

# The CMS Tumbler

November  
2019

This publication is an official bulletin of the Cascade Mineralogical Society Inc. (CMS).  
(Previously known as the Boeing Employees' Mineralogical Society (BEMS))

**Next Meeting:**  
**November 15, 2019**  
**7:00 p.m.**

**American Legion Hall**  
**25406 97th PI S**  
**Kent, WA**

The speaker will be  
Joan from Jerry's Rocks

The Show & Tell  
Theme is something you  
bought at a rock shop

This month remember to wish a  
Happy Birthday to  
**Robin Santos on November 4**  
**Michael Bruhahn on November 8**  
**Arthur Agadjanyan on November 11**  
**Malcolm Wheeler on November 14**  
**Elaina Calbaum on November 17**  
**Chuck McMurtray on November 19**  
**Robert Pattie on November 25**  
**Dian Davis on November 28**  
and also remember to wish a  
Happy Anniversary to  
**Robert & Jacqueline Pattie**  
**on November 23 (62 years)**

## Connect with us!

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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.

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

CMS Club Address  
14431 SE 254th St.  
Kent, WA 98042

Keith Alan Morgan, Editor  
3802 W Tapps Dr. E  
Lake Tapps, WA 98391

Postal, or Email, Exchange  
Bulletins are welcome.  
Email preferred.  
[greenrockdraggin@yahoo.com](mailto:greenrockdraggin@yahoo.com)

## 2019 Elected Officers

Title	Name	Phone	E-mail
President	Kat Koch	425-765-5408	president@cascademineralsociety.org
Vice President	Merriann Fu	253-236-5593	merriannf@gmail.com
Treasurer	Charles Benedict	425-306-0465	charlesbenedict@comcast.net
Secretary	Pete Williams	425-228-5063	petewill02@gmail.com
Director	Roger Pullen	206-387-3214	june.d.murff@boeing.com
Director	Roger Danneman	425-228-8781	roger.danneman@q.com
Director	Richard Russell	253-736-3693	richru1@yahoo.com
Past President	Bob Pattie	425-226-3154	bobpattie@comcast.net
Show Chairman	Mark Hohn	253-332-3736	showchair@cascademineralsociety.org
Federation Representative	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Federation Representative	Kat Koch	425-765-5408	president@cascademineralsociety.org
Mineral Council	Bob Pattie	425-226-3154	bobpattie@comcast.net
Mineral Council	Jacque Pattie	425-226-3154	dianahorsfall@comcast.net

## 2019 Show Committee Chairs

Cascade Show	Mark Hohn	253-332-3736	showchair@cascademineralsociety.org
Cascade Show Co-Chair	Kat Koch	425-765-5408	president@cascademineralsociety.org
Cascade Show Treasurer	Pete Williams	425-228-5063	petewill02@gmail.com
Cascade Show Silent Auction	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Cascade Show Raffle Donations	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Cascade Show Demonstrators	Richard Russell	253-736-3693	richru1@yahoo.com

## 2019 Committee Chairs

			Club Historian
Donations	Kat Koch	425-765-5408	president@cascademineralsociety.org
Field Trip	Roger Danneman	425-228-8781	roger.danneman@q.com
Health & Welfare	Bev Williams	425-228-5063	britbev1957@outlook.com
Library	Bob Pattie	425-226-3154	bobpattie@comcast.net
Meeting Programs	Miriann Fu	253-236-5593	merriannf@gmail.com
Membership	Mark Hohn	253-332-3736	showchair@cascademineralsociety.org
Newsletter - Tumbler Editor	Keith Alan Morgan	253-862-8201	greenrockdraggin@yahoo.com
Open Shop Instructors	Bob Pattie	425-226-3154	bobpattie@comcast.net
Public Relations	Kat Koch	425-765-5408	president@cascademineralsociety.org
Refreshment	Angie Bayer	253-631-3840	angiemc61@msn.net
Raffle/Display	Roger Pullen	206-387-3214	june.d.murff@boeing.com
Shop Operations	Bob Pattie	425-226-3154	bobpattie@comcast.net
Show & Tell	Michael Blanton	425-271-8757	mblanton41@hotmail.com
Webmaster	Mark Hohn	253-332-3736	showchair@cascademineralsociety.org

2019 CMS Dues are \$25 per year per family

Pay online, by mail, or at our meetings.

