



the CMS Tumbler

November
2018

The monthly newsletter of the **Cascade Mineralogical Society, Inc.** Kent, Washington

Next Meeting:
November 8, 2018
7:00 p.m.

American Legion Hall
25406 97th Pl S
Kent, WA

The Program will be Professor
Katy Shaw, of the Geology Dept.
at Green River College.

She will talk about collecting
samples and identifying mineral
formations at hydrothermal vents
(smokers) in the Endeavor
Segment of the Juan de Fuca Ridge.

I would like to show our support
for Prof. Shaw and her taking the
time out of her busy schedule
to speak to us. Please mark your
calendars and plan to attend!

The Show & Tell Theme is a rock,
mineral, geode, thunder egg or
fossil from your collection with
an unusual color, shape or pattern.



*This month remember
to wish a
Happy Birthday to*
Robin Santos on November 4,
Herman Gelbach on November 12,
Chuck McMurtry on November 19,
Robert Pattie on November 25,
*and also remember
to wish a
Happy Anniversary to*
James & Xuyin Cerenzie on November 16,
Robert & Jacqueline Pattie on November 23 (61 years)



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Tips, suggestions, recipes and experiments printed in this newsletter are the experiences and/or opinions of the individuals submitting them. We are not responsible for their authenticity, safety, or reliability. Caution and safety should always be practiced when trying out any new idea.

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2018 CMS Dues are \$30 per year per family

Pay online, by mail, or at our meetings.

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Kent, WA 98042

You can pay your dues via credit card! We now accept all cards through our website, or at the meeting. You can renew your membership, or enroll as a new member, and pay your dues all in one shot online. You will find it under the "Membership" tab on our website <http://www.cascademineralogicalsociety.org>

The object of the Society shall be to stimulate interest in the study of the earth sciences, lapidary arts and related subjects.

This Society is affiliated with the *American Federation of Mineralogical Societies*; the *Northwest Federation of Mineralogical Societies*; and the *Washington State Mineral Council*.

Every member of the club should be receiving a copy of the Northwest Newsletter. If you are not receiving a copy contact Mike Blanton in person or by telephone at (425) 271-8757 or by computer at mblanton41@hotmail.com

To get information to the Tumbler via the Internet send it to greenrockdraggin@yahoo.com Please put Tumbler and subject in the Subject Line. The deadline is the 20th of each month.





The Cascade Mineralogical Society Facebook page is <https://www.facebook.com/CasMinSoc/>

The Cascade Gem & Mineral Show Facebook page is <https://www.facebook.com/cascadegemandmineralshow/>



November

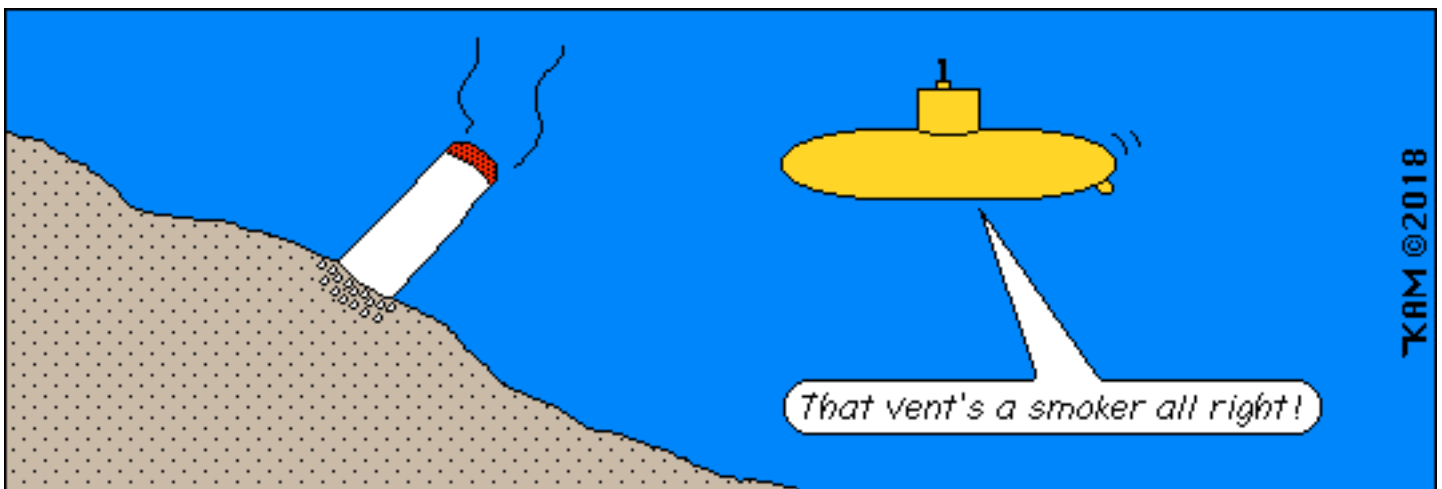


SUN	MON	TUE	WED	THUR	FRI	SAT		
Green River College Professor Katie Shaw will be the speaker at the general meeting				1	2	3		
4	Show Meeting 6:30 PM Board 7 PM 	5	6	7	General Meeting 7 PM 	8	9	10
11	12	13	14	15	16	17		
18	19	20	21	22	23	24		
25	26	27	28		29	30		

