PALOMAR GEM & MINERAL CLUB

VOLUME 61 - ISSUE #3
MARCH 2020

BOARD OFFICERS ELECTED	
President	Jef Wright
Vice President	**Justin Engelmeyer**
Secretary	**Fred Floyd**
Treasurer	Toni Floyd
BOARD OF DIRECTORS (APPOINTED)	
CFMS Chairperson:	Charles Shoup
Field Trips:	Melissa Takagi
Parliamentarian:	Chris Toft
Shop Coordinator:	Alan Mazzola
Program Chair	**Karen Wagner**
Show Chair	Michele Shepard
Newsletter Editor	**Carol Hiestand**
Website:	Ian Burney
Membership Chair	Karen Wagner
STANDING COMMITTEES (APPOINTED)	
Facebook Page	Admin
Ways & Means	Dawn Wright
Historian	Barbara Bury
Hospitality & Good Cheer	Judy Jessup
Meeting Displays	Barbara Bury
Picnic Coordinator	Moni Waiblinger
Refreshments	Dawn Wright
Redwood Rep	Barbara Bury
Librarian Calendar	Chris Toft Justin Engelmeyer

NEXT MEETING:

WEDS. MARCH 18 7:00 PM

710 W. 13TH AVE. ESCONDIDO

Redwood Terrace, Dittus Hall

PGMC 66th Anniversary !!!

POT-LUCK DINNER

Please bring a dish to share.

Last party there were too many desserts and appetizers. More main dishes, sides, please!!!

MARCH NL CONTENTS:

HAPPY BIRTHDAY to MARCH birthday folks!!

BIG THANKS TO:

"WILD BILL" for his great informative talk about JADE worldwide, & showing his incredible collection of same!

PGMC 2020 Budget/Expenses:

Any club member interested in the details may attend any board meeting (2nd Weds. every month at 6:30PM) We are currently in a financial crisis if we cannot make enough $$ on the Gem Show to support the work shop. ALL HANDS ON DECK!!!

ATTENTION:

CLUB MEMBERSHIP FEES ARE DUE NOW (Except for recent joiners). You must also sign a release form due to insurance requirements. Please make sure your email address is legible and your inbox has room for this newsletter. Your email will never be sold or given out to anyone.

CURRENT YEARLY DUES:

- $25 Individual (18 or older)
- $40 Family (2 adults & children 8-17)
- $35 Single-parent & children 8-17)

APPLICATION FORM AT END OF NEWSLETTER TO PRINT OUT AND FILL IN. Sorry, we are not set up for on-line applications and payments yet, but we will hopefully get there by next year!

SEND TO: PGMC

P. O. BOX 1583

ESCONDIDO, CA. 92033

WORKSHOP HOURS:

There have been a few changes, please note the new schedule!

Session cost (3 hours) for members still $7.00

OPEN SHOPS:

Monday 6:30-9:30 PM

Tuesday 6:30-9:30 PM

Weds. 11:00-2:00 PM

Thurs. 1:00-4:00 PM

(Closed major holidays)

Workshop address:

2120 W. Mission Ave, Suite 260 Escondido

THERE WILL BE NO MORE WORKSHOP IF THE CLUB CANNOT RAISE ENOUGH $$$ TO PAY FOR THE EXPENSE!! RENT AND UTILITIES ARE INCREASING! WE NEED ALL SHOP LOVERS/MEMBERS TO STEP UP & COME UP WITH $$ OR IDEAS ON HOW TO MAKE $$ TO PREVENT CLOSURE OF THE SHOP!! (and don't ask us old geezers to do it-we're broke!) Just kidding, any donations or realistic suggestions are appreciated.

There are several opportunities for leadership positions for the 2020 show. All of these need a little work up front, well in advance of the actual show. If you can spare a little time and want to contribute to your club, please let me know!

Michele 858.243.7241 or shepard.michele@att.net

OPEN SHOW COMMITTEE POSITIONS 2020

SHOW DESCRIPTION

The annual show serves several purposes: to educate the public in the value and knowledge of minerals, collecting, and jewelry making featuring lapidary techniques. The second goal is to ensure the health of the club, including funding our club shop, promoting our club, and increasing our membership.

OPPORTUNITY DRAWING CHAIRPERSON

The opportunity drawing chairperson shall be responsible for obtaining items from dealers who have a space at the show. Items shall also be obtained from local merchants, national dealers, and club members to ensure that the cases are filled with items that will insure good ticket sales. The required number of cases shall be given to the display chairperson so cases can be obtained.

SPECIAL DRAWING CHAIRPERSON

The chairperson shall be responsible for selling tickets for the grand prize item(s).

ADVERTISING COMMITTEE

Committee will work with the advertising chairman to ensure a high attendance. The chairperson will be responsible for enlisting and coordinating several volunteers to prepare and place advertising materials. The advertising chairperson and their committee shall be responsible for having show announcements placed in local club bulletins and paid advertising avenues, preparation of press releases to local magazines, TV stations and radio stations. Chairperson shall also prepare flyers for the show and solicit assistance for distribution thereof. Flyers shall be small 1/4 page for individual handout and full page for placing in dealers' and merchants' windows. Flyers shall be provided to dealer chairperson for distribution to show dealers. Advertisements shall be prepared for insertion into the local newspapers. Flyers should be provided to the club bulletin editor for inclusion in all exchange bulletins. Show handout should be prepared for handout to all attendees at the show. The show handout should list all club officers and dealers as well as demonstrators and displays.

