



the CMS Tumbler

March
2019

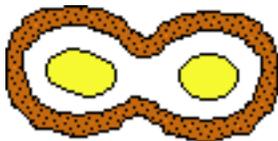
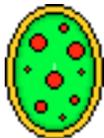
The monthly newsletter of the **Cascade Mineralogical Society, Inc.** Kent, Washington

Next Meeting:
March 14, 2019
7:00 p.m.

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

The Program is on Rock Displays
(More info on page 5.)

The Show & Tell Theme is a rock,
mineral, fossil or lapidary project
you like to display in your home.



*This month remember
to wish a
Happy Birthday to
Isaac Fu on March 2,
Jacqueline Pattie on March 31,
and also remember*



*to wish a
Happy Anniversary to
John & Brenda Haworth
on March 28 (55 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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2019 CMS Dues are \$25 per year per family

Pay online, by mail, or at our meetings.

Mailing Address: Charles Benedict

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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/>



March



| SUN | MON | TUE | WED | THUR | FRI | SAT | | |
|---|--|---|---|--|---|-----|----|----|
|  |  |  |  |  | 1 | 2 | | |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| 10 | Board Meeting 7 PM  | 11 | 12 | 13 | General Meeting 7 PM  | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | | |
|  | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| 31 | | | | | | | | |

CMS Board Meeting:.....Monday, March 11.....7:00 pm to 8:00 pm
 CMS General Meeting:.....2nd Thursday, March 14.....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 Wrong Rainbow Connection

by KAM



CMS Board Meeting Minutes February 11, 2019

Canceled.

**Senate Bill S. 47** by Bob Pattie

I have received the following notice on a US Government bill that is moving along toward final approval.

Feb 12, 2019 - Passed Senate (House next)

S. 47: Natural Resources Management Act

Last Action: Passed Senate with an amendment by Yea-Nay Vote. 92 - 8. Record Vote Number: 22. Explanation: This bill passed in the Senate on February 12, 2019 and goes to the House next for consideration.

Natural Resources Management Act

This bill sets forth provisions regarding various programs, projects, activities, and studies for the management and conservation of natural resources on federal lands.

Specifically, the bill addresses, among other matters land conveyances, exchanges, acquisitions, withdrawals, and transfers; national parks, monuments, memorials, wilderness areas, wild and scenic rivers, historic and heritage sites, and other conservation and recreation areas; wildlife conservation; helium extraction; small miner waivers of claim maintenance fees; wildland fire operations; the release of certain federal reversionary land interests; boundary adjustments; the Denali National Park and Preserve natural gas pipeline; fees for medical services in units of the National Park System; funding for the Land and Water Conservation Fund; recreational activities on federal or nonfederal lands; a national volcano early warning and monitoring system; federal reclamation projects; and search-and-recovery-missions. In addition, the bill reauthorizes the Historically Black Colleges and Universities Historic Preservation Program and the National Cooperative Geologic Mapping Program.

This bill has 15 cosponsors and it has passed the senate vote. There are 78 bills that cover in lieu of or in parallel to this bill. The bill is 698 pages in length, (the table of content is about 9 pages) and it appears to cover all over the entire United States. This bill has many parts and some very specific, such as, land exchanges, change in wording/boundaries etc. of wilderness, National Parks, wild and Scenic Rivers.

Section 1205. Oregon Wildlands (about 25 pages)

Section 1203. Methow Valley, Washington, Federal land withdrawal

(a) Definition of Map -In this section, the term Map means the Forest Service map entitled Methow Headwaters Withdrawal Proposal Legislative Map and dated May 24, 2016.

(b) Withdrawal -Subject to valid existing rights, the approximately 340,079 acres of Federal land and interests in the land located in the Okanogan-Wenatchee National Forest within the area depicted on the Map as Proposed Withdrawal is withdrawn from all forms of

- (1) entry, appropriation, or disposal under the public land laws;
- (2) location, entry, and patent under the mining laws; and
- (3) disposition under the mineral leasing and geothermal leasing laws.

(c) Acquired land -Any land or interest in land within the area depicted on the Map as Proposed Withdrawal that is acquired by the United States after the date of enactment of this Act shall, on acquisition, be immediately withdrawn in accordance with this section.

(d) Availability of map -The Map shall be kept on file and made available for public inspection in the appropriate offices of the Forest Service and the Bureau of Land Management.

