Yellowstone National Park, Wyoming. https://pixabay.com. CC0 1.0, Public Domain

March 2025

The Rocky Mountain Federation News

The official publication of the Rocky Mountain Federation of Mineralogical Societies, Inc. The RMFMS is a regional member of the American Federation of Mineralogical Societies, Inc. Email receipt of the *RMF News* is a privilege of membership in the RMFMS, and it cannot be exchanged by the editor for individual club newsletters from other regional federations. Accessible to the public on **www.rmfms.org** .

What's Inside:

Information for the **April** issue is due to LJGRALG@aol.com by **March 15.**

President's Message

Jim Gray, RMFMS President

Leane and I are looking forward to going to the AFMS convention and rock show in Hickory, NC in March. We are going to drive and we will see some country we have not seen before. We hope to have a chance to see the Atlantic Ocean for the first time!

I am trying to keep an eye on the new Administration's actions regarding public land access and encourage everyone else to do the same. If you see something happening in your area, be sure to inform your state's PLAC person to help with research and writing comments.

The RMFMS is still looking for volunteers to lead several of the committees. With this in mind, I have spent a little bit of time reading about how to best recruit volunteers for non-profit groups. I think this topic is relevant to the RMFMS *and* the individual clubs. I hear the same description from the many club leaders I know: we have all these members but only a few help. One Utah club had to resort to *hiring* a work crew for setting up the annual rock show! I will say that the Sublette County Rock Hounds, I am show co-Chairman, has an amazing group of members who help with the annual show for set-up and tear down, but I don't know that this is common. The articles I read about recruiting volunteers suggested starting with a clear job description. This makes sense – if we are not clear about what we want someone to do, how does that person feel comfortable committing to help?

"Be sure to clearly identify the skills that are needed for that to happen and recruit volunteers for those specific roles."

Quoted from https://donorbox.org/nonprofit-blog/how-to-attract-the-best-volunteers-and-keep-them, by Raj.

Raj goes on to suggest identifying how you intend to train your new volunteer to fulfill the role. He thinks a handbook or training program might be useful. I would add that a buddy-program might be good by pairing the new volunteer with someone experienced with the organization and the position being filled. This might reduce the anxiety of the new recruit about missing something or doing something incorrectly.

The next piece to recruiting is to:

"Explain what your nonprofit hopes to achieve and why you need help. Make your message short, simple, and direct. Communicate the need for the volunteer's service. Point out the benefits

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Treasurer's Report

Gene Maggard, RMFMS Treasurer

All reports are in, I think. We have 84 clubs reporting, compared to 87 member clubs at the end of last year. Three clubs did not report. Two have disbanded and one is not renewing their membership. We have 14,436 total members in 2024-25, compared to 13,946 members at the end of 2023-24 fiscal year. So, we had a membership increase even though we have fewer clubs. Not all clubs have paid their dues so I still can't compare this year's dues income compared to last year's, but there should be an increase in dues collections.

President's Message — *continued from page 2*

(e.g. skills and experience) the volunteer will receive as well as the community benefits that arise from volunteering."

Quoted from https://donorbox.org/nonprofit-blog/how-to-attract-the-best-volunteers-and-keep-them, by Raj.

I think we assume "everyone knows what we are doing," but this is not always true. Some people do not look at the details of what is happening around them, or they might be pretty new members of the group. And, I think there is value in asking a member face-to-face whether he or she would like to fill a specific role; the answer is surprising sometimes!

I think this topic is one that we need to share ideas about what has worked for your Club. Maybe you could write an article for Linda to include in an RMFMS newsletter?

RMFMS still has the following vacant committee positions to fill:

- Lapidary Tech
- PLAC - AZ
- PLAC - NM/TX
- PLAC - OK/AR
- PLAC – UT/NV
- Website Contest

So if anyone in your club would be interested please let me know.

Until next time,
Jim

Happy St. Pat's!

What Has Your Club Got Planned?

DeLane Cox, RMFMS Public Relations

It is that time of the year, when every Rock Club is probably experiencing what some consider "way too much happening at one time." And it is true.

Of course, your club has elected their new officers, right? And you have someone to train the new people in their job responsibilities, and they have already done that. Oh, not something you do? Perhaps it is something the club needs to consider. A brand-new person, elected to a job they may or may not know much about, should have some training, even if it is for one hour to go over the Club's Operating Procedures so that new person knows exactly what is supposed to happen. They should have the title "Trainer."

Who can do this for your Club? It should be someone who knows what your By-Laws and OPs contain and have a few years of tenure, preferably as an officer, with your club. It is important to know what your club has done, what its history is, and what the Mission Statement is and how it is going to be carried out.

This sounds like some planning needs to be done at the first of the year. And yes it does.

The Club's key officers should be responsible for getting together and deciding just what the Club is going to be focusing on for the year. Good Clubs do not just happen….they are planned. What will the club's education focus be? Who will be doing the training of your new members in your lapidary workshop? Or the returning members, too, who have not been shown how to make cabs or facet. What will be done about upkeep of your clubhouse or workshop, if you have either? And who will be responsible for that? Having a Show or Swap? Honestly, chairs for those activities should have been named right after last year's event. If they were not, it is time to recruit and get plans underway.

Sounds like a lot of work, doesn't it. That is why the president recruits people as soon as he or she is elected. The president should not be doing any of that work….they are president and have a big job to do just keeping the Club functioning. A president should get members active and working to help the club function. If they need help, call on the executive officers to help recruit the best person for a job.

And, my goodness, do you need funds to support any of these programs? Time for the Treasurer to get this year's budget finalized. To do that, every committee chair should submit budget needs as soon as possible after they have been recruited and trained. It is impossible for the Treasurer to know what a Committee Chair plans to do for the year and what they will need in funding. So, back to that word PLANNING, again.

Good Clubs do not just happen. They take work, and planning. And planning should take place as far out as possible to make an event run smoothly. Club members should be recruited to help with any event, in addition to the chair. Just asking someone to do a job may or may not get the job filled. The possible recruit should be told what the job is, what it is all about, who is in charge, and that the job is for one year only. What, you say? One YEAR? Yes! And if they do a good job, they can be asked to do it again. And if they don't do a good job, someone else can be asked to do the job.

Since this is a public relations article, remember to get publicity out about every Club event, which includes monthly meetings. Your publicity chair should be busy, too. Yes, people still read

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What Has Your Club Got Planned — *continued from page 4*

newspapers. But your best bet is your website or Facebook page. And have members "Like" and "Share" things from your page to other social media pages. You won't get new members if they do not know you exist.

So, you have a few things to think about now. Planning, budgets, and publicity. Better get going!

Exhibitors – Getting Started

Lee Whitebay, RMFMS Uniform Rules

Congratulations, you've chosen a topic! Individuals choosing to exhibit have the advantage of knowing what aspect of our hobby interests them. Minerals, fossils, lapidary, jewelry; all classes are open, so pick one that fits you. Remember, you do not have to create an exhibit by yourself. Families and groups can enter exhibits. Groups need to reach consensus on what to present. I suggest starting with an Educational Exhibit, which can be directed toward a general or technical audience. A good place to start is with an exhibit for a general audience. You do NOT need to enter a COMPETITIVE EXHIBIT. Well-constructed non-competitive exhibits are a great place to start. Realize it will take a substantial amount of time to create a good-looking display, so begin the process MONTHS before the show.

Fear of the Uniform Rules and fear of being judged are the two most common reasons given for not entering exhibits. Knowing these fears have been barriers to participation, an effort has been made to make the Rules more user friendly, and Guidelines for Exhibitors and Judges clearer. The Rules may now be accessed one chapter at a time, so you can focus on your area of interest. The documents are on the AFMS website: https://www.amfed.org/. Click on the Contests and Awards tab, then the Display Competition tab to find the Rules and related documents. Please read all of Section I of the Rules. Section I deals with General Rules and Definitions. Yes, I know. BORING!! However, there you will find definitions for exhibitor classes, rules for judges and host societies, and descriptions of awards. Ninety percent of the information will not apply to you, but the remaining 10% will be critical to your success. So, please do not skip Section I. A PowerPoint Presentation on getting started exhibiting is available. Contact me at Lwhiteba@gmail.com if you would like a copy.

Where in the RMFMS is Rocky?

- Nebraska?
- Nevada?
- South Dakota?

Clipart at top by Phillip Martin.
CC BY-SA 2.0.
Answers on page 23.

Isn't That Odd?

Joan Beyer, Las Cruces Gemcrafters & Explorers Club

You may assume that field collectors of micro minerals pack out the lightest loads. Not so. The micro collector chooses the big rocks, because delicate crystals are more safely transported within the rock. It also gives you more fun at home, breaking rocks into bits and checking every piece under the microscope. You never really know what you have until that point; so, the fun of the field trip, discovery, is extended well past that day out in the field!

