

The BULLETIN

OF THE NEW YORK MINERALOGICAL CLUB, INC

**Volume 131 No. 3
March 2017**

Minerals
Gems
Meteorites
Gifts
Lectures
Carvings
Publications
Books
Jewelry
Crystals
Minerals for Kids
Supplies
Fossils
Lapidary
Fluorescents

**Spring 2017 New York City
Gem, Mineral & Fossil Show**
March 4-5, 2017
Watson Hotel (Formerly Holiday Inn)
440 West 57th Street, New York City

Mineral Show Information
See pages 7-8!

Sponsored by Excalibur Mineral Corp., Charlottesville, VA
Hosted by the New York Mineralogical Club, New York, NY

STEVE OKULEWICZ

**SPRING NYC
MINERAL SHOW**

**CLUB HISTORY:
I. W. DRUMMOND**

LEAD on STAMPS

**SUPERDEEP EARTH
DIAMONDS**

**MEMBERSHIP
RENEWAL FORM**



**March 8, 2017
METEORITES:
OUR TRUE
EXTRATERRESTRIAL
VISITORS**

America's Oldest Gem & Mineral Club
Founded 1886 ♦ Incorporated 1937

Bulletin of the New York Mineralogical Club

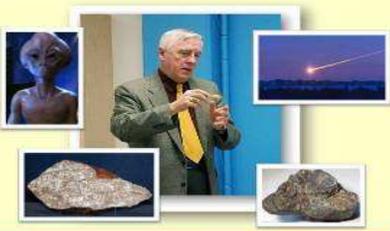
Founded 1886 ♦ New York City, New York ♦ Incorporated 1937
America's Oldest Mineral & Gem Club

Volume 131, No. 3

March 2017

March 8th Meeting:
**Steve Okulewicz: "Meteorites:
Our True Extraterrestrial Visitors"**

NYMC Meeting Lecture
**"Meteorites: The True
Extraterrestrials"**
Prof. Steve Okulewicz
Educator, Geologist & Magician



Wednesday, March 8, 2017
The Watson Hotel – 6:30 p.m.

Look up in the sky! It's a bird! It's a plane! No! It's *not* Superman but a meteor or fireball! These strange visitors from another planetoid are our true extraterrestrial visitors as leftovers from the formation of our solar system! Aged from 4.6 billion years to 175 million years (for some Martian meteorites), these rocks were regarded by ancient civilizations as signs of the gods. This presentation will cover "meteor-rights" and "meteor-wrongs," the various types of meteorites, their several possible origins, and mineral composition. Included will be the infamous 1908 Tunguska and February 2013 Russian meteorite impacts. **Please bring a hardhat because the sky is really falling!**

Steve is an adjunct professor of geology at Hofstra University on Long Island, New York and has been teaching geology for 35 years. He was one of the founders of the Staten Island Geological Society (1972).

Steve has been an extremely popular lecturer at meetings of the NYMC. He has educated us about plate tectonics, volcanoes and Iceland, Alaska gold, etc. in the past.

****** FINAL NOTICE ******

Send in Your 2017 Club Dues

It is time to send in your 2017 club membership dues! All memberships run from January 1 to December 31 of each year (with a few exceptions). If your mailing label says "2016", you owe your 2017 dues. Please take the time now to mail in your dues in order to prevent uninterrupted delivery of your bulletin. A handy form appears on page 12. Dues are \$25 for individual, \$35 for family. Mail to: Membership Coordinator, N.Y. Mineralogical Club, P.O. Box 77, Planetarium Station, NYC, NY 10024-0077.

Renew Online with PayPal!

Spring NYC Mineral & Gem Show is March 4-5, 2017

By Mitch Portnoy

The annual Spring New York City Gem & Mineral Show will take place on **March 4-5, 2017 (Saturday & Sunday)** at the **Watson Hotel (formerly Holiday Inn Midtown)** on 57th Street between 9th and 10th Avenues.

The New York Mineralogical Club will continue its **bi-annual successful partnership** with the show promoter, **Excalibur Mineral Corp.** (Tony Nikischer, *President*), and host this event. Tony, will **ONLY** be there as a promoter and not have a retail booth as in the past.

There is a **discount ticket** on the last page of this bulletin. The NYMC **website** also contains a downloadable file with more tickets, show posters and other information.

A list of the **diverse dealers** that will be selling their fine wares at the show can be found on page 7. On that same page you can also see the **lecture program**, one on each day of the show.

Since we have no direct commercial interest in the show, we do ask each dealer, however, for a **donation to the Club's June Benefit Auction** as a token of thanks for all the work we do to help promote the Show. These items tend to be the best lots in the entire auction so please come and patronize these top-quality dealers.

The **Club's booth** will be in its regular location (to the left as you enter the show). There you can obtain a free souvenir card (pictured on this page), a 2017 club meeting calendar, or just say hi to your fellow NYMC friends. We will decorate it with the club's many vinyl banners plus some of the colorful posters created (and available for sale) for this event.

The most important function of the booth, except for directing the public to a requested dealer, is to re-sign unrenewed members and to try to attract new members.

In addition, we hope to **raise some money**, mostly to cover our show expenses, by **selling various club products** and

publications such as:
(1) Gem & Mineral Note Card Sets;
(2) NYMC CD-ROMs & Videos;
(3) NYMC Drawing Backpacks;
(4) NYMC Posters;
(5) The NYMC "Stamp Album";
(6) Floaty Gemstone Pens & Pencils.
(7) Recommended

Mineral & Gem Guidebook.

We have **two lectures** scheduled, one on each day. On Saturday, Vivien Gornitz, Anna Schumate and I will be repeating our 2016 banquet lecture about opal; on Sunday, I will repeat my recent lecture about minerals, gems and geology in popular and artistic culture.

We do ask that you remember a few important things:

- (1) You can ask for discounts but be reasonable – most of the dealers have prices that are already more than fair;
- (2) **You are a representative of the New York Mineralogical Club. Please conduct yourself accordingly.**

**Spring 2017 New York City
Gem, Mineral & Fossil Show**
March 4-5, 2017
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440 West 57th Street, New York City

Sponsored by Excalibur Mineral Corp., Charlottesville, VA
Hosted by the New York Mineralogical Club, New York, NY

Issue Highlights

President's Message	2
Meeting Minutes	2
World of Minerals: <i>Minerals/Life II</i>	3
Lead on Stamps	4
Addictive Personality	5
Club History: <i>I. W. Drummond</i>	6
Which Freezes Faster?	6
Spring 2017 Show Information	7-8
Topics in Gemology: <i>Connected</i>	9
Unexpected Siberian Find	10
'17 Membership Renewal Form.	11
Diamonds/Superdeep Earth	12
Club & Show Calendars	13

President's Message

By Mitch Portnoy

Website Home Page Doodles

The Home Page of our website has a graphic, called a doodle, that changes frequently, almost daily. The image generally reflects an upcoming meeting lecture, club activity, national holiday, season of the year, historical event, current news item, etc. They can even have some animation to them.

