

Palomar Gem and Mineral Club

VOLUME 60 - ISSUE #6
JUNE 2019

BOARD OFFICERS ELECTED

President	Jef Wright
Vice President	Justin Engelmeyer
Secretary	Fred Floyd
Treasurer	Toni Floyd

BOARD OF DIRECTORS (APPOINTED)

CFMS Chairperson:	Toni Floyd
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	Lori Goodman

STANDING COMMITTEES (APPOINTED)

Facebook Page	Jeff Fox
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	Chris Toft
Calendar	Justin Engelmeyer

NEXT MEETING:

WEDS JUNE 19, 7 PM

**DITTUS HALL, REDWOOD
TERRACE**

710 W. 13TH AVE. ESCONDIDO

INFORMATIVE PROGRAM!!!!

BRING A FRIEND!!!

**Needed: CFMS Chair, fun job &
reimbursed for expenses!**

**HAPPY BIRTHDAY
TO JUNE BIRTHDAY
MEMBERS!!**

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BIG THANKS TO:

**Dr. Don Buchanan, for his
fascinating & informative
talk & slides: "Minerals
Rock" & San Bernadino
County Museum info!!**



IMPORTANT INFO FOR CLUB MEMBERS:

Show demonstrators can sell their custom product without the normal 20% fee to the club!

Volunteers needed for the gem show; please contact Michele Shepard to volunteer!

PGMC has a new cell phone, (760)743-0809 with a working voice mail. The **WIFI hot spot is in!** The shop & club will be able to take charges over \$10.00 in the future!!

Go see Gem Building at COUNTY FAIR!!!

Open through JULY 4 (closed Mondays & Tuesdays in June)

UPCOMING EVENTS:

JUNE PROGRAM: Info isn't available yet, but our new chair Karen Wagner, is working on something informative and of interest to club members!!

FIELD TRIPS: Unfortunately the recent trip was cancelled due to washed-out trails and re-scheduling in this heat is unlikely but it's still on the table for a future trip! Stay tuned for more details about future trips or contact Melissa, program chair.

PICNIC IN AUGUST: Annual summer picnic location and date to be announced soon, so stay tuned!!!

DEL MAR FAIR SANDBOX WAS A BIG HIT!

MANY THANKS TO EVERYONE WHO PARTICIPATED!!!

****UPCOMING CLASSES****

Lapidary & Silversmith Workshop

2120 W. Mission, Suite S., Escondido

Cabochon/Lapidary Class & Open Workshops

Tuesday 6:30 – 9:30 pm

Wednesday 11:00 am – 2:00 pm

Thursday 2:00-5:00pm

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: Sat. June 15, and Sunday June 16, 2019 – 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.

June workshop – June 22, 2019, 9-5

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

Faceting Immersion

An informative 5 day workshop/summer camp exploring the world of gem cutting. Learn how to

create a gem out of a piece of rough. 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: 1st Session August 5-9, 2019 – 9am -5pm

2nd Session August 12-16

Cost per 5 day session: \$175. Club membership required.

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

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: July 27 & 28, 2019, 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. Next class September 28 & 29.

Chasing & Repoussé Workshop



We are planning a week of chasing & repoussé for those who have had beginning experience, have their own tools and want to get together to create, share ideas, and enjoy time with other chasers.

Dates & times: Monday, August 19 – Friday, August 23, 2019 from 10-4.

Cost: \$75

Materials: Bring your own pitch bowl and tools.

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

MT. ST. HELENS BLASTS TO LIFE (part 2)

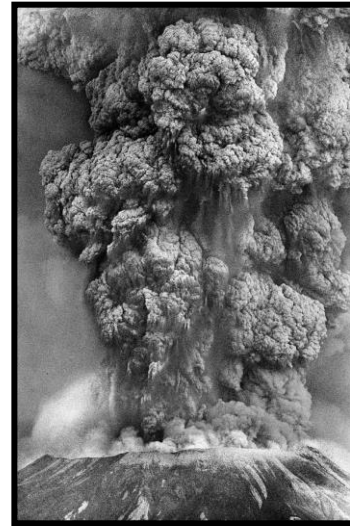
Gene Ciancanelli

POST ERUPTION ACTIVITIES

The Mount St. Helens' eruption resulted in the creation of the Mount St. Helens National Volcanic Monument. The new monument includes private land owned by Burlington Northern Railroad and Weyerhaeuser Company, a lumber products firm. Burlington owned the actual volcano and much of the land immediately around the volcano. The government, by eminent domain, will acquire all private lands within the national monument's boundary. Eminent domain requires the government to fairly compensate landowners for the property's surface value and the contained timber, mineral, and geothermal resources. The parties quickly agree on the surface, mineral, and timber value, but not the geothermal resource value. In 1986, Burlington and Weyerhaeuser retain consultants to establish the geothermal resource value on the land being purchased.

