

# MINI MINERS MONTHLY

VOL. 8 NO. 1 A Monthly Publication for Young Mineral Collectors

January 2014

## HAPPY NEW YEAR!

The second weekend of February is always the great Tucson Gem & Mineral Show™ in Tucson, Arizona. This year is the 60th Anniversary celebration of this world-famous mineral show. For the past 16 years, the Tucson show has included a special book for the children that attend. The theme of each book was also the theme of the show for that particular year. In celebration of their 60th Anniversary, this issue of *Mini Miners Monthly* is a compilation of some chosen pages from each theme throughout the years.

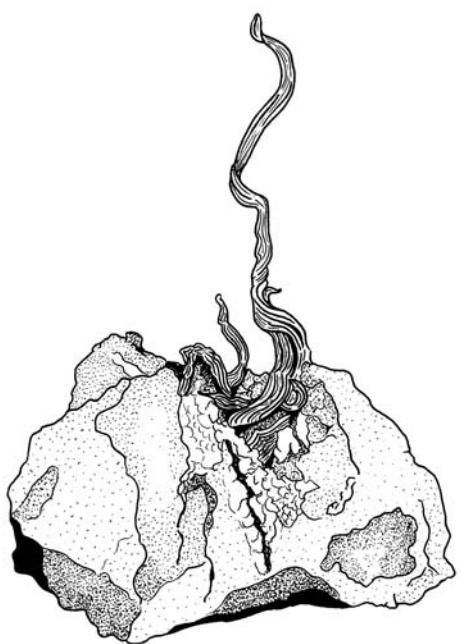
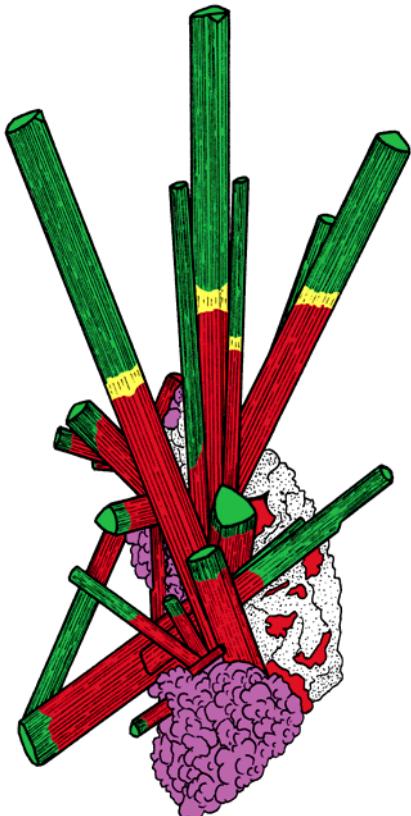
If you haven't noticed, there are a lot of mineral specimens out there. There are more and more mineral dealers every year offering more and more minerals from all over the world. Most collectors eventually find a theme in mineral collecting that becomes their specialty. Some collectors specialize in minerals from a specific place.

Sometimes that place is a country, like Mexico, Brazil or the United States. Other focus on a smaller area like minerals from a particular state, such as

minerals from Arizona. Perhaps as you enjoy these *Mini Miners Monthly* pages you will find a country that YOU want to specialize in.

Have you ever considered writing your own book about minerals? If you are a photographer, you can take photographs and use them for illustrations. You can also try your hand at drawing specimens. You will notice that as you look through this issue and the special mineral drawings done for the Tucson books, that the drawings actually get better over the years. This is because I learned to draw better pictures as I practiced more and more. Then do some research using good mineral books and the internet. Write some interesting paragraphs about the minerals you draw. Write about their physical properties, where they are found, how they are used, who or what they are named after. You can turn your document into a PDF file (there are some free PDF conversion programs on the internet) and then you can email it to family and friends. Maybe your mineral club will use your book at a meeting or show. Your book could be 10 pages long or 40 pages long or however long you want it to be! Remember, this is YOUR book. Here's a hint: when you think you are done, have a friend, parent or teacher read it over for you. When I read my books, I always miss spelling mistakes that other people see. Give it a try. You can write your own book about minerals!

Have you ever  
considered  
writing your own  
book about  
minerals?



# Mining for Minerals

By Emma Fajcz

Have you ever wanted to mine for minerals yourself? Believe it or not, there are numerous places in the eastern United States where you can do this activity. Some states, like Arkansas and North Carolina, have some reputable places to mine. Below, I'll share some interesting places you might want to visit.

Franklin, North Carolina, known as the "Gem Capital of the World," has many different gemming areas open to the public. Mines such as Cowee Mountain Ruby Mine, Mason Ruby and Sapphire Mine, and the Sheffield Mine have flumes where visitors can use screens to sift through the soil and try to find rubies and sapphires in the native soil. I went to Mason

Mountain Mine in North Carolina on Independence Day in 2011 and had a lot of fun. My Dad shoveled the ore, carried the five-gallon bucket, and rinsed off most of the ore using a screen and the flume. I enjoyed picking through the rocks and minerals in the screen. I found several rubies and sapphires, in addition to other minerals, like kyanite. This mine also offered "salted" buckets that contained minerals not found in that mine. These buckets are great for young children, since they can easily find big, colorful minerals to bring home. Mason Mountain Mine also had two sheltered picnic tables where we ate our picnic lunch. I definitely recommend gemming in Franklin, North Carolina!



Figure 2: Dad shoveling ore into the bucket from the big pile.

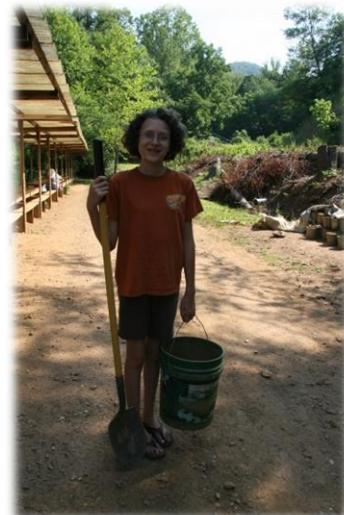


Figure 1: Emma with a bucket and shovel at Mason Mountain Mine.



Figure 3: Dad, Emma, and Beth in front of the flume.

In Murfreesboro, Arkansas, visitors can go to the Crater of Diamonds State Park and find their own diamonds for a small fee. This diamond field was once part of John Huddlestine's farm over a hundred years ago. Huddlestine was suspicious that the two mysterious crystals he had found on his property were diamonds. He brought them to a nearby jeweler, who identified them as diamonds. This started a rush of people to the town of Murfreesboro.



Figure 4: Beth enjoyed doing the "salted" bucket at Mason Mountain Mine with Mom's help.

Some famous finds include the perfect Strawn-Wagner diamond, the Uncle Sam diamond, and the Kahn Canary diamond.

Nowadays, visitors can sift through the soil looking for diamonds, or walk around the field looking for exposed jewels. Although some people have been startlingly prosperous, most people don't find any diamonds. Don't be discouraged: you can find other minerals at Crater of Diamonds State Park, like garnet, peridot, and agate.

Even if you don't find any diamonds, this would be a really fun rockhounding experience.

Fort Drum Crystal Mine, also known as Ruck's Pit, is a unique place to mine for fossilized shells. This interesting place is located in Okeechobee County, Florida. This is a great place to look for new specimens, with over 280 varieties of fossilized shells. Many of these shells have beautiful calcite crystals that have grown on them. The original mine site is no longer open, but visitors can come and sift through five-gallon buckets of dirt and specimens drawn from the mine for a fee. With your parents' help, you can see photographs about the mine and obtain contact information online at <http://thefortdrumcrystalmine.com/index.htm>.

Herkimer diamonds are double-terminated quartz crystals found in the area of Middleton, New York. "Double-terminated" means that the crystals have "naturally faceted ends."<sup>1</sup> Herkimer diamonds were named after Herkimer County in New York State. The two predominant mines for Herkimer diamonds are Ace of Diamonds and Herkimer Diamond Mines. Using picks, hammers, and other equipment, you can mine for your own Herkimer diamonds.

If you could visit a mine, which one would you choose? Maybe you and your family can visit one of these mines this year and have your own mineral adventure.



Figure 5: Beth and Emma sitting at the picnic table at Mason Mountain Mine.

Photography Credits: Brooke Fajcz

#### Footnotes

1. [http://en.wikipedia.org/wiki/Double\\_Terminated\\_Crystal](http://en.wikipedia.org/wiki/Double_Terminated_Crystal)

44th Annual  
**Tucson Gem**

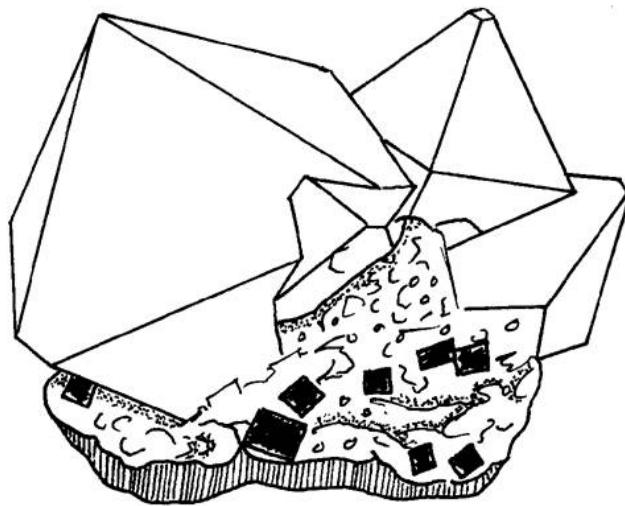
# & Mineral Show



*presents*

## M I N E R A L S TO COLOR

### A to Z



This is a gift to you from  
**The Tucson Gem & Mineral Society**

# M is for . . .

## ...Magnetite

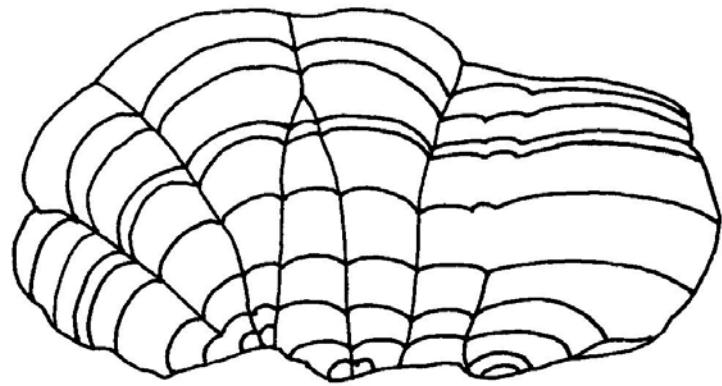
**Magnetite is a natural magnet. It is the most important ore of iron in the world. Its crystals are diamond-shaped: collectors call them *octahedral* crystals. “Octahedral” means they have eight sides. Color it gray.**



These diamond-shaped magnetite crystals are in a green rock called “chlorite”.

## ...Malachite

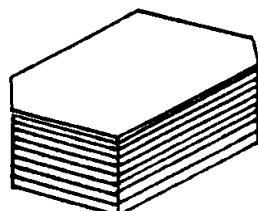
**Malachite is a beautiful green mineral which sometimes forms zones or bands. Each band is a slightly different shade of green. It polishes well and is used for carvings and jewelry.**



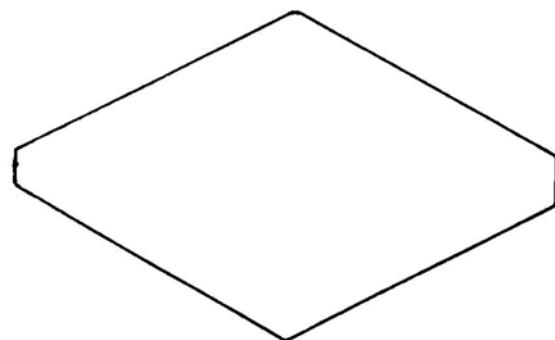
Banded malachite from Zaire.

## ...Muscovite

**Muscovite is another type of mica. It forms six-sided crystals and breaks into sheets. It can be yellow, light brown, green or red.**



A pile of muscovite crystals like this is called “a book” of muscovite.

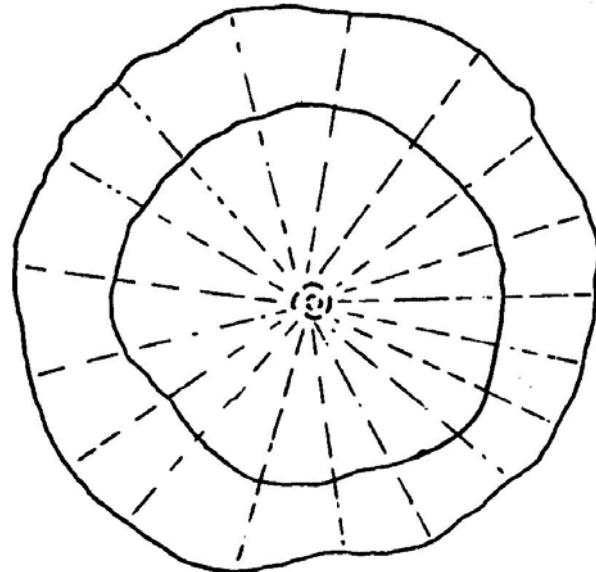


A muscovite crystal from the Black Hills of South Dakota.

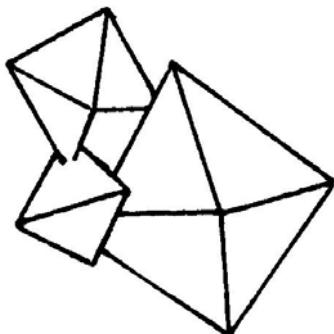
# P is for . . .