I will have more on this bill for future meetings, but I believe if people have some time, it would to read some of the sections where you have a special interest.

Young Richard's Almanac by Dick Morgan

The diamond signifies the institution of marriage. It is the hardest natural substance known to signify the hardest task undertaken, a lifetime marriage.

The Early Bird Gets the Worm - or the Fish? by Jim Brace-Thompson

In a pivotal link illustrating the evolution of birds from dinosaurs, paleontologists have reported the earliest known beak from an 85-million-year-old seabird. Although Yale University professors discovered fossil skulls 150 years ago in chalk beds of Kansas and the skulls have been resting within slabs in Yale collections ever since, it was only recently that new technologies (including CT scans) have been used to unearth details that have long been overlooked. Says Yale professor Bhart-Anjan Bhullar, "Right under our noses this whole time was an amazing, transitional bird [with] a modern-looking brain along with a remarkably dinosaurian jaw muscle configuration. The first beak was a horn-covered pincer tip at the end of the jaw. The remainder of the jaw was filled with teeth."

from Rockhound Rambling, 7/18

CMS General Meeting Minutes February 14, 2019



Canceled due to bad weather.

A Note From The President's Desk...

By Kat Koch, 2019 CMS President

I have been busy trying to find events where we can advertise our club. If anyone has any ideas please let me know.

I am trying to get the club a free table at the Gem Fair in Puyallup. I always pass out our club brochure when ever I do a craft or mineral show. We have info at Jerry's Rock Shop and Moore than Rocks. If you know of another business where we can place our club brochure let me know.

Merriann Fu is Vice President - Program Planning. If you have any topic ideas for our general meeting each month please share them with Merriann or let me know. That also goes for field trip ideas. Share them with Director Roger Danneman, Field Trip Leader or let me know. A few members did express an interest in a Gold field trip so we are putting together a trip the first weekend of August. Put that on your calendar if this interest you.

We are always looking for fresh and new ideas in all areas of our club. So if you have any please share them with any Board member.

I will be gone on vacation from right after the April general meeting to the day before the May Board meeting. If there is anything you want to discuss with me or have me do before I leave please speak up now. I will be available via text messaging or email only.

March Meeting Program by Kat Koch

Since our February meeting was canceled due to the weather we will be presenting the February program this month.

March's meeting program is on rock displays.

We know all of us are rock hounds and have rocks everywhere. This is your chance to show off your hobby.

Merriann has requested that you send her photos of your display of rocks, minerals or fossils. It can be either indoor or outdoor rock displays, large or small. It can also be any lapidary project: a bowl, bolo-tie, lamp, clock, rock display, outdoor wall, rock pile, etc.

Please send Merriann the photos as soon as possible so she can create the March presentation on rock displays.

Please, if possible, include the name and type of rocks displayed or used.

You should have received an email on January 13th giving you her email address and text address. You can use either method to send her your pics.

If you didn't receive the email go to our website and click on the Contact Us page. Send an email that you need Merriann's info.

Perovskite Fever by Terry Vasseur

The Perovskite mineral could transform the tech industry.

A rare mineral discovered in Russia in the 1830's could hold the key to boosting internet speeds 1,000 times faster than today. The mineral, perovskite, has a number of incredible properties, many of which scientists are now realizing.

Perovskite (CaTiO_3) is a calcium titanium oxide mineral, but the magic lies in this minerals ability to house many different cations in its physical structure, giving engineers the ability to modify the mineral as they see fit. While scientists have known about the mineral for quite some time, originally discovered in the Ural Mountains in Russia in 1839, researchers continue to find useful characteristics of this mineral.

Perovskite is found in Earth's mantle has been mined in Arkansas, the Urals, Switzerland, Sweden, and Germany. Each variety has a slightly different chemical makeup, allowing for different physical characteristics. One such useful characteristic discovered in 2009 is perovskite's ability to absorb sunlight and generate electricity, a natural form of a photovoltaic cell (solar cell). The mineral is currently under development for use in solar cells, displays, and catalytic converters.

OK, enough engineering on what this mineral may be able to do in ten years. How about collecting these rare crystals and where can you find these minerals? There are minerals for sale online and they aren't too expensive, however, identifying them is almost impossible for the amateurs. (I only bring that up because I almost don't trust anything anymore.)

