THE ROCKET

October 2021

deadline for next issue
November 12

Club email: secretary.hrc@gmail.com
Newsletter email: Edrocket18@gmail.com

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Future Meetings: Our monthly meetings are on the fourth Friday of the month.

Due to Covid-19, we are now limited to 40 people in the room but we still need a quorum (24 members) for the meeting so please come. Masks and full vaccination will be required and your status will be checked upon entry to the meeting. Crystal (our club secretary) sent a link on Saturday. Here is the information:

To attend the meeting please fill out the form to RSVP your spot so we can keep track of how many people we will have and who will be there at: https://forms.gle/z2iUXC7yR42ePzKb9

Next Meeting: Friday – October 22 at 7PM at Hastings Community Center Hall

There will **not** be snacks or drinks but you can bring your own water bottle etc.

Membership: It is membership renewal time. Payment by cash or cheque - $20 for individuals, or $25 for a family membership

Programs:

Our feature Speaker is Rhiana Henry from UBC Mineralogy.

Rhiana will be talking about her Beryl Crystallography Project. She will cover a bit about beryl, what she's been working on, and what the next projects are (since there are more in-progress).

Rhiana says: "I've always enjoyed gems and minerals, starting as a kid going to the Hayward shows in California. I did my undergraduate degrees in physics and geology at CU Boulder, 2013. Then graduate gemologist certification at GIA, 2014. Finished masters in geology at CU Boulder, 2018. I have been at UBC in Lee Groat's mineralogy group working on the PhD since then."

Of interest is that she reached out to our Club for assistance, and John Prychon supplied her with chips of emerald to be used for her research purposes.

Editorial: This is our first newsletter since April 2020. Due to Covid-19 the community center closed, our workshop closed down and we could not hold meetings. Shows were being cancelled and it wasn't fun to put out a newsletter full of cancellations and closures. Now it is a different story. We are able to meet and have opened our workshop. Everything is with limited capacities, but things are starting to happen again. There is something to report about our club. Here is looking to the future.

A report from the workshops committee

David Myers, Sante Gasperin, and Paul Pinsker

During the summer, after the Hastings Community Centre re-opened, allowing controlled access to our workshop, our club began to plan how to reopen our workshops. After several club zoom meetings (both general and executive), a workshop committee was struck to work with Hastings Community Centre executives to work out a health and safety protocol plan to enable the beginning of reopening our club's workshops during the summer, in preparation for the beginning of our fall season.
After it was agreed that the maximum number of members that can be present at the same time in our workshop was three persons, maintaining social distancing and wearing masks . . . a number of three person work parties were held to prepare the workshop for re-opening. This included unpacking all of our boxed up and stored tools and materials that had to be removed from the workshop space (due to flooding from very heavy rains, during the lock-down) so that a new floor could be installed after the old one was damaged by the flooding. It also included work parties to clean out rock sludge in our slab and trim saws and add fresh oil, as well as cleaning out the water return pipe for our grindstones (which had become partially clogged over time). Thanks to all of the volunteers who helped on these work parties.

Following these preparatory work parties, in the last week of June, we re-opened lapidary workshops on Monday, Wednesday and Thursday afternoons (1- 4:30 pm) as well as silversmithing workshops on Wednesday and Saturday mornings (9-12 am) with one instructor and up to two participants. This was subsequently changed to one instructor and four participants after the safety and health protocols were updated later in the summer. The instructors included Adam for the Monday afternoon lapidary workshops (until he had to return to California for school and was then replaced by Vera); Marilyn, for the Wednesday morning silversmithing workshops; David for the Wednesday afternoon lapidary workshop; Sante for the Thursday afternoon lapidary workshop; and Crystal (and later Robert) for the Saturday morning silversmithing workshop. Thanks to all the workshop instructors for helping us get this done! We continued the workshops through July and the first three weeks of August.

The Hastings Community Centre was closed for the last week of August for the PNE. When the community centre re-opened in September, they expanded their hours to include being open on Saturdays until 5pm (previously it was only until 1pm), being open in the evenings Monday- Friday, and being open on Sundays. Since then we have added a Saturday afternoon lapidary workshop that is currently being instructed by David and Sante on alternating Saturdays.