Current committee members: Charles Shupe, Michele Shepard. Input from Dawn Wright.

CUISINE CHAIRPERSON

Cuisine chairperson will be responsible for providing coffee and morning snacks for dealers and volunteers on show mornings. Chairperson will also be responsible for providing each dealer with a “goodie bag” that contains snacks, pen and paper, next year’s contract, and other useful items. Chairperson will be reimbursed for all expenses that have been approved by the club.

ELECTRICAL CHAIRPERSON (maybe Van Lynch)

The electrical chairperson shall work with the layout chairperson to ensure that electrical power is provided to all or as many as possible of the dealer spaces. The total allowable electrical load available to each dealer space shall be provided to the dealer chairperson for inclusion (wattage) in the dealer contracts. The electrical chairperson shall insure that electrical cords are obtained from the club shop attic or storage trailer and delivered and set up at the show and returned for storage after the show.

******UPCOMING CLASSES******

Lapidary & Silversmith Workshop

2120 W. Mission, Suite S., Escondido

Cabochon/Lapidary Class & Open Workshops

Monday 6:30-9:30pm

Tuesday 6:30 – 9:30 pm

Wednesday 11:00 am – 2:00 pm

Thursday 1:00-4:00pm

Learn to cut and polish a rock into a beautiful stone suitable for wire wrapping or fabricating in metal. A fantastic assortment of material is available for purchase on site.

The workshop is also open for general use. No prior registration needed.

Thursday 6:00 pm – 9:00 pm ***METAL SMITHING only - open for to those students who have had metal smithing instruction or experience and/or have instructor approval.*** *Those students who have attended an introductory class may continue to work on improving their skills in this weekly workshop*. An experienced metalsmith will be available for consultation.

Cost: A $7 shop fee will be collected for regular workshop. Club membership required.

Introduction to Faceting

An informative introduction and hands-on experience in the world of gem cutting. Learn how to create a gem out of a piece of rough, during a weekend class. No machine required. Return students welcome with or without their own machine. Each class can accommodate 3 new students without machines and 3 returning students with their own machines.

Instructor: Bob Johnson

Location: Club Shop

Dates & times: Saturday, March 14, and Sunday March 15, 2020 – 9am -5pm

Cost: $80 New students. Club membership required. $70 return students.

Contact Bob Johnson for more info or to register - 760-809-0152 or email Bob at N78532@yahoo.com

Faceting – Continuation Class

This is a class for continuing students who have completed the Introductory Class and is held once per month, from 9 to 5 on the Saturday following the general meeting, (which is always on the third Wed.)

Instructor: Bob Johnson

Location: Club Shop

Cost: $35.

March workshop- March 21, 2020, 9-5

Contact Bob Johnson for approval and to reserve a spot - 760-809-0152 or email Bob N78532@yahoo.com

Lost Wax Casting

This is a 3-day class to introduce the student to Lost Wax Casting.

Instructor: John Raabe

Dates & times: Wednesday, March 4, 2020, 6-9pm - Introduction to Lost Wax Casting Procedure

Friday, March 6, 6-9pm –Investment

Saturday March 7, 1:00-? pm Burnout

Cost: $100. Must be a club member. Returning students $75

Materials: All required materials will be provided including one ounce of silver

Requirements: Class is limited to 4 members

**Please RSVP by February 26, to John Raabe @ 760-749-2749

Next class April 1, 3, & 4, 2020

Introduction to Silversmithing Class

Ring by Mike Mettelka

This is a 10-hour introductory silversmith class. The students will learn to develop their designs, use a jeweler's saw to cut out a pattern, solder a bezel to a backing and add a bale or a ring shank, creating a wearable piece of jewelry. Intermediate students can work on a project of their choosing with instructor approval. At the completion of this introduction the student can continue learning in the Thursday night workshop.

Instructors: Diane Hall & Annie Heffner

Dates & times: March 28 & 29, 2020, 10-4

Cost: $60 (club membership required - $25 fee for single membership)

Materials additional – (Approx. $30) and please bring a cabochon to set in silver or let us know if you need one.

**Call Diane Hall at (760) 741-0433 (leave message for call back) or email dianehall213@gmail.com for more info or to

register.

Tube Setting a Faceted Stone with Laurie Union

This is a 6-hour one day class to learn tube setting! This is super fun and is the baseline to all faceted stone setting.

What is covered:

How to determine which size tubing to use
How to cut a seat in tubing
How to use die struck tube sets
Complete either a pendent or a simple pair of earrings

Instructor: Laurie Union
Dates & times: April 26th, 10-4
Cost: $95 (club membership required - $25 fee for single membership)

Materials additional – (Laurie will provide CZ's for a dollar a piece and tube sets at 6$ a piece. Also, Tubing, depending on amount could be anywhere from $6 for the sample all the way to a whole entire tube and that is around $30)
If you have 4mm round faceted stones, you can bring these along.