Collecting in the field for perovskite is out of the question for the nonprofessional. Perovskite is only found in the USA in contact carbonate skarns at Magnet Cove, Arkansas. It is also found in altered blocks of limestone ejected from Mount Vesuvius, in chlorite and talc schist in the Urals, and as an accessory mineral in alkaline and mafic igneous rocks, nepheline syenite, kimberlites and rare carbonatites. Perovskite is also a common mineral in the Ca-Al-rich inclusions found in some chondritic meteorites.

Of course, there could be many places that have not been prospected for perovskite and there is a lot of titanium in the San Gabriel Mountains.

Asteroid Impact Craters - Part 2 by Kat Koch, Cascade Mineralogical Society

Large to Larger Impact Craters on Earth

Eastern Russia's Lake El'gygytyn

Lake El'gygytyn rests inside a 3.6-million-year-old meteorite impact crater, and preserves the longest continuous climate record in the Arctic.

It's about 15 kilometers (9 miles) across, the crater is surrounded by an uplifted ridge some 18 kilometers (11 miles) across. Outside the crater, the land slopes gently, but inside the crater, walls descend steeply to a fairly flat-bottomed bowl, now filled by Lake El'gygytyn. Because the meteorite impact occurred in a region of the Arctic that escaped widespread glaciation during the Pleistocene Ice Age, the rocks in this area survived intact. As a result, the lake bed sediments contain a continuous record of past Arctic conditions, all the way back to the meteorite impact, making them extremely valuable to paleoclimate researchers.

By examining chemical compositions of cores extracted from lake bed sediments, scientists can piece together past climatic conditions of a given region. In November 2008, a drilling project began at Lake El'gygytyn and was continued through the spring of 2009. The project's ultimate goal was to use the lake bed cores to assemble the longest continuous record of climate change in the terrestrial Arctic and to compare that record to records extracted from lower latitudes.



Karakul Crater, Pamir Mountains, Tajikistan

Karakul (Black Lake) Crater is an impact crater with a rim diameter of 32 miles. The crater/lake lies at an elevation of 12,990 ft. above mean sea level. A peninsula projecting from the south shore and an island off the north shore divide the lake into two basins: a smaller, relatively shallow eastern one, between 43 to 62 ft deep, and a larger western one, 221 to 725 to 755 ft deep. It lacks a drainage outlet so the water is brackish.

The Karakul impact structure was first discovered in 1987 by studying images taken from space. They estimate the age of the impact crater to be between 5.3 to 2.6 million years old.

Barringer Meteor Crater, Arizona

The Barringer Crater is one of the Earth's best preserved craters. About 50,000 years ago a meteorite weighed 300,000 tons and traveled at a speed of 26,000 miles per hour (12 kilometers per second). When it struck the earth in what is now northern Arizona, it exploded with the force of 2 million tons of TNT, or about 150 times the force of the atomic bomb that destroyed Hiroshima. Most of the meteorite was melted by the force of the impact, and spread across the landscape in a very fine, nearly atomized mist of molten metal.

The crater was approximately 1 km (.75 mi) wide and .25 km (750 feet) deep. The impact occurred during the last ice age, a time when the Arizona landscape was cooler and wetter than it is today. The plain around it was covered with a forest, where mammoths, mastodons and giant ground sloths grazed. The force of the impact leveled the forest for miles around, hurling the mammoths across the plain and killing or severely injuring any animals unfortunate enough to be nearby. Over time, the landscape recovered. A lake formed in the bottom of the crater, and sediments accumulated until the bowl was only 550 feet deep. Then, with the ending of the ice age, the climate changed and dried. The desert that we see today has helped to preserve the crater, by limiting the erosion that might otherwise have blurred or erased the traces of the ancient impact.



Gosses Bluff Crater, No. Territory, Australia

Gosses Bluff Crater is located 160 km (99.4 mi) west of Alice Springs. The original crater is thought to have been formed by the impact of an asteroid or comet approximately 142 million years ago in the earliest Cretaceous, very close to the Jurassic-Cretaceous boundary. The original crater rim has been estimated at about 22 km (14 mi) in diameter, but this has been eroded away. The 5 km (3.1 mi) diameter, 180m (590 ft) high crater-like feature, now exposed, is interpreted as the eroded relic of the crater's central uplift.

Australia is a very good place to observe and study impact craters. Much of the Australian surface is very old, so Australia has collected more impacts than many other parts of the world. Because of the dry climate, the craters haven't weathered away, nor are they hidden by dense vegetation.



