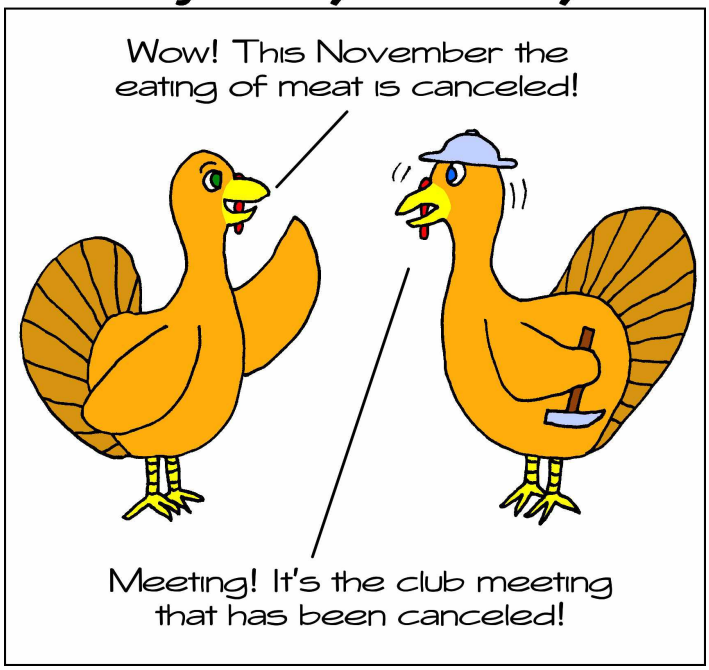
The CMS Tumbler

November 2020

Next Meeting: Canceled

Front Page Turkeys **by KAM**

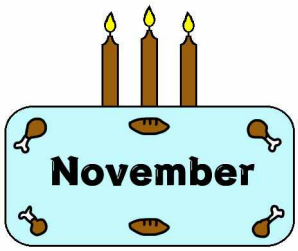


This month remember to wish a Happy Birthday to

Robin Santos on November 4
Michael Bruhahn on November 8
Arthur Agadjanyan on November 11
Herman Gelbach on November 12
Malcolm B. Wheeler on November 14
Tim Patndge on November 15
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

James & Xuyin Cerenzie on November 16
Robert & Jacqueline Pattie on November 23 (63 years)



Connect with us!

Website: cascademineralogicalsociety.org
Club Facebook: facebook.com/CasMinSoc/
Show Facebook: facebook.com/cascadegemandmineralshow
Instagram: instagram.com/cascadegemandmineralshow/

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

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Keith Alan Morgan, Editor
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Lake Tapps, WA 98391

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

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Social Media Kat Koch	425-765-5408	president@cascademineralogicalsociety.org
Webmaster Mark Hohn	253-332-3736	showchair@cascademineralogicalsociety.org

2020 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.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.

November

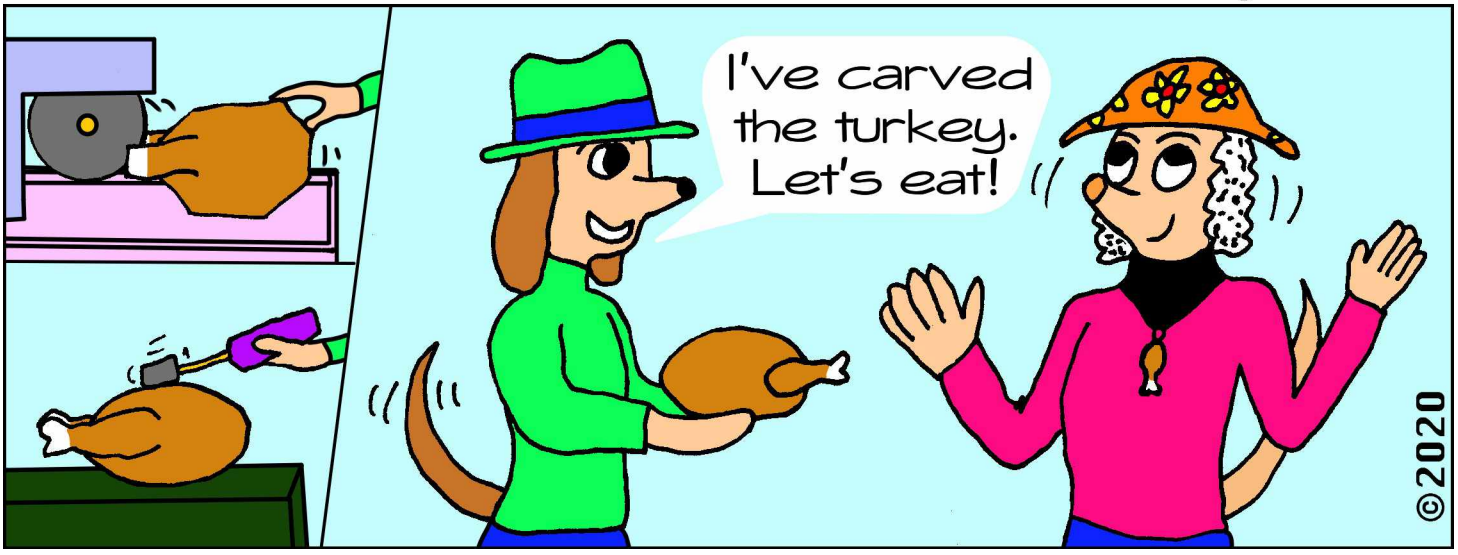
Sun	Mon	Tue	Wed	Thur	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	Meeting is Canceled!				

