



the CMS Tumbler

January
2017

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

Next Meeting:
January 12, 2017
7:00 p.m.

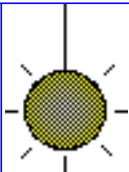
**American Legion Hall
25406 97th Pl S
Kent, WA**

The Program is Yakima River Rocks South of Ellensburg. We will show a video from Central Washington University's Department of Geological Sciences.

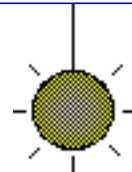
The Show & Tell Theme is each of our States have some unique rocks that they are known for. Bring in your rocks and tell us what they are, the State they are found in and how you obtained it.

We will have door prizes for just attending our meeting plus our regular raffle.

Hope to see all of you at this meeting
Guests and children are always welcome.



***This month remember
to wish a
Happy Birthday to
John Haworth on January 13,
and also remember
to wish a
Happy Anniversary to
Our Club on January 13 (68 years)***



January 2017 is the 68th Anniversary of our Club!!!
Please plan on attending the meeting to celebrate our Club's birthday. We will be serving a birthday cake.

This publication is an official bulletin of the Cascade Mineralogical Society Inc. (CMS).

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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.

When on field trips this organization uses CB Channel 7.

CMS Club Address

*Rich Russell
14431 SE 254th St.
Kent, WA 98042*

Keith Alan Morgan, Editor

Postal, or Email, Exchange
Bulletins are welcome.
Email preferred.
morgangraphix@yahoo.com

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2017 CMS Dues are \$30. Send or deliver dues to:

Richard Russell
14431 SE 254th St.
Kent, WA 98042

(or pay him at the meeting)

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

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

The CMS external website is <http://www.cascademineralogicalsociety.org>

Our Facebook page is <http://www.facebook.com/pages/Cascade-Mineralogical-Society/194320760605196>



January



SUN	MON	TUE	WED	THUR	FRI	SAT
1	2	3	4	5	6	7
8	9 Board Meeting 7 PM 	10	11	12 General Meeting 7 PM 	13	14
15	16	17 Lapidary Shop	18	19	20	21
22	23	24	25	26	27	28 Lapidary Shop
29	30	31	Have a Happy & Healthy 2017!			

Lapidary Class Hours:.....Closed until further notice

Lapidary Shop Hours:.....3rd Tuesday..... 4:00 pm to 8:00 pm

Lapidary Shop Hours:.....4th Saturday..... by appointment (call a few days ahead to set time)

CMS Board Meeting:.....Monday before the General Meeting.....7:00 pm to 8:00 pm

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

Rockhounding Weather

by KAM

☀ Sunny ☀	≡ WINDY ≡	☔ RAINY ☔	* SNOWING *
Great	Annoying	Better be good stuff	Time to quit

CMS Board Meeting Minutes December, 2016

There was no meeting this month.

CMS Christmas Party December 4, 2016

by Keith Alan Morgan, editor

The Club Christmas party was noonish on December 4 at the American Legion Hall, Kent, WA.

People brought some nice food dishes to share and afterward we had the club auction. Some items resulted in bidding wars, but still cost the winners less than had they bought the items at a store. Plenty of screaming deals were had for those who showed up.

A Note From The President's Desk...

By Kat Koch, 2017 CMS President

Happy 68th Anniversary CMS!

January 13th is the 68th anniversary of the first club meeting. The club was called "Sebac Mineralogical Society" and the meeting was held in the T-102 Building on Ellis Avenue. "Sebac" was an abbreviation of "Seattle Boeing Airplane Company".

We will be serving an anniversary cake and refreshments at our January 12th meeting. So be sure to attend the meeting and celebrate. I feel we should be proud that our club is still going strong and growing on our 68th anniversary.

As I sit here writing and looking back on 2016, I feel it has been good year for our Club.

We have tried several new events to get better exposure for our club and new members. Mark Hohn also built us a new website which has dramatically increased traffic and inquiries about our club. End results is that we did increase our membership.

I want to thank several of our Board of Director Members for their long and dedicated service to our club. Bob & Jacqui Pattie, Rich Russell and Pete Williams have served on our Board, in some capacity, for many years since the 1970's. We owe a lot of our clubs continuing success to them.

We also have several long time members (some also since the 1970's) that have been very supportive and active members. They continue to volunteer on various projects when needed. A special thanks to Dick and Keith Morgan, Roger Pullen, Stan Loreen, Bob & Linda Wahlberg, Bev Williams, Mike Blanton, Tony Johnson and Diana Horsfall. If I have left someone out I am so very sorry, it's an unintentional oversight.