One of the changes to our workshop that occurred after the lock down was a move of our slab saws and trim saws from the south wall of the workshop to the west wall near the grindstones on the north wall. This was partially due to not being able to use a power outlet on the east wall for the flat lap and the drill press (because it was not an authorized outlet installation). This led to the drill press and flat lap being moved to where the slab saws and trim saws had been previously and all three of the saws being moved to where they are now. This has a benefit for our neighbours in the room next to us on the other side of the south wall – our noisiest machines (all of the saws) are now further away from the dividing wall.

In the near future we are hoping to re-open the metal working workshop on Sundays and to move the Monday and Thursday afternoon lapidary workshops to evenings, as they were historically, instead of the current afternoon time slot. When the switchover has been arranged, notifications of the date of those switch-overs will be sent out to all current members by email.

Workshop Hours

Workshops are currently limited to a few members and the instructor. Please contact the instructor to reserve space and get information about entering the workshop.

			Instructor
Lapidary:	Monday	1:00pm – 4:30pm	Vera
	Wednesday	1:00pm – 4:30pm	David Myers
	Thursday	1:00pm – 4:30pm	Sante
	Saturday		David or Sante
Silversmithing:	Wednesday	9:00am – 12:00 noon	Marilyn
	Saturday	9:00am – 12:00 noon	Robert

Guenter Otto Nominated for the BCLS Lapidary Arts Award

Our Club has submitted what we hope will be a successful nomination of Guenter Otto as our entry for the new Lapidary Arts Award to be presented by the BCLS (BC Lapidary Society). Guenter has been actively involved in lapidary arts, including intarsia, inlay work, gem carving, small sculptures, faceting, fantasy gemstone carving, and jade carving, for the past 45 years. Guenter's work in stone and metal is well-known for excellence. He has exhibited his work and won some notable awards:

- First place (three times), Pacific Northwest Jewelry Guild competitions (BC and Washington)
- First place, silver category, 2014 World Jade Symposium
- Commissioned to carve a 100-carat sunstone by Sunstone Bute Mine for a travelling Smithsonian Museum exhibition
- Guest carver (demonstrator), jade exhibition, Vancouver Museum (Ultimate Treasures of Ancient China), 2001

As well, he continuously seeks greater knowledge in the hobby and generously shares his expertise with others. Many of us remember his presentation to the club about sunstones and his carvings. If Guenter prevails, the Hastings Centre Rockhounds receive a prize of $500, fame, and glory; Guenter would receive a plaque to honour his selection and a place in history. Let's all wish Guenter well.

Can We Know What You did During the Pandemic?

That was the question put to members at our last zoom meeting. Some members have responded. We'd love to hear from more of you.

PROJECTS

Many of you have been working on some great projects during our "Covid break". I hope to have a member's project in each newsletter. This is our newsletter and I would like it to be about our club. Do you know someone working on (or completed) an interesting project? Please let me know so we can feature their work in our newsletter.

What I did during lock down

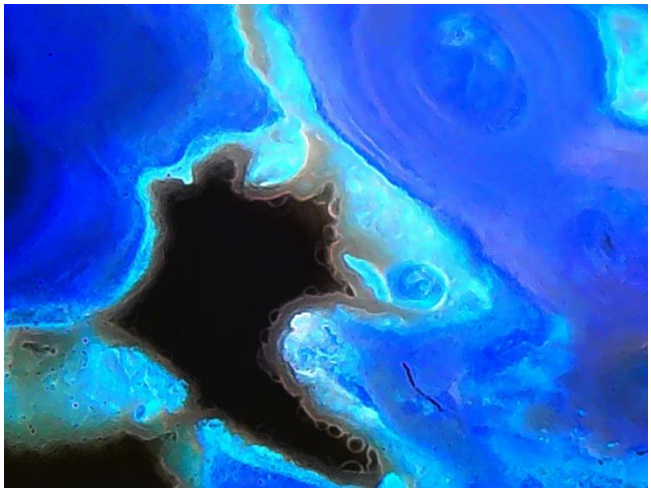
by David Myers

So, besides more recently being very involved in our club's re-opening efforts (see "Report from the workshops committee"), I spent a lot of my time during the lock down and the closure of our club's workshops, purchasing new materials from gemstone merchants in both Indonesia and Turkey who graciously provided me with "open boxes" – a term that means if you decide you want a given slab, they will put it in an "open box" for you until you have accumulated enough slabs to make the very expensive shipping worthwhile . . . and **then** they will bill you for all accumulated slabs and shipping fees. I don't pay until I'm ready for shipping. They trust me to keep my word and purchase those items in my "open box" and I trust them to hang onto my chosen slabs until they have accumulated enough for me to justify having them shipped altogether in one package. During those sixteen or more months we were shut down, I have ordered and received quit a lot of slabs (and a few cabs that are big enough to use with my backlighting kit (which I'll have to do silversmithing for) - all of which should keep me busy for quite some time to come. Here are a couple photos of a few of those slabs – the first set from Indonesia and the second from Turkey:

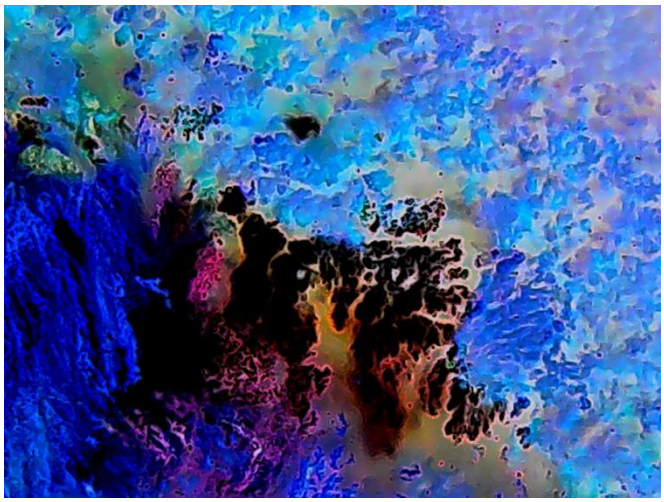
During those long months I also spent a lot of time using my USB microscope to explore and capture a form of "found art" in my already existing backlit pendants. The microscope comes with its own ring of tiny LED lights which I almost never use because they create a ring of reflections on the polished surface of my pendants. In the beginning, I used only the small LED lights from my backlighting kit to light the microscopic photographs. That causes the photographs to have very

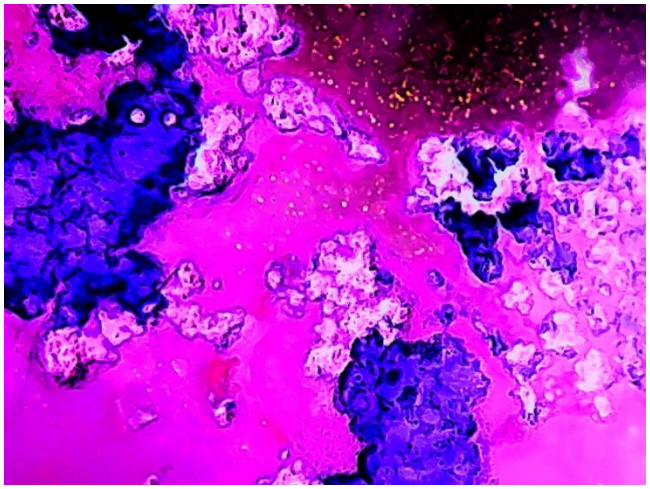
dramatic lighting with lots of very heavy shadows. Over time, I started using a small pen light to do some fill lighting from above (carefully avoiding reflections off the surface of the polished cabs). This allows one to see what combination of backlit elements in the stone are actually causing those dramatic shadows (many surprises resulted). Here are a couple of photos illustrating what may lurk in those heavy shadows:

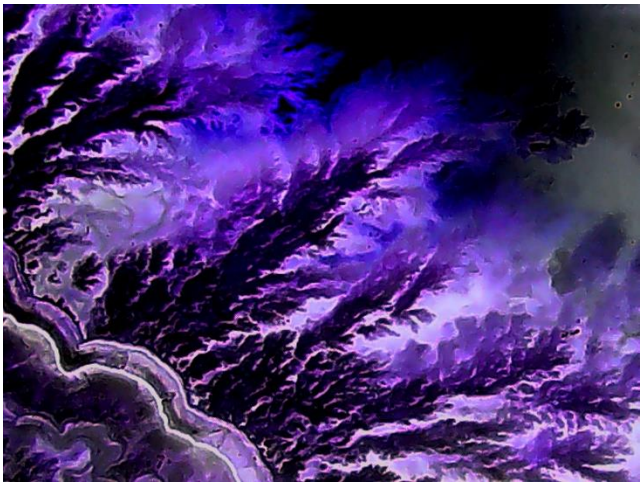
The microscope comes with software that lets you alter colour, colour saturation, brightness and contrast . . . . . and a great filter, that reverses all colours . . . what was white becomes black (and vice versa) what was yellow becomes blue, etc. Here is an example of a natural coloured microscopic image and the same image with the colour reversal filter applied:

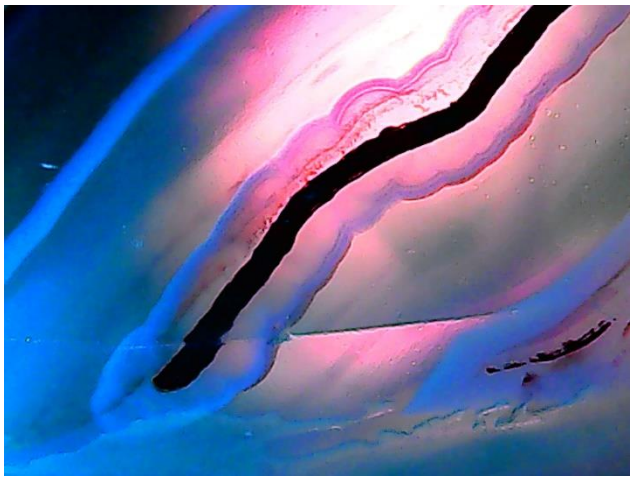


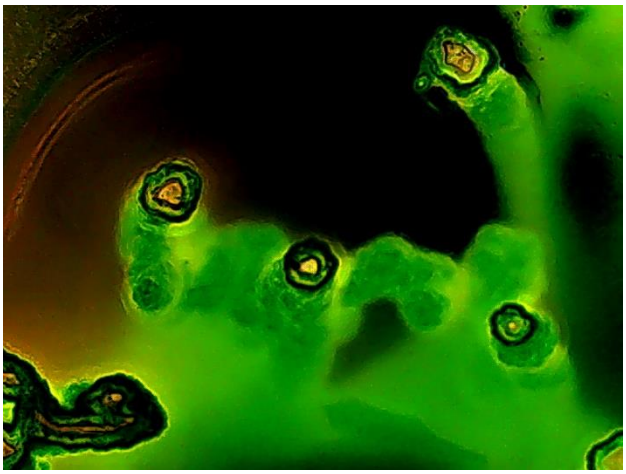
So I end up taking hundreds of high resolution photos deep within my backlit pendants with many variations of position, colours, degree of fill lighting etc. I can spend a couple hours on each backlit pendant and accumulate many photos for each pendant. Then I have to edit out the photos that I don't like for a variety of reasons, and focus on the most interesting versions, and then I separate some of the remaining photos for a "best of collection". Here are some examples from that best of collection:











So it takes a whole lot of time and I ***almost*** finished doing the microscopic photography for all of my previously made backlit pendants . . . and then we reopened our workshops! Now I'm making an average of two new backlit pendants per week and falling behind again on both regular and macro photography let alone getting around to the USB microscopic photography for the new pendants at all . . . **yet**. But there are so many wondrous images awaiting me deep down in the very exciting new backlit pendants that I am now making from the new materials that I bought during the lock down, so I'm going to have to step up my USB microscopic photography efforts very soon! This is probably the most exciting part of the process because until I fire up that USB microscope I don't have a clue as to what I'm going to find deep down in those stones . . . . it's an adventure . . . . and I love it! ;-)

Yale Field Trip

By Melanie G.

In August, 2021 Trevor Christie led a field trip to collect serpentine on a logging access road north of Yale:

Two Days on the East Coast of Vancouver Island

by Paul Pinsker

Joyce and I caught the 8:45 sailing of the Coastal Renaissance in sailor's delight weather out of Horseshoe Bay and landed as the tide was rising from its low two hours earlier. So, once in Nanaimo, we bee-lined to our destination at the projected easterly end of suburban Yambury Road, splitting the distance between Parksville and Qualicum Beach. Why? It's not a particularly special stretch of the Island's shores; however, Columbia Beach (or Yambury Beach, if you like) is noteworthy for its content of that local specialty - Dallasite - a jasper breccia blending epidote, quartz, altered basalt, and pumpellyite. I've read that it comes out of pillow lava that spews up underwater. While it doesn't look like much in the raw, coated with algae and barnacles, once cleaned up it takes a very attractive polish and can be made into jewelry or other articles. You may even want to keep some barnacles aboard.