If you would like to suggest a topic for a daily doodle, please feel free to do so. You can also design one if you like but let's discuss some programming specifications before you do that.

NYMC Children's Group?

During the 1990's the NYMC had a fairly active group of young members: The *Tourmaline Troop*. (They HATED being called "pebble pups" or the inaccurate "future rockhounds" and came up with this much more engaging name!)

Well, they eventually grew up and have since graduated from some of America's most prestigious colleges and universities. The unit has remained in hibernation.

One of our newer members, who lives in Brooklyn, has offered to spearhead its awakening. Please contact me if you would like your children involved in such an activity. (Their friends and relatives can also participate.) Let's see where this goes!

NYMC Geology Film Festival?

After the "movies and films" section in my January presentation about minerals, gems and geology in popular culture, I facetiously suggested that the Club sponsor a film festival with a geological theme. It turns out that one of our new members is actually an experienced film festival promoter! He contacted me (NOT facetiously) and suggested we have a dialog about the possibility of this actually happening. Stay tuned!

Club Meeting Minutes for February 8, 2017

By Vivien Gornitz, *Secretary*

Attendance: 25

President Mitch Portnoy presided

Announcements:

- ◆ The monthly raffle was held.
- ◆ The "unpaid" audience members were reminded that 2017 dues were due; Mark Kucera distributed membership cards to those who had paid.
- ◆ A NYMC Website update was given, focusing on the Historical Archives.

- ◆ Details about the February 12th Special Benefit Sale were provided.
- ◆ The day's and month's historical events were listed.
- ◆ A comic "Mineral Show Song," set to ballet music by Amilcare Ponchielli, was played.
- ◆ The evening's game about minerals of Mohs hardness 8-9 was played.
- ◆ The various remaining Club items for sale were pointed out. Many, such as the gem floaty pens, are almost sold out. The 10 (!) new note cards sets that will be available soon were announced; free postcards and Opal Banquet Gift Folders were distributed.
- ◆ Details about the Spring NYC Gem & Mineral Show were presented, including new items to be sold to the public (gem pencils, mineral guidebooks), the lecture schedule.
- ◆ Reminders about the lectures and other activities at the upcoming NYMC meeting were given.

Special Event

"Members Showcase"

This year's *Member Showcase* featured a diverse array of topics, ranging from choice mineral specimens and fossils, to unique hand-crafted jewelry. Rich Rossi, a true mineral connoisseur, displayed several of his recent acquisitions, such as an attractive, well-crystalized cluster of deep-green diopside crystals on a white, calcite matrix. Other additions to his collection include a rare aqua-colored boracite (magnesium borate) from England, dark red, submetallic cuprite crystals from New Mexico, green torbernite (a uranium mineral) from the Congo, and glassy white hyalite opal from Hungary, which fluoresces green due to traces of U. Rich also discussed what makes these specimens special, such as the placement and contrast of the green diopside crystals on the white matrix, the very high luster of the cuprite, or the classic localities of boracite, torbernite, and hyalite.

Evie and her friend Lucy, two very enthusiastic and well-informed kids, recalled a recent vacation on the beaches of Virginia where they collected 15 million year-old Miocene fossils of *Turritella* (tower snail) and uncoiled "lady curls" snails, and an amethyst geode from our Fall Show.

Eric Rampello showed optically-clear, elongated, tapering quartz crystals from Colombia. He pointed out numerous small faces, often not present on the typical quartz crystal. (Continues on page 4)

Members in the News

- ◆ **Mitch Portnoy** repeated his lecture about mineral and gems in popular culture at the Orange County Mineral Society on January 20, 2017.
- ◆ **Alfredo Petrov** identified in late January 2017 a new species for Canada: *matoliite*.
- ◆ **Fred Haynes** gave a presentation entitled "Adventures in Mineral Collecting in New York" on February 2nd in Victor, NY.
- ◆ **Irving Horowitz** will be presenting a version of his lecture about quartz at the Glen Oaks Library in April 2017.
- ◆ An extensive article about **Ernest Schernikow**, our second president, appeared in the Nov/Dec 2016 *Mineralogical Record*.

Welcome New Members!

Erica Flannes NYC, NY

Kara Rosella NYC, NY

Aung Shein Jamaica, NY

Coming Next Month . . .

NYMC Meeting Lecture

"The American Geode Story"

Charles Snider
NYMC Member & Dealer



Wednesday, April 19, 2017
Watson Hotel (Holiday Inn) – 6:30 p.m.

As Well as a New Game Series!

Mineral Streak

A Mineral & Gem ID Game
The New York Mineralogical Club
Based on a Suggestion by Diane Beckman



The World of Minerals

The *World of Minerals* is a monthly column written by Dr. Vivien Gornitz on timely and interesting topics related to geology, gemology, mineralogy, mineral history, etc.



Minerals and Life's Beginnings

Part II: How minerals shaped life

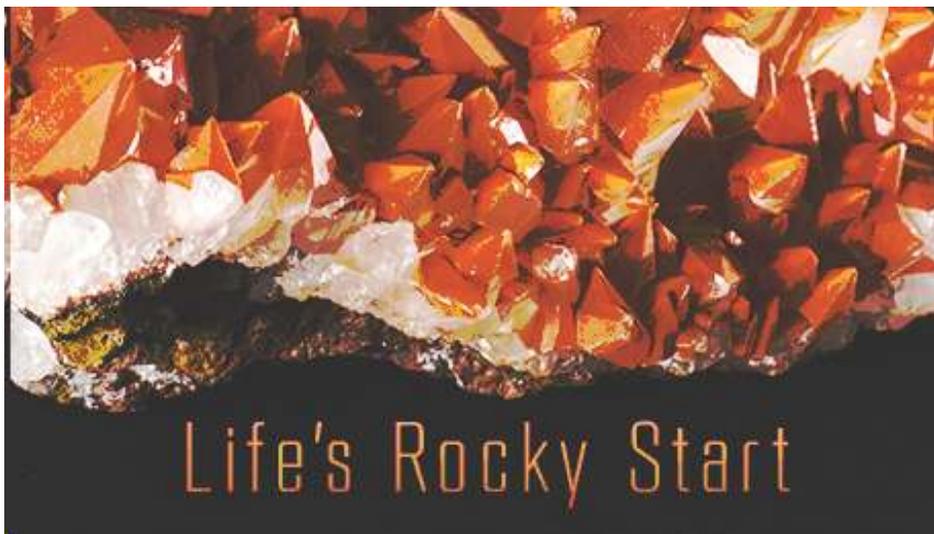
Graham Cairns-Smith, in his classic book "Seven Clues to the Origin of Life" (1985) proposed that not only did minerals help trigger the origin of life, but that the first form of life was actually a clay mineral. He argued that clays hold a sort of genetic information based on crystal defects, ionic substitutions, and interlayering sequences. They "replicate" by "growing" new layers and "evolve" as they dissolve and re-precipitate. At some unspecified point in early Earth history, carbon-clay interaction led to a carbon takeover as the basis for life.