Thank you to everyone that has volunteered at the Puyallup Fair and Gem Fair booths. It was a big commitment on the part of our club and I sincerely appreciated your help.

In 2017 I will be again committing our club to doing the Puyallup Fair and the Gem Fairs. So again I will be looking for volunteers to help at our booths.

We are continuing to seek a location to put on a club Gem & Rock Show in 2018. I am also continuing to seek a indoor location for our lapidary shop. If you have any location ideas for the Board to check out please let me know.

Young Richard's Almanac by Dick Morgan

Where is the capital of the state of confusion?
Washington, DC.

**Collecting Responsibly** by Scott Peters, Esq.

When we are out collecting, we have an obligation to fellow fossil or mineral collectors, the general public and to ourselves to practice conservation by collecting ethically and responsibly. The Merriam Webster dictionary defines a conservationist as "someone who works to protect animals, plants, and natural resources or to prevent the loss or waste of natural resources: a person who is involved in conservation."¹ One of the easiest things we can do to practice conservation is to follow the guidelines that are established in the AFMS Code of Ethics. The Code of Ethics has been published in the EFMLS News on numerous occasions but I wonder how many of us have taken the time to actually read the Code let alone try to implement all of it when we are out collecting? Most of the Code consists of common sense items that if we practice, will help us protect and preserve those collecting areas that are near and dear to our hearts.

Let's look at the first statement in the Code of Ethics, "I will respect both private and public property and will do no collecting on privately owned land without permission from the owner." Collectors must always obtain permission from the landowner before entering private property. You should never trespass on public or private property in order to collect. Failure to ask for permission is a valid cause for a complaint by the landowner of unlawful entry (trespass). Criminal charges and/or civil court actions could be costly and result in the cancellation of your collecting privileges on the subject land. You do not have the right to take fossils and minerals from the person who owns them. The fact that the property owner does not know they are there does not give you any special rights. Depending upon the value of the material you illegally collect, you could be charged with a felony for the theft of the property.

As a guest of the landowner, the collector should respect the property, taking care not to damage fences, trample crops or disturb or injure livestock. All gates must be left as they are found. If you dig a hole remember to fill it in completely. If the landowner gives you permission, you may want to mark the spot you were digging to permit you to come back on a future day to continue your exploration of the site. It is always a good practice to leave the area in as good as or better condition as you found it. Take all of your trash with you and if there is any trash left at the area by others pick it up and dispose of it properly. Take the time to note and report anything unusual or of special interest, such as leaking water troughs, livestock on roadways, gates that are closed and denying water to stock or the presence of trespassers or poachers. This will strengthen your relationship with the landowner and ensure that your presence on their property is providing an added benefit. This type of feedback will most certainly result in an invitation to come back again sometime.

Remember to always ask permission before you go collecting. Offer to share with the landowner any specimens you find. Most landowners will let you keep the specimens. By offering to share what you found with the landowner, you may peak their interest in the earth sciences and may pave the way for further collecting expeditions on their property. The friendships you make with landowners can last a lifetime and will almost certainly be more valuable than anything you could find. If the landowner refuses to give you permission to collect, do not enter their property. You may want to politely ask him why he is refusing his permission to ascertain if there are any concerns that you could address. If he still refuses to grant you access, thank him for his time and move on to another collecting site.

Public Lands may be off limits to collecting. It is safe to assume you cannot collect unless you absolutely know it is legal to collect at that site. Although the landowner you contact to ask for permission on private property is likely to be a reasonable and friendly individual, the public servant you contact to ask for permission on public land may be anything from suspicious to kind to condescending. Unlike the landowner who is lord of his domain, the public servant must answer to a boss and “NO” is a safer answer for him to give.

If it is legal to collect on certain public land please make sure that you follow any rules that have been established limiting the collecting area, the collecting method or the number of specimens that you may collect. Failure to follow the rules may result in fines and the closure of the area to future collecting.

By using our common sense and following the AFMS “Code of Ethics” we will continue to preserve those collecting areas that are near and dear to our hearts and may open up new areas for ourselves and fellow collectors. Please remember to collect responsibly.
(Endnotes)

1 “Conservationist” merriam-webster.com. Merriam Webster an Encyclopedia Britannica Company, 2014, 24 November 2014.

via The Franklin County Rockhounder, 1/15; from EFMLS Newsletter, 1/15

Fossil Replicas, Their Purpose in Science by Steve Mulqueen

Fossil replicas have played essential roles in the study of paleontology. This article will explore the many applications of paleo-facsimiles, as they apply to the understanding of ancient and extinct life forms.