Mailing Address: Charles Benedict, 25838 W Lk Wilderness Dr SE, Maple Valley WA 98038

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.cascademineralsociety.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](mailto:mblanton41@hotmail.com)

To get information to the Tumbler via the Internet send it to [greenrockdraggin@yahoo.com](mailto: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: <https://www.facebook.com/CasMinSoc/>

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

# November

Sun	Mon	Tue	Wed	Thur	Fri	Sat
Have a Happy Thanksgiving!					1	2
3	4	5	6	7	8	9 Maplewood Show Skagit Show
10 Maplewood Show Skagit Show	11 Show Meeting 6:30 pm Board 7:00 pm	12	13	14 General Meeting 7:00 pm	15	16
17	18	19	20	21	22	23 Kitsap Show
24 Kitsap Show	25	26	27	28 Thanksgiving	29	30

CMS Show Committee Meeting:....Monday, September 9.....6:30 pm to 7:00 pm

CMS Board Meeting:.....Monday, September 9.....7:00 pm to 8:00 pm

CMS General Meeting:.....2nd Thursday, September 12.....7:00 pm to 9:00 pm

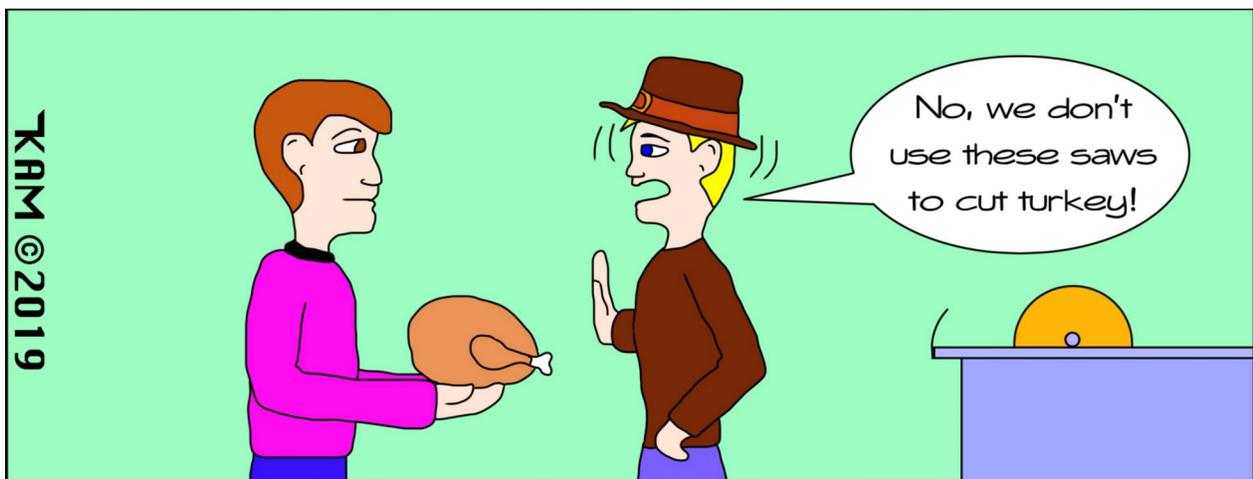
Lapidary Class Hours:.....By appointment, call to set a time & day for your lesson (425) 226-3154

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



The Tumbler has received One-Time Rights to publish this cartoon

**CMS Show Committee & Board Meeting Minutes October 7, 2019** by Rich Russell, 2019 Director

Meeting called to order 6:40 pm

Mark passed out Rock show Vendor Feedback Survey and his Show Feedback comments which covered his likes and dislikes about the rock show.

Opened a discussion about what to do with the equipment and rocks in storage. We need a new place to store them and what we might want to sell.

Looking for a new Rock Show Chairman, Mark has stepped down after 2 years of great leadership.

Roger will be leading a fieldtrip to Redtop on Saturday Oct 19th.

We need/would like suggestions for topics of future meetings.

Election of CMS Officers 2020

Meeting adjourned 7:40 pm.

**Young Richard's Almanac** by Dick Morgan

We live a life that is controlled by sets of rules, so when someone makes you an offer that is outside of the rules it is usually a fraud.

As you age all of your organs are replaced by new tissue except for your memories.

