

MAPLEWOOD ROCK AND GEM CLUB

2021
MAY

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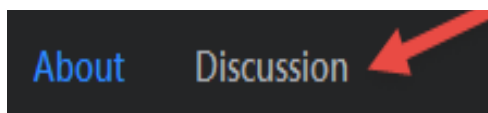


General meeting: May 17

We hope you will join us at our March meeting which will be Monday, the 17th at 7 pm. Members will receive a Zoom link in an email. If you have never used Zoom, you might find [this video introduction](#) helpful. Do you have questions about the meeting? Contact our Board President, Sandra: ask.sandra@yahoo.com

Online auction

Members can participate in our online auction by going to our [Facebook page](#) and clicking on the event, "MRGC silent auction". Just below the title you will see a small menu like the one here. Click Discussion. To bid on an item comment with a dollar amount.



This gorgeous 5 - 6" slice of petrified wood is being sold in our online auction. The auction ends at 10 pm on the evening of our general meeting.

Banner image: "Emerald on quartz" by Parent Géry

Juniors' Page - Viking crystal balls



Viking statue
by [Frank Douwes](#)
[CC BY 2.0](#)

Who were the Vikings?

Today, Vikings are best known as cruel warriors who ransacked towns, killed the townspeople, and stole whatever they wanted. Sadly, many Vikings did do those things, but many others were business people wanting to buy and sell things. Or, they were farmers and fishermen looking for new places to settle with their families.

The Vikings were from Norway and other Scandinavian areas. They sailed (and rowed) their ships around the Mediterranean Sea, the Atlantic, and even explored as far as Canada.

Fröjel on the Island of Gotland, Sweden

Archaeologists think that in the town Fröjel Vikings might have been manufacturing stone lenses, called Viking crystal balls.

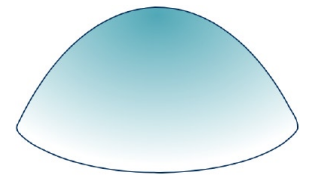
The evidence is that they found crystals that had not been cut yet, other crystals that had been partially cut and polished, and finished crystal balls in Viking graves. The people had been buried between the years 1000 and 1300.



Viking crystal ball
by [Mararie](#)
License: [CC BY-SA 2.0](#)

Viking crystal balls

The crystal balls are carved and polished quartz stones and they work as magnifying glasses. They are not spheres (round like a ball), but more like flattened balls (like the image at the right). This is a better shape for making a reading lens. You can learn more on [Wikipedia](#).



Sunglasses and more

Pliny the Elder, a Roman historian who was born in the year 23, wrote that Roman Emperor Nero watched the gladiators fight by looking through an emerald. Probably, this was to reduce the brightness of the sun rather than to clarify the image of the far off combat.

In the 1100's some Chinese people looked through flat sheets of smoky quartz possibly as sunglasses and possibly to shield themselves from evil forces.



Religious scholar wearing
glasses with glass lenses in 1352



May Birthdays

Happy birthday to everyone born in May! The days are warmer and new green growth is everywhere. Your birthstone, emerald, is green like this season.

Emeralds in history

Cleopatra was passionate about emeralds: she wore them, adorned her palace with them, and gave them as gifts to esteemed visitors.



Pliny the Elder wrote (1st century) about lapidaries who "have no better method of restoring their eyes than by looking at

the emerald, its soft, green color comforting and removing their weariness and lassitude." Pliny said that "nothing greens greener" than an emerald.

To an ancient Egyptian, emerald symbolized spring, rebirth, and fertility. They believed an emerald could ease the pain of childbirth. Mummies were sometimes buried with emerald necklaces to bring eternal youth in the afterlife.

Cortez had an emerald inscribed with "Among those born of woman there has not arisen a greater" in reference to John the Baptist. A 16th century historian, Brantôme, thought engraving a lovely piece of nature was sacrilegious and was why Cortez lost a treasured pearl.

Emerald in names

Emerald is used in names to associate a rich green color with the place or namesake. Ireland is the Emerald Isle. Seattle is the Emerald City. Thailand's most famous religious icon is the Emerald Buddha, even though the statue is carved from jadeite.

Emerald basics

Category: beryl variety

Formula: $\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$

Crystal family: hexagonal

Crystal habit: massive to crystalline

Mohs: 7.5 - 8

Cleavage: imperfect

Fracture: conchoidal

Color: blueish green to green

Diaphaneity: transparent to opaque

Luster: vitreous

Streak: white

Specific gravity: 2.76

Optical properties: isotropic

Refractive index: 1.564 - 1.602

UV fluorescence: none

Field trips

Many of us are eager to get out there and resume rockhounding. The Washington State Mineral Council is our main source of information on field trips, and they have not yet published a list of 2021 excursions.