CMS Show Committee Meeting:...Monday, November 5.....6:30 pm to 7:00 pm
 CMS Board Meeting:.....Monday, November 8.....7:00 pm to 8:00 pm
 CMS General Meeting:.....2nd Thursday.....7:00 pm to 9:00 pm

Lapidary Class Hours:.....By appointment, call to set a time & day for your lesson (425) 226-3154
 Lapidary Shop Hours:.....Most Tuesdays..... 2:00 pm to 5:00 p, call ahead (425) 226-3154
 Lapidary Shop Hours:.....3rd Saturday..... by appointment only (call a few days ahead to set time)

More Field Trip info can be found on Page 11
 More Show info can be found on Page 12



CMS Board Meeting Minutes October 8, 2018



by Pete Williams, 2018 Secretary

Members Attending

President Kat Koch Treasurer Rich Russell
Secretary Pete Williams Federation Mike Blanton
Past President Bob Pattie Show Chair Mark Hohn
Director Roger Pullen

Meeting called to order at 7:26

The rent for the monthly general meeting has been paid through the end of the year. A donated high-speed sander has been sold.

The website had lots of traffic in September. There are now 61 family members. A bill was passed in the Senate to provide all 4th graders free access to federal lands. It is now going to the House.

Our November general meeting program will be a professor from Green River College talking about minerals from underwater thermal vents. The January meeting will have a demonstration on faceting.

Motions were made and approved to budget \$50 for books for the kids program; to reduce annual dues to \$25 beginning on 1/1/19 and to remain on a calendar year basis; and for Rich to spend up to \$150 on trays of amethyst and petrified wood from a long-time collector for future club use. A motion was also made and approved to provide 2 grants of \$200 each to geology students at Green River College.

A change to the By-Laws was proposed and approved to go to the general membership to change the responsibility for maintaining a list of paying and honorary members and a master distribution list from the Treasurer to the Membership Chair.

Meeting adjourned at 8:51

CMS Show Meeting Minutes October 8, 2018

by Pete Williams, 2018 Secretary

Meeting called to order at 6:30

The show was a great success. A survey was sent out to the vendors and most rated the show as excellent. All those that responded to the survey indicated they would return next year. The committee discussed ideas on what worked and what needs improvement for next year. A number of ideas were discussed that will be worked over the course of the year.

A firm date for the show in 2019 has not been set as the college is still working on their calendar.

H.R 3186/S 1522 by Bob Pattie

These bills are being currently considered in this year's US Congress and they seem to be moving along.

The Act is to establish for every kid outdoors program, and for other purposes. The act establishes free access to Federal Land and waters for students and accompanying individuals in accordance with this section. The term "students" or "students" means any fourth grader or home-schooled learner 10 years of age residing in the United States, including any territory or possession of the United States. This pass would be effective beginning on September 1st and ending on August 31st the following years. It is only available to 4th grade students and any passenger in the vehicle with the 4th grader. There would be no charge for those areas that have an entrance fee or day use fee.

My comment on this bill:

I believe this would be very beneficial for our young people and their parents to get out and visit our forest and park systems.

Young Richard's Almanac by Dick Morgan



You are not here to save the world, but you are here to touch the hands that are within your reach.

It's often been said that we're brothers, or sisters, under the skin, then why does skin color change a person? Regardless of what you believe, creationism where we all came from Adam and Eve, or evolution where we came from evolution's top couple.

"Thank you" should be the easiest words to say when you have been helped, so how come the two words seem to be so hard to say? These words mean so much to the person who gave the assistance.

When we say "thank you" at Thanksgiving we are giving thanks for the country we have.

Silver is used to kill bacteria in water purification systems.

Sources: U.S. Geological Survey, Minerals Information Institute

from <https://minerals.usgs.gov/west/morefun.htm>, 12/15/17

CMS General Meeting Minutes October 11, 2018

by Pete Williams, 2018 Secretary

Meeting called to order at 7:12

Minutes were approved as written.

Treasurer's Report: Getting more new members. Accepting dues for 2019. New members joining now will have dues covering through 2019.

President's Report: The Young Tumblers that displayed at the show all earned showmanship badges. Each of the 4 earned 1st place for their age group and category. Next month a professor from Green River College will be doing a presentation on minerals from underwater vents.

Field Trip Report: The field trip this month will be to the Clipper mine with the Puyallup club on October 20. The November trip will be with the Mineral Council to Blanchard Hill.

Federation Report: At next month's meeting there will be AFMS raffle tickets for sale at \$5 each or 5 for \$20.

Mineral Council: The period for responding to the Forest Service about regulations for collecting on federal lands expires in mid-October. There is currently a bill in Congress to provide all 4th graders with a pass to access all federal lands except where there is restrictions.

New Business: The election of 2019 officers will be held in December. There are open spots for treasurer, VP, and one director.

Program: A review of the show by Mark and Kat. The committee decided to provide \$400 in grants to Green River College from show proceeds.

Meeting adjourned at 8:03 followed by show-and-tell and the raffle.

Displays:

Aidan Cerenzie - Agates from Redtop, amethyst and pyrite.

Roger Pullen - Items he bought and won at the show.

Kat Koch - Amethyst won on the raffle.

Isaiah Fu - A rock from the Cowlitz River.

Roger Danneman - Madriver agate from Madagascar.

Alex Danneman - Coprolite slab from Utah.

Rich Morgan - Blue petrified wood, and amethyst plate.

Scott Thomassan - Amethyst crystal.

Bob Pattie - Sample letter for the Forest Service.

