

The Sierra Pelonaogram



October 2017

... Member of the California Federation of Mineralogical Society Inc. ...

The Sierra Pelona Rock Club is a non-profit organization founded in 1959 with the objective to sponsor activities and promote interest and education in: mineralogy, lapidary, geology, paleontology and related subjects.



Hi Everybody!

We had a great trip September the 23rd with members from the AV Club collecting Rose Quartz. The weather was perfect and we collected to our hearts content, we manhandled those rocks up that hill and the altitude (about 7400 ft.) and load of rocks manhandled us right back. It was a great trip.

I missed the trip this last weekend to Clear Creek to collect Plasma Agate, I hope you all had fun. I left the country to take my wife on a much needed vacation.

I also want to remind all of you that we will be having elections for the board on December 9th at our Rock Club Party. Please consider serving in a position, as this will help the club stay strong, the more people involved makes the work easier.

Ron R



"It's not a mess. It's my rock collection."

Birthdays

October

Omid Aeen
 Josh Derenski
 William Edwards
 Olive Edwards

November

Karen Glavin
 Frank Humelbaugh
 Diane Southwell



Officers:

President – Ron Rackliffe
 Vice-President – Trina Aeen
 Secretary: Dianne Wohlleben
 Treasurer – Kay Denson
 Federation Director (CFMS/AFMS) -- Evelyn Velie

Chairpersons:

Claim--Mike Serino
 Donation Rock Table--Ron and Akiko Strathmann
 Equipment--Bill Webber
 Field Trips – Julie Tinoco
 Historian -Open
 Hospitality – Tina White
 Membership – Heidi Webber
 On-Line Presence (website)-- Trina Aeen
 Pelonagram Publisher, Editor – Heidi Webber
 Programs –Evelyn Velie
 Publicity –Bruce Velie
 Sunshine--Brigitte Mazourek

The Sierra Pelona Rock Club, is a member of the California and American Federation of Mineralogical Societies, Inc. (CFMS/AFMS). The general club meetings (Open to the public) are at 7:30 PM, on the 3rd Tuesday of each month at:

**The Clubhouse of the Greenbrier
 Mobile Estates EAST
 21301 Soledad Canyon Rd
 Canyon Country, CA 91351**

Contact the Club or the Sierra Pelonagram Editor at:

**Sierra Pelona Rock Club
 P.O. Box 221256
 Newhall, Ca. 91322**

Or e-mail: hwebber@pacbell.net

Visit the SPRC website www.sierrapelona.com

The Beautiful Emerald

Emerald is a gemstone and a variety of the mineral beryl colored green by trace amounts of chromium and sometimes vanadium. Beryl has a hardness of 7.5–8 on the Mohs scale. Most emeralds are highly included, so their toughness (resistance to breakage) is classified as generally poor. Emerald is a cyclosilicate.



Brazilian emerald (grass-green variety of the mineral beryl) in a quartz-pegmatite matrix with typical hexagonal, prismatic crystals.

Properties Determining Value

Emeralds, like all colored gemstones, are graded using four basic parameters—the four Cs of connoisseurship: color, clarity, cut and carat weight. Before the 20th century, jewelers used the term water, as in, "a gem of the finest water", to express the combination of two qualities: color and clarity. Normally, in the grading of colored gemstones, color is by far the most important criterion. However, in the grading of emeralds, clarity is considered a close second.

A fine emerald must possess not only a pure verdant green hue as described below, but also a high degree of transparency to be considered a top gem.

In the 1960s, the American jewelry industry changed the definition of emerald to include the green vanadium-bearing beryl. As a result, vanadium emeralds purchased as emeralds in the United States are not recognized as such in the UK and Europe. In America, the distinction between traditional emeralds and the new vanadium kind is often reflected in the use of terms such as "Colombian emerald".

Color

In gemology, color is divided into three components: hue, saturation, and tone. Emeralds occur in hues ranging from yellow-green to blue-green, with the primary hue necessarily being green. Yellow and blue are the normal secondary hues found in emeralds.

Only gems that are medium to dark in tone are considered emeralds; light-toned gems are known instead by the species name green beryl.

The finest emeralds are approximately 75% tone on a scale where 0% tone is colorless and 100% is opaque black. In addition, a fine emerald will be saturated and have a hue that is bright (vivid). Gray is the normal saturation modifier or mask found in emeralds; a grayish-green hue is a dull-green hue.

Clarity

Emeralds tend to have numerous inclusions and surface breaking fissures. Unlike diamonds, where the loupe standard, i.e. 10× magnification, is used to grade clarity, emeralds are graded by eye. Thus, if an emerald has no visible inclusions to the eye (assuming normal visual acuity) it is considered flawless.

Stones that lack surface breaking fissures are extremely rare and therefore almost all emeralds are treated ("oiled", see below) to enhance the apparent clarity.