Fig 1. Abstract Art. Tarnish on Bixbyite octahedron face growth patterns. Paramount Canyon

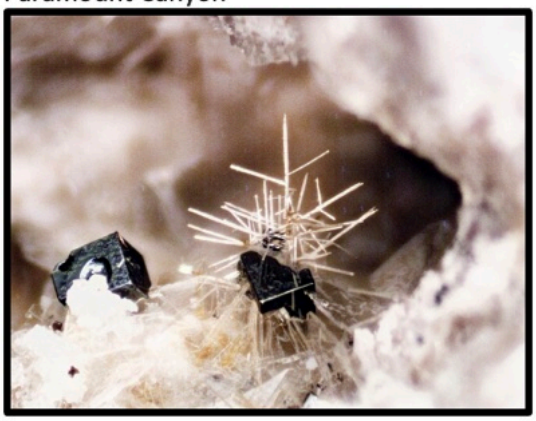

Fig 2. Charlie Brown Christmas Tree. Cassiterite, 74 Draw

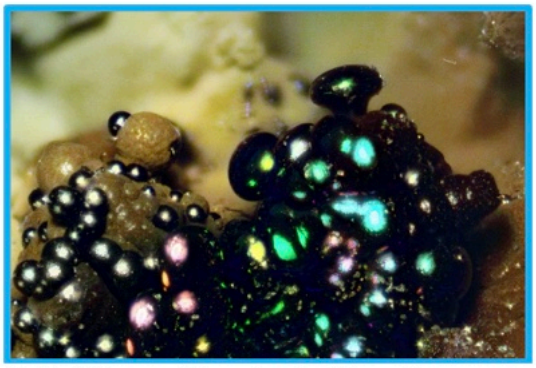

Fig 3. Iridescent Doorknobs. Hematite-Goethite. Mex-Tex Mine

One of the great pleasures of mineral microscopy is when you're casually looking over those bits of rock and suddenly come across something astonishing that you would never have noticed otherwise. It may be a perfectly formed crystal, an unexpected mineral species, or something altogether bizarre. The weird ones can be amusing and mind-boggling.

Here are some oddities I've collected over the years that I hope you will find amusing, interesting, or even beautiful — with my take on what they resemble.

How did they form? I'll leave that to the professionals to explain. Enjoy!

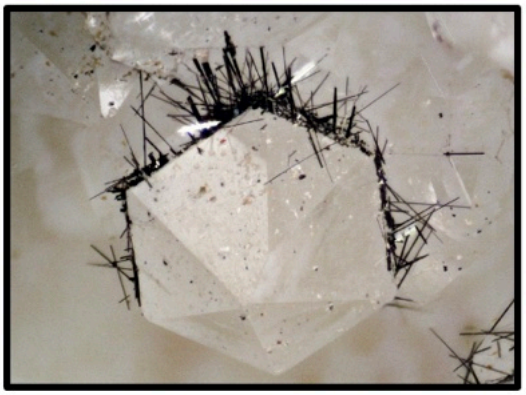

Fig 4. Bad Hair Day. Plattnerite on Quartz. Mex-Tex Mine

Fig 5. Trefoil Growth Pattern on Bixbyite octahedron face. Paramount Canyon

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Oddities — *continued from page 6*

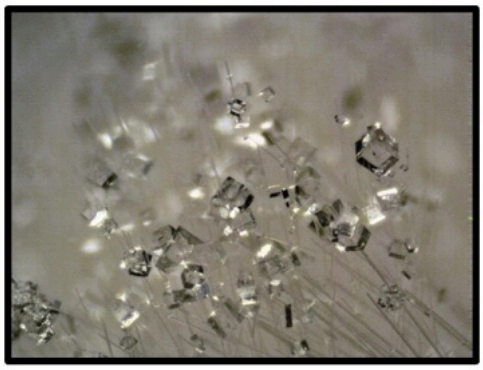

Fig 6. Twinkle Twinkle Little Star. Gila River, Chabazite impaled on Mesolite

Fig 7. Fancy Chocolate Bonbon. Iron Oxides, Cincinnati Mine

Fig 8. Malachite Loops. Mex-Tex Mine

Fig 9. Football Trophy. Mimetite on Cerussite. Rambler Mine

Fig 10. Dragonfly. Cerussite. Rambler Mine

Fig 11. Jaws. Bixbyite. Paramount Canyon3

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Oddities —*continued from page 7*

Fig 12. Ball on a Stick. San Juan Peak

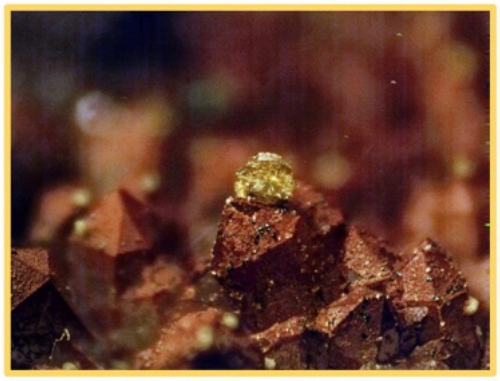

Fig 13. Ball on a Rock. Corkite on Hematite-coated Quartz. Mex-Tex Mine.

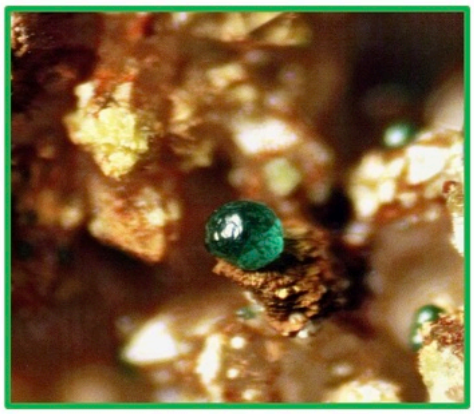

Fig 14. Ball on a Leaf. Pseudomalachite, Hematite. Mex-Tex Mine.

Fig 15. Ball on Ice. Graphic Mine.

From El Gambrisino, November 2024.

[Note from Editor Kathy Fuller: Joan Beyer, the author, is a member of the Las Cruces club. She is nearly or is 90 years old! Joan has been a club member since the early 60s. As you might have observed, she is a micro mineral collector. She no longer attends meetings, but is a faithful contributor to our newsletter.]

A Haiku Inspired by this photo of Heart Rock in the Wichita Mountains of Oklahoma:

Wichita Mountains
Seeking a heart of granite
Lovely hike — found it!

by Linda Jaeger, RMFMS Editor

Photo by Rohingya Eliyas, 2/18/25, on the Oklahoma History Facebook page.

AFMS Scholarship Recipients & Honoree from RMFMS

Richard Jaeger, RMFMS Chair

Amy Vovopyanov (Recipient)

I grew up in Michigan and had the opportunity to spend a large portion of my childhood getting to explore the Great Lakes that surround the state. Watching algae concentrations increase in these lakes over time sparked my interest in water quality and preservation. Throughout my undergraduate career at Michigan State University, I changed my major at least 3 times before settling on Environmental Biology/Microbiology. It was in this program where I began to see how interdisciplinary many of the environmental science fields were. In my last year as an undergraduate, I worked in an evolutionary pathogen lab, looking at diseases within freshwater Daphnia populations from a campus pond. After graduating, I spent one year working as a laboratory technician in a groundwater microbiology lab, studying how varying levels of nitrate pollution affects groundwater microbial community composition and function.

I am currently a second year PhD student in the Geological Sciences program at CU Boulder. Here, I was able to create a research project from scratch using my own personal motivational interests and the geochemical expertise of my advisor. My research investigates the impacts that wildfires pose on water quality by tracking changes in soil nutrient concentrations over different burn severities and temperatures.

Outside of research, I am the program manager for the Geological Sciences Graduate Association at CU Boulder, helping coordinate weekly events for the graduate students of the department. I am also a mother to my cat, PJ, and an avid concert-goer.

Tyler Wickland (Recipient)

I am a 5th-year PhD candidate in Geology at the University of Colorado Boulder, holding a BSc from Humboldt State University and an MSc from the University of North Carolina, Chapel Hill. Growing up in an outdoors-oriented family in Colorado, I spent my childhood summers climbing 14ers in the Rocky Mountains, which sparked my lasting passion for Earth Systems. In college, an introductory geology course solidified my interest in the field, blending my love of nature with scientific inquiry.

After earning the Best Senior Thesis Award for my undergraduate research, I pursued a MSc in igneous petrology, studying thermal oscillation effects on magmatic crystal growth. I also worked at UC Santa Cruz in an electron microscopy lab, leading research on isotopic systems in meteorites to investigate the formation of the Solar System.

At CU Boulder, my research focuses on the igneous rock record of the Intermountain West. My thesis aims to connect continental magmatism to unique subduction zone processes, analyzing amphibole minerals in shallow intrusions on the Colorado Plateau to better understand their petrogenesis.

Beyond research, I teach the Earth Materials lab, serve on the colloquium committee, and mentor non-traditional students. In my free time, I enjoy gardening, biking, and exploring the mountains through hiking and skiing.

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Scholarship Recipients & Honoree — *continued from page 9*

Dr. Kevin Mahan (Honoree)
We met Dr Mahan in last month's newsletter. This month we have his photo.