David Alt - Exogyra fossils from the Texas-Mexico border (Del Rio).

Jade (Nephrite) - Wyoming's Official Gemstone

Nephrite jade was adopted as Wyoming's official gemstone on January 25, 1967. Governor Stanley K. Hathaway signed legislation introduced by the 39th legislature, which established jade (nephrite) as the State Gemstone of Wyoming. The famed Wyoming jade fields occur in a rectangular band that runs roughly from Lander southwest to Farson, down to the Red Desert in Sweetwater County, east to Seminole Dam, north to Alcova, and westward back to Lander.

Wyoming jade is black, olive green, emerald green, light apple green and sometimes gray to white. The lighter colors of jade, especially apple green, are most in demand for gemstones.

Today, most people believe that Wyoming's jade fields have been scoured so thoroughly by six decades worth of jade hunters that the light green variety of nephrite can no longer be found. The 1930s and 1940s were the "glory days" of jade hunting in Wyoming. Many sources cite 1936 as the year of jade discovery near Lander. From 1936 until 1945, jade hunting was principally done by Wyoming residents. The end of World War II plus a 1945 article in Popular Science titled "Green Gold of Wyoming" changed all that. Something akin to a gold rush was on in central Wyoming and competition for Wyoming jade became intense. Some 7,000 to 8,000 pounds of jade were collected during the summer of 1945 alone. The link to gold was not unfounded.

Famed Wyoming jade hunter Allan Branham once stated that "...jade lures and lures as no other stone. It is as bad as the 'gold fever,' and once entangled with jade one seldom recovers." The term JADE is a generic term that actually covers three minerals. They are Jadeite, Nephrite, and Chloromenlanite.

Jade is chiefly valued by its color and freedom from cracks. It should have a 'greasy' appearance when it is polished. Colors will range from the many shades of green, to yellow, red, black, and white. Lavender Jade is the most highly valued, and also the most rare forms of the stone.

Jadeite is composed mainly of silica and alumina, its green color is determined by the amount of iron present. Jadeite is generally brighter and more vivid in color than nephrite. Its body is more translucent and sometimes partially crystallized. The white variety of Jadeite with the brilliant streaks of deep emerald green, gets its color from the element 'chromium'.

Nephrite is composed mainly of silica and magnesia; it is also dependent on its color by the amount of iron present. Nephrite is usually some shade of green: it may range from sea green, gray green, celadon, lettuce green, grassy green, and spinach green. Other colors of nephrite include blue gray, reddish gray, greenish gray, yellow, and black.

Public Comment Period Open NOW for Southern Utah BLM Management Plans Comment Period

Deadlines: November 15 and 30, 2018 by Andrew Hoekstra and Lisbet Thoresen

Hobby collecting was banned in 1.86 million acres of Southern Utah in 1996 after President Clinton signed Proclamation 6920 to create the Grand Staircase Escalante National Monument (GSENM). In 2016, President Obama signed Proclamation 9558 to create Bears Ears National Monument (BENM), which encompassed about 1.35 million acres. Hobby collecting has not been banned in Bears Ears prior to a management plan being drafted. However, environmental groups opposed to the recreational activity are expected to lobby the Bureau of Land Management (BLM) to ban it when a final management plan is published.

In December 2017, President Trump's Proclamations 9681 and 9682 downsized both Utah monuments - Bears Ears by about 85% to 202,000 acres and Grand Staircase-Escalante by about 47% to about 1 million acres.

Would you like to have the opportunity to collect rocks, minerals, and petrified wood and common invertebrate fossils on some of the lands that did and could yet put hobby collecting off limits in Southern Utah? Now is your chance to let the BLM know. The agency is considering restoring hobby collecting in some areas and wants your input.

GSENM and Kanab-Escalante Planning Area A November 30th deadline has been set for the public to submit comments on the BLM's proposed alternatives for the future management of the lands excluded from GSENM - now called the Kanab-Escalante Planning Area - and in the management plan for the lands retained within the monument. Rockhounds encouraged by the rescissions should take note that lands removed from Grand Staircase-Escalante under Presidential Proclamation 9682 will remain closed to hobby collecting until a new management plan is prepared - the excluded land has not reverted to its previous status.

For each management planning area, the BLM has prepared four alternative proposals. Public comments will influence the drafting of a final Resource Management Plan, which may include elements from any or all of the four proposals. Hobby rock collecting will be regulated in the same manner as hobby collecting of common invertebrate and botanical (petrified wood) fossils. Rockhounding will be allowed or prohibited in the same areas as described under the "Paleontological Resources" section of the plan alternatives (p. 3-44 in Draft RMP and EIS Vol. 1).

For the Kanab-Escalante Planning Area, the proposed alternative 'D', which is the BLM's Preferred Alternative, would allow hobby collecting of rocks, minerals, and common invertebrate and botanical fossils, including petrified wood, within almost the entire area excluded from the original Grand Staircase-Escalante monument. Alternative D also proposes to allow hobby collecting in two designated areas within GSENM.

Recommendation

Rockhounds are encouraged to support alternative 'D' regarding the Paleontological Resources provisions. (It is not necessary to support alternative D in its entirety or overall, but the Paleontological provision is important for rockhounds).

BENM and lands excluded by the monument rescission

To date, rockhounding has not been banned in lands excluded from the Bears Ears monument. Currently, a new management plan is not being proposed for the excluded area. For lands remaining inside the BENM, BLM has opened a public comment period on the draft alternative management plans now under consideration, with the deadline set for November 15, 2018.