CMS Show Committee Meeting:…Canceled
CMS Board Meeting:……Canceled
CMS General Meeting:……Canceled

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

Mr. & Mrs. Rockhound by KAM



CMS Board Meeting Minutes October 5, 2020

Meeting canceled.

CMS General Meeting Minutes October 8, 2020

Meeting canceled.

Our Club is a Member of these Federations and Associations:

AFMS: The AFMS governs our Northwest Federation. http://amfed.org/index.html

The bulletins are published quarterly. You can find the news bulletins at http://amfed.org/news/default.htm

NFMS: The Northwest Federation is our home federation. To keep up on the goings on in our own backyard. http://northwestfederation.org/

The link for the news bulletins is http://northwestfederation.org/Newsletters.asp
There doesn't seem to be any new issues posted. I do know they have been without a bulletin editor for a couple of years now. The website doesn't show where, when or if there is a planned 2021 show.

Due to the Covid-19 there are presently no shows or mid-year meetings planned.

ALAA: The American Lands Access Association, Inc. represents the rockhounding interests of 325 gem & mineral clubs/societies in 47 States and the District of Columbia.

The purpose of the association is to promote and ensure the rights of amateur fossil and mineral collecting, recreational prospecting and mining. The use of public and private lands for educational and recreational purposes. They also carry the voice of all amateur collectors and hobbyists to our elected officials, government regulators and public land managers. http://amlands.org

The front page always shows the Fee Free Days for National Parks and Monuments. This upcoming Veterans Day, November 11th, is a free day.

The front page also has a lot of current news, rockhounding restrictions or lack of, etc. http://amlands.org

ALAA also publishes a quarterly newsletter. To keep up on the news and lobby efforts on our behalf check out http://amlands.org/

Washington State Mineral Council: The Washington State Mineral Council is dedicated to the location and conservation of rock and mineral sites of interest to the rockhounds of Washington state. https://mineralcouncil.wordpress.com/

You can find a database of local rock and gems shows and field trips. It's a great resource if you want to plan on outing.

Their monthly field trips are also on again. So take advantage of these great outdoor rockhounding adventures!

Also check out “Misc. News” for all the latest updates on collecting sites around Washington. https://mineralcouncil.wordpress.com/news-updates/

Marysville has a trip on November 21st to Blanchard Hill. Check out the link below for additional details. You can find all this information and a whole lot more about what is happening in our state at https://mineralcouncil.wordpress.com/. The field trip details are under “Field Trips for 2020.”

Young Richard’s Almanac by Dick Morgan

Leadership is the trust in the intelligence and truth of the person you are willing to listen to or follow.

Now is the time of the year that we think about what we are thankful for, such as being born in America.

Mara Mamba Tiger Eye is a rare variety of Tiger Eye found only in the Hamersley Ranges of the Pilbara region in Western Australia. Only two deposits have ever produced “true” Mara Mamba, a rare type with reds, blues, yellow, gold and greens.

It is extremely old, forming when the Earth was very young and had little to no oxygen in its atmosphere. In the oceans, photosynthetic bacteria evolved more than 2700 million years ago, and gave off oxygen. Iron from underwater volcanos combined as iron-oxide precipitants and resulted in iron-rich and silica-rich bands, which are now classified as banded iron formations (BIFs).

Marra Mamba Tiger Eye was mined out in the 1970's. It is the most sought after form of Tiger Eye because of its mix of highly chatoyant Tiger Eye, (which can be golden, bluish, greenish or reddish). To top it off, Marra Mamba Tiger Eye often contains hematite and jasper.

from The Lake Agassiz Rock Hound, 4/20

From the Top of the Rock Pile... by Kat Koch, 2020 CMS President

There will be no club meeting in November. I just read Gov. Inslee's most recent memorandum and I really don't think we are going to be able to hold any meetings for sometime yet.

I know we are all anxious to see one another and engage in some good rock talk. Hopefully, that time isn't too far off. In the meantime, as long as the weather holds up, please take advantage of our club field trips. Roger works so very hard to keep this monthly event going. Check the website to see what great adventure he has planned for us this month. Be sure to join the emailing list under the website "Field Trip" tab and you will receive timely updates in the upcoming field trips.

Bob Sahalee was a very well known Washington rock collector and carver. Mr. Sahalee passed away a few years ago and Doug True from the Billings, Montana bought Sahalee's collection. After taking what he wanted Doug contacted and offered the NFMS clubs the opportunity to come to Sahalee's old ranch, just south of Port Townsend, and collect stuff for their clubs and take some for themselves.

Our club was the only club that showed up. I would like to thank the individuals that did help to collect: Mike Blanton, Charley Benedict, Ron & Christine Jacobson and Scott & Madeline Harris. Everyone worked so hard loading the trucks. Thanks to each of you.

We also had a private collection donated to our club from Mike & Barb Weibel of Renton. The rock and fossil collection had belonged to Mike's grandparents. Thank you!

With these 2 additions to our stores we now have a great supply for the silent auction at our 2021 Gem & Mineral Show, meeting door prizes and club auctions.