The Federal Government's position is there are no geothermal resources in the vicinity of Mount St. Helens. This is a strange position to assume, because virtually all high temperature geothermal reservoirs occur in proximity to active volcanism. Approximately a decade earlier the U. S. Geological Survey designated Mount St. Helens as a Known Geothermal Resource Area (KGRA), but now, after the massive steam eruption killed 57 people and devastated more than 150 square miles, it is the government's position there are no geothermal resources at Mt. St. Helens. The government's lead agencies are the Forest Service and the Bureau of Land Management (BLM). The private landowners disagree with the government's position. Weyerhaeuser hires as their consultants GeothermEx, Inc., a geothermal-resource consulting firm. Burlington hires our firm, Cascadia Exploration Corporation (Cascadia), as their consultants. Although Burlington and Weyerhaeuser have the same objective, the two companies largely proceed independently after preparing the first report, *Preliminary Evaluation of the Geothermal Resource Potential of the Mount St. Helens Area – July 1986*. That report assumes

Burlington and Weyerhaeuser lease their land's geothermal resources to a third party in the same manner as the Federal Government does with its land. Using this methodology, the geothermal resources have a present net value of \$84,910,000 of which \$6,424,000 is in annual lease rents and bonus payments. The Federal Government rejects this analysis, maintaining Mount St. Helens has no geothermal resources.



Plinian phase of May 18, 1980 eruption of Mt. St. Helens

EVALUATION AND NEGOTIATION EFFORTS 1986 – 1989

In early 1986, Cascadia is retained to estimate the volcano's geothermal resource value. Previously,

Cascadia worked with Technicon Analytic Research Inc. Then I see Ted sitting in a nearby office. (Gene) **“There and the University of Pennsylvania on a Department of Energy study to develop a methodology for appraising geothermal resource value at undeveloped localities. The Cascadia analysis employs the methods developed for the Department of Energy’s appraisal of geothermal resources at undeveloped localities**

The Mount St. Helens eruption is a windfall to the academic scientific community. The government funds universities and government agencies to study various topics in disciplines including geology, biology, environmental science, atmospheric science, chemistry, etc. Over 1300 scientific publications will be written before the land exchange process is completed.

Working for Burlington is pleasant, especially when traveling and attending meetings. Contrary to how they treat railroad passengers, railroad executives certainly know how to travel and eat first class. We usually dine in exclusive gourmet restaurants eating the finest foods and wines. A typical dinner for six men will cost over \$1,000 at a time when a similar meal at a fine restaurant would cost less than \$300. These good times don’t last. Burlington turns the Mount St. Helens land exchange over to Burlington’s Meridian Minerals subsidiary. I’m already well acquainted with the fact that mining companies believe in poor-boy subsistence and sadly the gourmet living ends.

There are meetings with government personnel at various localities while we’re preparing the 1986 report. These meetings are a waste of time, due to an insincere negotiation process coupled with the usual government bureaucratic sloth and ineptitude disguised as work.

One meeting is a one-on-one consultation with Ted, a U. S. Geological Survey (USGS) geologist working at Mount St. Helens. I already know Ted and expect a cordial friendly meeting, where he is to provide technical data necessary for the appraisal. I fly from San Diego to Portland, Oregon and then drive to Ted’s office at the USGS Volcano Research Office near the volcano. Upon arrival, the receptionist says, **“Ted isn’t in the office today”**. (Gene) **“We had a meeting scheduled for today and I have just flown up from San Diego?”** (Receptionist) **“I’m sorry but he’s not here today.”**

he is sitting in that office.” Walking into the office, Ted stands up and says, **“I’m too busy and I don’t want to meet with you today”**. He then escorts me from the office and closes the door. As I’m standing in the hall furious and trying to compose myself, I hear Ted pick up the telephone and tell someone he is taking the rest of his “too busy” day off. This wild goose chase treatment is standard government procedure and I’ve experienced it on several occasions. There is never a meeting with Ted and the government never honors the agreed for technical data exchange. All technical data flows in one direction from Burlington and Weyerhaeuser to the government.



