

HUI PŌHAKU 'Ō HAWAI'I

Rock & Mineral Society of Hawai'i, Inc.



VOLUME 44, NO. 4

ZINC MINERALS

BY DEAN SAKABE

Native Zinc is a rare mineral, even though it has been found in several locations, these locations have never produced much native Zinc. The first specimens of native zinc were found in New Brunswick, Victoria, Australia in 1855. Currently specimens are being found at Mina Dulcinea de Llampos, Copiapo, Chile.

Zinc has been used in the copper – zinc alloy Brass since Roman times. Brass has also been large scale produced in India since the 13th Century. The pure metal Zinc has unknown until the end of the 16th century. Alchemists burned zinc in air to form “philosopher’s wool”. In 1746 a German chemist discovered the pure metallic zinc. Work by others uncovered the electrochemical properties of zinc by 1800.

Ores of zinc include Sphalerite, Smithsonite, Hemimorphite, Franklinite, Willemite, Hydrozincite, and Zincite.

Zincite (Zinc Oxide) is essentially a one locality mineral. Even though it is found in several localities around the world such as Tuscany, Italy; Tsumeb, Namibia; Colorado; Poland, Spain and Tasmania. These localities do not produce Zincite in any quantity. It is only at the zinc and manganese mines of the Sterling Hill and Franklin, New Jersey that Zincite was found in quantities where it could be exploited for Zinc.

Zincite was also found in Poland, however this did not occur in a natural occurring cracks in the zinc smelters walls. The fluctuating temperatures and pressures inside the furnace then created conditions which supported the spontaneous growth of these crystals in the air vents and chimney channels.

Adamite (Zinc Arsenate Hydroxide) is a popular fluorescent mineral to collect. It fluoresces bright green under short and long UV light. Additionally it is also an attractive mineral specimen under ordinary light. The green color is typically due to trace amounts of copper and/or uranium, occasionally purple Adamite is found, this is due to trace amounts of cobalt. Adamite has been found in Mapimi, Mexico, Greece, California, and Utah.



Sphalerite on Limestone
Smith County, Tennessee

MEETING

Wednesday

April 22

7:00—9:00 pm

Makiki District

Park

Administration

Building

NEXT MONTH

Lead Minerals

LAPIDARY

Every Thursday

7pm-9pm

Second-floor Arts

and Crafts Bldg

Makiki District

Park

MEMBERSHIP

COSTS

2008

Single: \$10.00

Family: \$15.00

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Zinc Minerals, page 2

Franklinite (Zinc Iron Manganese Oxide), named after Franklin, New Jersey, where this mineral was found. This dark black mineral was found in such large quantities that it served as an ore of Zinc and Manganese. a world famous locality that has produced many formerly unknown and exotic mineral species. It is found in large enough quantity to serve as a ore of zinc and manganese. Specimens from Franklin often contain rounded black grains of franklinite surrounded by white calcite and/or greenish willemite with a sprinkling of red zincite.

Willemite (Zinc Silicate) is another somewhat rare zinc mineral. However it was found in such great abundance at Franklin New Jersey that it became an important ore of zinc. At other localities Willemite it is more scarce and forms as a secondary mineral from primary zinc deposits, such as the deposits in Tiger Arizona; Morsnet, Belgium; St. Hilaire, Quebec; and Tsumeb Namibia.

Willemite was discovered at Franklin NJ, however it was at a site in Belgium, where the mineral formed small brown crystals. Thru as little quirk of fate the mineralogists at Franklin described the mineral but never named it. While the mineralogists at Belgium took advantage of this and named the mineral after William I of Belgium, i.e. Willemite.

