Place:
Arden Community Hall
636 Hall Rd
Arden, WA

Club Meetings:

Third Tuesday of The Month at 6:00PM

The Panorama Prospector

March 2022

PANORAMA GEM AND MINERAL CLUB

Minutes of the March 15, 2022 Meeting

By: Glynis Hull, Secretary

President: Sheila Stratton opened the meeting at 6:00 pm, welcoming everyone including visitors.
Vice President: Bob Bristow gave a brief presentation on wolframite.

Treasurer: Frank Stratton presented the financial report for January 2022. Income was higher than expenses, but expenses will increase this year because we didn't have a show last year to pay for.

Show report: Johnie updated the show information. It's time to get the advertising out. Several members took responsibility for contacting various outlets.
Rent for the venue has increased from $350 to $750
All positions will need help and relief for breaks
Sharon presented the teacher packets and several members volunteered to take them to various schools in the area.
Jim Retzer. donated beautiful silversmith necklaces as choices for the grand prize. Vendors will be asked to donate for the hourly door prizes.
Display cases were asked for. Most members will do one and several more will do 2 or 3 cases.
Hospitality people will be contacted. Still working with Mr. Sub to see if they can serve food both days.
Set-up starts 8 AM on Thursday February 10!!

Break

Presentation: Frank showed a DVD about exploring the First Thought mine, with special caution about the dangers of entering old mines.

Inclusions and Xenolith

By: Jim Retzer

A while back one of our members, Joe Barreca, sent me a photo his wife had found of a Xenolith. Along with the photo was the information that "It is called an inclusion. These are rounded to angular masses of solid material enclosed within a rock of recognizably different composition or texture. Those consisting of older material not directly related to that of their host are known as xenoliths." This opened the questions: What is an inclusion and what is a xenolith? Are all inclusions xenoliths and are all xenoliths inclusions? How does this relate to mineral and crystal specimens?

First what is the geologic definition of an inclusion. Simply to a Mineralogists, an inclusion is any material trapped inside a mineral as it forms. In general, geologic usage it is something foreign to the host rock in which it is embedded. Second what is the definition of xenolith. It is a fragment of rock or crystal foreign to the igneous rock in which it is embedded. A broader definition could also include rock fragments which have become encased in sedimentary rock. To be considered a true xenolith, the included rock must be identifiably different from the rock in which it is enveloped.

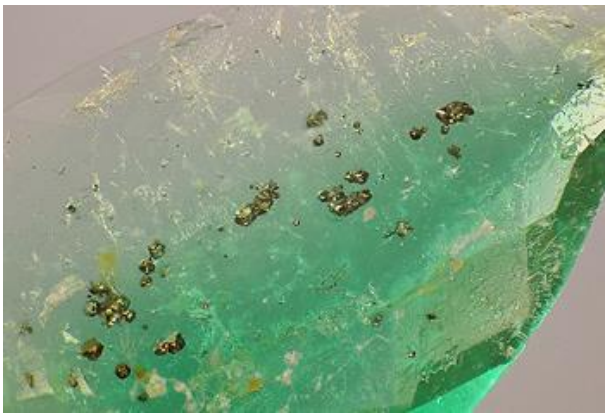
One of the examples of Inclusions most familiar to us is Rutilated Quartz. This is a variety of quartz which contains fine needle-like inclusions of rutile. Another form of inclusion is a liquid inclusion such as that found in Fire Opal that gives it it's play of

color. These are mineral inclusions. They form as part of mineral forming process and can be divided into three basic types.

Protogenetic Inclusions is where the host mineral grows around a mineral that was already present. In protogenetic inclusions the included mineral is older that the host mineral. In the case of Rutilated Quartz, the Quartz crystals formed around the already existing Rutile needles.

Rutilated Quartz

Syngenetic Inclusions is when different minerals are formed during the same mineralization process. An example of syngenetic inclusions would be olivines, orthopyroxenes, clinopyroxenes, garnets, spinels, and sulfides in diamonds. Another example is pyrite in emerald.



Pyrite in Emerald

Epigenetic Inclusions form after the host crystal was formed therefore the inclusions are younger than the host crystal. The inclusion from in a fracture in the host that is then recrystallized. The inclusions may also be liquid, solid, or gaseous. Since the inclusion forms within a fracture of the host mineral the limited space forms flat crystals and aggregates, quite different to well-formed syngenetic inclusions. The inclusions can also be liquid solid or gaseous.