Nobody seriously subscribes to this viewpoint any longer. However, it does highlight several important roles that minerals must have played in the origin of life. Mineral surfaces offer favorable interfaces for organic chemical reactions. Atoms on a crystal surface usually deviate slightly from their ideal crystal positions. Furthermore, such surfaces typically exhibit micro-steps and kinks and also incorporate growth defects which could provide beneficial docking sites for organic molecules. Many porous rocks such as unconsolidated sediments, lavas, volcanic glass, or flaky, freshly-deposited clay minerals, provide a complex, three-dimensional environment within which bio-chemical reactions can occur. The intricate geometrical interface between mineral surfaces and biomolecules strongly influences the kinds of reactions that can take place. Robert M. Hazen, Geophysical Laboratory, Carnegie Institution, has expanded upon these possibilities. He enumerates five distinct roles that minerals may have performed at the onset.

1) As shelters where simple organic molecules could interact. These molecules would have been too dispersed in sea water to join up into the biologically-important precursors of life. Vesicles in lavas, pumice, or the porous carbonates of white smokers could have supplied the needed enclosures or containers. Flat, platy clay crystals, freshly-deposited on the

seafloor, create a loosely-held structure, like a house of cards. These too could act as crawl-spaces for organic molecules.

2) As scaffolding on which bio-molecules could assemble and grow. This is where clays could have played an important role. Layered mineral structures (e.g., sheet silicates—clays, micas, etc.) can provide scaffolding for attachment or assembly of bio-molecules into longer chains. Clay minerals, for example, consist of loosely-held silicate sheets. Small organic molecules can become trapped between these layers and react with neighboring molecules to form more complex compounds. This might include amino acids linking up into polypeptides and ultimately proteins, or strings of base pairs and phosphate ions into RNA and DNA.



3) Selection of biologically important molecules. Quartz or twinned calcite may preferentially select for left- or right-handed organic compounds. As an old saying goes, "life is a left-handed screw." In nature, all amino acids in proteins are left-handed, i.e., they coil to the left. (Those found in certain meteorites, on the other hand, can coil either left or right). Maybe the first amino acid fortuitously landed on a left-handed quartz crystal. But from that point on, all amino acids coiled to the left.

4) As catalysts to stimulate vital chemical reactions. Günther Wächterhäuser, a German patent lawyer and chemist, noted that positive charges on pyrite, FeS_2 , could behave as a catalyst. Clusters of S and metal atoms exist embedded in proteins in some metabolic enzymes. This suggests that the S possibly may have triggered the formation of the enzymes from simpler molecules.

5) Incorporation into the living cell. The presence of S as a key element in many bio-molecules, such as the enzymes mentioned above, may not be a coincidence. Iron, also is present in hemoglobin, a molecule widespread in a host of microorganisms, including, no less, the red-lipped tubeworms living at hydrothermal vents, like that at the East Pacific Rise.

An emerging hypothesis now views life's beginnings in terms of a pathway leading from the smallest organic molecules towards more complex molecular systems that developed within semi-permeable compartments offered by porous rocks or crystals and on mineral surface irregularities. Early Earth habitats that favored the origin of life would have included geochemically dynamic environments that created steep temperature and chemical

gradients. These would have spurred multiple organic reactions that resulted in the build-up of long-chained bio-molecules. Such environments exist near deep-sea vents that produce white or black smokers. Minerals would have been active participants in many of the key biochemical steps that ultimately resulted in the first living cell. They would have enhanced

molecular concentration, selectivity, and finally triggered the organization of simple precursor molecules into the most complex-known system in nature.

Further Reading

Hazen, R.M., 2011. Life's rocky start. *Scientific American*, April, 2001, p. 77- 85.

Hazen, R.M. and Sverjensky, D.A., 2010. Mineral surfaces, geochemical complexities, and the origins of life. *Cold Spring Harbor Perspectives in Biology*, May 2(5):9002162. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC287174/>

Getting the Lead Out

By Daniel Rabinovich

Galena, a silvery gray mineral that is the natural source of lead(II) sulfide, is widely distributed in the Earth's crust and has been mined since ancient times. It is the most important mineral ore of lead, a heavy metal commonly used in car batteries, ammunition, solder, piping, and radiation shielding. The element is typically obtained by heating the ore in excess air, which converts the sulfide to the oxide (a metallurgical process known as roasting), followed by smelting with limestone and coke. The annual world production of refined lead is now around 11 million metric tons, roughly half of which comes from mining and the rest from recycling scrapped metal, mainly lead-acid batteries. China and Australia are the two top producers of primary (mined) lead, accounting for about two-thirds of the world's output. Significantly, secondary (recycled) lead represents nearly 90% of the refined lead generated in the United States, which was 1.26 metric tons in 2013.



Attractive specimens of galena are featured on stamps from several different countries, including Algeria, Belgium, Burundi, Canada, Kenya, Mexico, Spain, and Uganda. My favorite one is from Peru, illustrated below, since it not only shows the name and chemical formula of the mineral but also the unit cell parameters of its crystalline lattice. As a matter of fact, galena crystallizes in the cubic close-packed (or face-centered cubic) system, with perfectly square faces ($a = b = c$) and mutually perpendicular crystallographic axes ($\alpha = \beta = \gamma = 90^\circ$), and is therefore isostructural to sodium chloride (halite) and other alkali metals and silver halides.



Interestingly, galena is the official state mineral of Missouri and Wisconsin and also the namesake of several cities across the United States. The best known is perhaps Galena, Illinois, located in the Northwest corner of the state, an area where the mineral was mined by Native Americans for over a thousand years and used in burial rituals. Ulysses S. Grant, the Civil War general, lived in Galena for a few years before becoming the 18th President of the United States (1869-1877). There are also towns named Galena in Alaska, Kansas, Indiana, Maryland, Missouri and Ohio.

February 2017 Meeting "Show & Tell"

(Continued from page 2)

Mitch Portnoy brought us up-to-date on more examples of minerals, gem, and geology in pop culture and some new additions to the Club archives including a hand-assembled, unpublished manuscript by George E. Ashby on "Some Mineral Inclusions on Mica of Manhattan Island" (now available on CD-ROM) and a signed program for the 75th Anniversary (1886-1961) of the New York Mineralogical Club, held at the Faculty Club, Columbia University.

Anna Schumate took us to the heart of Tuscany with photos of La Citta che Muore (the dying city)--a medieval town perched on top of a precarious, rapidly-eroding hill accessible only by a narrow, winding footpath. Founded by the Etruscans 2,500-years ago, but re-built in the Middle Ages as a fortress, the crumbling ruins are now a regional tourist attraction. The host rocks consist of friable volcanic tuffs and argillite, subject to severe erosion and landslides. The valley below, called the "Vale dei Clanchi", resemble the Calanques near Marseille, although the rock types differ.

