ALASKA PEBBLE PATTER

August 2024

Official Bulletin of The Chugach Gem & Mineral Society

Chugach Gem & Mineral Society
P.O. Box 140112
Anchorage, AK. 99514-0112
https://www.cgmsak.org

CHUGACH GEM & MINERAL SOCIETY maintains memberships in:
AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES
Northwest Federation of Mineralogical Societies

Chugach Gem & Mineral Society Meeting Information
All Meetings will be held at the First United Methodist Church
725 west 9th Ave, Anchorage, AK.
Enter from the rear parking lot, south of 8th Avenue between G & H Streets.

BUSINESS MEETING – 2nd Thursday of Jan thru Nov at 6:30 pm.
POTLUCK MEETING – 4th Thursday of Jan thru Oct at 6:30 pm.
CHRISTMAS POTLUCK – 2nd Thursday of Dec at 6:15 pm.

For the potlucks, bring an entrée, side dish, salad, or dessert (plus serving utensil)
To serve at least 5 people. Also bring your own plate, silverware and drink.
Most importantly, bring a rock to show!

Annual membership fees: Individuals - $20.00; Families (2 or more) - $25.00; Bulletin only - $10.00
Lifetime membership fees: Individuals - $200.00: Families (2 adults & children under 18) - $250.00

This Issue

CHUGACH GEM AND MINERAL SOCIETY OFFICERS & CHAIRPERSONS

(✓) Checkmark indicates Texting capability

ELECTED POSITIONS FOR 2024

President: Kent Devine 907-744-0370 ✓

1st.Vice President: Mary Helms 907-441-1366✓

2nd Vice President: Paul Burger 575-302-3673 ✓

Treasurer: Greg Durocher 907-337-2553 ✓

Recording Secretary: Mark Avery (907-854-9072 ✓

Correspondence Secretary: Mike McMartin 907-258-1678 ✓

Member at Large: David ✓

APPOINTED POSITIONS FOR 2024

Programs: Greg Durocher 907-337-2553 ✓

Field Trips: Bonnie Hepburn 907-980-1491✓

Membership: Shana Rose 858-348-7812 ✓

Federation Director: Albert Whitehead 907-244-1772 ✓

Newsletter Editor: Chris Teutsch 907-694-6586

Sunshine: (Vacant)

Parliamentarian: **Position Open**

Websites

Contributor: Greg Durocher & Chris Teutsch

CGMS full URL for club's FB page:
http://www.facebook.com/pages/Chugach-Gem-and-Mineral-Society/157967464259784

CGMS website: **https://www.cgmsak.org/** (undergoing final tweaks and touch-ups)

Chaco Rocks: https://chacorocks.cave-exploring.com/wp/

Subsidence around Bonanza Mine:
https://www.nps.gov/wrst/learn/news/national-park-service-warns-visitors-of-collapsing-ground-near-bonanza-mine-in-wrangell-st-elias-national-park-preserve.htm

What's in YOUR water? The current geologic period should be called the Plasticene!
https://www.universal-sci.com/article/research-finds-shocking-amount-of-microscopic-plastics-in-bottled-water

More evidence for Younger Dryas comet:
https://earthsky.org/space/younger-dryas-comet-burst-crashed-earths-climate/

Classic Alaska Horn & Antler rerun from Alaska's News Source:
https://www.alaskasnewssource.com/2023/05/18/roadtrippin-2023-alaska-horn-antler/

Chugach Gem and Mineral Society August 8, 2024 Business Meeting Minutes

The meeting was called to order by Kent at approximately 6:30 pm. There were 20 members present.

Secretary's Report (Mark): Mark read the minutes from the business meeting from July 11, 2024. The spelling of Curt's name was corrected. Greg motioned to accept the minutes. Fay seconded the motion and the minutes were accepted.

Treasurer's Report (Greg): Greg provided a summary of recent activity and balances of our accounts.

Corresponding Secretary Report (Mike): Mike picked up two items (from Credit Union and a Printing ad).