We will be using 14-gauge square sterling silver wire, dead soft; and 20 or 21-gauge sterling silver round wire for ear wires. If you have this please bring it or you may purchase this separately from the instructor. Also, please bring basic hand tools if you have them. The shop does have some tools if you don't have them.

**Call Diane Hall at (760) 741-0433 (leave message for call back) or email dianehall213@gmail.com for more info or to register.

QUOTE TO THINK ABOUT:

"Rocks are records of events that took place at the time they formed. They are books. They have a different alphabet, but you learn how to read them."

-John McPhee

HEADS UP: APRIL IS PADDLE AUCTION. ALL PROCEEDS GO TO PGMC.

PLEASE CONSIDER DONATING SPECIMENS, TOOLS OR MACHINERY YOU NO LONGER NEED/WANT. CLUB MEMBERS CANNOT SELL HERE.

DONATIONS ONLY!!

Photo of

Barbara Gober

Recently deceased/long-time member (see Feb. obituary)

Submitted by:

Barbara Bury, Historian and long-time member.

FALLBROOK GEM & MINERAL SOCIETY

ROUGH N' CUT

MARCH 21ST

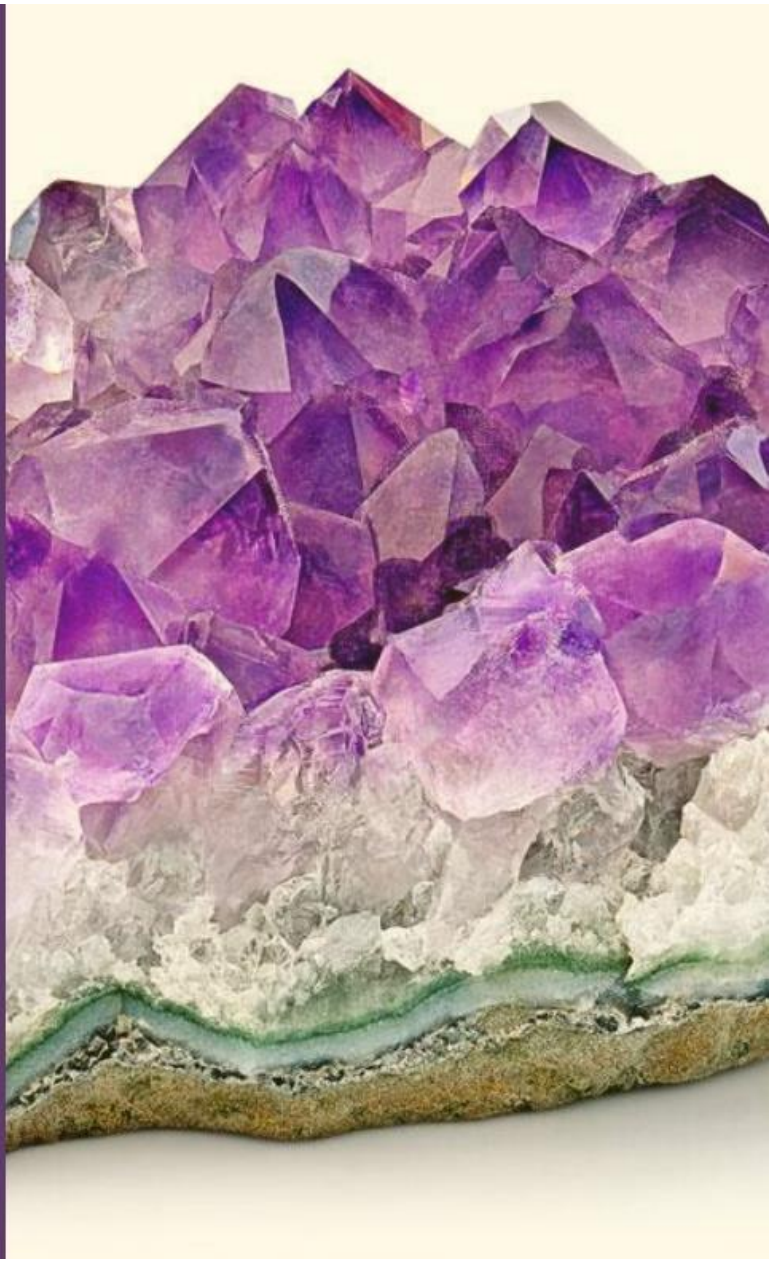
Everyone is welcome to our FREE annual sale event!

Rough stone, yard rock, lapidary materials, slabs, minerals specimens, crystals, gemstones and more!