**Chiastolite** by Mike Seeds, Baltimore Mineral Society

Chiastolite crystals just don't look right. They are generally opaque creamy white with a black X drawn across the face as if a machinist was locating the center before drilling a hole. But there is no hole. They look like unholy beads. But they are, in fact, natural crystals of andalusite and the X's are natural formations. They are especially fascinating because no one is sure how the X's form.

Andalusite ( $Al_2(SiO_4)O$ ) is a metamorphic rock-forming mineral mined for use in high temperature materials. In most cases, the white porcelain in spark plugs is made from andalusite. It is found in schist and gneiss at some tectonic boundaries where plates came smashing together with high pressure and high temperatures. The crystals have a square cross section with larger faces nearly perpendicular to each other. There are sometimes narrow faces along the long edges. Unfortunately, good crystals are rare and most are rough and imbedded in matrix making faces indistinct. Micromounters typically see better crystals.

Some andalusite crystals contain black X's drawn diagonally across the square cross section. The crystals break easily across the long c axis and when polished the X's stand out dramatically. Such crystals are known as chiastolites from the Greek *chiastos* meaning marked with an X, and that word comes from the Greek letter Chi which is an X. The X's in the crystals contain carbon plus some types of colorless mica trapped in the crystals. It's not clear how the X's form.

One theory is that the crystal growing in a carbon rich matrix "pushes aside" impurities including carbon and the impurities are concentrated along the diagonals to form an X. This theory is commonly found in books and articles, but it isn't clear how exactly that could happen. Also, this does not account for the thickening of the carbon lines at the outer edges of the crystals. This "feathering" can be delicate or bold, and in some cases can give the crystal the appearance of four white andalusite arms joined at a point in the middle.

Another theory proposed in 1934 suggests that the carbon is selectively attracted to the four edges of the crystals and as the crystals grow the carbon draws an X. Wikipedia refers to this idea as "the most widely accepted theory".

Some specimens come from the Blue Wing Mountains near Lovelock, Nevada. Those mountains are made up of black, graphite-rich pyroxene-hornfels. Such graphite-rich rock is thought to have been formed by a granite intrusion into oil-rich shale. The decomposition of the oil could account for the carbon making the rock emplacement dark and supplying the carbon to form chiastolite X's.

A further peculiarity is at the cores of some crystals. The very center of some crystals contains a black square with the arms of the X radiating outward from the corners of the black square. Still other crystals have a small square of carbon outlining the white core of the crystal, with the arms of the X's radiating outward from the corners.

Chiastolites are not rare, so there are lots of examples around. You could build a nice subcollection of different types of Chiastolites. Besides being a good show-off in a collection, chiastolite is a good ponder stone when you need a mystery to ponder.

from The Virginia Pen, 9/19

The pyramids were built before most of Mt. St. Helens was formed.

**CMS General Meeting Minutes October 10, 2019**

by Pete Williams, 2019 Secretary

Meeting called to order at 7:15

Minutes were approved as written.

Presidents Report: Alex Danneman and Isaiah Fu were given the Northwest Federation Junior achievement award.

Shop Reports: Anyone interested in receiving instructions on how to use club equipment should call Bob Pattie. The number is in the bulletin.

Field Trip Report: The October field trip was schedule for next week at Red Top. However, they have already gotten snow so that trip will be canceled. A different site will be selected. Sign up on the website for notifications.

Show Committee: The show was a great success. We made almost \$7000. There were 13 new members who signed up at the show. Feedback from the vendors was mostly positive. All vendors indicated they would come back next year. Mark has resigned his position as show chair, but will continue with membership.

Old Business: The club Christmas party will be on December 15 at the meeting location. It is a potluck and the club will provide turkey and ham.

The profit from the show is for the club to eventually have a permanent shop. We need ideas on who has available space and willing to host the shop. The club would pay for all utilities and other expenses.

Program: Bob Pattie presented the Draft Grizzly Bear Restoration Plan for Washington State.

Meeting adjourned at 8:14 followed by show and tell and the raffle.

**A Note from the President's Desk...** by Kat Koch, 2019 President

We had another successful Rock & Gem Show under the leadership of Mark Hohn! As all of you have probably heard by now, Mark has resigned as Show Chairman so that he can spend more time traveling during the summer with his wife, Penny. I thank Mark for all his hard work these past two years. You have left us with huge shoes to fill.