The inclusions and fissures within an emerald are sometime described as jardin (French for garden), because of their mossy appearance. Imperfections are unique for each emerald and can be used to identify a particular stone.

Eye-clean stones of a vivid primary green hue (as described above), with no more than 15% of any secondary hue or combination (either blue or yellow) of a medium-dark tone, command the highest prices.

The relative non-uniformity motivates the cutting of emeralds in cabochon form, rather than faceted shapes. Faceted emeralds are most commonly given an oval cut, or the signature emerald cut, a rectangular cut with facets around the top edge.

Treatments

Most emeralds are oiled as part of the post-lapidary process, in order to fill in surface-reaching cracks so that clarity and stability are improved.

Cedar oil, having a similar refractive index, is often used in this widely adopted practice. Other liquids, including synthetic oils and polymers with refractive indexes close to that of emeralds, such as Opticon, are also used.

These treatments are typically applied in a vacuum chamber under mild heat, to open the pores of the stone and allow the fracture-filling agent to be absorbed more effectively.

The U.S. Federal Trade Commission requires the disclosure of this treatment when an oil treated emerald is sold. The use of oil is traditional and largely accepted by the gem trade, although oil treated emeralds are worth much less than un-treated emeralds of similar quality. Other treatments, for example the use of green-tinted oil, are not acceptable in the trade.

Gems are graded on a four-step scale; none, minor, moderate and highly enhanced. These categories reflect levels of enhancement, not clarity. A gem graded none on the enhancement scale may still exhibit visible inclusions.

Laboratories apply these criteria differently. Some gemologists consider the mere presence of oil or polymers to constitute enhancement. Others may ignore traces of oil if the presence of the material does not improve the look of the gemstone.

Emerald Mines

Emeralds in antiquity have been mined in Egypt since 1500 BCE, and India, and Austria since at least the 14th century CE.

Colombia is by far the world's largest producer of emeralds, constituting 50–95% of the world production, with the number depending

on the year, source and grade. Emerald production in Colombia has increased drastically in the last decade, increasing by 78% from 2000 to 2010.

The three main emerald mining areas in Colombia are Muzo, Coscuez, and Chivor. Rare "trapiche" emeralds are found in Colombia, distinguished by ray-like spokes of dark impurities.

Zambia is the world's second biggest producer, with its Kafubu River area deposits (Kagem Mines) about 45 km (28 mi) southwest of Kitwe responsible for 20% of the world's production of gem quality stones in 2004. In the first half of 2011 the Kagem mines produced 3.74 tons of emeralds.

Emeralds are found all over the world in countries such as Afghanistan, Australia, Austria, Brazil, Bulgaria, Cambodia, Canada, China, Egypt, Ethiopia, France, Germany, India, Italy, Kazakhstan, Madagascar, Mozambique, Namibia, Nigeria, Norway, Pakistan, Russia, Somalia, South Africa, Spain, Switzerland, Tanzania, the United States, Zambia, and Zimbabwe.

In the US, emeralds have been found in Connecticut, Montana, Nevada, North Carolina, and South Carolina.

In Canada, in 1997 emeralds were discovered in the Yukon.



A Colombian trapiche emerald

Origin Determinations

Since the onset of concerns regarding diamond origins, research has been conducted to determine if the mining location could be determined for an emerald already in circulation.

Traditional research used qualitative guidelines such as an emerald's color, style and quality of cutting, type of fracture filling, and/or the anthropological origins of the artifacts bearing the mineral to determine the emerald's mine location.

More recent studies using energy dispersive X-ray spectroscopy methods have uncovered trace chemical element differences between emeralds; even emeralds mined within close proximity to one another.

American gemologist David Cronin and his colleagues have extensively examined the chemical signatures of emeralds resulting from fluid dynamics and subtle precipitation mechanisms, and their research demonstrated the chemical homogeneity of emeralds from the same mining location and the statistical differences that exist between emeralds from different mining locations, including those between the three locations: Muzo, Coscuez, and Chivor, in Colombia, South America.

Synthetic Emerald

Both hydrothermal and flux-growth synthetics have been produced, and a method has been developed for producing an emerald overgrowth on colorless beryl.

The first commercially successful emerald synthesis process was that of Carroll Chatham, likely involving a lithium vanadate flux process, as Chatham's emeralds do not have any water and contain traces of vanadate, molybdenum and vanadium.

The other large producer of flux emeralds was Pierre Gilson Sr., whose products have been on the market since 1964. Gilson's emeralds are usually grown on natural colorless beryl seeds, which are coated on both sides. Growth occurs at the rate of 1 mm per month, a typical seven-month growth run producing emerald crystals of 7 mm of thickness.

Hydrothermal synthetic emeralds have been attributed to IG Farben, Nacken, Tairus, and others, but the first satisfactory commercial product was that of Johann Lechleitner of Innsbruck, Austria, which appeared on the market in the 1960s.

These stones were initially sold under the names "Emerita" and "Symeralds", and they were grown as a thin layer of emerald on top of natural colorless beryl stones.