## ...Pyrite

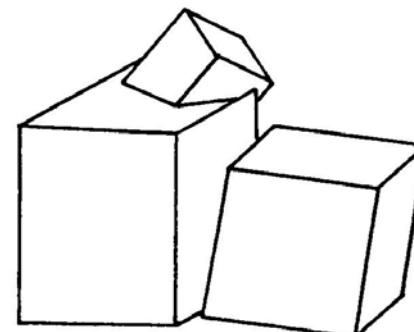
**Pyrite is also known as “Fool’s Gold” because a lot of prospectors thought they had discovered gold when they had only found pyrite. Actually, gold is softer and more of a yellow color than pyrite. Pyrite is named after the Greek word of fire, because if you hit pyrite with steel there will be a spark. Pyrite is dark yellow and has a shiny, metallic luster.**



This pyrite is sometimes called a “pyrite dollar” because it looks like a large coin. It is from Illinois.



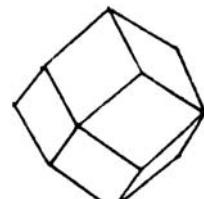
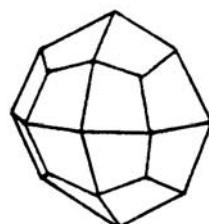
Sometimes pyrite forms diamond-shape crystals like these from Peru.



Shiny, intergrown pyrite cubes from Spain.

## ...Pyrope

**Pyrope is a dark red variety of Garnet. Its crystals are often very well formed. It is sometimes used as a gemstone.**

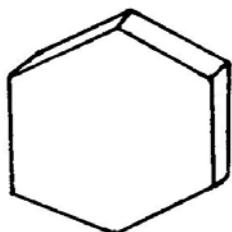


Here are two different pyrope crystals.

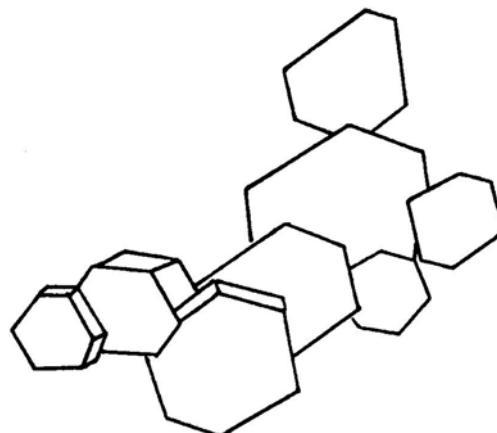
# V is for . . .

## ...Vanadinite

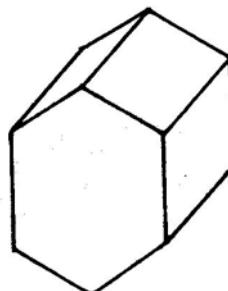
Vanadinite forms bright red to reddish-orange, six-sided crystals. Six-sided crystals are called *Hexagonal* crystals. Vanadinite crystals are very valuable to mineral collectors.



Vanadinite can form very thin crystals like this...



A group of vanadinite crystals

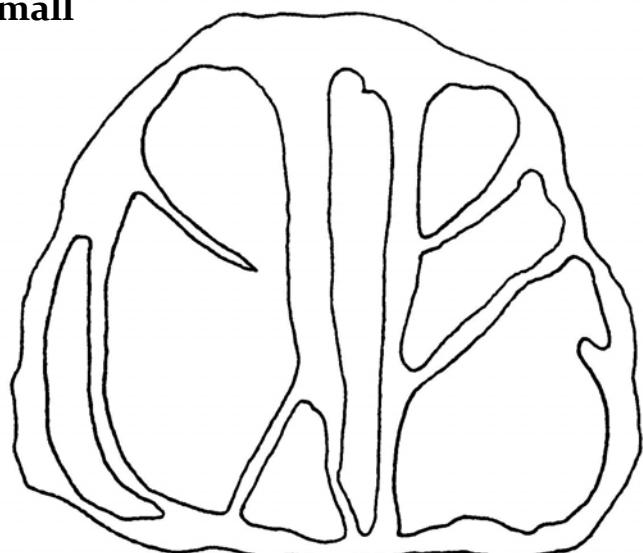


...or it can form fat crystals like this.

## ...Variscite

Variscite almost always forms lumps or masses. However, some very small crystals (*micro-crystals*) are found in Arkansas. It is light green and is sometimes surrounded by a yellow mineral called *Crandallite*.

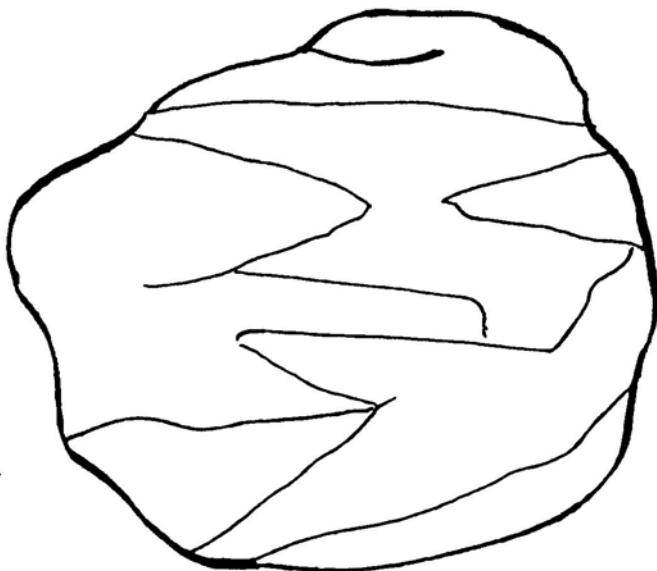
A variscite nodule from Fairfield, Utah with yellow crandallite around green lumps of variscite.



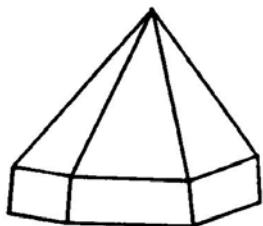
# Z is for . . .

## ...Zincite

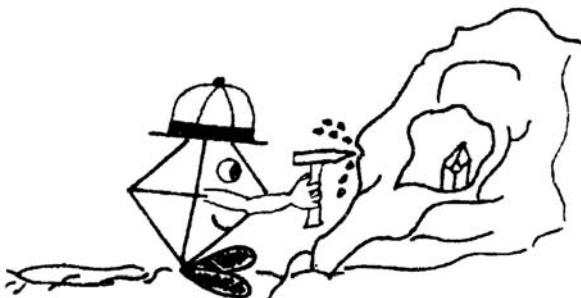
Zincite is an important ore of the element Zinc. It seldom forms crystals. When it does, like the zincite crystals from Franklin, New Jersey, it is sought out by collectors. It is orange to dark red in color.



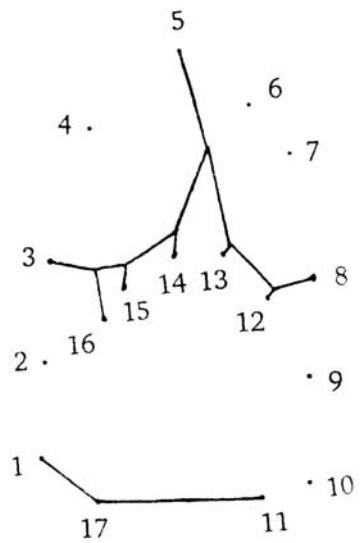
The zincite looks like fingers. It grew in white calcite.

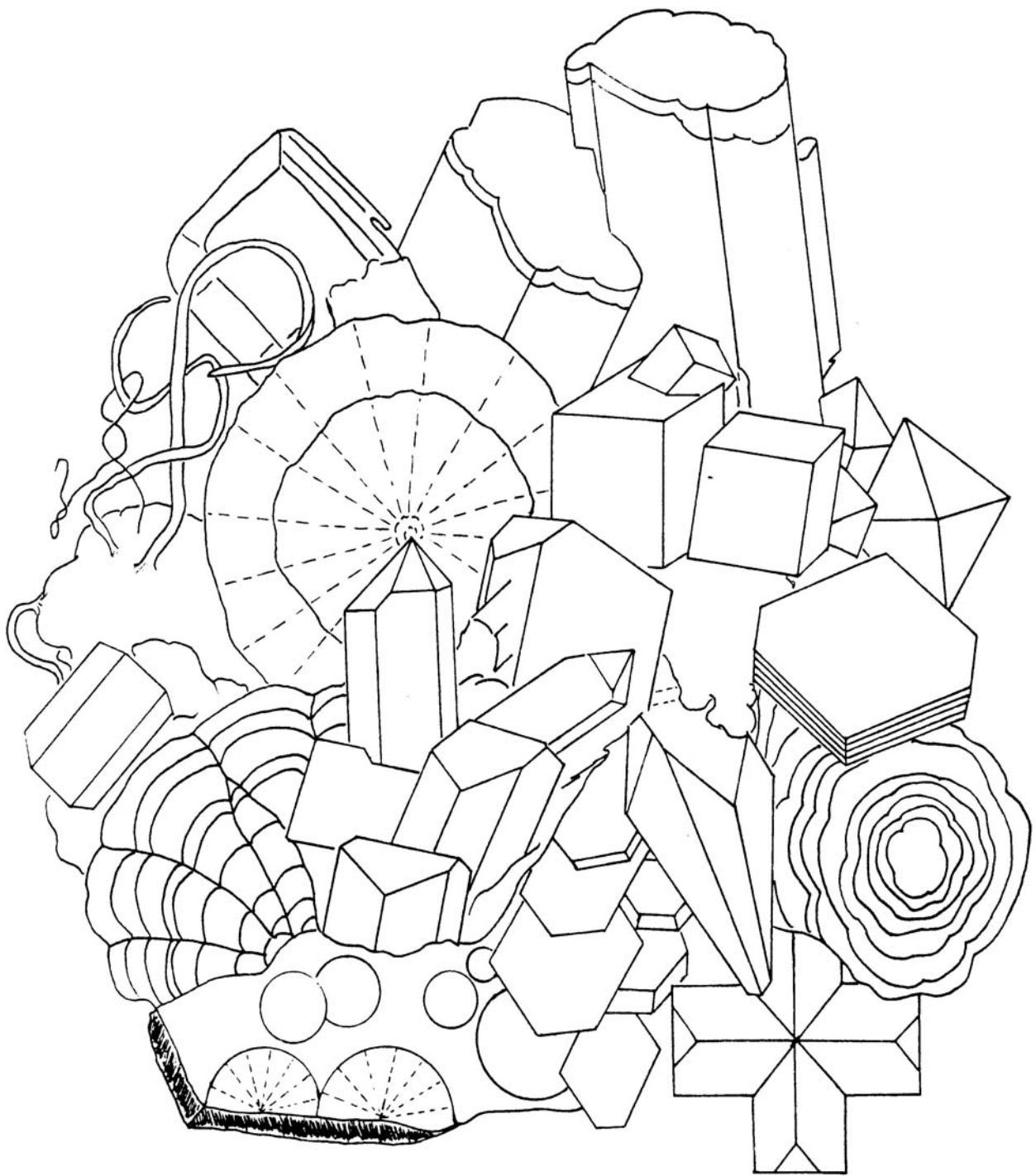


A perfect zincite crystal.



Diamond Dan has discovered a crystal, but he needs your help. Connect the dots and compare the finished crystal with the others in this coloring book. What did Dan find?