Turning to jewelry, Pauletta Brooks, sets raw minerals into jewelry, using metal and also a medical mesh that can be coated with resin, but is lightweight and holds the stones well. Featuring a green theme (the Pantone color of the year), she showed pieces that use green kyanite, uvarovite, serpentine, and diopside. Some of her pieces tend toward the dramatic, such as a large, massive agate necklace, while others are more delicate, such as several pairs of earrings. Paula, an accomplished silversmith and lapidary, showed lovely jewelry set with ocean picture rock from Rock Creek, B.C. This material, a mix of quartz, calcite and serpentine, when appropriately cut, yields amazing miniature seascape "paintings."

Howard Heitner concluded the evening with another "pseudo-what"—an alleged quartz pseudomorph after fluorite from somewhere in China. The specimen is too soft to be quartz, but its true identity remains undetermined at present.

There's No Such Thing as an 'Addictive Personality' – Here's Why

By Mark Griffiths

"Life is a series of addictions and without them we die".

This is my favorite quote in academic addiction literature and was made back in 1990 in the British Journal of Addiction by Isaac Marks. This deliberately provocative and controversial statement was made to stimulate debate about whether excessive and potentially problematic activities such as gambling, sex and work really can be classed as genuine addictions.



Many of us might say to ourselves that we are “addicted” to tea, coffee, work or chocolate, or know others who we might describe as being “hooked” on television or using pornography. But do these assumptions have any basis in fact?

The issue all comes down to how addiction is defined in the first place – as many of us in the field disagree on what the core components of addiction actually are. Many would argue that the words “addiction” and “addictive” are used so much in everyday circumstances that they have become meaningless. For instance, saying that a book is an “addictive read” or that a specific television series is “addictive viewing” renders the word useless in a clinical setting. Here, the word “addictive” is arguably used in a positive way and as such it devalues its real meaning.

Healthy Enthusiasm ... or Real Problem?

The question I get asked most – particularly by the broadcast media – is what is the difference between a healthy excessive enthusiasm and an addiction? My response is simple: a healthy excessive enthusiasm adds to life, whereas an addiction takes away from it. I also believe that to be classed as an addiction, any such behavior should comprise a number of key components, including overriding preoccupation with the behavior, conflict with other activities and relationships, withdrawal symptoms when unable to engage in the activity, an increase in the behavior over time (tolerance), and use of the behavior to alter mood state.

Other consequences, such as feeling out of control with the behavior and cravings for the behavior are often present. If all these signs and symptoms are present then I would call the behavior a true addiction. But that hasn't stopped others accusing me of watering down the concept of addiction.

The Science of Addiction

A few years ago, Steve Sussman, Nadra Lisha and I published a review examining the relationship between eleven potentially addictive behaviors reported in the academic literature: smoking tobacco, drinking alcohol, taking illicit drugs, eating, gambling, internet use, love, sex, exercise, work and shopping. We examined the data from 83 large-scale studies and reported a prevalence of an addiction among US adults ranged from as low as 15% to as high as 61% in a 12-month period.

We also reported it plausible that 47% of the US adult population suffers from maladaptive signs of an addictive disorder over a 12-month period and that it may be useful to think of addictions as due to problems of lifestyle as well as to person-level factors. In short – and with many caveats – our paper argued that at any one time almost half the US population is addicted to one or more behaviors.

There is a lot of scientific literature showing that having one addiction increases the propensity to have other addictions. For instance, in my own research, I have come across alcoholic pathological gamblers – and we can all probably think of people we might describe as caffeine-addicted workaholics. It is also common for people who give up one addiction to replace it with another (which we psychologists call “reciprocity”). This is easily understandable as when a person gives up one addiction it leaves a void in the person's life and often the only activities that can fill the void and give similar experiences are other potentially addictive behaviors. This has led many people to describe such people as having an “addictive personality”.

Addictive Personalities?

While there are many pre-disposing factors for addictive behavior, including genes and personality traits, such as high neuroticism (anxious, unhappy, prone to negative emotions) and low conscientiousness (impulsive, careless, disorganized), addictive personality is a myth.

Even though there is good scientific evidence that most people with addictions are highly neurotic, neuroticism in itself is not predictive of addiction. For instance, there are highly neurotic people who are not addicted to anything, so neuroticism is not predictive of addiction. In short, there is no good evidence that there is a specific personality trait – or set of traits – that is predictive of addiction and addiction alone.

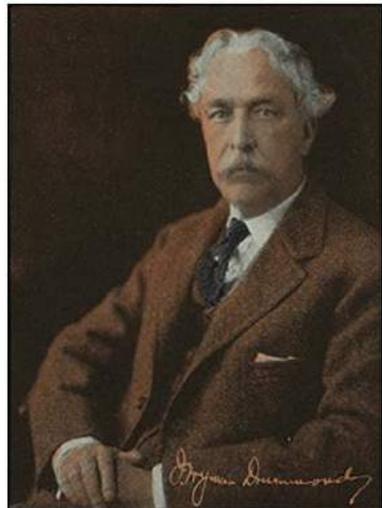
Doing something habitually or excessively does not necessarily make it problematic. While there are many behaviors such as drinking too much caffeine or watching too much television that could theoretically be described as addictive behaviors, they are more likely to be habitual behaviors that are important in a person's life but actually cause little or no problems. As such, these behaviors should not be described as an addiction unless the behavior causes significant psychological or physiological effects in their day-to-day lives.

Source: IFLScience.com from November 13, 2016

Club History:**Isaac Wyman Drummond**

(1855-1933)

Isaac Wyman Drummond was born in Roxbury, Massachusetts in June 1855, the son of Sarah and James Drummond, the superintendent of a paint factory (1860) and later an importer (1880). He graduated from the School of Mines at Columbia University in 1878 as a chemist and geologist, with a degree in Mining Engineering; he received his PhD in Chemistry there in 1879, and worked as a chemist for the F.W. Devoe and C.T. Raynold Paint Companies, becoming President and a partner in the Reynolds Company.



Drummond was a voracious collector of many different things, from

Japanese art swords to Chinese snuff bottles, rare antiques and paintings, archeological artifacts (especially jade), and minerals. The prominent mineral dealer Martin Ehrmann (1904-1972) was one of his sources for jade and mineral specimens. Drummond was a member of the New York Mineralogical Club, and in December 1928 he hosted a meeting of the club in his home, addressing the club on the subject of "Jade and Amber." Attendees toured his remarkable collections, including specimens of "water geodes," tourmaline and beryl.

A fire swept through Drummond's summer residence in 1922, destroying many valuable paintings, furniture, jewelry and antiques (and minerals?). This hardly seemed to slow down his collecting activities, though.

Drummond never married, and always lived with a couple of servants. The paint business had made him wealthy, and by the time of the 1930 census (when he was 74), he listed the value of his house at \$60,000, an enormous sum during the Depression, equivalent to several million dollars today. He was on numerous boards, and was a regular supporter of the arts.

Following his death in 1933 he bequeathed much of his collection of minerals to Columbia University, and other specimens (including jade and amber artifacts) to the American Museum of Natural History in New York in 1934; other jade objects he donated to the Field Museum of Natural History in Chicago.