We will publish the trips, once we learn the schedule, so watch future issues of this newsletter.

Or, you can periodically check the Washington State Mineral Council's website. On the [home page](#) click *Field Trips for 2021* in the left navigation menu.



Rock shows

Please contact the club before going to the show to be sure it has not been cancelled due to our changing pandemic restrictions.

May 22nd and 23rd

The Hatrockhounds Gem & Mineral Society is hosting a show on May 22nd and 23rd from 10 am to 5 pm. The show is at

Eastern Oregon Trade & Event Center
1705 East Airport Road
Hermiston, OR



Brad and Hanna Newport
We Got Rocks, in Sweet Home, Oregon

Periodic Facebook live sales events

We Got Rocks in Sweet Home, Oregon have online sales events on their Facebook page.

They stream live video where they show the rocks, and people ask to buy items in the chat feed. They don't publish a calendar of upcoming sales, so you need to check their Facebook page periodically. They have gorgeous spheres, some over a foot in diameter, of petrified wood, labradorite, and a multitude of other stones. They also offer slabs and jewelry. <https://www.facebook.com/wegotrocks/>

Trapiche emeralds



[Trapiche emerald](#)
Muzo Mine, Columbia
by Liciana Barbosa
license: CC BY-SA 3.0

Trapiche emeralds are rare and most often found in the Muzo, Coscuez, and Peñas Blancas mines of Colombia. In the Colombian regions where they mine emeralds, people also grind sugar cane, using a spoked wheel called a *trapiche*.

The star comes from impurities entering the central hexagonal crystal. As the gem grows in width, the junction lines of the six sides are filled with impurities creating a spoke pattern. In the Colombian gems the impurities are nearly always a dark carbon mineral.

Other gems that have trapiche varieties are ruby, sapphire, garnet, chiastolite, and tourmaline.



Trapiche emerald
by [Bruce Fulton](#)
[CC BY-NC-ND 2.0](#)

Do you have a heart of stone?



As the author of this article, I confess, I do. In fact I have a couple that Brad and Hanna Newport of We Got Rocks generously gave me when I visited their shop in Sweet Home, Oregon. I am donating them to the club, so watch for them in an upcoming silent auction.



If you sell stone hearts, cabochons, spheres, slabs, crystals, gems, minerals, or related specimens, let me know about what you sell, so I can feature your shop here in the newsletter. With a little publicity and good fortune, perhaps our whole club membership will have hearts of stone - the good kind!

Nancy Samuels: mrgc@nancysamuels.com

Crown of the Andes

In Popayán, Columbia is a Roman Catholic cathedral which has a larger than life statue of the Virgin Mary. In the 16th Century the orb and cross were made as a votive crown for the statue. The crown is sometimes called *Crown of Our Lady of the Assumption of Popayán*.

In 1660 the crown was greatly enlarged and made into a diadem. The ornate design features gold scrolls of acanthus leaves with clusters of emeralds shaped like blossoms. Imperial arches and dangling pear shaped emeralds were added in 1770.

This complete crown is adorned with 450 emeralds, the largest being the 24 carat Atahualpa Emerald, which



Crown of the Andes



Incan Emperor, Atahualpa

might have belonged to the last Incan Emperor Atahualpa before being seized by the Spanish Conquistadors in 1532.

In the early 20th Century it was sold to an American, and it now belongs to the [Metropolitan Museum of Art](#) in New York City.

Egyptian vs. Colombian emerald

High quality emerald is uniformly medium to dark green and is transparent. Egyptian stones are nearly always pale and cloudy due to inclusions. Colombian emerald is often better quality. Romans might have appreciated Egyptian emerald for its hexagonal crystals which were drilled through the length to make beads. They did not cut gems into faceted stones at that time.

