

HAPPY FATHER'S DAY



The CULVER CITY ROCK & MINERAL CLUB, located in Culver City, California, brings together persons interested in the earth sciences to engage in research and study, to assist members in the collection and preservation of rocks and minerals and in the study of lapidary and related arts.



June Virtul Program: Magical Obsidians from Davis Creek

Our Club is happy to present an illustrated presentation by Terry Wilson on Monday, June 8 at 7:00 PM.

Terry is a VGMS (Ventura Gem & Mineral Society) member and she will recount a fun weekend-long CFMS field trip to Davis Creek, where the group visited all of the obsidian collecting locations currently (at that time) allowed in this remote corner of California. Each location sports its own special variety of obsidian: multicolored rainbow, pink, electric blue, silver sheen, mahogany needles, mahogany triple flow, and mahogany sheen. Davis Creek has it all!



Terry will show us some of the varieties of Obsidian from Davis Creek. Followed by, how to inspect the obsidian in the field, and then how to inspect it back at home. Then she will show us how to line up, slab and cab, these very special types of obsidian to bring out the best of their unique optical properties. Plus, she will, also, show us how to cut a cab exhibiting a cat-eye effect.

Although this is an online Zoom presentation, Terry will do her best to show us various examples through video.

If you have a hunk of obsidian in your rock pile, you might be surprised to find that it

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General Meetings

General meetings will be held the second Monday of every month at **7:00 PM on Zoom** until it is safe to resume in person meetings. **Guests are always welcomed!**

Upcoming Programs

June 08 – Magical Obsidians from Davis Creek

July 13 – To be announced

August 10 – To be announced

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June Virtual Program *continued*

has some magic inside.

Terry Wilson lives in Ventura and is a member of the Ventura Gem & Mineral Society. Currently, Terry is semi-retired from a career in various art and design fields. She is a life-long “maker” and nowadays enjoys making cabochons and jewelry, as well as engaging in pottery and gardening. She’s a regular exhibitor at the Ventura County Fair, as well as the shows of the gem clubs in Ventura County.

Check your email a few days before the presentation for the Zoom meeting link. For additional Zoom instructions, see page 8.

Submitted by
Ken Rogers
Programs Chair

President’s Message

Despite having been closed down now for about three months, our Club has been able to keep in touch and not even miss a meeting. Even now, as more cities and counties begin to lift portions of Stay-Safe orders, many of us older generation folks are feeling it’s still pretty risky to venture out to a crowded room for a rock Club meeting. So online is looking pretty good.

Our last two virtual meetings (Mineral Locations of Death Valley and Sand Casting for Making Jewelry) have been a little rocky but showed it is possible. We have everything it takes to move our Club meetings online for everyone to enjoy from the comfort of home. Looking forward, I see little chance of having face-to-face meetings until vaccines become available. And that’s next year. So these online meetings are the best for us to keep the Club healthy and keep our members involved.

Looking forward, we have set up a Zoom account which allows unlimited time for our meetings, and I’ve tasked Ken Rogers, our Program Chair, to find some interesting speakers for us through the end of the summer. We may have a better idea by then about the future.

If you have not used Zoom and are interested, it can be done by cell phone, laptop, tablet, or desktop. Simply download the free Zoom cloud app from the Google Store or Apple Store. Tutorials on how it works are available at zoom.com or on youtube.com Or just get in touch with me or another member of the Club.

As we become more proficient at Zoom presentations, it offers an opportunity for us to change our schedule of Club meetings. For instance, a more convenient time on the second Monday, or we could even have more than one presentation a month. Many things are possible – virtual field trips, lapidary, gemology, or jewelry skills twice a month. What do you think?

And to help our members keep in touch with each other, I’ve asked Veronique Gautherot to help put together an updated copy of our Club roster. She will be in touch with you if there’s any question about which data (address, email, birthday month, or phone) you wish to have shared with other members of the Club. Of course, the roster is not to be shared with non-members.

Stay safe everyone,
Brad Smith, President

Nyki Bell



I joined CCRMC because I would like to learn more about lapidary and stone cutting. As a child, my grandmother collected antique jewelry with turquoise and other natural stones. Ever since then I have been obsessed and have been collecting my own pieces.