References

- ANON. (1899) Catalogue of the Alpha Delta Phi. p. 499.
 ANON. (1922) Fire wrecks home of Dr. Drummond. New York Times, October 24, p. 4.
 BLANK, H.E. (1929) Proceedings of Societies; New York Mineralogical Club; Minutes of December Meeting. American Mineralogist, 14, p.117.

Source: Minrec.org

New Theory Could Explain Why Hot Water Freezes Faster Than Cold Water

By Jonathan O'Callaghan

In 1963, a Tanzanian student named Erasto Mpemba noticed something odd while making ice cream. When he froze his boiling-hot mixture, it cooled faster than his classmate's cooler mixture. This phenomenon was later published in a paper by Mpemba in 1969, and became known as the Mpemba effect. But to this day, no one is quite sure how it works.



Now, scientists from the Southern Methodist University in Texas and Nanjing University in China have published a new paper in the Journal of Chemical Theory and Computation that seeks to provide an answer. They suggest that the links between hydrogen atoms and oxygen atoms of neighboring water molecules might be the cause.

"We see that hydrogen bonds change when warming up water," Dieter Cremer from the Southern Methodist University, one of the researchers, told ScienceNews.

He added that in higher temperatures, more hydrogen bonds were strong because the weaker ones were broken down. This caused groups of molecules to form into fragments that could realign into the crystalline structure of ice. For colder water, the bonds must first be broken before this can take place.

However, the idea that hot water can freeze faster than cold water remains controversial. Another recent article in Scientific Reports from November 2016 said there was "no evidence to support meaningful observations of the Mpemba effect." The authors added they were "not gladdened by such a conclusion, indeed quite the opposite," as the effect had proven to be engaging to "people of all ages and backgrounds."

One major problem is that the effect is difficult to reproduce, although that hasn't stopped plenty of theories being put forward for how it might work. One is that the hot water may evaporate, which reduces the mass and amount of water to be frozen. Another is that water at lower temperatures freeze from the top, while warm water freezes from the bottom, although this is contentious.

It's certainly still an interesting topic. Forbes notes that in 2012, the Royal Society of Chemistry even held a competition to find the best explanation for the effect – with the winner thinking that "supercooling" was at play.

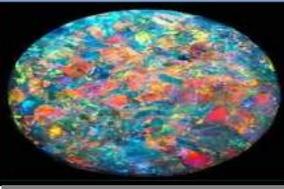
But exactly why it occurs, or even if the effect is real at all, isn't clear. Perhaps this latest paper will offer a new solution, but the case is far from settled for now.

Source: IFLScience.com from January 13, 2017

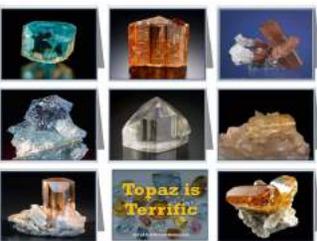
Spring 2017 Show Dealer Roster *(Subject to change)*

1	New York Mineralogical Club, Inc., New York City
2	Alan's Quality Minerals
3	Amazon Imports, Williston Park, New York
4	Amber J. I. N. Corporation, Canada
5	American Geode, NYC, NY
6	Aurora Mineral Corp, Freeport, New York
7	AYS International, Floral Park, New York
8	Bary Gems, Hollis, New York
9	John Betts Fine Minerals, New York City, New York
10	China South Seas, Inc., New York City, New York
11	Crystal Circle, Cincinnati, Ohio
12	Exotic Russian Minerals, Moscow, Russia
13	Gems Art Studio, Brooklyn, New York & Moscow, Russia
14	Great Opals, Raleigh, North Carolina
15	Highland Rock & Fossil, Highland Park, New Jersey
16	Khyber Gemstones, Lyndhurst, New York
17	Mahalo Minerals, Takoma Park, Maryland
18	Malachite & Gems of Africa, Rochester, New York
19	Raj Minerals, Jersey City, New Jersey
20	Rocko Minerals, Margaretville, New York
21	Howard Schlansker, Marshfield, MA <i>(Wholesale Only with Relevant Credentials)</i>

Show Lecture Titles & Schedule

<p style="font-size: small;">Spring 2017 NYC Gem & Mineral Show</p> <h3 style="text-align: center;">Show Lecture The Sparkle of Opal</h3> <p style="text-align: center;">Vivien Gornitz, Anna Schumate & Mitch Portnoy <i>NYMC Members</i></p> <p style="text-align: center;">Saturday, March 4 at 1:00 p.m.</p> 	<p style="font-size: small;">Spring 2017 NYC Gem & Mineral Show</p> <h3 style="text-align: center;">Show Lecture Minerals & Gems in Popular & Artistic Culture</h3> <p style="text-align: center;">Mitch Portnoy <i>NYMC President</i></p> <p style="text-align: center;">Sunday, March 5 at 1:00 p.m.</p> 
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10 New Note Card Sets Available!

 <p><i>Beautiful Beryls</i></p>	 <p><i>The Wonder of Geodes</i></p>
 <p><i>Striking Meteorites</i></p>	 <p><i>Andy Warhol Gems</i></p>
 <p><i>Uncommon Calcite</i></p>	 <p><i>Kunzite & etc.</i></p>
 <p><i>Apatite</i></p>	 <p><i>Russian Minerals</i></p>
 <p><i>Terrific Topaz</i></p>	 <p><i>Carnelian</i></p>

Free!
NYMC Annual 2017 Calendar!

2017 NYMC Calendar

Month	Su	Mo	Tu	We	Th	Fr	Sa
January '17							
February '17							
March '17							
April '17							
May '17							
June '17							
July '17							
August '17							
September '17							
October '17							
November '17							
December '17							

Details

Jan 11 Lectures: Minerals & Gems in Popular Culture (Michi Potbury)
 Jan 10 Special Club Benefit Sale?
 Feb 8 Event: Members' Show & Tell

Apr 22 Spring 2017 NYMC Mineral & Gem Show
 Apr 4 Informal Saturday Evening Dinner
 Mar 8 Lectures: Meteorites / Russian Meteorite Impact (Steve Okruska)

Apr 10 Lectures: The American Gemstone Story (Charles Striker)
 Lectures: TW (Hans)

Apr 16 Annual Club Benefit Auction

Jun 24 Lectures: Phenacite / Gemstones (N. Sarna & A. Schumann)
 Jun 16 Annual Officer's Planning Meeting

Aug 7 Open House - Long Island (Oct 1985)

Oct 13 Lectures: Russian Mineralogy (John Sarafian)

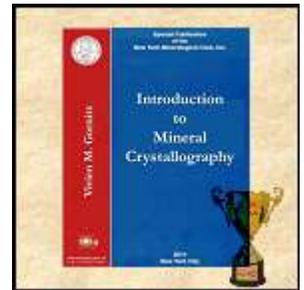
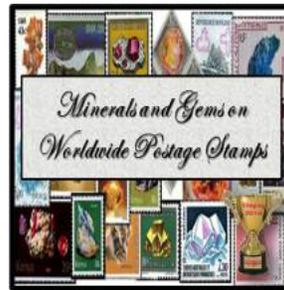
Oct 15 151st Anniversary Banquet
 Theme: "Silver禧"
 Lectures, short talks, awards, games, prizes, gifts, wine & MORE
 After 5:00pm: From Gemology to Mineral Physics & Rock Ages

