observe them.
- I will to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind - fences, signs, and buildings.
- I will leave all gates as found.
- I will build fires in designated or safe places only and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material - matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock. [Editor's Note/Observation: I would also include wildlife as well as livestock.]
- I will not contaminate wells, creeks or other water supply.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field trip leaders and the se in designated authority in all collecting areas.
- I will report to my club or Federation officers, Bureau of Land management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the "Golden Rule", will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and Public "image" of rockhounds everywhere.

**MEMBERSHIP APPLICATION OR RENEWAL
THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA (MSDC)**

Family ~ \$25.00 per year. One address.

Individual ~ \$20.00 per year.

New * Renewal Dues are for Year _____ *

For new members who join in the last months of the year, membership will extend through the following year with no additional dues.

ANNUAL DUES – PLEASE PAY YOUR DUES PROMPTLY.

Pay at next meeting or mail to:

Mineralogical Society of DC
c/o John Weidner
7099 Game Lord Drive
Springfield, VA 22153-1312

Name(s) (First and Last) _____

Address _____

City _____ State _____ Zip: _____

Phone(s): Home/Work/Mobile _____

Email(s): _____

OK TO INCLUDE YOU ON CLUB MEMBERSHIP LIST?

Yes – Include name, address, phone, email.

If you want any information omitted from the membership list, please note:

Omit my: Email; Home phone; Work phone; Mobile phone; Address; Name

SPECIAL CLUB-RELATED INTERESTS? _____

Meeting Dates, Time, and Location: The first Wednesday of each month. (No meeting in July and August.) The National Museum of Natural History, Smithsonian Institution, 10th Street and Constitution Ave, Washington D.C. We will gather at the Constitution Avenue entrance at 7:30 PM to meet our guard who will escort us to the Cathy Kerby Room.