I do photography. Specifically, I love taking photos of dogs and bees. I love camping. We have a roof tent mounted on our SUV so we can camp anywhere while traveling.

I once jumped off a 40-foot waterfall. It was awesome, immediately followed by freezing water. But it still makes for a great story.

I make photos: www.nykibell.com

I used to teach yoga, but I don't teach anything anymore.



If you would like to be featured in a future Nugget, please send your information to: nugget@culvercityrocks.org

May Program Report



Sand Casting Presentation and Live Demo

Most home-based jewelry makers fabricate items from sheet and wire, but a far greater range of complex shapes, thick sections, tapers and turned shells become possible with casting. It's the primary method used worldwide for producing items for the jewelry market. The process is efficient and versatile in that it minimizes the labor cost for making items of complex shape in small to medium lot quantities.

When we talk about casting, most people think of the lost wax process. It can produce very accurate and complex shapes, but the downside is the cost of equipment and the space required. Sand casting is a much more practical for use in a home shop. It offers many of the benefits of the more expensive process on an easily affordable budget. Plus it's fast. Often a mold can be prepared and poured within a half hour.

The presentation showed the components of low cost sand casting kits that are available and the simple tools that are required. Then it went step by step through the process of making an example mold and finally pouring metal to make a copy of the original model.



The main limitations of the sand casting process are model complexity and thin sections. Models to be cast must be shaped such that they can be pressed into the sand and then removed without disturbing the mold that had been produced. Imagine making a sand mold of a more complex shape like a coffee cup. The sand would form around the handle and you would not be able to withdraw the coffee cup from the sand without destroying a portion of the mold.

But for many other rings, medals, pendants, small carvings or odd shaped appliques, the sand casting process fits the need of the small shop.

Submitted by
Brad Smith
President

Small-scale mining for gold has produced long-lasting toxic pollution, from 1860s California to modern Peru

This article is about the possibility of harmful environmental effects caused by dredging for gold, panning for gold and mining for the mineral period. It's on it's way to being outlawed or severely restricted.



Panning for gold in California, 1850. Credit: Unknown/Wikipedia

Gold is everywhere in modern life, from jewelry to electronics to smartphones. The global electronics industry alone uses 280 tons annually. And that demand keeps growing.

But most people know little about the environmental impacts of gold mining. About 15% of world gold production is from artisanal and small-scale mining in over 70 countries throughout Asia, Africa and South America. These operations employ 10 to 19 million workers. They often are poorly policed and weakly regulated.

Artisanal mining might sound quaint, but it is usually criminal activity and results in widespread environmental damage. It also is the largest source of mercury pollution in the world today, far exceeding other activities such as coal combustion and cement manufacturing. While mercury is an element that occurs naturally in the Earth's crust, it has many toxic effects on humans and animals, even at very low exposure levels.

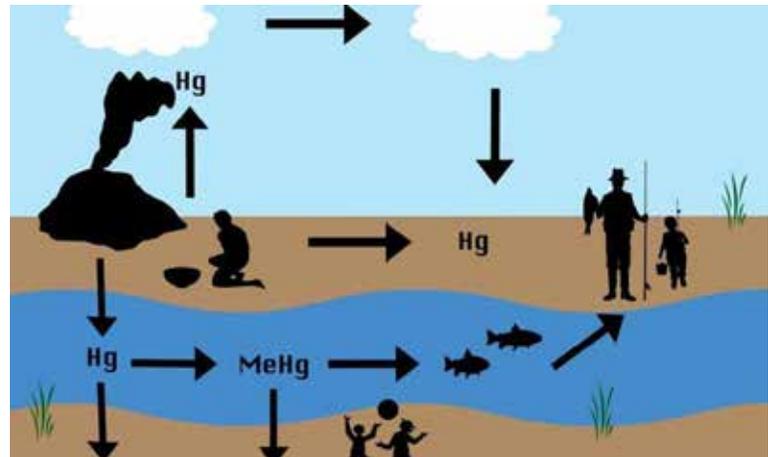
We have studied mercury pollution from artisanal gold mining for the past five years. The extraction methods that these operations use today are not drastically different from processes that miners

employed in the California gold rush in the mid-1800s. Today we see history repeating itself in places like the Peruvian Amazon, where small-scale gold mining threatens to leave behind long-lasting social, economic and environmental consequences.