We arrived as the tide had swept half-way to high, still exposing large beds of wave-tumbled rocks. Barnacle encrustation, though, was limited at this point so we could appreciate what was there. It took nearly half an hour, but we finally struck a patch of shore, yet exposed with the tide advancing, that was semi-fertile with our target. Another 20 minutes and we found about a dozen keepers, which were enough (see photo). Results in the workshop have been most satisfactory.

The next day turned out as foul as can be, so I aborted meeting up with kindly Russ Ball of the Courtenay Gem & Mineral Club (to search for flowerstone and fossils). Instead, Joyce and I spent a half-day in the Courtenay District Museum, which is surprisingly good. We came for the paleontology, including two(!) elasmosaurus (a type of plesiosaur) that were monsters of the seas 80.5 million years ago. The larger, more complete one was found in 1988 along the banks of the Puntledge River by Mike Trask, and the other also near Courtenay along the banks of the Trent River in 2020 by Mike's brother, Pat. Pat is now Science Curator at the museum, and gave us a lengthy tour of the fossil collections. These included ammonites and bizarre baculites, the latter readily found on Hornby Island and near Campbell River (file away for future pursuit).

A return to the area may be in the offing....the 2022 BCLS Rendezvous is planned for Coombs, west of Parksville in springtime. There clearly is lots of good rockhounding to be done in this part of the Island. My souvenir of the visit, apart from the Dallasite, was Rick Hudson's Field Guide to Gold, Gemstone & Mineral Sites on Vancouver Island. Who's coming along?

Interesting Summer Find

By Esther Searle

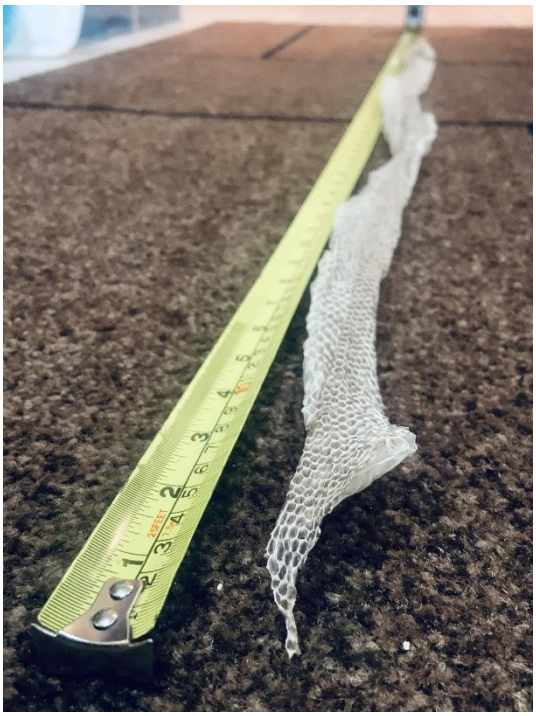
Skaha Creek fire crested over ridge near Penticton Aug.23, 2021

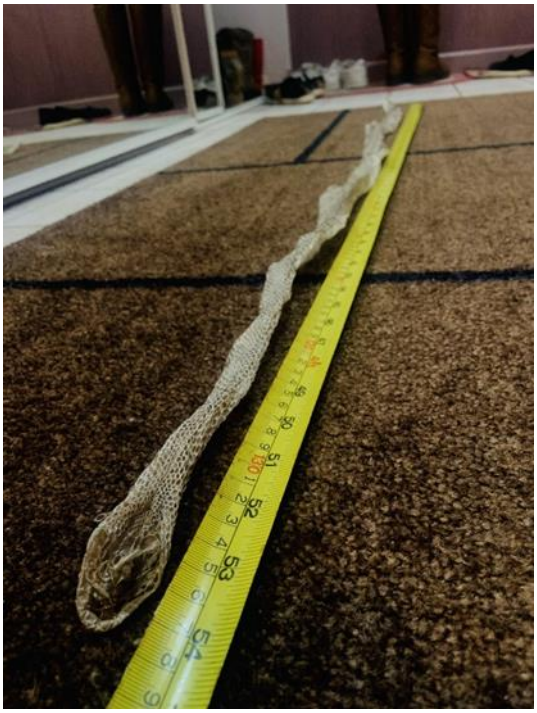
My last hoooorahhhh before the summer ended took place out in Penticton and camping in Peachland. One of the days was spent on a float down the Penticton channel with my Boyfriend, Little Brother and his Girlfriend.