Only the proposed alternative 'A' - the "No Change" alternative - would allow rockhounding in the monument. Rockhounds may want to comment on the Paleontological Resources provisions of the BENM proposals.

Policy and practice under the law

The BLM field offices in Southern California regard hobby collecting as a low-impact recreational activity and tend to be more accommodating of it than many of their BLM counterparts in other parts of the US. Elsewhere, including in Utah, the BLM exercises discretion to prohibit hobby collecting; although, existing federal statute allows for accommodation.

In 2009, the Paleontological Resources Act (PRPA) was enacted by Congress. This landmark legislation enables designation of BLM lands appropriate for hobby collecting. No other law exists that bans rockhounding within national monuments administered by the BLM. So, concerning public lands that are supposed to be managed to accommodate multiple uses, whether inside or outside a national monument, it is not legally mandated to prohibit all hobby collecting of rocks or common fossils to protect scientifically significant finds, notably fossils finds, i.e., dinosaur bones. In fact, it is well to remind the BLM, that it may be detrimental as a preservation measure, because rocks and common fossils left in situ near the earth's surface often weather out and are irretrievably lost.

It is long overdue for multiple-use management plans to incorporate accommodation of hobby collecting, not least for the recreational and educational values thousands of enthusiasts enjoy. Hobbyists have experienced an alarming loss of access to collecting areas throughout the US in recent decades. They now need to seize the opportunity to reverse the trend.

GSENM and Kanab-Escalante Planning Area Comment period now open

Deadline: Nov 30, 2018

Submit comments via:

Mail: 669 S Hwy 89

Kanab, UT 84741

Attn: Matt Betenson

ePlanning: <https://goo.gl/EHvhbc>

BENM

Comment period now open

Deadline: Nov 15, 2018

Submit comments via:

Mail: BLM, Canyon Country District Office

82 East Dogwood

Moab, Utah 84532

Attn: Lance Porter

eMail: blm_ut_monticello_monuments@blm.gov

In your comment for either the GSENM or BENM, be sure to include a reference to a specific page or section of the Draft EIS/Draft RMP.

Want to sign onto a joint comment letter?

Join SDMG's mailing list at: <https://goo.gl/KZqPsc> select the "Utah public lands" list or email: ajhoekstra@yahoo.com Be sure to provide: first and last name, city, state if you're a member or officer of a club, list the club, city and your role (title).

from The Pegmatite, 9/18

A New Discovery Of Reidite. One Of The Rarest Minerals On Earth! by Kat Koch

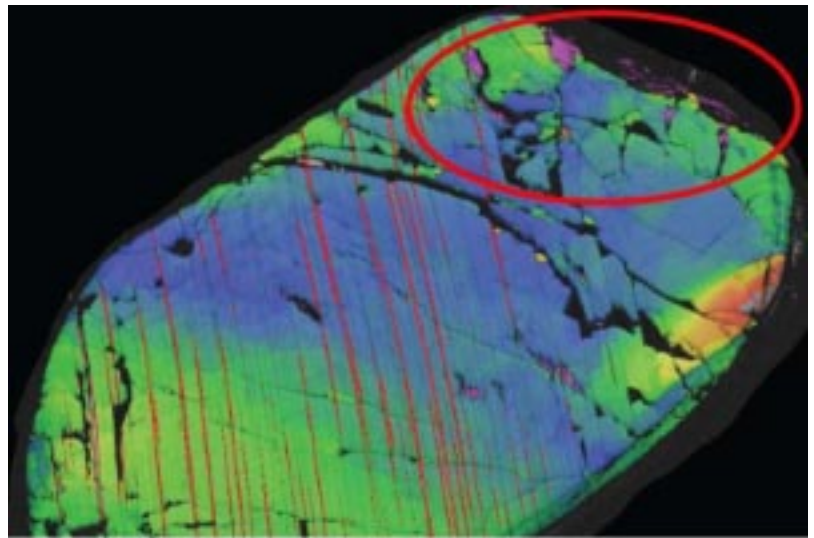
It is only the 6th time the mineral has been discovered on Earth. The amount of Reidite that has been discovered world wide is microscopic. This ultra-rare mineral only forms when rocks containing zircon from space slam into the earth's crust. Reidite has only been discovered 6 times on earth and the entire amount would fit under your finger nail.

20 years ago core samples were taken of the Woodleigh Crater (largest meteorite crater in Western Australia) near Shark Bay, is approximately 750 kilometers north of Perth. This crater is not exposed at the surface and has led to many discrepancies regarding its actual size. The crater has been buried under younger sedimentary rock. Reports on its diameter vary from 25 to 75 miles (40 to 120 kilometers). It may turnout that the Woodleigh Crater is the largest impact crater in Australia.

The drill core samples have been sitting in the core shed of the Geological Survey of Western Australia and unexamined for almost 20 years. An honors student from the Curtin University was recently studying the sample cores for her thesis and discovered the Reidite.

Formation: Meteorites with zircons morph into Reidite when shock waves from the meteorite impact hikes up pressures and temperatures to extreme levels, equal to those deep inside the Earth where diamonds form. The pressure makes minerals to tightly repack their molecules into denser crystal structures.

Crystal system: Tetragonal Mohs scale: 7.5 Color: Colorless to white



The Reidite is shown in an "electron diffraction" image by the color purple.