Mercury contamination from gold mining

Mercury has been used for centuries as an inexpensive and easy way to collect gold. The process begins when miners pump a mixture of water and sediment from a riverbed into a trough, where the sediment can be suspended into a slurry—a technique known as hydraulic mining.

Next they add mercury, which binds to the gold particles, forming an amalgam. Mercury is heavier than pure gold, so the balls of amalgam sink to the bottom of buckets or holding ponds where they can be collected.



When artisanal gold miners burn mercury, it is released into the atmosphere and can end up on land or in water. Mining tailings (solid waste) also deposit mercury onto land or into water. Microbes in the environment can convert mercury into methylmercury, which can be taken up by living organisms, including fish and people. Credit: Arianna Agostini, Rand Alotaibi, Arabella Chen, Annie Lee, Fernanda Machicao, Melissa Marchese, CC BY-ND

Finally, workers burn off the mercury—often with a hand torch or in a crude stove—leaving gold metal behind.

This process releases mercury to the environment

Small-scale mining for gold has produced long-lasting toxic pollution, from 1860s California to modern Peru

continued

in two forms. First, tailings, or waste material, can contaminate nearby land and aquatic ecosystems. Second, mercury vapor enters the atmosphere and can travel long distances before being deposited to land and water via rainfall or small dust particles.

In the environment, microbes can transform mercury into a more potent form known as methylmercury. Methylmercury can be taken up by bacteria, plankton and other microorganisms that are then consumed by fish and build up to dangerous concentrations in animals higher on the food chain.

Methylmercury is a potent neurotoxin that is harmful to humans and wildlife, such as endangered giant otters that feed high on the food web within these contaminated environments. It can cause severe central nervous system damage that results in sensory and motor deficits, as well as behavioral impairments such as difficulty swimming in aquatic animals and flying in birds.

A lasting legacy in California

During the U.S. gold rush, hydraulic mining operations in California completely denuded forested landscapes, altered the course of rivers, increased sedimentation that clogged river beds and lakes and released enormous amounts of mercury onto the landscape. California wildcat miners used an estimated 10 million pounds of mercury from the 1860s through the early 1900s. Most of it was released to the environment as tailings and mercury vapor.

A century later, water, soil and sediments in the Sierra Nevada region still have high concentrations of mercury and methylmercury, often exceeding thresholds set by the U.S. Environmental Protection Agency. Studies show that fish, birds and other organisms living near historically mined sites in California have high mercury concentrations in their bodies compared to those inhabiting nearby unmined landscapes. Extreme erosion on mountain slopes can continuously mobilize mercury deposited decades ago.



Comparison of landscape change from gold mining during the California gold rush (left) and modern artisanal mining in Peru (right). Credit: Bancroft Library, UC Berkeley (left); Arabella Chen (right)

History repeats itself

Like men who traveled to California in 1849 hoping to strike it rich, today's artisanal miners around the world are mainly low-skilled workers hoping to support themselves and their families.

In Peru, where we have studied this process, artisanal miners produce an estimated 35,000 to 40,000 pounds of gold per year. The industry offers an opportunity for upward mobility for substantial numbers of Peruvians, who generally migrate to mining sites from coastal and mountain towns.

As a result, gold rush towns have boomed over the past 20 years. The Inter-Oceanic Highway, which was completed in 2012 and runs from Brazil's Atlantic coast to Peru's Pacific coast, has connected these towns to larger cities and increased access to the Peruvian Amazon.

Producing a pound of gold requires about 6 pounds of mercury. Given that at least 50% of the mercury used in these operations is lost to the environment, we estimate that artisanal gold mining in Peru alone releases nearly 50,000 pounds of mercury annually.

Mining in this region is producing impacts that are strikingly similar to the hallmarks of the California gold rush. For example, miners in the Peruvian Amazon have cleared more than 250,000 acres of forest since 1984.