We are now on a search for a new Show Chairman or Assist. Show Chairman. If you would like to volunteer for either position please email from our website under the "Contact" page. This is a 2 year Board position and would also require you to attend our Board meetings. Any volunteers for either position will be interviewed by the Board and the selection of the volunteer to fulfill the position will be made by the Board.

We are also looking for in indoor facility for a lapidary shop. We must be able to heat the area and to work in the shop year round. Do you know of a vacant house, unused light industrial space, unused 2 or 3 car garage, we also interested in unused space in a city or state building. If you know of such a space contact or have any ideas for a shop please contact me through the website.

Our Young Tumbler's earned badges from their display case entries.

Alex Danneman earned his fossil badge.

Isaiah Fu earned his collection badge.

Isabel Viejo earned her showmanship badge.

Alexa Viejo earned her showmanship badge.

I have also been notified by the Northwest Federation that Alex Danneman and Isaiah Fu have each won a Junior Achievement Award. This is a first time for any Young Tumbler from our club!!

Congratulations to each of you for your awards and badges. We are very proud of you.

**Puyallup Fair Ribbons** by Charles Benedict

Our President is setting a good example for us!

Kat submitted 6 pieces of jewelry and two minerals for judging at the displays for the State Fair in Puyallup.

She not only won the Grand Reserve champion for her frog jewelry, but she won 4 first places in jewelry and 2 second places! In other words – every one of her submissions for jewelry took an award!

For the two mineral displays she took second and third place.

Way to go Kat! And thank you for the wonderful example (Along those same lines, I understand that two of our junior members also earned badges from the Northwest Federation). I'm sure I see a pattern developing.

**!!!Important Safety Instruction!!!**

Always wear a mask, when grinding copper-related rocks on a Genie or similar machine. Also, copper-related rocks should not be ground when others are present. Some rocks containing copper include: Azurite (Hydrated Copper Carbonate), Chalcopyrite (Copper Iron Sulfide), Chrysocolla (Hydrated Copper phyllosilicate) Conicalcite (Hydrated Calcium Copper Arsenate), Copper (Cu), Cuprite (Copper Oxide), Malachite (Hydrated Copper Carbonate), Tetrahedrite (Copper Antimony Sulfide), and Turquoise (Hydrated Copper Aluminum Phosphate).

from The Virginia Pen, 9/19

## **Beaches: Materials** by Kat Koch, Cascade Mineralogical Society

Ocean basins serve as collecting bins for eroded debris that is washed from continents. Studying the sediment source, color, size, and sorting on the beach helps the coastal geologist to understand and describe the dynamic systems that transport, deposit, and erode our coasts and shorelines.

### *Material Size*

Looking at the size, the most common sedimentary deposits in the ocean are mud and sand, with gravel a distant third; boulder and tiny particles (colloids) are extremely rare in the sea. However, the beaches may be composed of sediments of various sizes: (from finest to coarsest) mud (silt and clay), sand, and gravel (cobbles and boulders). Typically, people associate beaches with quartz sand, however, sand has a grain size of .0008 to .08 inches, not a rock type, so beach sediments are found in all shapes and sizes and may be composed of any rock type (e.g., igneous, metamorphic, or sedimentary).



**Coarse Beach Sand, Golden Gate Nat. Rec., Calif.**

### *Mud and Silt*

Finding muddy open coast beaches in the United States is rare, although this silt and clay is commonly found in back barrier regions of barrier islands. For muddy sediments to dominate, low-energy conditions must exist that will allow very fine grained particles to settle out from being suspended in water. Except during periodic storm events, tidal creeks, marshes, and mud flats are low-energy coastal environments where clays and silts are commonly found. This image shows a tidal flat exposed during low tide in Alaska.



**Alaska mudflats at Turnagain Arm**

### *Sand*

Sandy beaches are found throughout the United States, ranging from the fine, white sands of Padre Island National Seashore (Texas) to the coarser sands of Cape Lookout National Seashore (North Carolina). Sandy beaches are typically associated with passive (trailing edge) margins, a wide continental shelf, and a sedimentary geologic framework. These regions often contain barrier structures such as barrier islands, barrier spits, and barrier beaches. Dunes protect inland areas from wind, waves, and storm events. Vegetation aids dune stability, which decreases beach erosion.



