The BULLETIN

OF THE NEW YORK MINERALOGICAL CLUB, INC

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January 2018

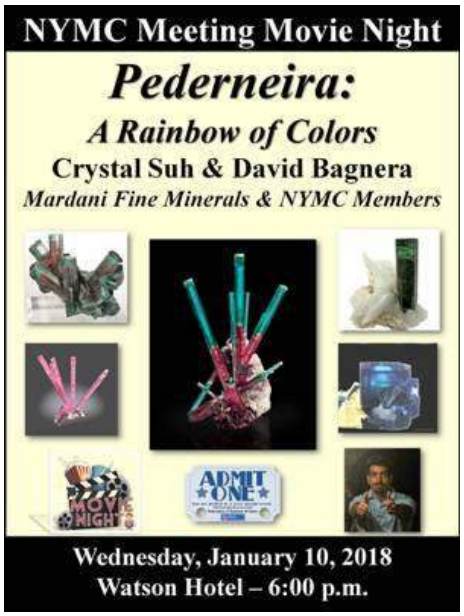
America's Oldest Gem & Mineral Club
Founded 1886 ◆ Incorporated 1937

Bulletin of the New York Mineralogical Club

Founded 1886 ♦ New York City, New York ♦ Incorporated 1937

Volume 132, No. 1 *America's Oldest Mineral & Gem Club* **January 2018**

January 10th Meeting:
1st Annual Movie Night:
"Pederneira: A Rainbow of Colors"



The first meeting of the new year will feature the documentary ***Pederneira: A Rainbow of Colors*** under the sponsorship of Mardani Fine Minerals of Madison Avenue (Daniel Trinchillo & Marissa Chung, claim owners and movie producers).

The Pederneira claim, located in Minas Gerais, Brazil, has produced world-class specimens of tourmaline, in addition to other spectacular minerals and gems.

We have members **Crystal Suh and David Bagnera**, both of whom work for Mardani, to thank for coming up with the idea and making it happen for the Club.

If you look at pages 7-8 in this bulletin, you can see pictorially what a special meeting this will be. Both "Hollywood" and "Tourmaline" are themes adding to the evening's fun and visual enhancements. And there will be even more surprises than those pictured on those pages!

Thanks to a remarkable donation by the Trinchillos, all NYMC members in good standing will be given a copy of the out of print Jan-Feb 2015 *Mineralogical Record* issue Pederneira! (Note: *Member in good standing* means you have paid your 2018 NYMC dues.)

(Continues on p. 2, President's Message)

Two New Events Among Varied 2018 NYMC Activities

By Mitch Portnoy

The **year 2018** will feature two new events for the New York Mineralogical Club among the "regular" meeting lectures, auctions, social activities and mineral shows.

Indeed, the year will open with our **First Annual Movie Night**! Much planning has gone into making this new event very special. (I hope the fact that this bulletin contains lots of information about this meeting make this obvious!)

The second important addition to the NYMC calendar will be the **Summer NYC Mineral & Gem Show** on June 23-24, 2018. Both the **Spring Show and Fall Show** have been so successful that Tony Nikischer decided to add another! Although very little about this show is finalized, it may feature a different floor plan as well as an increased number of dealers.

The Club's important **meeting lecture series** is falling into place. The first half of the year's topics will include gemstone folklore (Eric Rampello), pearls (Renèe Newman), and NYC geology/mineralogy (Dennis Askins).

The "new" **July meeting** will have a lecture about collecting type locality minerals by the famous Karenne Show. (You should expect some interesting activities at this meeting to make it extra special!)

If you look at the full calendar on page 13, you will notice that several months (including the Banquet) are still in **need of a speaker.** If you have some ideas, contacts or people in mind to fill these openings, PLEASE contact me ASAP.

The **June 2018 Benefit Auction** will once-again feature a splendid variety of minerals, gems, lapidary items and fossils. I can state this at this time this because I know how many wonderful items were already donated to us by all the dealers at the November 2017 NYC Mineral Show AND both the March and June 2018 Shows still have to happen! An illustrated auction catalog will be posted online on our website beginning in March.

Planning for the popular **October 2018 Banquet**, whose theme will be *carnelian* (with a hint of Halloween), is well underway. Perhaps this year we will break the 90 attendee barrier!

You can also look forward to many of the other "standard" Club activities including the **Member Show & Tell** and **Chinese Auction** in February, the very social **Open House** in August and the **Silent Auction** in October.

I hope to see you at many of these events and activities so you can experience how valuable and fulfilling a membership in the NYMC really is. And remember, ideas and suggestions are ALWAYS welcome!

Issue Highlights

President's Message

By Mitch Portnoy
(Continues from page 1)

About Crystal Suh

Crystal joined the team in 2015 and brought with her an eclectic background based in writing, consulting, sales, and the arts. She is a lifelong collector of objets d'art and a lover of the natural world. Her favorite aspect of minerals (besides sharing their name) is the wealth of narratives that surround them. From the incredibly complex science surrounding their formation to the often impossible measures taken to unearth and preserve these treasures, she avidly studies and shares these fascinating histories with her clients.

About David Bagnera

David joined the Mardani team in 2014. He is a California native and recent New York transplant who has always had a fascination with rocks and minerals, and still has his childhood collection. He brings with him over a decade of sales and retail management experience with a concentration in fine jewelry. He is a quick study with a photographic memory and an impressive breadth of mineral knowledge.

Be aware that the officers of many local clubs were contacted about this evening and their members were also invited. Since we expect a larger than average attendance at this meeting, please try to arrive on time.

Late arrivers, please sit in the rear of the meeting room.

Have an idea for a story?
Write for the *Bulletin of the NYMC.*
You'll be glad you did!

Send in Your 2018 Club Dues

It is time to send in your 2018 club membership dues! All memberships run from January 1 to December 31 of each year (with a few exceptions).If your mailing label says "2017" or we contacted you via email, you owe your 2018 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.

