

HUI PŌHAKU 'O HAWAII

Rock & Mineral Society of Hawai'i, Inc.



Meeting Times

MEETING

Wednesday
March 23, 2016

6:15-8:00 pm

Makiki District Park
Admin Building

NEXT MONTH

Precious Metals and
Fancy Diamonds

LAPIDARY

Every Thursday
6:00-8:30pm

Makiki District Park
2nd floor Arts and
Crafts Bldg

MEMBERSHIP

DUE COSTS 2015

Single: \$10.00

Family: \$15.00

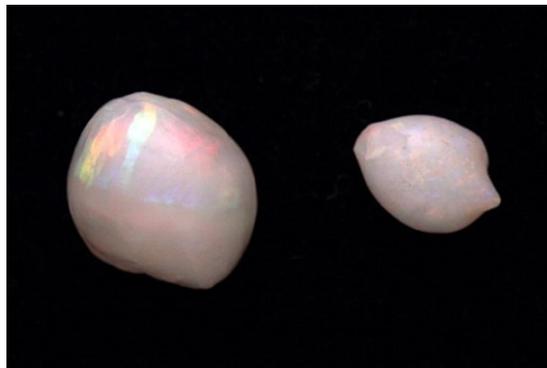
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Organic and Bio-Organic Minerals

By Dean Sakabe

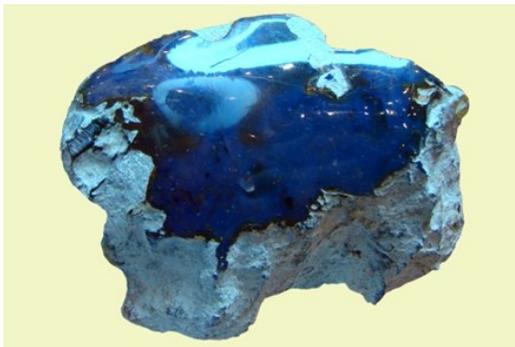
March's topic of Organic and Bio-Organic minerals is sort of a select few. However a select few which many, many people have in their possession. To start off with the Organic Minerals normally include these three items : Pearls, Coral and Amber.

Amber, of which is generically Baltic Amber, as this is the one in which large scale mining has been performed since the mid 19th Century. One of the larger operations is the Open-Pit mine at Jantarny (Sambia Peninsula, Kaliningrad Oblast), Russia. Baltic Amber itself ranges in color from clear, to light yellow, to dark yellow on to brown.



4mm & 2mm Opalized Pearls, Cooper Pedy, Australia

Amber itself first came to life as the sap of ancient trees. This tree resin was secreted to heal a wound, of which when the tree eventually died, and started to decay, the sap remained. Then being buried under layers of vegetation, earth, and sometimes water. The sap continued to harden from the pressure and heat that naturally builds up. Add many millions of years under this slow process we finally get fossilized resin.



Blue Amber, Dominican Republic

Organic and Bio-organic Minerals

Pearls unlike gemstones produced inside the Earth, are created by mollusks. These animals live can live in both salt and fresh water habitats. There are also more than 100,000 or so different species. You would think that with this large number of species there would be a lot of pearls. However, pearl producing mollusks are rare, there are less than one in every 10,000 animals.

Natural pearls usually start off as a wayward food particle and not a grain of sand. This irritant becomes trapped inside the mollusk. The animal senses the object and coats it with layers of aragonite and conchiolin. The two materials that are basically the same substances the animal uses to build its shell. In most pearls, the aragonite is arranged in sheets of flat, six-sided crystals. Between each sheet, the mollusk secretes a very thin layer of the membrane-forming protein conchiolin. This composite material is called Nacre or mother-of-pearl.

The most distinctive feature of a nacreous pearl is the way it glows from within. This property, known as "luster," gives pearls their unusual beauty. Luster results from the reflection of light rays not only off the surface of the pearl, but also off the concentric inner layers of nacre. Because a pearl's surface is mostly round, it acts as a convex mirror, reflecting light so that it appears to emanate from within the pearl. The multiple layers of nacre also give rise to the "iridescence" or "orient" of pearls. This is a characteristic that resembles the shimmer seen on a soap bubble. The layers of nacre act like tiny prisms, refracting light so that it appears with all the colors of the rainbow.