Free Museum: 11am - 4pm
Meet the Museum Curator: 11am - 1pm
Rough 'N Cut Sales: 1pm - 4pm
Silent Auctions: 1:30, 2:30 & 3:30pm

Fallbrook Gem & Mineral Society
123 W. Alvarado St. Fallbrook CA 92028

www.fgms.org || info@fgms.org || (760) 728-1130



TALES OF OTHER FOLKS (part 3)

By: Gene Ciancanelli

TWO WOMEN SCIENTIST VICTIMS OF PREJUDICE

Rosalind Franklin

Most people have some familiarity with DNA and the many benefits this discovery has made to our lives. In 1962, the Nobel Prize in Medicine was awarded to James Watson, Francis Crick and MauRusset Wilkins for the discovery of the structure of the DNA molecule. The DNA molecule's structure is a double helix, which resembles a tall ladder that has been twisted into a spiral shape. The discovery of this molecule's structure was key to the understanding of the DNA molecule and the many subsequent applications and technological advances DNA has provided. For this discovery, Watson and Crick and to a lesser extent Wilkins became famous scientists. Meanwhile, the woman, who actually worked out the double helix structure of DNA, was until recently forgotten and even maligned by the very men whose fame was built upon the discovery, they stole from her.

Rosalind Franklin, a young Jewish woman gifted in science and math, was born and grew up in England where she earned a bachelor's degree from Cambridge University just as World War II was about to begin. As a result of her contributions to the war effort, she was granted a Physical Chemistry PhD from Cambridge in 1945. After the war, she moved to Paris to work with Jacques Mering perfecting the new science of X-ray chromatography. In the days before the advent of computers, her strong mathematical ability allowed her to accurately solve the arduous equations necessary to decipher the atomic structure being revealed by X-ray chromatography. In the early 1950's Dr. Franklin moved back to England to advance her career.

Upon arrival at King's college, where she was to continue her X-ray research, Dr. Franklin was upset to discover her "lab" was an empty unfinished and unheated dirt floor basement in a very old building. She was faced with the formidable job of singlehandedly personally installing electrical wiring and patching together surplus antiquated equipment into a quasi-workable state. She was further annoyed to learn that, as a woman, she could not eat lunch in the college cafeteria. *(I encountered that very same situation in the company dining room with a woman assisting me at a prominent Los Angeles law firm in the mid-1970's. I immediately severed all ties with that firm.)* Once her basement lab was functioning, MauRusset Wilkins returned from a sabbatical leave and was angry to learn that the "female assistant", whom he expected to work as his underling, was far above the level he anticipated. Furthermore, Dr. Franklin refused to knuckle under his oppressive rule.

Working alone in her unheated "root cellar" laboratory with junk equipment and virtually no support from King's college, Dr. Franklin continued to advance X-ray research. Wilkins shifted his work to Cavendish Laboratory, to work with his friends Francis Crick and James Watson. These three then young men were building "tinker toy" wooden models trying to decipher the structure of the DNA molecule. They were working on a triple helix model, which was wrong.

Meanwhile, Dr. Franklin's X-ray images had revealed the double helix structure. She labeled the critical photograph "Photo 51" and filed it away. Soon afterward she attended a conference where Crick and Watson proposed their triple helix model conjecture as to the structure of the DNA molecule. She knew from her X-ray analysis that they were wrong and criticized their model. To be criticized by a "mere" woman, widened the schism between her and Wilkins and she was further ostracized by the "good old boys" at King's college, who took to calling her Rosie or the witch. Watson went so far as to criticize her

makeup and complain that she didn't make herself pretty. This harassment let to Dr. Franklin's decision to move to another college. During her move, Wilkins somehow got his hands on her notes and the critical Photo 51. Without Dr. Franklin's knowledge, Wilkins took this information to Crick and Watson. Soon afterward, there was a falling out between Wilkins and the Watson – Crick duo. Watson and Crick, now in possession of Dr. Franklin's research notes and the ground breaking Photo 51, published the double helix structure of the DNA molecule as their own discovery. This was the critical discovery that cracked the code of DNA. Watson, Crick and Wilkins were now famous for "their discovery". Dr. Franklin never knew that these "gentlemen" had purloined her research.

Part of the arrangement, for Dr. Franklin's 1953 move from King's College, was her agreement to do no further research on DNA. She switched her research to viruses and made several important discoveries including work on the polio virus. Dr. Franklin probably would have received a Nobel Prize for her later work in molecular biology but she died in 1958 from cancer, while still in her 30's. The Nobel Prize can only be awarded to living recipients and no more than three people can share one prize. Watson, Crick, and Wilkins shared the prize in 1962 and Rosalind Franklin was already forgotten. Watson later wrote a widely popular book on the discovery of DNA in 1968. In the book he was highly critical and even derogatory toward Rosalind Franklin as being an emotional woman and an inept scientist. She of course was now dead for ten years and not able to defend her reputation. Eventually, her research notes, X-ray photos, and correspondence between the three Nobel laureates were discovered in an old storage room and the truth was revealed. Today, after more than 50 years, Watson's and to a lesser extent Crick's reputation have been diminished and Rosalind Franklin is getting the recognition she deserves.

