

HUI PŌHAKU 'Ō HAWAI'I

Rock & Mineral Society of Hawai'i, Inc.



Meeting Times

MEETING

Wednesday

July 25

6:15-8:00 pm

Makiki District Park

Admin Building

NEXT MONTH

August 22

Chalcedony

LAPIDARY

Every Thursday

6:30-8:30pm

Makiki District Park

2nd floor Arts and
Crafts ldg

MEMBERSHIP

DUE COSTS 2011

Single: \$10.00

Family: \$15.00

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African Minerals By Dean Sakabe

Africa has been the primary source for Diamonds for many, many years, and it is still a very important source. Africa is also a very important source for colored gemstone, but production is spread across small mines in more than half a dozen countries so it is difficult to write about it all. Primary gemstone-producing countries are in southern and eastern Africa, stretching from Namibia in the southwest through Zimbabwe, Mozambique, Malawi and Tanzania to Kenya in eastern Africa when we include that large east African island nation of Madagascar. We have what is geologically a gemstone-rich area, known as the Neoproterozoic Mozambique Belt.

The colored gemstone production from the African mines has been constantly changing. Gemstones have been discovered one year and the mine can be played out sometimes the next year. This recently happened with the fine Spessartine Garnets from Namibia. They were plentiful and introduced to the world, but the next year there were hardly any. While there is still some supply from Namibia, it is difficult to find and most of the better Spessartine's are now coming from Mozambique.

The current major gemstone producers are Tanzania, Mozambique and Madagascar. Tanzania has enormous potential with more than a half of million small-scale miners are digging away throughout the country. Tanzania is especially famous for Tanzanite (the gem version of Zoisite), however recently they have also found large Spinel, Tsavorite Garnets, and some uniquely colored Zircons. Madagascar is famous for recent discoveries of Ruby and Sapphire, although a number of other gemstones have been found, including Tourmalines, Aquamarine, Chrysoberly, Andalusite, Apatite, Citrine, Iolite and Kyanite.

Malachite Stalagmite,
Katanga, Democratic
Republic of Congo

Mozambique has been producing excellent tourmaline in a wide range of colors, and fine Spessartite and red garnets in impressive sizes have also been coming out of the country. Mozambique has recently become famous for its high quality paraiba-like



African Minerals

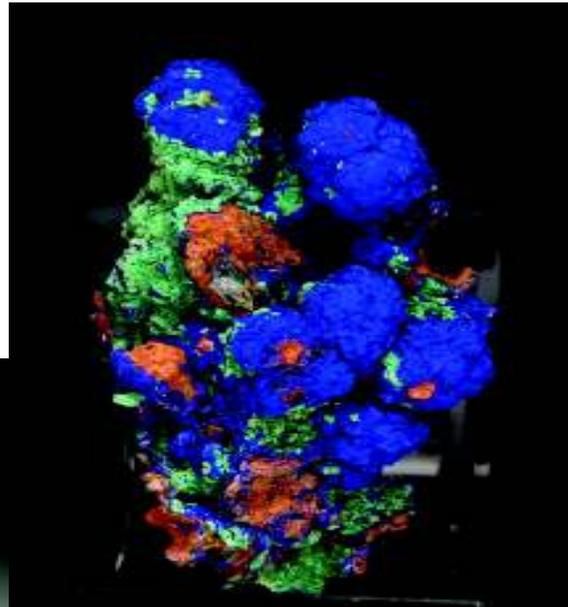
tourmaline.

Nigeria is a gemstone producer that is outside the Mozambique Belt, but nevertheless, Nigeria has produced respectable blue sapphires as well as large quantities of fine tourmaline. Nigeria is also known for pyrope and almandine garnet, aquamarines and topaz.

Looking at other minerals from Africa, **Malachite**, a copper carbonate that is formed from copper-containing solutions near copper ore deposits. Though it is fairly soft at 3.5 to 4 on the Mohs scale, it is popular for jewelry and ornaments due to its striking green colors and interesting vein patterns. Many of the most spectacular specimens of malachite found here contain combinations with other minerals, such as azurite, cuprite, or chrysocolla.

Azurite with Malachite, M'Cissi, Er Rachidia, Morocco

The Democratic Republic of the Congo, once known as Zaire, has become the most important malachite producer. It has rich deposits in the mining district of "Shaba Crescent" in Katanga Province. Belgians founded this area as a mine settlement in 1910, and it quickly became the center of the copper belt. Malachite is also found in Zambia, Namibia, and Zimbabwe and Morocco.



