

LAPHOUND NEWS

VICTORIA LAPIDARY & MINERAL SOCIETY

PO Box 48164 Uptown PO
Victoria, BC V8Z 3L0



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Website :: www.vlms.ca

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Sunshine Corner:	Susannah Andersen	johnsusannah@telus.net (250-812-9303)



The Newsroom

Announcements

Club Contact Information

Victoria Lapidary & Mineral Society has a new (centrally located) mailing address. The old mailing address is still active as we relay the new information to our business contacts, but please, from this time forward send any mail correspondence to:

**VLMS
PO Box 48164 Uptown PO
Victoria BC
V8Z3L0**

March Rock and Gem Show

A reminder to all club members that this annual Rock and Gem show is scheduled for March 15-17, 2019 at the DaVinci Center, 195 Bay Street, Victoria, BC (in Vic West). It is never too early to start getting ready for our Annual Show. Mark it in your calendars and stay tuned as to how you can help make our annual, hosted event to continue to be a show-stopping success. Planning meetings have already started – to volunteer to help out, contact Allana. Volunteers are needed for setup (Thurs), operation (Fri-Sun), and take down (Sun).

Competition Case at the Rock and Gem Show

Submissions for the competition case at the annual Rock and Gem show are being solicited. Please contact the show organizers (or see the VLMS website) if you are interested in this competition – categories include cabochons, faceted rocks, wire-wrapping, sculpture and silver work involving rocks and gems.

Abbotsford Mineral Excursion

On Saturday April 13th, our club will once again be subsidizing the cost of two coach-style buses to take members on a return trip from the Tsawassen ferry terminal to the BC Gem Show in Abbotsford. We will be catching the first ferry at 7:00 am and board the awaiting buses at the Tsawwassen ferry terminal at 9:00 am. The buses will take us to the BC Gem show at the Abbotsford Exhibition Park, and return us later in the day in time to catch the 5 pm ferry home to Victoria. Bus transportation cost for each club member is \$20 for the return trip. Each member is responsible for their own transportation to and from the ferry on the Victoria side, as well as, ferry costs, food and, of course,

shopping money. To date, we have already had enough members sign up and secure their spot to fill one of the buses and spots are reserved only once payment has been made, so don't delay if you want to take advantage of this extremely fun excursion. The Saturday tailgate sale, the showcases, demonstrations and more rocks, crystals, books than you can count await you at this, the biggest rock show in BC.

Club Events

Annual General Meeting

The 2019 Annual General Meeting was held on January 7, 2019 at the Les Passmore Senior Centre. The results are listed below:

Elected positions:

President: Allana Shilito

Vice President: Leni Gagnon

Secretary: Sarah Hamilton

Treasurer: David Jackson

Registrar: Margaret Braithwaite

Members At Large: Yvan Gagnon, Brian McMillan, John Andersen, Debbie Frank

Appointed Positions:

Sunshine Corner: Susannah Andersen

Library: Kathryn Ann Hawkins

Programs: no volunteers at present

Newsletter: Gary Brooke

Webmaster: Becci Simmons

Field Trips: Gilles Lebrun

Show Chairman: Allana Shilito

Refreshments: Barb MacKenzie

Please contact vlms@vlms.ca if you are interested in supporting our club by volunteering to take on the Programs position or assisting Margaret or Gilles with their respective positions.

Meetings

The next meeting is scheduled as follows:

Date: Mar 4, 2019

Place: Burnside Lawn Bowling Clubhouse, 274 Hampton Road, Victoria, BC

Time: 7:30 pm.

Field Trips

The February field trip is scheduled for 1200 pm (noon) Feb 24, 2019 at Island View Beach. Participants are to meet at the beach parking lot. Please let Gilles know by phone if attending. The March field trip is to be announced.

Courses

It has been a busy start to the New Year as we have already had two Basic Lapidary courses completed and, at the time of this newsletter's distribution, a Basic Silversmithing course will be half completed. Vanessa will soon be organizing a third lapidary course starting mid-March on Tuesday nights; if you are an existing member who is looking for courses and have not yet been contacted, please send an email to the workshop email address (vlmsworkshop@gmail.com)

Course rates will be moderately increased in September and any new names added to the wait-lists after June, will be subject to the new rate (\$50).

Reports

President (Allana)

It is my pleasure to deliver my first president's report. Since we are starting a New Year, I believe the intent of this message should be to plot the year ahead for the club. Our membership numbers are strong and it is my intention to continue the fine work of this club, to encourage and promote everything about our hobby and to advertise the great area we live in. The emphasis in the first part each year is the ever-important Rock and Gem show, our "Bread and Butter" so to speak. The proceeds from this show pay our rents (workshop and meeting spaces), various costs to run a society and, to a lesser extent than other years, workshop needs. As a VLMS member, it is expected that each of us put in a two-hour volunteer stint to help make the show run smoothly.