Sunshine Report (Vacant):
- Mary is having health issues, yet is in good spirits.
- Chris is recovering after medical tests.

Membership Report (Shana was not available): Nothing significant to report (NSTR).

Pebble Patter (Chris was not available): NSTR.

Scholarships (Greg): NSTR.

Federation Report (Albert was not available). NSTR.

Field Trips Report (Bonnie): Bonnie provided an update on future trips. For field trip information, see the updated Trip List in the Pebble Patter, Facebook, or cgmsak.org.

Old Business: Regarding Andres' interest to sanction members for inappropriate conduct during the recent field trip, there are insufficient written statements to pursue the matter at this time. Kent reminded members that trip leaders should be explicit about conduct, meeting times, itineraries, etc., and participants need to communicate better.

New Business:
- Greg will solicit volunteers for the Board Selection Committee.
- Bonnie will bring a sign-up list for Fur Rondy displays to the next meeting.
- There was a discussion of lapidary ideas for the Show, including a Flat lap demonstration (Kent) and cracking geodes (Tom).

Adjourn: Greg motioned to adjourn the meeting. The motion was seconded by Fay and the meeting was adjourned.

The business meeting was followed by a distribution and swap of rocks and minerals from Dorothy's collection.

Respectfully submitted,
Mark Avery, Secretary

Greetings all -
Our vice-president, Mary Helms, has been admitted to Providence Hospital. She may be there 3 more days or so before being moved to extended care. She said she'd be up for visitors starting tomorrow (Tuesday). She's in an overflow room, 2nd floor of C Tower, in the Labor and Delivery area. Room 2512. Before visiting, call her at 907-441-1366
__Greg Durocher

WHAT ARE SKARN DEPOSITS?
[July 2024 reprint]

(*Auriferous) Iron Pyrite, re-crystallized limestone (calcite) skarn specimen from Nabesna Gold Mine. Courtesy: Kyle Johnson. (Photo by Phillip Elrod)*

July business meeting ended with a slide presentation by Kyle Johnson on the Nabesna Gold Mine, it's history and geology of the surrounding area. By way of show and tell, Kyle brought a number of ore samples he collected from the mine. Especially interesting was the type of deposit occurring in this area that caught my attention. It is the topic for this article.
Taken from a compilation of papers on this topic by Meinert (1992) and Einaudi and Burt (1982) skarn is given this definition:
There are many definitions and usages of the word "skarn". Skarns can form during regional or contact metamorphism and from a variety of metasomatic processes involving fluids of magmatic, metamorphic, meteoric, and/or marine origin. They are found adjacent to plutons, along faults and major shear zones, in shallow geothermal systems, on the bottom of the seafloor, and at lower crustal depths in deeply buried metamorphic terrains. What links these diverse environments, and what defines a rock as skarn, is the mineralogy. This mineralogy includes a wide variety of calc-silicate and associated minerals but usually is dominated by garnet and pyroxene.

There are different types of ore deposits found in the world. One of these is called "skarn deposit", which describes the occurrence of the gold found at Nabesna, Alaska. Another term describing the process in which skarn deposits are formed is "contact metamorphism", i.e. occurring adjacent to igneous or magmatic intrusion into carbonate rock, such as limestone or dolomite. In this situation two things may happen.

High temperature hydrothermal solutions may pick up metal ions and carry them upward through fractures in the rock strata where they are deposited as a result of decreased fluid temperature and pressure. The resulting

concentration of metals may be high enough to be considered economic as ore deposits. Such skarns may be identified by the predominant metals they contain such as copper, gold, zinc-lead and iron.
The country rock adjacent to the magmatic intrusion is chemically altered by the heat and pressure. Limestone recrystallizes to form calcite or marble. Mineralization associated with skarns include grossular-andradite garnets, epidote, diopside and chlorite, hedenbergite. The componant having no economic value is termed "gangue"

Two well known skarns in the U.S. and Canada include the copper deposits near Whitehorse, Yukon Territory, and the lead zinc deposits near Franklin, N.J.