His background is in Geological Engineering. He is currently Professor and Associate Chair of the Graduate Program for the Department of Geological Sciences at University of Colorado Boulder.

Dr. Mahan is a structural geologist and metamorphic petrologist. His research primarily focuses on deep continental crust, specifically the physical and chemical processes associated with rock deformation. He and his students pursue questions such as: How do variations in mechanical properties, chemical composition or mineral reactions due to changing pressure, temperature, and water availability impact where and on what scale deformation occurs? How do these processes influence the physical properties of the crust? How do they influence our ability to remotely image the structure of tectonic plates through geophysical methods? What do the intrinsic characteristics and evolutionary tendencies of deep crustal rocks imply about the growth, modification and/or stabilization of continents? At present, he advises 3 PhD students, a postdoctoral scholar, and several undergraduate students. They are working on projects related to magmatism and lower crustal metasomatism of the Colorado Plateau, crustal rheology and records of past earthquake activity in fault zones of the Canadian Shield, fault zone evolution in the Colorado Front Range, and early Cenozoic arc magmatism in the Caribbean.

Update on All American Club, Website, and Editor Contests

Linda Jaeger, RMFMS BEAC

RMFMS Bulletin Editors Contest

All entries for the 2025 contest have been judged by the RMFMS judges. Our top three winners in each category are now in the hands of the AFMS judges. AFMS awards will be presented at the Breakfast with Editors & Webmasters, held in Hickory, NC as part of the EFMLS/AFMS Show & Convention (March 29). RMFMS awards will be presented at the RMFMS Breakfast with the Editors & Webmasters in Grand Junction, CO.

Changes made for the 2025 AFMS contest:

-New Juniors Collaboration Category

-Features categories at AFMS have been divided into adult categories and junior categories

All American Club Award

AFMS awards for All American Club yearbooks will be given during the EFMLS/AFMS Show & Convention at the awards banquet (March 29). Remember to keep working on your yearbooks for 2025 — it's a great way to compile club history and fond memories!

—Roberta Wagle, All American Club Chair
waglemom@gmail.com

RMFMS Website Contest—Reminder!

Awards for 2024 will be presented at the 2025 RMFMS Convention in Grand Junction, CO.

The Life of a Fossil Technical Committee Chair

Mike Nelson, RMFMS Fossil Tech Chair

The recent edition of the RMFMS Newsletter, under the guidance of editor Linda Jaeger, carried articles from President Jim Gray and Secretary Liz Thomas about the need for volunteers to staff several Federation committees. This was the second or third (?) plea from President Jim requesting help. I had been in similar positions in the past and therefore told him to "count me in" for additional help (I had previously volunteered for other committees)—the Federation really needs volunteers to help with the management. So, here I am as the new Chair of the Fossil Technical Committee trying to better understand the duties. For that information check out the February 2023 Newsletter and/or the Federation Operating Procedures Revised 2019 available on our Web site, www.rmfms.org. I am also trying to work myself out of a job hoping a new volunteer will step up as I prefer to spend my limited energy writing stories for the Newsletter and throwing snow here in Wisconsin — yes, I have moved out of the Federation boundaries!

One of the chores of the Committee is listed as: *Furnish to the Newsletter Editor for publication in the RMFMS Newsletter pertinent information on paleontology and fossils of benefit and interest to the collector and exhibitor.* Most rockhounds are interested in collecting fossils on Federal lands managed by the Bureau of Land Management (BLM), part of the Department of Interior, and the U.S. Forest Service (USFS) a member of the Department of Agriculture.

In past years I often offered comments on the proposed rules and regulations concerning such and had hoped that the two agencies would come up with common, and understandable, regulations. That "sort of happened," although there are differences in the rules, and some appear to an ole plugger like me as not very understandable. But both agencies strongly point out that collecting vertebrate fossils and "uncommon" invertebrate fossils and fossil plants on Federal lands is prohibited without a collecting permit — don't even think about it and don't disturb the area if you happen to find a locality—contact the land managers for advice.

As best that I can understand, the USFS has a very prescriptive set of regulations concerning the collection of common invertebrate fossils. **Invertebrate fossils** are the fossilized remains of animals lacking a backbone. A few examples include: ammonites, trilobites, snails, clams, and insects. Invertebrate and plant fossils (including invertebrate and plant trace fossils) may be collected without a permit, from the surface without digging and for personal, hobby, educational, and noncommercial use only. A permit is required for research/scientific purposes… **Trading, bartering, or selling any fossil material (plants, invertebrates, vertebrates, or any trace fossils) removed from National Forest System lands is prohibited.** In the meantime, for your reading pleasure see: Federal Register/Vol. 80, No.74/ Friday, April 17, 2015/Rules and Regulations and make certain to read the fine print, as there are some surprising "subrules."

The BLM rules "resemble" those of the USFS and were published on 8/2/2022 when the BLM stated: The U.S. Department of the Interior (DOI or Department) is promulgating this regulation under the Paleontological Resources Preservation Act. This regulation provides for the management, preservation, and protection of paleontological resources on lands administered by the Bureau of Land Management../.,Published Document: 2022-16405 (87 FR 47296).

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Fossil Technical — *continued from page 11*

Reading the Federal Resister is not a very enjoyable evening activity. However, in my humble opinion the BLM regs are less prescriptive than those of the USFS: *You may collect reasonable quantities of common invertebrate fossils such as mollusks and trilobites,* ***but this must be for personal use, and the fossils may not be bartered or sold.***

My advice to the fossil hunters is to visit with the local land managers and ask for their advice and perhaps ask about a location for collecting. I have found these employees to be quite helpful and nice, but perhaps a little cautious after receiving episodes of screaming and yelling from miscreants out in the field. Be respectful to these hard-working ladies and gentlemen as they have a wealth of useful information.

Please note that I have only scratched the surface on these collecting rules, and they may have different interpretations in different localities. For example, the amount (pounds) of fossils available as "casual collecting". So, TALK TO THE LAND MANAGERS.

And finally, the Committee should *encourage club committees and individual club members to submit questions.* So, if you have questions about fossils, drop me an email. I MAY be able to offer some help or point out other sources of information. But, the last time I taught invertebrate paleo was in fall 1990 (35 years ago), and I periodically clean out stored information in my brain. But together maybe we can make this work as I am always open to suggestions and comments.

As for the educational part of this article, I refer you to *promulgating this regulation* from the BLM. Who uses promulgating in everyday discussions? I guess the Federal bureaucracy sense of promulgate, in the context of administrative law, is a term used to describe **the process of enacting an administrative final rule as an administrative regulation**. A regulation is **promulgated** when a final rule is published in the Federal Register at the conclusion of the rule-making process.

Now, your assignment is to use the verb or noun in a sentence within the next week. Increase your vocabulary. I did!

Mike Nelson, <csrockguy at yahoo.com>

Where in the RMFMS is Rocky?

- Nebraska?
- Nevada?
- South Dakota?

Clipart at top by Phillip Martin.
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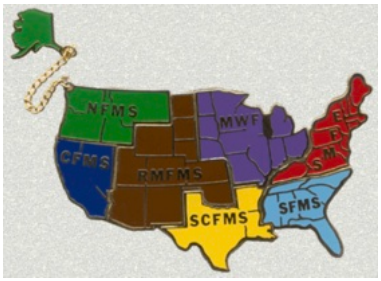
Answers on page 23.



Which Way is Up?

Charlotte Small & Dennis Gertenbach, Flatirons Mineral Club

Have paleontologists been looking at the *Rafinesquina* brachiopod upside down this whole time?

Rafinesquina is a genus of brachiopod that primarily flourished in the Darwillian subdivision of the Ordovician through the Ludlow epoch of the early Silurian, approximately 469 to 423 million years ago. Adapting to live worldwide, fossils of this genus are commonly found outcropping in regions of the Americas, Canada, West Europe, China, and Russia. They typically measure around 40 millimeters (1.5 inches) and have produced 22 described species.