Tiger Eye History & Facts

First of all, tiger's eye, tigereye, tiger eye and tiger-eye are all accepted ways to write this name.

Tiger's Eye is a durable quartz composite with the usual quartz hardness of 7. It begins as the fibrous blue mineral called crocidolite, which is comprised of iron & sodium. Most of us know crocidolite as asbestos. The transformation begins when quartz becomes imbedded between the fibers of crocidolite. This process will result in one of two gemstones. A blue stone is called Hawk's Eye or the golden brown stone called Tiger's Eye.

During the process, the asbestos is completely dissolved. But the quartz takes on the fibrous formations and the blue color of crocidolite. This creates the parallel lines within the gem which gives it that ever shifting play of light and movement the stone is so loved for. This is also known as chatoyancy, the gleam that rolls across its surface, much like the eyes of a cat.

Even though the iron & sodium dissolve, traces of hydrated oxide of iron deposit between the crocidolite and quartz, creating the golden color that is common to Tiger's Eye. How much of this hydrated mineral is deposited will determine how Golden brown, red, green or blue, Tiger's Eye and Hawk's Eye will be. The rarer blue Hawk's Eye will have only the slightest amounts. The varying

amounts of hydrated oxide of iron, actually cause several colors and mixes of color. When the color is a greenish gray, it is called cat's-eye quartz. A golden yellow reflection on a brown stone, is called Tiger's Eye. If the stone is blue gray or bluish, it's known as Hawk's Eye. Reddish brown, or mahogany colored stones, are known as bull's-eye or ox-eye.

Up until recently tiger eye has been considered to be pseudomorph but new evidence proves otherwise. It has long been thought that the crocidolite fibers were replaced with quartz much like the replacement that happens in petrified wood. New evidence proves this may not be the case and that quartz and the crocidolite co-exist.

Tiger eye has a fibrous structure and in the lapidary shop must be oriented properly to get the chatoyancy and/or the "cats eye" effect. Cuts must be exactly parallel to the length of the fibers to get the full chatoyancy. If the saw cut is perpendicular, or 90% to the fibers, you end up with a lifeless, dark brown to black stone with no chatoyancy or light play at all. Orientation of cutting is critical to getting good chatoyancy and color out of tiger eye.

These fibers in Tiger Eye may be up to about two inches long and very thin. Most are only 0.001 millimeters, or 0.000039 inches in diameter and are not always straight making it even harder at times to cut good chatoyant stones.

Treatments:

In most cases, but not always, red tiger eye is not a natural occurrence. It is usually the result of heating and can be done using the kitchen oven. Here's a basic recipe for heat treating tiger eye.

To protect the tiger-eye from thermal shock during heating, cover slabs of ordinary, gold tiger eye in fine clean silica sand, at least 3" all around the slab.

Place the metal container in a cold oven and increase the temperature by 50 degrees every hour until it reaches 400 degrees. Then turn the oven off and **DO NOT OPEN THE DOOR**. Allow plenty of time for the container to cool all the way through. (If you heat treat tiger eye to sell **BE SURE** you let it be known it has been treated, it's only right and it's the law.)

There are natural occurrences that tiger eye can be found with red color. And other known ways have been from brush fires where the deposits are found and also when miners would build fires next to the seams to help crack it up into smaller pieces, remember most of these miners had nothing but hand tools to work with.

Not long after tiger eye was first discovered for lapidary, the world famous Idar-Oberstein lapidaries discovered by using hydrochloric or oxalic acid they could bleach tiger eye to an evenly colored light, translucent yellow. When cut properly they produced "cats eye" stones that look much like the rare variety of chrysoberyl but can be distinguished very easily between the two by gemologists.

Other treatments but not usually done, never by me, but some do do it. In pietersite and bighamite stones especially, it is very common to run into pits, cracks, or voids called vugs. These are some-times filled with wax, super glue or opticon in the last steps of sanding and polishing the stone. I never do any of these treatments but as I said it is and has been done by others.

There are many other types of stones that display a "cats eye" or shimmering chatoyancy. The word "Chatoyant" comes from the French word for "cat" or to glow like a cat's eye.

Tigereye is the anniversary gemstone for the 9th year of marriage.

Editors Note: Remember tigereye has asbestos, so always use a face mask and/or keep tigereye under water when sanding and polishing.

via The Whittier Rockhounder, 7/16; via The Palomar Gem, 2/05; via Chips 'N Splinters, 5/16; from Top Gems

Is It Silver?

At the club we use sterling silver (925 or 92.5% silver) and fine silver (999 or 99.9% silver). Both of these silvers have a high percentage of silver (Ag). But not all "silver" contains silver. There are number of other alloys out there that use the name silver because they look like silver but have no silver or other precious metals in them.