A large tree ripped apart by the steam blast in the May 18, 1980 eruption.

On another occasion, the government bureaucrats want to make a helicopter flight over the monument and the volcano for an onsite inspection. This is a sightseeing helicopter junket at Burlington and Weyerhaeuser’s expense. The government bureaucrats select a Saturday date for the sightseeing trip. I charter a helicopter and inform the BLM and Forest Service personnel as to the time and airfield where we will meet the helicopter. Once again, I fly from San Diego to Portland for the sightseeing trip. At the airfield, the helicopter pilot and I wait for the government people to arrive. I’m anticipating this will be a great opportunity to see the volcano. The pilot and I sit and wait hour after hour. I telephone the government offices, but it is Saturday and no one answers the phone. In the afternoon, I release the helicopter and return home. On Monday, I call the BLM to ask why no one showed up

and they reply, **“When we picked the date, we did not realize it was a Saturday. We don’t work on Saturdays.”** (Gene) **“Why didn’t you tell me and save us the cost of the helicopter and my time and travel expense?”** (BLM) **“It didn’t occur to us.”** Sure, it occurred to them. This is standard runaround crap companies constantly endure when dealing with these 20th Century imperial bureaucratic jerks. They did this again to several of us when we arrived in Portland for a scheduled meeting only to be told everyone was “out of town”. Their disrespectful and costly gamesmanship greatly hindered the land exchange process.

The 1986 report is delivered to the Government Agencies and there is a waiting period while they read and respond. They are slow readers and in November 1987, Burlington and Weyerhaeuser receive BLM’s response. The government dismisses the 1986 Cascadia report because, in their opinion, the other Quaternary volcanic KGRA’s are different from Mount St. Helens KGRA. Obviously, there are differences, because no two geologic areas are ever identical. BLM also questions the ability to immediately market geothermal energy. BLM fails to understand that Burlington and Weyerhaeuser own these geothermal resources. They are under no obligation to market them at the present time. No company develops and markets a resource except when market conditions are favorable. Burlington and Weyerhaeuser could “sit on” these resources until future demand renders the resource profitable to develop. BLM’s position is the resource has no value period – end of discussion. They refuse to recognize the geothermal resources at Mount St. Helens have value, while they routinely value undeveloped coal, oil, gas, minerals, and geothermal resources elsewhere.



Decades after the volcano’s eruption the devastated area is recovering with small trees and shrubs.

By 1988, the opposing sides are at an impasse. They select an outside third-party arbitrator and agree to abide by his decision. Burlington now places their Mount St. Helens interest with their Denver subsidiary Meridian Minerals. In preparation for arbitration, Meridian has Cascadia prepare two reports. The report, *Status of the Geothermal Resource Potential of Mount St. Helens Volcano in 1982*, documents all the information available regarding the probability there were geothermal resources at Mount St. Helens, when Congress established the national monument in 1982. The second report, *Mount St. Helens – Geothermal Potential Update 1986 – 1989*, will update the original Cascadia 1986 report. Both documents are entered as evidence with the arbitrator. I know the government will dismiss Meridian’s arguments and any evidence I present. As Meridian’s sole technical expert, I stand alone, while the government has several

dozen geologists, geophysicists, and geochemists arrayed against me. The government will direct these experts to assert there are no geothermal resources at Mt. St. Helens. There are hundreds of published Mount St. Helens scientific reports by the academic and government research experts arrayed against us. Government grants and the U. S. Geological Survey are funding these experts' studies. Many of the research projects are investigating and documenting the temperature, geochemistry, size and shape, depth, etc. of Mount St. Helens' geothermal reservoir. Although the government contends there are no geothermal resources at Mt. St. Helens, it is spending millions of taxpayer dollars studying this "nonexistent" geothermal resource. I decide to argue that a geothermal resource is present by using the government's research. Cascadia compiles government documents, studies, and statements by government-funded researchers regarding the geothermal reservoir. Each opinion or fact is referenced back to the original report from which it is quoted. Nowhere does this extensive report offer my opinion. The entire report purposes the geothermal reservoir exists by means of the research and statements of the government's scientists. The arbitrator rules in Meridian and Weyerhaeuser's favor, but the government reneges and refuses to accept the arbitrator's decision.