**White Sand Beach, Kohala, Hawaii**

### *Gravel*

Gravel (pebbles .078 to 2.5 inches, cobbles 2.5 to 10.1 inches and boulders greater than 10.1 inches) beaches are typically found in high-energy coastal environments such as the northeastern United States and along the Pacific

coast. Rocky coasts are commonly associated with active (leading edge) margins and narrow continental shelf widths. These areas typically have an igneous or metamorphic framework, which provide a source of more resistant rocks that form rocky shores.

#### *Beaches: Sand Colors*

Coastal sediments come in a wide range of colors: from the brilliant white sands of Gulf Islands National Seashore (Mississippi and Florida) to the black volcanic beaches of Hawaii Volcanoes National Park (Hawaii). Sand coloration depends on the parent rock from which the beach sediments have eroded.

The parent material may be from a local source (eroded from a nearby bluff or cliff) or may be transported long distances; for example, Mississippi River delta sediments may be transported from Montana.

Additional coloration of coastal sediments may occur as a result of the influence of color-producing minerals such as hematite (red), limonite (yellow), magnetite (black), and olivine (green), or the introduction of chemicals and pollutants. Still other beaches are composed mainly of calcium-carbonate shells, which are a variety of colors depending on mineral staining.

#### *Black Sand*

The black sand beach in Hawaii Volcanoes National Park is the site of some of the newest land on Earth. When molten lava cools rapidly in seawater, it shatters, forming the black sand that is washed onto the shore.

#### *White Sand*

White sand beaches are typically composed of quartz-rich sediments. Due to its hardness and chemical structure, quartz is a very durable mineral that is difficult to weather and erode. Therefore, quartz is often the most prevalent mineral found in beach sediments. White sand beaches often include accessory minerals such as garnet, magnetite, and ilmenite. These minerals are often found in dark streaks along shorelines, which demonstrate the winnowing by waves and wind action of heavier minerals.



**Enderts Beach, Redwood National Park, California**



**Red Sand Beach, Maui**



### Calcium-Carbonate Shells

Some beaches, like the one shown here, are composed primarily of the carbonate remains of marine organisms. The calcium-carbonate shells of mollusks and gastropods may be the dominant component of these beaches and make great locations for shell collecting. If you look closely, these beaches may also include fossils such as shark teeth, whale vertebrae, or bony fish remains. In general, fossils are typically heavier than their modern counterparts, and may be different in color because of mineral staining that occurs with prolonged burial. Bone fossils may maintain textural features such as striations and porous matter. This beach at Padre Island National Seashore (Texas) is composed of shell fragments and quartz sands.



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## Our Hobby's History: It Started with a Passion and a Sharing of Ideas by Jennifer Haley AFMS Historian

I've been hitting the books again, investigating the earliest AFMS Historian files to see what gems of information I could write about for you. 1928 is a year to remember. The first radio and telephone connection between the Netherlands and U.S.A. occurred, American aviator Amelia Earhart became the 1st woman to fly across the Atlantic Ocean, sliced bread was sold for the first time, and Scottish bacteriologist Alexander Fleming discovered penicillin while studying influenza.

And in 1928 an earth science teacher noticed the need to have the earth sciences taught at schools below the college level. Unfortunately, I do not have the gentleman's name, but what we do know is that he started a club for his students and community. The club was such a big hit, he hoped something similar could go national. Peter Zodac, founder and first editor of *Rocks & Minerals Magazine* was a big supporter of the idea, and began writing monthly articles which appeared in his magazine about forming earth science clubs. In those articles were ideas for programs and activities, and of course information about minerals. Learning about minerals and collecting minerals was becoming extremely popular, and was the main focus of our hobby in the beginning. Individuals and families were fascinated with what they could learn, and were enchanted by the adventures they were exploring.

Mineral societies slowly but in a big way began to spring up around the country. The first two in California in 1931, 1932, and the third in Oregon in 1933 which was called the Oregon Agate and Mineral Society.

The Oregon club got busy promoting themselves and started a bulletin. The club grew by leaps and bounds its first year, becoming what was believed to be the largest club of its kind in the world at that time. The monthly bulletin was called the *Oregon Mineralogist*. By its second year a person you are now familiar with from a recent AFMS Historian article, Dr. Dake, became their editor and renamed the bulletin *The Mineralogist Magazine*.