We are continuing to a get new members every month. Welcome to all our new members and I hope we all get to meet real soon.

I hope everyone is staying healthy. Be sure to take good care of yourselves and wear a face mask when going out. I know we are all looking forward to seeing another again. As far as I know, we have not lost any of our members to the virus or any other health reason.

Recent Government Activities by Bob Pattie

The following items are the latest government activities that I have seen recently.

I just received the latest "Schedule of Proposed Action" (SOPA) for the Mt. Baker-Snoqualmie National Forest for the period of 10/01/2020 to 12/31/2020. This report had a few items of interest for the rockhounds.

First - The North Cascades Grizzly Bear Restoration project has been cancelled.

Second – The Middle Fork Snoqualmie and Pratt Wil and Scenic Rivers Comprehensive River Management Plan is asking for comments by November 13, 2020. I believe that Glenn has already sent an e-mail regard this plan. It is located at the following webpage if you had missed Glenn's message: Web Link: http://www.fs.usda.gov/project/?project=53997

Third – A new item labeled as "Locatable Mining Rule =- 36 CFR 228, subpart A is included. This covers all states and National Forest System and was reported in the Federal Register, and a draft EIS & proposed rule should be available for review/comment in late 2020. The expected decision would be 12/2021. This pretty much the same material I wrote about last month H.B. 2579, the difference is that this was written by the Forest Service and not by a politician and my first reading of this approach (the forest service) would be better for rockhounds. They both have the definition listed for causal collecting. I will have more information on this activity when I get more details.

Fourth – The Pacific Northwest National Scenic Trail project in on hold for the present time.

Most of the other items were completed or their plans have been updated, including the road 7222 project, part of 7222 will be closed and a short connection to 7224 put in place.

The second and separate article would be following.

When I was reviewing the Department of Natural Resources (DNR) if found the following under the DNR rockhounding section on where to collect in the State of Washington. I believe this is a change of position for DNR, a welcome sight, after many trips to Olympia and other meetings. A number of rockhounds including myself, have been presenting this position at our meetings with DNR personnel for the last 10 years or more. This means that rockhounds are able to do causal collecting without a permit on DNR trust land.

The web page for rockhound https://www.wa.gov/rockhoundin#where-can-i-collect?.1 and a discussion on "Where can I collect?" you can select DNR-Managed Lands you will find the following statement.

DNR manages two types of land:

State-owned aquatic land(the lands beneath navigable waters of the state);

2. State Trust land that the DNR manages in trust to provide revenue for various public institutions, including K-12 schools, universities, counties, and junior taxing districts.

The DNR authorizes non-commercial gathering of rocks/mineral/fossils for recreation, research, or educational purposes under the following conditions:

Individual recreational rock hounding/mineral collecting on State Trust lands is authorized without a permit;

2. Group recreational rock hounding/mineral collecting/educational activity is authorized by a non-exclusive land-use license for a fee (Contact Ana Shafer for permit 253-569-2307);

3. DNR must have legal access which allows recreational use (e.g. do not block gates or roads);

4. Recreational rock hounding/mineral collecting is not allowed in or near typed waters; also, the activity must avoid special habitats per DNR's HCP (i.e., talus slopes, caves, cliffs, etc.); and

5. No mechanized equipment (or explosives) is allowed for exposing, collecting, or transporting rocks/minerals to a vehicle.

Gold panning is not allowed on State Trust lands . It may be authorized on State-owned aquatic lands, but the individual must obtain a use authorization from Aquatic Resources Division . If you get authorization, you will also need to have a copy of the Gold and Fish Pamphlet on you at all times.

The third and separate article would be the following.

On the DNR web site they have a section called "Home school help for the Washington Geological Survey". The web page address is https://washingtonstategeology.wordpress.com/2020/04/27/home-school-help-from-the-washington-geological-survey/ .

Do you have kids at home and you're looking for educational resources for learning about science? We have tons of cool information about Washington's geology to read about! Check out these pages!

This site has some: short videos, articles, charts, etc.

Subject: Middle Fork Snoqualmie and Pratt Wild and Scenic Rivers Comprehensive River Management Plan
Date: October 14, 2020

Dear Forest User:

The Mt. Baker-Snoqualmie National Forest, Snoqualmie Ranger District invites you to review and comment on the draft Environmental Assessment (EA) with a Forest Plan amendment, and draft Comprehensive River Management Plan (CRMP) for the Middle Fork Snoqualmie and Pratt Wild and Scenic Rivers Comprehensive River Management Plan project.The project is located northeast of the city of North Bend, in King County, Washington. In 2014, the Pratt River and a segment of the Middle Fork Snoqualmie were designated as additions to the National Wild and Scenic Rivers System. Designated areas include the upper 28.2 miles of the Middle Fork Snoqualmie River, and the entire Pratt River.
To determine how to manage the Middle Fork Snoqualmie and Pratt Wild and Scenic River Corridors, both a CRMP and an EA are needed. The CRMP is required by the Wild and Scenic Rivers Act, while the EA is required by the National Environmental Policy Act. The draft EA contains the purpose and need for the plan, alternatives, and environmental analysis. The draft CRMP contains the river boundaries; river values; management direction, including desired conditions, standards, and guidelines; and monitoring plan. To view the draft EA, draft CRMP, and related project information, visit the project website at: https://www.fs.usda.gov/project/?project=53997. This website is the most up-to-date source for project information.