Azurite, Kerrouchene, Meknes-Tafilet Region, Morocco



Sugilite, Wessels Mine, Hotazel, South Africa

Sugilite is a rare mineral of fairly recent discovery. It is named after the Japanese petrologist, Ken-ichi Sugi, who first identified it in 1944 (in Iwagi islet, Japan). It has a distinctive purple color and is usually opaque to translucent. Sugilite has sometimes been called purple turquoise although there is no really no connection at all between sugilite and turquoise.

Though sugilite was first discovered in 1944, it did not become of interest to the gemstone world until many years later.



African Minerals

(Continued from page 2)

In 1979, a major deposit of gem-quality sugilite was found in a Wessels mine (manganese) in the Southern Khabahari desert in South Africa. This important deposit yielded several thousand kilograms of material. Sugilite colors include all shades of purple -- from lilac to plum, including hues of magenta, purple and red violet. Sugilite specimens often contain black matrix, and reddish or yellowish blotches, since the mineral sugilite occurs in brownish yellow and pale pink as well as violet and reddish violet.

Tigers Eye, is the common name for a variety of quartz that is chatoyant because of parallel intergrowth of quartz crystals and altered amphibole fibres that mostly turned into limonite. A new interpretation of the origin of tiger's-eye was recently given by Heaney and Fisher (2003): Our study has revealed that the textures responsible for the shimmer of tiger's-eye do not represent pseudomorphic substitution of quartz after preexisting crocidolite asbestos. Rather, we argue that tiger's-eye classically exemplifies synchronous mineral growth through a crack-seal vein-filling process."

For Tiger eye to the proper chatoyance (or the "cats eye" effect), the lapidarist must make its cuts exactly parallel to the length of the fibers. If the saw cut is perpendicular, or 90° to the fibers, you end up with a lifeless, dark brown to black stone with no chatoyance or light play at all. Most Tigers Eye is natural and occurs in Golden or Bluish colors (or a combination of Blue and Gold called Hawk's eye). However if gold Tiger's eye is heated it turns a nice Red. If it is treated with Acid it can be bleached to a light yellow which has a similar look and color to cats eye Chrysoberyl.

Pietersite is the trade name for a dark blue-gray breccia aggregate made up mainly of hawk's eye and tiger's eye. It was discovered in 1962 by Sid Pieters in Namibia. He registered his find in Britain and in 1964 it was named Pietersite in his honor. In 1993 a similar material was discovered in Hunan province in China. Pietersite belongs to a branch of the tigers eye family called riebeckite. Tiger's Eye is a pseudomorph, which starts out as the mineral crocidolite (a form of asbestos). As Quartz replaces the crocidolite, it takes on the shape of the fibrous mineral, which is what causes the Chatoyance in the gemstones of this family.

Unlike Tigers eye, the surface of a Pietersite is rather chaotic, with streaks and colors in every direction. This because during formation of the crystal, the materials that compose it were broken apart, swirled every which way, and then were reformed and cemented together by quartz. Stones and crystals that go through that process are referred to as brecciated. Pietersite colors include blues, reds, golds and browns. In contrast the Chinese Pietersite often occurs in shades of gold, red and blue color segments.

Pietersite, Kuromon District, Namibia





David P Wilbur comes to Hawai'i

Thank you Bryan Swoboda and BlueCap Productions for engineering a fantastic talk and fluorescent mineral light-show at UH. David P Wilbur, presenter of "What's Hot in Tucson" took a side trip during his stay on the island to talk about rocks. We rock-hounded with questions and mined for answers. Of course, everyone has a rocking good time when talking minerals! Check out the pictures below.



Bryan Swoboda, David P. Wilbur, and Jade Emory at the beginning of the event

David P. Wilbur with one of the finest Emeralds to come out of Hiddenite, NC



Bryan Swoboda with the Blue Cap Tourmalines which serve as the inspiration of Blue Cap productions. In a show of aloha, he told us to click on the Kamaaina to get a 20% discount when ordering a video

Mahalo!

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
 MAHALO TO MARKUS FOR ESTABLISHING OUR *ROCK FACE!*

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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.

Parking at Makiki Park

Parking along Keeaumoku St. starts at 5:30

After that, good luck because it drops off really fast!



Apophyllite, N'chwaning II mine, Kalahari Managanese Field, South Africa

See page 4 for a wrap-up and pictures of our special June 16 event!



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