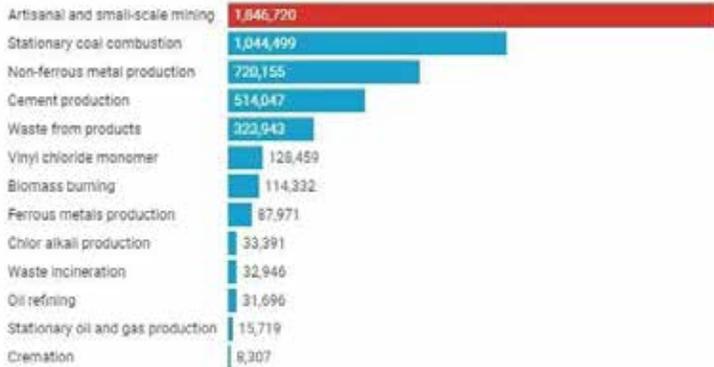
The Madre de Dios River, which runs through a

Small-scale mining for gold has produced long-lasting toxic pollution, from 1860s California to modern Peru

continued

Artisanal and small-scale gold mining is the world's largest source of mercury pollution

Estimated global mercury emissions by sector, 2018 (pounds). Artisanal and small-scale gold mining accounts for 38% of total emissions, surpassing well-known sources such as coal-fired power plants and waste incineration.



Credit: Chart: *The Conversation*, CC-BY-ND Source: UNEP

zone that has seen substantial mining, will likely continue to erode the landscape, carrying mercury-laden particles downstream. Long-lasting mercury contamination in this region threatens the highest biodiversity on the planet and many indigenous communities.

Gold mining in 19th-century California sparked a wave of western migration and helped drive settlement of what we now refer to as the western United States at a time when mining and environmental pollution were unregulated. Today, use of mercury in artisanal gold mining is regulated by the 2013 Minamata Convention on Mercury, which has been signed by 128 countries—including Peru. Yet there is little on-the-ground regulation in most countries. Nor have governments addressed legacy pollution and deforestation from gold mining.

Illegal artisanal gold mining is a major source of income for local communities in places like the Madre de Dios region of Peru. As long as people all over the world continue to demand more gold, we believe that they are just as responsible as miners and local policymakers for the environmental degradation gold mining causes.

Source: <https://phys.org/news/2020-05-small-scale-gold-long-lasting-toxic-pollution.html>



Modern day dredge

Source: <https://prospectorjack.wordpress.com/tag/maine/>

Submitted by
Devon Lloyd
Minerals Chair

General Meeting Minutes

May 11, 2020

The meeting was called to order by President Brad Smith at 7:10 PM.

Jette Sorensen mentioned that membership needed to be made aware that the shop would not open for quite a while.

Brad Smith asked members to volunteer for presentations in future meetings. He also indicated that member contact information should be updated on the Club roster, so that members could contact one another to share similar interests and ask questions. Members would have to consent to sharing their contact information.

A discussion followed about ways in which the club could support the vendors, given that the Fiesta of Gems had been canceled. Janice Metz suggested vendors provide videos about their stores and products for the Club to post on its Facebook page or the Club's website. Janelle Williams committed to bringing the idea up to DJ Gervais. A virtual Fiesta of Gems was also considered.

The May Program followed. Quorum was then established and the April General Meeting minutes were approved as read in the May Nugget. Meeting adjourned at 8:12 PM.

Submitted by
Ana Maria Strambi Guimaraes
Recording Secretary



The Lapidary Shop
is closed until further
notice

Zoom Instructions

Zoom can be used on a computer, tablet, or smartphone. If you do not have a webcam or smartphone, you will still be able to participate. You will view the presentation with any computer, and may call in with a regular phone to take part in the discussion.

You can install the Zoom app on your device from their website, or the appropriate app store:

[Zoom Website](#)
[Apple Store](#)
[Google Store](#)

Rocks & Minerals Quiz

1) What gemstone has been discovered on Mars?

- Diamonds
- Emeralds
- Opal
- Ruby

2) To create Stonehenge, humans moved giant bluestones as far as 140 miles how many years ago?

- 1500
- 4500
- 10000
- 1 million

3) A professional rock expert is called what?

- Mineralogist
- Igneologist
- Petrologist
- Stone Doctor

4) Which mineral was once considered so valuable that ancient Roman soldiers were partially paid with it?

- Quartz
- Magnesium
- Salt
- Sulfur

5) About how many known minerals exist?

- 500
- 1000
- 4000
- 5000

6) How old are the oldest rocks on Earth?

- 1 million years old
- 50 million years old
- 4 billion years old
- 60 trillion years old

7) How many carats is the Hope Diamond?