This brachiopod is characterized by an asymmetrical semi-circular design with one valve (shell) being concave shape, and the other being convex (see **Figure 1**). A small notch, or beak is located on the straight part of the structure, which is a necessary feature of all brachiopods, despite not being very noticeable or prominent. This serves as a hinge mechanism, allowing the animal to close or open its shells. Another noticeable feature are the thin radiating lines beginning at the beak that follow the downward curvature of the brachiopod. These often alternate in size and distance from one another. Some of this patterning can be attributed to scarring from the mechanical stress, which is an important clue in deducing the angle limitations of the hinge mechanism

Figure 1. *Rafinesquina nasuta* from the Ordovician McMillan Formation, Georgetown, Ohio. Left: larger convex valve, middle: flatter concave valve, right: end view showing the thin convex-concave shape of this brachiopod. Credit: Atlas of Ordovician Life, licensed under Attribution-NonCommercial-ShareAlike 3.0

Almost all brachiopods are *suspension feeders*, a term coined for animals who capture and digest floating particles. Relying completely on the water current, they use their lophophore to feed on small bits of phytoplankton, bacteria, and animal pieces. The lophophore and other structures of this brachiopod are shown in **Figure 2.**

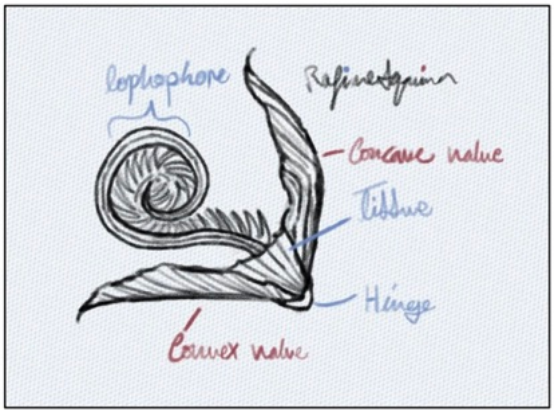


Figure 2. *Rafinesquina* anatomy. Credit: Charlotte Small

The Mystery: Which valve was up?

Many ancient (and modern) brachiopods attached to rocks, shells, and other hard surfaces on the bottom of the ocean by a fleshy stalk called a pedicle. This not only kept the brachiopod

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Which Way is Up? — *continued from page 13*

anchored to the ocean floor, but also kept the animal above sediments which would foul its lophophore as it opened its shells to feed.

Rafinesquina and other strophomenid brachiopods are different.They did not have a pedicle but, instead, sat directly on the ocean floor. If the bottom was somewhat mucky, the brachiopod would need some strategy to prevent sediments from entering the opened brachiopod and fowling its lophophore as it fed. This has puzzled paleontologists since *Rafinesquina* was first described by Timothy Abbott Conrad of the New York Geological Survey in 1838.Because the convex valve of *Rafinesquina* had a pronounced lip along the open end, paleontologists reasoned that the convex valve sat on the ocean floor with the concave valve facing up. The pronounced lip on the convex valve would have prevented sediments from washing into the opened brachiopod, as shown in the right illustration in **Figure 3.**

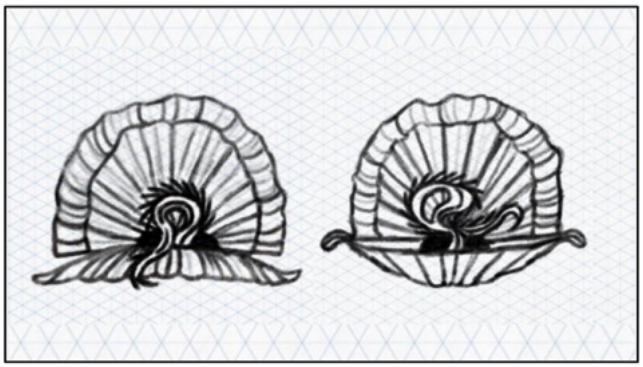

Figure 3. Illustration of *Rafinesquina* sitting on the ocean floor. Left: convex valve up, right: concave valve up. Credit: Charlotte Small

However, there are problems with this orientation. Many *Rafinesquina* fossils have epibionts (animals such as some species of bryozoan and coral that attach to shells) encrusting their shells. But most of these *Rafinesquina f*ossils have epibionts attached to the convex valve, like the one shown in **Figure 4**. This implies that the convex valve must have faced upwards to allow the epibionts access to seawater to feed. Additionally, *Rafinesquina*, with the concave valve facing up, would have been prone to flipping over in ocean currents unless it was sunk into the mud, which would cause the open brachiopod to fill with sediments. These concerns argue that the convex valve faced up, as illustrated on the left of **Figure 3.**

Figure 4. The bryozoan epibiont *Homotrypella* sp. encrusting a *Rafinesquina ponderosa*convex valve from the Ordovician.

So, we have a nearly 200-year-old mystery. Which valve faced up?

A paper published this year by several authors, including Lindsay Dougan and James Hagadorn of the Denver Museum of Nature and Science, addressed this mystery (Dattilo et al., 2024). Using a number of sophisticated analyses, they determined that instead of opening only 5 to 10^{o} like most modern brachiopods, *Rafinesquina* would have opened 45^{o} or more (see **Figure 5**). With this wide opening, the brachiopod could rapidly shut, quickly clearing out any sediment that entered inside the brachiopod. Observations of depressions in the sediment around some *Rafinesquina* fossils (termed "moats") support seawater being rapidly expelled from the brachiopod.

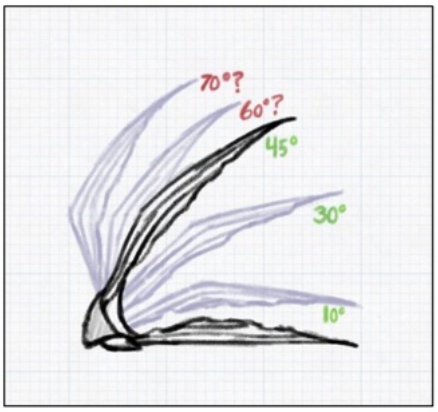

Figure 5. Illustration of *Rafinesquina* gape angles. Credit: Charlotte Small.

continued on next page

Which Way is Up? — *continued from page 14*

Conclusion: Which valve was up?

So, is this mystery solved at last? The combined evidence of the valve angle study, as well as the appearance of the mud "moats", strongly support a convex side-up orientation. Epibionts on the convex valve also support this theory. Assuming all this stands, the original concave-up theory is not substantiated, as the problem of possible mud contamination has likely been resolved. Based on the evidence, we are inclined to believe that a convex-up orientation is the most probable.

As you ponder the *Rafinesquina* fossil in Figure 6, what do you think?

Figure 6. Which valve faced up when *Rafinesquina was living on the ocean floor?*

References and Further Reading

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- Dattilo, Benjamin F., Freeman, Rebecca L., Hartshorn, Kyle, Peterman, David, Morse, Aaron, Meyer, David L., Dougan, Lindsay G., And Hagadorn, James W. (2024), "Paradox lost: wide gape in the Ordovician brachiopod *Rafinesquina* explains how unattached filter-feeding strophomenoids thrived on muddy substrates," *Palaeontology*, v. 67, part 2, p. 1-23. https://onlinelibrary.wiley.com/doi/epdf/10.1111/pala.12697
- Ecology Center, "Suspension Feeders." Suspension Feeders - Population Dynamics - Ecology Center
- Mindat.org, "*Rafinesquina*." Rafinesquina
- Ordovician Atlas, "*Rafinesquina*." Rafinesquina – Atlas of Ordovician Life
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- University of Kentucky website, "Brachiopods." Brachiopods, Fossils, Kentucky Geological Survey, University of Kentucky
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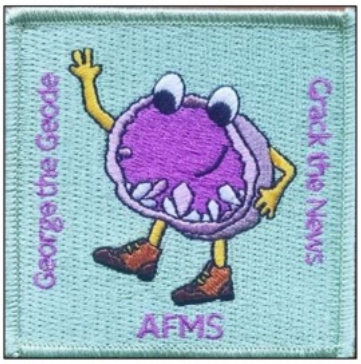
- Wikipedia, "Darriwilian." Darriwilian - Wikipedia
- Wikipedia, "Ludlow Epoch." Ludlow Epoch - Wikipedia
- Wikipedia, "*Rafinesquina*." https://en.wikipedia.org/wiki/Rafinesquina

From: *Flatirons Facets, January-February 2025*

Crack the News: The AFMS Newsletter for Kids & Teens

Dennis Gertenbach, CTN Editor



GEORGE THE GEODE

The latest edition of *Crack the News*, the AFMS newsletter written by kids and teens for kids and teens, is now available at https://www.juniors.amfed.org/juniors-newsletter. In this edition, juniors from around the country wrote about wire wrapping, Petoskey stones, field trips to collect zeolites, thunder eggs, and trilobites, uraninite, obsidian, *Sacabambaspis* (a jawless fish from the Ordovician seas), and Cambrian trace fossils. It's wonderful to see the variety of rockhounding interests of the juniors in our clubs. Every junior who contributes to *Crack the News* receives a patch featuring George the Geode, the mascot of the newsletter.

Be sure to send every junior in your club a copy to read.

And encourage the kids and teens in your club to send an article, poem, artwork, or photos for the next edition. Details about where to send your contribution are at https://www.juniors.amfed.org/juniors-newsletter; just scroll down to the section "Calling all junior journalists, writers, poets, photographers, and artists..." Not only will your juniors receive a George the Geode patch, but they can share their knowledge and excitement about rocks, minerals, and fossils with kids and teens across the country.

RMFMS Editor's notes:

*1-**Juniors!** Do you like to write? There is a **submission form on the next page** — fill it out with your parent and send in your articles, drawings, photos to be published in Crack the News, the AFMS newsletter written by kids and teens for kids and teens! (And guess what? Adults like to read it, too!)*

*2-Next month (April) look for information on the newest badge you can earn: **Badge #21 Sand and Sediment**. It is being unveiled at the EFMLS/AFMS Convention in Hickory, NC at the Junior's Cracker Barrel!*

Where in the RMFMS is Rocky?