Nearly all Willemite specimens fluoresce a bright green under ultra-violet light. This fluorescence combined with the red fluorescence of the Calcite at Franklin, makes these specimens highly desirable. Some Willemite specimens will even show phosphorescence. (Phosphorescence is the ability

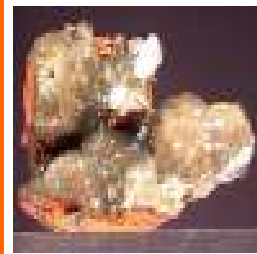
of a mineral to glow after the initial light is removed) The mineral has stored the energy of the activating light and re-emits the light on a delayed basis. Willemite is one of the best examples of a fluorescent mineral.

Sphalerite (Zinc Iron Sulfide) which is also known as Blende, is an important ore of zinc. It can also make a attractive cabinet specimen. It can have excellent luster and associates with many beautifully colored minerals, such as Galena, Pyrite, Fluorite, Calcite, Quartz, and many others.

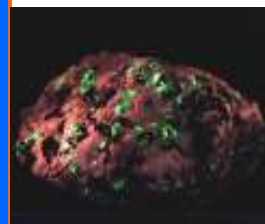
Sphalerite can be difficult to identify because of its variable luster, and color. So much so that miners had difficulty distinguishing Sphalerite from more valuable minerals such as Galena, Acanthite, and Tetrahedrite, that they named it Sphalerite which is Greek for *treacherous rock* and Blende is German for *blind* or *deceiving*. Sphalerite has been found in the Tri state area of Missouri, Illinois and Tennessee; Broken Hill, Australia; England, Germany, and Peru.



Sphalerite
Madan District, Bulgaria



Adamite
Neapami, Durango,
Mexico



Franklinite in Calcite
Franklin, New Jersey



Lab grown Zincite

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Lead Minerals, page 3

Smithsonite (Zinc Carbonate) is named for James Smithson, the founder of the Smithsonian Institution. It has a silky to pearly luster which sets Smithsonite apart from other minerals. Most Smithsonite is found in a apple green to blue-green color, however it also has a variety found in a purple to lavender color that is very sought after. Smithsonite is also found in yellow, white, tan, brown, blue, orange, peach, pink, red and colorless varieties.

The typical crystal habit of smithsonite is botryoidal. The Kelly Mine, Magdalena, New Mexico has produced the absolute finest blue-green botryoidal masses of Smithsonite. However rounded rhombohedrons and scalenohedrons have been found from the mines in Tsumeb, Namibia and the Broken Hill mine in Zambia.

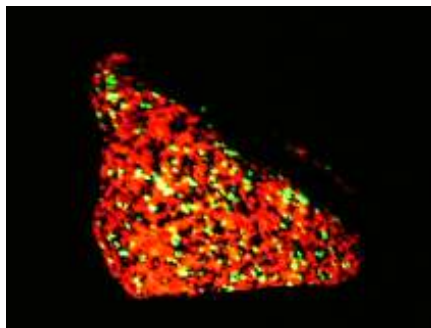
Smithsonite has been and is still being used as an important, although rather minor ore of zinc. At Leadville, Colorado the Smithsonite deposits were largely overlooked until their profit potential was finally realized. Many other zinc ore minerals may have been originally smithsonite before metamorphism or other altering processes, formed new minerals. Smithsonite forms in dry climates as a weathering product of primary sulfide zinc ores such as sphalerite.



Purple Smithsonite
Choix, Sinaloa, Mexico



Smithsonite
79 Mile marker, Gila County, Arizona



Willenite
Franklin, NJ

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News and Notes, page 4

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.

WE HAVE A WEBSITE!

http://pohakugalore.net/Hui_pohaku/Hiu_pohaku_1.html

MAHALO TO MARKUS FOR HELPING US GET OUT OF THE ELECTRONIC STONE AGE!



Lab grown Zincite

PARKING LOT RESURFACING AT MAKIKI PARK HAS FINISHED.

KEEAMOKU ST AND MAKIKI ST PARKING LOTS ARE RE-OPENED FOR GENERAL USE.

Rock & Mineral Society of Hawai'i, Inc.

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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, 7:00 - 9:00 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.

Any newsletter comments are appreciated, and can be sent to elise.thomasson@gmail.com

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