- 91.6
- 12.4
- 45.4
- Three bunches

8) Which type of rock is so full of bubbles that it can float?

- Pumice
- Obsidian
- Slate

Answers on page 10. Source: <https://kids.nationalgeographic.com/games/quizzes/quiz-whiz-rocks-minerals/>

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Upcoming CFMS Shows

Many clubs have cancelled or changed their show dates due to Covid-19 social distancing orders. Please check the CFMS website for the most up to date information on upcoming shows.

<https://www.cfmsinc.org/shows-2/>

June 1-2: Cambria, CA **CANCELLED**
San Luis Obispo Gem & Mineral Club

June 6-7: Glendora, CA
Glendora Gem & Mineral Society
Goddard Middle School
859 E. Sierra Madre Ave.
Hours: Sat 10 am – 5 pm; Sun 10 am – 4 pm
Contact: 626 963-4638
Email: ybidwell2@aol.com

June 13-14: Escondido, CA
Palomar Gem and Mineral Club
California Center for the Arts
340 N Escondido Blvd, 92025
Hours: Sat 10 am – 5 pm, Sun 10 am – 4 pm.
Contact: Toni Floyd 425-281-6218
Email: tonifloyd41615@gmail.com
Website: <http://palomargem.org/annual-gem-mineral-and-jewelry-show/>

June 22-28: Lodi, CA **CANCELLED**
California Federation of Mineralogical Societies

June 27-28: Culver City, CA **CANCELLED**
Culver City Rock & Mineral Club

Special Offer

Rock & Gem magazine invites CCRMC members to sign-up for their free weekly e-newsletter. Visit <https://www.rockngem.com> to sign up.

Rock & Gem is also offering our members a discount for a 1-year subscription, 12 issues for \$24. To subscribe, visit: <https://www.beckettmedia.com/magazine-subscriptions/rockngem> and use promo code RG24.

The logo for Rock & Gem magazine, featuring the words "Rock & Gem" in a blue serif font. The ampersand is stylized and colored orange.

the Nugget - Submissions

Submissions deadline is on the 15th of every month. Articles or notes without a byline are written by the Editor. Permission to copy is freely given as long as proper credit is noted. Photographs without credits are shot by a CCRMC member. Permission to use photography is freely given as long as proper credit is noted.

Email submissions to: nugget@culvercityrocks.org

the Nugget - Advertisements

The Nugget accepts paid advertisements. The cost for an eighth of a page (approx. 2" high x 3.5" wide) is \$7 per insertion, payable in advance. Ad location is at the discretion of the Editor. Ads, copy, or business cards must be received by the 10th of the month.

Send materials to:
Culver City Rock and Mineral Club
Attn: Editor
P.O. Box 3324
Culver City, CA 90231



Answers:
1) Opal 2) 4500 3) Petrologist 4) Salt 5) 4000
6) 4 billion years old 7) 45.4 8) Pumice

Stay In Touch



Mailing Address:
Culver City Rock & Mineral Club
PO Box 3324
Culver City, CA 90231
310-836-4611

2020 Elected Officers

President
Brad Smith

Vice President
Steve Dover

Treasurer
Darrell Robb

Recording Secretary
Ana Maria Strambi Guimaraes

Corresponding Secretary
Véronique Gautherot

Parliamentarian
Jon P. Gowling

Committee Chairs

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- Federation Director – Rick Shaffer
- Field Trips Chair – Devon Lloyd
- Historian – Virginia Hollis
- Librarian – Andrea Fabian
- Membership – Stephanie Dangott
- Membership Co-Chair – Laura Seffer
- Minerals Chair – Devon Lloyd
- Photography – Pam Leitner
- Programs – Ken Rogers
- Publications Chair – Janet Gampe
- Publicity – Janice Metz
- Show – Adrienne Louie
- Shop Committee – President, Vice President & Shop Instructors
- Social Co-Chairs – VACANT
- Sunshine – Felice Ganz
- Trading Post – Gary Mitchell
- Web Master – Jette Sorensen
- Workshops – Janice Metz

Board of Directors

2020
Anna Maria Strambi Guimaraes
Bruce Mensinger

2021
Franne Einberg
Gary Mitchell

The CCRMC is a non-profit 501(c)(4) organization.