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EVALUATION AND NEGOTIATION EFFORTS 1990 - 1995

A stalemate period begins after the government refuses to abide by the previously agreed upon arbitrator's decision. Cascadia prepares two Mount St. Helens geothermal potential update reports for 1990 and 1991. The government now rules there will be another binding arbitration before a Federal Government arbitrator. This time the government will stack the deck and have their own man decide. Imagine, you sue your neighbor and the judge is the neighbor's brother. Not exactly an impartial judgement. Meridian presents the same evidence to the Federal Government arbitrator as was presented to the first arbitrator. The Federal arbitrator realizes that if he rules against Meridian, then Meridian will argue in court that the government either refuses to accept the published conclusions of its own scientists or the government considers their published studies to be false in which case the taxpayer funded research has been a farce and a

fraud. The Federal arbitrator recognizes the trap I have set and he has to rule in Meridian and Weyerhaeuser's favor.

The BLM and the Forest Service now decide to do nothing and let the matter sit in limbo, pretending arbitration never occurred. These bureaucrats answer to no one and Burlington/Meridian and Weyerhaeuser now seek political intervention from the politicians they support in Congress. Congress intervenes and the government compensates Burlington/Meridian and Weyerhaeuser for their geothermal resources. The parties will receive geothermal rights to government acreage having comparable geothermal potential to those exchanged at Mount St. Helens. In addition, Burlington/Meridian also receive a \$15,000,000 cash payment.

The geothermal land exchange occurs in two stages. When the first land block is offered, Meridian asks me if the land block is comparable in value to those being surrendered. I inform Meridian that I'm unfamiliar with the lands being offered and to make even a minimal appraisal will cost approximately \$5,000. Meridian refuses to pay for Cascadia's services and accepts the first block with no investigation confirming that geothermal resources might be present. Meridian has a change in management after the first land exchange. The final exchange block is offered in August 1995 and Meridian's new manager invites me to a Denver meeting to discuss the final exchange. I worked with Meridian's competent landman Chuck. Prior to the meeting, Chuck asks me to prepare a report summarizing the current status of geothermal development. I write "*Current Status of Geothermal Energy Development in the Pacific Northwest – August 1995*".

Chuck and I meet with Meridian's new manager, Ralph, for the land exchange. In the morning we discuss the first land exchange and Ralph asks, "**What value did you place on the land exchanged in phase one?**" (Gene) "**I didn't place any value on that land. I took no part in that exchange.**" (Ralph) "**Why not?**" (Gene) "**I informed Meridian that they were exchanging for lands that I was unfamiliar with and it would cost at least \$5,000 to gain the necessary familiarity. Meridian decided this was too expensive and our services**

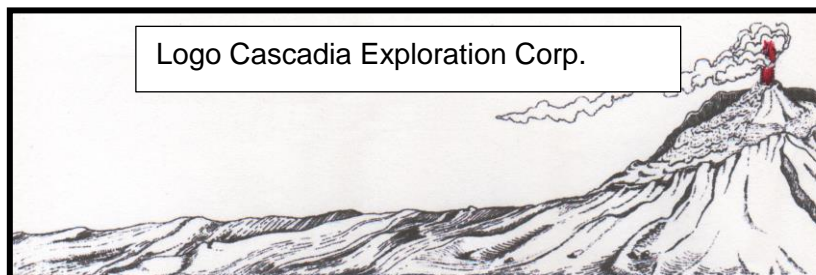
weren't used." (Ralph) "Chuck did we exchanged leave his office. Chuck is driving me to the Denver airport millions of dollars of valuable land without advice to and says, "I don't understand Ralph. In the morning insure we were getting fair value?" (Chuck) "Just as he faults the phase one exchange for not paying you Gene said, Meridian didn't want to pay for his \$5,000 to make sure Meridian is getting value and, in services. I tried to get Meridian to hire him, but they the afternoon, he does the same thing he was faulting refused to pay the \$5,000 and the exchange was made his predecessors for." (Gene) "In the morning he without a value determination." (Ralph) "That was an didn't have the freedom, gained from several cocktails incredibly stupid decision." (By now you can guess and many glasses of wine during lunch. The alcohol where this is headed.) allowed his innate stupidity to manifest itself."