The man-made Channel gets to about (30-35c in summer). Something of an oasis, the man-made river runs alongside the highway from Okanagan Lake (north) to Skaha Lake (south).

During our float there was a massive wild fire right in eyes view that had just started that morning! It just so happened that the water bombers route had them flying over head constantly the entire float. Which was super exhilarating!

As dusk was setting in and we were still on the channel I decided I had had enough and it was time to get out of the water so I pulled to the side walked up to the path and immediately found this beautiful gopher snake!





Fact: Although many snakes spend a significant amount of time underground, they usually come up to the surface to shed their skin All snakes must do this once in a while, typically every **3 weeks to 2 months**, depending on their growth rate and need to heal injuries or slough off parasites.

Upcoming Events of Interest: Shows:

We said to BCLS that our show will be in March 12-13, 2022 the first week of spring break.

Vancouver Rock Show will be at the Forum in December again, and Alex is inviting us to demonstrate again. The show there will have limits to participants and will require vaccine passports.

The following clubs are having shows and sales. For more information visit the BC Lapidary Society website or the club websites.

October 30&31, 2021 **Parksville & District Rock & Gem Club**, Qualicum Beach Civic Centre, Qualicum Beach, BC

November 19, 20 & 21, 2021, **Abbotsford Rock & Gem Show,** Matsqui Community Hall,

Recent News:

Nickell Aktarian has sent a link to a news story on the meteorite that landed in Golden by crashing through a roof.

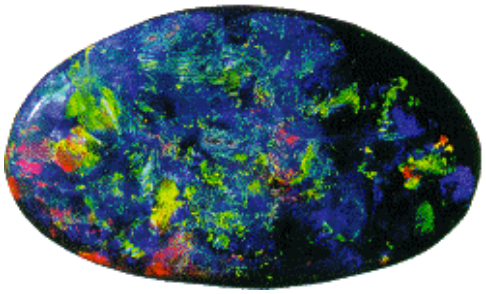
https://vancouversun.com/news/local-news/b-c-woman-nearly-hit-by-meteorite-that-crashed-through-bedroom-ceiling-ive-never-been-so-scared-in-my-life

The following is a reprint of the article I wrote for the October 2018 issue.

Opal has been the birthstone for October since the 15th century and perhaps even before.

A rough Crystal opal from Coober Pedy

Boulder opal often shows the Matrix



Aurora Australis –Most valuable Black Opal.

Sometimes aquamarine or pink tourmaline is considered the birthstone but we can consider them another time. According to most sources, opal is the stone for celebrating a 14th anniversary but some say it is for the 24th anniversary. Opal is also an alternate for the 18th and 12th anniversaries. It is a good thing there are so many varieties of opal. No zodiac or day of the week claims opal as a birthstone but Wikipedia gives opal as the birthstone for those born at 6 pm.

The name opal has 3 possible sources. In Sanskrit upala means “precious stone”, in Greek Opallios means “to see a change of color” and in Latin opalus means “seeing jewel”.

Opal was known as the “Queen of Gems” because it has the colours of all the other gems. Red is the most highly valued colour, then orange. Fire opal also comes in shades of orange, so we have our theme colour for this month’s newsletter.

In some ancient civilizations, opal was said to have fallen from heaven in flashes of lightening producing its fiery colours. Some believed opal could ward off lightening or grant invisibility (if it was wrapped in a fresh bay leaf and held in the hand). It was also thought that opals had the power to preserve the life and colour of blond hair. Ancient Greeks thought opals gave the gift of prophecy and guarded their owners from diseases especially those of the eye. That was especially true if green was the most prevalent colour in the opal. If red was most prevalent, the opal was believed to stop bleeding like the gem, ruby or emerald, usually associated with the colour.

Opal has been associated with fidelity, assurance, loyalty, faithfulness, love and desire, passion and eroticism. Opal has also been thought to act as an emotional stabilizer! Many cultures have considered opals a symbol of hope.

Because opal can show all colours it has long been held as the luckiest and most magical of all the gems, possessing all the virtues of each gemstone whose colour was shown in the stone.
That all changed in 1829 when Sir Walter Scott wrote a book called Anne of Geierstein. A main character in the story died after holy water fell on the opal she wore in her hair. She fell ill and was taken to bed. The next morning all that was left of her was ashes. Readers and others took it that the opal was bad luck for anyone not born in October. Within months the opal market crashed and prices dropped 50%. Between 1796 and 1810, Napoleon Bonaparte gave Josephine an opal, but Empress Eugenie (wife of Napoleon III after 1853) refused to wear the stones. Queen Victoria (between 1876 –1901) laughed at the superstition, and gave opals as wedding gifts to her daughters when they married.

