

HUI PŌHAKU 'Ō HAWAII

Rock & Mineral Society of Hawai'i, Inc.



Meeting Times

MEETING

Wednesday
February 27, 2019

6:15-8:00 pm
Makiki District Park
Admin Building

Next Months Topic
Green Minerals

LAPIDARY

Every Thursday
6:00-8:30pm
Makiki District Park
2nd floor Arts and
Crafts Bldg

MEMBERSHIP DUE COSTS 2019

Single: \$10.00
Family: \$15.00

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Flat, Pink and Red Minerals By Dean Sakabe

This month is an eclectic group of minerals. Flat, Pink and Red minerals. So starting off with Flat minerals the obvious one is **Mica**.

The Mica group of sheet phyllosilicate minerals includes several closely related materials having nearly perfect basal cleavage of which all are monoclinic. This near perfect cleavage (which is the most prominent characteristic of Mica) is due to its sheet-like arrangement of atoms. The crystalline structure of mica forms layers that can be split or delaminated into thin sheets usually causing foliation in rocks. These sheets



Mica

are chemically inert, dielectric, elastic, flexible, hydrophilic, insulating, lightweight, platy, reflective, refractive, resilient, and range in opacity from transparent to opaque. Which led to its use as windows, prior to wide spread use of glass.

Muscovite is a hydrated phyllosilicate mineral of Aluminum and Potassium. Like Mica it has perfect basal cleavage, which yields very thin sheets. Large sheets of Muscovite, up to 5 meters x 3 meters have been found in Nellore, India. Interestingly enough the name Muscovite comes from *Muscovy-glass*, a name given to this mineral due to its use in medieval Russia as a cheaper alternative to glass in windows. During the sixteenth century the use of Muscovite as window material was widely used in England. Sheet muscovite is also an excellent insulator, which makes it suitable in the manufacturing of specialized parts for electrical equipment. The scrap, flake, and ground



Muscovite with Morganite; Nuristan, Afghanistan

muscovite are used as fillers and extenders in a variety of paints, surface treatments, and manufactured products. The filler part of the paint is due to the pearlescent luster of Muscovite which adds "glitter" to paints, ceramic glazes, and cosmetics.

Biotite is a name used for a large group of black mica minerals that are commonly found in igneous and metamorphic rocks. These include minerals such as Annite, Phlogopite, Siderophyllite, Fluorophlogopite, Fluorannite, and Eastonite. These

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Biotite; Bancroft, Ontario, Canada

Micas vary in chemical composition but are all basically sheet silicate minerals with very similar physical properties. The name "Biotite" is used in the field because these minerals generally cannot be distinguished without optical, chemical, or x-ray analysis. They are all essentially rock forming minerals found in a range of igneous rocks.

For Pink and Red gemstones, there are a multitude to choose from. Starting with Diamonds, Corundum, then progressing into the Ruby want-to-be Spinel. Not to be out done, from Southern Cal you have Tourmalines, Kunzites, and Morganite's. Finally there are various varieties of Garnets to choose from. Will we be writing anything about any of these Gemstones, will not here as they were all covered in past editions and information on all of these can easily be found. Instead we shall talk about other Pink and Red minerals.

The first being the pink **Cobaltoan Calcite**. This pretty pink mineral is an intermediary mineral between Calcite and Sphaerocobaltite. Essentially it is a Very Colbalt rich variety of Calcite. One normally sees specimens Cobaltoan Calcite as surface covering on matrix. However if some cases one can find clusters of very appealing crystals.

Tugtupite is a Sodium Aluminum Beryllium Silicate, which is closely related to Sodalite and Hackmanite. The name is derived from the Greenlandic Inuit word for reindeer (*tuttu*), and means "reindeer blood". It is also called Beryllsodalite or reindeer stone. Tugtupite can be transparent to translucent, with colors ranging from pink, red, white, green, and blue. It also is Tenebrescent, so its color may fade in the dark, however it recovers its intensity when brought out into the sunshine. These stones may also show a reaction when kept warm. The Greenland Inuit say that it turns into a deeper red according to the intensity of emotions of the persons wearing it. Tugtupite also fluorescences in orange under LW UV and red-pink under SW UV.