How to Comment and Time Frame

Pursuant to 36 CFR 218.25, comments on this proposed project will be accepted for 30 days beginning on the first day after the date of publication of the legal notice in the paper of record (The Herald). If the comment period ends on a Saturday, Sunday, or Federal holiday, comments will be accepted until the end of the next Federal working day. After consideration of comments received during this 30-day comment period, a draft Decision Notice (DN) and Finding of No Significant Impact (FONSI) will likely be issued. The draft decision will be subject to an objection process pursuant to 36 CFR 218, subparts A and B. Only those who have submitted timely, specific written comments during a public comment period established by the responsible official are eligible to file an objection (36 CFR 218.5).

Comments should be within the scope of the proposed action, have a direct relationship to the proposed action, and must include supporting reasons for the Responsible Official to consider (36 CFR 218.25). Other eligibility requirements are defined by 36 CFR 218.25 (a)(3) and include name, postal address, title of the project and signature or other verification of identity upon request. Individual members of an entity must submit their own individual comments in order to have eligibility to object as an individual. A timely submission will be determined as outlined in 36 CFR 218.25 (a)(4). It is the responsibility of the sender to ensure timely receipt of any comments submitted.

The proposed programmatic amendment to the Mt. Baker-Snoqualmie National Forest Land and Resource Management Plan is subject to 36 CFR 219, Subpart B. Only individuals or entities who have submitted substantive formal comment to the plan amendment during the opportunities for public comment, including this comment period, may file an objection (36 CFR 219.53). Other eligibility requirements are defined by 36 CFR 219.54(c) and include name, postal address, title of the project and signature or other verification of identity upon request and the identity of the individual or entity who authored the comments.

In an effort to reduce paper use, the Forest is emphasizing electronic documentation. The project website will be the primary avenue through which the Forest Service will provide information about the project. Comments can be submitted electronically through the project website: https://www.fs.usda.gov/project/?project=53997. Once on the website, under "Get Connected," click on the link for "Comment/Object on Project."

Electronic comments must be in one of the following formats: email message, plain text (.txt), rich text format (.rtf),

or Word (.doc)or (docx), or Adobe (.pdf). Written comments may be mailed to:

Martie Schramm, District Ranger
Snoqualmie Ranger District
902 SE North Bend Way
North Bend, WA 98045

At this time our office is closed to the public. If you wish to submit hand-delivered comments, please call (425)888-1421 in advance to arrange an appointment.

Thank you for your interest in the Mt. Baker-Snoqualmie National Forest. If you have any questions, additional information can be provided by contacting Sarah Lange, Recreation Planner at sarah.lange@usda.gov.

The Mustang Caves by Kat Koch

This is not a story about the WW II aircraft, wild horses, cars or a ranch.

This is a story about the remote sandstone caves in Northern Nepal. These sandstone caves straddle the Himalayas and Tibetan Plateau, elevation 13,200. They are called the Mustang Caves or Sky Caves. The Upper Mustang District, Nepal, was a restricted demilitarized area until 1992. This area is one of the most preserved regions in the world due to it being so isolated from the outside world. The monarchy existed in the Mustang District until October 2008, at which time Nepal became a federal democratic republic.

The ancient kingdom of Mustang, until mid-1990's, preserved some of the rarest culture, traditions and artifacts in all of South Asia. It is home to one of world's greatest archaeological mysteries, 10,000 man-made sandstone caves, estimated to be between 2,000 to 3,000 years old, that lie within the steep valley walls near the Kali Gandaki River. Scientists believe over thousands of years the sandstone cliffs were cutout by the Kali Gandaki River.

In the mid-1990's archaeologists began exploring and studying the stacked caves. The first scientific expedition found several dozen partially mummified human bodies dating to about 2,000 years ago. They also determined that the caves were either dug directly into the hillside or tunneled from above. These 10,000 caves resemble a giant sand castle. One of the caves is 5 stories tall! These caves dwarf the Grand Canyon Caves.

In 2007, scientists discovered ancient Buddhist decorative art and paintings, manuscripts, pottery dating the the 13th century. A second expedition in 2008 discovered several 600-year-old human skeletons and recovered reams of precious manuscripts, some with small paintings known as illuminations, which contain a mix of writings from Buddhism and Bon (Tibetan religion).

In 2010, a scientific team and mountaineers uncovered an additional 27 human remains in two of the biggest caves. These skeletons dated from the 3rd to 8th centuries, before Buddhism came to the area. These bones had cut marks which are believed to be a burial ritual may have been related to the Bon-Buddhist practice of sky burial. The ritual was to cut the body into small pieces, bones included, to be swiftly eaten (cleaned) by vultures and then buried in the caves. This burial ritual of cutting up the body is practice in the Upper Mustang District to this day.

Research groups have continued to investigate these caves, but no one has yet understood who built the caves and why they were built. Scientists have divided the cave use into 3 periods. Around 1,000 BC the caves were used as burial chambers. Around the 10th century the region is thought to have been engaged in frequent battles as the valley was a trade route for the flourishing salt trade. So for safety purposes families moved into the caves and them as their permanent homes. The caves were not only a safe place to live, but also helped them keep warm during the harsh and unforgiving Himalayan winters. These mountain villages were more than 155 ft above ground, multi-level with many passages connecting rooms on each of the levels, some of these levels accommodating up to 15 rooms. These rooms were used as sleeping spaces, kitchens and granaries. Scientists have found that by the 1400's the caves were used a meditation chambers, military lookouts and storage units as people moved into villages.