Smaragdus Mons

Egyptian beginnings

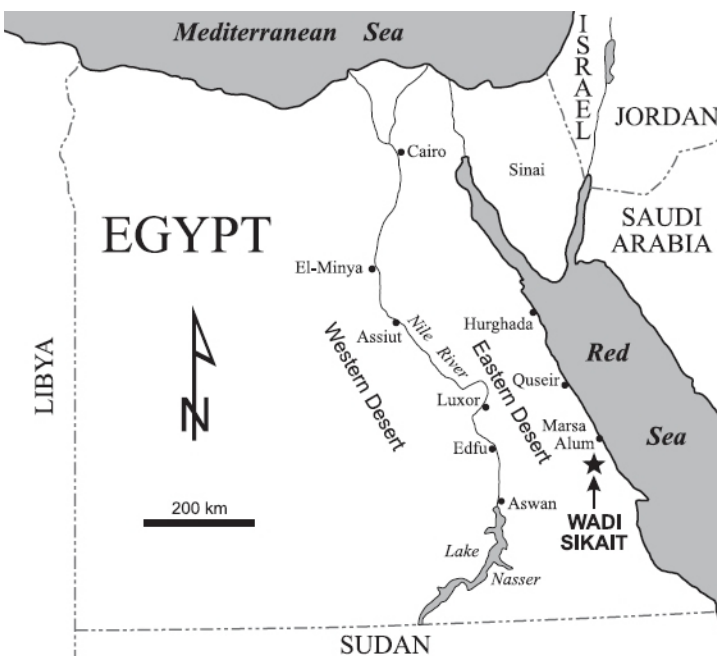
Around BCE 1500 ancient Egyptians began mining emeralds in various places in the Sikait region which is in the narrow Eastern desert between the Nile Valley and the Red Sea.

Roman rule

Later, when the Egyptian Empire gave way to the Romans, the Latin conquerors renamed the area *Smaragdus Mons* (Emerald Mountain) and turned the area into a cluster of industrial scale mines from which they unearthed emeralds, serpentinite, tourmaline, and other stones.



Ancient Sikait emerald mines
by [Roland Unger](#), License CC BY-SA 4.0



Egypt showing the location of Wadi Sikait
by [Dr. James A. Harrell](#), Professor Emeritus of Archaeological Geology, University of Toledo

Mines dotted Smaragdus Mons in a 70 square mile area with at least nine towns built to support the miners. Today the most important archeological site among these towns is Sikait, built on the wadi Sikait. On the hillsides nearby are numerous entrances to ancient mine shafts.

Islamic Control

Eventually, Rome fell, and the Byzantine Empire reigned until the Islamic conquerors took control of Egypt in CE 641. Under Muslim rule mining continued into the 14th Century on a smaller scale and with periodic interruptions. After Spanish Conquistadors discovered higher quality emeralds in Colombia, the Egyptian mines closed.

[Read more about the mines.](#)

Birth of birthstones

The idea of ascribing gemstones to groups of people might have begun with the book of Exodus. The breastplate of Aaron was inlaid with 12 gemstones, each one inscribed with the name of one of the tribes of Israel. These gems were emerald, sapphire, diamond, topaz, carbuncle, sardius, agate, ligure, amethyst, onyx, jasper, and beryl.

In the 1st and 5th centuries Flavius Josephus and St. Jerome assigned one of the breastplate gems to each zodiac sign. They anticipated a day when everyone would own all 12 and people would wear the appropriate one each month.

The priest in *Le Mariage de la Vierge* is wearing a breastplate with 12 stones representing the tribes of Israel.



Le Mariage de la Vierge
 painted by Alexandre-François Caminade in 1824

Amphibole vs. Pyroxene

Some of the differences between nephrite and jadeite are due to their crystal habits.

Amphibole minerals (e.g. nephrite)

inosilicate with double chains of SiO_4 tetrahedra

double chain silicate: 2 single chains are joined by sharing oxygen

cleavage angles are close to 120° and 60° forming rhombic cross sections

two crystal systems: monoclinic and orthorhombic

contain essential hydroxyl (OH) or halogen (F, Cl)

less dense

stronger pleochroism

Pyroxene minerals (e.g. Jadeite)

inosilicate with single chains of SiO_3 tetrahedra

single chain silicate: 2 tetrahedrons share 2 oxygen with 2 other tetrahedrons in a chain

cleavage angles are nearly 90°

monoclinic crystal system

Lollia Paulina's emeralds and pearls

Caligula, Rome's cruelest emperor

Caligula (*aka* Gaius or Gaius Julius Caesar Augustus Germanicus) took Lollia Paulina as his third wife in CE 38. The word *took* is too kind to be an accurate description of their marriage.

At age 25 Caligula became the 3rd Roman emperor in CE 37. During his first half-year he was described as noble and moderate, but after that grace period, his reputation soured, and he was described as a cruel, sadistic, extravagant, and insane tyrant.