Not everything we do is work - for the third year in a row, the club has chosen to fund 2 buses from the Tsawwassen Ferry terminal to the BCLS Lapidary Show in Abbotsford on Saturday April 13th. These buses are equipped for members with mobility issues. The trip is a wonderful day spent with like-minded people in an environment filled with amazing material. I would like to acknowledge Vanessa for taking the lead again in initiating and organizing this event.

Our May meeting is the annual auction. If you are looking to "spring clean" as the snow melts, the auction is a great place to clear out, make some cash and renew your materials. June is a strawberry and Ice Cream Social as we break for summer. The fun doesn't end though as the Courtney Club is hosting the Vancouver Island Gemboree this year and the rocks in this area are spectacular including those found on Mt. Washington.

Info for this great event can be found at: <http://www.bclapidary.com/rock-hunting-gemboree.php>

When we meet again in September, we have a month to organize the VLMS Members' Fair Oct 13-14th. This will be the fourth year we are running this with in partnership with Jen Guerra at the Da Vinci Centre. The Members' Fair was started in response to our need to have an opportunity for our members to share their hobby/love of everything rock and mineral in a supportive setting. Our March Show is the club's money maker and has a waiting list. The October show strictly focused on our Members and organized as a special venue to learn and support the business side of the hobby.

We have a number of members stepping up in the workshop and expanding their talents in leaps and bounds. Privately, I hope one day the Greater Victoria area could be strong enough to form a guild with all the talent we have and, indeed, attract. Without the Workshop, our club membership would be much lower. I am truly humbled by the large number of volunteer hours Vanessa and Brian (Mac)

have put in over the years including time spent teaching, fixing, mentoring and nurturing genuine friendships in the workshop space. Karen, Wendy, and Doug have taken recent leadership/teaching roles in the workshop and I am so pleased to have them represent us.

For the fellow, raw rock hounding aficionados, Gilles provides rock hounding trips - usually on the last or second-to-last Sunday of each month. In finding locations for last year's Gemboree, we discovered some lovely sites for the four-wheelers. More sites and more adventurous excursions are welcome input from those members who have a hankering for the great outdoors we are so blessed to live in.

Our club popularity can be attributed to the fine efforts of Becci in getting out our messages, photos and announcements out through social media i.e., our web and Facebook sites. Her meticulous dedication to photos and record keeping is a gift to the cluttered brains of this high school teacher.

In reflection of this note, we are a very busy club. My late husband, Greg Shea, fell in love with this club on his first meeting back in 2008 and dragged me in a few years later. So here I am, busting my buttons as I write (gush) about all the neat things we do. It is my focus and desire to represent this club with dignity and with its best interest at heart in keeping with its long history. Happy Hounding!

Rock and Gem Show (Allana)

This year's March meeting will be dedicated to ensuring as many volunteer positions can be filled as possible. Door/Ticket Sales, Security, Membership and Workshop volunteers are needed for all of the show hours during the March 15-17 timeframe. For members who might be away for the weekend, there is still an opportunity to volunteer as we need people for the Thursday morning (March 14th) to set up and on the Monday morning (March 18th) to pack away. We will feed you lunch on Thursday if you help out with set-up.

We have had three vendors who decided not to participate this year and, hence, we needed to find replacements via our jury-type procedure. Divine Gems, Stones and Weave and Rain Coast Jewelry were selected from five possible replacement vendors. Forest Crystals will be joining us again. Dragonfly designs and Victoria Bailey will be added to our Artisan Vendors. Because this show is our only annual fund raiser, I take great responsibility in ensuring the show is profitable. This means that established vendors count on us to provide appropriate advertising, a well-appointed venue and complementary vendors that uphold the prestige associated with this event; it is not an easy task. If your business would like to be placed on a waiting list for this event then it is required that you provide photos of your work and kiosk display (with no humans) as your resume. Membership alone, in the VLMS or BCLS, is not sufficient to guarantee securing a vending spot. Unique vendors ensure customer satisfaction and money well-distributed to our happy vendors.

Volunteers get into the show for free. Please sign up with Vanessa at the upcoming March 4th meeting.

Membership (Margaret)

As of our last meeting Feb 4, 2019, our membership number stands at 90. This total is comprised of 137 individuals including 18 juniors. Sadly this is far short of last year's totals that included 140 memberships and 228 individuals. Note, because so few members renewed in a timely manner, our submissions to the BCLS have been both short and late and have not yet been processed.