Coral Polyps are small spineless animals, usually only a few millimeters in diameter. Each as a central mouth opening surrounded by tentacles. Its exoskeleton is excreted near the base, this is aragonite acquired from the calcium and carbonate ions taken in by the polyps. Generation after generation of the polyps, both vertically and horizontally forms the coral.

Black Coral is Hawaii's State Gem. Black corals (Family Antipathidae) live in colonies up to 6 feet high. The polyps are cylindrical with six non-retractable tentacles. Named for their stiff black or brownish skeleton, black coral is related to sea anemones and stony corals. Found in all oceans of the world, more than 150 species of black corals have been described, in Hawaii there are 14. Some black coral grows as a single, spiral coil, while others have a fan shape or elaborate tree-like branches. On Hawaii's deep reef slopes is where you will find the tree like black corals.



Gold Coral



Petosky Stone, Michigan

Petosky Stone is Michigan's State Stone. It is a fossilized coral that was the *Hexagonaria percarinata*, found predominantly in Michigan's Upper Peninsula. The stone consists of tightly packed, six-sided corallite. The center of each polyp was the mouth and contained tentacles that reached out for food. The hexagon shape of each cell and thin lines radiating out from the dark "eye" in the center are distinguishing features unique to this fossil. Which in a roundabout way gave its name, Petoskey. The Petoskey Stone has a pattern resembling "rays of the rising sun," tie to the origins of the resort area.

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

[HTTP://WWW.FACEBOOK.COM/PAGES/ROCK-AND-MINERAL-SOCIETY-OF-HAWAII/103902329673700?v=wall&ref=sgm](http://www.facebook.com/pages/Rock-And-Mineral-Society-Of-Hawaii/103902329673700?v=wall&ref=sgm)

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.

Coal is a combustible rock of organic origin composed mainly of carbon, hydrogen, and oxygen. Some water is always present, as are grains of inorganic matter that form an incombustible residue known as ash. Coal is classified by the amount of alteration it has undergone during formation. From an initial peat stage, we have the brown coal (or lignite), sub-bituminous coal, bituminous coal, and anthracite. If the coal is under gradual increased temperature and pressure, which decreases the water content, we have sub-bituminous coal, bituminous coal and anthracite are together known as black coal.

Coal is formed from accumulated vegetable matter that has been altered by decay and by various amounts of heat and pressure over millions of years. The progressive transformation of coal is referred to as coalification. Interlayered with other sedimentary rocks, it forms beds ranging from less than a millimeter to many meters thick. Such a bed, or several beds separated by thin layers of shale, siltstone or sandstone, constitute a coal seam. Major coal deposits have been formed in nearly every geological age since the Carboniferous age. The considerable diversity of coal type (organic composition), grade (mineral matter content) and rank (degree of coalification) depends on the differences in the mode of formation.

Organic minerals such as the tannic acid precipitates in wine caskets, or carpathite (hydrocarbon mineral that fluoresces) Bio mineral would be coral aragonite, sea snail shell calcite, sea urchin spine (high Magnesian-calcite), bone apatite.

Bio-organic Minerals would have to have protein or some other organic material interbedded within the crystalline matter, but one could also consider tannic acid crystals in wine as a bio-organic.

Tannic acid is a commercial form of Tannin. Its weak acidity is due to the numerous phenol groups in the structure. Tannic acid chemically is a mixture of polygalloyl glucoses or polygalloyl quinic acid esters with the number of galloyl moieties per molecule ranging from 2 up to 12 depending on the plant source used to extract the tannic acid. Commercial tannic acid is usually extracted from any of the following plant parts: Tara pods, gallnuts, or Sicilian Sumac leaves. Tannic acid is a specific type of tannin (plant polyphenol).

The organic matter in soil is usually derived from plants and animals. For example in forests, leaf litter and woody material falls to the forest floor. When it decays to the point in which it is no longer recognizable it is called soil organic matter. Furthermore when the organic matter has broken down into a stable substance that resist further decomposition it is called "Humus". Thus soil organic matter comprises all of the organic matter in the soil exclusive of the material that has not decayed. Humus is what enables the plants to withhold water and nutrients, therefore giving plants the capacity for growth. Another advantage of humus is that it helps the soil to stick together which allows nematodes, or microscopic bacteria, to easily decay the nutrients in the soil.



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