Currently tourists and scientists to the caves are restricted to a total of 1,000 persons per year. There is a museum near Mustang's Jamsom airport which displays a collection of artifacts and bones found in the caves.

According to local legend the caves are 14,000 years old. Scientific researchers have yet to confirm the legend.

Bibliography: Wikipedia – 2 different pages, National Geographic, BBC-Travel, Hidden and Little Known Places

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No matter how hard you try, you'll never find a dry rock in a river.

Asteroid Bennu

NASA: Bennu's boulders were found to contain a bright vein of carbonate which had to be formed through interaction with water - likely flowing freely on its parent body.

Asteroid Bennu may contain the building blocks of life within its 'rubble-pile' surface, and the body was once part of a much larger, water covered world, scientists claim.

NASA's OSIRIS-REx mission will land on Bennu on October 20 to collect samples of the space rock and bring them back to Earth for scientists to study in the lab.

As part of the preparations for this mission, six research papers have been published looking at the history and make-up of the near Earth asteroid using data gathered by OSIRIS-REx that has been orbiting the space rock since 2018.

One of those papers, by Amy Simon of NASA Goddard, found evidence of carbon-bearing and organic materials widespread across the surface of Bennu. These materials were found in veins running through rocks covering the surface of the asteroid, and had to be formed as a result of free flowing water that was on the larger, long destroyed celestial body that created Bennu.

This is the first confirmed detection of these building blocks of life on a near-Earth asteroid, according to the team behind the study. The discovery of life giving molecules and ancient free-flowing water adds credence to the theory that meteorites may have carried the first building blocks of life to Earth - molecules that eventually led to all life on the planet including humanity.

Since its rendezvous with Bennu in late 2018, OSIRIS-REx has conducted detailed orbital surveys and reconnaissance of the surface of the space rock. It has been collecting data on the asteroid's composition and structure as well as identifying suitable locations for sample collection.

Teams of researchers from institutions around the world have been pouring over the data to better understand the mysterious lose pile of orbiting rocks.

Simon and colleagues from NASA used infrared spectroscopy to show that carbon-bearing materials, such as organic molecules and carbonate minerals, are widespread across most of Bennu's surface. These primitive building blocks of life are particularly concentrated on individual boulders, the team explained. “The abundance of carbon-bearing material is a major scientific triumph for the mission. We are now optimistic that we will collect and return a sample with organic material – a central goal of the OSIRIS-REx mission,” said Dante Lauretta, OSIRIS-REx principal investigator.

These may have come from the fact the asteroid once had running water on its surface, according to Hannah Kaplan, also of NASA Goddard. Some of the carbonates they found evidence for are only formed through interactions with water and are on Bennu in veins three feet long and inches thick. This is evidence that water once flowed freely over the rocks and suggests Bennu was once part of a larger parent body with a hydrothermal system.

According to researchers the fluid flow on Bennu's parent body would have taken place over distances of kilometres for thousands to millions of years. When that parent body was still young - in the early solar system - it still had enough heat to keep liquid water flowing in its soils and as it dribbled through the asteroid it deposited the carbonate minerals in the fractures it passed through.

Bennu was born out of the debris of the parent body and some of those mineral veins have survived intact - as discovered by the NASA team.

“This is why we do spacecraft exploration,” says Kaplan. “We didn't expect to see these things, we cannot see them from Earth, and we needed to be orbiting pretty close up to the asteroid in order to see them.”

The area of Bennu that OSIRIS-REx will land - the Nightingale crater region - is made of fresher materials meaning it will provide a cleaner look at the early solar system as the rocks are from deeper inside the asteroid - when Bennu first formed.

Researchers from around the world have been involved in the study of data from Bennu, including Open University researcher Dr Ben Rozitis. He has analyzed the temperature changes on the space rock and found that some of the boulders are weaker and more porous than others.

The stronger rocks are the ones with the carbonate veins - suggesting interacting with water may have resulted in stronger rocks due to liquid seeping material into holes in the boulders. The weaker boulders are particularly interesting for Earth scientists though. Dr Rozitis says these porous rocks would be unlikely to survive entry into Earth's atmosphere as they would heat up and explode.

This means we have never seen rocks like this close up on the planet before - presenting a unique opportunity when they are returned to Earth by NASA.

Rozitis says that beyond the unique opportunity to study rocks not previously found on Earth, the return mission will give more details than can be achieved through remote robotic equipment. Such a detail not possible from remote observations, as the equipment needed for this is too large to be launched on a rocket. From these analyses, we can learn what conditions were present at the formation of the Solar System 4.5 billion years ago, how it subsequently evolved, and also where organic compounds that helped initiate life came from.

For more informational videos on Bennu go to Youtube and search for NASA Goddard Bennu.
Condensed from a NASA article.

More Bennu News by Keith Alan Morgan

Since Kat submitted that article, Osiris-REx has sampled the surface of Bennu. The probe went a little deeper than intended, estimates are about half a meter. It also collected a larger sample than planned. One of the rocks collected prevented the seal from fully closing so some material was lost as the probe was rotated.