So what is this chameleon rock? It is a solidified gel from silica and about 5-20% water. Gem grade opals usually have 6% to 10% water content. The chemical formula is $SiO_2 \cdot nH_2O$, similar to quartz (SiO_2) but doesn't form crystals. Opal forms when water, rich in dissolved silicates, gets into a cavity and deposits the microscopic spheres of silicates. If the spheres are uniform in size and shape and neatly stacked, they will diffract light creating colours-precious opals. Often the spheres are random in size, shape, and arrangement so they don't have the colour play -common opals. The size of the spheres and angle of viewing determines the colour, but the spheres are so small that, according to gemsociety.org, 20,000 spheres are about the size of the period at the end of this sentence.

Opals have a Mohs hardness of 5.5 to 6.5. (Most household dust is a 7 to 7.5 on the Mohs scale.) Opals can be transparent to opaque. Each opal is unique like a fingerprint because of the difference in colour play and pattern of the spheres of silica. Because opals are relatively soft, care must be taken when you own one. Store them away from other jewellery and avoid wearing them where they will get treated roughly. Opals are very heat sensitive. Clean them with warm or room temperature water, mild soap and a soft brush. A toothbrush is too hard so a softer bit of cloth may be better. Don't use mechanical cleaning systems or steam. Some opals may crack if allowed to dry out too rapidly after being mined. To prevent that it is often recommended to store the stone in moist cotton – not water and definitely not oil or glycerin. Opals may be somewhat porous, so it is dangerous to immerse opals in liquids other than water.

For the lapidary, Opals kept in water must be dried carefully before cutting. Taking it out of water and putting it in a plastic bag for a year – out of sunlight - is one suggestion. There may be other and even better methods; more research is recommended. Sometimes a stone can become chalk white and lifeless. This may be due to scratches on the surface that destroy the polish and dulls the colour play. Re-polishing can correct this. As opals dehydrate they can develop crazing or cracks or checking (which is cracks on the surface.) These may not be able to be repaired.

According to the Care Guide on gemsociety.org, "Opals are sensitive to shocks from contact as well as scratching, so they're more suitable for pieces like earrings, brooches, and pendants than rings. If you're considering an opal ring, choose a setting in which the metal comes over the opal. However, avoid settings that can put excessive pressure on the opal, such as bezel or prong settings."

To evaluate an Opal five steps are taken: determining the **type** of opal, examine the **colour play**, the **transparency**, the **clarity**, and the **cut**. Opals are rarely faceted and often cut in irregular shapes to preserve as much of the valuable colour-play part of the stone as possible.

There are 6 main types of opals. "Common opal" comes in a variety of colours and refers to opaque or glassy opals with a waxy luster. They do not have any colour play. Common opals are often fluorescent. The other 5 types are Gem Opals: White Opals, Black Opals and Crystal Opals occur in small seams in sedimentary rock. Boulder Opal occurs in thin layers between layers of hardened sandy clay. Fire Opal occurs as pebbles within old lava flows.

- White or light opal: translucent to semi-translucent, with play-of-color against a white or light gray background color, called the bodycolour.
- Black opal: translucent to opaque with play-of-color against a black or other dark body colour.
- Crystal or water opal: transparent to semitransparent, with a clear background. This type shows exceptional play-of-color.
- Fire opal:transparent to translucent, with brown, yellow, orange, or red body color. This material, also known as "Mexican opal," often doesn't show play-of-color. It is often faceted.

- Boulder opal: translucent to opaque, with play-of-color against a light to dark background. Fragments of the surrounding rock, called matrix, become part of the finished gem.

The colour play of opals involves looking at the percentage of colour and the patterns that can show. This is where people will discuss pinpoint, harlequin or other patterns of colour. If a particular shape is seen in the colour pattern it is considered a more valuable stone. Larger patches of colour are better too.

We often discuss treatments of the gem stones. We've already mentioned concerns with water, oil and glycerin. But some ways lapidaries use thin pieces of opal can be useful. These pieces can be attached to a backing, as in a **doublet** or have a cover of quartz added to protect the thin layer of opal, as in a **triplet.** These are considered lesser stones than the solid opal, but can be useful in creating jewellery such as rings which will get harder wear. Care must be taken not to soak these pieces as the glue between the layers can separate. Sometimes these added layers will be made of plastic so the buyer needs to know what they are getting. Doublets and Triplets allow the beauty of the opal to show, and allows thin pieces of opal to be used, at a fraction of the price of solid opal.