Oct 22 151st Anniversary Banquet
 Theme: "Silver禧"

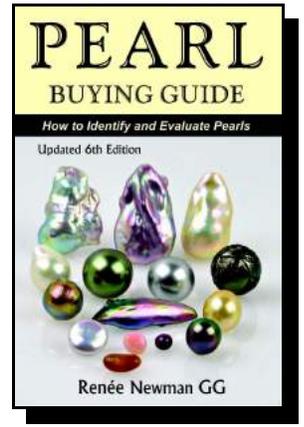
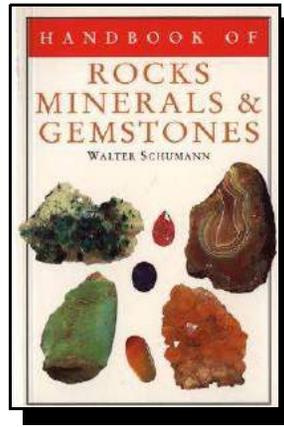
Nov 11 L2017 Fall 2017 NYMC Mineral & Gem Show
 Nov 11 Lectures: Ais Quartz (Mirinda Pitzer)
 Nov 13 Lectures: The Blue Moon Diamond (Alan Branstetter) - Facetive
 New York Mineralogical Club, Inc. Founded 1858
 America's Oldest Mineral & Gem Club

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CD-ROMs**



Informative Books for Sale



They're Still Here!
Floaty Gemstone Pens
For Sale at the Show – \$5 each



New!
For Sale at the Show – \$2
Miniature Rock Collection® Pencils



For Sale at the Show – \$5
NYMC Drawstring Backpack



Topics in Gemology

Topics in Gemology is a monthly column written by Diana Jarrett, GG, RMV, based on gemological questions posed to her over the years by beginners and experts alike. Contact her at diana@dianajarrett.com.



Connected on Your Own Terms

The exploding market for wearables, or smart jewelry and accessories is set to eclipse recent projections due to an ever widening consumer base that is embracing the connected niche. Wearable technology as it's also referred to, allows user to stay in touch with what matters most to them . . . but completely on their own terms. Today, the accessories include connected clutch bags, men's accessories and of course jewelry. This particular sector is melding fashion with function for some outstanding results.

One innovative smart jewelry company gaining a lot of traction is Ringly; keeping women connected to the people, messages and apps that are most important to them. Ringly's product line started with rings and soon expanded to bracelets. They are embellished with exotic gemstones like labradorite, tourmalinated quartz, rainbow moonstone, lapis, blue lace agate, and snowflake obsidian. Their sleek collection integrates with over 100 apps, including Uber, Slack, WhatsApp, eBay, Snapchat, and so many more.



Aries tourmalinated quartz smart bracelet by Ringly

Ringly founder **Christina Mercado d'Avignon** chatted with us recently about the exciting fusion of jewelry to high-tech:

NYMC: How has the market responded to your product line? Were there any surprises on your end as to what are the most popular items with shoppers?

CMD: We've received great feedback from our community. Our customers have been a big part of how our product line and brand has grown. They share their comments, and we listen.

NYMC: What specific demographic finds your collections most exciting and relevant?

CMD: The Ringly woman is smart, ambitious, stylish and fun. She doesn't want to miss important calls, text or notifications. She's influenced by word of mouth from friends and colleagues, fashion magazines, blogs and social media. She shops online and offline at both high-end department stores, local boutiques and specialty retailers. She appreciates simplicity, balance and soaking up experiences. Ringly appeals to her fashion first, technology second.

NYMC: Is consumer response informing where your collection is headed?

CMD: We love listening to our customers for feedback on gemstones and styles. When we launched our bracelet collection, we received a lot of comments asking for a silver version so we quickly iterated and launched 2 new silver styles. You'll definitely see a lot more designs in upcoming seasons.

NYMC: Your gemstone choices are those that today's sophisticated jewelry collector are drawn to. Was that deliberate and what drives your product choices in general?

CMD: The different gemstones we've selected and our styles are named after moments in our lives where we don't want to worry about having our phones out - Road Trip, Out to Sea and Dive Bar are examples. We take a lot of inspiration from the color and quality of different gemstones - it's our favorite part of the creative and design process!



Smart ring in pink sapphire by Ringly

Coming in June!

New York Mineralogical Club

**MINERAL, GEM, FOSSIL
& JEWELRY AUCTION**

Wednesday, June 14, 2017
Watson Hotel (Holiday Inn)





Auction Lot Viewing from 5:00 - 6:00 p.m.
Auction Proceedings from 6:15 - 9:00 p.m.

**2017 Benefit Auction
Illustrated Catalog**

New York Mineralogical Club, Inc.
100 West 111th Street, New York, NY 10025
100 West 111th Street, New York, NY 10025
Phone: 212-224-1111

Online Catalog!

newyorkmineralogicalclub.org

Unexpected Find in Siberia

By Diana Jarrett



Diamond mining in Siberia unearths some spectacular finds. Exploration in that hostile terrain has gone on for decades against enormous odds. Identifying volcanic kimberlite there in the mid 1950s resulted in the opening of several enormous mines in the harsh permafrost. For seven months of the year, Siberian ground is frozen solid. But the impenetrable terrain morphs into sludge during their short summers, creating another mining conundrum. By the mid 60's, one mine alone was turning out 10M carats per year; making all those challenges worth it.

To access the diamonds below the earth in Siberia, miners have to dig deep; really deep. So it should surprise no one that they turn up unexpected finds from time to time. After all, this relatively untouched region of the earth harbors proof of early planet formation.



Still, eyebrows raised pretty high in mid-August when Siberian miners dug up a peculiar looking mummified mammal from the diamond rich district of Udachny in the Mirninsky region of the Sakha Republic. Its sandy terrain is likely responsible for the outstanding preservation. It was so well-mummified that its fur and part of the brain was still intact.

Still no one quite knows what this oddity was during its life. Experts are suggesting that it could be a young wolverine type carnivore. These small, wolf-like mammals with strong jaws and large canine teeth still exist today, and are the state animal of Michigan. Other opinions call the creature either a pine marten or a sable, which are small members of the weasel family.

The Siberian Times reports that the little mummy will be taken to the regional capital of Yakutsk for further examination. The location of this discovery has diamondiferous sands dating back to the broad Mesozoic Era, about 252 to 66 million years back. The period also referred to as the 'Middle Life' era on earth expanded rapidly, boasting other mammals like giant reptiles and dinosaurs, besides new plant species spreading out across the earth.