Rosalind Franklin

Joselyn Bell Burnell

Joselyn Bell Burnell

Joselyn Bell Burnell was a graduate student astrophysicist at Cambridge University in the 1960s. She was part of a small team that built a radio telescope to search for quasars, which are powerful radio sources in the distant universe. In those early days, before computers were able to analyze the radio telescope data, the data was recorded on very long paper printouts, some of which were over 90 feet long. It was Joselyn Bell Burnell's task to laboriously analyze this data to search for the quasar signals. She noticed a radio pulse that repeated itself every 1.5 seconds and brought it to the attention of her advisor Anthony Hewish. Hewish derisively dismissed the pulses as artificial radio noise, which he dubbed as LGM-1 for Little Green Men. Joselyn Bell Burnell was not convinced and continued to investigate eventually finding more of these regular pulsed signals. This led to the discovery of pulsars.

Pulsars are created when very massive stars, much larger than our sun, burn off most of their fuel and begin to collapse inward toward the core until being blown away as a supernova explosion. Meanwhile the remnant core of the star becomes compressed incredibly dense as electrons and protons are

compressed into a dense mass of neutrons. This forms a very small neutron star typically 10 to 20 kilometers in diameter. The matter in a neutron star is incredibly dense. A one cubic centimeter of a neutron star would weigh about 10 million tons.

Unlike a typical star, that radiates light in all directions, neutron stars radiate light in just two narrow directional beams on opposite sides of the neutron star. Neutron stars spin incredibly fast, some as fast as only a few milliseconds per rotation. As the neutron star rotates, the emitted light beams outward in similar fashion to a rotating lighthouse. If the beam of light passes across the earth, the radio telescope detects the light as a radio pulse, which repeats every few seconds or milliseconds depending on the neutron star's speed of rotation.

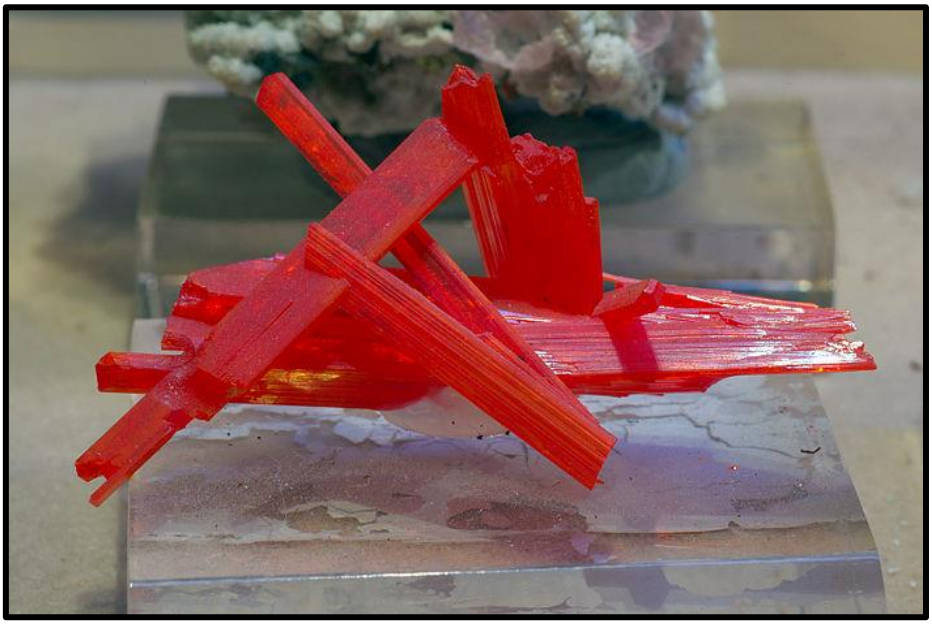
Eventually convinced of Joselyn Bell Burnell's discovery of pulsars, which had been predicted by theoretical astrophysics, Anthony Hewish and Sir Martin Ryle jointly published the discovery with Joselyn Bell Burnell as a co-author in 1968. In 1974, Hewish and Ryle received the Nobel Prize for the discovery of pulsars. Many people in science were appalled that the Noble committee, which had a long history of ignoring the contributions of women, did not recognize Joselyn Bell Burnell, who made the actual discovery.

In 2018, Joselyn Bell Burnell was awarded a 3-million-dollar Special Breakthrough Prize in Fundamental Physics for her discovery of pulsars and other subsequent contributions to science. She donated the 3 million dollars as the Bell Burnell Graduate Scholarship Fund. Unlike Rosalind Franklin, Joselyn Bell Burnell at least lived to receive vindication.

THE MINERAL CROCOITE FROM TASMANIA, AUSTRALIA

By: Gene Ciancanelli

Crocoite is a lead chromate mineral $PbCrO_4$ crystallizing in the monoclinic crystal system. The mineral Crocoite is commonly found as large well-developed bright red translucent prismatic crystals with an adamantine or vitreous lustre. Brilliant bright red elongate Crocoite crystals form beautiful mineral specimens. Crocoite is often referred to as red lead and the most famous locality is from mines in the Dundas area of Tasmania, Australia.