Imitation opals have been made using Slocum stone, a man-made glass that gives a play of color. Chips of opal and colored plastic are also put into hollowed rock crystal, and an imitation opal from Gilson Laboratories uses silica spheres. A jeweller can spot these imitations with their equipment. A lay person can use heat to melt plastic or spot a mesh-like appearance to the colour play in imitations. As new imitations are created new methods of spotting them emerge.

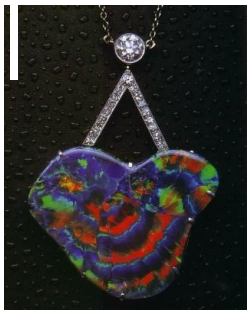
As early as 4000 BC tools of opal were used in northern Africa. Since Roman times the gem opals from Eastern Europe were the most highly prized until opals were discovered in Australia in the 19th century. Now, Australia is the best known area for producing opals but Ethiopia is gaining a greater market share. Brazil also produces some good quality White Opal. Common opal is found around the world.

In North America, Mexico produces Fire Opal which is often known as "Mexican Opal". Louisiana produces the Louisiana Sand Opal that is a sandstone/quartzite with opal cement and matrix. Spencer, Idaho produces a rare Star Opal (the star is created by the order of the spheres not inclusions like happens in Sapphire). There is also a lot of thin vein opal that is useful in doublets and triplets. According to Gemmology Canada, Gemstones of British Columbia By Stephen Bertalan, A.G. (C.I.G.) (cigem.ca) " Common opal occurs in seams of rock outcroppings north of Princeton, and also in tertiary rocks at Savona Mt., Agate Mt., Horse Fly River, Fourmile Cr., and Slocan Lake." Fire Opal has been found along the banks of Deadman Creek but only a few locations of precious opal are found in BC - perhaps Eagle Creek near Burns Lake and on a mountain west of Penticton. Outside Vernon opal is mined commercially. In the past there were some concerns with cracking. I could not find recent information about the site.

There are some notable specimens amongst opals. The **"Aurora Australis"** (See Beginning of the article) was found in 1938 at Lightning Ridge , New South Wales, Australia. It weighs 180 carats. and is 3 inches by 1.8 inches. Dug from an old sea-bed it has the distinctive impression of a star fish on its back.

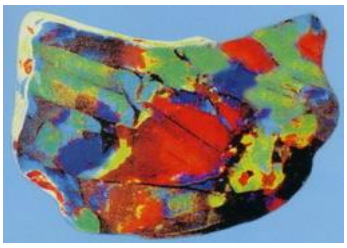
"Olympic Australis" was found at a depth of 30 feet near Coober Pedy, Australia in 1956. Uncut it is 127 oz.and named in honour of the Olympic Games that were being held in Melbourne. Currently it is in Sydney, Australia.

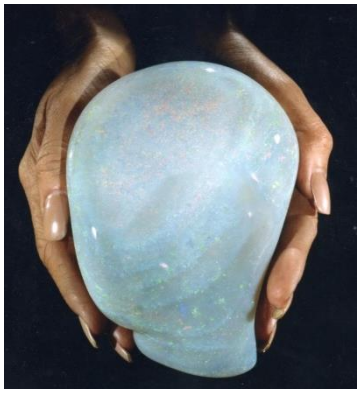
The **Andamooka Opal** was discovered in Andamooka, South Australia and after cutting and polishing it weighs 203 carats. It was set with diamonds into an 18 karat palladium necklet and presented to Queen Elizabeth II in 1954 on her first visit to South Australia.



Red Admiral or Butterfly was found in Lightning Ridge, Australia. It is 40-50 carats rough. Many regard this as the world's most beautiful opal.

Pride of Australia was found in 1915 in Lightning Ridge, New South Wales, Australia. It was 2 inches x 3 inches and 225 carats, partly cut. It was stolen stolen from the owner in Los Angeles in 1961.





The **Galaxy** is certified by the Guinness Book of World Records (1992) as the world's largest polished opal. It was found at the Boi Morto Mine in north eastern Brazil in 1976. It is part of a private collection. The finished opal weighs approximately 3,749 carats. It was carved into a shape resembling a child's head.