As preparations for the March show progress I'd like to remind everyone that this show generates the funding which keeps our membership dues relatively inexpensive and helps provide our workshop and equipment. As each member is expected to contribute towards this annual success please sign up to volunteer in an area you will most enjoy.

Please let me know if you need a name badge – first one is free whereas replacements are \$16. Please be advised that it takes two weeks to obtain them.

Field Trips (Gilles)

No field trip was scheduled for January. The next scheduled excursion is planned for Island View Beach on Feb 24, 2019. Participants should contact Gilles by phone and meet at the beach at noon – weather permitting of course.

Sunshine Corner (Susannah)

Sadly, I will be constructing a Memory Corner, at the Rock and Gem Show, for the one member who passed away in 2018: Alan Osmond Bodman was born October 4, 1920, died April 10, 2018 in Langford BC, is survived by 13 children. He was an expert in geology and land formations, a rockhound, who gathered precious gems, made jewelry for his family, did jewelry repairs, taught silversmithing classes at the Seniors Center and was an active member of the Victoria Lapidary Club.

Library (Kathryn)

We received a donation of four books to our Library. Of note, one of these books is about the Hawaii Volcanoes complete with amazing pictures; the remaining three books present interesting information about the American Parks including the Grand Canyon. Along with our books we have magazine issues of the Lapidary Journal, Jewelry Artist and Rock & Gem available for loan. As usual, VLMS Crests & Pins, Stickers and BC Rockhounder Magazines are available for purchase (proceeds go to support the Club). I would like to remind members to return any outstanding books or magazines. If you wish to keep anything longer please let me know at our next meeting.

Island Zone (Vanessa)

The Courtenay Gem and Mineral Club will be hosting the 2019 Island Gemboree on Friday, Saturday and Sunday July 19th, 20th and 21st. Welcome packages have been received by each club and we have posted a copy on our VLMS website. This year, the Gemboree will be hosted from the Puntledge RV Park and Courtenay club has reserved several spots for this event. Registration for this event opens on February 28th, but don't delay as spots are filled on a first-come, first-serve basis.

Workshop (Doug)

Since taking over the operation of the shop things have been running smoothly. Please check out the pictures posted by Becci on the website under "Seen at the Workshop". The last few shop days have been fairly full and, since there are quite a few new people are taking the lapidary courses, I am looking at the possibility of adding more shop days. I will try to establish the number of people that will need to show up regularly to make another day feasible. Note, we will have to work around our Lapidary and Silversmithing courses and Woodcarving (the other occupant of the shop). A weekday afternoon shop day for seniors (and those not working) is being contemplated. I am trying to accommodate people living further away from the shop and those that desire shorter sessions. I

welcome feedback from people as to which days (and duration) are best. You can contact me at – wesmac12@gmail.com or 250-888-8440.

Editor (Gary)

Most of the information presented in these newsletters is solicited. Unsolicited contributions are welcome – contact gab.bns@gmail.com. Please remember to volunteer for the March Rock and Gem show.

Equipment For Sale

1. Assorted Lapidary Equipment - Members are welcome to contact the seller, Geoff Bodman by email (geoffbodman65@gmail.com) or phone (250 474-1939 or 250 727-5947). Note, only one item has a firm price, all other items are open to offers.



17" floor drill press \$600. new with water swivel and wet containment



Industrial Diamond core bits from Pothier Enterprises: 11 bits ranging from 5/8 to 2 5/8, some never used.