Cobaltoan Calcite; Mashamba West Mine, Democratic Republic of Congo

Rhodonite is a silicate of manganese-iron-magnesium, and a mineral of the Pyroxene group. It sometimes occurs as distinct translucent to semi-opaque crystals. However it is more often found in compact, granular, crystalline masses of a patchy, pink, flesh red or brownish red color, with blackish veining or spider web bands due to oxidation of manganese. The zinc-bearing variety of Rhodonite is called Fowlerite, which contains up to 10% zinc oxide. This is usually used as gemstone material.



Tugtupite; Tugtup, Greenland

Rhodochrosite is a manganese carbonate, as an fyi. It is the manganese that is responsible for the rose-like color. Rhodochrosite is most commonly light red or pink and is usually cut as cabochons or carved. Transparent red crystals are relatively rare, which makes the large red crystals from the Sweet Home Mine.

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Pezzottaite, Madagascar

Rhodochrosite's name comes from the Greek rhodon - "rose" and chroma - "color." Rhodochrosite was also found in the pursuit of Silver. However, Rhodochrosite was found to be very destructive to the amalgamation process used in the concentration of silver ores. So when found it was often separated out and discarded in the mine dumps.

Pezzottaite is a Caesium analogue of Beryl. It was discovered in Madagascar in 2002 and originally thought to be Red Beryl (a Beryllium Aluminum Cyclosilicate), which in itself a very nice Red mineral. But later investigation was found to be a new variety of Beryl, with Lithium which causes the Pezzottaite to crystallize in a Trigonal crystal system, versus the Beryl Hexagonal system. Most Pezzottaite specimens are small (under 1 carat) and are usually cut as cabochons due to their many inclusions, some of the material exhibit Chatoyancy, making a very pleasant cat's eye cab.

Cinnabar is a Mercury Sulfide, whose name was derived from the Ancient Greek (*kinnabari*), which refers to its bright red form. Cinnabar is a common source ore for refining elemental Mercury. In early times it was the source of the scarlet vermilion pigment and other associated red pigments. However it is toxic, so its use as pigment and jewelry have almost been discontinued. Cinnabar is a hydrothermal mineral that precipitates from ascending hot waters and vapors as they move through fractured rocks. Therefore Cinnabar first precipitates as coatings on rock surfaces, then as fracture fillings. It usually ends up a massive deposits and rarely as Crystals. Interestingly enough small droplets of liquid mercury are sometimes present on or near cinnabar.

Realgar, is an Arsenic Sulfide, sometimes known as "Ruby Sulfur" or "Ruby of Arsenic". It is often found in association with the relative mineral Orpiment. Its name



Cinnabar; Hunan, China



Rhodochrosite, Sweet Home Mine, Colorado

comes from the Arabic *rahj al-gār*, "powder of the mine". This soft orange red mineral melts at 320 °C, and burns with a bluish flame releasing fumes of arsenic and sulfur. Realgar most commonly occurs as a low-temperature hydrothermal vein mineral associated with other arsenic and antimony minerals. One of the common beliefs is that after a long period of exposure to light Realgar changes form to a yellow powder known as Pararealgar, furthermore the yellow powder was thought to be Orpiment. However two different chemical compositions so not Orpiment but Pararealgar. But it still reacts to light, so best not subject it to too much of a good thing.

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The Rock & Mineral Society meets on the 4th Wednesday of each month (except for adjusted dates in November and December) at the Makiki District Park, 6:15-8 pm. Enter from Keeaumoku Street. Parking is free but limited.

The Newsletter is published monthly, some days prior to the meetings and is distributed in electronic format by email (Adobe Acrobat PDF file attachment). Printed copies are "snail" mailed to those who do not have email. The electronic format usually contains full-color images; the print version may be limited to B&W due to reproduction costs.

DOOR PRIZES

Please note that we have instituted door prize drawings at our monthly meetings. Because of Hawaii's gambling laws, these drawings cannot be conducted in the common "raffle" format where tickets are sold. Rather, each *paid* member attending the meeting will receive a drawing ticket upon request. A voluntary donation of \$1.00 is requested and encouraged. Drawings will be conducted at the end of the meeting with available prizes awarded in random order. You must be present to win. Please remember: if you win a prize, please bring one to the next meeting. This helps to keep our drawings going. Thank you.



Realgar; Royal Reward Mine, Washington

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