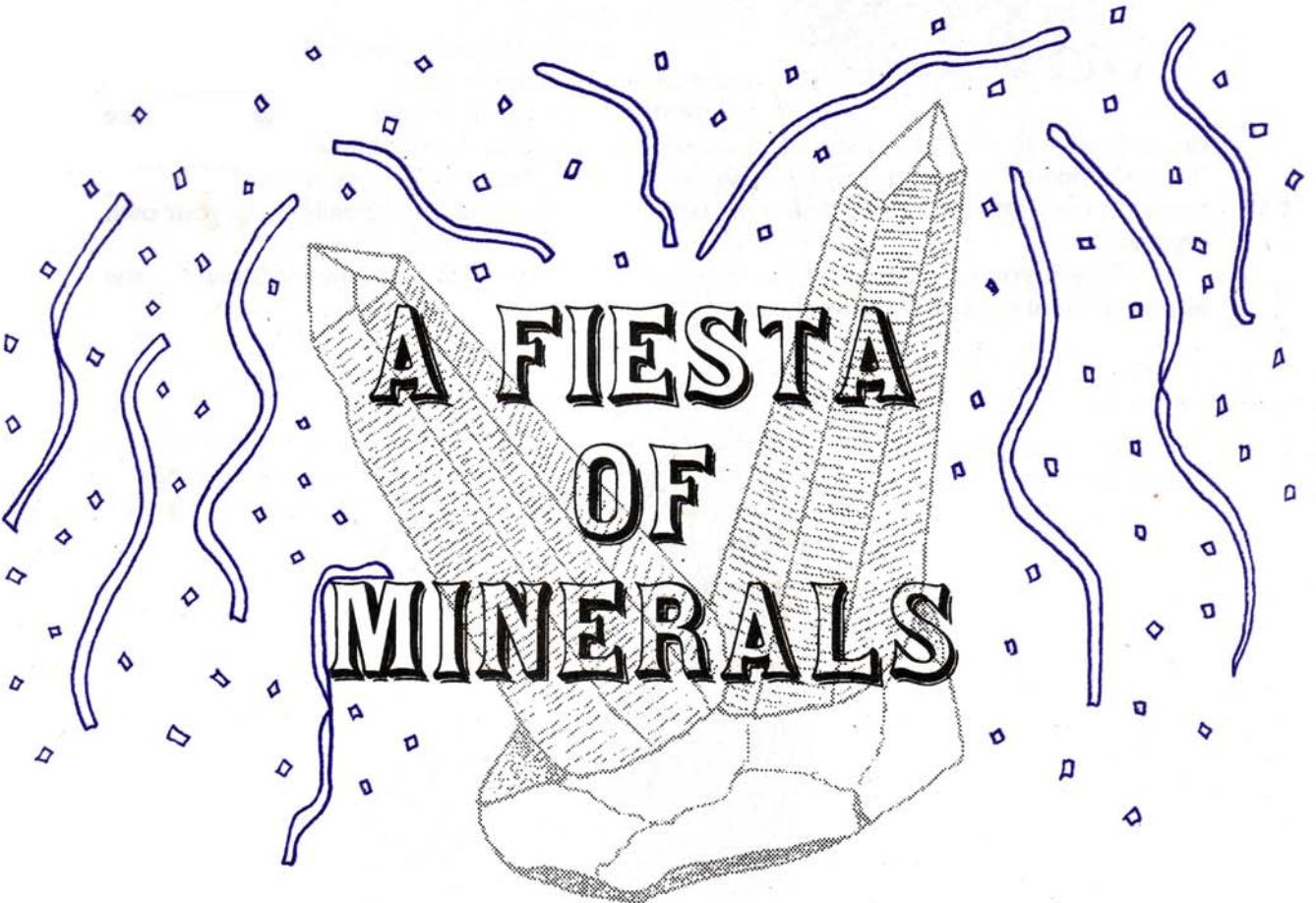




**A collection of minerals to color.**

**The 45th Annual**

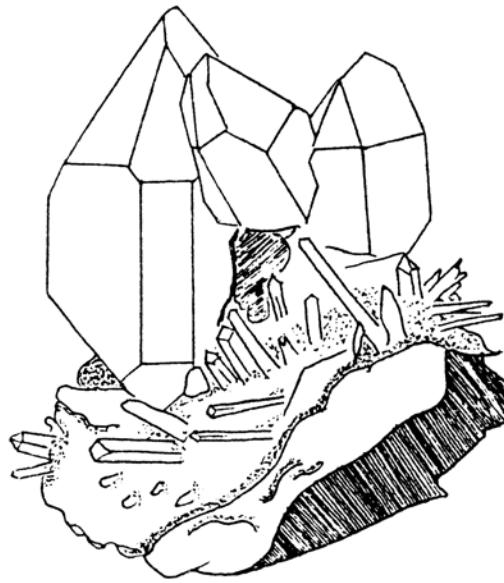
**Tucson Gem & Mineral Show**



A FIESTA  
OF  
**MINERALS**

**MINERALS OF MEXICO**

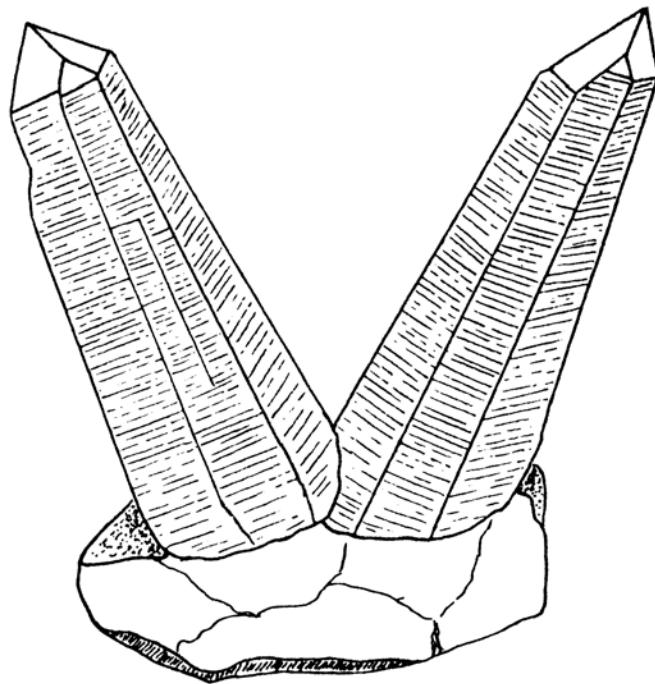
This is a gift to you from  
**The Tucson Gem & Mineral Society, Inc.**



## **AMETHYST**

Tepustete, Alamos, Sonora, Mexico

Amethyst is the purple variety of the mineral quartz. All quartz crystals have six sides. This is a specimen of three large amethyst crystals sitting on a bed of smaller amethyst crystals. All the crystals can be colored light purple.



## **AMETHYST**

Amatitlan, Guerrero, Mexico

This specimen of amethyst is from another locality in Mexico. Like the one above, these crystals have six sides. It is different in at least two ways: the crystals are longer and it is dark purple. These crystals from Guerrero are very attractive and very popular with collectors.



## SILVER ON GALENA

Taxco, Guerrero, Mexico

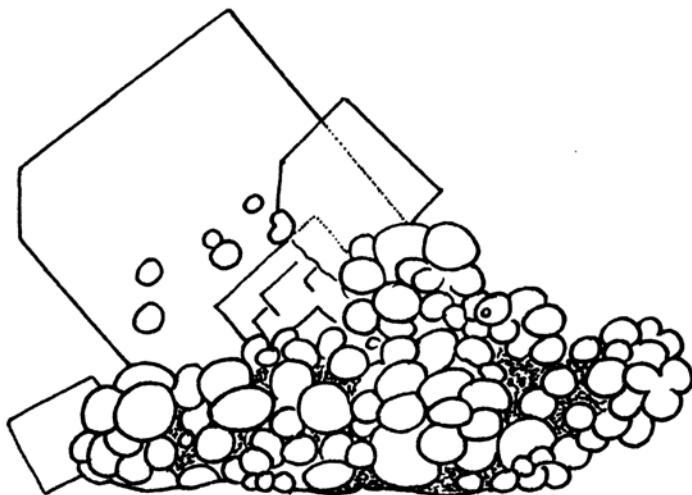
Silver is a beautiful and valuable mineral. Silver can be easily formed into jewelry. When Spanish explorers came to Mexico, they eagerly searched for silver and gold. Occasionally silver can be found in nature like this specimen above. This specimen is actually a bundle of silver wires that grew together. It is sitting on galena. Galena is the heavy ore of lead. Color the silver with a silver-colored crayon or pencil, and the lead with a dark gray pencil.



## SMITHSONITE

Santa Anita Mine, Choix, Sinaloa, Mexico

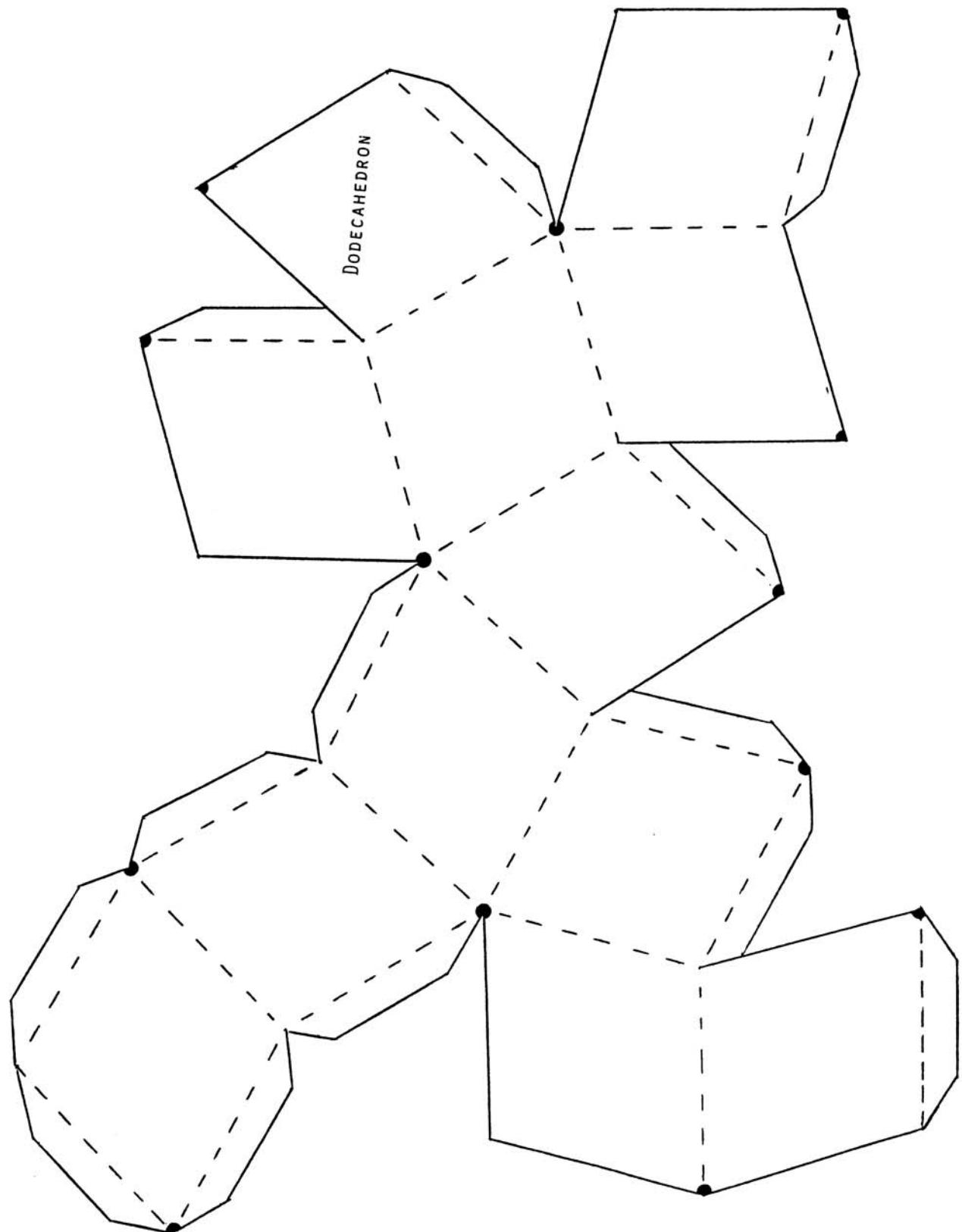
Smithsonite can form crystals, but they are very rare. Usually, smithsonite is found in smooth, rounded masses like this specimen. This mineral form is called "botryoidal" which means "grapelike" because it looks like a bunch of small grapes. Smithsonite can be found in many beautiful colors including pink, purple, green, and yellow. Color this specimen pink with some light purple near the bottom of the specimen.



## WULFENITE ON MIMETITE

San Francisco Mine, Sonora, Mexico

The wulfenite crystals of Mexico are world-famous. The San Francisco Mine has produced some of the most beautiful wulfenite specimens in the world. The crystals are a very light yellow, and usually are so thin that you can see right through them! They sit on top of rounded masses of the mineral mimetite, which is orange-yellow in color.



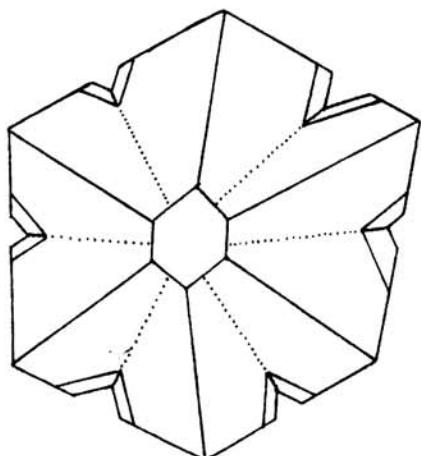
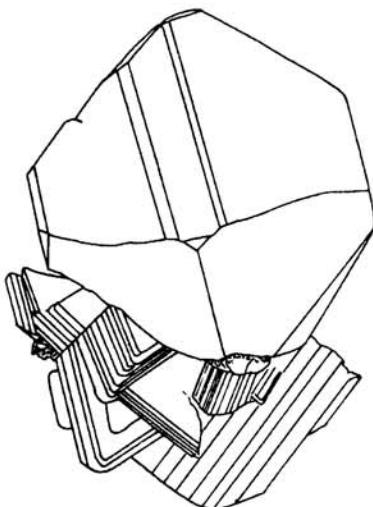
## DODECAHEDRON

"Dodecahedron" literally means "12 faces." This crystal form is found in the *isometric* or *cubic* system. It is the form typical of garnets. This crystal model is a bit more difficult, but with patience and care, you can do it!