Duria Antiquior: A Nineteenth-Century Forerunner of Paleoart by Steven Wade Veatch

In a breath of inspiration in 1830, English geologist Henry De la Beche (1796-1855), while exploring new intellectual territories in the emerging fields of paleontology, painted *Duria Antiquior* (meaning “a more ancient Dorset”), a representation of a prehistoric Dorset coast. De la Beche’s work was groundbreaking - his artwork combined science and art in the first artistic rendering of a paleontological scene, while laying bare the secrets of the past. Before 1830, art depicting the prehistoric world did not exist and these realms were unknown to the public (Porter, n.d.). While it is true that scientists made drawings of fossil animals and exchanged them with each other in private letters, the public had no concept of how prehistoric animals looked. This painting opened people’s imagination to new visions, thoughts, and beliefs.

De la Beche’s painting also laid the foundation for a new genre that would later be known as paleoart, an artistic genre that

reconstructs prehistoric life according to the fossil record, scientific understanding, and artistic imagination. De la Bache's brushstrokes of prehistoric time included (literally) all the information known at that time about ancient life and soon became the first teaching graphic used in the classrooms of the Golden Age of Geology, a period from 1788 to 1840 (Clary R. M., 2003). Today, this graphic would be equivalent to a PowerPoint slide in a classroom.

De la Beche's *Duria Antiquior* brings the viewer face-to-face with creatures that once lived in a coastal sea where these animals fought a deadly battle for survival, a typical theme of nature in the Regency era (McGowan, 2001). The scene is remarkable: a toothy ichthyosaur bites into the long neck of a plesiosaur, while another plesiosaur tries to grab a crocodile on the shore (De la Beche's ichthyosaur is minus the triangular dorsal fin and vertical tail fin that, from later fossils found in Germany, we now know it had). A turtle quietly dives into the water. What would become coprolites (fossil excrement) drop from a terrified plesiosaur (Davis, 2012). Other creatures patrol the deep waters for food, while two pterosaurs dive toward each other in the sky. Belemnites appear like squids. Hollow ammonite shells rest on the bottom of the sea and crinoids (sea lilies) are portrayed in the lower right corner. Groves of palm trees grow on the shore. All of this is rendered through the painter's use of a restrained palette of browns, greens, and blues.

Another striking feature of the painting is how it is divided. The waterline reveals the action above and below the water's surface (Rudwick, 1992). The *Duria Antiquior* is the first example of what is known as the aquarium view that would become a Victorian trend several years later (Clary & Wandersee, 2005). The area above the waterline is further divided into two areas of activity - action on the land and in the sky. De la Beche wanted the viewer to be convinced of his portrayal of a prehistoric scene.

De La Beche based the *Duria Antiquior* on fossils found by Victorian fossil collector, Mary Anning (1799-1847), along the Dorset coast near the resort town of Lyme Regis (Brewster, 2016). Anning was from a poor family, who frequently found themselves on the far side of desperate. To ease these brutal financial circumstances, the family earned money by collecting and selling fossils. As a child, her father would take Mary Anning and her brother, Joseph, fossil hunting by the fossil-rich cliffs near Lyme Regis. They returned home with fossils and, with superior skill, cleaned and prepared them, and then sold them to tourists as curios. Anning, aged 11, continued the family business after her father died of tuberculosis and heavily in debt.

By 1830, Anning was a celebrity among the leading constellation of British geologists for her knowledge and skill in collecting and preparing fossils (Cadbury, 2000). Anning is credited with finding the first ichthyosaur skeleton to be recognized and the first two plesiosaur skeletons ever found. Her discovery of these marine reptiles had created a sensation in the scientific community (McGowan, 2001).

Anning frequently found herself in financial straits due to harsh economic times in Britain, and from the unpredictability of finding and selling fossils. Being strapped for money restricted her ability to find fossils. De la Beche wanted to keep her in the field hunting fossils. To that end, he arranged to have prints of *Duria Antiquior* made and then sold the copies for £2 10s (approximately £213 or \$279 today) each (Rudwick, 1992). De la Beche gave the profits - with great enthusiasm - to Anning, so she had more time to hunt for fossils and seashells along the seashore. The painting was a smashing success and, to meet the enormous demand for the prints, the *Duria Antiquior* was reprinted and redrawn several times.