Replicas of human, animal and plant remains are useful in many facets of science, when studying prehistoric to present day life forms. The following describes some of the sciences that commonly use physical models as tools for learning, exhibiting, training, and demonstrating:

Sciences and Disciplines That Require Replicas

- Anatomy
- Archeology/Anthropology
- Biochemistry
- Biology
- Botany
- Evolution studies
- Extinction studies
- Forensic sciences
- Medical fields
- Osteology
- Paleontology
- Physiology
- Veterinary sciences
- Replicas for Paleontology

In the science of paleontology, fossil replicas are needed in schools, universities, museums, private collections and fossil repositories for the applications listed below:

Exhibit Purposes — Fossil replicas are often exhibited instead of the fragile and sensitive fossils. The environment in the exhibit case may expose the original specimen to heat, dust, humidity, vibration and excessive light.

Scale Models — Scale models can be very effective for exhibit and for demonstration purposes.

Trade & Borrow Specimens — Museums, universities and fossil repositories often trade and borrow fossil specimens in order to make their own fossil replicas.

Rare Fossils — Some fossils are very rare and must be shared with other paleontological institutions. The sharing of rare specimens is often made by sending only fossil replicas. This will eliminate the wear and tear on the original specimens and prevent the possibility of a fossil being lost in the exchange.

Expensive Fossils — Some fossils are so rare and expensive that the museums or universities cannot afford originals.

Dissemination of Specimen-quality Learning Tools — If fossil replicas can be mass produced and disseminated to numerous institutions, this will enable one original specimen to benefit thousands of scientists, students and members of the general public.

Demonstration of How Fossils Form — Replicas are often used to demonstrate the complex sequences of natural conditions necessary for fossils to form and to be preserved during long periods of geologic time.

Unavailability of the Original Fossil — When the original fossil is unavailable on the open market, a replica is the only alternative.

When the Fossil Does Not Exist — Some fossilized skeletal remains can be missing a few parts. Fossil replicas can be made to complete the skeleton for exhibit purposes or for scientific study.

Fossil Replicas Manufactured for Fraudulent Purposes — Unfortunately, there are many fossil replicas being manufactured, presented and sold as if they are the real specimens. Whenever a collector is in the market for a genuine fossil, they should first make a diligent effort to research the fossil in order to become familiar with its many characteristics. When in a position to purchase a fossil, it is best to physically hold the specimen to observe its fine details and to determine its relative density. Most replicas are made with materials that are less dense than the original. However, this is not always the case. It is also recommended that you get a second opinion from a fellow fossil collector, especially when purchasing an expensive fossil.

Materials Applied to the Manufacture of Fossil Replicas — Replicas, including molds, casts and storage jackets are made from one or more of these listed materials:

Plaster

Resin/fiberglass

Plastic

Latex

Silicone rubber

Dental molding compounds

Cement, with pulverized matrix from a fossil-bearing formation (to match color, texture and density of the real specimen.)

3-D printer medium (plastic)

Tomography Applied to Paleontology

X-ray computed tomography, CT scanning and thermal neutron scanning are a few examples of energies that can be focused to scan and obtain high-resolution imaging of fossil specimens. These computed images can be applied to assessing a specimen to aid in the excavating process, piecing together the image to make a complete picture of the fossil and as an aid in forming fossil replicas.

Fossil Replicas made on a 3-D Printer

Today, fossil replicas can be made on a personal computer with a 3-D printer. 3-D printers are readily available for hobby or professional use. Some of the least expensive 3-D printers cost less than \$500. The printer medium is a plastic substance that is usually available in a spool of thin, continuous plastic rod.

Conclusion

Fossil replicas are useful in numerous scientific applications as effective tools for exhibiting, demonstrating, learning and training. In the science of paleontology, replicas are very common and extremely useful in collections, museums and universities. When purchasing real fossils, it is important to be able to detect a replica, especially when it is being presented as a genuine specimen. With today's ever-advancing technologies, excellent quality fossil replicas can be manufactured with little effort. All scientists have been exposed to essential information that was conveyed by use of effective models. Fossil replicas are very important to the science of paleontology because they can be important tools for scientific learning and exhibiting.

Acknowledgment: Special thanks goes to Larry, Donna and Tim Knapton for demonstrating the use of a 3-D printer.