THE 46TH ANNUAL  
**Tucson**  
**Gem & Mineral**  
**Show**

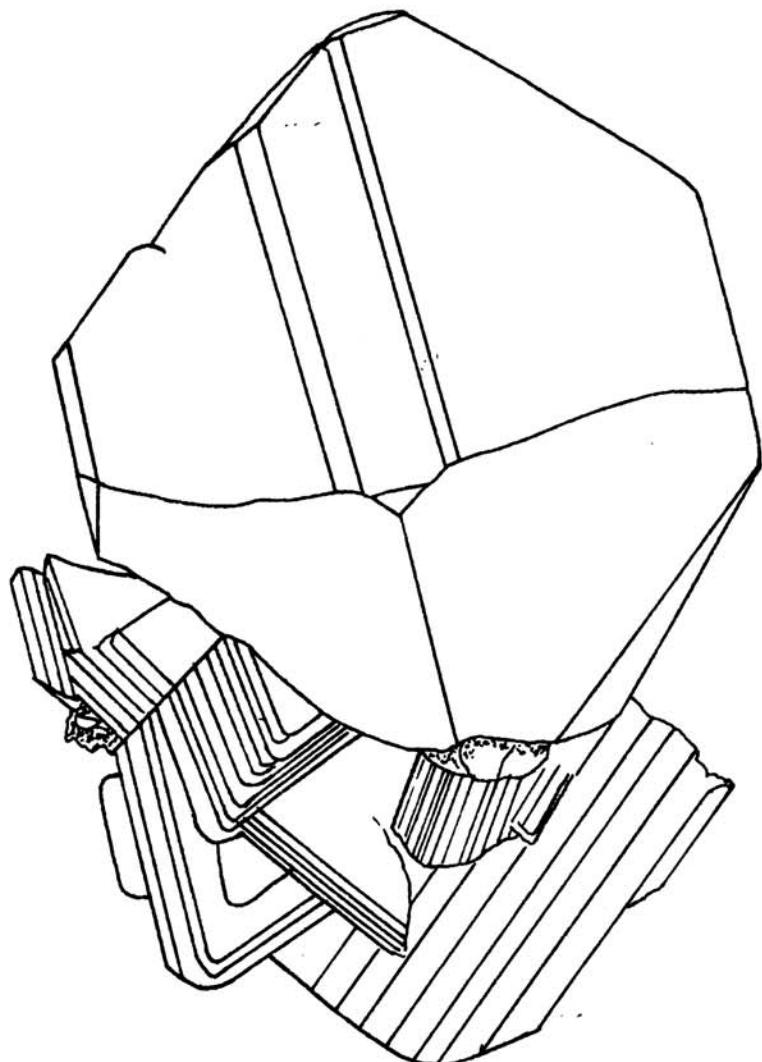
*presents*

**Minerals from  
Brazil**



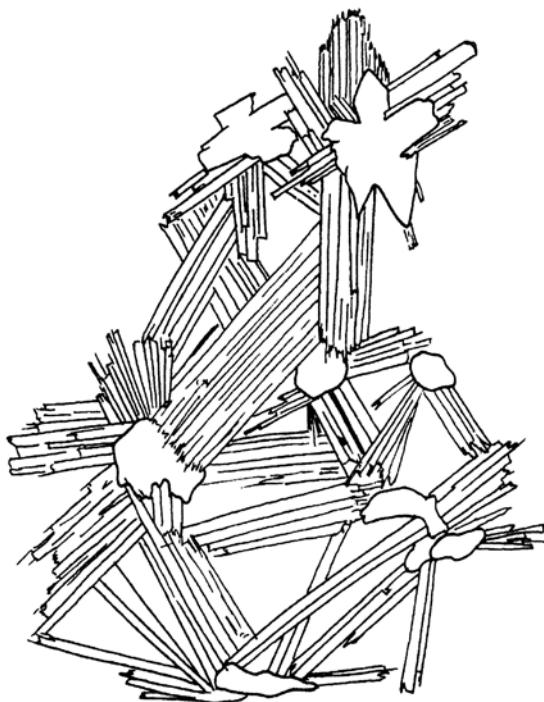
# Brazilianite

Brazilianite was first discovered in 1945 in Brazil. The name was given by the mineralogist Frederick H. Pough in honor of the country in which it was found. Brazilianite has a glassy luster and a greenish-yellow color. It is often found associated with muscovite mica. The specimen below is from Minas Gerais, Brazil.



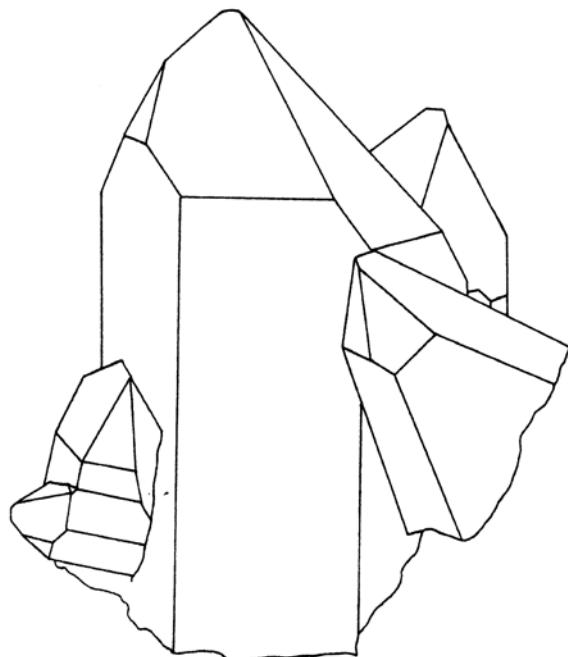
# Rutile & Quartz

Sometimes one mineral can grow inside another. When this happens it is said that a mineral is "included" in another; it is then called an "inclusion." The mineral rutile can be found included in quartz crystals. This is called *Rutilated Quartz*. The rutile is seen inside the quartz and looks like long, fine hairs running in every direction.



This is a specimen of rutile crystals with the mineral hematite. The long, straight rutile are golden brown. The hematite is black and is found here as round and irregular plates. This specimen is from Jbitiara, Bahia, Brazil.

This group of quartz crystals is colorless. Inside it are hundreds of long, thin rutile "hairs." Draw in the rutile hairs. They are golden brown. This specimen is from Minas Gerais, Brazil.



# Mineral Word Search

Here is a list of some of the minerals found in Brazil. Search for them in this word search puzzle. The words can run up, down, left, right, or diagonally. Good luck!

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | T | I | V | O | C | S | U | M | X | P | E | H | W | S |
| A | B | R | A | Z | I | L | I | A | N | I | T | E | N | I |
| Z | A | E | N | D | A | A | D | G | X | M | I | M | O | D |
| T | R | Q | R | C | L | P | L | N | D | I | Z | A | S | E |
| S | I | D | K | Y | F | O | O | E | A | T | N | T | C | R |
| Y | T | P | G | O | L | D | G | T | N | V | U | I | U | I |
| H | E | S | A | L | C | U | E | I | W | H | K | T | T | T |
| T | Z | T | R | A | U | Q | G | T | S | P | H | E | N | E |
| E | T | I | N | A | Y | K | P | E | T | I | A | B | L | E |
| M | U | L | E | N | S | C | A | P | O | L | I | T | E | K |
| A | G | A | T | E | J | P | H | E | N | A | K | I | T | E |
| T | O | U | R | M | A | L | I | N | E | Q | A | C | I | M |
| T | A | L | E | T | I | T | A | T | S | N | E | I | I | C |
| O | R | T | H | O | C | L | A | S | E | M | I | N | A | S |

Agate  
Amethyst  
Apatite  
Axinite  
Barite  
Beryl  
Brazilianite  
Elbaite  
Enstatite  
Euclase

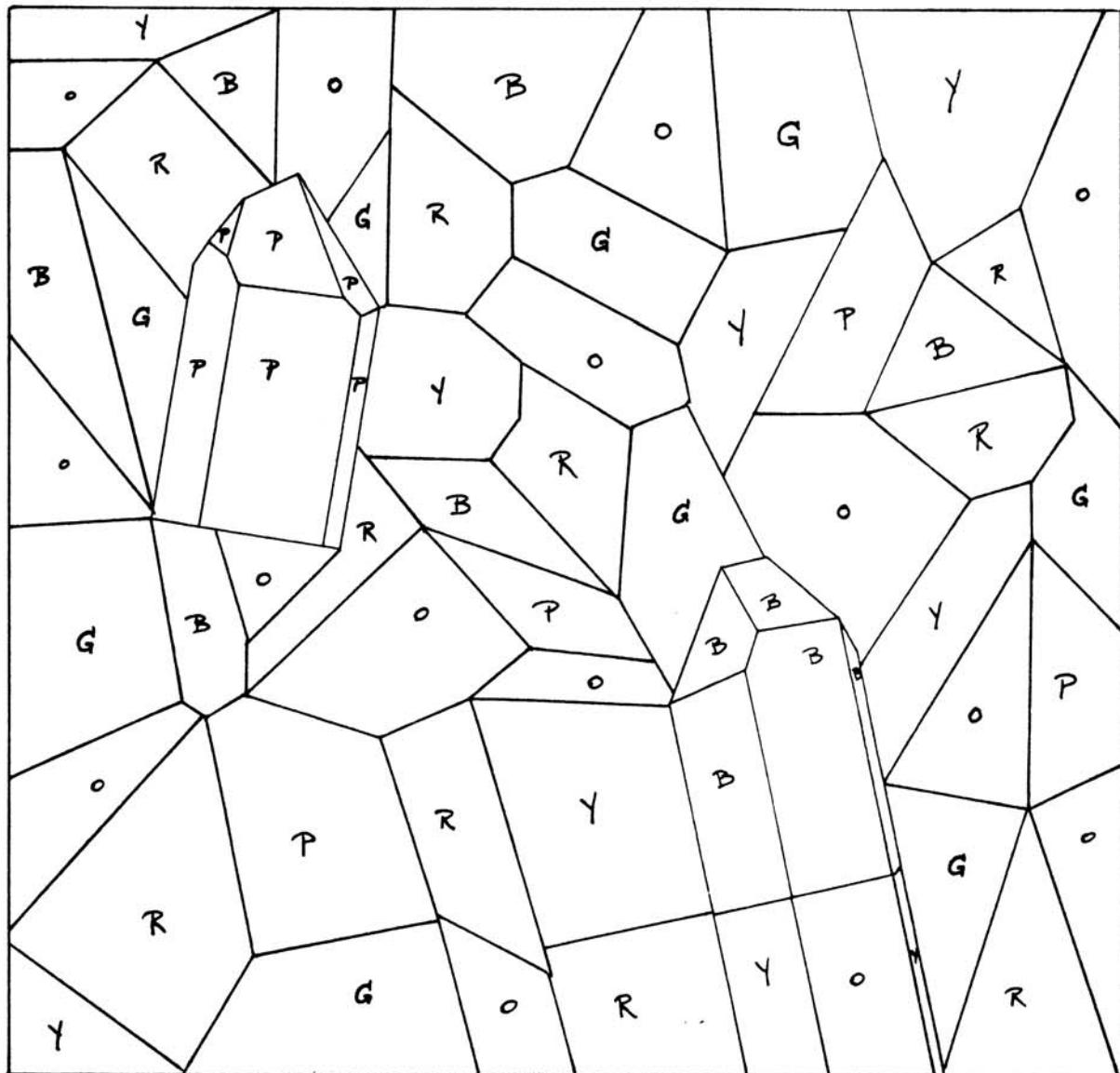
Garnet  
Gold (three times!)  
Hematite  
Kunzite  
Kyanite  
Magnetite  
Mica  
Muscovite  
Opal  
Orthoclase

Phenakite  
Quartz  
Raspite  
Scapolite  
Siderite  
Sphene  
Topaz  
Tourmaline  
Extra words:  
Tucson, Minas

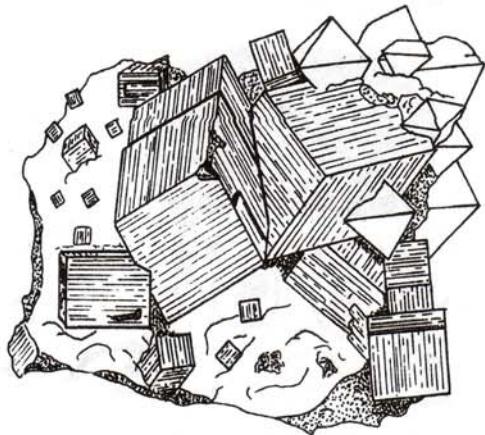
# Hidden Minerals

In the puzzle below are two hidden minerals from Brazil. Can you find the Quartz and the Topaz? Color the shapes like this:

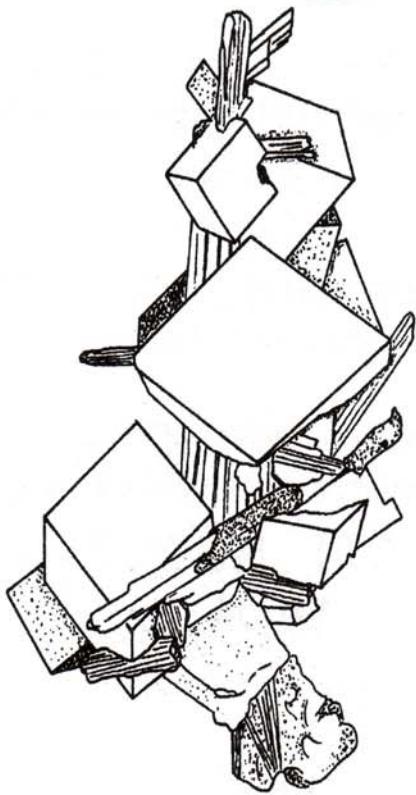
P=Purple    G=Green    R=Red    Y=Yellow  
B=Blue      O=Orange



THE 47TH ANNUAL  
TUCSON GEM & MINERAL SHOW  
PRESENTS



# RUSSIAN Minerals

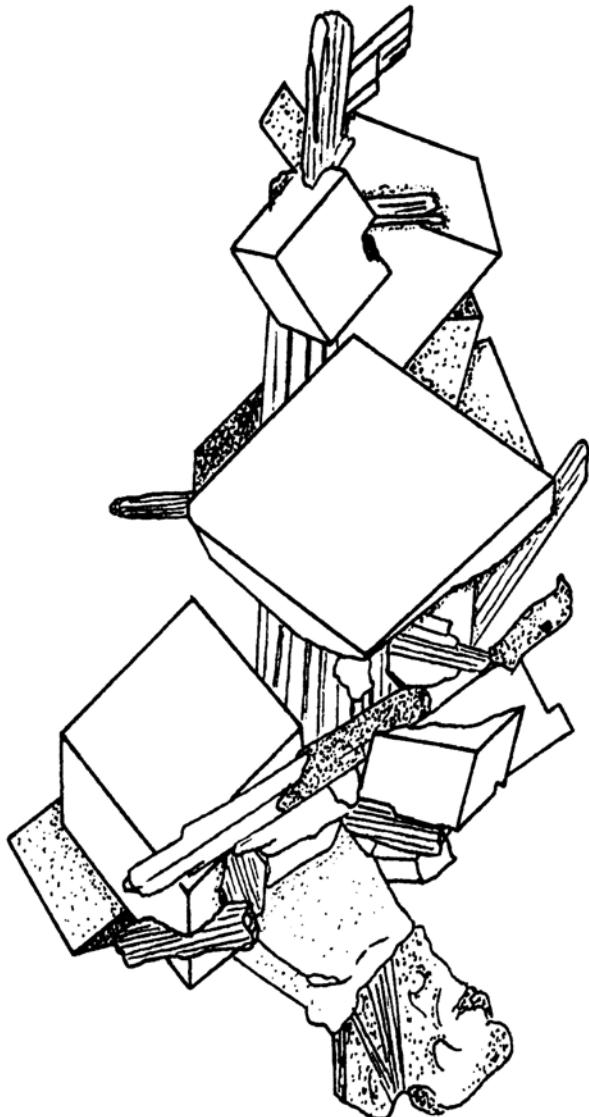


By Darryl Powell



# C Calcite with Stibnite

This beautiful specimen shows two minerals: calcite and stibnite.