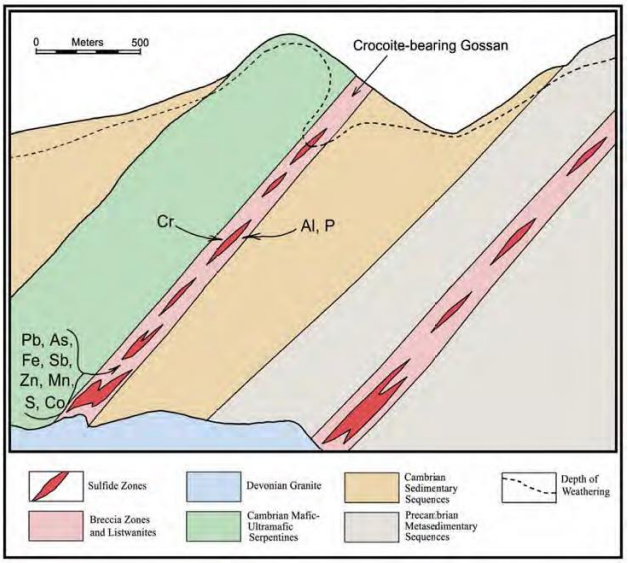
Crocoite from Red Lead Mine Tasmania, Australia

Crocoite is the official mineral of Tasmanian. The mines are located in proximity to the ghost town of Dundas where mining began in the late 19th Century. Abundant masses of exceptional crocoite crystals have been recovered from the Extended, Adelaide, Red Lead, West Comet, Platt and several other Mines. Crystals of Crocoite are usually found in long slender and often hollow prisms about 10–20 mm and rarely up to 100 mm (4 inches) or more in length. In the early days of mining for lead and silver, Crocoite crystals possibly as big as a man's arm where found and sadly ground up as lead ore. In the early 20th Century lead and silver mining ceased and since that time the mines have been operated strictly as the producers of spectacular Crocoite mineral specimens. Crocoite is also found in Brazil, Western Australia, Germany, South Africa, and the Philippines, but Tasmania is by far the premier locality for this mineral.

"It is commonly stated by collectors that nearly all of the crocoite found in the Dundas mines in the early years was regarded simply as flux material and trucked away to the Zeehan smelters. However, early mine records indicate that the smelters actually sought the ferro-manganese gossan rather than crocoite itself, and it is reasonable to think that the miners saved the very best crocoite specimens, as these were acknowledged even then to be valuable. One mine inspector recorded his surprise that crocoite specimens were being regularly sent to museums and private collectors overseas. And it is thought today that the many high-quality European mineral specimens in

various Tasmanian museums were obtained around 1890–1910 by the exchange of crocoite for specimens from European collections, although unfortunately there are few records to confirm this (Ralph Bottrill, personal communication). But it remains true—sadly—that great quantities of crocoite found in the Dundas mines during the period of ore mining (ca. 1885–1925) were destroyed in the Zeehan smelters. Observing that most crocoite from the Red Lead mine was meeting this fate as late as the 1920s, Bancroft (1984) evokes horse-drawn trucks headed to the smelter with "thousands of kilograms of crocoite 'blinding in the sun.' Some chunks of crocoite crystals, too large to lift by hand, were broken down before loading." The specimen-collecting efforts of Warren Foote's agent in 1898–1901, and the mercies of many anonymous early miners, are all to the good, but still it is almost solely the hard work of specimen-miners from 1970 to the present which has made contemporary collectors aware of this major mineral occurrence, and has provided collections worldwide with beautiful "Dundas" crocoite specimens." (Moore and Wendell, 2012)

Tasmania's best specimens are found in the shallow depth of an intensely oxidized gossan lead orebody that runs through a mountain in the Dundas area. (A gossan is the upper oxidized portion of a metallic sulfide ore deposit. The secondary minerals that form in a gossan are typically brown and black in color.) The Dundas area gossans formed during oxidation when oxygen rich acidic low pH ground water percolated down into a preexisting lead/silver ore deposit. The mineral Crocoite formed by deriving chromium from the chromium rich serpentinite rocks and lead derived from the oxidizing galena lead ore (see cross section below). Crocoite is a stable mineral in this low pH environment and the result was the formation of the spectacular red crystal masses of Crocoite. It was within the soft highly oxidized porous rock with open cavities where the Crocoite crystals formed. The bright red crystals grew as secondary supergene minerals lining the open cavities, which range in size from an inch to several yards across. (Supergene minerals form in the oxidizing zone (gossan) of and ore deposit where the metallic ions are dissolved from the primary metallic minerals and redeposited as secondary minerals such as crocoite, malachite, chrysocolla, azurite, wulfenite, smithsonite, etc.) In these cavities the Crocoite crystals grew as floaters or as upright crystals rising from and attached to the black and brown oxidized matrix rock. The unique geo-environment in these ore deposits hosts a variety of other rare and often spectacular mineral specimens in association with the Crocoite.



Geologic cross section through the veins of the Dundas ore field (after Bottrill and Baker, 2008). Chromium migrates into the weathering lead-rich sulfide lenses while aluminum and phosphorus migrate in from

(left) Crocoite from Adelaide Mine, Dundas, Tasmania, Australia. (right) Premier pocket from Adelaide Mine.

(left) The 2012 Red River watercourse pocket. The full extent of the pocket is unknown. Bryan Swoboda photo. (right) Crocoite crystal group, 19.8 cm, from the Adelaide mine. Lyda Hill collection; Jeff Scovil photo.