Source of Information: Refer to sources of information under the heading of fossil replicas, including manufacturers, suppliers and their numerous applications related to paleontology. Also, see references under the heading of X-ray computed tomography, CT scanning and thermal neutron scanning as applied to paleontology.

via Rockhound Rambling, 1/16; from the VGMS, 1/16

To clean non-plastic metal costume jewelry immerse it in rubbing alcohol for five minutes. Rinse in warm water and dry with a lint-free cloth.

via Gem & Mineral Journal, 2/16; from The Quarry, 2/16

January Field Trip

CMS doesn't have any field trips planned for January. We most likely will start back up in February. Depends on the weather. Mineral Council Sponsored Field Trips can be found at <https://mineralcouncil.wordpress.com/>

Gold – Colors And Karats by Mark Nelson, Pasadena Lapidary Society

Pure gold is slightly reddish yellow in color. At a Mohs Scale rating of just 2.5, the same as a fingernail, it is impractical to use pure gold in any way that involves handling.

The U.S. \$20 gold piece, so widely circulated, was made from 90% gold (0.900 fine = 21.6 karat) and 10% copper alloy to slow down the wearing process.

Pure 100% gold is 24 karat (abbreviated as kt or as K) by definition, so all colored golds are less than this, with the common being 18K (75%), 14K (58%), and 9K (38%). Colored gold is made in three ways. The oldest is by adding another metal to pure gold to form an alloy. The alloys used for colored gold are:

White gold - usually nickel, manganese or palladium. Like yellow gold, the purity of white gold is given in karats

Gold is made to form a shade of red by adding copper and sometimes silver. Here are the most common mixtures used to make Rose, Red, and Pink gold - 18K Red gold: 75% gold, 25% copper, 18K Rose gold: 75% gold, 22.25% copper, 2.75% silver, 18K Pink gold: 75% gold, 20% copper, 5% silver, 12K Red gold: 50% gold and 50% copper.

Spangold - an alloy of 76% gold, 19% copper, and 5% aluminum. The result is a sparkly surface covered with tiny facets.

Green gold was known to the Lydians, near present-day Turkey, in 860 BC under the name electrum, a naturally occurring alloy of silver and gold. Today we add cadmium to produce the green color by an alloy of 75% gold, 23% copper, and 2% cadmium yields light-green 18-karat gold. The alloy of 75% gold, 15% silver, 6% copper, and 4% cadmium yields a dark-green alloy.

Gray gold - made from gold and palladium, or from gold, silver, manganese and copper in various ratios.

Purple gold is an alloy of gold and aluminum rich in gold-aluminum intermetallic (AuAl₂). It is called an intermetallic compound instead of a malleable alloy, as the compound structure becomes somewhat brittle and can be shattered with a sharp blow.

Blue gold is an intermetallic alloy of gold and indium, containing 46% gold (about 12 karat) and 54% indium. Blue gold is also formed through an exterior layer of controlled oxidation of an alloy of 75% gold, 24.4% iron, and 0.6% nickel which is then heated. A rich sapphire blue colored gold of 20—23K can also be obtained by alloying with ruthenium, rhodium and three other elements and heat-treating at 1800 °C, to form the 3 - 6 micrometers thick colored surface oxide layer.

Black gold is formed by an application of a surface treatment to gold. Black-colored gold can be produced by Electroplating, using black rhodium or ruthenium; Patination by applying sulfur and oxygen-containing compounds; Plasma-assisted chemical vapor deposition process involving amorphous carbon and through the process of Controlled Oxidation of gold containing chromium or cobalt (e.g. 75% gold, 25% cobalt).

Sources for this article include: Wikipedia; the National Numismatic Collection, National Museum of American History; Mohs Scale - www.amfed.org/t_mohs.htm, Amazon.com, Classic Engagement Ring.com

from Rockhound Ramblings, 12/15

Pyrite by Dave Jacobson

This month we will take brief look at pyrite, iron sulfide, FeS₂. If you have ever heard the term “fools gold” it is referring to pyrite, due to the minerals color. But once you have seen real gold in a quartz matrix you will not confuse pyrite with gold. Most people who collect minerals have one or two pyrite specimens in their collections as they make beautiful specimens. Pyrite is very common and is found in all mineral environments.

Some minerals associated with pyrite are quartz, calcite, gold, galena, sphalerite, and fluorite. A lot of gold ore is massive quartz shot through with pyrite where the gold is not visible by eye. Beautiful pyrite specimens have been found in many locations in the world. Fossils from some locations have even been pyritized.

Pyrite is a sulfide mineral in the isometric crystal system. Most pyrite has a pale brass -yellow color with a metallic luster. Parallel striations are very common on the crystal faces. These striations are one of the features that help in the identification of pyrite.