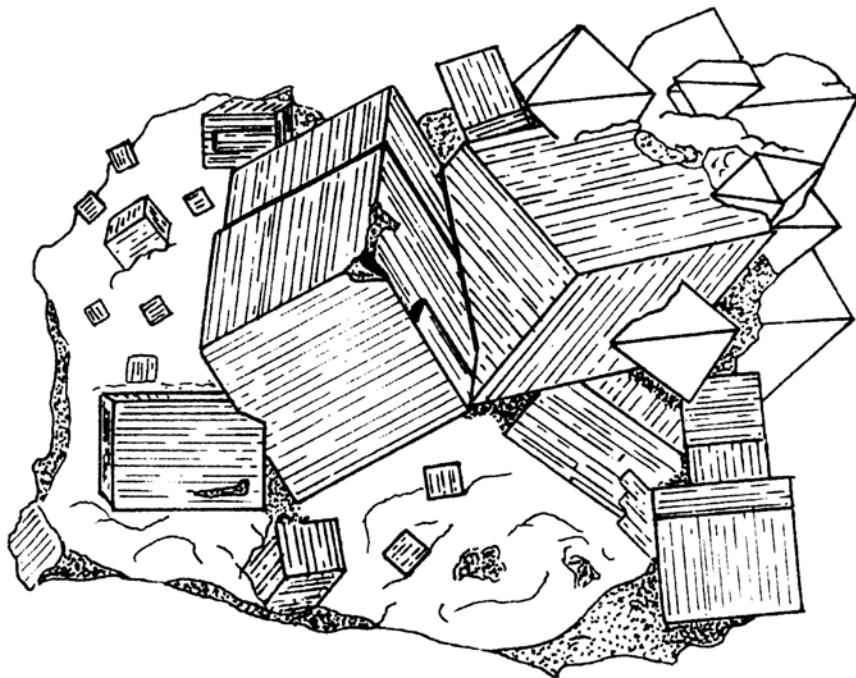
Calcite is one of the most common minerals on earth. Its crystals have been found to make over 600 different forms. The form - or shape - seen here is called the *rhombohedron*. The rhombohedron looks like a box which has been squashed on its side. This calcite is white, but calcite can be red, green, blue, golden, yellow, and black.

Stibnite is steel-gray and has a *metallic luster*. This means it looks like a metal. It is very soft at 2 on the hardness scale: you can scratch it with your fingernail. These crystals can be easily bent, an unusual property for minerals.

*from Kyrgyzstan, Russia*

# Scheelite with Pyrite

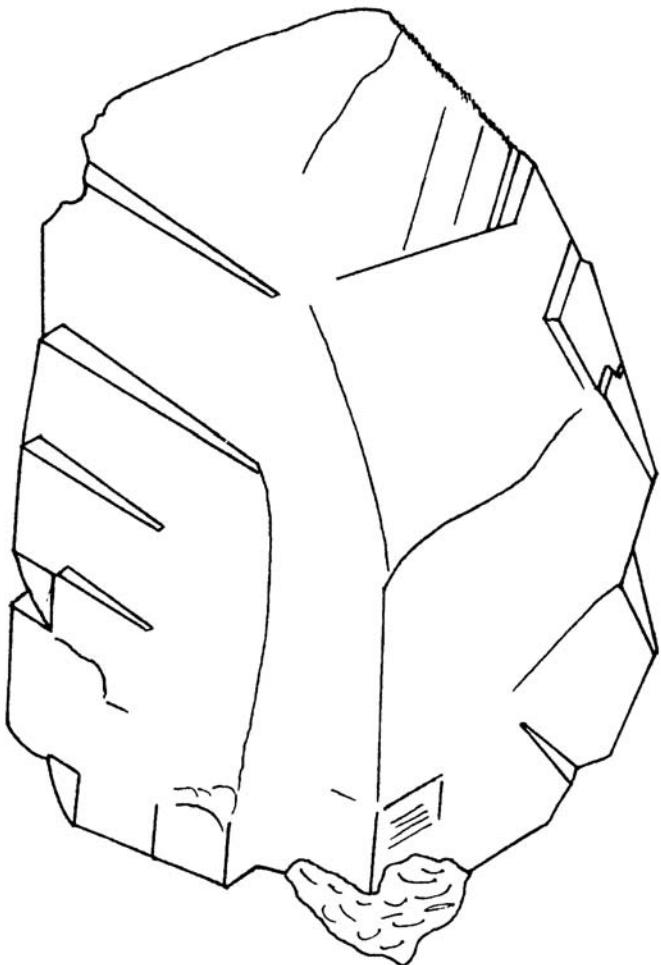
from Magadan Oblast', Russia



Scheelite contains the element *tungsten* which is used in light bulbs. In this specimen, the scheelite crystals look like pyramids (they are on the right side of the specimen.) Scheelite is unusually heavy. These unusual crystals are bright orange. Scheelite is often *fluorescent*: when ultraviolet light shines on this mineral, the mineral is blue.

The other crystals in this picture are pyrite, which is also called "Fool's Gold." The crystals are cubes which have grown over and into one another. They are described as *intergrown*. The name "pyrite" comes from a Greek word which means "fire," because hitting pyrite with a piece of steel creates a spark hot enough to start a fire. Pyrite is brass-yellow in color.

# Axinite



from the Dodo Mine, Puyva, Polar Urals

My axinite crystal:

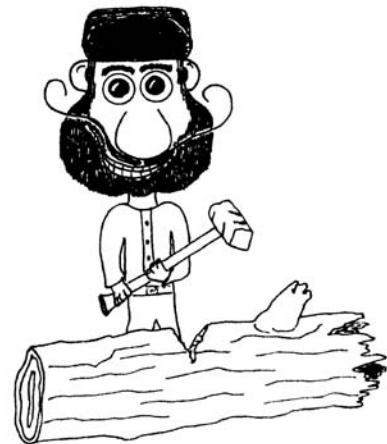
Axinite crystals have a very unique shape.

They look a lot like the blade of an axe. The name is from the Greek word *axine* which means axe.

These beautiful axinite crystals are from the Ural mountains, very close to the north pole. They are very glassy. They have a deep, root beer brown color.

Axinite crystals are always very flat, and usually have the parallel lines that are seen here on the left side of the crystal.

In the space below, draw an axinite crystal and Mikita, the Miner from Muscovy!



My Mikita picture:

# S tellerite

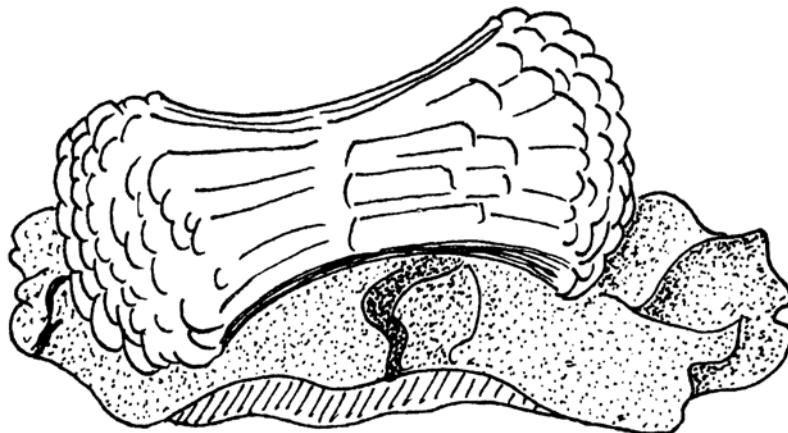


Stellerite is a variety of the mineral *stilbite*. Though stilbite is usually white or ivory, the stellerite of Sarbayskiy Mine, Rudnyy, Kustanay Oblast', is orange.

Each of these "balls" of stellerite are actually groups of hundreds of crystals which have grown together.



This is called *radial growth*. Sometimes the crystals grow together into a bow-tie shaped group, like the stilbite specimen pictured below. Can you find the bow-tie crystals in the specimen above?

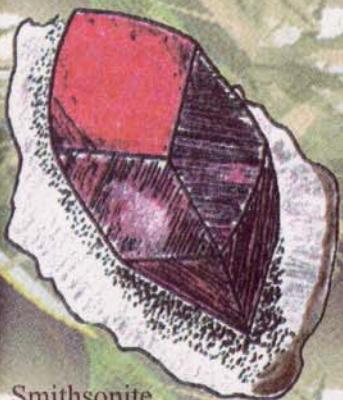


Stilbite ("Bow-tie" form) from Krasnoyarsk Krai, Siberia. This bundle of crystals is an ivory color.

THE 48<sup>TH</sup> ANNUAL  
TUCSON GEM &  
MINERAL SHOW  
Presents . . .



# MINERALS OUT OF AFRICA



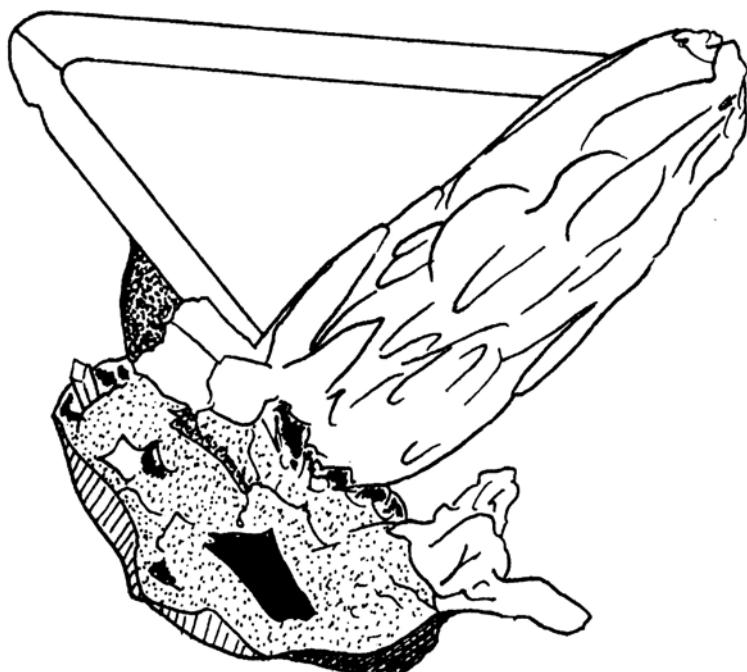
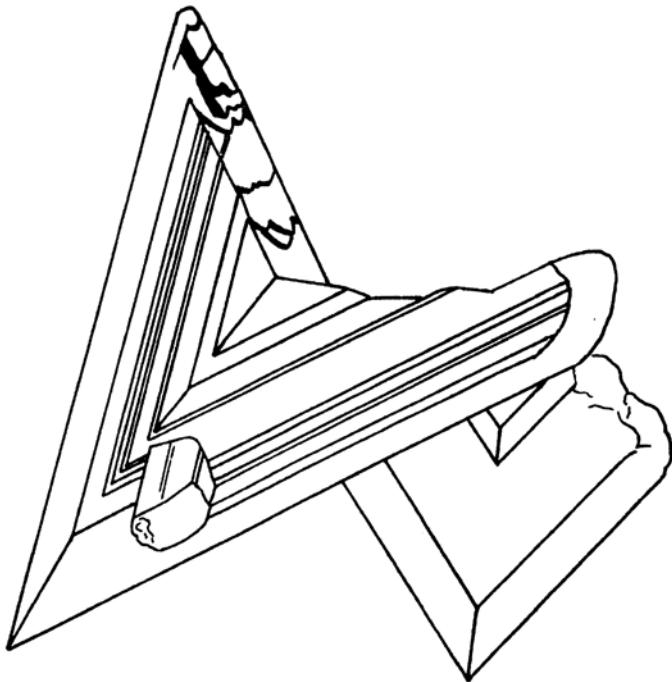
BY DARRYL POWELL

# CERUSSITE

Touissit mine, Oujda, Morocco

Cerussite is a soft mineral. It is, however, a rather heavy mineral. It is heavy because it has lead in it. As a matter of fact, cerussite is a lead ore. Lead is used to make pipes for factories and machines. You might have used lead fishing weights when you go fishing.

Cerussite is found with other minerals such as galena, malachite, and barite.