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Club Meeting Minutes for December 13, 2017

By Vivien Gornitz, *Secretary*
Attendance: 37
President Mitch Portnoy presided

Announcements:

- The monthly raffle was held.

Thanks to Irving Horowitz for providing wonderful New Street Quarry specimens for the raffle!

- The remaining 2017 Amethyst Banquet packets and calendars were offered to members.
- All extra NYMC note cards from incomplete sets were distributed free.
- A Club website update was given.
- Details about the Priceman mineral donation to the Club were given.
- The day's historical events and special holidays were presented.
- Moydite-(Y), named after NYMC member Louis Moyd , was added to the "memberite" list!
- A game about tourmaline varieties was played in anticipation of January's meeting about Pederneira, which is famous for its tourmalines.
- End-of-Year Awards were presented to several members.
- All currently scheduled Club activities through October 2018 (the Carnelian Banquet) were quickly gone over.

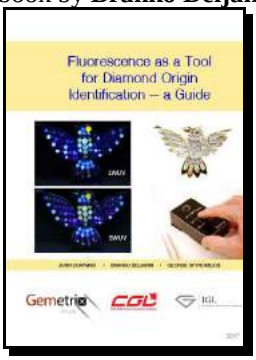
Special Lecture: Irving Horowitz
"Last Hurrah at New Street Quarry"

The Paterson, New Jersey zeolites and associated minerals have been collectors' favorites from the 1920s through the 1980s, until more recently superseded by lovely specimens from the Deccan Plateau, India. Irving Horowitz, long-time Club member, retired New York City school educator, and author of widely-used earth science textbooks, recalled some of his personal experiences in collecting at the now-vanished New Street Quarry in Paterson.

Irving began by briefly reviewing the local geology. Two hundred million years ago, basaltic lavas had flowed into a salt lake that was part of a much larger rift system (similar to the one in East Africa). The hot lavas in contact with saltwater congealed into large bulbous masses called *pillow lavas*, because of their shape. At a later time, mineralizing solutions filled the cavities in between the pillows, where zeolites and other minerals then deposited. The New Street Quarry was excavated into a stack of lava flows that formed the 1st ridge of the Watchung Mountains. Across the Hudson River from us and part of the same period of volcanic activity is the Palisades Sill—an intrusive diabase sandwiched in between early Mesozoic sediments. (Continues on page 6)

Members in the News

- New book by **Branko Deljanin!**

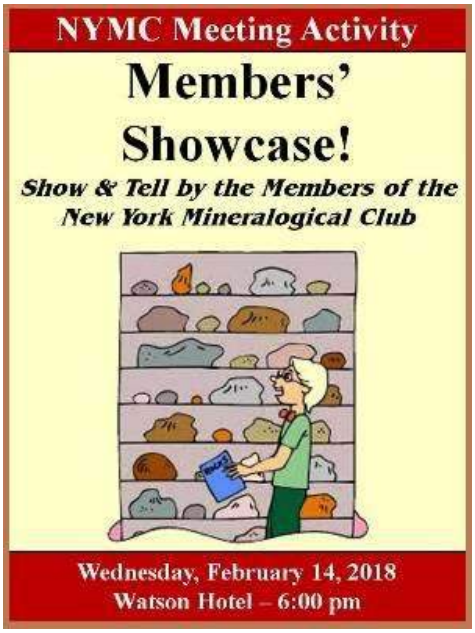


- **Naomi Sarna** was awarded a Bronze Medal for a carving at the 2017 International Jade Exhibition in Suzhou, China during November.
- **Dr. George Harlow** was quoted in a New York Times article about gems on December 12, 2017. (We will reprint the entire article later in the year.)

Welcome New Members!

Bruce Moor . . . . . Woodstock, NY
Lana Raymond . . . . . White Plains, NY

Coming In February:



4th Annual Chinese Auction

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.

Vivien is on a well-earned winter break; her column will resume next month. Recently, someone posed a question at a meeting regarding the difference between a "precious" and "semi-precious" gemstone. I therefore thought it was a good time to reproduce this essay. – Editor

No Valid Distinction Between Precious and Semiprecious Stones

By Waldemar T. Schaller

The United States Geological Survey is often asked to make a distinction between precious and semiprecious stones, and especially to state the class in which some particular mineral belongs. To the popular mind the diamond, ruby, sapphire, and emerald are the true precious stones: all others are semiprecious. The popular mind, however, is not consistent from time to time; the fickleness of fashion may readily change the standing of gems; and demand and supply, popular taste, and price may affect the rank of a precious stone.

Gemstones are desired for personal adornment because of their rarity, their cost, and especially their beauty, and these items probably determine as much as any other the classification of gemstones. But can agreement ever be reached as to what are the most beautiful of all gemstones? The opinion and taste of the wearer, of the jeweler, and of the scientist all deserve consideration, but the three can probably not reach a satisfactory agreement.

In short, no criteria of subdivision between precious and semiprecious stones can be offered on which all gemstones can be classified. All stones which are suitable for personal adornment and which please the wearer may be called precious stones. Jasper is as much a precious stone as diamond. The schemes of classification of gemstones into precious and semiprecious are almost as numerous as the books written on the subject, but not even all the authors can retain their classification throughout. One author, in his table of contents, divides gemstones into (a) precious stones (diamond, corundum, and beryl) ; (b) semiprecious stones (topaz, spinel, garnet, etc.); (c)ornamental stones (fluor, lapis lazuli, sodalite, etc.); and (d) organic products (pearl, coral, amber) ; yet, in his text, he says: "Once contemptuously styled common garnet, andradite suddenly sprang into the rank of precious stones."

