

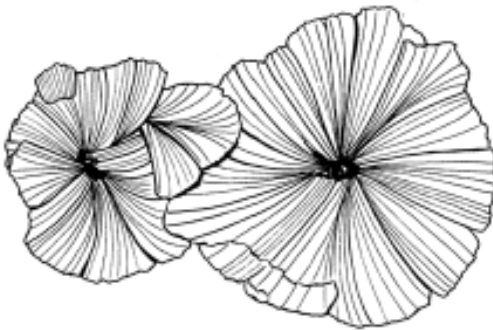
MYSTERY MINERAL: WHO AM I?



I am a native element.
I am metallic.
I crystallize in the isometric system.
Often I form as very thin wires and sometimes as very thick bundles of wires.
People use me to make coins, forks, spoons, knives and rings.
I am very bright when clean, but tarnish easily to black.
Who am I?



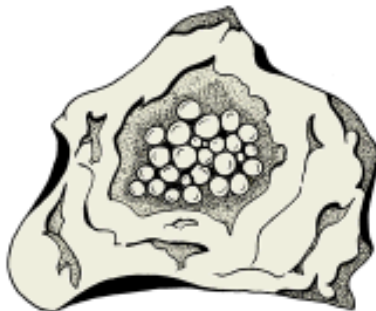
MYSTERY MINERAL: WHO AM I?



My chemical formula is $\text{NaCaB}_5\text{O}_6(\text{OH})_6 \cdot 5(\text{H}_2\text{O})$.
I am found in evaporite deposits.
I am mostly found in California and Nevada.
When my crystals grow parallel to each other, I can be cut and polished to make "tv stone" because my crystals work like fiber optic cables.
I was discovered by Georg Ludwig Ulex.
Who am I?

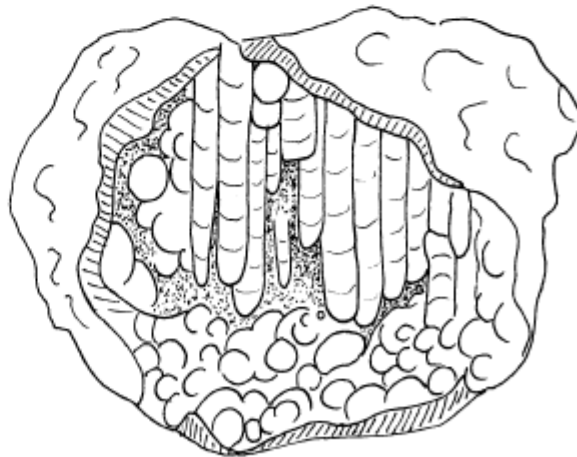
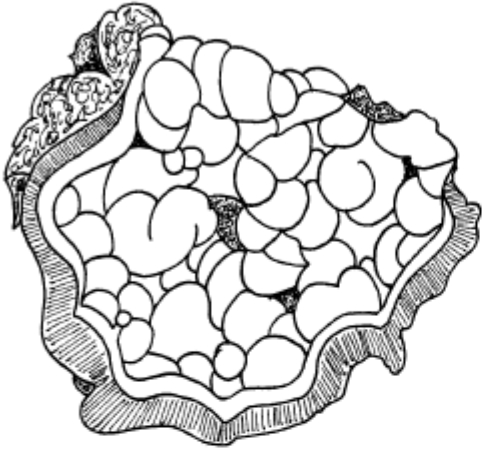


MYSTERY MINERAL: WHO AM I?



My crystals can be found in over 600 different forms.
I am a carbonate mineral.
Two other minerals have my chemical formula, but crystallize in different crystal systems. These two minerals, aragonite and vaterite, are called *polymorphs*.
I dissolve in hydrochloric acid. I am on the hardness scale.
Who am I?

Agate & Chalcedony



Agate = Quartz

You are familiar with quartz. We have had a lot of quartz crystals in Mini Miners issues. Most of the quartz you are familiar with forms crystals. Examples include rock crystal, amethyst, citrine, smoky quartz, and milky quartz.

There is another type of quartz that you have probably seen, but you may not know that it is quartz. This type of quartz forms crystals that are so small that they can only be seen with a special microscope. Mineralogists call this type of quartz *cryptocrystalline*. Chalcedony and agate are two varieties of this special type of quartz.

Chalcedony is very hard, 7 on the hardness scale. It is light. Chalcedony is usually banded. The bands alternate between fibrous bands and bands that are made up of microscopic grains. There are a number of different varieties, or types, of chalcedony. The most popular and well-known is agate.

Agate is banded chalcedony. The bands can be different shades of gray. But they can also be a number of different colors. On the previous page is a banded agate (lower left). Color the different bands different colors (white, gray, red, yellow, brown, purple,

etc. Sometimes the different bands form randomly in the specimen, like the upper right agate on previous page. The bands are red, orange and dark brown.

Another type of chalcedony is called *jasper*. Jasper is red chalcedony. The specimen pictured on the previous page, in the upper left corner, is dark red, rounded jasper. Chalcedony often forms in rounded masses like this specimen.

Light to dark brown chalcedony is called *carnelian*. Apple-green chalcedony is called *chrysoprase*. Dark green chalcedony with red spots is known as *bloodstone* or *heliotrope* because the red spots look like drops of blood. Gray and black, waxy-looking chalcedony is called *flint*.

All the different chalcedony varieties are cut and polished by jewelers and lapidary artists to make jewelry. Flint can be chipped into very sharp edges. Native peoples have used flint for arrowheads, spearheads, and various cutting tools.

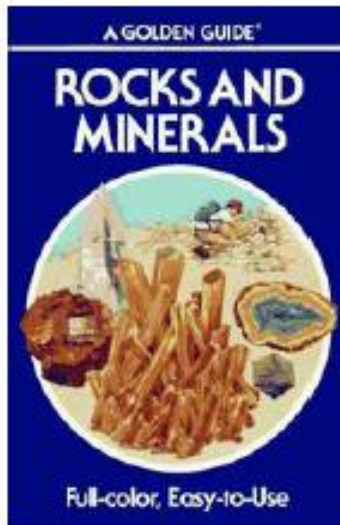
Now that you have read about chalcedony, what do you think the lower right specimen is on the previous page?



“MUST HAVE” MINERAL BOOKS FOR YOUR LIBRARY

If you are serious

about becoming a first-rate mineral collector with a first-rate mineral collection, you MUST start building a good library of mineral books. You will need a combination of good mineral field guides, a variety of books on different mineralogical topics, and some high-quality picture books on minerals. On the following pages are Diamond Dan's suggestions for the books that every serious, first-rate mineral collector should have on her or his shelves.



Rocks and Minerals: A Guide to Minerals, Gems, and Rocks.

A Golden Nature Guide. By Herbert S. Zim, Paul R. Shaffer
and illustrated by Raymond Perlman. 160 pages.

This small, inexpensive paperback book is a classic that nearly every young mineral collector has owned. It includes sections on how to collect minerals, their physical properties and how to identify them, crystal systems, and special mineral properties. It has a long section on minerals (though not complete) and their forms and properties, and it ends with a section on rocks.

It is illustrated with accurate, colorful, detailed mineral drawings. This is the best book for the brand-new, young mineral collector.

Above: A recent cover for this title.

Right: The original cover. Copies of the older editions are still easily available online or at used book stores - and they are very inexpensive.