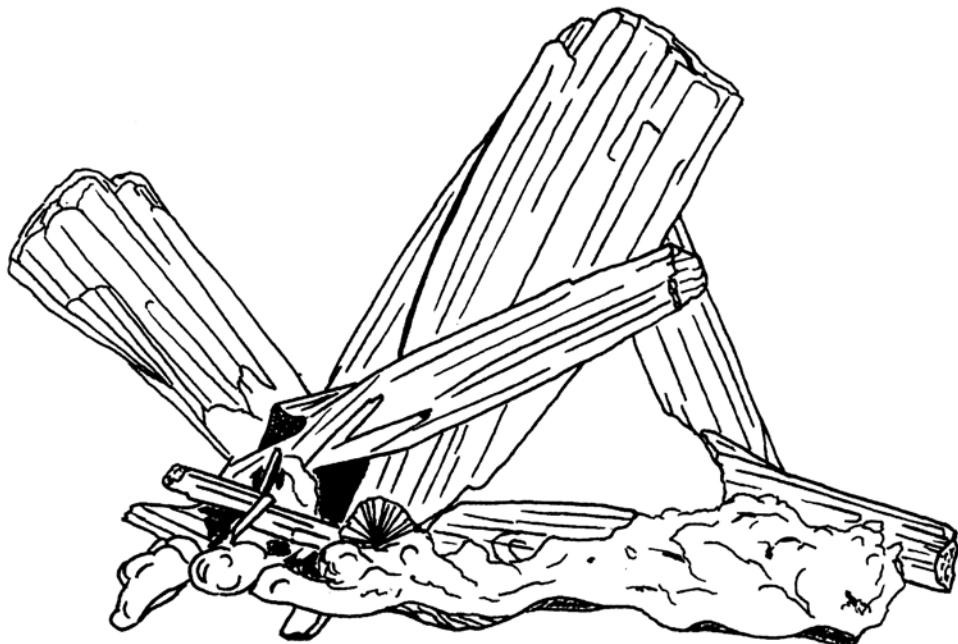
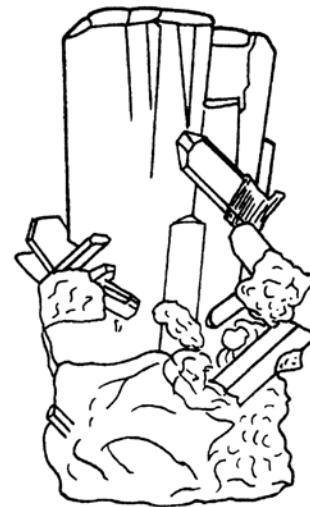
Above: brown cerussite crystals.

Left: reddish-brown cerussite crystal (the large, flat crystal pointing to the left) with a colorless anglesite crystal (pointing toward the right).

# AZURITE

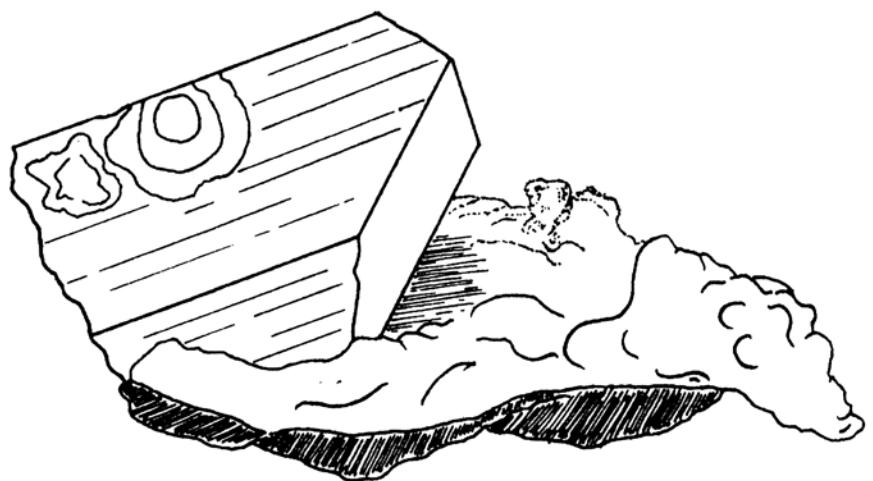
Some of the most beautiful azurite crystals ever found are found in Africa. Some are light blue. Others are dark blue and can be so dark they are almost black.

Azurite was named after the Latin word *azure* which means *sky blue*.



Rough,  
intergrown, light  
blue azurite  
crystals from  
Tsumeb.

A very dark blue, glassy azurite crystal on brown limonite from Tsumeb. The circles on the top crystal face are spots where the blue azurite is slowly turning into green malachite.



# MINERAL WORD SEARCH PART 2

Many very rare minerals have been found at the Tsumeb mine in the African nation of Namibia. This is a more difficult word search for the names of some rare minerals from this world-famous mine. As before, the names can run left to right, right to left, up, down and diagonally. Good luck!

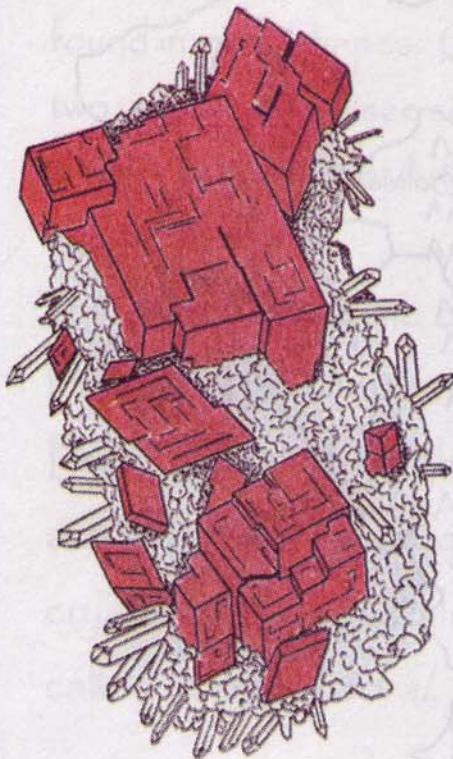
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | T | I | S | E | M | A | J | S | X | A | G | E | O | L |
| T | R | P | H | A | J | E | T | I | T | T | O | T | S | U |
| I | Y | Y | H | A | N | N | A | H | L | R | L | I | U | D |
| R | E | E | T | I | G | R | A | H | T | I | L | R | S | L |
| O | T | Q | S | H | P | A | R | F | A | Z | D | E | A | O |
| D | I | D | U | I | R | S | O | E | R | G | E | V | N | C |
| N | E | B | M | F | O | I | N | A | E | A | A | A | N | K |
| A | N | K | E | G | S | O | T | A | V | I | T | E | I | I |
| X | N | Y | B | W | P | W | H | E | H | T | H | B | T | T |
| M | I | X | I | T | E | E | O | O | A | I | O | D | E | E |
| W | L | L | T | C | R | P | L | P | M | T | L | M | O | D |
| E | A | K | E | Y | I | T | E | R | E | E | L | I | D | L |
| S | K | A | G | E | T | I | N | O | D | L | Y | A | B | G |
| G | A | R | T | R | E | L | L | T | T | E | A | C | F | O |
| P | R | D | E | T | I | D | R | O | C | E | R | N | I | M |

Bayldonite  
Beaverite  
Erythrite  
Gaitite  
Gartrellite  
Jamesite

Keyite  
Linneite  
Lithargite  
Ludlockite  
Minrecordite  
Mixite

Nadorite  
Otavite  
Prosperite  
Stottite  
Susannite  
Tsumebite

The 49<sup>th</sup> Tucson Gem & Mineral Show presents

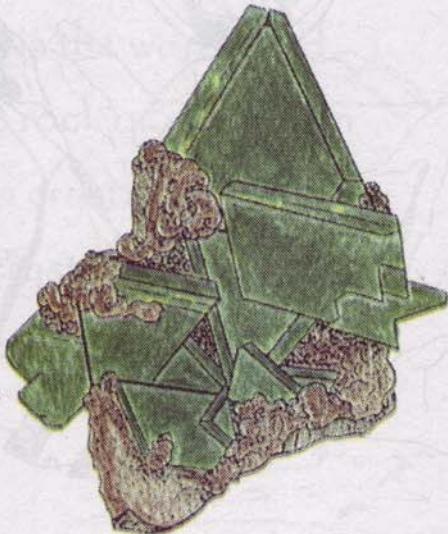


# Minerales de Los Andes

(Minerals of the Andes)



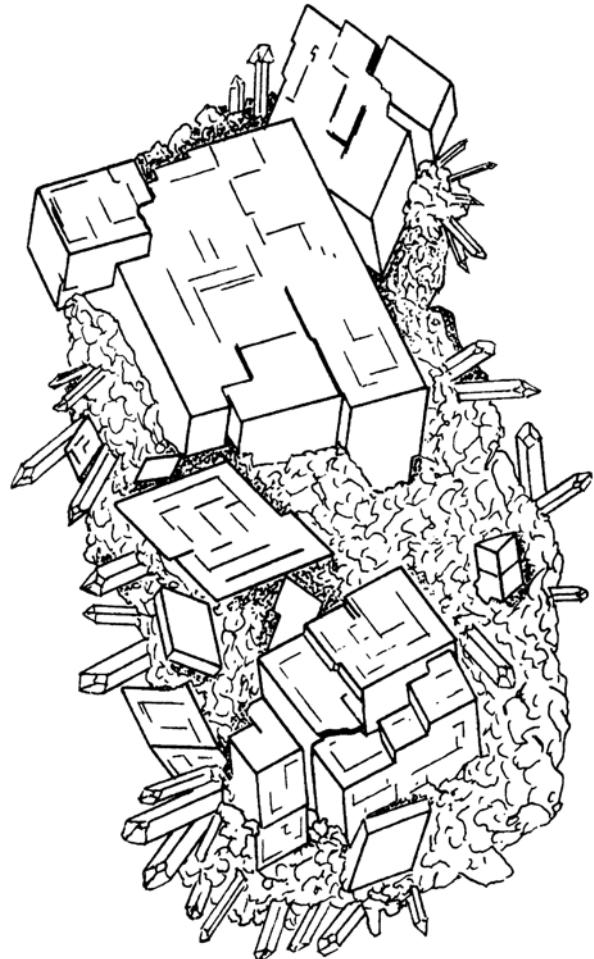
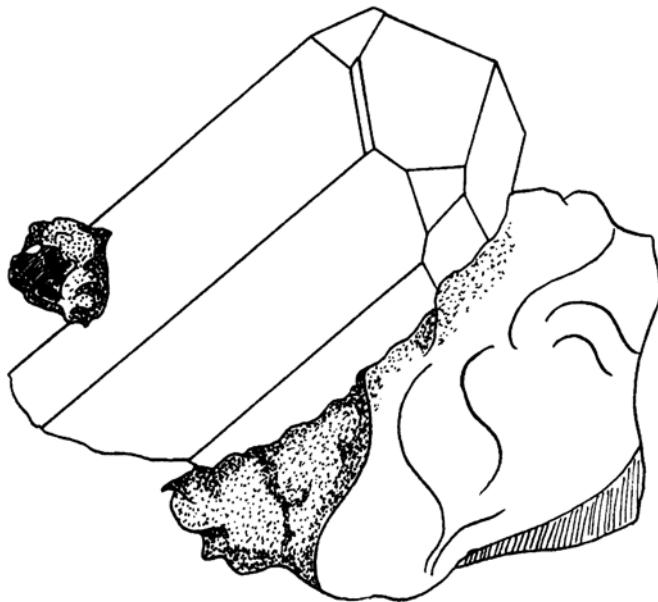
by Darryl Powell



# Rhodochrosite

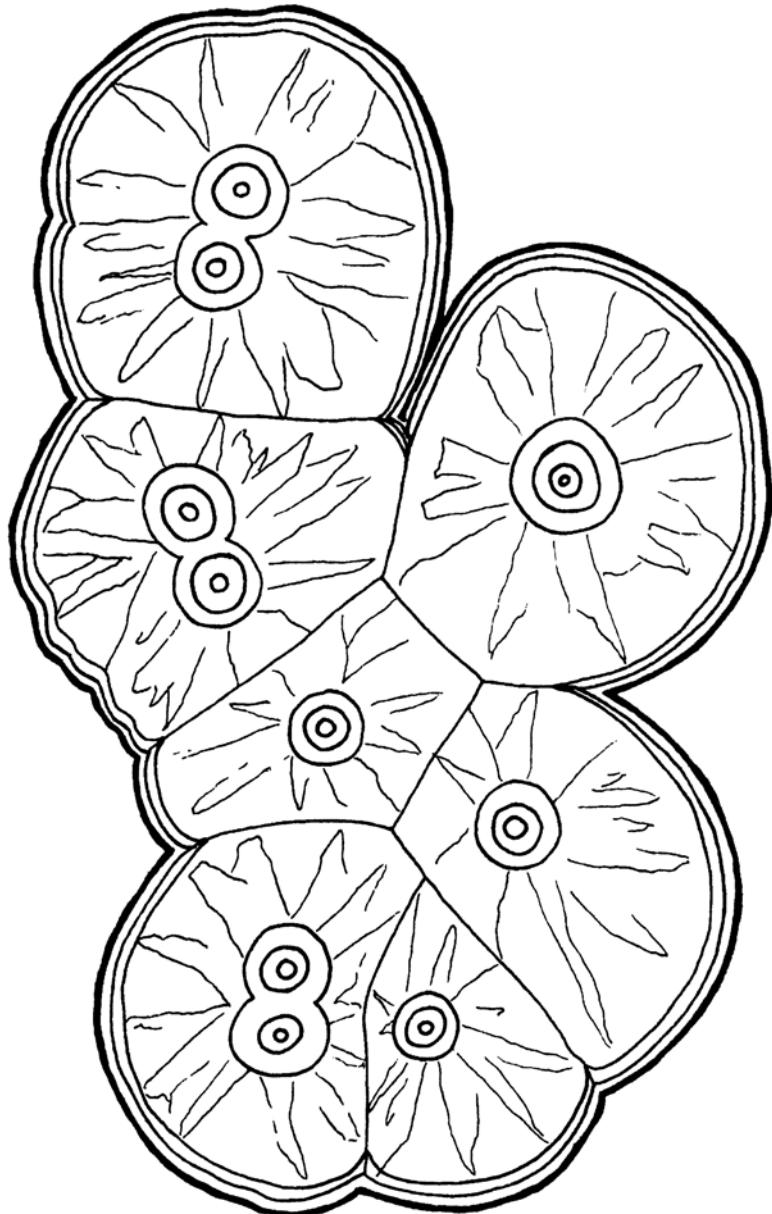
is a bright red to pink mineral that is found in many shapes. On the next two pages you will see some of the shapes found in the Andes Mountains.