The properties that give minerals value as gemstones are color, luster, transparency, hardness, and rarity. The first three are sometimes grouped together under the head of beauty. It has been said that a mineral must possess at least a majority of these properties in order to be ranked as a precious as distinguished from a semiprecious stone. An attempt to apply the test will show the futility of any such subdivision. The application of such a subdivision would also relegate a good many specimens of every mineral species to the semiprecious class; thus a diamond that is dull in appearance, gray in color, and only translucent (not transparent) could then not be classed as a precious stone, for such a crystal would lack all beauty, and the diamond is not the rarest of gemstones. Further, only certain varieties of the mineral corundum and of beryl could be called precious; the vast bulk of these minerals would be only semiprecious.

Color cannot furnish a satisfactory basis of division for, in addition to corundum (ruby), many red minerals are used as gemstones, such as spinel, garnet, opal, jasper, fluorite, and tourmaline; in addition to sapphire, many blue minerals are used, such as benitoite, sodalite, fluorite, turquoise, azurite; and many green minerals, such as feldspar, fluorite, tourmaline, variscite, malachite, and hiddenite. Absolute lack of color, characteristic of some diamonds, is also shown by many other gemstones, such as quartz, beryl, phenacite, and topaz.

Luster and transparency vary considerably, not only in the same mineral but even in the same crystal. The presence of impurities or flaws may have a marked effect on the luster of a mineral, so that two crystals of the same mineral may exhibit very different degrees of luster and transparency.

Hardness cannot be a deciding factor, unless it is said that all minerals must have a hardness of 9 or more in order to rank as precious stones; but this requirement would exclude emerald, which has a hardness ranging from 7-1/2 to 8. If the limit is placed at 7-1/2 to 8 (that of emerald), then chrysoberyl (8-1/2), topaz (8), phenacite (7-1/2 to 8), and perhaps a few others like the minerals of the spinel group (7-1/2 to 8) would have to be included.

The rarity of gemstones has often been set up as a criterion of their value. It may be true that, in general, a very rare gem is of greater value than an equally attractive but more abundant one, but the rarity of a stone may be offset by its properties. The diamond is by many people regarded as extremely rare, but in comparison with such gemstones as benitoite, hiddenite, and many others it is very abundant.

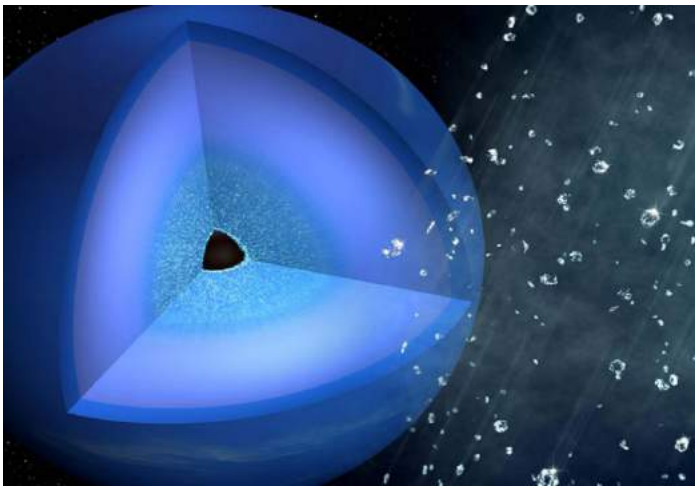
The foregoing statements are intended to show that gemstones can not logically be classified as either precious or semiprecious and that neither cost, beauty, hardness, nor rarity, whether considered separately or together, can be made to serve as an exact basis of such a classification. Of course, an arbitrary classification of gemstones may be proposed, but it is not likely to be universally adopted, especially if it ignores the particular properties, such as color and hardness, that characterize gemstones in general.

Source: US Geological Survey 1916: Gemstones, Metals. Chapter 3, pps. 887-888.

Diamonds Really Do Rain on Neptune, Experiments Conclude

Researchers subjected hydrocarbon samples in a laboratory to Neptune-like pressures. The samples, reminiscent of molecules found in the ice giant's atmosphere, compressed into nanodiamonds.

By Kimberly M. S. Cartier



A cutaway of Neptune (left) shows the theorized interior structure of the planet, including the region where the hydrocarbon atmosphere may produce diamond rain (light blue) that falls onto the core (black center). A recent experiment observed the formation of diamonds from hydrocarbons under conditions like those found in the interiors of Uranus and Neptune. Credit: Greg Stewart/Stanford Linear Accelerator Center National Accelerator Laboratory

A very hard rain likely falls inside Uranus and Neptune.

In recent high-energy laser experiments, researchers have replicated the pressures and temperatures found deep in the atmospheres of such planets, known as ice giants. Those extreme conditions in the laboratory compressed hydrocarbon plastics, chemically similar to the methane found in ice giants, into tiny diamonds, giving an experimental boost to a long-standing theory about the characteristics of ice giant planets.

"It was a very surprising experiment," said Dominik Kraus, a researcher at Helmholtz-Zentrum Dresden-Rossendorf in Dresden, Germany. His team had expected very small signs of molecules splitting apart after being subjected to high pressures, "maybe some little hints of diamonds," he explained.

But instead, they found a very strong signal that under intense pressures, hydrocarbons in Neptune would transform into diamonds. Kraus is lead author of a 21 August *Nature Astronomy* paper describing the results.

Pressure Shock

In the recent tests, the experimenters first had to find a substance that was chemically similar to methane (CH_4), a molecule believed to be in about 1.5% abundance on Neptune and the planet's most common component after hydrogen and helium. They hit upon polystyrene (C_8H_8) plastic—not only is it a common material, but it is also easier to use because it's a solid at room temperature, whereas methane is gas that would need to be contained.

The researchers then fired two short, but intense, pulses from a high-energy X-ray laser at the polystyrene sample. The two laser bursts hitting the sample at nearly the same time exerted a pressure shock almost 1.5 million times greater than Earth's surface atmospheric pressure yet kept the temperature below the melting point of diamonds.

The fleeting shock simulated conditions found around 10,000 kilometers below the surfaces of Uranus and Neptune. Then, using X-ray diffraction measurements to continually monitor the chemical nature of the sample after the laser strikes, the researchers witnessed carbon separating from hydrogen and compressing into nanometer-sized diamonds.

