

HUI PŌHAKU 'Ō HAWAI'I

Rock & Mineral Society of Hawai'i, Inc.



Meeting Times

MEETING

Wednesday
March 27, 2019

6:15-8:00 pm

Makiki District Park
Admin Building

Next Months Topic
Minerals of India

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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P.O. Box 23020
Honolulu, HI
96823-3020

Green Minerals By Dean Sakabe

March's theme is Green Minerals. On any given gathering of people one can usually find several people wearing (green) Jade pendants, bangles, or rings. Green Chinese turquoise is also more prevalent in the marketplace. Even looking at the lava rocks by the beaches one might be able to find small olivine fragments within the nooks in the lava rock.

Green minerals are so numerous, that it is hard to whittle down the list so I'll take the easy way and go thru the easier selection of the minerals.

To start it off will be the natural selection of New Zealand's **Greenstone**. In Maorian it is called Pounamu, which refers to nephrite jade.

Although there is also Serpentine and Bowenite also found in New Zealand, they try to reserve the name just for Nephrite. Pounamu is generally found in rivers in specific parts of the South Island, usually as nondescript boulders and stones, which the collectors can only use hand tools and also have to pack out the boulders and nodules themselves.

Jade, the gem variety of Jadeite and Nephrite. The two minerals are used interchangeably with Jade and at times can be hard to distinguish from each other. Jadeite is almost never found in individual crystals and is composed of microscopic interlocking crystals that produce a very tough material. Nephrite is actually a variety of the mineral Actinolite. Nephrite is composed of fibrous crystals inter-twinned in a tough compact mass. This toughness of Nephrite is fairly remarkable and was put to use by early civilizations as axes, knives and other weapons. It was later that Jade became a symbolic stone used in ornaments and other

religious artifacts. Today Jade is valued for its beauty as its many colors are very appreciated. However it is the emerald green color that Jadeite produces that is highly sought after by collectors. This emerald green jade called "Imperial Jade" is colored by chromium, iron is the cause of green and brown Jade. Manganese is



Greenstone Hook
Pendant



Imperial Jade

Green Minerals



Diopside; Kunene, Namibia

thought to produce the violet colors. Usually Nephrite comes in green, black, and creamy white. Versus Jadeite which can have the full range of colors, although Black is extremely rare and Jadeite with no impurities produces Ice Jade or Water Jade.

Garnets, are very hard, with many used as abrasives, however they are also used as gemstones. In this use the garnets come in every color, but blue. Additionally a new color change variety of Garnet has been found in Kenya. The **Deman-toid** variety of andradite garnet, which is relatively rare, is the most valuable form of garnet. The combination of its color and fire give it unsurpassed splendor. When looking at Deman-toid garnets one can usually see the characteristic "horsetail" in-clusions. The **Tzavorite** variety of grossular garnet is a very bril-liant green. Tzavorite is found the bushland along the frontier between Kenya and Tanzania. The name Tzavorite is to honor

the Tzavo National Game Park and the Tzavo river running through this area. The **Uvarovite** variety of grossular garnet, which is the rarest of the garnets, usually occurs in very small crys-tals. If a crystal happens to be large enough to be faceted it is usually preserved as a mineral specimen.

Diopside, it is an Iron Aluminum Silicate and one of the few minerals that can challenge emerald's deep green color. The sad part is Diopside is kind of soft with cleavage issues. There-fore it usually not made into gemstones. As mineral specimens, these are very wonderful, as who does not like the deep green colors with well defined crystals.

Emerald is a Beryllium Aluminum Silicate that is the green variety of Beryl. The green color of emerald is unparal-leled in the gem kingdom, and caused by small amounts of chro-mium and enhanced by traces of iron. Unlike other Beryls, em-eralds often contain inclusions and other flaws. These flaws are not looked on negatively, as they would be for other gemstones. Instead the flaws are considered part of the character of the stone and are used to assure the purchaser that they have a natural stone, versus a lab grown emerald.



Green Apophyllite; Maharashtra, India



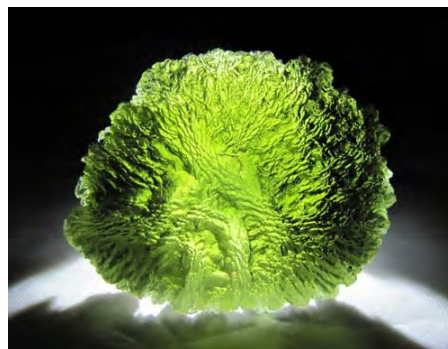
Tzavorite, Merelani Hills, Arusha Region, Tanzania

Hiddenite is the green variety of Spodumene. It is greenish in color, which varies from a yellowish green to a blu-ish green, although it sometimes approaches emerald green. Hiddenite is strongly pleochroic, meaning there is a color in-tensity variation when a crystal of it is viewed from different directions. The top and bottom of the crystal reveal the deep-est colors. Hiddenite was found in Alexander Co., North Caro-lina, in the latter part of the nineteenth century. New deposits have been unearthed in Madagascar and Brazil. Due to hid-denite's cleavage, splintery fracturing and strong pleochroism, it is a faceter's challenge.