Here are some crystals from the Huayllapon mine, Peru. They are bright red and are found with white quartz crystals. The crystals are called *rhombohedral*.



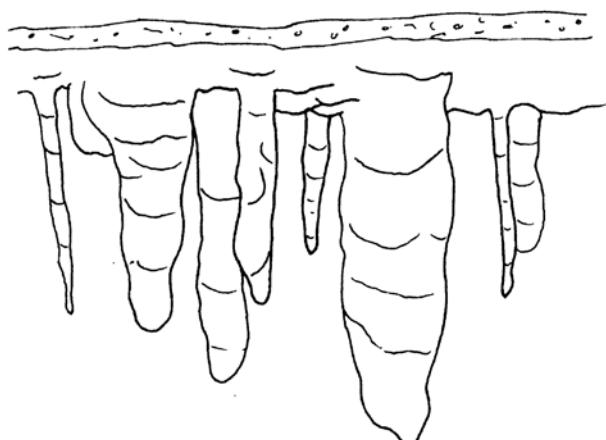
To the left is a dark red rhodochrosite crystal on dark brown matrix (*matrix* is the word used for the rock or mineral on which a crystal grows). This crystal is from Uchucchacua, Peru.

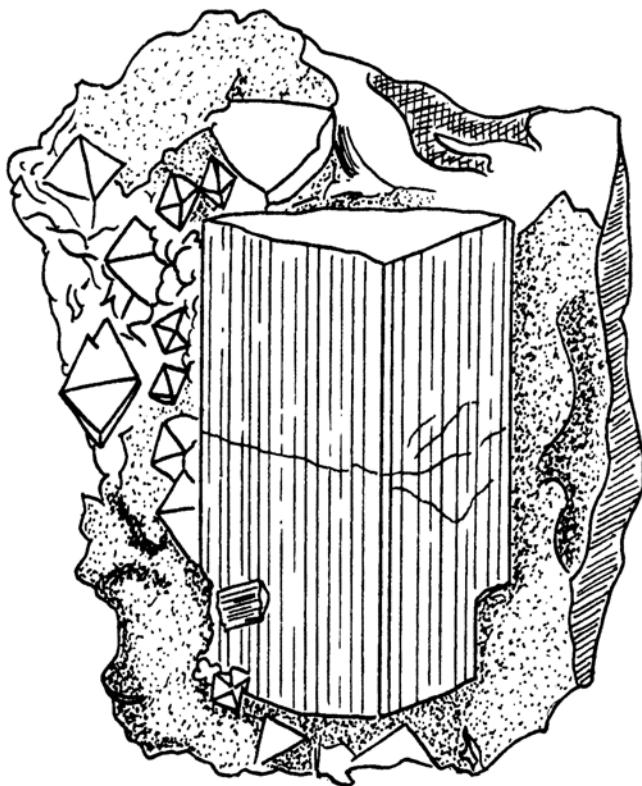
# Rhodochrosite



A rhodochrosite stalactite slice from La Capillita mine, Catamarca province, Argentina.

Rhodochrosite can grow in caves as long growths called *stalactites*. Stalactites form as water drips from the ceiling. Stalagmites grow up from the floor when the water drips on the cave floor. These growths look like the picture below. To the left is a slice of a bunch of stalactites that grew into each other. This rhodochrosite is deep red. The circles are shades of pink.





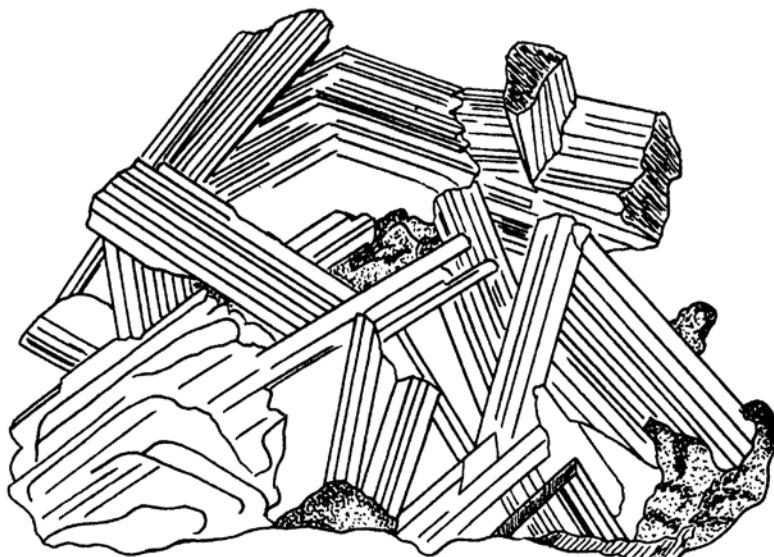
## Fluorapatite

The mineral that has a hardness of 5 on the Mohs Scale of Hardness for minerals is Apatite. When apatite has a lot of the element fluorine in it, it is given the special name fluorapatite. This fluorapatite crystal is yellow. It is surrounded by brassy arsenopyrite crystals. Arsenopyrite is another mineral with a special name. It is pyrite with the addition of the

element arsenic. So, it is given a special, long name to tell you what is in it. This specimen is from the Castrovirreyna District in Peru.

## Szenicsite

Szenicsite is a dark green mineral that was discovered in Atacama, Chile. It was named after the people who discovered it, Terry & Marissa Szenics. This specimen is hundreds of crystals that have all grown together into a group.



# Mineral Word Search

Names of minerals from the Andes Mountains are hidden in the puzzle below. Can you find them? The names can run left to right, right to left, up, down and diagonally. Good luck!

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X | F | D | O | L | O | M | I | T | E | X | I | S | E | W |
| R | O | L | C | H | A | L | C | O | P | Y | R | I | T | E |
| A | O | A | U | F | S | O | A | N | D | E | S | K | I | T |
| N | R | R | P | O | H | E | L | V | I | T | E | B | S | I |
| E | P | E | A | W | R | K | C | Q | W | C | A | O | O | N |
| L | I | M | R | H | E | I | I | S | I | L | V | E | R | A |
| A | M | E | T | H | Y | S | T | R | P | C | O | T | H | I |
| G | E | N | O | R | A | A | E | E | N | H | P | I | C | V |
| O | N | G | L | E | U | M | R | L | B | I | Q | L | O | I |
| L | T | Y | C | B | A | U | M | E | L | L | U | E | D | V |
| D | U | P | S | H | B | A | R | I | T | E | A | E | O | H |
| B | D | E | T | I | R | Y | P | P | R | S | R | H | H | A |
| I | L | U | S | I | L | V | E | R | Y | D | T | C | R | N |
| L | O | N | E | T | I | S | C | I | N | E | Z | S | E | N |
| S | G | T | E | T | R | A | H | E | D | R | I | T | E | A |

Amethyst  
Barite  
Beryl  
Calcite  
Chalcopyrite  
Dolomite  
Emerald

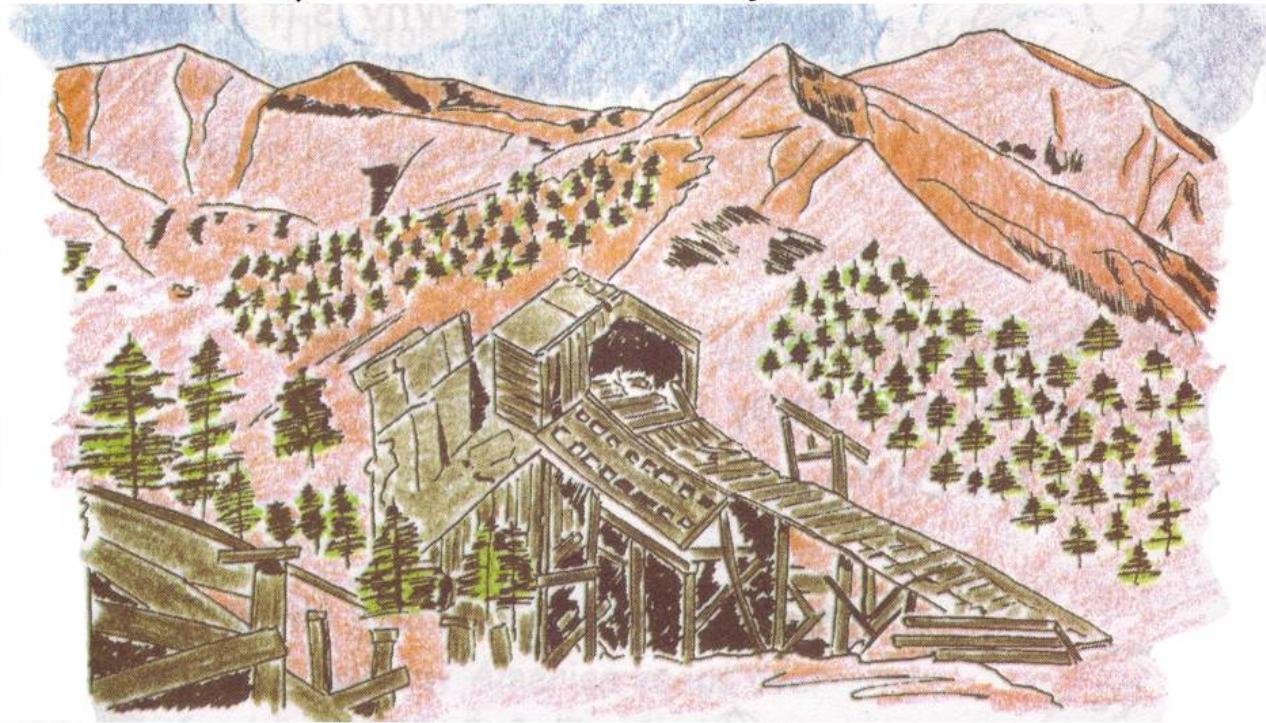
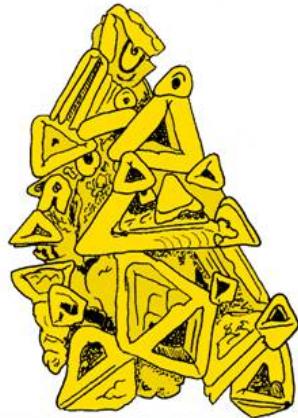
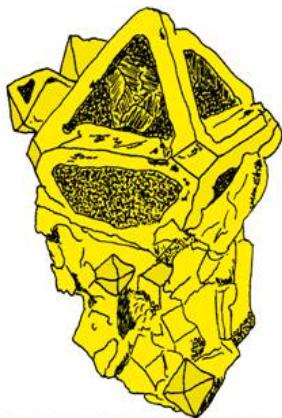
Fluorite  
Galena  
Gold (x2)  
Helvite  
Orpiment  
Pyrite  
Quartz

Rhodochrosite  
Scheelite  
Szenicsite  
Silver (x2)  
Tetrahedrite  
Vivianite

**Bonus:** Andes, Peru, South America, Chile

*The 50th Tucson Gem & Mineral Show  
presents . . .*

**G O L D !**



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# GOLD



## Eureka!

I found it! This was the cry of the lucky prospector searching for a golden fortune. What did the prospector find?

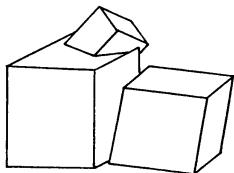
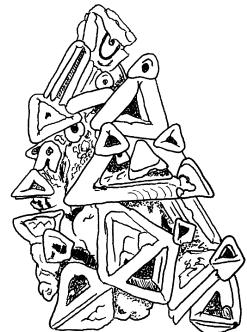
Gold is possibly the first metal found by humans. Gold items from Mesopotamia were discovered that are 6000 years old.

|           |
|-----------|
| Au        |
| 79        |
| 196.96655 |

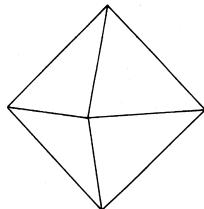
Gold is an element. Its symbol is Au.

Gold is number 79 on the periodic table of elements.

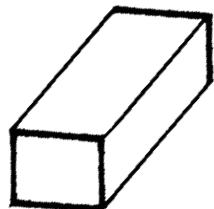
The atomic weight of gold is 196.96655.



Gold crystallizes in the *cubic* crystal system.



Gold has been made into gold bars and coins by many nations. The United States of America keeps over 368,000 bars of gold at the U.S. Bullion Depository at Fort Knox, Kentucky. The bars are  $7 \times 3\frac{5}{8} \times 1\frac{3}{4}$  inches. Each gold brick weighs about 400 ounces.



# NORTH CAROLINA

Gold was first discovered in North Carolina in 1799 by 12-year-old Conrad Reed. While out fishing in Meadow Creek, he found a 17-pound shiny yellow "rock" in the water. He took this "rock" home and his family used it as a doorstop for three years. Later, they sold it for \$3.50. It was only later that a jeweler discovered the doorstop was gold. The gold was worth about \$3,600! This golden discovery started America's first gold rush.