The meeting then broke for a very long lunch and upon our Over a ten-year period, Cascadia's services included return, the topic shifted to the second exchange. Now for hundreds of hours of research, writing seven reports, the first time, I'm shown a map indicating the land being advisory services, and participation in numerous meetings. offered and Ralph asks for an opinion of its value. (Gene) Largely due to our work, Meridian exchanged their "I have never been in that area and have no familiarity geothermal resources at Mount St. Helens for geothermal with the geology except on a regional basis. I know of resource rights elsewhere and received a cash payment of no reason why geothermal resources should be \$15,000,000. Unfortunately, Meridian's two wise men present in that area." (Ralph) "What would it cost to swapped proven resources for land that almost certainly get you familiar with this area?" (Gene) "As I contains no resources. It was amusing to singlehandedly estimated in the first land exchange about \$5,000." outwit the countless experts the arrogant government (Ralph) "Meridian isn't going to pay you \$5,000, what arrayed against me. I enjoyed the battle and Meridian is your lowest fee." (Gene) "That is my lowest fee. profited from the victory. In another client versus There is a certain amount of time and expense government lawsuit years earlier, when the government necessary to research the area." (Ralph) "Well we are confiscated my clients' leases, the government ruled, certainly not going to pay \$5,000." Chuck now "that as a lone self-funded geologist, I had an unfair intervenes, "This morning you expressed surprise that advantage over the multi-million dollar budgeted the phase one exchange was not investigated for major oil companies' geologists and the U. S. \$5,000 and now you don't want to spend \$5,000 to Geological Survey's geologists." Maybe they were evaluate the phase two exchange. I don't understand right. why Meridian would make the same mistake a second time?" (Ralph) "There's no mistake. This guy is trying to hold us up." I'm sitting there with my mouth shut thinking, "Here is another empty SUIT promoted beyond his level of competence."

Hoping to make headway, Chuck now tries to shift the discussion. (Chuck) "I asked Gene to prepare a report for Meridian, on the current status of geothermal development, to give us some background for making a decision." (Ralph) "What's that report going to cost us?" When I tell Ralph, the report cost \$2,000 to prepare, he refuses to pay for it. Chuck tries to get Ralph to be reasonable, but he has already decided he doesn't want to pay for my services. As I'm preparing to leave, I say to Ralph, "This report is of no value to me. You can have it for \$300." Ralph turns the offer down as Chuck and I

EPILOG

In the spring of 1979, Betty and I formed Cascadia Exploration Corporation. We designed the logo pictured below. A year later, Mt. St. Helens erupted and created a volcano uncannily similar to our logo.