Carrying the experiment's analogy back to Neptune, the results indicated that hydrocarbons known to be within Neptune likely condense into a solid as you go deeper into the planet's interior. The experiments took place at the Stanford Linear Accelerator Center (SLAC) National Accelerator Laboratory in Menlo Park, Calif.

Why Simulate Neptune's Atmosphere?

Knowing how hydrocarbons might behave deep within an ice giant's atmosphere will affect our understanding of how atmospheres transport heat and evolve over time, explained Kraus. What's more, the implications of this research extend beyond our solar system to exoplanets, as a large fraction of the known exoplanets are similar in size or mass to our ice giants.

The ability to model an ice giant atmosphere's density from the top down to the core is a critical part of characterizing that planet. For example, an atmosphere made mostly of hydrogen is much puffier than one with diamonds, Kraus noted.

A diamond-studded atmosphere also likely behaves very differently than one without diamonds. For example, atmospheric convection might have to overcome more hurdles, which may lead to sharp changes in chemical composition between different atmospheric layers, the researchers said. This could also inhibit heat flow.

"These experiments can be used to improve our understanding of the behavior of common materials in the universe at high pressures and temperatures, which has a direct connection to modeling planetary interiors," said Ravit Helled, a computational science and theoretical astrophysics professor at the University of Zurich in Switzerland, who was not involved in the study.

One-Two Punch Keeps Old Theory in the Ring

Planetary scientist Marvin Ross first proposed the idea that Uranus and Neptune could have diamond precipitation in 1981. Other research groups have tried many times since then to observe this chemical reaction in the lab but have seen only hints of hydrogen-carbon separation and diamond formation. Moreover, these changes took place at pressures and temperatures that don't match theory very well.

In contrast, the shock method used by Kraus and his team produced strong signals from the separation and diamond formation at the temperatures and pressures suggested by theory. The one-two X-ray punch was the key to the experiment's success, according to coauthor Siegfried Glenzer, professor of photon science at Stanford University and director of SLAC's High Energy Density Sciences Division.

"We saw carbon clusters forming under the presence of hydrogen, and then we saw those carbon clusters forming diamonds under high pressure," Glenzer described.

Kraus added that "nearly every carbon atom inside the plastic turned, within this 1 nanosecond or less, into a diamond crystal structure." He said that if the nanometer-scale diamonds could grow for longer spans of time, like they might in ice giant atmospheres, the nanodiamonds "would for sure grow to much larger size."

To see diamond formation, the sample needed to be highly compressed but not heated beyond the melting point of diamonds, a tricky combination for most laser experiments, Glenzer explained. The lasers compressed the sample for only a few nanoseconds, too short a time to substantially increase the temperature. The team performed its experiment with the Matter in Extreme Conditions (MEC) instrument on SLAC's Linac Coherent Light Source (LCLS).

SLAC's full range of experimental techniques allows scientists "to be able to assess these questions of reactivity and kinetics," said Laura Robin Benedetti, an experimental physicist at Lawrence Livermore National Laboratory in Livermore, Calif., who did not participate in the research. "It's very exciting to have new work in this field."

The Hydrogen Solution

Glenzer explained that the shock method's short timescale is important for keeping hydrogen from escaping during the diamond compression. Past experiments that observed the reactions over the course of a few seconds might have suffered from hydrogen loss, he speculated.

In the shock experiments, "hydrogen is still present, and that's important because that's what happens [in] Neptune," Glenzer emphasized. "You have carbon under high pressure, and hydrogen is still around. And then we see the formation of diamonds." In this way, the lab simulation "is a much better approximation for what we believe is happening in Neptune."

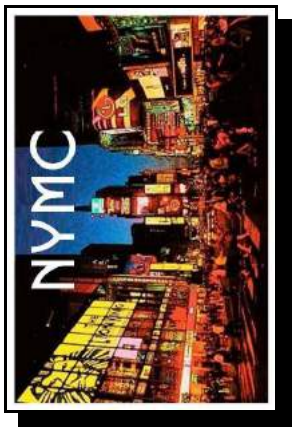
The research group has begun conducting similar experiments with plastics of different composition to test the range of reactions that could occur, according to Kraus. He and his colleagues are particularly interested in reactions that include oxygen and helium, two elements in high abundance in not just ice giants but also Jupiter-like planets as well.

"To refine our models of the interiors of the ice giant planets and also to understand their formation processes, we will need every bit of data we can get our hands on!" Benedetti told Eos in an email.

The team also hopes to retrieve the newly formed diamonds from the MEC chamber to analyze their structure and strength, Glenzer said. Through that, there may be a practical application to this science: Harvesting the diamond nanocrystals formed in the experiments is the researchers' first step in assessing potential applications for the diamonds in material science or industry.

Source: EOS.org from 15 September 2017

New 2018 NYMC Postcards Available!



Geology's Clocks Might Have Been Misread, Throwing out Our Volcano Predictions

By Stephen Luntz

Scientists from Queensland University of Technology looking for zircons that might be older than the rocks in which they are placed.

One of the most important measuring tools of geology might be frequently misread, scientists at Queensland University of Technology, Australia have argued, and the consequences could be serious. If we are getting the age of geological features wrong, we might not just be misunderstanding the story of life on Earth, but distorting our estimates of risk for volcanic eruptions.

Zircons are usually small silicate crystals common in granites. They have a couple of distinctive features that make them great for establishing the dates of rocks. They exclude lead when forming, but include radioactive elements that slowly decay to lead with time, providing an indication of how long this decay process has been running. They are so tough that some have survived 4 billion years.

However, Dr Scott Bryan thinks we are making a mistake in jumping from the age of zircons to the age of the rocks they comprise. In Earth-Science Reviews, Bryan presents evidence that zircons from locations as diverse as Queensland, New Zealand, and Hawaii, have inspired misreadings, and suggests how geologists can do better.