The curious creature roaming the diamond sands of Siberia is pretty old—maybe not as early as the sands themselves. But thanks to the unique geology of the Russian permafrost, it could be pretty ancient. It's not the first such unexpected find in the area however. Last year in Sakha Republic a remarkably preserved 12 thousand-year-old puppy was found. While Russians wait to see what scientific conclusions are revealed with this recent discovery, they go back to the digging up what they do best. Siberian diamonds incidentally are considered some of the clearest in the world.



**Donations Being Accepted for the
Annual NYMC Benefit Auction
Wednesday Evening, June 14, 2017**
Minerals, Gems, Jewelry, Cabochons,
Meteorites, Lapidary Arts, Crystals,
Magazines, Books, Ephemera, Fossils,
Posters, Prints, Equipment & etc.

Please Send in Your 2017 NYMC Membership Dues!

Forget

Forget the hasty, unkind word;
 Forget the slander you have heard;
 Forget the quarrel and the cause;
 Forget the whole affair, because,
 Forgetting is the only way.
 Forget the storm of yesterday;
 Forget the knocker, and the squeak;
 Forget the bad day of the week.
 Forget you're not a millionaire;
 Forget the gray streaks in your hair;
 Forget to even get the blues -

**But don't forget
 To Pay Your Dues!**



👉 👉 👉 FINAL NOTICE 👈 👈 👈

**Please take the time to send in your
 2017 NYMC membership dues
 if you have not already done so.
 And get yourself a set or two of note cards —
 they make great gifts!**

Name (s)		
Street Address		
City		State
		Zip
Home Phone	Work Phone	E-mail PLEASE! G Send me my monthly Bulletin via e-mail.
G Individual Membership (\$25.00)		G Family Membership (\$35) for:
Please send me a set of the following boxed Note Card Sets (Each set for \$6.00 including envelopes): G Thin Sections G Mineral & Gem Bookplates G Jade G Beryls G Tourmaline G Ruby G Gold G Famous Diamonds G Birthday Mineral Cards G Malachite G Tanzanite G Quartz G Lapis G Amethyst G Fluorite G Garnet G Amber G Sapphire G Pyrite G Geodes G Pseudomorphs G The NYMC G Opal G Meteorites G Mineral & Gem Textures G Emerald G Turquoise		
G I'd like to get one of garnet-red drawstring backpacks which features the Club. (Each backpack for \$5.00)		
Mail this form (or copy) with your check to:		Membership Coordinator, New York Mineralogical Club, Inc. PO Box 77, Planetarium Station, NYC, NY, 10024-0077

Big Diamonds Bring Scientists a Message from Superdeep Earth

By Rae Ellen Bichell



Geologists studied these scraps of diamond leftover from the shaping of big jewels. Evan Smith/Gemological Institute of America

Evan Smith wanted to get his hands on the world's biggest diamonds — the kind that sit atop royal scepters, and the ones that are always the target of elaborate movie heists.

But this wasn't for some nefarious get-rich-quick scheme. It was for science.

"The most valuable, the most prized, of all gemstones are coincidentally some of the most scientifically valuable pieces of the Earth," says Smith, a diamond geologist at the Gemological Institute of America.

They're scientifically valuable because they come from a deep part of the Earth that humans can't access and don't know that much about.

Because of their rare size and quality, Smith thought these diamonds might have come from somewhere different, though no one knew exactly where.

"It was a total mystery," says Smith.

To solve that mystery, he'd have to look inside the diamonds, at tiny specs of junk no wider than a human hair that the crystals had brought with them on their journey from the deep.

"You really couldn't ask for a better vessel to store something in. Diamond is the ultimate Tupperware," says Smith.

A slogan like "the ultimate Tupperware" won't sell many engagement rings, but for scientists, the diamonds' Tupperware-quality is key. It makes the geologic equivalent of messages in a bottle.

But Smith couldn't just knock on a royal palace door and ask to crack open the crown jewels.

Instead, he got the Gemological Institute of America to buy eight fingernail-sized chunks of those big diamonds, the scraps leftover from when the rough diamonds were cut into sparkly jewels.

After grinding some down and cutting others open, Smith used fancy techniques involving big microscopes, lasers and electron beams to figure what was inside. He also used some not-so-fancy equipment — a magnet attached to a string — to figure out if they contained iron. ("After staring at these inclusions for hours on end over the course of many months, you start to resort to some alternative tools," he says).

Smith eventually found that many of the stones contained bits of garnet with a nitrogen content indicating that they must have formed under very high pressure. He also found iron and nickel, shrouded in invisible envelopes of fluid methane.

"That's unusual. This is the first time I've seen methane around an inclusion," he says.

When he took a non-destructive look at 53 other diamonds passing through the institute for quality grading, he found that 38 of them contained the same unusual materials.

As Smith and his colleagues wrote Thursday in the journal *Science*, those odd bits and pieces told him two important things.

"One, they tell us that these large, exceptional-quality diamonds originate from extreme depths in the Earth," he says, from about 200 to 500 miles below us.

That's about as far under our feet as the International Space Station is above our heads. And it's about twice as deep as where most diamonds are born.

"So, that in itself is pretty amazing," says Smith.

The second thing he learned is that the diamonds had formed inside oxygen-deprived patches of liquid metal. And that's the first hard evidence that the Earth's mantle is not a uniform stew of oxygen-rich rocks.

Because they weren't allowed to smash open the world's most valuable diamonds, scientists instead studied pieces leftover from when the gems were cut.

Evan Smith/Gemological Institute of America

It might not sound very exciting, says Kanani Lee, a mineral physicist at Yale University, but it is.

"It further complicates things, but it makes us have to think more deeply about what's going on in the planet because ultimately this does affect what we see up on the surface," says Lee.

As the Earth cooled over the last 4.5 billion years, its layers slowly revolved from the core to the surface and back again. Until recently, scientists expected that the mantle, the part of the planet between the continental plates and its core, would be pretty thoroughly mixed, with oxygen distributed throughout. But these diamonds show that until relatively recently, there were pockets that somehow managed to resist that mixing.

And those pockets were long-lasting and widespread enough to produce diamonds that surfaced on multiple continents and that range in age from about 100 million years old to about a billion years old.

It's unclear if those pockets are still around now. Nevertheless, it means that the planet and its past could be a little messier than scientists first thought.

"It tells you that we have to refine our thinking about how the planet — whether it's Earth or any other planet — evolves with time. And that our simple pictures may not be good enough anymore if we can't explain these features," says Lee.

Those odd features are just slivers of a much larger picture — how the Earth became what it is today, including its ability to host life.

"Over time, those are the things that shape the surface of the Earth. They're the materials that the whole surface of the Earth is built with," Smith says.