The Nabesna gold mine is located in the Chisana Mining District, on the SE flank of White Mountain near Nabesna, which is now part of the Wrangell-St. Elias National Preserve. According to mindat.org, the Nabesna skarn was mined for its gold content. The ore was pyrite-rich, also containing magnetite, and smaller concentrations of sphalerite and galena, andradite garnet, chlorite, epidote, magnetite, hematite vesuvianite and wollastonite. But the chief gangue minerals are calcite and quartz.

__Addendum

Note the pyrite cubes. [Specimen and Photo: Chris T.]

Today the old Nabesna mine property is still in private ownership. Its future as an operating mine is uncertain. Located within the Wrangell-St. Elias National Park and Preserve and surrounding lands being managed by the National Park Service, the question persists, whether this area will be rehabilitated as a historic site along with mine buildings, mining equipment and the old Nabesna town site, or slated for environmental clean-up or once again become a potential natural resource development site in the future. In any event, this gem of Alaskan mining history is well worth visiting despite a long driving and hiking adventure.
During my last trip to the area, I picked up some nice specimens from a small ore pile just on top and to the right of the last ore processing mill buildings. I obtained permission for this by the former owner's son, who at the time had possession of the property__and to my knowledge still does. Another specimen from this location, which changed hands at a previous CGMS Silent Auction, was bornite with yellow zinc blende crystals (zinc sulfide, minus Fe, hence the light color. Zinc blende with much Fe makes these crystals black and go by the vernacular, "black jack."

While not straying too far the orginal Pebble Patter article on "Skarn Deposits," I have tied in the Nabesna Mine as a relatively close at hand example of this type of deposits. If you can find a copy of the book, **"Nabesna Gold** – and the Making of the Historic Nabesna Gold Mine and Town On the Frontier of Alaska

Territory, by Kirk Stanley, Todd Communications, publisher, Anchorage, AK, March 2005, you'll find an interesting and historical account of this Alaskan location. __ct

2024 Chugach Gem and Mineral Society Activity List

Club membership is required for all club trips.
>>To sign up, contact trip leader. (See list after trips) <<

WARNING: If you don't sign up for a trip and just show up, you run the risk of not being informed of last-minute changes

Date	Leader	Activity	J/KF*	Comments
By appointment Note: Kent available until Aug 24	Kent	Rock Cutting and Polishing Workshops	J/KF	Kent has a heated Conex with equipment in Eagle River. BYO rocks for cutting and polishing or choose from Kent's supply. $25 for a 3-hour session. By appointment only.
Aug 18 Sun	Elrod	Crow Creek Gold Mine	J/KF	Explore historical buildings at Crow Creek Mine in Girdwood and/or moil for gold. Price dependent on activity. See www.crowcreekgoldmine.com for options.
TBD Early Sep	Paul	Ravine Lake Prehnite	J	Very strenuous climb up steep scree slope to prehnite vein. Helmet required.
TBD Fall evening (3rd Thurs?)	Greg	Alaska Museum of Science and Nature	KF	Local museum in Anchorage that features dinosaurs, rocks and gems, Ice Age mammals and more. Limit 20 CGMS members. Fee waived.
Oct 26-27 Sat-Sun	Paul	Vendor Rock & Mineral Show	J/KF	Vendors only show at the Midtown Mall.
2025 Jan 16-21 Thu-Tue Note revised dates	Mark Kent	Quartzsite Mineral Shows Quartzsite, AZ	J	"Rockhound" at the annual Quartzsite shows. Contact Mark to share the cost of passenger van and/or Airbnb in Blythe, CA. DIY RV boondocking or alternate accommodations also OK.
2025 Early June	Dave	Utah / Wyoming Rockhounding	J	Delta, UT to Kemmerer, WY. Trilobites in UT. Green River Formation fossils in WY, *et al.*
2025 TBD (not summer)	Sharissa	Crater of Diamonds Arkansas State Park	J	Hunt for diamonds at this AR State Park. Add-ons include Mount Ida aka "Quartz Crystal Capital of the World", Hot Springs NP, *et al.*
2026	Lyndsie	Black Hills, SD	J/KF	More details as this develops.