Diamond Pacific Twin Diamond wheel with sander



Heavy Duty Tumbler on Heavy Duty stand holds 2-12lb drums



Highland Park model 6TSC Saw/polisher combo



Diamond Wheel bench mount saw aka: Tile saw

2. Ultrasonic Drill (\$500 OBO)
Contact Info: 250-413-7266 or email at
rbchandler@shaw.ca

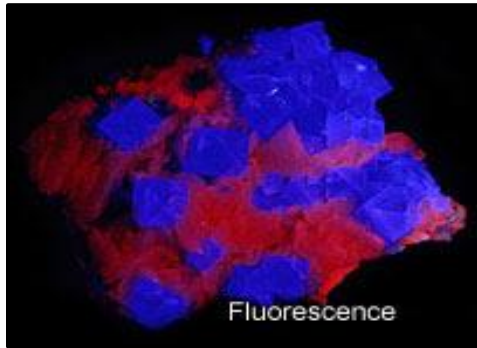


Drill Press



Control Unit

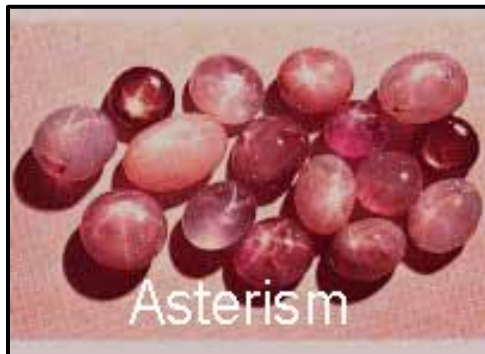
Specialized Gem Phenomena



Fluorescence refers to the emission of light of certain spectral (frequency) content from a substance being irradiated by light with different spectral characteristics. Note, some minerals fluoresce in the infrared, hence invisible, range but typically the fluorescence is visible. The agent that causes a given substance to fluoresce can be ultraviolet light, an electron beam, X-rays, or even visible light of a different wavelength (from that emitted). All fluorescence, however, involves the addition of energy by some means to a substance, and the re-emission of part of that energy as electromagnetic radiation.



Color Changing occurs as a result of the presence of trace amounts of vanadium and chromium +3 ions. These trace elements apparently affect the absorption bands of the mineral. When the light has a greater amount of ultraviolet (e.g., daylight), the stone will be blue or green, but when the light source is reddish (e.g., incandescent), the stone appears red, purple or raspberry.



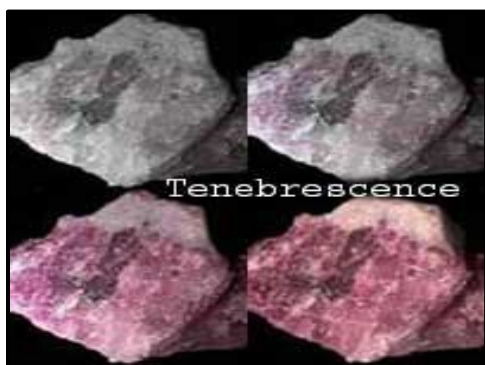
Asterism is caused when needle-like inclusions orient themselves perpendicular to a crystal face. In sapphire and ruby (hexagonal crystals) the star will appear as 6-sided. In diopside, an orthorhombic crystal, the star appears as 4-sided.



Adularescence (Labradorescence) is an effect seen in certain minerals when cut and polished. The effect is manifested in a display of billowy, rounded, ghost-like reflections with a bluish-whitish color emanating from the surface. It is caused by structural anomalies or build-up of water in the mineral. The minerals most famous for exhibiting adularescence are Opal, Moonstone, and, of course, labradorite.



Chatoyancy occurs when parallel needlelike inclusions of microscopic size reflect a streak of light, e.g., Tiger's eye, Pietersite, and Charoite. A chatoyant stone with just a slight change in viewing angle can change from light to dark.



Tenebrescence is a remarkable property of certain materials that allows them to temporarily change their color. Very few minerals exhibit tenebrescence (also known as reversible photochromism) but two good examples are: (i) hackmanite (a variety of sodalite) and (ii) tugtupite. Note, this type of behavior is exploited in the composition of synthetic materials for the manufacture of self-adjusting sunglasses, which darken on exposure to sunlight.