What to Do with Your Trim Saw Scraps by Jim Retzer

What do you do with all those small pieces that are cut off on your trim saw? If they are big enough you can us them to make another cabochon or put them in your tumbler. But what about the slivers and odd shaped pieces that are to small? Do not throw them away, they are still usable. I put them in a container and save them to use for later project. Some of these scraps can be used for inlay and mosaic projects, some can be crushed, and the power used with epoxy for inlay and some can be used to form a laminated stone.

To make a laminated stone I spread the scraps out on my bench. Look through the scraps and find ones that together will make an interesting stone. It is a good idea to select stones that are similar in Mohs hardness. If you use a mixture of soft and hard stones this will make the cabochon forming process more difficult. The pieces you use should be trimmed or ground down to uniform shape. Once I decide on the pieces I am going to use and the pattern I will make I grind the two sides that will be next to the other pieces smooth. This is can be done on a flat wheel on the end of your cabbing machine or on the side of a silicon carbide wheel. If you use a silicon carbide wheel be careful of heat buildup if you do not wet the side of the wheel. Make sure the sides of adjacent pieces are smooth and when put next to each other do not have any gaps.

After I have my stones ready, I mix some Epoxy 330. This is a two-part epoxy that, when it dries, forms a water clear bond. The epoxy is spread liberally on the sides of the stones that are to be glued together. Do not worry about applying to much epoxy as the excess will grind off when the stone is formed. A small light clamp can be used to hold the pieces together until they dry. Once epoxied, set the stone aside until the next day to allow the epoxy to cure completely.

Once the epoxy has properly cured you can mark the stone and cut it into a cabochon. When working with the stone use a light touch and take your time. Rushing the cabochon cutting process can result in sections of the stone braking off. Once the top of the cabochon is finished you can flatten and smooth the back of the stone on a flat disk on the end of your cabbing machine or on the side of a silicon carbide wheel. Again, be careful of heat buildup on the silicon carbide wheel.

When the stone is used in a jewelry piece it is a good idea to set it in a strong bezel setting to best protect the stone. This is the most basic of laminated stones. As you refine this technique you can advance to more complex designs utilizing multiple laminated pieces to form a variety of designs such as chevrons shields, herringbone or whatever your imagination can come up with. Any of our club members that have questions or want help in this technique feel free to contact me at Jimrocks@recycledhistory.com.

via The Council Reporter, 9/20; via Yakima Rock and Mineral Club News, 08/20; from The Panorama Prospector, 7/20

Corona Chuckles

Prediction: There will be a minor baby boom in 9 months, and then one day in 2034, we shall witness the rise of the rise of the Quaranteens.

Day 1: I have stocked up on enough non-perishable food and supplies to last me for months, maybe years, so that I can stay in isolation for as long as it takes to wait out this pandemic.

Day 1 + 45 minutes: I am in the supermarket, because I wanted a Twix.

Day 2 without sports: Found a young lady sitting on my couch yesterday. Apparently, she's my wife. She seems nice.

I washed my hands so much due to COVID-19 that my exam notes from 1995 appeared.

My 30th birthday is today, but I just want everyone to know that I will be postponing it indefinitely due to the corona virus and I will be turning 30 at a later date. (Fill in the year as appropriate for you.)

from Breccia, 10/20

Marl (or Marlstone) is a soft, very porous limestone, which can be clastic or chemical in origin and is made of lime-rich mudstone containing varying amounts of clay and silt. It is usually dull and ranges in color from light tan to darker blue-gray. Marl is found throughout the world and often preserves fossils such as ammonites. The first real dinosaurs were discovered in the marl and limestone of Dorset, England, by Mary Anning (the 'Mother of Paleontology'). In Washington, fossil-rish marl can be found at Double Bluff Beach on Whidbey Island. Marl is even found under the remnants of cedar trees in the country of Lebanon. It has many uses, from enrichening farm soil, to cement, to softening hard minerals in water!

from The Clackamette Gem, 9/20

Young Tumblers News

The Colors of Obsidian by Kat Koch

Obsidian is a natural forming dense volcanic glass. Obsidian is mineral like but isn't considered a mineral as it lacks a crystalline structure. Obsidian forms in lava flows where the lava cools so fast that crystals don't have time to form. It's classified as a mineraloid.

When obsidian breaks the edge can be as sharp as a knife or a piece of broken glass. For this reason you must be very careful when handling obsidian.

The most common obsidian is all black. Some of the other varieties are: Apache Tears, Fire Obsidian, Mahogany Obsidian, Rainbow Obsidian, Sheen Obsidian, Snowflake Obsidian.

Where can obsidian be found in the United States?

1. Oregon: varieties of fire, mahogany, and rainbow are known.
2. Wyoming: Black, brown, mahogany, gray and green. At Yellowstone National Park in particular.
3. New Mexico: Apache tears (black) and brown.
4. Arizona: Black and dark brown.
5. Colorado: Apache tears (black).
6. California: All varieties.
7. Nevada: Black, brown and mahogany.
8. Utah: Major source of snowflake obsidian.
9. Hawaii: Pele's hair and other varieties

Obsidian comes in many colors:

1. Black
2. Brown
3. Gray
4. Mahogany – Black with brown streaks or bands.
5. Iridescence Sheens: gold, silver, blue, violet, green, and combinations of these colors, The colors are caused by the inclusion of very small bubbles that reflect light.
6. Snowflake - Black obsidian with grayish or white spots forming a snowflake pattern. The white spots are Cristobalite crystals (type of needle shaped quartz) that have formed in the obsidian.