The *Duria Antiquior* pushed the boundaries of science and art at the end of the Regency period in Britain. This avant-garde watercolor became the first scene of prehistoric animals interacting with each other in their ancient environment, all based on known science at the time. This was the earliest such art to be widely distributed and helped shape the understanding of prehistoric life on Earth.

References

- Brewster, S. (2016, July 4). *Duria Antiquior, A More Ancient Dorset*. Retrieved from *Eastern Biological*: <https://easternbiological.co.uk/blogs/news/duria-antiquior-a-more-ancient-dorset>
- Cadbury, D. (2000). *The Dinosaur Hunters: A True Story of Scientific Rivalry and the Discovery of the Prehistoric World*. Foulsham.
- Clary, R. M. (2003). *Uncovering Strata: an Investigation into the Graphic Innovations of Geologist Henry T. De la Beche*. Retrieved from *LSU Doctoral Dissertations*: https://digitalcommons.lsu.edu/gradschool_dissertations/127/
- Clary, R. M., & Wandersee, J. H. (2005). "Through the Looking Glass: The History of Aquarium Views and their Potential to Improve Learning in Science Classrooms. *Science and Education*, 579-596.
- Davis, L. E. (2012). *Mary Anning of Lyme Regis: 19th Century Pioneer in British Palaeontology*. *Headwaters: The Faculty Journal of the College of Saint. Benedict and St. John's University*, 96-128.
- McGowan, C. (2001). *The Dragon Seekers*. New York: Perseus Publishing.
- Porter, S. (n.d.). *Paleontology Needs Paleoart*. Retrieved from *Earth Archives*: <http://www.eartharchives.org/articles/paleontology-needs-paleoart/>
- Rudwick, M. J. (1992). *Scenes from Deep Time: Early Pictorial Representations of the Prehistoric World*. Chicago: The University of Chicago Press

from Rocky Mountain Federation News, 11/19

The 8 main Hawaiian Islands are made up of 15 volcanoes, which are the youngest in a chain of more than 129 volcanoes (above and below sea level) that stretches for 3,800 miles.

from USGS Twitter, 2/6/19

Dendrites Vs. Moss Agates: Orbicular Jasper Vs. Polka Dot Agate

We are usually delighted, but not surprised, to find inclusions in crystals, e.g., quartz of one color or another, rutile, sagenite, and 'stars'. The appearance of inclusions in microcrystal-line varieties of quartz, however, have a mysterious ambiance that brings out the name-making propensities of collectors. When our vision of inclusions is obscured, our imagination takes hold.

Chalcedony (clear to cloudy), agates (clear but usually banded), and jasper (opaque) are all variations of silica oxides, with hardness between 6 and 7, which makes them very suitable for polishing. They may all have included material, and the nature of the inclusion is dictated by the composition of the host rock material and the manner of rock formation.

Dendritic chalcedony and moss agate are terms or names frequently applied to the same material. They are basically similar, but dendrites can form not only in chalcedony and agate, but also on limestone and soapstone and some sandstones. The dendrites, so called from the Greek dendron, or tree, are branching structures of mainly manganese and iron oxides, in or on the host material.

Dendrites occur in many places in the world, basically whenever water rich in oxides flows across rocks. The dendrites form on a surface and are two-dimensional, like snowflakes or frost crystals on a windowpane. If the rock is chalcedony, the dendrite forms on the surface, but more chalcedony may entomb it. The dendrites are usually earthy, black, brown, or reddish, but near Four Corners, in the eastern Mojave, near the junction of Hwy 58 & Hwy 395, rockhounds reputedly find blue.

The 'mosses' of moss agate, not organic material at all but chlorite or celadonite, are visible impurities in the agate. Scientists attempt to distinguish between the two by determining, if possible, whether the dendrite/moss or the mineral rock formed first. The moss forms while the chalcedony is still gel like and can then form three-dimensional shapes with the stone. Moss agate, also widely distributed, can be a variety of colors, green, black, white, yellow, red, orange, and tan. It is widely used in jewelry, and polishes beautifully, if care is taken not to cut into and pluck the moss.