"One of the assumptions being made is that the composition of the zircons and the rocks in which they have formed give an accurate record of the magmas and conditions at which the zircons and magmas formed," Bryan said in a statement. "From this, we then estimate the age of the event that caused them to form."

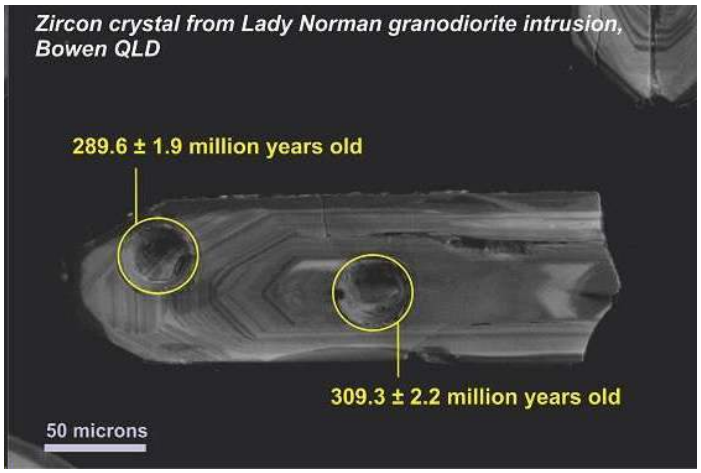
"But some zircon crystals may not be related to their host rocks at all," he added. "They may have come from the source of the magma deep in the Earth's crust or they may have been picked up by the magma on its way to the surface."

When pre-existing zircons are treated as being the same age as the rocks that hold them, the antiquity of eruptions is overestimated, sometimes by millions of years.

This may sound as though getting accurate ages for rocks is impossible, but Bryan disagrees. Instead, he discusses techniques to distinguish between zircons that formed with rock and pre-existing crystals incorporated during an eruption. Unfortunately, these don't work in every case, with uranium and thorium-rich zircons being resistant to such differentiation.

Problematic as inaccurate dates can be – for example when estimating species' ages from volcanic rocks sandwiching fossil specimens – there are bigger dangers.

Recent rumblings in the supervolcano beneath Yellowstone National Park reminded the world of the danger such events pose. But to know how likely a civilization-threatening eruption is, it is important to know how frequently, and at what intervals, such events have occurred in the past. For that we usually rely on zircons, using the assumptions Bryan and his co-authors criticize.



When zircons from different parts of a rock have different ages they must have formed in different magmas but may bias estimates of the rock's age. Siegel et al/Earth-Science Reviews

The Universe Should Not Exist, Scientists Say

By Hannah Osborne

The universe as we know it should not exist, scientists working at CERN, the European Organization for Nuclear Research, have said.

After performing the most precise experiments on antiprotons that have ever been carried out, researchers have discovered a symmetry in nature that they say just shouldn't be possible.

One of the big questions about the universe is how the first matter formed after the Big Bang. Because particles and antiparticles annihilate one another when they come into contact, if there were exactly equal measures of both, the universe wouldn't exist—at least not in the form we see it today. As such, there must be an imbalance between particles and antiparticles, even if it is only by the tiniest fraction.

But this is not the case. All experiments designed to find this asymmetry have come up blank. This is also true of the latest, which were recently carried out at CERN by an international team of researchers. The findings from the BASE (Baryon Antibaryon Symmetry Experiment) are published in the journal Nature.

"All of our observations find a complete symmetry between matter and antimatter, which is why the universe should not actually exist," first author Christian Smorra, from Japan's RIKEN institute, said in a statement.

In the study, researchers used antiprotons that had been isolated in 2015. The antiprotons were measured using the interaction of two traps that use electrical and magnetic fields to capture them. The team was able to measure the magnetic force of the antiproton to a level that is 350 times more precise than ever before.

If there was an imbalance between protons and antiprotons, this level of precision would be the best bet for finding it. "At its core, the question is whether the antiproton has the same magnetism as a proton," said Stefan Ulmer, spokesperson of the BASE group. "This is the riddle we need to solve."

"The measurement of antiprotons was extremely difficult and we had been working on it for 10 years. The final breakthrough came with the revolutionary idea of performing the measurement with two particles."

The Milky Way and Andromeda galaxies. Experiments at CERN still cannot explain how matter formed in the early universe. NASA

After finding no asymmetry between particles and antiparticles, the researchers will now work to develop even higher-precision measurements of protons and antiprotons to improve on the latest findings. "An asymmetry must exist here somewhere but we simply do not understand where the difference is. What is the source of the symmetry break?" Smorra said.

Source: www.newsweek.com from October 25, 2017

Horowitz New Street Quarry Lecture

(Continued from page 2)

Not all the minerals found at New Quarry are zeolites. Irving showed us an impressive specimen consisting of fairly large quartz crystals and a radiating cluster of anhydrite epimorphs (now replaced by silica). Other examples that point to the original evaporitic nature of the local environment are calcite after glauberite, a hydrated sodium calcium sulfate, and prehnite after anhydrite, calcium sulfate. Among the true zeolites found at New Street are: stilbite, in characteristic "bow-tie" clusters, heulandite, chabazite, analcime, natrolite, and thompsonite. Many other minerals also formed together with the zeolites, including fibrous, silky radiating pectolite, pale-green prehnite, pseudo-cubic apophyllite, fibrous needles of natrolite, and pumpellyite.

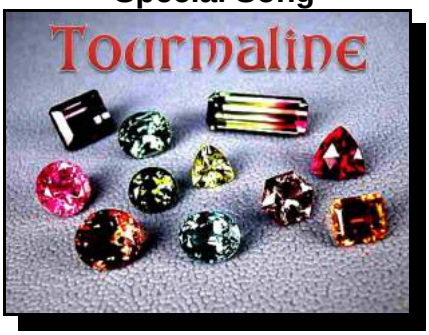
Irving concluded by showing us photos of the Deccan Traps in India, source of well-known, collectors' choice specimens. The Deccan basalts yield fine examples of translucent green and white apophyllite, pale salmon stilbite, pearly-lustered heulandite, analcime, chabazite, and natrolite. Bright blue cavansite (named after its chemistry—a calcium vandadium silicate), and its similar-looking polymorph, pentagonite, from Poona, India, often occur together with zeolites.