Obsidian Uses: It was used to make arrowheads, spear points, knives, scrapers, and a lot of other weapons and tools. Once obsidian was discovered it quickly became the raw material for making almost any sharp object.

Bibliography: Pictures from Wikipedia, Pinterest and USGS

Basalt by Duane Flackus

Basalt is an igneous rock formed from the rapid cooling of lava that is rich in magnesium and iron exposed at or very near the surface of a terrestrial planet or a moon (there is no salt in basalt). It is the most common rock known to man. It is the rock that you dig out of your garden. It is the rock cliffs you see along the Columbia Gorge. The ocean bottoms are made up of basalt. Not only the most abundant rock, but also the most used. The roads and highways are paved with basalt gravel. It is so prevalent that it is sold by the truckload rather than by the pound.

from The Clackamette Gem, 10/20

Mineral vs. Gemstone, How Do You Tell The Difference? by Duane Flackus

Minerals are elements. Nature has combined these elements into rocks over millions of years with heat, pressure, etc. The rock is defined by its combination of its mineral makeup. It's a science thing.

Sometime back in history, humans began to cut, carve, and polish beautiful rocks into jewelry. So, these rocks that have been made into jewelry are referred to as gems. It's a human thing.

from The Clackamette Gem, 9/20

If it wasn't for the dinosaurs, you wouldn't have a turkey dinner.

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).

11/21 *Darrington Rock Club* - **Blanchard Hill** – Meet at I-5 Exit 240 Gas Mart before 9 am - Dalmation stone & Chert – Bring hard rock tools
Ed Lehman wsmced@hotmail.com h# (425) 334-6282 c# (425) 760-2786

CMS Field Trip November 7 Little Naches by Roger Danneman

On Nov. 7th 2020, we're going over Chinook Pass to Little Naches for Thunder Eggs, Lilypad Jasper, and Leaf Fossils. The Thunder Egg dig site involves a ~1/2 mile hike, but the other two sites are next to the road. Meet 8:00AM at the Enumclaw Ranger Station. Group leaves promptly at 8:15. We'll have another rendezvous point at Little Naches turnoff (FR 19), where we'll stop and wait to make sure we get all vehicles accounted for, especially since there is a potential delay on the gravel bypass at the Hwy410 reconstruction area east of Enumclaw. Bring dig and hard rock tools.

We'll drive over Chinook Pass to FR19 (Forest Road 19), turn left, and park on the side of FR19 where there's a campground and toilets. This is about a 1 1/2 hour drive from Enumclaw (~80 miles), and is around MP91 or 92 (milepost). We'll make sure we have all the vehicles at that point, let people use the "facilities", then head up FR19 for 1.6 miles, turn right on FR1901 for about 4.4 miles and park. The hike to the thunderegg dig spot is ~1/2 mile.
Probably spend 2 hours digging for thundereggs, and then head back to the cars where we'll drive on to the next 2 sites. It will be a full day.

Roger Danneman (roger.danneman@gmail.com hm # 425-228-8781 or cell # 425-757-3506).

The Aluminosilicates by Jo Borucki

These aluminosilicates all have the same chemical structure, Al2SiO5; (2 parts Aluminum, one part Silicon and five parts Oxygen). The three aluminosilicates are metamorphic; rocks changed in form as a result of heat and pressure. While they are chemically the same, they differ in other ways. Bill, my husband, pointed this out to me the other day, and I was intrigued. I hadn't really thought about that before, just assuming that every mineral had a different chemical composition. The example that Bill showed me was the three aluminosilicates; Andalusite, Sillimanite, and Kyanite. Kyanite and Sillimanite are polymorphs of Andalusite. The word "polymorph" can be thought of as same material composition but differing in structure mainly a result of the amount of pressure and heat to which this chemical structure is subjected.

Andalusite forms under low pressure and low to high temperatures. I typed "eBay Andalusite" into Safari on my iPad mini and as a result, I saw many beautiful pieces of jewelry. It's really worth a look, both to tempt you to buy jewelry or in creating your own, to get ideas of all the ways Andalusite has been used in jewelry. I also checked online to see how difficult it is to facet. It is difficult to find decent size pieces and the crystals are long and narrow and can be brittle, but it cuts fairly easily, and as you can see from the illustrations on the right, once cut, it produces beautiful results. Check online for the International Gem Society's articles for detailed information on faceting.

Andalusite has a variety of commercial applications. In is used in making porcelain for spark plugs, and it is used to make ceramics for lining furnaces, kilns, and incinerators.

Rockhounds will be interested in knowing that Andalusite is found in Mono County, California.

Sillimanite is also called Fibrolite. It is formed under the widest range of pressures of the aluminosilicates and at a higher temperature than Andalusite. It has been found in Brandy Springs, New Castle County, Delaware. It is used in the manufacture of some glass, high alumina refractors and bricks, and in porcelain. The mineral's brittleness and directional cleavage make it difficult to facet. If one is successfully faceted, it is very desirable and therefore, very expensive, especially the violet blue variety found in Mogok Valley, Burma.