Pyrite has a brittle to conchoidal fracture with no cleavage. It has a hardness of 6 to 6.5, with a specific gravity of approximately 5. Its streak is greenish to brownish black. It is insoluble in hydrochloric acid, but powdered pyrite dissolves in nitric acid. When Powdered, pyrite, when heated gives off sulfur smell and leaves a small Metallic, magnetic globule.

Pyrite gets its name from the Greek, pyrites lithos, which means “stone which strikes fire”. Pyrite will spark when hit with a piece of iron.

I used the following reference materials in preparing this article. *Field Guide To Rocks And Minerals* by Frederick H. Pough. *Mineralogy For Amateurs* by John Sinkankus. *Simon & Schusters Guide to Rocks And Minerals*. *The Audubon Society Field Guide to North American Rocks and Minerals*. *Amethyst Galleries Mineral Gallery* @ <http://mineral.galleries.com>

via The Quarry, 9/16; from Canaveral Moonstone, 6/16

AFMS Code of Ethics

I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.

I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.

I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.

I will use no firearms or blasting material in collecting areas.

I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.

I will leave all gates as found.

I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.

I will discard no burning material - matches, cigarettes, etc.

I will fill all excavation holes which may be dangerous to livestock.

I will not contaminate wells, creeks, or other water supplies.

I will cause no willful damage to collecting material and will take home only what I can reasonably use.

I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.

I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.

I will cooperate with field-trip leaders and those in designated authority in all collecting areas.

I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.

I will appreciate and protect our heritage of natural resources.

I will observe the "Golden Rule", will use Good Outdoor Manners and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.

Revised July 7, 1999 at the AFMS Annual Meeting

Bitch Creek, Idaho Jade (Also known as Teton Jade) by Terry Vasseur

One of the reasons why we go to Quartzsite or Tucson is to find something we haven't seen before. For Craig Polliard and I, this year it was a jade neither of us had seen before.

I remember reading about it in Rock & Gem some years ago. The name is said to be a corruption of the French word "biche" which is an enigma and that French trappers originally named the waterway "Anse de Bic" which probably has something vulgar to do with the difficulty in climbing in and out of the steep sides of the creek bed.

The jade is said to be a nephrite that coming out of the creek looks dark green to coal black. The rushing river tumbles the jade into cobbles polished smooth. Their satin skin reveals their toughness and no beam of light can penetrate it. When you cut a quarter inch slice and you are lucky; you may see a gemmy, translucent window of blue-green jelly with tiny black and green spots and filaments held in suspension. Areas not translucent-gemmy, still take a decent polish on their opaque green with mottled black, however those areas seem to be a softer indicating a transformation from nephrite to tremolite.

Twenty five years ago, the mantra to polish jade was chrome oxide on leather with pressure, sometimes dry to elevate the heat. Undercutting was often the result. Generally, I would go to Linde A (an aluminum oxide that is uniform in size, 0.03 microns) to get a polish on a stubborn material. On this jade I find diamond up to 8000 or even 50,000 does the job.

Quality of jade has always been the fine green color of jadeite, it's transparency, and it's smooth texture. Bitch Creek nephrite is nowhere near the fine grades of jadeite but in the scale of quality for nephrite, I think Bitch Creek with its blue-green translucents could be on the upper end of the scale next to Polar Jade's solid green, nephrite. On the scale of nephrite quality, translucents are the most highly valued characteristic followed by a vitreous luster, a uniform color, and the way it is cut.

The gemmy translucents found in the center of the slabs I purchased, may well be a high quality nephrite jade. Their hardness exceeds 6 on the Mohs scale. I accidentally dropped one of my very thin, long oval translucent cabs on the concrete garage floor without a trace of damage. I also had one catch on a polishing pad that would have snapped an ordinary agate of the same dimensions, an example of its toughness.

Another interesting feature of this jade is: this jade has tiny specs of metallics imbedded in them. I confirmed it is metal by testing one of the larger specs with an Ohmmeter. Someone on the Internet said it was probably nickel so I tested it with *Allertest Ni* (my iron meteorite test kit for nickel). It turned out negative. I think it is gold or a gold alloy. I would sure love to find an explanation of how native metals get deposited in some jades and not in others.

Mike Burkleo, another well known jade guy, also had metallics in the jade he was taking out of the foothills of the California Sierras. He had his jade analyzed at the University of Reno, Nevada where they found gold, silver, and palladium in his jade.

from The Agatizer, 2/15