Later, from 1965 to 1970, the Linde Division of Union Carbide produced completely synthetic emeralds by hydrothermal synthesis. According to their patents (attributable to E.M. Flanigen), acidic conditions are essential to prevent the chromium (which is used as the colorant) from precipitating.

Also, it is important that the silicon-containing nutrient be kept away from the other ingredients to prevent nucleation and confine growth to the seed crystals. Growth occurs by a diffusion-reaction process, assisted by convection.

The largest producer of hydrothermal emeralds today is Tairus in Russia, which has succeeded in synthesizing emeralds with chemical composition similar to emeralds in alkaline deposits in Colombia, and whose products are thus known as "Colombian Created Emeralds" or "Tairus Created Emeralds".

Luminescence in ultraviolet light is considered a supplementary test when making a natural vs. synthetic determination, as many, but not all, natural emeralds are inert to ultraviolet light. Many synthetics are also UV inert.

Synthetic emeralds are often referred to as "created", as their chemical and gemological composition is the same as their natural counterparts.

The U.S. Federal Trade Commission (FTC) has very strict regulations as to what can and what cannot be called "synthetic" stone. The FTC says: "§ 23.23(c) It is unfair or deceptive to use the word "laboratory-grown," "laboratory-created," "[manufacturer name]-created," or "synthetic" with the name of any natural stone to describe any industry product unless such industry product has essentially the same optical, physical, and chemical properties as the stone named."

Emerald in Different Cultures, and Emerald Lore

Emerald is regarded as the traditional birthstone for May as well as the traditional gemstone for the astrological signs of Cancer.

One of the quainter anecdotes about emeralds was told by the 16th-century historian Brantôme, who referred to the many impressive emeralds the Spanish under Cortez had brought back to Europe from Latin America.

On one of Cortez's most notable emeralds he had the text engraved, Inter Natos Mulierum non sur-rexit mayor ("Among those born of woman there hath not arisen a greater," Matthew 11:11) which referred to John the Baptist.

Brantôme considered engraving such a beautiful and simple product of nature sacrilegious and considered this act the cause for Cortez's loss of an extremely precious pearl (to which he dedicated a work, A beautiful and incomparable pearl), and even for the death of King Charles IX of France, who died soon afterward.

The chief deity of one of India's most famous temple, the Meenakshi Amman Temple in Madurai, is the goddess Meenakshi, whose idol is traditionally thought to be made of emerald.

Source: Wikipedia

SPRC Board Meeting 10/3/17

Ron, Kay, Trina, Evelyn, Julie, Dianne Called to Order at 7AM

Old Business:

Permits only on line for the Plasma Agate \$5.00 per car and \$10.00 per person for Clear Creek, Coalinga. 4 wheel drive is best for the trip.

Kay gave Treasures report.

Ron R. will be gone from the 7th to the 21st.

Wire Wrapping the 4th

New Business:

Silver Clay is possible subject for next meeting and /or a future meeting . The representative has not returned efforts to contact her.

We have to begin thinking about next year. Which field trips is the club interested in? Also, Ron stated he is looking forward to seeing new people with new energy volunteering for the officers positions available: President, Vice President, and others. etc..

The CFMS conference is in Visalia Nov. 10th to 12th. Evelyn will be going and is requesting reimbursement for lodging, gas, and Fri. night dinner expenses. She will turn in all receipts.

Safety Guidelines brochure is being finalized for the CFMS.

Our Club will update the "Release of Liability Waver" for club members to sign during All workshops, rock cutting, wire and Robin's soldering workshops.

Trona Trip will be in December.

Evelyn will give a presentation about Rose Quartz during this months general membership meeting.

Motion was made to adjourn. The meeting adjourned at 7:50 PM.

Submitted by your Secretary, Dianne Wohlleben



August 26, 2017 Membership Meeting

Meeting called to order by Ron, the President. Pledge of Allegiance to the flag.

The meeting opened with discussions of the Sept. 3rd Rose Quartz Trip. Ron will call Insurance for a copy of the insurance to submit to Paul at the Rose Quartz.

December 2nd is the Trona trip.

The Rock Workshop is Sept. 30th and October 4th for wire wrapping.

Bruce brought up the Hillcrest Farms Halloween Event. In the past our club had a booth at Lombardi's Halloween Event. Now that Lombardi's has closed, we could get a booth at the Hillcrest Farms. There was an open discussion and Bruce will continue the research and report back.***

There was a discussion about a lost wax kiln for sale and it was tabled until the next meeting. Christmas dinner will be December 9th. Our faithful member, Serita will do the Center Pieces.

Meeting adjourned at 8:20PM

Submitted by Your Secretary, Dianne Wohlleben

***Bruce did the research the weeks following the meeting. He called and emailed Board members. The consensus was that there was not enough time to properly organize and prepare for the booth. But everyone agreed it should be organized earlier next year so we can