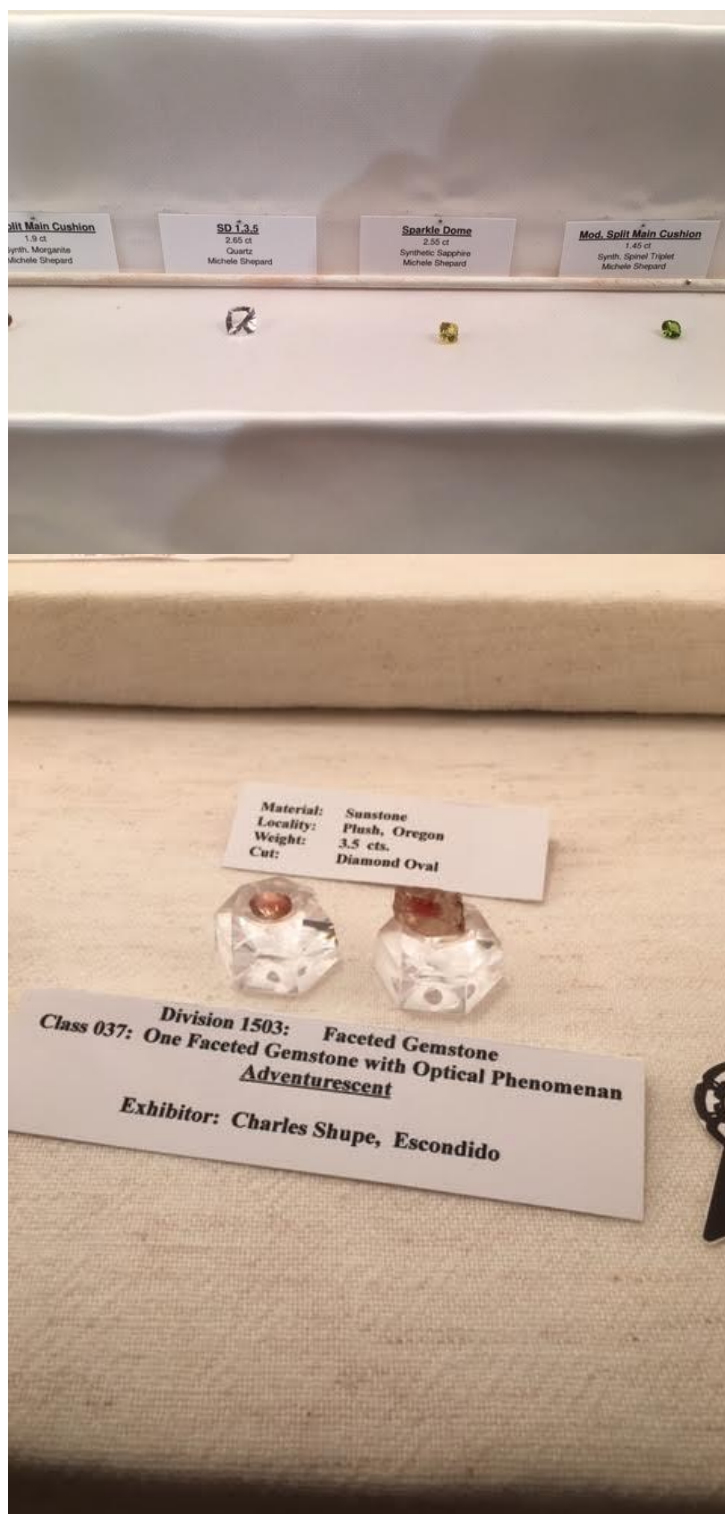


A small eruption at Mt. St. Helens volcano following the main 1980 eruption

San Diego County Fair
2019 – Multiple prize-
winning entries by PGMC
members:

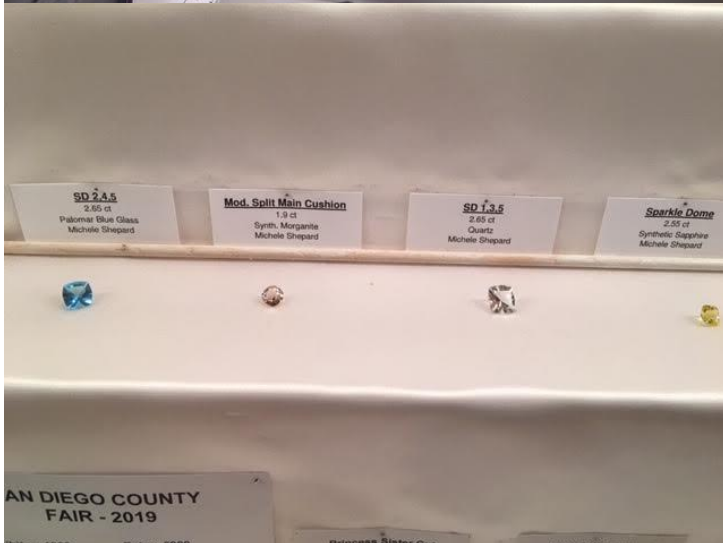






Palomar Gem and Mineral Club

VOLUME 60 - ISSUE #6
JUNE 2019



BIRTHSTONES

JUNE BIRTHSTONES



If you were born in the month of June, you are lucky enough to have three birthstones to call your own. June is one of only three months (the others are August and December) that has three

birthstones, giving you a variety of beautiful birthstone choices.