Flat Epigenetic pyrite crystal inclusions inside a fissure in a quartz crystal

In the preceding cases these are all inclusions but not xenolith. Xenoliths are not related to the mineral forming process even though some xenoliths can be crystals.

So, what is a Xenolith? A good example is in the photo sent to me by Joe. It is a dramatic example of an older rock encased in the newer rock.

In most cases a xenolith happens when material along the margins of a magma chamber are torn loose from the walls and of an erupting lava conduit or explosive diatreme or picked up along the base of a flowing body of lava on the Earth's surface and engulfed by the new volcanic material. As the magma makes its way to the earth's surface it will sometimes brake off portions of the rock around it. This material flows with the magma to the surface. Sometimes the material removed by the magma are from crystal formations. In this case they are called Xenocrysts. A well know form of xenocrysts are diamonds in Kimberlite. Kimberlite is the igneous rock known for carrying xenocrysts of diamonds to the surface, where they are mined.

Diamond in kimberlite from the Precambrian of South Africa

Limestone xenolith in Volcanic Ashflow

Xenoliths do not have to be formed in igneous rock. Though rare they can also be formed in sedimentary rock. Xenoliths have even been found in meteorites. The xenoliths in meteorites were formed from collisions with other objects outside the Earth's atmosphere.

Sedimentary xenoliths in a Orendite lamproite, Wyoming, USA. From Wikipedia

Xenoliths and xenocrysts are affected by temperature. A xenolith may lose its unique qualities if it melts into the surrounding magma. In metamorphic rock xenoliths lose their individual characteristics and become part of the new rock.

In summary we can say that all Xenoliths are Inclusions but not all Inclusions are Xenoliths. Xenoliths can be crystals, but crystals and minerals do not have Xenoliths. Xenoliths are primarily related to igneous and rarely sedimentary rocks and can be found in meteorites.

This is a simplified explanation of Inclusions and Xenoliths and is not to be an encompassing explanation of these geological processes. Also, Mineral inclusions is an interesting field of collecting for those interested in minerals and crystals. With the varied forms and types of inclusions they make for great study into the mineralogical world.

To everyone, we need your help on Thursday, March 10 at 8 o'clock AM to get set up for the show.

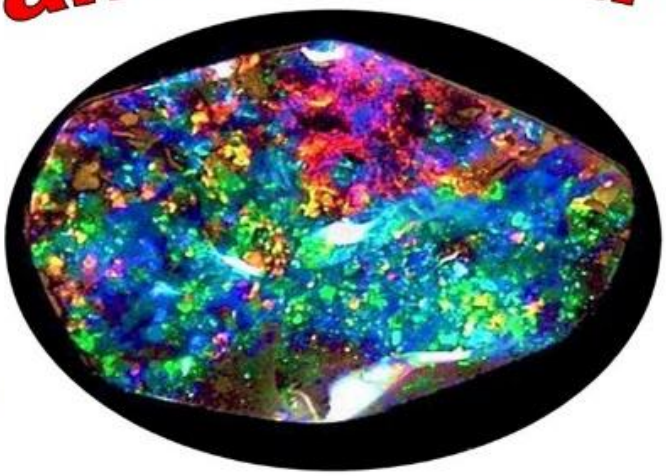
We are expecting a really good time of meeting old friends and meeting new ones while enjoying the workmanship and collections associated with our hobby.

At the next meeting we will need to discuss scholarships.

Johnie pitman

Earth's Treasures

Gem and Mineral Show



Free

21st Annual

March 11th and 12th

Colville Ag and Trade Center

8:30 AM - 6:00 PM Friday March 11th
9:00 AM - 5:00 PM Saturday March 12th

Wheel of Fortune

Jewelry

Fossils

Gold Panning

Food

Gems and Minerals from Around the World

Black Light Tunnel

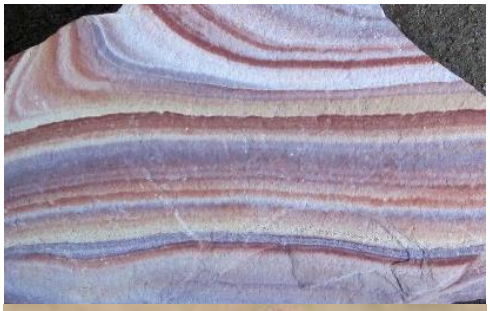
Silent Auction

Door Prizes

(509) 684-8887

Identify the “Rock or Mineral”

Last month’s rock or mineral:



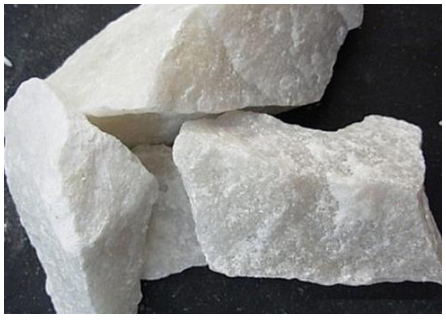
“Wonderstone” it is a rhyolite lava flow with naturally stained picturesque, folded bands that create colorful designs in cream, yellow-brown, and multiple shades of maroon. It is a volcanic rock composed predominantly of volcanic glass particles which have been welded or stuck together by heat and compacted by the weight of overlying material. Alteration of the rock by circulating ground water produced the colorful banding. The maroon and yellow-brown colors are due to the presence of iron oxides. In some cases, such as in Utah, there may be blues and grays in the banding.

It is primarily found in Nevada and Utah.

In Nevada, the Wonderstone found near Grimes Point in Churchill County, Nevada, is a rhyolite tuff that was altered by silica and pyrite from hydrothermal fluids. This volcanic rock is a Rhyolitic air-fall tuff, material ejected from a volcano about 12 million years ago. The rock was altered by hot waters that deposited pyrite (FeS2) and quartz (SiO2). Rainwater penetrated the rock and oxidized the pyrite to form bands of red hematite (Fe2O3) and orange and brown goethite (FeO(OH)).

In Utah, Vernon Hills Wonderstone is found in the Fishlake Mountains. It is a welded-vitric (glassy) tuff of rhyolitic composition. Along with the finer grain Vernon Hills Wonderstone Utah also has Salina Canyon Wonderstone Utah a dark blue color in its pattern. Salina Canyon Wonderstone is a volcanic "sill" formation. After being buried, it broke into chunks and was colored by groundwater and changed into the rocks we find today. Each individual rock has the distinctive spherical orbs of color even though they are found in a layer of rocks.

This month’s rock or mineral:



Membership Dues:

$20.00 per **household** per year is due to the club Treasurer Frank Stratton on the third Tuesday of November for regular members. Dues can also be sent to: Panorama Gem and Mineral Club c/o Johnie Pitman, 701 B Williams Lake Rd, Colville, WA 991114.

Webpage: http://panoramagem.com/

Facebook Group: Panorama Gem & Mineral Club

We**, The Panorama Gem and Mineral Club**, are a multi-faceted group of mineral-minded people. Our proud members include some real gems, a few fossils, and even some diamonds in the rough. A few have lost some of their marbles, but they know where to get more! A few need to polish their coordination because they are always tumbling! And some are miners who use the "silver pick" as their tool of choice! It should be crystal clear, that we all enjoy this unique conglomeration and above all else we strive to **HAVE FUN.** And we never throw stones (away).

A Quick Note from The Editor

The restrictions put in place because of the Covid Virus have interrupted and changed many of the club and members plans.

This has resulted in the modification of our club meetings and club activities until further notice.

It is hoped we can resume a somewhat normal schedule of events soon, but until then stay healthy and safe.

Refreshment Schedule for 2021

Last names that begin with the letters posted bring refreshments for that month

January – N, O, P
February – Q, R, S, T
March – W, A, B, C
April – D, E, F, G
May – H, I, J
June –K, L, M
July – N, O, P
August – Club Picnic
September – Q, R, S, T
October – W, A, B, C
November - D, E, F, G
December – Christmas Party

Panorama Gem and Mineral Club: Organizational Chart

Officers

President:	Sheila Stratton	skstratton@hotmail.com	509-207-8506
Vice-President:	Bob Bristow	bristow71@outlook.com	509-935-4375
Secretary:			
Treasurer:	Frank Stratton	frstratton@outlook.com	509-207-8503
Trustee 1:	Jim Peters	jimnbetty17@gmail.com	509-992-6921
Trustee 2:			
Trustee 3:	Greg Cozza	troller@hotmail.com	509-710-0375

Committee Chairs

Program Coordinator:	Sheila Stratton	skstratton@hotmail.com	509-207-8506
Hospitality:	Betty Peters	jimnbetty17@gmail.com	509-992-6921
Historian:			
Newsletter:	Jim Retzer	jimrocks@recycledhistory.com	509-738-2503
Show Chair	Johnie Pitman	jgpitman@outlook.com	509-684-8887