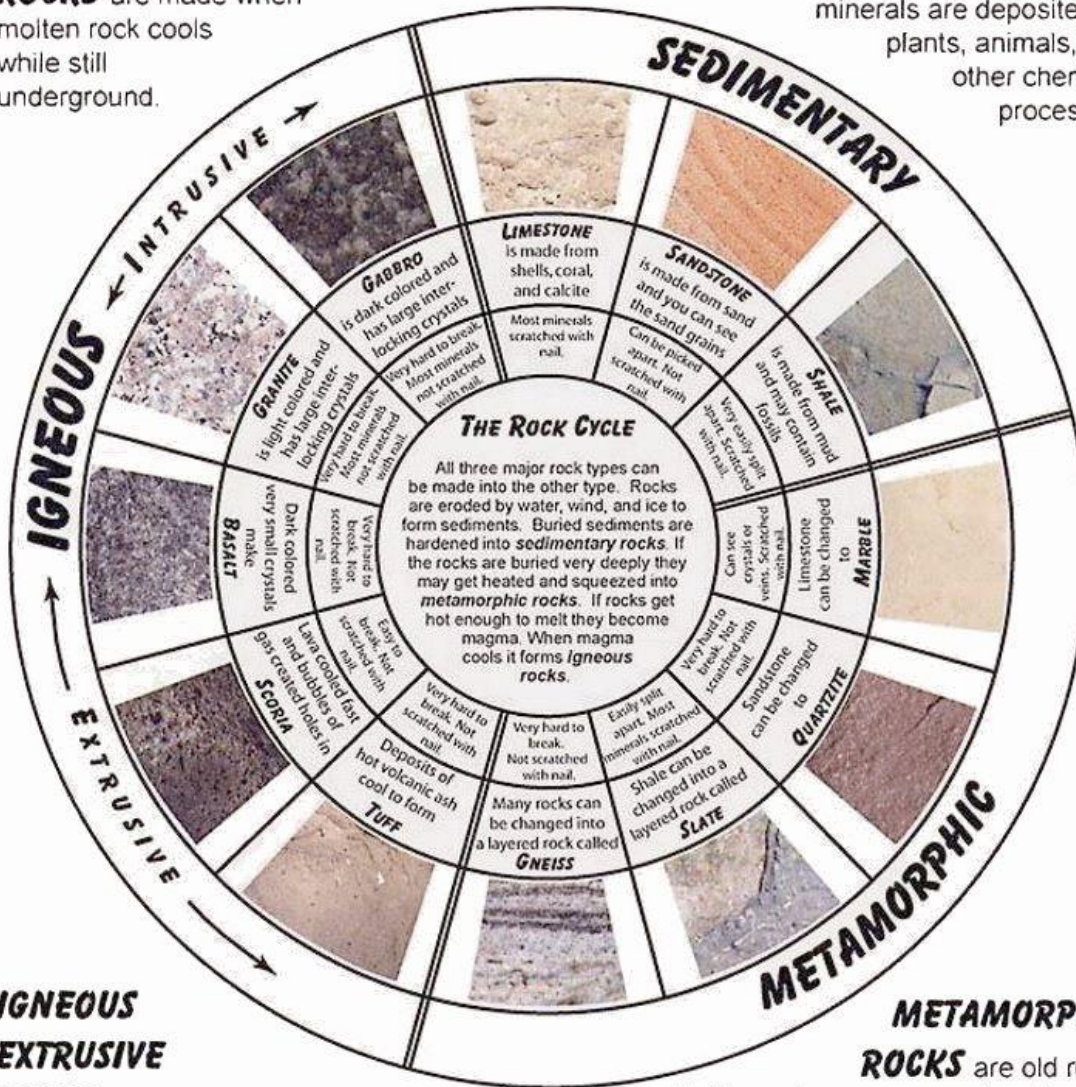
HOW TO IDENTIFY ROCKS

IGNEOUS INTRUSIVE

ROCKS are made when molten rock cools while still underground.

SEDIMENTARY ROCKS

are made when pieces of rocks settle from the water or when minerals are deposited by plants, animals, and other chemical processes.



IGNEOUS EXTRUSIVE

ROCKS are made when molten rock flows on the land surface or is thrown into the air and then is cooled into rock.

METAMORPHIC

ROCKS are old rocks that have been squeezed and heated but not melted. What new rock is made depends on what the original rock was and on the amount of heat and pressure.

Source: Bill Langer, U.S. Geological Survey.

Fun Facts

Lappy the Laphound

" All that glitters isn't gold
....but it might be opal!!!!



Foxy the Foxhound

" Diamonds are a girls' best friend
....cubic zirconia... not so much !!!!



Pippa Goes On-Line

Pippa the Poodle had taken the plunge and decided to seek out an on-line course in mineralogy. She was tired of feeling left out when Lappy and Foxy were deep in discussion about this stone or that stone, about this rock formation or that rock formation. Dotty the Doberman may not really care but Pippa did. She liked the idea of an on-line course where she could work at her own speed at home; she chose a course offered by the UVic K-9 Continuing Education Department. The nice thing about the UVic program was that each student was assigned a Graduate Student as a Mentor who was available to answer questions and offer advice on-line, at select times. Pippa's assigned mentor was Charlie the Chihuahua. Pippa and Charlie had conducted several "on-line" sessions that Pippa always found instructive. Today was a special occasion as Pippa had requested a special "face-to-face" meeting with Charlie to discuss a review sheet that was a precursor to the final exam to be held in two weeks. The subject matter was on mineral composition, color, and streak – of course, the confusion, in part, was Pippa's difficulty in reconciling her own ability to distinguish color (see Laphound News, Vol 60_1) with the subject material provided on the website. Of course, that information was simply cribbed from the main UVic Geology department website that was biased towards human students whose color-distinguishing capabilities are greater than those belonging to any canine. In addition to the color issues, some of the chemistry notation and intricacies were beyond Pippa's recollection from her high-school chemistry courses. Pippa and Charlie were scheduled to meet in a classroom at the Bob Wright Building ...home of the Earth and Ocean Sciences Department at UVic. Pippa arrived a bit early and was going over her notes on her laptop. Fifteen minutes rolled by; already nervous and apprehensive, Pippa was starting to think she had written down the wrong day or time. Just then, Charlie burst into the classroom.

Charlie: "Pippa?"

Pippa: "Yes".