A pocket in the Adelaide Mine, which was discovered in the early 1970's, was 2 meters high, 2.7 meters long and 1.5 meters wide. The walls in the pocket were completely covered with crocoite crystals up to 8 cm long. In 2012 an even larger and more spectacular pocket of Crocoite crystals was discovered and is pictured above (Moore and Wendell, 2012). A pocket found in 1971 was described as follows: "One day in July, while working alone, Frank broke into a large cavity some eight feet long, six feet high, and four feet six inches wide. Enlarging the hole big enough to hold his light an arm's length into the cavity, Frank was spellbound by a scene of sparkling beauty, such as few men have ever witnessed. The roof, walls and even the floor were completely covered with crocoite crystals of all sizes, from the dimensions of pins to a few that exceeded 3 inches in length. All were terminated and of the finest color. Not since the heyday of the mine had anything like it been seen!" (Chapman, 1972). Over the last 130 years of mining, pocket after pocket of Crocoite crystals have been and are still being found in the Tasmanian mines yielding probably tens of thousands of beautiful specimens.

The destruction of spectacular mineral specimens by mining companies is not unique to the Crocoite mines. It is in fact standard mining company practice to discourage miners from recovering mineral specimens. When I was attending college at the University of Arizona in the 1960s, the Glove mine was a nearby mine containing large cavities lined with spectacular wulfenite crystals as large as a man's hand. Instead of preserving these treasures, the mining company chose to grind them up as lead ore. My friend, who worked at the mine said, "It was criminal what the company did to a deposit that should have been preserved as a national treasure". Later in the 1960s, I was working for Phelps Dodge copper mining company. The firm refused to allow employees to collect the spectacular specimens of azurite, malachite, chrysocolla, and other copper oxide minerals for which the mines in Bisbee, Arizona are world famous.

An internet search of the words: "**Crocoite Plate from Adelaide Mine**" will reveal an interesting You Tube film of miners extracting crocoite crystals in the Adelaide Mine.

References

Bottrill, R. S. and Baker, W. E. (2008) A Catalogue of the Minerals of Tasmania. Geological Survey Bulletin 73, Mineral Resources Tasmania, 254 pages.

Chapman, A. H. (1972) On a Spectacular Find of Crocoite in the Adelaide Mine, Dundas, Tasmania. Mineralogical Record, 3 (3), pages 111–113.

Moore, Thomas P. and Wilson, Wendell E. (2012) Major Crocoite Discoveries at the Adelaide Mine, Tasmania. The Mineralogical Record, volume 43, November–December, pages 651 – 673.

Born in March? Here's your birthstone

Happy birthday to all you March babies. Your month has 2 birthstones – the Aquamarine and the Bloodstone.

Natural aquamarine crystals. Photo via Gunnar Ries.

.March has two birthstones – Aquamarine and Bloodstone.

Aquamarine

Aquamarines vary in color from deep blue to blue-green of different intensities, caused by traces of iron in the beryl crystal. Naturally occurring deep blue stones are the most prized because they are rare and expensive. However, yellow beryl stones can be heated to change them to blue aquamarines.

The aquamarine – also called the "poor man's diamond" – is a form of the mineral beryl that also includes other gemstones such as the emerald, morganite, and heliodor. Beryl consists of four elements: beryllium, aluminum, silicon, and oxygen. Beryl occurs as free six-sided crystals in rock veins unaffected by shock and weathering that otherwise destroy gem deposits. It is a relatively hard gem, ranking after the diamond, sapphire, ruby, alexandrite, and topaz.

The best commercial source of aquamarines is Brazil. High quality stones are also found in Colombia, the Ural Mountains of Russia, the island of Malagasy, and India. In the United States, Colorado, Maine, and North Carolina are the best sources.

The name aquamarine was derived by the Romans from the words "aqua," meaning water, and "mare," meaning sea, because it looked like sea water. Aquamarines were believed to have originated from the jewel caskets of sirens, washed ashore from the depths of the sea. They were considered sacred to Neptune, Roman god of the sea. This association with the sea made it the sailors' gem, promising prosperous and safe voyages, as well as protection against perils and monsters of the sea. Its first documented use was by the Greeks between 480-300 B.C. They wore aquamarine amulets engraved with Poseidon (the Greek god of the sea) on a chariot.

Beginning in the Roman period, the aquamarine was believed to possess medicinal and healing powers, curing ailments of the stomach, liver, jaws, and throat. During the Middle Ages, it was believed to be an effective antidote against poison. Aquamarines were thought to be the source of power for soothsayers, who called it the "magic mirror," and used it for telling fortunes and answering questions about the future. It is said that Emperor Nero used it as an eyeglass 2,000 years ago. Much later, aquamarines were used as glasses in Germany to correct shortsightedness. In fact, the German name for eyeglasses today is "brille," derived from the mineral beryl.

Bloodstone. Photo via Ra'ike/Wikipedia.