- Nebraska?
- Nevada?
- South Dakota?

Clipart at top by Phillip Martin. CC BY NC ND 3.0.

Answers on page 23.

Juniors Newsletter Submission Form
American Federation of Mineralogical Societies

Thank you for submitting an article, pictures, poetry, artwork, or other contribution for publication in the juniors newsletter. Your article or other contribution can be on any rockhounding subject that interests you. Juniors need to be 17 years or younger. The top part of this form is for the junior to fill out and the bottom part needs to be completed and signed by a parent.

FOR THE JUNIOR TO COMPLETE

Name: _____ Age: _____

Title of the article or other contribution: _____

_____

Rock club name: _____

School (optional – your school will receive a copy of your published work)

_____

Signature of junior: _____

FOR THE PARENT TO COMPLETE

I grant permission for the American Federation of Mineralogical Societies to publish this article or other contribution, along with your child's name, age, and rock club, both electronically and in print. Your child retains the right to publish elsewhere, anytime, and anyplace in the future.

Please note that any photo(s) with identifiable children's faces will need each child's parent's permission to publish.

Parent's name (printed): _____

Parent's signature: _____

Parent's email address: _____

Street address: _____

City or town: _____ State: _____ Zip: _____

Please scan or photograph this completed form and send it to youth@amfed.org along with your article or other contribution for the juniors newsletter.

Silver Reef: A Strike, a Boom, the Bust

Mike Nelson, csrockguy@yahoo.com, Colorado Springs Mineralogical Society

[Alternative Title: We'll all be rich with the biggest silver strike this side of Hudson Bay. Rudolph the Red-nosed reindeer (credit 1964 Videocraft International Ltd)]

I was spending the cold Wisconsin day, one only fit for ice fishers, in my cozy and warm office daydreaming while contemplating about the beautiful colors one can find in Christmas flowers. In between a snooze and a contemplation or two, I was examining some of my micro perky boxes and ran across an old box labeled BEAVERITE, WARREN LODE #5, MOHAVE CO AZ. Names like beaverite always pique my interest so I decided to explore the small sample and see what beaverite was all about! Little did I know that such exploration would lead down the proverbial rabbit hole with each side tunnel offering different confusing possibilities. For example, according to MinDat, beaverite is unknown from Warren Lode #5. More on that conundrum later. What I did find, however, was a fantastic paper by Biek and Rohrer (2006) describing the geology and mining history of a most interesting area in southwestern Utah, Silver Reef. For you see, Silver Reef in Beaver County, Utah, is the Type Locality for Beaverite, an uncommon lead iron copper sulfate: Pb(Fe3+2Cu)(SO4)2(OH)6. So that serendipitous tidbit sent me sliding down the rabbit hole and finding, as Alice said—*it's rather curious you know, this sort of life*.

Biek and Rohrer (2006) described the Silver Reef Mining Area as "a geologic anomaly, a historical curiosity, and an ecological novelty. It is one of the few places in the world where economic disseminated silver chloride [chlorargyrite: AgCl] was produced from sandstone." I had the opportunity to visit Silver Reef during my late 1960s grad school days at the University of Utah, later in the 1980s while chasing fossils in southern Utah, and finally in spring 2023 during a two month, "get out of cold weather" stint, in St. George, Utah. I tried very hard to locate a bit of the silver with each visit but no luck. Nada. However, there are many old mining structures, shafts, head frames, dump piles, equipment, a preserved original building, and a

***Above**: Stone walls remaining from a building at Silver Reef. Photo M. Nelson.*

1-Some mine openings at Silver Reef just head straight down. Photo M. Nelson.

2-Head Frame on Big Hill Reef. Photo from Reid & Rohrer, 2006.

3-Typical adit heading into the reef sandstone. Rebar gate is a recent addition to keep people out while allowing bats freedom in and out. Photo from Reid & Rohrer, 2006.

continued on page 19

Silver Reef — *continued from page 18*

wonderful museum to keep one busy and enticed.

4-The Pine Valley Mountains form a beautiful backdrop at Silver Reef. These are some of the highest peaks in southern Utah (Signal Peak is 10,369 feet) and were formed from the Pine Valley Laccolith, perhaps the largest such igneous feature in the U.S. The quartz monzonite composing the laccolith has been dated as around 22 Ma. Photo M. Nelson.

5-Springdale Sandstone, AKA silver sandstone, exposed at Silver Reef. Public Domain Photo courtesy of arbyreed on Flicker.

The "silver history" of Silver Reef begin when a "vein of silver" was discovered in sandstone about 1866 by one John Kemple. However, poor ole John received a hearty round of laughs and guffaws since "everyone" knew silver veins occurred in "hard rocks", usually igneous, and certainly silver was absent in most sedimentary rocks like sandstone. Ten years later a couple of Salt Lake City "bankers", the Walker Brothers, decided to take a chance on the long-reported silver vein and sent a professional "claim guy" to stake several mining claims in the sandstone. Yep, you guessed it-----there really was disseminated **silver chloride** (AKA horn silver) in the sandstone and within three years over 2,000 miners were living and working on the original claims, as well as those migrating outward to dozens (hundreds) of new claims. It turns out that not only was silver present at Silver Reef but also ores of lead, copper, and uranium. Google AI (accessed January 2025) stated, "the ore in the Silver Reef Mining District averaged 20 to 60 ounces of silver per ton." According to MinDat (accessed January 2025) the Silver Reef District produced 7.52 million ounces of silver, 10.7 million pounds of copper, and an unknown amount of gold (probably not much). Most of this production happened during a five-year period of 1878-1882. By 1888 all the big mines had pulled up stake as the near surface ore was wiped out, the price of silver on the exchanges was heading toward the basement, and water was filling the lower mine tunnels. By 1903 the several, small, silver towns of Silver Reef were deserted. Sort of a typical western mining town history—a strike, the boom, and a bust!

But what about the story of silver in a sandstone? Biek and Rohrer (2006) described the Silver Reef area as one of the few places in the world where "economic disseminated silver chloride was produced from sandstone." A validation for ole John Kemple.

But where did the silver come from? What was the source? James and Newman (1986) suggested that "ground water leached metals from regional silver-rich rocks (presumably mostly from volcanic ash beds in the [Triassic] Chinle Formation or from igneous systems and redeposited them in the

continued on page 20

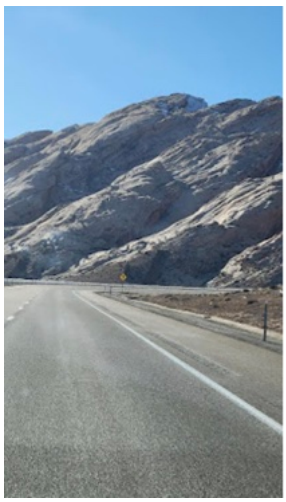
Silver Reef — *continued from page 19*

[Jurassic] Springdale Sandstone, the first overlying permeable bed with organic material. The silver was probably transported by a sulfide-poor, chlorine-rich, brine and passed upward into anticlinal traps where it encountered reducing conditions or low-salinity groundwater that caused silver to precipitate."

Biek and Rohrer, in their masterful 2006 article, noted that "although most workers familiar with the area agree that the Silver Reef deposits formed from metal-bearing low-temperature brines along permeable zones in the Springdale Sandstone, there is no consensus on the source of the metals, the chemistry and migration routes of ore fluids, and mechanisms to explain the variable distribution of silver, copper, and uranium." According to my 57-year-old class notes, that statement was about exactly what we learned in Lee Stokes' stratigraphy classes at the University of Utah! Perhaps this is one of life's persistent questions and I need to make a call to the Acme Building (Thanks Garrison Keilor)? You know: *on the 12th Floor of the Acme Building, one man is still trying to find the answers to life's persistent questions: Guy Noir, Private Eye."*

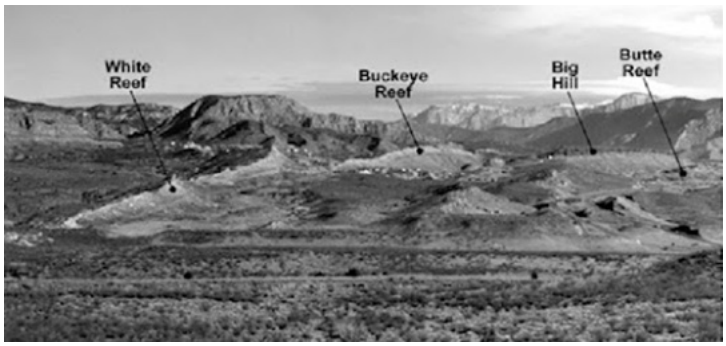
Nostalgia is when you want things to stay the same! - Jeanna Moreau

In the Intermountain West one often sees the term "reef" with the most famous being the San Rafael Reef. In this usage reef does not refer to a nautical feature but to a resistant rock layer, usually indurated sandstone, that projects above its neighboring layers (often softer and easily erodible shale). At Silver Reef there are several large exposures of the resistant Springdale Sandstone (the silver bearing unit) that are exposed along, and on either side, of the nose of the Virgin Anticline, a small 30 mile long "buckle" in the rocks. The anticline is a compressional feature associated with the Lower Cretaceous Sevier Orogeny. These exposures are repeated in the rock



Interstate 70 bisects the San Rafael Swell and cuts through the tilted Jurassic Navajo Sandstone that is the Reef on the east side of the uplift. Photo M. Nelson

stratigraphy due to numerous thrust faults moving the rocks around. The early silver miners thought that several different sandstone layers contained silver; however, the newly arriving geologists were able to map the faults and identify just a single silver-bearing sandstone. The resistant Springdale exposures at Silver Reef are known as the White, Buckeye, East, Big Hill, and Butte Reefs and are the major areas and mines of silver.