For collectors eager to repeat Irving's finds in the Watchungs, you're out of luck! The New Street Quarry has been literally blasted into oblivion in the name of progress. The site now holds housing complexes and shopping malls.

Sponsored by Mardani Fine Minerals of Madison Avenue, New York City
Daniel and Marissa Trinchillo, Proprietors
Presented by Crystal Suh & David Bagnera

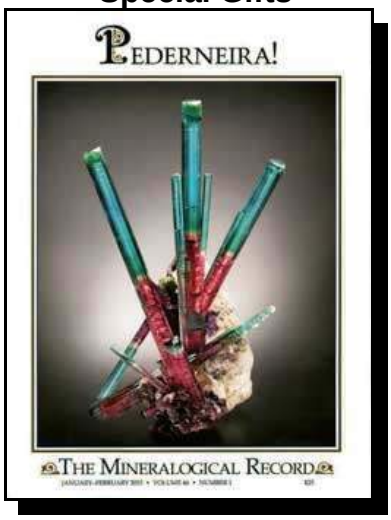
Special Game

Special Song



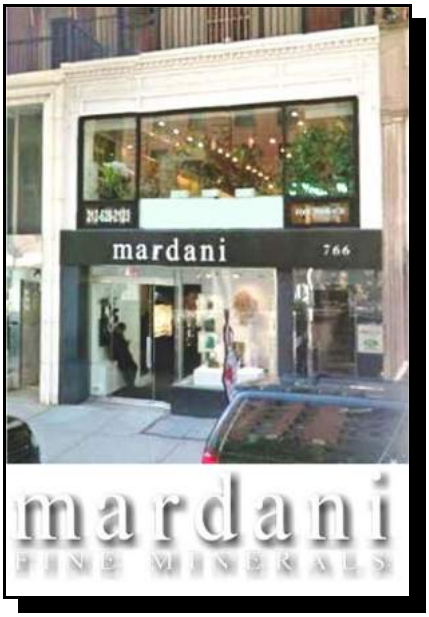
Special Note Cards

Special Gifts

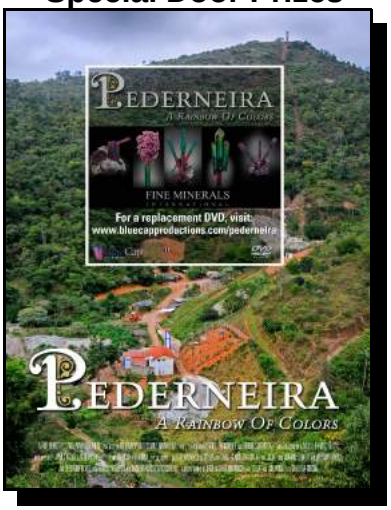


All NYMC members in good standing for 2018 will receive a copy of this *Mineralogical Record* Pederneira! issue.

The Sponsor



Special Door Prizes



All NYMC members in good standing for 2018 will receive a chance to win a copy of the Blue Cap Pederneira DVD.

BlueCap productions

Framed Pederneira Specimens Photographs for Sale

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.

Picking Up Where Others Left Off

The world first discovered diamonds in India. And for centuries after that was the only place to dig for them. Early historical documents place their initial discovery to the 4th century BC. It was Europe's growing appetite for the sparkly bits that drove their desirability to a larger market outside of India. Consider the times in which they were coveted in Europe. The nobility entertained lavishly in the great banquet halls and ballrooms of their estates. There was no interior lighting as we know it today. Candles illuminated these expansive spaces. Titled ladies and gentlemen adorned from head to toe with diamonds made for a spectacular entrance at these social events, since diamonds caught and reflected the ambient lighting. The more the merrier was the idea with regards to self-adornment with diamonds. Hence the craving grew for more of these light reflecting stones.

Just when India's trove of diamonds appeared to be depleted, diamond discovery cropped up in Brazil at the dawn of the 17th century AD. It was alluvial gold miners who first laid eyes on these marvelous rocks we're told. Once diamond panning took off, it dominated the global market for these glittery pebbles for another 150 years. About that same time, the consumer base for diamonds also underwent its own transformation.

Explosion of Demand

As sources for diamond's discovery transitioned over time, the diamond market itself underwent its own evolution. Prior to this era, the wealthy European aristocracy and royalty drove the demand for the stones. But a re-distribution of wealth created by a burgeoning new economy rising in young America changed the consumer base. The old ruling classes—diamonds' biggest consumers—were in decline by the late 1700s. The French revolution also led to a massive shift in power and economical status of the private individual in Europe.

Wary of Brazil's Output

In those early days, there was no way to test diamonds to determine exactly what they were. So at first, Brazilian stones were not always favorably received by the diamond-buying public. They were either thought to be not actually diamonds at all, or perhaps at least inferior to those from India. But eventually the public warmed up to the dazzling stones and mining continued in earnest. It was said that the state of Sao Paulo, to the south of Minas Gerais, Brazil was rife with diamonds readily found in the rivers flowing into the Rio Parana. The yield from these rivers was significant. Diamonds found up to 1850 in the Rio Claro, Sao Paolo alone were reported to weigh about 252,000 carats.

When diamonds and plenty of them were found in Kimberley South Africa beginning in 1866, the focus shifted from Brazil to South Africa for diamond mining's future. But the story wasn't completely over with regards to mining in Brazil.

Post Hey-Day Production

Today, far away from public scrutiny, deep in the heart of Minas Gerais, rural miners are again searching for diamonds in the massive craters left behind by large mining companies that dug out colored stones for which Minas Gerais is known. Until just a few years back, multinational mining companies extracted the stones without regard for the land or the river traversing the region.