Bloodstone

The second birthstone for March is the bloodstone. Bloodstone – also known as heliotrope – is a form of the abundant mineral quartz. This particular form of quartz, known as cryptocrystalline quartz, exists as a mass of tiny quartz crystals formed together in large lumps that show no external crystal form, yet each of the component crystals that make up the mass is a genuine crystal. This quartz variety is also called chalcedony. Green chalcedony spotted with flecks of red is known as bloodstone. Bloodstone is found embedded in rocks or as pebbles in riverbeds. The best sources of this stone are India, Brazil, and Australia.

The bloodstone is a favored material for carving religious subjects, particularly the Crucifixion. One particularly famous carving was done by the Italian Matteo del Nassaro around 1525. In "The Descent from the Cross," the carving was carefully crafted so that spots of red on the bloodstone represented the wounds of Christ and his drops of blood. According to legend, bloodstone was believed to have formed during the crucifixion of Christ. A Roman soldier-guard thrust his spear into Christ's side and drops of blood fell on some pieces of dark green jasper lying at the foot of the cross, and the bloodstone was created.

Babylonians used this stone to make seals and amulets, and it was also a favorite with Roman gladiators. In the Middle Ages, bloodstone was believed to hold healing powers, particularly for stopping nosebleeds. Powdered and mixed with honey and white of egg, it was believed to cure tumors and stop all types of hemorrhage. Ancient alchemists used it to treat blood disorders, including blood poisoning and the flow of blood from a wound. Bloodstone was also believed to draw out the venom of snakes.

PALOMAR GEM AND MINERAL CLUB – APPLICATION FOR MEMBERSHIP

PLEASE PRINT

2019-2020

NAME _____ **SPOUSE** _____

STREET ADDRESS OR P.O. BOX _____

CITY _____ **STATE** _____ **ZIP** _____

EMAIL ADDRESS _____ **PHONE** _____

IF NO INFORMATION IS PROVIDED YOU WILL NOT BE ABLE TO RECEIVE ANY CORRESPONDENCE FROM THE PGMC. PLEASE PRINT EMAIL ADDRESS CAREFULLY TO AVOID ERRORS!

NAMES OF CHILDREN WHO ARE TO BE PART OF YOUR MEMBERSHIP 8 – 17:

_____ **AGE** _____ _____ **AGE** _____

_____ **AGE** _____ _____ **AGE** _____

HAVE YOU EVER BEEN A MEMBER OF ANY OTHER GEM AND MINERAL CLUB? _____ **IF YES, GIVE NAME OF CLUB AND LOCATION** _____

MEMBERSHIP DUES:

☐**Single** (Age 18+) - $25.00 ☐Single Parent (1 Adult + Children) - $35.00 ☐**Family** (2 Adults + Children) - $40.00

SINGLE PARENT and FAMILY memberships include all children age 8 – 17 years
Those joining after November 1st of each year will be paying for the following year.

Mail application and check to: Palomar Gem & Mineral Club, P.O. Box 1583, Escondido, CA 92033
OR
Drop off complete application and payment at the Club Workshop or at our monthly meetings.

I/We agree to share in the rights, privileges and responsibilities which membership in the Palomar Gem and Mineral Club entails. *Please read and sign release of liability on back of application.*

_____ Date _____

Applicant Signature

_____ Date _____

Applicant Signature

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Date Rec'd **Amt. Paid** ☐ CREDIT ☐CASH ☐CHECK **Rec'd by:**

Release of liability signed ☐

AGREEMENT AND RELEASE FROM LIABILITY

PALOMAR GEM AND MINERAL CLUB

I, the undersigned, acknowledge that lapidary equipment, jewelry making equipment and machinery are dangerous if not used properly and can cause serious injury to others or myself, and that the Palomar Gem and Mineral Club assumes no responsibility for the training or safety of myself or any member using the shop equipment. I understand that each member is responsible for the safe use of any piece of equipment or tool that he or she uses.

In consideration for being permitted by Palomar Gem and Mineral Club to use their facilities, I hereby agree that I, my assignees, heirs, and legal representatives will not make any claim against, sue or attach the property of the Palomar Gem and Mineral Club or its officers for any injury or damage resulting from negligence or other acts, however caused, by myself, other members of Palomar Gem and Mineral Club or a Palomar Gem and Mineral Club representative or officer. I further release Palomar Gem and Mineral Club from all actions, claims or demands, that I, my assignees, heirs or legal representatives now have or may hereafter have for damage or injury resulting from my participation in any Palomar Gem and Mineral Club activity.

I have carefully read this agreement and fully understand its contents. I hereby acknowledge that I am aware that this is a release of liability and a contract between me and the Palomar Gem and Mineral Club, and sign the agreement of my own free will. I also acknowledge that I am responsible for providing required ear and eye protection for myself and all persons included in my Palomar Gem and Mineral Club membership while participating in or observing any operation in the club's lapidary workshop. I agree to abide by any and all rules of personal conduct and safe use of any machinery or tools, and acknowledge that I have received a written copy of the club rules.

Member Name _____

(Print full legal name) 1 adult member per form

Member Signature _____

Junior Name(s) _____

(Print full legal name(s))

_____

Legal Guardian Name _____

(Print full legal name)

Legal Guardian Signature _____

Date _____ Phone: _____