Charlie: "Sorry I am a bit late, I got cornered by another student just as I was about to leave my office area."

Pippa was surprised by Charlie's small stature – not to mention the fact that Charlie was a female. All this time during on-line discussion, Pippa had calculated that Charlie (given the name) was a big strapping guy who liked to go traipsing about in the backwoods looking at strange rock and mineral formations. For her part, Charlie was likewise taken aback by Pippa's appearance (always impeccably groomed) – "elegant" was the word that came to Charlie's mind almost immediately, in stark contrast to the usual slovenly student appearance that she was used to. Pippa sensed that she had unnerved her mentor ever so slightly – she did not regret having visited her hairdresser the previous day. Not only

were her “poodle puffs” looking perfectly symmetric but the “highlights” she had inserted into the hair on the top of her head gave her a sort of “movie star” look.

Pippa (temporarily at a loss for words): “I wasn’t expecting....”.

Charlie (laughing): “A girl! I know, I get this all the time....don’t worry about it. We girls can have other interests besides minding the home front or filing papers in an office somewhere.”

Pippa (still nervous but feeling a bit more at ease): “Neither of those are in my plans but, in reality, I am taking this course so I can be more in tune with some friends that I have who are really into rocks and gems! It has been awhile since I did any formal studying, so I find myself struggling a bit with some of the assignments – maybe I have left it too long after my high-school days and can’t learn anymore”

Charlie (sympathetically): “Oh, I doubt that Pippa. In our previous discussions, I have been struck by how well you have grasped some of the basics. Let’s go over a few of the things that have been giving you a problem. Shall we start with “color”?

Pippa (now totally engaged): “Yes, of course. As I mentioned in my text to you, I have trouble with reds and greens - I just can’t relate those colors to anything.”

Charlie: “I hear you...I was the same way when I first got interested in geology. There are a couple of tricks that I learned, after much trial and error. First, try to relate color to the chemical composition as much as possible. This is not fool proof, of course, but it seems to help. Second, use the “streak” information since it closely related to color.”

Pippa: “Gee, I guess I never thought of that approach but it sounds good to me.”

Charlie: “Remember that under normal circumstances (in visible light conditions), most materials appear a certain color because they reflect light of a certain wavelength and absorb all other wavelengths.

Pippa: “Right, I know that sunlight is white light (consists of all wavelengths) but when it hits a piece of turquoise¹ (for example), all the wavelengths that make up the white light are absorbed except the wavelength associated with the “tealy” turquoise color which is reflected.”

Charlie: “Very good, now what we want to get at here is: why does the turquoise reflect that specific shade of blue?”

Pippa: “I think it is related to copper. ”

Charlie: “That is partially correct, but turquoise can also be found with greenish hues so there must be a bit more to it. Recall that the streak associated with turquoise is a pale bluish white“.

Pippa (a little embarrassed): “Can you explain streak to me again?”

Charlie (patiently): “Streak is the color of the powder generated when a stone is dragged across an unweathered surface. This powder contains randomly oriented crystals and its color is not as

heavily influenced by trace elements thereby giving a more realistic true color of the material”.

For some reason, Pippa found herself completely into this discussion (6 months ago she would never have believed it). Perhaps it was Charlie’s soft-spoken approach; she didn’t know, but whatever it was, Pippa wanted more.

Charlie (continued): “Recall from one of your first on-line assignments on mineral properties, we know that with regard to color, minerals are typically classified relative to the types of elements they contain. The classifications are as follows: (i) idiochromatic elements are essential to a mineral’s composition and (ii) allochromatic elements are contained only as trace elements. Thus by extension, we can label a mineral as being idiochromatic or allochromatic depending on their elemental constituents. It follows that a mineral’s ability to absorb and reflect certain wavelengths must be dependent upon the interaction of light with those same elements. Turquoise is a hydrated phosphate of copper (Cu) and aluminum (Al); the blue color shades found in Turquoise are idiochromatic because they are associated with these two idiochromatic elements, Cu and Al. Alternatively, the green shades are allochromatic because they are associated with the trace allochromatic Fe (iron) element that sometimes replaces the Al in the crystal lattice of the mineral. Now, just to complete the picture, pseudochromatic minerals display color through interference effects; an example is labradorite²”

Pippa (completely in awe): “Wow, you make it sound so reasonable. I know that Lapis³ is also typically a blue color but it must result from different elements.”

Charlie (impressed by how quickly Pippa had picked up on this train of thought): “Bingo. Lapis is a bit of a “licorice allsorts” when it comes to minerals as it contains calcite⁴, sodalite⁵ and pyrite⁶ (amongst other things). The intense blue color can be traced back to the presence of tri-sulphur radical anions (S₃⁻) in its crystal lattice – its streak is light blue but darker than that of turquoise.”