About a year after he ascended to power, Caligula heard of Lollia Paulina's beauty and the beauty of her grandmother. He commanded her to divorce her husband and become his third wife. The unfortunate 25-year-old Paulina had a young son by her first husband, but had to leave them and marry Caligula.



Little Soldier's Boot

When Gaius was a boy his father was a popular General leading a campaign in Germania (now Germany and neighboring countries).

His father's soldiers gave the boy the nickname, *Caligula*, which was a soldier's heavy-duty, sandal style, boot with a hobnailed sole.



He lost interest in Paulina in only six months, ostensibly because she was infertile. Caligula divorced Paulina forbidding her to associate with another man. After four years running the Roman Empire Caligula was executed by a conspiracy orchestrated by Senators, courtiers, and officers of the Praetorian Guard, ending the short reign of the cruelest Roman Emperor.

Paulina's extravagance

In *Natural History* Pliny the Elder tells us how revered emeralds were to ancient Romans. The only gems they valued higher were diamonds and pearls.

Pliny also criticizes Paulina, whom he saw at a dinner party while she was Caligula's wife. "I have seen Lollia Paulina, who became the consort of Gaius covered with emeralds and pearls interlaced and shining over her head, hair, ears, neck and fingers, the sum total amounting to a value of 40,000,000 sesterces." At the time a soldier's annual wage was about 1,200 sesterces.

Looking back from 2021 we shall never know whether her extravagance was a reflection of herself or of Caligula's desire to show off his family's wealth with his new wife as the crowning gem.

Jadeite and Nephrite Jade

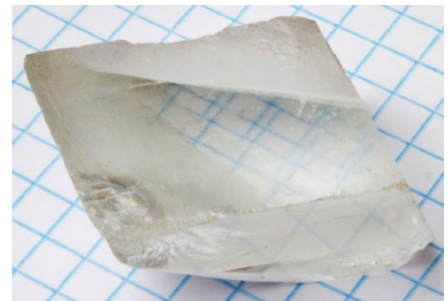
The crystals in jade are fine grained and complexly interwoven like felted wool. Although the Mohs rating at 6.5 - 7.0 tells us jade is not particularly hard, it is extremely strong. While this mineral is most often green, it can be a greasy white (mutton fat jade), gray, blue-green, lavender, yellow, orange, brown, reddish brown, or black. Jade has a mineral composition that is either one or both of these:

- jadeite (rare) - sodium-rich aluminum pyroxene ($\text{NaAlSi}_2\text{O}_6$): some varieties are
 - Imperial or gem jade: emerald green, translucent
 - Yunan jade: dark green, semitranslucent
 - Apple jade: yellowish green
 - Moss-in-Snow jade: white with bright green spots and streaks
- nephrite - calcium-rich, magnesium, iron, aluminum amphibole ($\text{Ca}_2(\text{Mg,Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$)
 - spinach jade: dark green
 - iron is nearly always the chromophore (coloring agent)
 - can be found in Washington

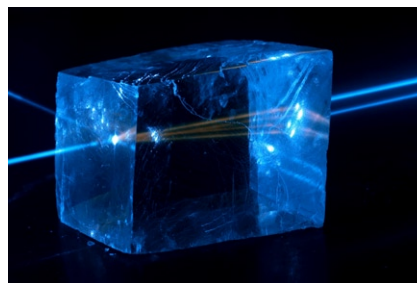
Birefractive Gems

Some gems such as rubies, sapphires, tourmalines, and topaz are birefractive. That is, they yield two different refractive indices depending on the polarization and direction of the light source. As light enters the stone the ray is bent in two different angles. In the calcite crystal on graph paper above you can see a double image of the grid through the stone.

The lower image shows a blue laser beam entering a birefractive stone and exiting in two beams.



Birefractive calcite crystal



A 445 nm blue laser beam passing through a fluorescing and birefractive calcite crystal by [Jan Pavelka](#)

License: CC BY-SA 4.0

Word of the Month

Anisotropic

A gem is anisotropic or birefractive if the refractive index yields different results depending on the angle of the light shining into the stone.

Anisotropic crystals belong to the triclinic (aka anorthic) crystal system which means they have little or no symmetry.

Salt lamp wanted

A newsletter reader asked whether any of you readers sell or know of a good source for salt lamps. If you do, please contact Nancy at mrhc@nancysamuels.com and she will put you in touch with the reader.