Two other publications were born from the excitement of the hobby, *Earth Science Digest* and *Mineral News and Notes*. Advertisements for lapidary equipment became a popular aspect of the magazines. Clubs across the country were corresponding with one another, visiting each other's club meetings and venturing out together to collecting sites for minerals.

With so many clubs forming an idea was sparked to form a Federation. Those first visionaries of our hobby wanted to keep the spirit and the knowledge of the science and the hobby alive instead of seeing it dwindle over time. As a synergy, they felt their combined efforts would be far greater than the sum of what an individual club could do on their own.

Backed by the eagerness and the efforts of the clubs over a course of years, the seven federations one by one were formed. California Federation-1936; Northwest Federation-1938; Midwest Federation-1940; Rocky Mountain Federation-1941. During the time of WWII efforts to advance the federations was suspended. In 1946 came the

inspiration for forming a national federation, and by 1947 the American Federation of Mineralogical Societies was born. Two other federations followed with the formation of the Eastern Federation of Mineralogy and Lapidary-1950, and the Southwest Federation-1976.

When you hear society members asking why we have the federations and the AFMS, you now have a great story to tell them that they can take to heart.

from AFMS Newsletter, 4-5/19

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## **Galena** by Dave Jacobson

The mineral for this month is Galena (PbS, lead sulphide). Galena is a common mineral and is one of the more important lead ores. It is present in almost all hydrothermal sulphide ore bodies and is associated with pyrite, chalcopyrite and sphalerite. Galena from some locations is silver bearing. Although galena is the leading lead ore, enough silver is recovered during ore processing to make it a leading silver ore. Galena is found in most mineral collections as its cubic shape makes it an interesting specimen. Galena is a common mineral. Some of the more noted sites where galena has been mined are the Texas-Oklahoma-Missouri TriState Mining area in the USA; Broken Hill, Australia; Cumberland, England and Santa Eulalia, Mexico.

Galena is in the isometric (cubic) crystal system. Cube shaped galena crystals are very common. The stepped offsets in the faces of these cubic crystals are also very common. Galena has a hardness of 2.5 - 2.7 with a specific gravity of 7.58. Its streak is lead gray. Galena's color ranges from a metallic silver-gray appearance to dull lead-gray. Freshly fractured specimens usually have a metallic luster with the luster diminishing to a duller gray over time. Galena is easy to identify, with its shape, color, hardness and high specific gravity.

Galena gets its name from the Greek, galene, meaning "lead ore"

The following reference materials were used in preparing this article: A Field Guide to Rocks And Minerals by Frederick H. Pough. Mineralogy For Amateurs by John Sinkankus. Simon & Schusters Guide to Rocks And Minerals. Amethyst Galleries Mineral Gallery on the Internet at <http://mineral.galleries.com> from Canaveral Moonstone, 10/19

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## **Galena Educational Puzzler**

Here is an educational mindbender using galena.

Hold a small piece of galena in one hand and a large piece of pumice in the other. Ask someone (a noncollector) which is heavier. Most people will pick the larger chunk (the pumice), which is light due to the air it contains.

You can then talk about density ("heavy as lead") compared to mass (the larger piece of pumice).

from The Mineral Newsletter, 9/19

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Kunzite is the pink, gemmy form of the mineral spodumene. Kunzite is familiar to many local rockhounds since it is found in the pegmatites of San Diego and Riverside Counties, as well as Afghanistan, Brazil and Madagascar (green gemmy spodumene, known as hiddenite, is even rarer). Gemstone varieties of spodumene are trichroic, exhibiting three differing colors when viewed along each of the three crystal axis.

Spodumene is the lithium-containing member of the pyroxene group of silicate minerals (another pyroxene familiar to lapidary enthusiasts is jadeite). Spodumene crystals are prismatic or columnar, frequently long, flat sided, with longitudinal striations. Non-gemmy crystals or "logs" of spodumene can be 47 feet long and 6 feet wide (Black Hills of South Dakota). Spodumene crystals in pegmatites are mined for lithium (other rare minerals in these pegmatites can provide cesium and tantalum).

via The Quarry, 9/19; via The Rockcollector, 9/19; from Delvings, 8/19

## Young Tumblers News

### Salted or Unsalted???

No, we're not talking about minerals with salt sprinkled on them. But "salting" does have a special meaning in the mineral world.