Source: www.npr.org from December 15, 2016



A rare diamond carried this tiny package of material from hundreds of miles underground. It's about as wide as a poppy seed. Evan Smith/GIA



Big diamonds like this one can contain tiny bits of metal from superdeep underground, visible as black spots inside the gem. Jae Liao/Carnegie Institution for Science

2017 Club Calendar

Date	Event	Location	Remarks & Information
March 8	Meeting at 6:30	Watson Hotel, Manhattan	Special Lecture: Steve Okulewicz – “Meteorites: Our True Extraterrestrial Visitors”
Third Wednesday! April 19	Meeting at 6:30	Watson Hotel, Manhattan	Special Lecture: Charles Snider (1 st Timer!) – “The American Geode Story”
May 10	Meeting at 6:30	Watson Hotel, Manhattan	Special Lecture: John Sanfaçon – “Russian Mineralogy”
June 14	Annual Benefit Auction	Watson Hotel, Manhattan	Details to follow; Online catalog available!
July 12	Meeting at 6:30	Watson Hotel, Manhattan	Special Lecture: Anna Schumate & Naomi Sarna – “Phenomenal Gemstones”
July ??	Officer’s Planning Meeting	Upper West Side, NYC	2017 Banquet Planning; Club 2018 Calendar; Overall Theme: <i>Leveling Up!</i>
August ??	Open House (Party!!)	Long Island, NY - C. Neary Home	Details to Follow
September 13	Meeting at 6:30	Watson Hotel, Manhattan	TBD
Third Wednesday! October 18	Annual Gala Banquet	Mezzanine, Watson Hotel, Manhattan	Theme: <i>Amethyst</i> ; Lecture; Silent Auction; Awards; Amethyst Game; Gifts & Surprises!

2017 Show or Event Calendar

Date	Event	Location	Remarks & Information
March 4-5	Spring NYC Gem, Mineral & Fossil Show	Grand Ballroom, Watson Hotel (Holiday Inn), New York City	25+ diverse dealers; lectures; wholesale section (with credentials); NYMC Booth
March 11-12	Annual Gem, Mineral & Fossil Show	Old Bethpage Village Restoration Old Bethpage, New York	Time: 10 am - 5 pm, both days Sponsor: Island Rockhounds
April 1-2	North Jersey Gem, Mineral & Fossil Show	Midland Park High School, Midland Park, New Jersey	Host: North Jersey Mineralogical Society; Website for Info: nojms.webs.com
April 20-23	Rochester Mineralogical Symposium	Radisson Hotel Rochester Airport, Rochester, New York	Lectures, Dealers, Exhibits, Silent Auction, Banquet, Voice Auction, etc.
April 29-30	NJESA Show & Swap	Franklin School, Franklin, NJ	Info: RNB515@aol.com
May 20-21	Southern Vermont Mineral, Rock & Gem Show	Grace Christian School, Bennington, Vermont	For info: Bill Cotrofeld 802-375-6782
June 3-4	Annual Mineral, Jewelry, Gem, & Fossil Show	Museum Village, Monroe, Orange County, New York	Sponsor: Orange County Mineral Society Full Mastodon Skeleton on View!
June 9-11, 2017	AFMS Convention/Show	Ventura, California	Article Contest Results; Details to Follow
October 20-22, 2017	EFMLS Convention/Show	Bristol, Connecticut	Article Contest Results; Details to Follow
November 11-12	Fall NYC Gem, Mineral & Fossil Show	Grand Ballroom, Watson Hotel (Holiday Inn), New York City	25+ diverse dealers; lectures; wholesale section (with credentials); NYMC Booth

*For more extensive national and regional show information check online:
AFMS Website: <http://www.amfed.org> and/or the EFMLS Website: <http://www.amfed.org/efmls>*



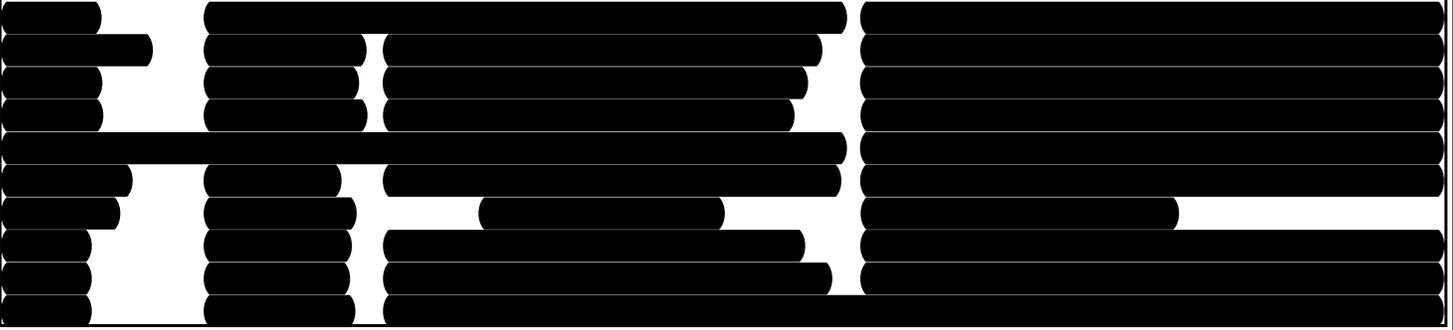
The New York Mineralogical Club, Inc.

Founded in 1886 for the purpose of increasing interest in the science of mineralogy through the collecting, describing and displaying of minerals and associated gemstones.

Website: www.newyorkmineralogicalclub.org

P.O. Box 77, Planetarium Station, New York City, New York, 10024-0077

2017 Executive Committee



Dues: \$25 Individual, \$35 Family per calendar year. **Meetings:** 2nd Wednesday of every month (except August) at the Watson Hotel (formerly Holiday Inn Midtown Manhattan), 57th Street between Ninth and Tenth Avenues, New York City, New York. Meetings will generally be held in one of the conference rooms on the Mezzanine Level. The doors open at 5:30 P.M. and the meeting starts at 6:45 P.M. (**Please watch for any announced time / date changes.**) This bulletin is published monthly by the New York Mineralogical Club, Inc. The submission deadline for each month's bulletin is the 20th of the preceding month. You may reprint articles or quote from this bulletin for **non-profit usage only** provided credit is given to the New York Mineralogical Club **and permission** is obtained from the author and/or Editor. The Editor and the New York Mineralogical Club are not responsible for the accuracy or authenticity of information or information in articles accepted for publication, nor are the expressed opinions necessarily those of the officers of the New York Mineralogical Club, Inc.

Next Meeting: Wednesday Evening, March 8, 2017 from 6:00 pm to 9:00 pm

Mezzanine, Watson Hotel (formerly Holiday Inn), 57th St. & Tenth Avenue, New York City

Special Lecture: Steve Okulewicz – “Meteorites: Our True Extraterrestrial Visitors”

New York Mineralogical Club, Inc.
Mitchell Portnoy, Bulletin Editor
P.O. Box 77, Planetarium Station
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FIRST CLASS



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NYC GEM AND MINERAL SHOW

A Spring Show & Sale of Minerals, Fossils, Gemstones, Meteorites, Jewelry & Crystals

March 4 - 5, 2017
Saturday (10:00 am – 6:00 pm)
Sunday (11:00 am – 5:00 pm)

Watson Hotel
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