Last updated: 8/12/2024

* J = Joint trip with Mat-Su Club; KF = Kid Friendly; Note: Children's supervision is solely the responsibility of their parent(s).

Trip Leader
Contact Information (Next page)

Leader Name	eMail	Phone/Text
David Hutchings	aireraft@gmail.com	907-748-3427
Elrod, Phillip	alaskanadventures@yahoo.com	907-223-7877
Greg Durocher	akrockhound1@gmail.com	907-337-2553
Kent Devine	subsea50@gmail.com	907-744-0370
Lyndsie Dieken	ldieken15@gmail.com	907-947-0929
Mark Avery	averyabn@aol.com	907-854-9072
Paul Burger	cavemonpaul@hotmail.com	575-302-3673
Sharissa Young	youngsharissa@gmaill.com	505-934-5538

Last updated: 8/12/2024

* J = Joint trip with Mat-Su Club; KF = Kid Friendly; Note: Children's supervision is solely the responsibility of their parent(s).

The Petrified Forest of Unga Island: A Window into Alaska's Ancient Past

By: Kent Devine, CGMS President

Nestled in the remote Shumagin Islands of Alaska, Unga Island is home to a remarkable natural wonder—a petrified forest that offers a glimpse into the Earth's distant past. This forest, frozen in time, provides crucial insights into the geologic and climatic history of the region, revealing a story of dramatic environmental change over millions of years.

Geologic History of Unga Island

The petrified forest on Unga Island dates back to the Miocene epoch, approximately 25 to 15 million years ago. During this time, the region that is now Alaska was experiencing significant geological activity, much of it related to the movement of tectonic plates along the Pacific margin. The Shumagin Islands themselves are part of the Aleutian Arc, a chain of volcanic islands formed by the subduction of the Pacific Plate beneath the North American Plate.

In the Miocene, Unga Island was located much closer to the equator than it is today, in a subtropical to temperate climate zone. The island was covered in dense forests composed of large trees, including species similar to modern-day cypress, pine, and redwood. These trees thrived in the warm, humid conditions, supported by volcanic soils rich in nutrients.

The preservation of these ancient trees as fossils began with their burial by volcanic ash and sediment, which were common in the geologically active region. Over time, silica-rich waters percolated through the sediment, replacing the organic material of the trees with minerals like quartz and opal. This process of permineralization gradually turned the wood into stone, preserving even the most delicate structures of the trees.

The Climate of Unga Island During the Miocene

During the Miocene, global climates were warmer than they are today, and the polar ice caps were much smaller. Alaska, including Unga Island, experienced a much milder climate. The region was likely characterized by warm, wet conditions, with significant rainfall and a lush, diverse flora.

The forests of Unga Island would have been similar to the temperate rain forests found in the Pacific Northwest today, with towering conifers and a rich understory of ferns and other plants. The warm temperatures and high humidity created an environment where large trees could grow rapidly; contributing to the dense, towering forests that eventually became petrified.