Notice how the reefs, outcrops of the Springdale Sandstone, are not connected but offset from each other giving the illusion that several different silver-bearing sandstone units were present. Photo from Biek and Rohrer (2006). The moral of the story—call a geologist if you locate silver!

Note the massive dump pile from a large mine in the reef. Photo M. Nelson.

continued on page 21

Silver Reef — *continued from page 20*

Like the Phoenix, Silver Reef has experienced a rebirth, in fact, several periods of renaissance with the most successful mining activity being in 1950-1951 when 2500 pounds of uranium oxide, mostly carnotite, was hauled out for processing during the Colorado Plateau "uranium boom." Visit Silver Reef today and you will notice a much larger rebirth as the old mines are now part of a large upscale home subdivision of Leeds and greater St George.

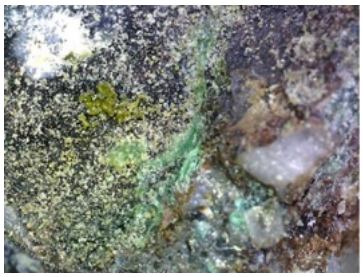
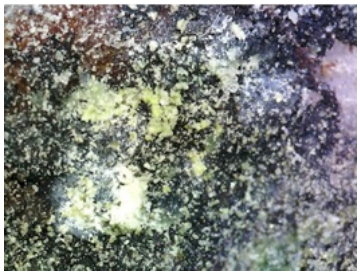
But wait, what about beaverite, the mineral that started this discussion? The Silver Reef beaverite, in current mineral classification, is known as beaverite-(Cu) due to copper as a major cation:

$Pb(Fe^{3+}_2\mathbf{Cu})(SO_4)_2(OH)_6$ and is the copper analogue of beaverite-(Zn) $Pb(Fe^{3+}_2\mathbf{Zn})(SO_4)_2(OH)_6$ described from the Mikawa Mine in Japan. It took me a long time to round up a copy of the original naming and description of the Silver Reef Type Specimen by Butler and Schaller in the 1911 *American Journal of Science*: check the QR code at right, created from https://rruff.info/Beaverite.

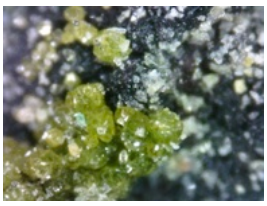
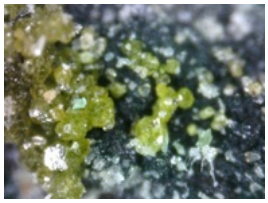
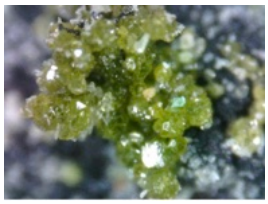
Butler and Schaller described the mineral: "Beaverite, a New Mineral. From the Horn Silver mine near the town of Frisco was collected a mineral that on examination in the laboratories of the United States Geological Survey proved to be a new species. For this mineral, which is a hydrous sulphate of copper, lead and ferric iron, the name Beaverite is proposed, after the name of the county from which it was first described.

Occurrence.-The mineralization in the Horn Silver mine occurs along a fault plane that has thrown Tertiary lavas down against Cambrian-Ordovician limestone, the ore deposits being mainly a replacement of the volcanic rocks".

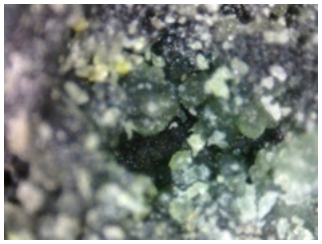
In 1992, Breidenstein and others redefined the chemistry and crystal structure of beaverite and suggested that beaverite-(Cu) is the most common of the related species with the zinc variety rare at only five different mines in Asia, Europe, and South America. In contrast, the Cu variety is uncommon but has a worldwide distribution; both are members of the Alunite Group > Alunite Supergroup.

A couple of general views of the beaverite-(Cu) specimen. FOV ~9 mm. Photo M. Nelson. Note white, white cream mass, lemon yellow mass. The dark (Black) matrix is goethite. Golden yellow mass, green exposures with some botryoidal, large quartz and salt and pepper scattered everywhere.

A golden yellow mass of submillimeter crystals of beaverite-(Cu). In fact, the mass in the middle photo is ~1 mm in width FOV. Essentially this is the limit of my photography skills.




Above L: Note the sub millimeter green balls of some copper mineral--malachite?, brochantite?, plumbojarosite (lead iron sulfate), osarizawaite?
Above R: Sub millimeter prismatic crystals of malachite?

MinDat noted that Beaverite-(Cu) has a yellow color that seems to range from a very pale yellow to a bright lemon yellow. However, as one peruses the photographs on MinDat and Google Photos, it

continued on page 22

Silver Reef — *continued from page 21*

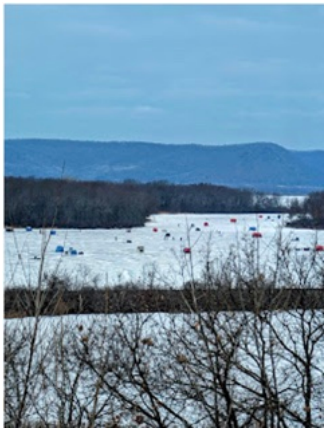
becomes apparent, at least to an ole plugger like me, that the mineral may also be noted in various shades of green and brown to golden brown to a golden yellow. Beaverite-(Cu) ranges from earthy masses without visible crystals (at least to me) to microcrystals often appearing as somewhat vitreous encrustations. Whatever the case, the crystals are really tiny or almost non-visible, even with a decent, rockhound, binocular scope.

And what about the Warren Lode # 5? Not much I am afraid. Evidently it was a small claim for someone wishing for a polymetallic mine. Cannot locate any production figures. Mine not identified in *Mineralogy of Arizona*. No beaverite noted in MinDat; however, osarizawaite was identified (correctly?).

To complicate identification, at least to ole plugger rockhounds, is a warning from MinDat: *Beaverite-(Cu) Forms a solid solution series with its Al analogue osarizawaite .It can be distinguished from plumbojarosite only by accurate determination of the Fe:Cu ratio. And, other Fe members of the alunite family are also visually very similar [to beaverite].* That, my fellow rockhounds is enough to scare most of us—unless we have access to nice electronic gizmos such as microprobes or XRDs!

OK boys, let me tell you about the problem of identifying beaverite from the silver mines. Ole Mike just led us down a rabbit hole with that dang mineral! Do we boot him out of the club or send him to catch the rabbit? ? Apologies to Cassius Marcellus Coolidge and his now Public Domain photo.

Writing this paper was somewhat above my pay grade. One really needs an XRD or Microprobe to confirm visual identification of such small crystals. So don't quote any of my identifications as 100% accurate. As my hero Teddy Roosevelt said, *Do what you can, with what you have, where you are.*



January 2025. Near my home in Wisconsin hundreds of fishers are now crowding the back bays of the Mississippi River waiting for a sunnie or a fat perch, but most importantly preparing for the Super Bowl. Unfortunately, the local Packers and Vikings, AKA the Pack and the Vikes, suffered early elimination. On the big day most fishers will retreat to their tents or huts stocked with propane heaters, cold beer, chairs, color TVs, and lots of food. Photo M. Nelson.

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Bayless, P., U. Kolitsch, E.H. Nickel, and A. Pring, 2010, Alunite Supergroup: recommended nomenclature: Mineralogical Magazine, v. 74, no, 5.

Biek, Robert and C. Rohrer, 2006, Geology, mining history, and reclamation of the Silver Reef mining district, Washington County, Utah *in* R. Bon, R. Gloyn and G. Park (editors), Mining Districts of Utah: Utah Geological Association Publication 32.

James, L.P., and E.W. Newman,1986, Subsurface character of mineralization at Silver Reef, Utah, and a possible model for ore genesis, *in* Griffen, D.T., and W.R. Phillips, (editors), Thrusting and extensional structures and mineralization in the Beaver Dam Mountains, southwestern Utah: Utah Geological Association Publication 15.