If you are a member of Maplewood Rock & Gem Club, and you sell rocks, gems, or minerals, please send Nancy a brief description of what you sell along with a photo or two. Let's connect buyers with sellers during this challenging time for business.



Salt lamp
by [Urbanwild](#)
License: [CC BY-NC-ND 2.0](#)

Video recommendations

The internet offers myriad videos about rocks, minerals, gems, and related topics. Here are some links to videos you might enjoy.

Kids

[The Vikings and Leif Erikson for Kids](#) by Bedtime History (9 minutes)

[Rock Cycle | Sedimentary, Metamorphic, Igneous | Learning Made Fun](#) (7 minutes)

Teens: [How do Gemstones form?](#) by Gem and Rock Auctions (8 minutes)

Crystal Systems

[How do crystal systems work?](#) by Graham Baird (5 minutes)

[Hexagonal Crystal System Explained: Gemologist vs Geologist](#) by JTV (23 minutes)

Simple introduction: [The 7 Crystal Systems](#) by Rock Talk (3 minutes)

[Unit 1.8 - The Seven Crystal Systems](#) by Frank Hoffmann (10 minutes)

Emerald mines

[The Emerald of Colombia documentary of Patrick Voillot](#) (53 minutes)

[Afghanistan's Emerald Mines](#) by Real Stories (28 minutes)

Jade

[Jade discovery of the Millennium! Giant Nephrite Boulder found in Canada](#) (7 minutes)

[Identifying Good BC Jade \(Nephrite\)](#) by Rubble Rock and Gem (15 minutes)

Win-win for everyone

Until we can resume having rock shows, our building upkeep and other costs need to be covered by other means. You can help the club while getting a win-win outcome.



Selenite desert rose

Bid in the silent auction

Bidding on items in the silent auction is a way to give back to the club. You get a gorgeous specimen of rock or mineral and the club has a little more money for paying bills. All the items available in the silent auction were donated, so even before you bid, people have already generously supported our club.

When bidding, remember that this is a fundraiser where you might get a huge bargain; you might pay a fair price; or you might even bid generously. Don't be afraid to bid up on something you like. The previous bidder, might respond in kind to your bid.

Buy grit for your rock tumbler

Contact Sandra to buy grit: ask.sandra@yahoo.com

Donate to the club

Our club is a 501(c)(3) organization, so if you itemize deductions, you might receive a tax deduction. Ask your tax expert.

Checks can be made out to *MRGC* if you don't want your hand to cramp from writing the entire club name, *Maplewood Rock and Gem Club*. The club address is

8802 196th Street SW
Edmonds, WA 98026



Facebook

Our [facebook page](#) has up to date information about what is happening at our club. When we have online auctions, they happen on our page.

We also have a Facebook group — [MRGC Sales and Trades](#) — which is open to members of our club.



Board meeting

Until it is safe for the Board to meet again, their meetings are on Zoom. If you have questions for the board or if you'd like to attend a meeting, please email our Board President, Sandra: ask.sandra@yahoo.com

Washington State Mineral Council

Our club, along with many other rock and gem clubs in the state, is a member of the [Washington State Mineral Council](#).

This organization helps us by

- advocating for access to public lands
- advocating for beneficial land use policies
- compiling and sharing maps and other information
- publicizing shows and field trips so members learn about and can participate in events at other clubs

Read their latest [Newsletter](#).

Connect with us

Website: <http://www.maplewoodrockclub.com/>

Facebook page: [Maplewood Rock & Gem Club](#)

Facebook group for members: [MRGC Sales and Trades](#)

Address:

8802 196th St SW, Edmonds, Washington 98026



Sister club in Australia

Our sister club in Australia is the Atherton-Tableland Mineral & Lapidary Club in Tolga, Queensland. Connect to them on Facebook:

www.facebook.com/groups/197340266987276

One hundred million years ago the eastern edge of the Australian continent extended much farther to the east. Tectonic forces broke off and submerged into the ocean the eastern section while a rising mantle caused the remaining land to lift.

Beginning 4 million years ago large basalt flows filled river valleys and formed a relatively flat landscape. Following that period the volcanoes became more gaseous spewing lava in violent eruptions. This landscape is now called the Atherton Tablelands. You can learn more on Wikipedia.



This issue

Maplewood Rock and Gem
Club News

Volume 5

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News to share? A suggestion? A correction?

Please send news ideas and images you'd like to share to the newsletter editor, Nancy Samuels at mrgc@nancysamuels.com.