Have you ever been to a mine or a mineral show where you got to look for minerals in the dirt or sand? Sometimes you get a bag of sand with minerals hiding inside and you get to use a sluice or a pan to remove the sand and reveal the minerals by swishing the mixture around in water. Sometimes, you get to pick up mineral pieces that you find on the ground. I went to a garnet mine many years ago. They let us dig around in the dirt to find pieces of garnet. I found a HUGE chunk of deep red, massive garnet on the ground that I got to keep.

Did you know that many times, businesses (including mines and museums) will add pieces of minerals and crystals so that it is easier for you to find something to take home? Sometimes they add pieces of the minerals that are found only in that area. Other businesses add pieces of minerals from all over the world. This is a practice called salting. "Salting" is when a business, museum or mine adds minerals to a dig area that were not naturally there to begin with.

The most honest and reputable places will tell you upfront that they salt their dirt or sand so that you have a better chance of finding something to take home with you. However, some businesses don't tell this to their customers. On the other hand, there are businesses that take great pride in never salting their mine or dig site. When you go into their mine or business, you will know up front that what you find truly did come out of their mine. This means you may not find much. But if you do find something interesting, you will know that it is a special find and worthy of adding to your collection.

So, if you're out at a mine, mineral shop or museum this summer, and they give you a chance to dig or search for minerals in their dirt or sand, ask if they have "salted" the area. They will be impressed by just how much you know!

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### Early Industrial Uses of Quartz Crystals

The Curie brothers discovered the piezoelectric effect of quartz in the early 1880s. In 1917, P. Langevin used X-cut plates of quartz to generate and detect sound waves in water with the objective of finding a means to detect submarines which led to the development of sonar. In 1923 G.W. Pierce of Harvard proved that a quartz plate with only one set of electrodes could control the frequency of an oscillator circuit and single vacuum tube. The Pierce oscillator circuit was widely used in the 1920-30s in "ham" radios. Dan Noble of the Galvin Manufacturing Co. (Motorola) proved that crystal control was essential to effective two-way radio communication with the first application in police radios and later large-scale use in military communication systems. In support of WWII, by 1943 there were 130 manufacturers producing crystal units using natural quartz. Demand for quartz crystals dropped dramatically after the war with a short lived growth spurt during the Korean War. Impurities made using natural quartz in electronics difficult. The discovery that synthetic quartz could be manufactured in an autoclave by dissolving raw quartz and reforming it into bars of pure quartz helped quartz become a key factor in frequency control in the modern wireless market.

from The Quarry, 10/19; via Glacial Groove, 10/19; via High Frequency Design; from Chip & Lick, 2/08

### Rockhounding Phrases In Latin by Sue Marcus

Carpe mineralis—seize the mineral! Or carpe quam fossilium—seize the fossils! Carpe saxa—seize the rocks!

Writing this was a (Latin) learning experience; perhaps reading it was for you too.

from The Mineral Newsletter, 6/19

## 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>).

**August 16**     *Darrington Rock Club - Blanchard Hill* – Meet at the I-5 Exit 240 Gas Mart before 9:00 am - This site is next to the road, so no hike is involved. - Washington Dalmation stone and Chert – Bring hard rock tools and safety glasses, Discover Pass required, as this is in a Washington State Recreational Area.  
*Ed Lehman wsmced@hotmail.com h# (425) 334-6282 c# (425) 760-2786*

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### Field Trip Report by Roger Danneman

The Oct. 19th field trip to Greenwater for black agate and red jasper was postponed due to heavy rains. I had concerns about the spur road being under deep water, snow/slush being up at the dig site, and weakened tree roots from all the rain and gusty winds. So we decided not to attempt the trip. The trip has been rescheduled for Saturday November 9th. If the area has a dry spell and the snow level stays above 4000 feet, there's a good chance we'll get in there for some rock hounding. I'll make the call by November 5th and an e-mail will go out to the Field Trip distribution list (those who have signed up for field trips on the CMS Field Trips tab).

For more info contact Roger Danneman 425-757-3506 (call or text) or email: [roger.danneman@gmail.com](mailto:roger.danneman@gmail.com)

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### Personal Limits by Ellery Borow, AFMS Safety Chair

No doubt all safety-aware persons are mindful of various rules, regulations, guidelines and limits imposed upon us by all manner of property owners, equipment manufacturers, various state and federal agencies.