The June birthstones are pearl, alexandrite and moonstone. With so many attractive options, individuals with June birthdays can have a birthstone that fits their mood or budget, due to the different colors and price points these gems offer.

JUMP TO:

[PEARL](#) [MOONSTONE](#) [ALEXANDRITE](#)

PEARL BIRTHSTONE

PEARL BIRTHSTONE MEANING & HISTORY

This enchanting June birthstone originates from oceans, lakes and rivers around the world. It is a timeless wardrobe staple, beloved by women of all ages. The origin of pearls fascinated our forebears. Ancients from the Middle East believed that pearls were teardrops fallen from heaven. The Chinese fancied that the June birthstone came from the brain of a dragon. Christopher Columbus and his contemporaries thought that mollusks formed pearls from dew drops.

Pearls are organic gems that grow inside the tissue of a living saltwater or freshwater mollusk

(either an oyster or a mussel). Natural pearls form when the mollusk secretes a substance called nacre around an irritant such as a piece of sand or a parasite that has invaded its shell. Cultured pearls are a product of human intervention. Technicians implant a piece of mantle tissue alone (common for freshwater cultured pearls) or with a mother-of-pearl shell bead (all saltwater) into a host mollusk. The mollusk covers the irritant with nacre, just like a natural pearl. Cultured pearls are raised in pearl farms – saltwater or freshwater operations where the mollusks are cleaned, protected from predators and eventually harvested. Thousands of years of pearl fishing have decimated the natural pearl beds, so cultured pearls account for the vast majority of pearl sales today. These cultured pearl birthstones come in a dazzling array of sizes, colors and shapes.

Pearls have long been associated with purity, humility and innocence. So it may be said that the June birthstone meaning is "sweet simplicity." As such, pearls were traditionally given as a wedding gift.

The pearl birthstone was also thought to have beneficial properties. In the ancient Sanskrit text the Atharvaveda, pearls were said to bestow long life and prosperity. In Asia, pearls were believed to help alleviate indigestion and hemorrhages. Some 19th century Arab physicians maintained that pearl powder improved eyesight, quieted nervous tremors and eased depression.

One of the most famous natural pearls is the 50.56 carat (ct) [La Peregrina](#). About the size of a pigeon's egg, the drop shaped pearl was discovered in the 1500s in the Gulf of Panama. It became a prized possession of European royalty. Richard Burton eventually gifted it to Elizabeth Taylor in 1969; Christie's New York auctioned the Cartier necklace containing La Peregrina for \$11.8 million in 2011.



Cartier set Elizabeth Taylor's historic 50.56 ct La Peregrina pearl as part of the pendant to this two-

strand pearl, ruby and diamond necklace. Courtesy: Christie's

WHERE ARE PEARLS FOUND?

Warm waters... clear skies... dramatic scenery – it sounds like a dream beach vacation, don't you think? It's also an accurate description of where you'll often find these pearl birthstones. Pearl-bearing mollusks fail to thrive in polluted waters, so pearl farms are usually located far from civilization – and often in breathtaking settings.

Saltwater cultured pearls are grown in many areas around the world. Akoya cultured pearl farms are primarily found in Japan and China, especially along the southern coasts of Guangdong and Guangxi provinces. South Sea cultured pearls are farmed from the northern coast of Australia through Indonesia to the southern coast of Southeast Asia, with large operations in the Philippines as well. The Gambier Islands and the Tuamotu Archipelago, both part of French Polynesia, are two locales where the rich black Tahitian pearls are cultured. China is the dominant source of freshwater cultured pearls.



Ago Bay, Japan is one of the most important sites for akoya cultured pearl farms. Photo: Valerie Power/GIA



French Polynesia's atolls shield pearl farms from the surrounding ocean waves. Behind the fringe of palm trees, there's a sheltered lagoon that's ideal for mollusk culturing. Photo: Amanda Luke/GIA

Natural pearls have been found in the Arabian Gulf (Persian Gulf) for at least 5,000 years, while divers have been recovering the June birthstone from the Red Sea since 300 BCE. The Strait of Mannar has been providing pearls since 2000 BCE. Starting in the 16th century, during Spanish colonial rule, large quantities of pearls were recovered from the

waters off Mexico, Central America and what is now Venezuela. Only small quantities of pearls are found in any of these areas today.