Multi-colored balls can appear in rhyolite flows. Rhyolite is a fine-grained igneous rock the, if it contains sufficient silica to take a brilliant polish, and is sometimes called jasper. Orbicular material usually appears as a mass of rhyolite that has silicated. As the rhyolite cools, sometimes excess silica starts to precipitate out of the magma, forming spherical balls. The ball shape is the form that any extremely concentrated silica (cristbalite) takes, as opposed to the crystal form in dilute concentrations. However, any material that by composition or consistency is immiscible (not mixable) with the host magma will also form balls.

Regional metamorphism can also form orbicular jaspers. We hear names like Rainforest Jasper from Australia, Leopard Skin Jasper from Mexico, Poppy Jasper from California, and Ocean Jasper from Madagascar. We may find one color surrounding another, or bands of balls, veils of lighter colors staining the background. Polka Dot Agate, from Oregon, has iron rich spheres floating in a snowy extremely fine-grained jasper, along with veils of golden brown. The material is so fine-grained it is almost chert and resembles porcelain.

The rock distinction of jasper and chert is: if it's attractive, it's jasper; if it's dull, it's chert. Some jasper represents replaced limestone or dolomite, some occurs as nodules, and sometimes it is part of the gangue of mineral deposits by hydrothermal or meta-somatic processes. Agates are translucent and usually banded, with sub-vitreous luster; jasper is opaque with a dull to pearly luster; to a rockhound, jaspagate is a fine mixture of the beautiful oxides.

via Whittier Rockhouser, 1/15; via Breccia, 9/08; via Rock Chip Reporter, 4/08; via Petrograph, 6/03; from Calumet Gem

About Soapstone (Or Steatite)

The Chinese have treasured soapstone for centuries and used it to carve their delicate figurines. The Eskimos use it to make lamps and cooking pots. In ancient Babylon it was used to make signet rings and other items of jewelry. In North America, the early pioneers used it to make laundry tubs; but this is not why it is called soapstone. The mineral gets its name because the waxy polished surface looks and feels like soap. Soapstone is classified as a metamorphic rock. The original mineral was probably lava, rich in magnesium and silicates fused in the "furnace" of some ancient volcano. The characteristic and usually chief mineral is talc, but which also contains varying parts of chlorite, mica, tremolite, quartz, magnetite, and iron compounds. It is gray to green in color and is notable for its high degree of resistance to acids and heat. It is so soft that it can be easily cut with a knife or other sharp tool, making it a popular material for sculpting. The chief deposits of commercial importance are in the United States, Norway, and Canada. It is now used in the manufacture of laboratory table tops, kitchen sinks, laundry tubs, furnace linings, and electrical apparatus.

via Golden Spike News, 1/19; via Rock Chips, 12/18; from The Agate Explorer, 1/06

Hopping Landers Post Pix of an Asteroid's Surface by Jim Brace-Thompson

Four years ago, Japan aimed Hayabusa-2 at an asteroid with the dry name of 162173 Ryugu. On September 21, that probe successfully released two landers to explore the asteroid's surface. This marks the first soft landing of a rover on an asteroid. The tiny landers, Rover-1A and Rover-1B (or collectively as MINERVA II-1), look like little tin drums with spikes around the top and bottom edges. They've begun sending pictures as they hop on their spikes and gather data. If all goes well, a third lander, MASCOT, will join them and next year lander MINERVA II-2, or Rover-2, will touch down. While these little guys gather data on the surface, Hayabusa-2 will map the asteroid and gather further data from above. It's hoped Hayabusa-2 will collect a gram of surface dust and return it to Earth in 2020. The overall goal is to deepen understanding of how asteroids and planets may have formed and evolved in our solar system and to pave the way for more deep-space missions with unmanned craft and rovers.

from Rockhound Rambling, 11-12/18

Young Tumblers News

Come to the March meeting and earn \$3 in Rock Bucks. I will call on you, come to the front of the room and answer the following 3 questions you will earn the Rock Bucks.

What is Washington’s State rock?

What is Washington’s State fossil? It is NOT petrified wood.

What is your birth stone?

Jewelry Auction by Keith Alan Morgan

Words and things associated with auctions. Can you find them all? The words go in all directions, forwards, backwards, up and down, and diagonal. Have fun!