Those rules, regulations, guidelines and limits have been thoroughly researched, reviewed, relevancy tested, and released for all of our collective safety concerns.

Where however, do ones own personal limits come into play? Our various medications, concerns about our less than satisfactory balance, our less than sharp eyesight, and our less than optimal motor skills all suggest limitations to which we should also pay attention as we engage in our rockhounding activities.

Is that a slope we could easily climb or is it something we could no longer ascend? Is a large lapidary project something we should no longer attempt, considering the weakness in our hands? Should we cut back on certain faceting designs because of eyesight issues?

While rules, regulations, guidelines and limits imposed upon us are thoughtful and well intentioned, we would be well advised to be aware of our personal limits and mind them as well. Our personal limits are, well, personal. We are the ones most suited to judging and minding our own personal limits. How are we can walk to a quarry, how heavy a pack we can carry, how far we can carry that pack, should all be a part of our thought process in being safe.

Some limitations have work-arounds. One can add wheels to their collecting bags, or support jigs and fixtures to support heavy lapidary work, or use a longer trail instead of the steep slope. Those are all work-arounds.

Ones own personal limits are important to mind. One might injure themselves by disregarding equipment manufacturers recommendations, but one might also injure themselves when disregarding a personal limitation such as when taking too steep a trail.

Please be safe – your safety matters, no matter the source of a limitation.

from AFMS Newsletter, 12/18 - 1/19

## Shows

**November 9 & 10:** 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 9 & 10:** 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 98284

**November 23 & 24:** Saturday 10 am – 5 pm; Sunday 10 am – 5 pm  
**Kitsap Mineral and Gem Society, Fall Festival of Gems**  
The President's Hall  
1200 NW Fairgrounds Road  
Bremerton, WA

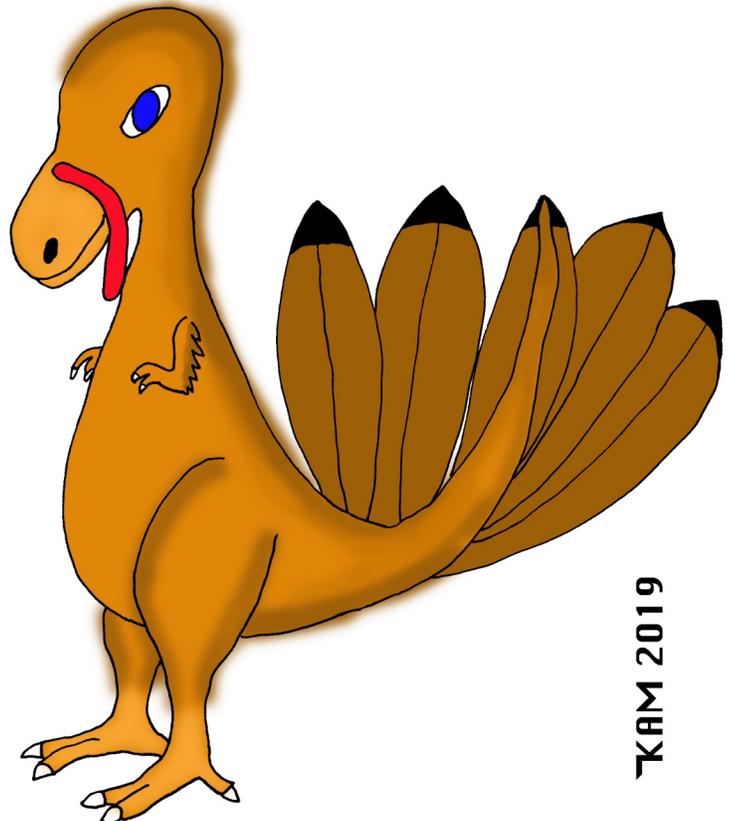
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### Internet Address

30 Cool Facts About Mount St. Helens  
<https://pubs.usgs.gov/gip/103/>  
from USGS Twitter, 10/28/19

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# Happy Turkey Day!!!



(Note: Actual turkeys emotional state about Thanksgiving may vary. Comment offered as a general wish not a definitive statement on turkey emotions.)

KAM 2019