HUI PŌHAKU 'O HAWAI'I
Rock & Mineral Society of Hawai'i, Inc.

Meeting Times

MEETING
Wednesday
June 22, 2016

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

NEXT MONTH
Undecided

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

MEMBERSHIP
DUE COSTS 2015
Single: $10.00
Family: $15.00

P.O. Box 23020
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Quartz
By Dean Sakabe

Quartz (silicon dioxide) is most likely the most common mineral on the planet. It is found in nearly every geological environment and makes up some component of most types of rocks. Quartz is also one of the most varied type of minerals in terms of varieties, colors, and forms.

The variety comes about because of the abundance and widespread distribution of quartz. A collector such as Marcus could easily have hundreds of quartz specimens with no two of them being the same due to the many broad categories. Quartz specimens could be separated by: color, shade, pyramidal, prismatic, druzy, twinned, sceptered, phantomed, type of inclusions, tapered, coated, microcrystalline, macrocrystalline, stalactite, concretionary, geoidal, and banded. Additionally, multiple combinations of any of these can then produce hundreds of unique possibilities.

Amazonite with Smoky Quartz, Cleavelandite and Fluorite, Smoky Hawk Mine, Colorado

For our purposes we shall just consider two of the larger classifications. Macro-crystalline or crystals large enough to be seen and Crypto-crystalline or crystals too small to be seen.

The Macro-crystalline varieties of quartz are very well known and popular as specimens and as gemstones:

Clear Quartz – pure silicon dioxide devoid of color.
Amethyst – Purple gemstone variety.
Citrine – Yellow to Orange gemstone variety (often created by heating Amethyst)
Milky Quartz – a Cloudy whitish variety
Pink Quartz - Pink gemstone variety
Smoky Quartz – brown to gray variety

The Crypto-crystalline varieties of quartz are also used as semi-precious stones and for ornamental purposes.:

Rose Quartz – Pink quartz
Chalcedony – normally a single homogeneous color, (i.e blue, orange, green)
Agate – varied colors with translucency
Chrysoprase – green variety
Sard – yellow to brownish Agate
Carnelian – yellow to Orange Agate (usually heated).

Quartz

Rose Quartz, which is famous for its unmistakable pink color can be thought of as more crypto-crystalline. As one does not see a cluster of rose quartz points. Rose Quartz is primarily found in massive form, and when used in the lapidary class usually shaped into high dome cabochons to keep the pink color. Sometimes as in the find from Madagascar and South Dakota, Rose Quartz is very translucent and possesses a very fine six sided star. Star quartz's from other localities are normally 4 sided stars.
Pink Quartz, of which very appealing clusters have been coming out of Minas Gerais, Brazil. These have a very deep pink color, which will not fade in exposure to sunlight.

Slice through a star-shaped stalactite, Artigas, Uruguay

Prasiolite is generically the name for any green quartz crystal. Prasiolite is quite rare in nature, with some being found in Poland. Most often Prasiolite is heat treated Amethyst. You will remember that heating Amethyst usually transforms the color into yellow or orange, hence Citrine. However, Amethyst from a few locations (mainly Montezuma, Brazil and Arizona) when heated will turn into a greenish color.

Chrysoprase is the green Crypto-crystalline variety of Quartz. The color is due to trace amounts of Nickel. The very nicest green Chrysoprase in my opinion comes from Candala mine in Marlborough, Australia. There is also a Chrome Chalcedony, being found in Zimbabwe, in which the color comes from Chromium. However this color sort of an off green darker color.

Star Rose Quartz,
Vorondolo Mountains, Madagascar

Rock crystal quartz, the most common variety of quartz, has been used by many cultures for many, many years. For centuries early civilizations believed that these pinhead to meter wide rock crystals were permanently frozen ice. Quartz's high thermo-conductivity, which makes it feel cool to the touch, probably added to this belief. Historical records show the use of rock crystal for decoration and jewelry for at least 4,000 years. Its use as tools and weapons have also predated this use as decoration.

Chalcedony is crypto-crstalline quartz which is normally a single homogeneous color. Such as the blue chalcedony from Turkey. These are found in large nodules with consistant blue coloration, translucent to transparent, and very few inclusions. There are also the Malawi Blue chalcedony and Nevada

Quartz

"Misty Blue chalcedony. These have superior color, however they are not found in large quantities, nor in large nodules. Chalcedony also can be found in orange, green and white.

Amethyst Stalactite, Uruguay

Agates come in a variety of colors and found in nodules, seams, or pockets (as in the insides of geodes). Normally agates are named in relation to a specific area. Such as Blue Holly Agate, which is a purpleish agate found in Oregon. Nipomo Agate, is a clearish agate with Marcasite plumes which was found in the bean fields of Nipomo, California.

Jasper is a colorful agate which has a lot of other minerals mixed in with it. Jasper is not translucent and is very colorful.

Synthetic Quartz is used for industrial purposes, as natural quartz is often formed twinned. In this case Large, flawless, single crystals are grown in an autoclave using the Hydrothermal process. Here one end of the autoclave is kept at a very hot temperature, where the nutrient dissolves into solution. At the cooler end the solution becomes supersatuated and with seed crystals, crystallization sets in. These Quartz's are used as a quartz Oscillator for frequency generators, watches, etc. Also the quartz is also used to make the bulbs for Halogen lamps. Glass does not take the high temperature and quartz is needed for this lumination technology.

Smokey Quartz, Borne, Switzerland

Flawless, pure Quartz has a piezoelectric property. This is used for pressure gauges, oscillators, resonators, and wave stabilizers. This type of Quartz also has the ability to rotate the plane of polarization of light. It is also transparent in ultraviolet rays, so it is used in making heat-ray lamps, prism, and spectrographic lenses. Used in the manufacture of glass, paints, abrasives, refractories, and precision instruments.

A commercial process of manufacturing pure, flawless, electronics-grade quartz was developed. "Cultured quartz," that is, quartz crystals grown very carefully in highly controlled laboratory conditions, is the quartz that is used in industry. About 200 metric tons of cultured quartz is produced each year. In the production of cultured quartz crystals, a "seed crystal" is needed. This seed crystal, called Lascas, is a small piece of carefully selected, non-electronics-grade quartz. The manufactured crystal then grows on this seed crystal.

WE HAVE A FACEBOOK PAGE! LET'S GO LIKE IT!

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MAHALO TO MARKUS FOR ESTABLISHING OUR *ROCK FACE*!

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Newsletter Editor

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.

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