"German Silver", "Nickel Silver", "Nicolite" or "White Brass" is an alloy of copper (Cu) Nickel (Ni) and Zinc (Zn) that contains no silver. It has a number of commercially made compositions. One combination used for jewelry contains Cu 60%, Ni 20% and Zn 20%. It melts at around 1453 degrees centigrade, about 500 degree centigrade higher then fine silver. It is also harder than silver and does not keep a high polish but quickly oxidizes to matte finish. This nickel alloy was extensively used for cutlery before stainless steel came into vogue. The hallmark E.P.N.S. represents Electro-Plated Nickel Silver and is used on "Silver" cutlery. Electroplated jewelry is often referred to as "silver filled" as the article is made from the nickel alloy and then electroplated to look like silver. The alloy is also used in jewelry and was popular with beginner silver smiths. It costs less then silver and can be worked and soldered. It is also harder than silver. Findings, belt buckles and other articles made from Nickel Alloy often use silver in their name. Many people are deceived by the name and know no better than to refer to the jewelry made from this alloy simply as "silver". The copper and nickel in this alloy cause it to react with acidic foods (e.g. yogurt, curried egg) if cutlery made from it is left standing in the food too long. The toxic compounds that result have a bitter taste. This alloy also reacts with the human body. It is unsuitable for earring wires and studs for long term use. Findings made from nickel alloy are most likely the reason why many people claim that they cannot wear silver earrings.

Next time you see cheap "silver" jewelry ask yourself "is this really silver or an impostor?"

via The Quarry, 1/18; via MLMS Ghost Sheet, 5/18; via WGMS Rockhounder, 10/16; from Rockbottom News, 1/11

Young Tumblers News

Do You Know . . .

1. What are the 3 types of rock? _____
2. What do we call a rock that contains metal? _____
3. What is the hot molten rock in side a volcano called? _____
4. What is the hot molten rock called once it erupts from the volcano? _____
5. What rock floats on water? _____
6. What are rocks from space that land on earth called? _____
7. What rock is often used to make arrowheads? _____

Lava Crystals Ore Igneous Feldspar Sand Obsidian Clay Magma
Turquoise Pumice Meteorites Sedimentary Coal Metamorphic Azurite

Answers on next page.

Interesting Facts About Minerals And Rocks by Kat Koch

All minerals are rocks, but not all rocks are minerals.

Minerals

Minerals are naturally occurring substances formed by geological processes. They are inorganic, naturally occurring, solid and feature a crystal structure as well as specific physical properties and chemical composition.

Physical properties of minerals include crystal structure, hardness (Mohs scale), luster (how it reflects light) and color, as well as more complicated properties such as streak, fracture, cleavage and density.

Mohs scale of hardness measures the ability of minerals to scratch each other. Talc is very soft and is listed as 1, diamond is very hard and is measured as 10.

A mineral is sometimes made up of just one chemical element but more often it is a compound (mixture) of two or more. For example, diamond is made up of just carbon, while fluorite is made up of a compound of calcium and fluorine.

There are over 4000 different types of minerals. Only around 30 of these are commonly found in the Earth's crust.

Examples of minerals include calcite, gypsum, feldspar, pyrite, gold, quartz and diamond.

The precious gems ruby and sapphire are varieties of the mineral corundum.

Historically gemstones have been categorized into two distinctive classes; precious and semiprecious stones. While there are any number of semiprecious gems, diamonds, rubies, sapphires and emeralds continue to be deemed precious. This status is determined by supply and demand as well as the perceived quantities existing on earth.

Rocks

Rocks and stones are naturally occurring solids made up of minerals.

The Earth's crust is made up of rock.

Rocks have been used by humans for millions of years, from early tools and weapons through to various construction materials.

There are three different types of rocks based on the way they form: Igneous, Sedimentary and Metamorphic.

Igneous rock is formed when magma cools and solidifies, it may do this above or below the Earth's surface.

Magma can be forced into rocks, blown out in volcanic explosions or forced to the surface as lava.

The atoms and molecules of melted minerals are what make up magma.

These atoms and molecule rearrange themselves into mineral grains as the magma cools, forming rock as the mineral grains grow together. If the magma cools slowly, large crystals form in the rock.

There are over 700 different types of igneous rocks.

Examples of igneous rocks include basalt, granite, pumice, obsidian, tuff, diorite, gabbro and andesite.

Basalt forms the metamorphic rock granulite when subjected to extreme heat and pressure over time (metamorphism).

Granite is a common rock that contains at least 25% quartz and is sometimes used in construction because of its strength.

Pumice is an unusual, lightweight rock formed when molten rock is rapidly blown out of a volcano, forming bubbles as it quickly loses pressure and cools at the same time.

Obsidian is a volcanic glass that forms quickly without crystal growth, it can have very sharp edges making it useful as a cutting tool or arrowhead.

Tuff is a rock formed from volcanic ash.

The upper section of the Earth's crust is made up of around 95% igneous rock.

Sediment rock is deposited over time, often as layers at the bottom of lakes and oceans, forms into rocks.

The sediment is compressed over a long period of time before consolidating into solid layers of rock. This sediment can include minerals, small pieces of plants and other organic matter.

Sedimentary rocks forms layers called strata which can often be seen in exposed cliffs.

Young Tumblers News

Sedimentary rocks cover the majority of the Earth's rocky surface but only make up a small percentage of the Earth's crust compared to metamorphic and igneous types of rocks.

Examples of sedimentary rocks include limestone, sandstone, mudstone, greywacke, chalk, coal, claystone and flint.

Chalk is a soft, white form of limestone.

Flint is a hard, sedimentary form of the mineral quartz.

Metamorphic rock is formed under extreme pressure and heat over time.

Metamorphic rocks can be formed by pressure deep under the earth's surface, from the extreme heat caused by magma or by the intense collisions and friction of tectonic plates.

Uplift and erosion help bring metamorphic rock to the Earth's surface.

Examples of metamorphic rocks include anthracite coal, quartzite, marble, slate, granulite, gneiss and schist.

Marble is a metamorphic rock that is formed from the sedimentary rock limestone.

