

HUI PŌHAKU 'O HAWAI'I

Rock & Mineral Society of Hawai'i, Inc.



VOLUME 46, NO. 6

JUNE 2011

ANYTHING PETRIFIED

BY DEAN SAKABE

This month's topic is "Anything Petrified". This of course begs the question: What is Petrified? Does it mean being scared stiff? Haha, no: In the rock and mineral world it is something like Petrified Wood.

The process of petrification (of wood) starts with three basic ingredients: Wood, water and mud. Ancient logs or branches fell to the ground, which was then swept into a waterway. This tumbled downstream through lakes or swamps, where they eventually came to rest buried under water, debris, and mud—the mud, here, being volcanic ash. The water and mud stop oxygen from contacting the logs, so that the logs do not decompose; instead the mud slowly releases minerals into the water, which seep into the wood and form into quartz crystals. Over many millenniums the quartz crystals continue to grow replacing more and more wood till the entire log is turned into stone.



The petrified wood from Arizona is renowned for its reds and yellows due to the naturally radioactive soil.

MEETING

Wednesday

June 22

6:15-8:00 pm

Makiki District Park
Administration Building

NEXT MONTH

July 27

**Eric's French
Adventure with Pic-
tures, Rocks, and
Stories**

LAPIDARY

Every Thursday

6:30-8:30pm

Second-floor Arts and
Crafts Bldg
Makiki District Park

MEMBERSHIP

DUE COSTS

2010

Single: \$10.00

Family: \$15.00

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Anything Petrified

Please note that is not the variety of wood that makes petrified wood colorful. Mainly, it is the minerals mixed in with the petrifying groundwater. Minerals such as manganese, iron, and copper give the petrified wood a variety of color ranges. Quartz crystals are colorless, however when iron is added, the crystals become stained with yellow or red.

This is a list of minerals and related color hues:

- Copper - green/blue
- Cobalt - green/blue
- Chromium - green/blue
- Manganese - pink
- Carbon - black
- Iron Oxides - red, brown, yellow
- Manganese Oxides - black
- Silica - white, gray



Blue Forest Petrified Wood (Wyoming)



Red Petrified wood (Lane Co, Oregon)

The term “fossilization” refers to a variety of equally complex processes that enable the preservation of organic remains within rocks. It frequently includes the following conditions: rapid and permanent burial/entombment; protecting the specimen from environmental or biological disturbance; oxygen deprivation; limiting the extent of decay and also biological activity/scavenging; continued sediment accumulation as opposed to an eroding surface; ensuring the organism remains buried in the long-term; and the absence of excessive heating or compression which might otherwise destroy it.



Venerior bivalve (Bracklesham Bay, West Sussex, UK)

Fossil evidence is preserved within sediments deposited beneath water. Usually because of the conditions previously described, and primarily because the majority of the Earth's surface is covered by water. Even fossils derived from land, including dinosaur bones and organisms preserved within amber (fossilized tree resin) were preserved in sediments deposited beneath water i.e. in wetlands, lakes, rivers, estuaries or swept out to sea.

Fossilization can also occur on to a lesser extent on land, and includes specimens that have undergone mummification in the sterile atmosphere of a cave or desert. However these exam-

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ples are only a delay to decomposition rather than a lasting fossilization and specimens require permanent storage in a climate controlled environment in order to limit its affects.

From that a fossil is any evidence of life that has been preserved in rock. Fossils include not just organisms themselves, but also the burrows, marks and footprints they left behind. Fossilization is the name for the processes that produce fossils. One of those processes is mineral replacement. This is common in sedimentary rocks and sometimes with metamorphic rocks, where a mineral grain may be replaced by material with a different composition, but still preserving the original shape.



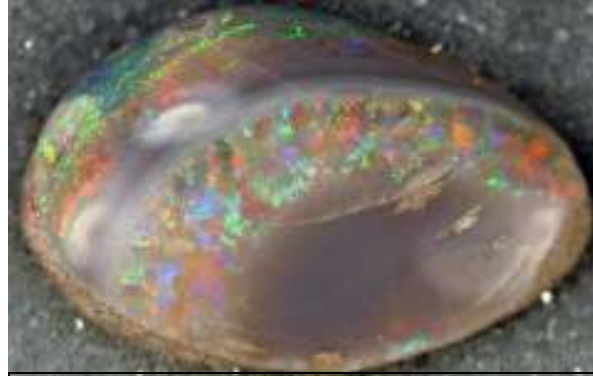
Opalized pinecones (Virgin Valley, Nevada)

When a fossil organism is subjected to mineral replacement, it is said to be petrified. For example, petrified wood may be replaced with chalcedony, or shells replaced with pyrite. This means that out of all fossils, only the creature itself could be fossilized by petrification.

Furthermore not all fossil organisms are petrified. Some are preserved as carbonized films, or preserved unchanged like recent fossil shells, or fixed in amber like fossil insects.

Scientists don't use the word "petrified" much.

What is called "petrified wood" is actually fossil wood. "Petrified wood", however, has a nicer sound.



Opalized Clam Shell (Cooper Pedy, Australia)

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News and Notes, page 4

Rock & Mineral Society of Hawai'i, Inc.

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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 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!

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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P.O. Box 23020
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Opalized wood (Virgin Valley, Nevada)

PARKING AT MAKIKI PARK

Parking along Keeaumoku St. starts at 5:30
After that, good luck because it drops off really fast!

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