Brazilian artisanal miners find small diamonds

One such area known as the Areinha claims (Rio Novo mine) is populated by small groups of rural miners trying their luck in diamond mining using artisanal techniques. By simply utilizing metal pans, wooden knives, large water pumps and other readily accessible tools, they search. They work around the riverbed in an attempt to spare the river of further damage. It is estimated that hundreds of people across the region are actively digging for diamonds in small groups of 10 or less. Their homes are wooden huts with no electricity. They bathe with water buckets, and eke out a living.

On rare occasions when recovery is exceptional, they can rake in a profit of tens of thousands of dollars. After weeks of arduous digging, a group can penetrate through gravel of almost 50 yards deep. Then pumps powered by cast off truck engines assist the rock extraction. After that the artisanal miners rely on their hands to sort through the rocks and separate the diamond rough.

For the most part, diamond mining in Brazil is simply part of this country's rich history. But here and there scattered within remote areas that most people would never venture into, the ancient vocation of artisanal mining is still alive. Those who persevere are able to support their families while hoping for the big one.

Stolen Tourmaline Pieces Recovered Intact

By Tom Ferrall

Two of the five major tourmaline pieces stolen from the Fallbrook Gem & Mineral Society Museum have been recovered intact.

The pieces were among the stolen property recovered from the home of Oceanside resident Edward Torrison, who was arrested Sept. 26 by Laguna Beach police officers as a suspect in a series of smash and grab robberies in Orange County.

Torrison pleaded guilty Oct. 6 in Orange County to seven felonies – four counts of second-degree burglary, two counts of grand theft and one count of receiving stolen property – and on Oct. 11 was sentenced to 32 months in state prison.

The Fallbrook Gem and Mineral Society was the victim of a smash and grab heist Sept. 10, as was The Collector Fine Jewelry less than a week later.

Detective Joel Couch of the Fallbrook Sheriff's substation said Torrison is a suspect in the Fallbrook Gem and Mineral Society robbery and is "a person of interest" in the break-in of The Collector. The Fallbrook cases are ongoing investigations and no charges have been filed.

In searching the garage of Torrison's home, Laguna Beach police found a large tool chest filled with gems, crystals and stolen jewelry. The estimated $500,000 worth of stolen property was taken to the Laguna Beach Police Evidence Department, and that's where Mary Fong-Walker, a member and advisor to the Fallbrook Gem & Mineral Society, went to view the stolen loot Oct. 23.

Fong-Walker, along with her husband Jim Walker, and the assistant curator for the museum, Gina Palculich, examined the evidence and found three of the five major mineral specimens that were stolen from the museum. Unfortunately, one of them, a nine-inch tourmaline from the Cryo-Genie mine, had been destroyed.

Fong-Walker reported that a tourmaline specimen from the Cryo-Genie Mine (9 inches tall) and a tourmaline and quartz specimen from the Cryo-Genie Mine (3.15 inches tall) appeared to be intact with minimal damage.

They did not find the other two stolen tourmaline specimens – tourmaline on quartz from the Tourmaline Queen Mine, and tourmaline, quartz and lepidolite from the Pala Chief Mine – among the piles of evidence.

Fong-Walker said that of the "rough and cut" specimens on quartz bases that were also stolen, 12 of the 13 quartz bases were recovered. She added that the group went through the specimens and gemstones and identified some that could possibly be part of the museum collection but it was clear that not all of them were there.

Fong-Walker said the group was "overjoyed" to find the intact pieces but "absolutely crushed" to find the one piece that had been destroyed.

"For whatever stupid reason, he sawed it up," said Fong-Walker. "There were definite saw marks. You're taking something that was basically irreplaceable and turning it into pieces. There was nothing to be gained from doing it. There was no gem value in it whatsoever, and why the hell he did it, I have no idea. This is the one that Dr. Peter Bancroft had given to the club in memory of his wife Virginia, so this really hurts."

Fong-Walker said the Gem & Mineral Society remains hopeful the other two pieces will be recovered and that the organization will continue to get the word out about them.

Anyone with information regarding the Fallbrook robberies is asked to call Detective Couch at (760) 451-3109.

Source: http://villagenews.com from October 28, 2017

Please Send in Your 2018 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!

Please take the time to send in your 2018 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 Native Elements G Crystallography G Ruby
G Famous Diamonds G Birthday Mineral Cards G Malachite G Quasicrystals G Quartz G Lapis
G Amethyst G Fluorite G Garnet G Amber G Sapphire G Pyrite G New York State G Pseudomorphs
G The NYMC G Opal G International Year of Light 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 is $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

Volcanic Rock Minerals Helps Explain Earth's Evolution

By Kenny Walter

The picture of the early history of the Earth may soon be getting clearer.

A team from Louisiana State University (LSU) has found evidence showing that komatiites—three-billion-year old volcanic rocks found within the Earth's mantle—had a different composition than modern ones, offering new information about the first billion years of Earth's development and the early origins of life.

Researchers have been fairly uncertain about the evolution of Earth's first 1.5 billion years, largely due to a lack of any significant rock record prior to four billion years ago and a very limited record until about three billion years ago.

Rocks this age are generally extensively altered, making comparisons to modern rock difficult.

The new insight is a result of three decades of LSU scientists studying and mapping the Barberton Mountains of South Africa. The researchers conducted chemical analyses of hundreds of komatiite rocks sampled from about 10 lava flows.

"Early workers had mapped large areas incorrectly by assuming they were correlatives to the much more famous Komati Formation in the southern part of the mountains," LSU geology professor Gary Byerly said in a statement. "We recognized this error and began a detailed study of the rocks to prove our mapping-based interpretations."

The researchers discovered original minerals called fresh olivine within the rocks. While rarely found in rocks, fresh olivine is a major constituent of Earth's upper mantle and controls the nature of volcanism and tectonism of the planet.