Gaspeite is a Nickel Magnesium Iron Carbonate, which mainly comes from Australia. It is used as to make semi-precious cabochons. Gaspeite's almost apple green color is quite unique. Gaspeite is found as a secondary mineral

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around nickel sulfide deposits. It was thought of as just a gangue mineral by miners when it was encountered and usually placed in the mines dumps or tailings. A gangue mineral is a mineral that probably contains the ore metal, but its chemistry is such that processing it is either impossible or unprofitable. Such was the case with Gaspeite despite being rich in nickel, useless for the miners so left aside. Gaspeite is named for its type locality of Gaspe' Peninsula, Lemieux Township, Gaspé-ouest County, Quebec, Canada, but the best material of late is coming from North of Perth, Australia.



Moldavite

Malachite which is a Copper Carbonate Hydroxide), gets its name from the Greek word for "mallow" (a green herb). It is banded with light and dark green designs. That give it a unique ornamental quality unlike that of any other stone. The banding comes from the subtle changes in the oxidation states of the surrounding waters over time. The exact mechanism of the coloration is still not completely understood. It is usually found in massive form, from which carvings can be made from them. Malachite also can be found in crystalline forms, which are slowly becoming available to mineral collectors. One of its more unique habits is its fine acicular crusts and tufts. At times appearing as a mat of thin hairs or as a carpet of green velvet.

Moldavite – These Tektites are poorly understood. They are irregularly shaped, sometimes looking like blobs of glassy substance, or at times intricately-shaped nodules. They have no crystal structure, and are similar to obsidian, however they are not associated with volcanic processes. Their chemistry is quite unique. It is postulated that many odd events occur during a meteor's impact because of the tremendous heat and pressure produced. Tektites may be fused glass that formed during an impact of a meteor with layers of rock on the Earth's surface. Tektites occur in broad bands in specific localities in different parts of the world. These bands produce characteristically similar tektites and are sometimes loosely associated with meteorite craters or suspected craters. The odd and diverse chemistry of the tektites could be a result of unique meteorites hitting unique rock types with the combinations producing particular effects. Some tektites, called Moldavites, are especially prized for their clarity and unique green color. Moldavites are found in a "splash field" centered around Moldavia in former Czechoslovakia.



Pyromorphite; Guangxi Province, China

Olivine, is a Magnesium Iron Silicate, which has been known by many names. It is actually the mineral names of forsterite and fayalite. However it is also known as "Chrysolite" or Peridot. Chrysolite is an old German name that was applied to gem quality olivine. Peridot is the birthstone of August and is a very affordable gemstone with a unique green-yellow color. Most Peridot is actually the magnesium rich Forsterite and its color is caused by the presence of iron ions. Fayalite's higher iron content make for darker, less attractive specimens that are not generally used as gemstones. The best colored Peridot has an iron percentage less than 15% and includes nickel and chromium as trace elements that may also contribute to the best Peridot color. Olivine is found in igneous rocks and marbles that formed from metamorphosed impure limestones. The early crystallization of olivine is the reason

WWW.ROCKANDMINERALSOCIETYOFHAWAII.ORG

Officers

President

Matthew Martin

Info@naturalhistorylab.com

Vice President/ Admin.

Jon Bly

BLYJ1966@gmail.com

Vice President/ Lapidary

Dean Sakabe

Dean.sakabe@gmail.com

(808) 282-6681

Treasurer

Debbie Iijima

Secretary

Blair Ishitani

Newsletter Editor

Blair Ishitani

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.

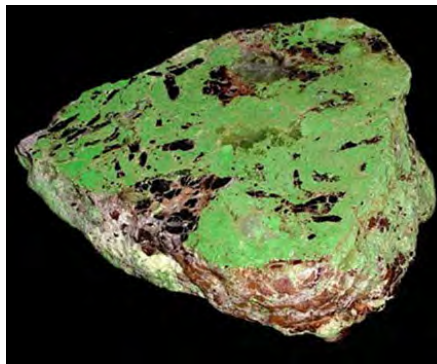
that molten lavas can contain crystallized grains of olivine. Olivine is also found in iron-nickel meteorites. Not just as small grains but as significantly sized crystals sometimes occupying over 50% of the meteorites volume. Thinly cut slices of these meteorites are extremely attractive with the polished steel gray of the iron and the embedded grains of gemmy green olivine.



Variscite

Variscite (Hydrated Aluminum Phosphate) is a phosphate mineral that is

sometimes confused with turquoise. It is usually greener, than turquoise. Variscite, can be used as a semi-precious stone, in that it has distinctive color patterns. Variscite occasionally alters into other phosphate minerals. This occurs in what were perhaps weak layers of a nodule since only portions of the Variscite nodules are altered. The most common alteration mineral is crandallite and gives some nodules a yellow or white layer.



Gaspieite

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