Quartzite is a metamorphic rock that is formed from the sedimentary rock sandstone.

Slate is a metamorphic rock that is formed from the sedimentary rock mudstone.

Granulite is a metamorphic rock that is formed from the igneous rock basalt.

Bibliography: Encyclopedia Britannica, Rock Geology; National Geographic, Minerals and Gems; Wikipedia; Mindat.org; Smithsonian National History Museum History, Dept of Mineral Sciences; Geology.com.

Answers to Do You Know...:

1. Igneous, Sedimentary, Metamorphic
2. Ore
3. Magma
4. Lava
5. Pumice
6. Meteorites, Obsidian

Looking For A Star by Spencer, TRMS Pebble Pup, 10 years old.

There is a crater near Winslow, Arizona. It is about 4,000 feet wide and 570 feet deep. Its rim rises 150 feet higher than the surrounding plains. People living near the crater have always believed it to be the result of a star crashing to the earth. They said you could just pick up chunks of iron and silver (which later turned out to be iron-nickel) off the ground.

In the 1880s, the stories about the crater made it to the east coast. Prospectors and geologists got interested. They went to Arizona to take a look. The chief geologist of the U.S. Geological Survey said he went to the crater to "find the star". But he didn't find a star. The chief geologist concluded that the crater was formed by a steam explosion.

In 1902, a geologist and mining engineer named D.M. Barringer heard that locals thought the official report was wrong. Barringer studied the crater and found no volcanic rock. He thought the locals were right, so he bought the crater and started to mine it. For 20 years Barringer searched for the "star". He didn't find it either. Careful magnetic searches found no big metallic deposit. He drilled over two dozen core samples and ruined several drills when they hit really dense material. But, he didn't find any vein of iron or other metal.

Eventually, ballistic theory provided the answer. Ballistic theory suggested that the "star" would have been much smaller and would have shattered on impact. People had found the star - but only mere pieces of it.

All the searching for the star meant that we learned a lot more about meteors, meteorites, and impact craters. Today, the crater is still owned by Barringer's company. It is a tourist site with a museum. It is known by Barringer Crater by scientists and Meteor Crater by locals and everyone else.

Nobody found all of the "star" (the meteorite) but you can see a big chunk in the museum.

from T-Town Rockhound, 7/18

A New Geological Age Named: Welcome To The Meghalayan! by Jim Brace-Thompson

Scientists have been debating a new name for our current geological epoch, namely the "Anthropocene," to reflect human influence on our planet since 1950. While that name continues to be debated, one new name was officially announced in July by the International Commission on Stratigraphy: the Meghalayan age. To earn a name, a proposed geological age must have a marker in the rock record. This one's marker comes from oxygen isotopes in a stalagmite from India. The Holocene Epoch is now officially divided into three ages: Greenlandian (starting 11,700 years ago as massive continental glaciers retreated), Northgrippian (starting 8,300 years ago at the start of a renewed cooling trend), and Meghalayan (starting 4,200 years ago with a drought that saw the decline of several ancient civilizations).

from Rockhound Rambling, 8/18

A Tyrannosaurus toe claw is about 11 inches long, the same as the height of an ordinary sheet of paper.

Field Trips

The club or clubs sponsoring the field trips are shown in italics. When known I have listed a phone number and contact person for each sponsoring club below the listed trips. If you are not a member of the sponsoring club, you should phone and ask permission to go on their field trip.

Information from the Washington State Mineral Council webpage (<http://www.mineralcouncil.org>).

November 17 *Darrington Rock Club - Blanchard Hill* - Meet at the I-5 Exit 240 Gas Mart before 9:00 am - *Dalmation stone & Chert* - Bring hard rock tools
Ed Lehman wsmced@hotmail.com h# (425) 334-6282 c# (425) 760-2786

On the Color of Smoky Quartz by Paolo Sanchez, Junior Member Pasadena Lapidary Society

The practical mineral collector would've most likely encountered some of the mineral smoky quartz at least one time in his or her life. Whether it would be at gem shows or at rockhounding trips, this crystalline form of silicon dioxide has not really been a major interest of rockhounds. Usually, smoky quartz would just be sold as a faceting material for beginners, or as crystals serving as decor or paperweights.

However, in the scientific community of mineralogy, one thing about this mineral remains of interest: the color. As implied by the name, the color of smoky quartz is, well, smoky - ranging from a light tint of brown to a blackish hue. While many people would consider the mineral's color to be rather drab, the origin of this color is actually unique in the mineral world.

A good majority of minerals receive their color from certain elements in their intrinsic chemical composition or from the light absorption and reflection properties of the mineral's crystal lattice. These minerals are known as idiochromatic. Other forms of minerals include allocromatic minerals, where traces of accessory elements alter the absorption of different colors of light throughout the crystal lattice. Smoky quartz, however, gets its color from a rather surprising source.

Smoky quartz is known to form in granitic pegmatites, associated with different minerals and gemstones including tourmaline, cleveandite, and aquamarine. What is unique about these pegmatites is that they contain a significant amount of radioactive elements, particularly the elements uranium, radium, and thorium. Because these elements decay from their radioactivity, they emit gamma rays that are then absorbed by the surrounding rock. When quartz (particularly clear quartz) is in close proximity to these elements, the gamma radiation that is absorbed causes aluminosilicate ion impurities [AlO₄] within the quartz to lose an electron, forming a neutral, aluminosilicate compound which absorbs multiple colors of light.