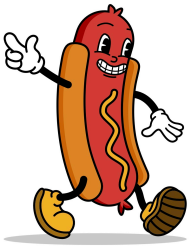
Where in the RMFMS is Rocky? — Answers *Linda Jaeger, Editor*

We have clubs from13 states in the RMFMS. Have you been there? Do you recognize the photos from the areas shown this month? **I would love for you to send an awesome photo from your state with a caption and location to print!** RMFMS has amazing country and activities to fill your senses.

Here are the answers for the photos on pages 8, 13, and 16:
-page 5: Ashfall Fossil Beds, Royal, **Nebraska**
-page 12: Carhenge, Alliance, **Nebraska**
-page 16: Toadstool Geologic Park, Harrison, **Nebraska**

All photos pages 5, 12, 16 from Nebraska Tourism.

Look for more beautiful locations next month from our member states: Arizona, Arkansas, Nebraska, New Mexico, Nevada, North Dakota, South Dakota, Texas, Utah, Wyoming.



Hot Links – Editor's Picks

Linda Jaeger, Editor

Below are some hot links you might find interesting. Just click on the link — it will open the web page in your browser.

- **Stunning Fossil Reveals Fireflies Glowed When Dinosaurs Ruled Earth**

https://www.msn.com/en-us/travel/tripideas/stunning-fossil-reveals-fireflies-glowed-when-dinosaurs-ruled-earth/ar-AA1sAsaL?ocid=BingNewsSerp

- **Galaxies get tangled up in 'the queen's hair' in new Hubble Telescope image**

https://www.space.com/the-universe/galaxies/galaxies-get-tangled-up-in-the-queens-hair-in-new-hubble-telescope-image

- **Scientists film footage of extremely ancient deep sea creatures**

https://mashable.com/article/deep-sea-rare-footage-nautilus

- **'Dinosaur highway' tracks dating back 166 million years are discovered in England**

https://apnews.com/article/uk-dinosaur-tracks-discovery-9fd0499419db0950099e6413a1936488

Upcoming Shows and Events

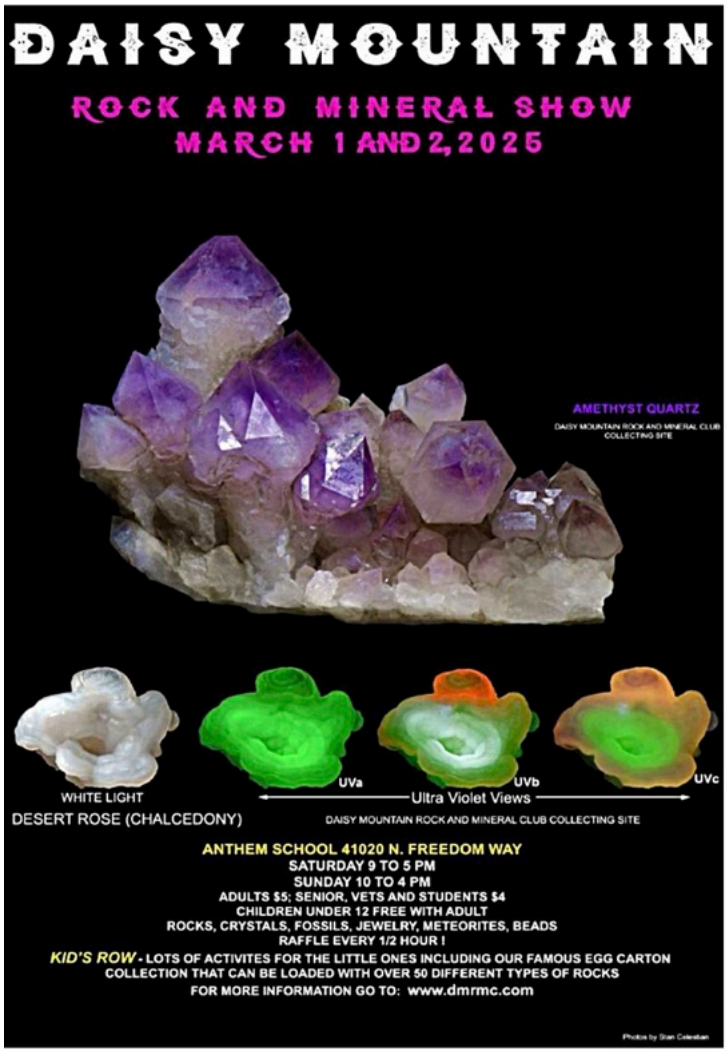
2/28-3/2, 2025	Denver Gem & Mineral Guild	Jefferson County Fairgrounds	https://denvergem.org/show/
3/1-2/2025	Sierra County Rock & Gem Society	Sierra County Fair Barn, 1321 Hyde Ave., Truth or Consequences, NM	Megan Holden, scragssierracounty@gmail.com; scrags.org
3/1-2/2025	Daisy Mountain Rock & Mineral Club	Anthem School, 41020 N Freedom Way, Anthem, AZ	Tiffany Poetsch, dmrmclub@gmail.com; www.dmrmc.com
3/14-15/2025	Albuquerque G&M Club	Expo NM State Fairgrounds, 300 San Pedro NE, Albuquerque, NM	Roy McKinney, 505.715.1038; show-chair@agmc.info; www.agmc.info
3/28-29/2025	Ada Gem, Mineral & Fossil Show	Pontotoc County Agri-plex, Bldg #1, 1710 N Broadway, Ada, OK 74820	Bobby Freeman, 580.399.7214
3/28-30/2025	Fort Collins Rockhounds	The Ranch, Larimer County Fairgrounds, McKee Building, 5280 Arena Circle, Loveland, CO	Nancy Howerter, 970.206.9569; fcrockhounds@gmail.com; www.fortcollinsrockhounds.org
4/12-13/2025	Northwest Arkansas G&M society	Bentonville Armory, 6800 SW Minuteman Ave, Bentonville, AR	DeLane Cox, 479.254.0894; delanec3@earthlink.net
4/25-27/2025	Wasatch Gem Society	Bastian Agricultural Center, 2100 West 11400 South, South Jordan, UT	Roberta Chase, roberta.chase@outlook.com; wasatchgemsociety.com
4/25-27/2025	Wichita Gem & Mineral Society	Cessna Activity Center, 2744 George Washington Blvd, Wichita, KS	Gene Maggard, 316.742.3746; gandpmaggard@gmail.com; wichitagemandmineralsociety.org

If your club has show information that you would like to have listed in the *Rocky Mountain Federation News*, please email the information to the editor (including show flyers) — <LJGRALG at aol.com>. As with many of the other email addresses in the newsletter, you will need to remove the chevrons, < >, and replace the spaces and the "at" with the correct symbol, @ .

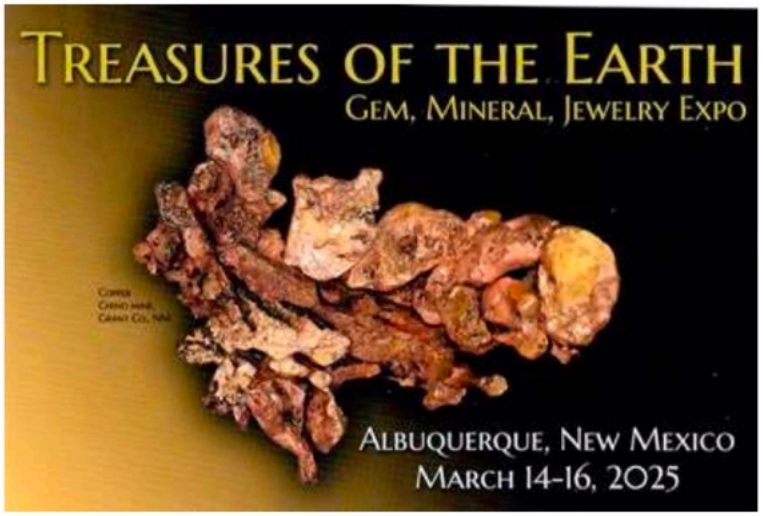
Below are upcoming regional federation shows:

	California Federation	Eastern Federation	Midwest Federation	Northwest Federation	Rocky Mountain Federation	South Central Federation	Southeast Federation
2025	Lancaster, CA May 10-11	**AFMS/EFMLS Hickory, NC March 28-30**	Lincoln, NE April 5-6	Walla Walla, WA Sept. 5-7	Grand Junction, CO Sept. 19-21		
2026			**AFMS/MWF St. Charles, IL May 23-24**		Tulsa, OK July 17-19		


Highlights and Note
DENVER GEM AND MINERAL GUILD
ANNUAL SHOW 2025
February 28 – March 2, 2025
Jefferson County Fairgrounds
Friday 10 -6; Saturday 10 -6; Sunday 10 -5
Gems
Books
Displays
Minerals
Sculptures
Demonstrations
Kids' activities
Crystals
Jewelry
Geodes
Fossils
Over 25 Sellers
Amazonite & Aquamarine
Theme Minerals
Best of species contest
https://denvergem.org/show/
Photo by
DGMG member
Ron Wolf
CSM Specimen,
Mt. Antero, CO