Charlie: “Let’s take a five minute break so I can drink my Latte – it is getting cold.”

Pippa was in solid agreement as she was trying to keep up with typing some notes on her laptop – not an easy task even though she had specifically requested a special K-9 keyboard be installed; she found that her paws were just a little too small to comfortably reach all of the keys. She cursed a bit under her breath whenever she encountered a difficulty typing.

Charlie (laughing, as she observed Pippa typing): “I have the same problem, my paws are too dainty!”

Pippa: “You must do a lot of typing.”

Charlie (sigh): “It seems like it is all I ever do. It takes me quite a bit longer to type than my classmates just because my paws are tiny.”

Pippa (sensing some frustration): “Do you ever get tired of it all and just want to vegetate in front of the TV or something. I don’t think I could handle the constant pressure to learn new facts.”

Charlie (being honest): “Yes, of course I do get tired. But from a very young age I realized that I didn’t want to spend the rest of my life being told what to do by some guy who has less education than I do and gets paid double. I want to be telling those guys what to do and not vice versa.”

Pippa (impressed): “Well, I don’t like being told what to do by guys either. My two girl friends Foxey and Dotty both have entered into new relationships with guys and while I like both of their choices very much I realize it is not for me.”

Charlie was suddenly quite silent as she sipped her latte; Pippa wondered if she had blabbered on a bit too much.

Charlie (somewhat remorsefully): “You are lucky that you have good friends – my circle of friends is almost nonexistent. We had better get back to the task at hand....we only have a few minutes as I have a tutorial session at the top of the hour.”

Pippa (looked at her watch and couldn’t believe an hour had gone by already): “Goodness, where did the time go?”

Charlie (picking up the pace): “Here is a useful list that you should probably know (and expand on) for your upcoming exam:

1. Cobalt, Co, produces the violet-red color in erythrite⁷, (cobalt arsenic sulfide).
2. Chromium, Cr, produces the color orange-red color of crocoite⁸, (lead chromate).
3. Copper, Cu, produces the azure blue color of azurite⁹, (copper carbonate hydroxide).
4. Iron, Fe, produces the red color of limonite¹⁰, (hydrated iron oxide hydroxide).
5. Manganese, Mn, produces the pink color of rhodochrosite¹¹, (manganese carbonate).
6. Nickel, Ni, produces the green color of annabergite¹², (hydrated nickel arsenate).
7. Uranium, U, produces the yellow color of zippeite¹³, (hydrated potassium uranyl sulfate hydroxide).
8. Vanadium, V, produces the red-orange color of vanadinite¹⁴, (lead vanadate chloride).

Pippa typed furiously. Charlie started to collect her things. There was something Pippa wanted to ask Charlie before she left.

Charlie (anxiously): “Well, Pippa, I have to go but I really enjoyed our session. I am confident with a bit more studying you will do well on your exam.”

Pippa: “Gee thanks Charlie. Hey, after my exam is over, my friends are planning a Boulder Dash supper/party. I don’t suppose you would join us as my guest? Boulder Dash is a game involving rocks, gems and terminology....you would be an expert player. I think my friends would like very much to meet you and you will like them all.”

Charlie: “I tell you what...you pass your exam and I will come to your party!”

Pippa (excited): “That is a deal. Thank you very much for your help...you had better go or you will be late.”

With that Charlie and Pippa parted company. Pippa felt a strange excitement as she made her way home from UVic – she couldn't wait to tell Foxy and Dotty about her meeting with Charlie.

Acknowledgements

Once again I would like to thank all those members who contributed to this Newsletter – it continues to be only as useful and complete as the information you provide.

Appendix

Fun Facts Rocks and Gems (all information obtained from Wikipedia on the web)

1.



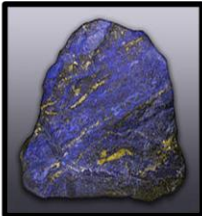
Turquoise - is an opaque, blue-to-green mineral that is a hydrated phosphate of copper Cu and aluminium Al. It is rare and valuable in finer grades and has been prized as a gem and ornamental stone throughout history owing to its unique hue. Turquoise is generally found in dry climates: USA, Mexico, Chile, Afghanistan, China, and Tibet.

2.



Labradorite - is a feldspar mineral and occurs as clear, white to gray, blocky to lath shaped grains in common mafic (rich in magnesium and iron) igneous rocks such as basalt and gabbro. Labradorite can display an iridescent optical effect known as "labradorescence". It is found in Labrador, Canada and has also been reported in Norway and other locations worldwide.

3.