Kids, bring the completed puzzle to the meeting and get \$2 in Rock Bucks.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | W | Z | W | R | D | X | D | E | T | W | R | E |
| I | A | Q | P | E | A | R | L | S | O | I | C | T |
| D | D | G | N | I | R | E | A | G | N | V | N | E |
| S | Y | Q | K | T | Z | T | R | T | X | F | R | T |
| T | H | X | Q | I | T | D | E | T | W | X | G | Y |
| E | S | A | S | N | H | N | M | S | X | K | C | U |
| E | M | Z | P | G | S | T | E | A | H | C | L | H |
| P | C | G | A | E | J | S | A | L | F | O | M | H |
| T | U | R | P | U | D | N | M | J | B | R | D | L |
| D | R | R | V | P | R | J | A | Y | O | U | X | S |
| Z | E | A | D | A | D | D | K | L | Y | U | A | M |
| S | E | A | T | Q | E | N | O | T | S | L | P | B |
| S | D | K | L | S | G | C | E | P | E | O | G | Z |

Bauble
Bids
Color
Deal
Emerald

Intense
Jade
Pearls
Ring
Rock

Sale
Seat
Shape
Size
Star

Steep
Stone
Tinge
Tint

Lapidary by Duane Flackus

The word “lapidary” is a Latin derivative meaning “stonecutter”. Therefore, we now call a person, or an activity as being lapidary when it involves stone and gem engraving, cutting, and/or polishing.

from The Clackamette Gem, 11/18

Safety Matters - Kid Safety by Ellery Borow, AFMS Safety Chair

Kid safety? Isn't kid safety the same as adult safety? Well, yes it is, more or less, and that is the crux of the matter — the “less” part that is. Kids are generally less — less experienced in matters of safety, less tall, less heavy, have smaller hands and overall, have smaller proportions than adults.

There are thus, some safety considerations when it comes to kid safety. Namely:

1. Some safety goggles are made of hard plastic or rubber. They do not easily conform to the smaller faces on kids. Solution: try using softer vinyl framed goggles which are flexible enough to properly fit kid faces. Goggles with elastic head bands can easily be adjusted to fit kids. If one is using safety glasses with side shields make sure the temples are sized to fit kids. One would find it uncomfortable to have safety glasses keep sliding down the nose every time one looked downward - and let's face it, looking downward is a large part of rock, mineral and fossil collecting.

2. Heavy duty work gloves in either large or sometimes medium size are easily found in most stores. Heavy duty kid work gloves are not so easily found. Solution: try looking for ladies small-size heavy duty gloves. Sometimes the better stocked suppliers will have smaller, heavy duty gloves.

3. Hard hats for kids? Sometimes I have seen the play hard hats, but never have I seen scale hard hats that meet all the various ANSI or OSHA specifications. Solution: check out the adjustability of the head band and suspension system. Some are more adjustable than others. Seek one that can be adjusted to fit smaller heads. The benefit is that a good hard hat can be adjusted to fit as the child grows.

4. Steel toe work shoes in smaller sizes? There again, in some specialty work clothes establishments one can find safety toe work boots that fit smaller lady-size feet. The problem there is often finding the correct width, but with a little luck one might be successful in finding a safety shoe that fits. As fast as kids grow, it will be quite a trick to keep kids in proper safety footwear. The best one can mostly hope for is just providing good sturdy work boots. Oh, there are steel and safety toe sneakers, so there may be some suitable offerings there as well.

5. Kid appropriate tools? Sure, kids love to hammer on things. Can one find kid appropriate rock collecting tools? Solution: I have found none specifically made for kids, but what I have seen are what I call “travel tools”, tools that are smaller — less heavy rock picks, crack hammers, and chisels. Why does a kid need smaller tools? Well, smaller tools are more easily controlled in kids smaller, less strong, and less coordinated hands.

Mind that any use of tools should be suitably adult supervised. Along with tool use safety and first-aid kits should have kidsized bandages packed in with all the adult-size bandages.

We like protecting our kids from harm.

Large, dangerous working mines, quarries, pits and other hazardous commercial operations often limit kid entry. Insurance and liability requirements in operating facilities often dictate that no one under 18 is permitted on site.. Thus, kid specific safety gear is often not needed because kids are often not permitted inside. Common sense should reign in other collecting sites.