"Discovering fresh unaltered olivine in these ancient lavas was a remarkable find," geology Ph.D graduate Keena Kareem said in a statement. "The field work was wonderfully productive and we were eager to return to the lab to use the chemistry of these preserved olivine crystals to reveal clues of the Archean Mantle."

The researchers said that a chunk of early-Earth magma ocean could be preserved in the approximately 3.2 billion year-old minerals.

"The modern Earth shows little or no evidence of this early magma ocean because convection of the mantle has largely homogenized the layering produced in the magma ocean," Byerly said. "Oxygen isotopes in these fresh olivines support the existence of ancient chunks of the frozen magma ocean.

"Rocks like this are very rare and scientifically valuable. An obvious next step was to do oxygen isotopes," he added.

The study was published in *Nature Geoscience*.

Source: R & D Magazine from November 6, 2017

Massive Pounamu Collection Gifted to New Zealanders

By Matthew Tso

A collection of one of country's most cherished natural taonga has been gifted to the people of New Zealand.

Greenstone expert Russell Beck has donated his personal reference collection of pounamu and jade, which will be held as part of the GNS National Rock and Mineral Collection.

Part of the Beck International Jade Research Collection on display.

The 1500 sample pieces from New Zealand and around the world have become the Beck International Jade Research Collection, which was formally handed over on Thursday at the GNS research institute in Lower Hutt.

Beck has studied greenstone for more than 50 years and has become New Zealand's foremost pounamu expert. He has worked closely with GNS and Ngāi Tahu to survey deposits in the South Island and has traveled widely to inspect others across the globe.

He is also a carver and has authored four books on jade and pounamu. He was made an Officer of the New Zealand Order of Merit for services to art and local history in 2000.

GNS principal scientist Dr Simon Cox said Beck's work had been very important to both the geological understanding of the stone and its relationship with human history.

"GNS is absolutely thrilled to be looking after this collection on behalf of New Zealand.

"This collection is possibly the only collection worldwide, to have all the main localities in the world [where greenstone is found] represented. It's certainly the only one I'm aware of."

The collection could be used for a number of purposes such as promoting research on the properties and formation of the stone, archaeological investigations and the study of erosion.

Pounamu also faced pressure as a resource and the collection will be used to investigate sustainability and trademarking issues.

GNS worked in close consultation with Ngāi Tahu to establish the collection. Ownership of all New Zealand's naturally occurring pounamu deposits in the South Island were returned to the iwi under the Ngāi Tahu (Pounamu Vesting) Act 1997.

Ngāi Tahu kaumātua Sir Tipene O'Regan said the iwi's relationship with Beck was highly valued and went back a number of years.

Pounamu was an extremely important material to Māori and particularly Ngāi Tahu, and Beck's survey work had been invaluable to their understanding of it as a resource.

"[Beck] has made a huge contribution to our own understanding of pounamu which is essential to out heritage and cultural story."

Source: www.stuff.co.nz from November 6, 2017

2018 Club Calendar

Date	Event	Location	Remarks & Information
January 10, 2018	Special Meeting at 6:00 pm	Mezzanine C Watson Hotel, Manhattan	First (Annual?) NYMC Movie Night! – Movie, Game, Song, Door Prizes, Refreshments, etc.
February 14	Meeting at 6:30 pm	Watson Hotel, Manhattan	Annual Members' Show & Tell; 4th Annual Chinese Auction
March 14	Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture: Eric Rampello – "Gemstone Folklore & Mythology"
April 11	Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture: Renée Newman – "The Luster of Pearls!"
May 9	Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture: Dennis Askins– "NYC Minerals & Their Locations"
June 13	Annual Benefit Auction	Mezzanine C Watson Hotel, Manhattan	100+ Diverse Lots; Online Catalog Available!
July 11	Summer Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture: Karenne Snow– "Collecting Type Locality Minerals"
August ?	Open House (Social Event)	Location?	Details to follow when finalized
September 12	Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture: Mitch Portnoy– "The Stones of NYC Park Monuments"
October 17	Annual Gala Banquet	Mezzanine B & C Watson Hotel, Manhattan	Theme: *Carnelian*; Lecture; Silent Auction; Awards; Fun & Games, Gifts & Surprises!
November 14	Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture TBD
December 12	Meeting at 6:30 pm	Watson Hotel, Manhattan	Special Lecture TBD

2018 Show or Event Calendar

Date	Event	Location	Remarks & Information
Late Jan-Feb 2018	Tucson Minerals Shows	Dozens of locations, Tucson, AZ	A huge multi-week, multi-venue event
February 24	25th Annual Gem, Mineral, and Fossil Show and Sale	New York State Museum, Albany New York	Sponsored by the Capital District Mineral Club and the New York Academy of Mineralogy
March 3-4	**Spring NYC Gem, Mineral, Jewelry & Fossil Show**	**Grand Ballroom, Watson Hotel, New York City**	**25+ diverse dealers; lectures; wholesale section (with credentials); NYMC Booth**
April 6-8	Combined EFMLS/AFMS Convention & Show	Raleigh, North Carolina	Bulletin Article Contest results; More detailed information to follow
April 14-15	29th Annual North Jersey Gem, Mineral & Fossil Show	Midland Park High School, Midland, New Jersey	Sponsored by the North Jersey Mineralogical Society
NEW! June 23-24	Summer NYC Gem, Mineral, Jewelry & Fossil Show	Grand Ballroom, Watson Hotel, New York City	NYMC Booth; Details TBD

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

2018 Executive Committee

[redacted]

Dues: $25 Individual, $35 Family per calendar year. **Meetings**: 2nd Wednesday of every month (except August) at the Watson Hotel , West 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, January 10, 2018 from 6:00 pm to 9:00 pm

Mezzanine, Watson Hotel, West 57th Street & Tenth Avenue, New York City

Special Event: 1st Annual Movie Night – Feature: *"Pederneira: A Rainbow of Colors"*

New York Mineralogical Club, Inc.
Mitchell Portnoy, Bulletin Editor
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