PEARL BIRTHSTONE CARE & CLEANING

Pearls are 2.5 to 3.0 on the [Mohs Scale](#) of hardness, so they are a comparatively soft gem and require special care. Store them separately from other gemstones and metal jewelry to prevent scratching. Never store your pearl birthstones in a plastic bag — plastic can emit a chemical that will damage their surface. Always apply perfume, hair products and cosmetics before putting on your pearl jewelry. The best way to clean your June birthstone: Use a soft, damp cloth, ideally after each time the pearls are worn.



Today, cultured pearls can be found in a wide variety of shapes, colors and sizes (here, measuring between 9 mm and 23 mm). From left to right: a baroque cultured pearl; small fancy pink and peach off-round freshwater cultured pearls; round white Australian cultured pearls; and black and brown Tahitian cultured pearls. Photo: Robert Weldon/GIA.

Now that you know a little more about the history of pearls and where this June Birthstone comes from, you probably have a deeper appreciation for these classic beauties! If we've whetted your appetite for the pearl birthstone, consider adding [five essential pearl jewelry pieces](#) to your

collection. But before you begin shopping for pearls, be sure to learn about the GIA 7 Pearl Value Factors™ and what to look for with this handy [Pearl Buying Guide](#).

MORE ABOUT PEARL PEARL BUYER'S GUIDE

MOONSTONE BIRTHSTONE

MOONSTONE BIRTHSTONE MEANING & HISTORY

Moonstone is the best-known gem of the feldspar group of minerals. It is renowned for its adularescence, the light that appears to billow across a gemstone, giving it a special glow. The finest moonstones show a blue sheen against a colorless background. This June birthstone has been associated with both the Roman and Greek lunar deities. Hindu mythology claims that it is made of solidified moonbeams. Moonstone is often associated with love, passion and fertility; it is believed to bring great luck.

Great designers of the Art Nouveau era (1890s–1910s), such as René Lalique and Louis Comfort Tiffany, featured moonstone in their fine jewelry. The moonstone birthstone came to the forefront again during the 1960s “flower child” movement

and with New Age designers of the 1990s.



Frankish disk brooch from the second half 7th century.
Medium: Gold sheet, filigree, moonstone/adularia, glass cabochons, garnets, mother-of-pearl, and moonstone.
Courtesy: The Metropolitan Museum of Art

WHERE IS MOONSTONE FOUND?

Moonstone can be found in a wide variety of places. This includes parts of the United States, such as New Mexico, North Carolina and Virginia. The most important world locations for the moonstone birthstone are India and Sri Lanka, but sources also include Brazil, India, Sri Lanka, Madagascar, Myanmar and Tanzania.



Mining for moonstone in Sri Lanka. Photo: Afsaneh Tazari/GIA



Rough moonstone found in Sri Lanka. Photo: Vincent Pardieu

MOONSTONE BIRTHSTONE CARE & CLEANING

Moonstone is a 6–6.5 on the Mohs scale of hardness and has poor toughness. It may crack when exposed to high heat. Therefore, ultrasonic and steam cleaners should not be used on your moonstone. The best option for cleaning is warm, soapy water with a soft brush.



The 8.34 ct moonstone in this ring designed by Maria Canale is set in platinum with sapphires. Courtesy:

Richard Krementz Gemstones. Photo: Robert Weldon/GIA

**MORE ABOUT MOONSTONE MOONSTONE
BUYER'S GUIDE**

ALEXANDRITE BIRTHSTONE

ALEXANDRITE BIRTHSTONE MEANING & HISTORY

Alexandrite is the rare variety of the mineral chrysoberyl that changes color in different lighting. Most prized are those alexandrite birthstones that show a vivid green to bluish green in daylight or fluorescent light, and an intense red to purplish red in incandescent light. Major alexandrite deposits were first discovered in 1830 in Russia's Ural Mountains. The gem was named after the young Alexander II (1818–1881), heir apparent to the throne. Alexandrite caught the country's attention because its red and green colors mirrored the national military colors of imperial Russia.

When certain types of long, thin inclusions are oriented parallel to each other in this June birthstone, they can create another phenomenon, called chatoyancy or the cat's-eye effect. Few gems are as fascinating – or as stunning – as cat's-eye alexandrite.