In general, safety requirements are similar for kids and adults - keeping hydrated, minding site specific rules and regulations, wearing safety goggles, and so on. The trick with kid safety, the one thing that makes it easier for adults is this one simple guideline: kids use adults as role models. If kids see their parents wearing goggles, they will want to as well, because it's the adult thing to do. If kids see their parents using gloves, kids will want to as well. Kids learn from us, so if we adults set a good example, our work in keeping kids safe is made much easier. The bonus with that approach is that we stay safe too (for our kid's sake).

from The Franklin County Rockhounder, 10/17

The Mystery of a Little Islet with a Very Long Name by Jim Brace-Thompson

Maps show us features that are immutable - until they aren't! Such is the case of the disappearing islet off Japan. Last surveyed in 1987, Esanbehanakitakojima stood 4.6 feet above sea level and was 500 meters northeast of the Japanese province of Hokkaido. Today, it appears to be gone. No one knows when, how or why, but the Japanese Coast Guard has gone looking for it. Why? Because these waters also are claimed by Russia. International law says a country can claim waters only if there is a geological mass that rises above the sea at low and high tide. Japan has staked its claim to territorial waters at its northern edge on Esanbehanakitakojima. Minus this tiny land mass, it's said Japan's territorial waters here will shrink by 500 meters. Whether eroded away by wind or waves, ground down by drifting sea ice, or overwhelmed by rising sea levels, what was there is there no more. And so the Japanese Coast Guard searches for a lost little islet with a very long name.

from Rockhound Rambling, 11-12/18

Matrix by Duane Flackus

There are many instances where the valuable mineral specimen is not found alone. Instead, it is often attached or embedded within a larger rock mass . . . such as a vein of gold embedded in a quartz stone, or a fossil tooth protruding from a sandstone slab.

In geology, this base material that surrounds and holds the specimen is called the “matrix”.

from The Clackamette Gem, 12/18



Shows



March 8 & 9: Friday 8:30 am - 6 pm; Saturday 9 am - 5 pm

Panorama Gem and Mineral Club, Annual Show

Colville Fairground
Colville Ag and Trade Center
317 West Astor
Colville, WA

March 9 & 10: Saturday & Sunday 10 am - 5 pm

North Seattle Lapidary & Mineral Club, 65th Annual Rock and Gem Show

Crown Hill Center
9250 14th Ave NW
Seattle, WA 98117

March 29 - 31: Friday & Saturday 10 am - 6 pm; Sunday 10 am - 4 pm

Rock Rollers Club of Spokane, 60th Annual Gem, Jewelry and Mineral Show

Spokane County Fair & Expo Center
N. 604 Havana
Spokane WA

March 30 & 31: Saturday 10 am - 6 pm; Sunday 10 am - 5 pm

Mt. Baker Rock & Gem Club, 58th Annual Rock and Gem Show

Bloedel-Donovan Park
2214 Electric Ave.
Bellingham WA

March 30 & 31: Saturday 10 am - 6 pm; Sunday 10 am - 5 pm

Sweet Home Rock & Mineral Society, 71st Annual Rock & Mineral Show

Sweet Home HS Activity Gym
1641 Long St.
Sweet Home, Oregon



Are You a Rockhound or Just a Mineral Collector? by Vicki Harder

A rockhound is someone who shows extreme levels of interest in rocks and collecting while a mineral collector is considered someone who just “likes” minerals and rock. So which one are you? If you’re uncertain as to which camp you’re really in, here’s some surefire signs your level of interest in rocks has exceeded “casual” or “rockpup” levels and you’ve finally graduated to full-blown “

Check to see how many of the following signs apply to you, if it’s over 10, then watch out! You’re a *Rockhound!*

1. The sign on the side of the highway says “Falling Rock” and you pull over to wait.
2. The severe sunburn from your vacation is a one inch wide strip of skin at the gap between the tail of your shirt and the top of your pants (also known as “plumber’s sunburn”).
3. Your friend shows you a “pretty stone” they’ve found, and you work hard to talk them out of it for yourself.
4. You care more about what happened to the diamond in the movie “Titanic” than the people.
5. Your mother asks how the soup tastes and you reply, “variable color, greasy surface, low specific gravity, texture smooth with bits of ductile material.”
6. You lick rocks to show off the wonderful colors. (Editor’s note: Some of our club members cannot deny this; I’ve seen it in person!)
7. Your family puts the birthday candles on a slab of amethyst instead of cake.
8. A truck throws a rock into the windshield of the family car and you examine the rock first.
9. You think the primary function of road cuts is for easy mineral collecting.
10. You own more pieces of quartz than underwear.
11. You receive a letter from the county informing you a landfill permit is required if you want to put anymore rocks in your back yard.

from The Slate, 3/18