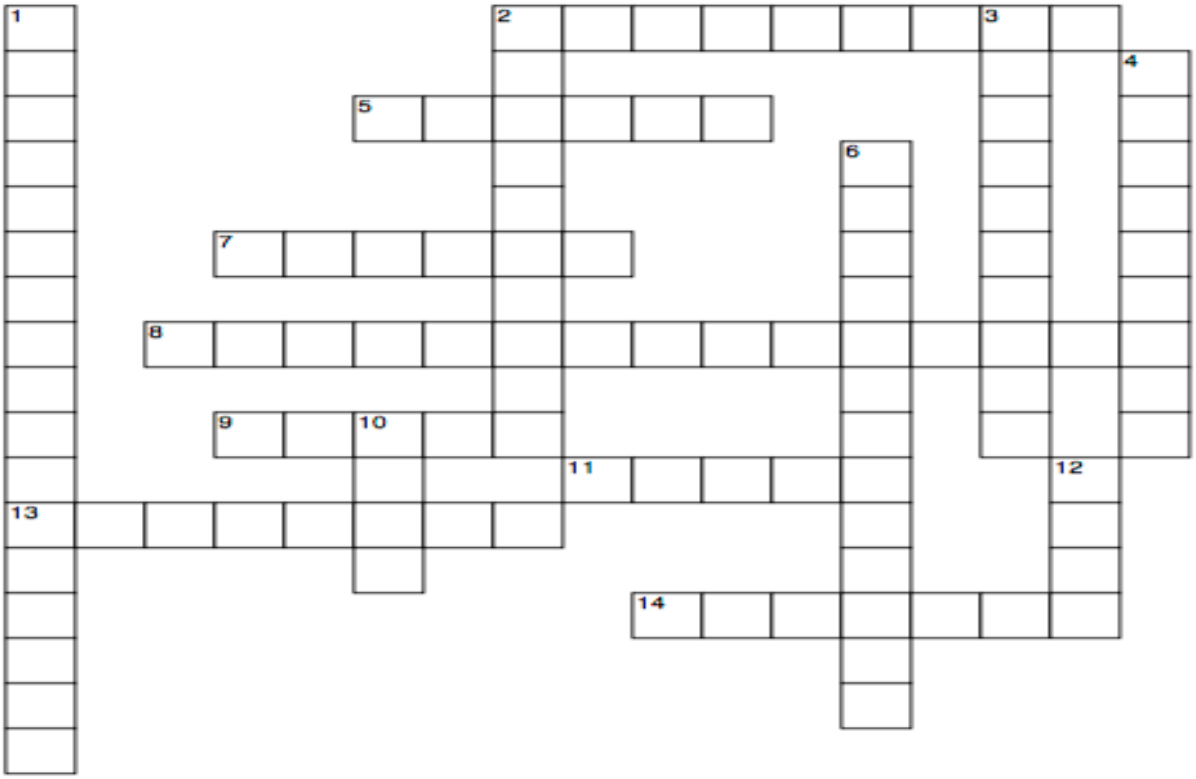
As the climate gradually cooled towards the end of the Miocene and into the Pliocene, these forests began to retreat, giving way to the more tundra-like environments that dominate much of Alaska today. However, the petrified remains of the ancient forest on Unga Island serve as a stark reminder of the dramatic shifts in climate and geography that have occurred over millions of years.

The Petrified Forest is a testament to the dynamic nature of Earth's geology. The processes that led to the formation of the petrified wood—volcanic activity, sedimentation, and permineralization—are all key components of the Earth's ever-changing landscape.

For visitors to Unga Island, the petrified forest offers a unique opportunity to step back in time and experience a piece of Alaska's ancient history. The sight of massive, stone-like tree trunks lying on the ground, some still partially embedded in the rock, is both awe-inspiring and humbling, a reminder of the long and complex history that has shaped our planet.

The petrified forest of Unga Island is not just a geological curiosity; it is a window into a world that existed millions of years ago, here in Alaska.

The Quartz Family



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ACROSS

2 A clear red chalcedony
5 one of the most common of minerals in the continental crust
7 an opaque red variety of cryptocrystalline quartz
8 the chemical formula for quartz
9 _____quartz is a brown type of quartz
11 the name of a group of silicates made of chalcedony.
13 a purple variety of quartz
14 a yellow variety of quartz

DOWN

1 crystals are only visible with magnification
2 one of the cryptocrystalline varieties of quartz, the mineral in agates
3 a green variety of cryptocrystalline quartz
4 a chatoyant gemstone containing asbestos
6 mechanical pressure generates electrical charge
10 a black and white banded variety of cryptocrystalline quartz
12 _____quartz is a pink type of quartz