DAISY MOUNTAIN
ROCK AND MINERAL SHOW
MARCH 1 AND 2, 2025
AMETHYST QUARTZ
DAISY MOUNTAIN ROCK AND MINERAL CLUB COLLECTING SITE
WHITE LIGHT
UVa
UVb
UVc
Ultra Violet Views
DESERT ROSE (CHALCEDONY)
DAISY MOUNTAIN ROCK AND MINERAL CLUB COLLECTING SITE
ANTHEM SCHOOL 41020 N. FREEDOM WAY
SATURDAY 9 TO 5 PM
SUNDAY 10 TO 4 PM
ADULTS $5; SENIOR, VETS AND STUDENTS $4
CHILDREN UNDER 12 FREE WITH ADULT
ROCKS, CRYSTALS, FOSSILS, JEWELRY, METEORITES, BEADS
RAFFLE EVERY 1/2 HOUR !
KID'S ROW - LOTS OF ACTIVITES FOR THE LITTLE ONES INCLUDING OUR FAMOUS EGG CARTON
COLLECTION THAT CAN BE LOADED WITH OVER 50 DIFFERENT TYPES OF ROCKS
FOR MORE INFORMATION GO TO: www.dmrmc.com


TRUTH OR CONSEQUENCES, NM
ROCK & GEM SHOW
MARCH 1-2, 2025 ◊ SATURDAY & SUNDAY ◊ 9-5
EARLIER DATES - SAME GREAT SHOW!
SCRAGS.ORG


TREASURES OF THE EARTH
GEM, MINERAL, JEWELRY EXPO
ALBUQUERQUE, NEW MEXICO
MARCH 14-16, 2025

Reminder:
Advertise your Show in as many Free locations as possible!

- Local newspapers
- Current events sections!
- Local TV stations
- Community Calendars
- Other local shows

Advertise in the *Rock & Gem Magazine!*
Send the information in early so it's published in the magazine as well as online:
www.rockngem.com/showdate-submissions/

Above from *CFMS Newsletter,* April 2024

2024-2025 Executive Committee — *composed of the Officers & the State Directors*

Officers:

President	Jim Gray	<jimgray at wyoming.com>
Vice President	Steve Kaminski	<scsckamin at gmail.com>
Secretary	Liz Thomas	<mygemsrock at gmail.com>
Treasurer	Gene Maggard	<gandpmaggard at gmail.com>
Historian	Cinda Kunkler	<cindakunkler at att.com>
Past President	Bob Regner	<Rnregner at aol.com>
Past President	Richard Jaeger	<RjgrSci at aol.com>

State Directors:

AZ/NV	Jodi Brewster	<jodibrewster66 at gmail.com>
CO	Mike Nelson	<csrockguy at yahoo.com>
KS	Larry Beck	<Lkbeckfam at gmail.com>
ND/SD/NE	Lori Loomis	<sdnestatedirector at gmail.com>
NM/TX	Donna Regner	
OK/AR	Roberta Wagle	<waglemom at gmail.com>
UT	Tracy Jensen	<tracyjensen0515 at gmail.com>
WY	Leane Gray	<lgray at wyoming.com>

Please note: *All email addresses* are enclosed in chevrons, < >, and the @ symbol has been replaced by the word "at" with a space before and after the word. This is to prevent bots from picking up our email addresses. You will need to remove the chevrons and replace the word "at" and the two spaces with the @ symbol to have the correct email.

2024-2025 Committee Chairs

ACROY (AFMS Club Rockhound of the Year)	Chris Whitney-Smith	<ask.chrisws at yahoo.com>
All American Club	Roberta Wagle	<waglemom at gmail.com>
BEAC (Bulletin Editors Advisory Committee) & Bulletin Editors Contest	Linda Jaeger	<LJGRALG at aol.com>
Boundaries	DeLane Cox	<delanec3 at earthlink.net>
Convention Advisor	Liz Thomas	<mygemsrock at gmail.com>
Credentials	Roberta Wagle	<waglemom at yahoo.com>
Directory	Lori Loomis	<riggsoldchap at yahoo.com>
Editor of Newsletter	Linda Jaeger	<LJGRALG at aol.com>
Finance	Wayne Cox	<WayneC3 at earthlink.net>
Fluorescent Tech	Brian Walko	<bwalko at earthextractions.com>
Fossils Tech	Mike Nelson	<csrockguy at yahoo.com>
Gold Pan Award	Richard Jaeger	<RjgrSci at aol.com>
Insurance	Gene Maggard	<gandpmaggard at gmail.com>
International Relations	Mike Nelson	<csrockguy at yahoo.com>
Juniors Program	Michelle Cauley	<michelle.cauley at dakotacollege.edu>
Lapidary Tech		
Long Range Planning	Liz Thomas	<mygemsrock at gmail.com>
Long Range Planning	Richard Jaeger	<RjgrSci at aol.com>
Long Range Planning	Judy Beck, chair	<Lkbeckfam at gmail.com>
Mineralogical Tech	Mike Nelson	<csrockguy at yahoo.com>
Name Badges	Richard Jaeger	<RjgrSci at aol.com>
New Program Contest	Gene Maggard	<gandpmaggard at gmail.com>
Nominating Committee	Bob Regner	<Rnregner at aol.com>
Nominating Committee	Liz Thomas	<mygemsrock at gmail.com>
Nominating Committee	Jim Gray	<jimgray at wyoming.com>

continued on next page

2024-2025 Committee Chairs — *continued*

Parliamentarian	Gene Maggard	<gandpmaggard at gmail.com>
PLAC - AZ		<>
PLAC - CO	Mike Nelson	<csrockguy at yahoo.com>
PLAC - KS	Mike Nelson	<csrockguy at yahoo.com>
PLAC - NM/TX		
PLAC - OK/AR		<>
PLAC - ND/SD/NE	Lori Loomis	<sdnestatedirector at gmail.com>
PLAC - UT/NV		<>
PLAC - WY	Greg Jones	<wyojones at wyjones.com >
President's Hat	all past presidents	
Program Library	Gene & Peggy Maggard	<gandpmaggard at gmail.com>
Public Relations	DeLane Cox	<delanec3 at earthlink.net>
Resolutions		
Ribbons	Jenelle Hopkins	<Jhopk67328 at aol.com>
Safety	Jodi Brewster	<rmfmssafety2024@gmail.com>
Scholarship Committee	Richard Jaeger	<RjgrSci at aol.com>
Stationery/Trophies	Ben Thomas	<myretirementrocks at gmail.com>
Supplies	Roberta Wagle	<waglemom at gmail.com>
Uniform Rules	Lee Whitebay	<lwhiteba at gmail.com>
Uniform Rules	Leon Reeder	<leonreeder47 at yahoo.com>
Uniform Rules	Les Presmyk	<presmyk at cox.net>
Webmaster	Tyler Jacobsen	<webmaster at rmfms.org>
Website Contest		

Please note: *All email addresses* are enclosed in chevrons, < >, and the @ symbol has been replaced by the word "at" with a space before and after the word. This is to prevent bots from picking up our email addresses. You will need to remove the chevrons and replace the word "at" and the two spaces with the @ symbol to have the correct email.

RMFMS Purpose & Policies –

Excerpts from 2023 Directory (Revised)

- To bring about a closer association of the Earth Science Groups in the Rocky Mountain region.
- To increase and disseminate knowledge about minerals and other geologic materials.
- To encourage mineral study, collecting, and fashioning as a HOBBY.
- To sponsor local organizations interested in similar purposes.
- To encourage all clubs to publish bulletins and newsletters.
- To continue building up and promoting the use of the Federation Library of slide programs, videos, CDs, and DVDs to each member club.
- To distribute information and suggestions on the preparation and arrangement of specimens and materials for exhibit and display.
- To provide information and assistance to clubs holding Gem and Mineral Shows.
- To encourage clubs to support the American Federation of Mineralogical Societies Scholarship Foundation Fund.
- To promote the concept that all members of all clubs are members of the RMFMS and the AFMS, and to encourage individual members and clubs to take responsibility for asking questions or making known that help is needed. To encourage more contacts between those working at the Federation level, between clubs, and between club members.
- To keep the members informed of problems and activities regarding the use of Public Lands.
- To continue to support Federation-sponsored programs.

The Rocky Mountain Federation is composed of a membership of approximately 14,000 members in the following states: Arizona, Arkansas, Colorado, Kansas, Nebraska, New Mexico, Nevada, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming.

The work of the Federation is directed by the Executive Committee, composed of: President, Vice-President, Secretary, Treasurer, Historian, State Directors, and the two immediate Past-Presidents.

Reminder — next *RMF Newsletter* is the April 2025 issue. Deadline for articles is March 15, 2025.

AFMS Code of Ethics

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

–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–fences, signs, buildings.

–I will leave all gates as found.I will build fires in designated or safe places only 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 supply.

–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 pro- tected 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.