Lapis lazuli or lapis for short, is a deep blue metamorphic rock used as a semi-precious stone that has been prized since antiquity for its intense color. As early as the 7th millennium BC, lapis lazuli was being mined in northeast Afghanistan. Today, operational mines are found in Afghanistan, Pakistan, Russia, Chile, Italy, Mongolia, US and Canada.

4.



Calcite is a carbonate mineral and the most stable polymorph of calcium carbonate (CaCO_3). Calcite is a common constituent of sedimentary rocks, limestone in particular, much of which is formed from the shells of dead marine organisms. Calcite is transparent to opaque and may occasionally show phosphorescence or fluorescence.

5.



Sodalite is a rich royal blue mineral discovered in Greenland but with large deposits also found in Ontario. A light, relatively hard yet fragile mineral, sodalite is named after its sodium content. Well known for its blue color, sodalite may also be grey, yellow, green, or pink and is often mottled with white veins or patches. Although somewhat similar to lazurite and lapis lazuli, sodalite rarely contains pyrite (a common inclusion in lapis).

6.



Pyrite (or iron pyrite) is an iron sulfide and is considered the most common of the sulfide minerals. Pyrite's metallic luster and pale brass-yellow hue give it a superficial resemblance to gold, hence the well-known nickname of *fool's gold*. Pyrite is usually found in quartz veins, sedimentary rock, and metamorphic rock. It comes as either cubes or multifaceted crystals).

7.



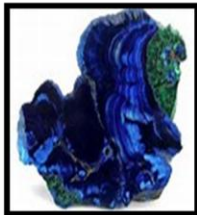
Erythrite or red cobalt is a secondary hydrated cobalt arsenate mineral. It crystallizes in the monoclinic system and forms prismatic crystals (well-formed crystals are rare). The color is crimson to pink and occurs as a secondary coating known as *cobalt bloom* on cobalt arsenide minerals. Erythrite occurs as a secondary mineral in the oxide zone of Co–Ni–As bearing mineral deposits. Notable localities include Cobalt, Ontario;

8.



Crocoite is a mineral consisting of lead chromate. It crystallizes in the monoclinic crystal system and is identical in composition with the artificial product chrome yellow used as a paint pigment. Crocoite is commonly found as large, well-developed prismatic adamantine crystals. Crocoite is the official Tasmanian mineral emblem. The relative rarity of crocoite is connected with the specific conditions required for its formation.

9.



Azurite is a soft, deep blue copper mineral produced by weathering of copper ore deposits. It is also known as Chessylite after a location in France. The mineral, a carbonate, has been known since ancient times, and its blue color is exceptionally deep and clear, and for that reason the mineral has tended to be associated since antiquity with the deep blue color of low-humidity desert and winter skies.

10.



Limonite is an iron ore consisting of a mixture of hydrated iron(III) oxide-hydroxides in varying composition. It has been mined for the production of iron for centuries. Limonite usually forms from the oxidation and hydration of iron rich sulfide minerals, and chemical weathering of other iron rich minerals such as olivine, pyroxene, amphibole, and biotite.

11.



Rhodochrosite is a manganese carbonate mineral. In its pure form, it is typically a rose-red color, but impure specimens can be shades of pink to pale brown. It forms a complete solid solution series with iron carbonate (siderite). Calcium, (as well as magnesium and zinc, to a limited extent) frequently substitutes for manganese in the structure, leading to lighter shades of red and pink,.

12.



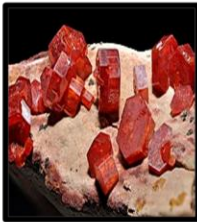
Annabergite is an arsenate mineral consisting of a hydrous nickel arsenate. It crystallizes in the monoclinic system and is isomorphous with vivianite and erythrite. Crystals are minute and capillary and a fine apple-green in colour. It was traditionally known as nickel bloom and occurs with ores of nickel, of which it is a product of alteration. Closely related is *cabrerite* wherein some of the nickel is replaced by magnesium.

13.



Zippeite is a radio-active hydrous potassium uranium sulfate mineral. It forms yellow to reddish brown monoclinic-prismatic crystals with perfect cleavage in underground uranium mines. Zippeite is one of the so-called 'uranium ochres'. It occurs in association with uranopilite in the weathered veins of uranium. Zippeite is no longer used for the manufacture of paints, but is still used as a uranium ore, as is pitchblende.

14.



Vanadinite is a relatively uncommon mineral belonging to the apatite group of phosphates. It is one of the main industrial ores of the metal vanadium and a minor source of lead. A dense, brittle mineral, it is usually found in the form of red hexagonal crystals. Vanadinite is usually bright-red or orange-red in colour, although sometimes brown, red-brown, grey, yellow, or colourless.