



CHALCEDONY

BY DEAN SAKABE

This month's topic is the most worked upon stone in any lapidary operation, **Chalcedony**. Chalcedony is a cryptocrystalline form of silica, composed of very fine intergrowths of Quartz and Moganite. These are both silica minerals, which differ in the respect that quartz has a trigonal crystal structure, while moganite is monoclinic. Chalcedony's standard chemical structure is SiO_2 (Silicon Dioxide). Chalcedony has a waxy luster and is usually semitransparent or translucent. It can assume a wide range of colors, with the most common seen as white to gray, blue, or brown ranging from pale to nearly black.

The name "chalcedony" comes from the Latin *calcedonius*, from a translation from the Greek word *khalkedon*. Unfortunately, a connection to the town of Chalcedon, in Asia Minor could not be found, but one can always be hopeful.

To make things a little confusing is that Chalcedony and Agate are terms used almost interchangeably, as both are forms of quartz and are both Silicon Dioxide. My own philosophy to differentiate these two terms are thusly.



Malawi Blue Chalcedony

I call a stone Chalcedony, when it is sort of translucent and homogeneous in color. Such as the Malawi Blue Chalcedony.



Blue Lace Agate

Agates are stones which usually have colored layers. These are colored layers of differently colored layers of Chalcedony. Such as the Blue Lace Agate or Holly Blue Agate.

Forms of Chalcedony are found in all 50 states, occurring in many colors and color combinations. Some of the better known ones are:



Chrysoprase, Goias, Brazil

MEETING

Wednesday

August 22

6:15-8:00 pm

Makiki District

Park

Administration

Building

NEXT MONTH

Wednesday

September 26

Flourite

LAPIDARY

Every Thursday

6:30-8:30pm

Second-floor Arts

and Crafts Bldg

Makiki District

Park

MEMBERSHIP

COSTS

2012

Single: \$10.00

Family: \$15.00

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Agate, a variety of chalcedony with multi-colored curved or angular banding. Iris agate shows exceptional iridescence when light is shone through the stone. Landscape agate is chalcedony with a number of different mineral impurities making the stone resemble landscapes.

Fire agate is a form of chalcedony which contains inclusion of iron oxides that result in a play of colors much like that of precious opal. Arizona is the only State currently to have commercial production of fire agate.

Aventurine is a form of chalcedony, characterised by its translucency and the presence of platy mineral inclusions that give a shimmering or glistening effect termed aventurescence. Chrome-bearing Fushite (muscovite mica) is the classic inclusion, and gives a silvery green



Holly Blue Agate

or blue sheen. Oranges and browns are attributed to hematite and goethite.

Carnelian, is a clear-to-translucent reddish variety of chalcedony. Its hue may vary from a pale orange, to an intense almost-black coloration.

Heliotrope or Blood Stone is a green variety of chalcedony, containing red inclusions of iron oxide. These inclusions resemble drops of blood, giving heliotrope its alternative name of bloodstone. A similar variety, in which the spots are yellow instead of red is known as plasma.

Moss agate contains green filament-like inclusions, giving it the superficial appearance of moss. There is also tree agate which is similar to moss agate except it is solid white with green filaments whereas moss agate usually has a transparent background, so the "moss"

appears in 3D. It is not a true form of agate, as it lacks agate's defining feature of concentric banding.



Indonesian Purple Chalcedony Dragon

Onyx is a variant of agate with black and white banding. Similarly, agate with brown, orange, red and white banding is known as Sardonyx.

Petrified wood occurs in throughout Arizona, however the commercial production is essentially from privately owned lands in Navajo and Apache Counties near the Petrified Forest. Pieces as small as 1/4-inch to sections of logs 5 feet in diameter are recovered from the surface of the ground or with minimum excavations for use in



Petrified Wood, Oregon

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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!

the lapidary trade. Arizona petrified wood has the broadest range of applications of any gem material produced.

California's "Mojave Blue" agate, is a pastel blue or blue-gray agate, which cuts into attractive cabochons.

Oregon's State rock, the "**Thunderegg**," may be the best known gem material from Oregon. Thundereggs were not ejected from volcanos, but formed in very soft volcanic ash beds. Solutions containing silica permeated the cinders until voids were found which aggregations of chalcedony were deposited, but before the material could fully solidify the center of the concretion split apart, possibly because of shrinkage, permitting the later introduction of additional materials. The resulting star-shaped centers of chalcedony may be in the form of agate, jasper, or in some cases different varieties of opal.

Fairburn Agates, from South Dakota, are after a community near a very prolific agate deposit in Custer County, these brightly colored banded agates are similar to Lake Superior agates found in Michigan and Dryhead agates from Montana. The color patterns are alternating bands with one of the bands always white. The colors that alternate with white include yellowish-brown, dark red, salmon pink, black, yellow, grayish-blue, and milky-pink. The agate nodules range in size from about 20 millimeters in diameter to some that weigh as much as 20 kilograms.



Alphabet Agates from Indonesia



Botryoidal White Chalcedony, Durango, Mexico



Red Chalcedony Stalagmites, Paraiba, Brazil

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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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