

# HUI PŌHAKU 'Ō HAWAI'I

## Rock & Mineral Society of Hawai'i, Inc.



### Meeting Times

MEETING  
Wednesday  
July 25, 2018

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

Next Months Topic  
Botryoidal Minerals

LAPIDARY  
Every Thursday  
6:00-8:30pm

Makiki District Park  
2nd floor Arts and  
Crafts Bldg

MEMBERSHIP  
DUE COSTS 2018  
Single: \$10.00  
Family: \$15.00

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Hawai'i, Inc.  
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### Red White and Blue Minerals By Dean Sakabe

July's topic is minerals that are Red, White, and Blue.

Being that there are numerous minerals that in one form or another can be found in each of these colors. I figured that I would change it up a little and write about a mineral where all three colors (and sometimes more) appear at the same time.



Opal, Brazil

First up are **Opals**, this is an hydrated amorphous form of Silica. That being said Opal has an amorphous character, which classifies it as a mineraloid, it does not have any crystalline form. It is sometimes in veins, lumps, and/or pin points. Opal can also be found in material replacement, such as the replacements of fossils or tree limbs. In the case of Hawaii it is found in little vesicles in lava, granted it is just white potch, but it is still Opal. The color occurs when the microscopic sized spheres of Silica happen to line up in way that it acts like a prism. The opal splits the white light into all the colors of the spectrum, and the light eventually bounces back out the top of the stone. Here we get the spectrum of color.



Opal, Virgin Valley, Nevada

Now the size of the little spheres and the angle at which the light is diffracted will determine what color is being produced. Therefore the possible combinations of colors in an opal can be seen as: blue only, blue-green, blue-green-yellow, blue-green-yellow-orange, and finally the full spectrum of blue-green-yellow-orange-red. The presence of red in an opal can greatly add to its value. Opals can also contain aqua and purple as well as the other 'non-primary' colors

## Red White and Blue Minerals

which are produced when two primary colors are combined. For example, green and orange between the primary colors of blue, yellow, and red.

**Labradorite**, this is an Sodium calcium aluminum silicate, essentially it is a Feldspar mineral in the Plagioclase series that is often valued as a gemstone and ornamental material for its red, blue, or green iridescence. The mineral is usually gray or brown to black and need not be iridescent. Labradorite is one of the more common plagioclase varieties and occurs in many gabbros, dolerites, norites, and basalts.. Labradorite is named for its occurrence near Nain, on the coast of Labrador, Canada. Labradorite can display an iridescent optical effect known as labradorescence. Labradorescence is not a display of colors reflected from the surface of a specimen. Instead, light enters the stone, strikes a twinning surface within the stone, and reflects from it. The color then seen is the color of light reflected from that twinning surface. Different twinning surfaces within the stone reflect different colors of light. Light reflecting from different twinning surfaces in various parts of the stone can give the stone a multi-colored appearance.



Rainbow Moonstone, Madagascar

Labradorite with superb labradorescence is produced from a few deposits in Finland, of which the best of this material was given the name "Spectrolite" ( by the director of the Geological Survey of Finland ). A significant amount of gray to black Labradorite is produced from locations in Madagascar and Russia. There are also small amounts of transparent Labradorite produced in India.

**Tourmalines**, an Aluminum Boron Silicate come in just about every color. We are not just talking about single color crystals, but multicolored containing two or more colors with in the same crystal, additionally one can also find tourmalines with a cat's eye in them. The name comes from the Sinhalese word "Turмали" or "Thoramalli", for the stones originally coming out of Ceylon (Sri Lanka today). The most spectacular tourmaline crystals are formed by hydrothermal activity. These crystals form when hot waters and vapors carry the elements needed to form tourmaline into pockets, voids, and fractures, which offer an open space for crystal growth. The tourmaline crystals formed in these cavities range in size from tiny millimeter crystals to massive prisms weighing over 100 kilograms.



Labradorite, Madagascar

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Bluecap Tourmaline, Tourmaline Queen Mine, Pala, California

**Fluorite** is a Calcium Fluoride, which is very popular to collect. It comes in all different colors ranging from pure Fluorite, which is colorless, to every color in the rainbow. Fluorite is also one of the most fluorescent minerals. As many specimens strongly fluoresce, and different specimens will fluoresce in different colors. In fact, the word "fluorescent" is derived from the mineral Fluorite. The name of the element fluorine is also derived from Fluorite, as Fluorite is by far the most common and well-known fluorine mineral.

**Ammolite**, is a rare, gem-quality, iridescent material cut from the fossilized shells of Ammonites found only in the Bearpaw Formation in Alberta, Canada. In Siksika, the language of the native Blackfoot people, the stone is called *aapoak*, meaning "small, crawling stone.". One might refer to this astone interchangeably as Ammolite and Ammonite. Both are correct. However, Ammonite refers to the fossil shells of Ammonites, whether they are gem-quality or not. Ammonites were marine mollusks that became extinct around 65 million years ago. Their fossils have been found across the globe. The ones that yield gem-quality Ammolite are *Placenticerus meeki*,

*Placenticerus intercalare*, and *Baculites compressus*. This material has only been found in Alberta, Canada. Also only about 5% of the ammonites found in Alberta have any suitable gem material, which is only found on the shell surface. Furthermore, only about 20% of this part of the shell can be used. The fossilized ammonite shell is comprised primarily of Aragonite with trace elements of aluminum, barium, chromium, copper, iron, magnesium, manganese, silicon, strontium, titanium, and vanadium. The iridescent outer layers may be 0.5 – 8 mm thick before polishing and 0.1 – 3 mm thick after polishing.

A higher grade Ammolite gem will have either a very strong, bright single color or a range of bright colors. These gems can show any color of the rainbow. Lower grade gemstones will show less vibrant colors in a more limited range. Generally, red and green are more common than blue or purple. Certain hues, like crimson, violet, and gold, are very rare and in high demand.



Ammolite, Alberta, Canada

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## Officers

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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.

## UPCOMING VOTE : Adoption of Vendor Eligibility & Guidelines for Club-Sponsored Shows

The Club Officers and Board of Directors have developed and refined a set of guidelines that provide criteria and guidance for eligibility of vendors at club-sponsored shows, as well as basic criteria for vendor participation. At the upcoming July meeting, these will be presented to the membership for adoption.

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