This coalition between chemical impurities and radioactivity eventually results in the unique, brown to blackish color that gives smoky quartz its name. Fortunately, there is no need to worry about the radioactivity that smoky quartz is exposed to, for the amount of radioactivity in the quartz is so minuscule that it doesn't cause any damage to living species nor the surrounding environment.

While this rather common species of silicon dioxide is often underestimated in most of the rock collecting community, the formation of color in smoky quartz still stands as a unique and relatively rare process in the mineral world.

Works Cited:

- Holden, Edward F. "Color of Smoky Quartz and Amethyst." Color Smoky Quartz and Amethyst. N.p., n.d. Web. 1 Nov. 2016*
Nassau, Kurt. "Color in Minerals." Color in Minerals. N.p., n.d. Web. 2 Nov. 2016. "Smoky Quartz." The Quartz Page: Smoky Quartz. N.p., n.d. Web. 1 Nov. 2016.
Webster, Robert. Practical Gemmology: A Study of the Identification of Gemstones, Pearls, and Ornamental Minerals. New York: Arco Pub., 1978. Print.

from Rockhound Ramblings, 4/17

Nicolai Medvedev and the Art of Intarsia

Intarsia is a term that is used to describe both stone and wood inlay, where pieces of similar thickness are cut and shaped to fit closely together without spaces or gaps, forming a pictorial or geometric design. Marquetry is the term most commonly used to describe this technique in woodworking. The Latin term, *pietre dure*, is essentially stone marquetry, which first appeared in Rome in the 16th century and reached maturity in Florence. The stones are loosely assembled and then each one is glued in place to a base, typically of marble, obsidian, onyx, jade, granite, quartz, or even ceramic. Today, this art of stone inlay is called intarsia. Intarsia is different from mosaics and micromosaics, where small pieces, or tesserae, of glass, stone, shell, or bone are set into a mortar with grout in between the pieces, and oftentimes the pieces are the same size and shape. This is quite different from intarsia, where the pieces are different shapes, sizes, and material; no grout or mortar is used; and the cutting must be exact so that there are no spaces or gaps between the stones.

Check out <https://mineralsciences.si.edu/collections/intarsia/master-of-intarsia.htm> for more information on Nicolai and how he became a master of intarsia.

via The Council Reporter, 6/18; from KMGs Hard Rock News, 6/18



Shows

November 10 & 11: Saturday 9 am - 5 pm; Sunday 10 am - 5 pm

Maplewood Rock and Gem Club, Annual Fall Show

Maplewood Rock and Gem Clubhouse

8802 196th ST SW

Edmonds WA

November 10 & 11: Saturday 9 am - 5 pm; Sunday 10 am - 4 pm

Skagit Rock & Gem Club Treasures of the Earth

Sedro Woolley Community Center

703 Pacific St

Sedro Woolley WA

November 17 & 18: Saturday & Sunday 10 am - 5 pm

Kitsap Mineral and Gem Society, Fall Festival of Gems

The President's Hall

1200 NW Fairgrounds Road

Bremerton, WA



A Carnelian Cylinder by Terry Vasseur

I got an E-mail from someone who wants someone who can make a cylinder of carnelian. First, what is carnelian?

Carnelian is a glassy, translucent stone colored orange of a variety of chalcedony, a mineral of the Quartz family of Silica (silicon dioxide, SiO₂). It's color varies from pale pinkish-orange to a deep rusty brown, though it is most known for its brilliant orange and red-orange crystals. It's Mohs scale hardness is 6 - 7 and it doesn't have cleavages. It's name comes from a Latin word meaning "flesh" and most of the carnelian on the market comes from India, Britain, Iceland and Peru.

To make a cylinder of 37mm (or 1.42 inches) long and 17mm (or 0.68 inches) diameter you need a core drill. There are several types. Kingsley North has six different type diamond core drills. One is Cutter Choice Core Drills, diamond coated made for cutting glass, not anything stronger than glass. Crinkled Core Drills are another one, a diamond bonding systems that are not for any longer than inch cutting. These bonding types are cheaper but they wear off the diamonds easily. What you want for this is job is a Sintered Core Drill. These will work longer. The cost for this drill costs around \$40.

Always use a lubricant. There are several water soluble lubricants on the market and plain water is better than nothing. Drilling underwater, with the bit and stone submerged, is great for reducing heat, but it is messy. The best way to lubricate your bit is to use a water soluble additive and water in a squirt bottle. As you are drilling the waste material accumulates in the lubricant so a new squirt from the bottle pushes the dirty lubricant out of the way, thus helping to keep the bit cool and allowing you to see the drilling area better.

The optimum speed control is somewhere around 1500 to 3000 rpm. The faster you go the hotter the core drill gets and the water and mud splashes all over. If you go too slow, the longer it takes to cut the core.

Sintered diamond bits require cleaning or dressing before use and after each use with an aluminum oxide stone, thus revealing a fresh layer of diamonds each time.

Also, lock the rock with wax on the bottom of the pool and find away to lock the pool so it won't move as the Core Drill won't move.

from The Agatizer, 4/18

Vermiculite, mica-like minerals that expand or exfoliate when heated to between 1,400 and 2,000 degrees, expand due to the expansion of water as it changes to steam between the layers.

Sources: U.S. Geological Survey, Minerals Information Institute

from <https://minerals.usgs.gov/west/morefun.htm>, 12/15/17