Kyanite is formed under the highest range of temperatures of the three aluminosilicates and at a wide range of pressures. I became intrigued with it about twenty years ago when I found a sample in a rock shop in Estes Park, Colorado. I bought it, and it was one of my very early wire wrapping endeavors. I was fascinated because on one axis, its Mohs Scale hardness is only a 4.5 to 5, but turned 90 degrees, the hardness is a 6.5 to 7. Like the other aluminosilicates, its commercial usage is for high temperature glasses and ceramics.

The word, kyanite is derived from the Greek word, kyanos which means cyan or dark blue. To my delight, I found online that some Kyanite is faceted. The sample shown is a beautiful deep blue.

And so Bill's walking into my study one day to tell me that he knew of three minerals that all had the same chemical composition but differed otherwise, has afforded me many hours of research and learning. There are at least two other sets of minerals that share identical chemical compositions, diamond and graphite (C) being one and pyrite and marcasite (FeS2) being another. There may be others. The table below shows the properties of the three minerals. Bill gave me the inspiration to research and learn. What do the terms in the table below mean? Perhaps you will find inspiration in this article to begin your own learning quest.

from Breccia, 10/20

Show

November 14 & 15: 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

Prairie Agates

Designated as the Nebraska State rock by the 1967 State Legislature, the prairie agate is not a true agate. This rock grades into banded or layered chert rather than agate.

Prairie agates are found in northwest Nebraska, southwest South Dakota, and northeast Wyoming. Since these are the same areas where the much-sought-after Fairburn agates are found, many rockhounds mistake some of the banded prairie agates for Fairburns. These are referred to as “Nearburns” by the more knowledgeable.

Although ignored by many of the natives of the area where they are found, prairie agates lend themselves very well to lapidary. Because of the coloration of these nodules, which runs from bright yellows and reds to subdued pastel shades of pink, lavender, blue, tan and grey, many beautiful specimens can be cut and polished. The fascinating blend of colors also can be captured in cabochons to make attractive and novel jewelry pieces.

Using the same procedure as used when working true agate, the lapidary is rewarded with a brilliant polish on any piece of prairie agate he works with.

via The Quarry, 9/20; via AFMS Federation Newsletter, 9/20 via from The Glacial Drifter, 1/91 & 2/20

Internet Addresses

Mineral Commodity Fact Sheets
https://www.usgs.gov/energy-and-minerals/mineral-resources-program/science/mineral-commodity-fact-sheets
from USGS Twitter 10/29/20

Treasure Island: The Rare Gemstones of Baffin Island
https://blog.scienceborealis.ca/treasure-island-the-rare-gemstones-of-baffin-island/
from The Hard Rock News, 9/20

Mini Miners with Diamond Dan
https://www.youtube.com/channel/UCsSWWKyVd5dGofhQgkv11MA

Gemological Institute of America
https://www.gia.edu

Citrine is one of the most valuable and popular gemstones in the quartz group. While many citrines on the market today are actually heated amethyst or smoky quartz, citrine does occur naturally in beautiful golden and brownish-orange hues. It's also possible that quartz crystals that grew naturally as amethyst or smoky quartz were turned into citrine by natural heat from nearby magma activity. Citrine is one of the most valuable and popular gemstones in the quartz group.

Name Origin and Meaning: Replacing the simple name of yellow quartz, the name “citrine” was officially adopted for this stone in 1556 when German metallurgist Georg Bauer, known to some as “the father of modern mineralogy,” used it in a publication about gemstones and jewelry. The word “citrine” has a few potential sources, all related to citrus fruits. The most likely root of this word is from the old French word citron, meaning “yellow,” or the Latin word citrus, in reference to citrus fruit. Around the 17th century, both citrine and smoky quartz were called “cairngorm” after their source in the Cairngorm Mountains of Scotland. “Madeira citrine” is the term used for darker, orangey-brown citrines, so named because they share their color with Madeira wine.

History: Citrine has been used ornamentally on tools and in jewelry for thousands of years. In ancient Greece, the stone now known as citrine first gained popularity as a decorative gem during the Hellenistic Age, roughly between 300 and 150 B.C. In the 17th century, Scottish weapon makers used citrine to adorn dagger handles, sometimes even using a single large citrine crystal as the handle itself. Some Biblical scholars believe that citrine was the tenth of twelve stones in Aaron's breastplate described in the book of Exodus. The stone was referred to as chrysolitus (Greek for “golden stone”) in both Roman Catholic and Latin versions of the Old Testament, leading to some confusion over whether it was citrine, topaz, or beryl. However, in the King James Version, the tenth stone is referred to as beryl, meaning it would be heliodor, and modern scholars believe the stone was actually topaz.

In 1852, after Queen Victoria married Prince Albert, they built Balmoral Castle in the Scottish Highlands. Because she was so fond of her new home and Scotland in general, the queen often had parties for which she required her guests to dress in full Highlands attire. This gave Victoria a good opportunity to share another of her loves: gemstones found within her kingdom, citrine in particular. As a result, citrines set in traditional Highlands shoulder brooches and kilt pins became popular.

via The Hard Rock News, 10/20; from Golden Spike News, 11/19