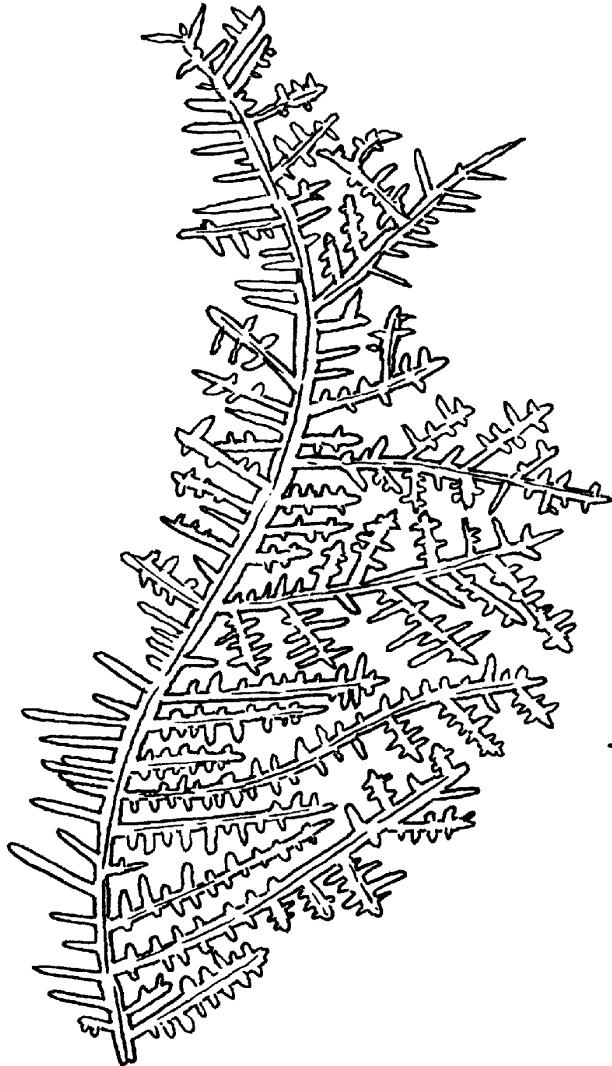
Gold crystals  
from Cabbarus  
County, Gold Hill,  
North Carolina.  
The actual size of  
this specimen is  
1.3 cm.



## Golden Nugget

Did you know that pure gold is *very* soft. It is only 2.5-3 on the mineral hardness scale. This is too soft for jewelry. So, gold is mixed with harder metals to make it useful for jewelry.

# ENGLAND



This gold specimen is described as *dendritic* or *fern-like*. It is actually many small, intergrown gold crystals. This specimen is a very light yellow because it is actually a mixture of gold and the element *palladium*. It is from Hope's Nose, Torquay, Devon, England. Its actual size is 2 cm.

*Try to draw your own  
gold dendrites here:*



## Golden Nugget

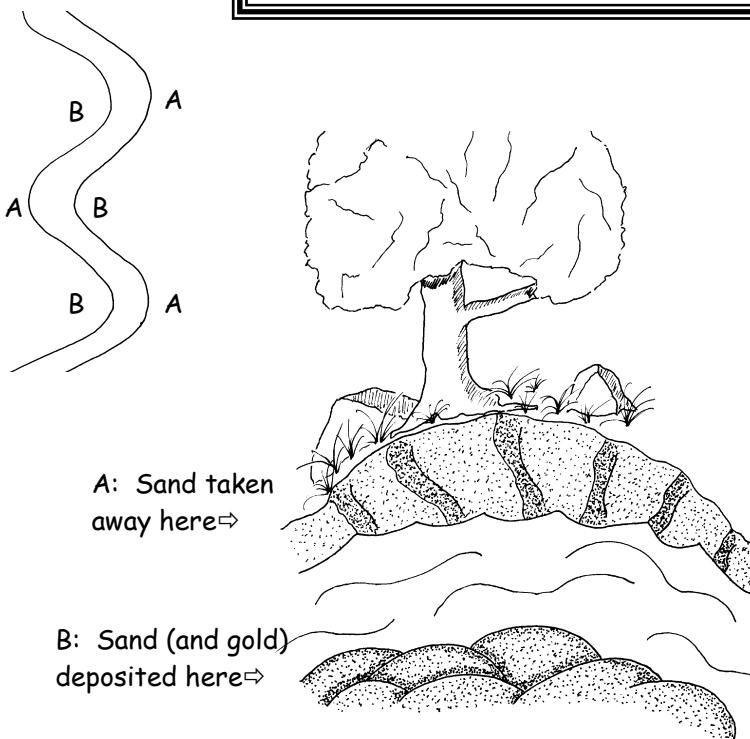
Gold is *malleable*. This means that gold can be hammered into very, very thin sheets. One ounce of gold can be hammered into a sheet of gold that is 10 feet long by 10 feet wide (that is 100 square feet!)

# Placer Gold

Have you ever panned for gold? Prospectors once searched for gold in rivers using pans. It is still possible to find gold nuggets and flakes in rivers — you just have to find the right river. Here is a typical pan used for gold panning. You swish water over the river sand. The light sand is washed away. The heavy gold remains in the pan.



Where would you look for gold in a river?



When a river "snakes" over the land, it is described as **meandering**. There are two sides to a meander. At the outside bank (A) of the meander, the water runs faster and sand is washed away. At the inside bank (B) of the meander, the water flows slower, and sand and gold are deposited. Therefore, always pan for gold in the *inside bank*.

# Leaf Gold



Side view of  
leaf gold.



Above: Leaf gold from Romania.

Right: Leaf Gold from California.



"Leaf Gold" is the term used to describe gold that forms as very thin sheets in nature. Thin sheets of gold are used to cover works of art and building decorations. These thin sheets are also called "leaves."

# THE 51<sup>ST</sup> TUCSON GEM & MINERAL SHOW PRESENTS . . .

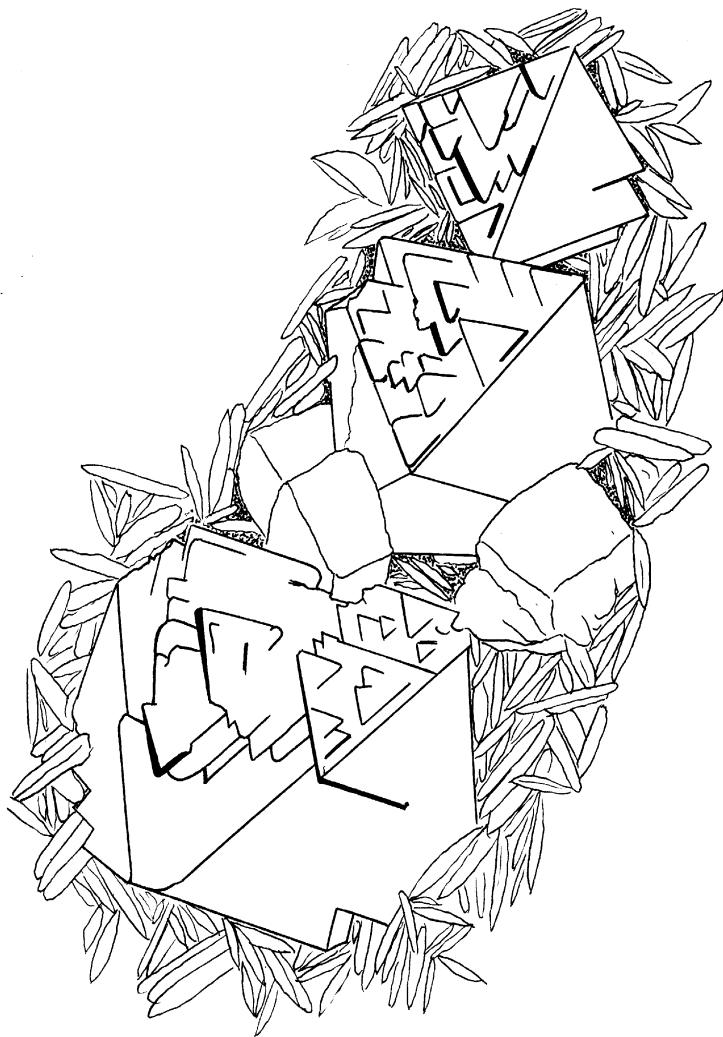


## MINERALS FROM CHINA

This book is a gift to you from the Tucson Gem & Mineral Society.

# Scheelite

Xue Bao Diang Mountain, Sichuan Province



**Uses:** Scheelite is an important source of the element tungsten. Tungsten is added to steel to make it stronger and harder.

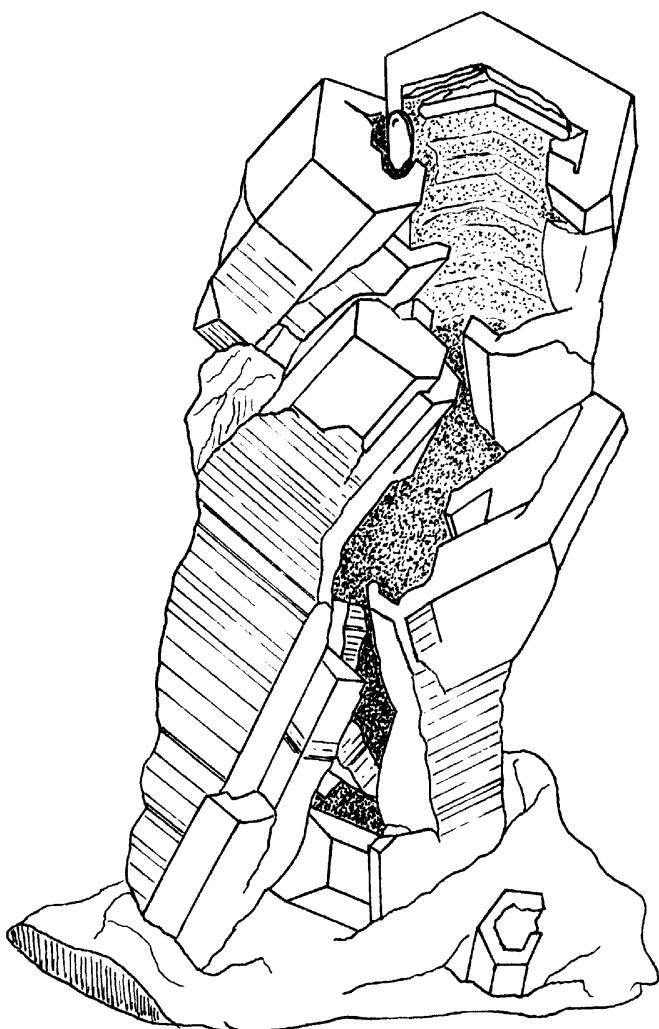
**Name:** Sometimes minerals are named after important people. Scheelite was named after the Swedish chemist, Karl Wilhelm Scheele (born in 1742 and died in 1786).

**Color:** These scheelite crystals are bright orange. It can also be yellow, green and gray. These scheelite crystals are sitting in golden tan mica crystals.

**Draw some scheelite crystals here:**

# Pyromorphite

Daoping Lead Zinc mine, Guangxi

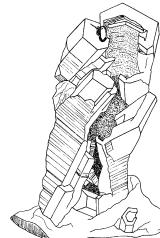


**Uses:** Pyromorphite contains lead, and is sometimes a lead ore. Its beautiful shape and color make it a favorite mineral for collectors.

**Name:** Pyromorphite was named from the Greek words *pyr* which means fire and *morphe* which means form, because this mineral will melt into a liquid ball (like a drop of water) but when it cools, it turns into a crystal again!

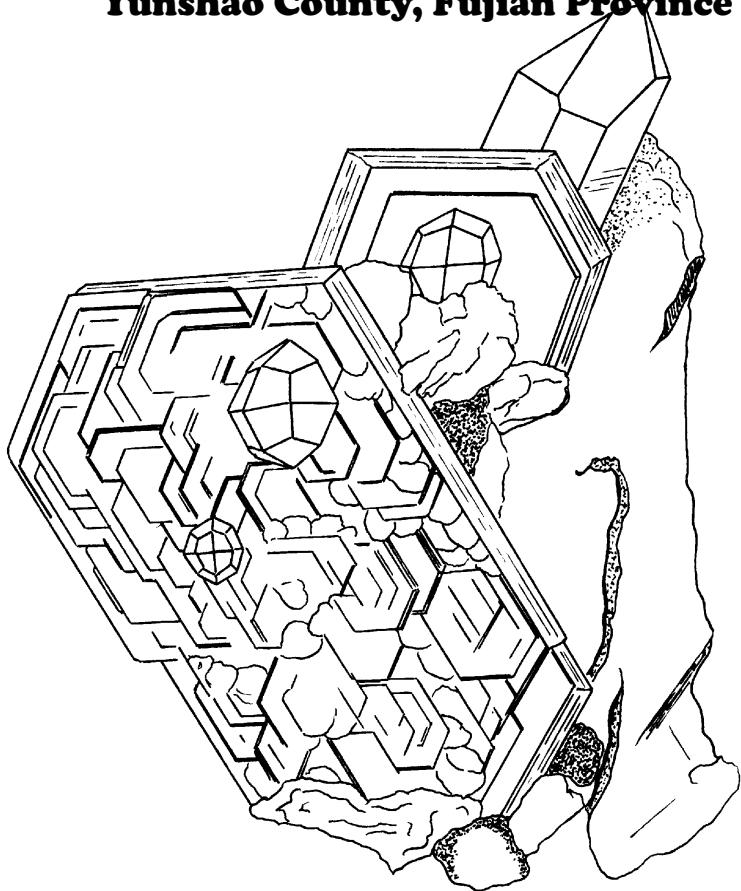
**Color:** Pyromorphite can be green, brown or colorless. These specimens from China are bright grass green.

Actual size of this specimen  
(3.6 cm)⇒



# Muscovite With Spessartine Garnet and Smoky Quartz

**Yunshao County, Fujian Province**



**Uses:** Muscovite has many uses. It is crushed and used for insulation. It is also used to make paper, rubber and paint.

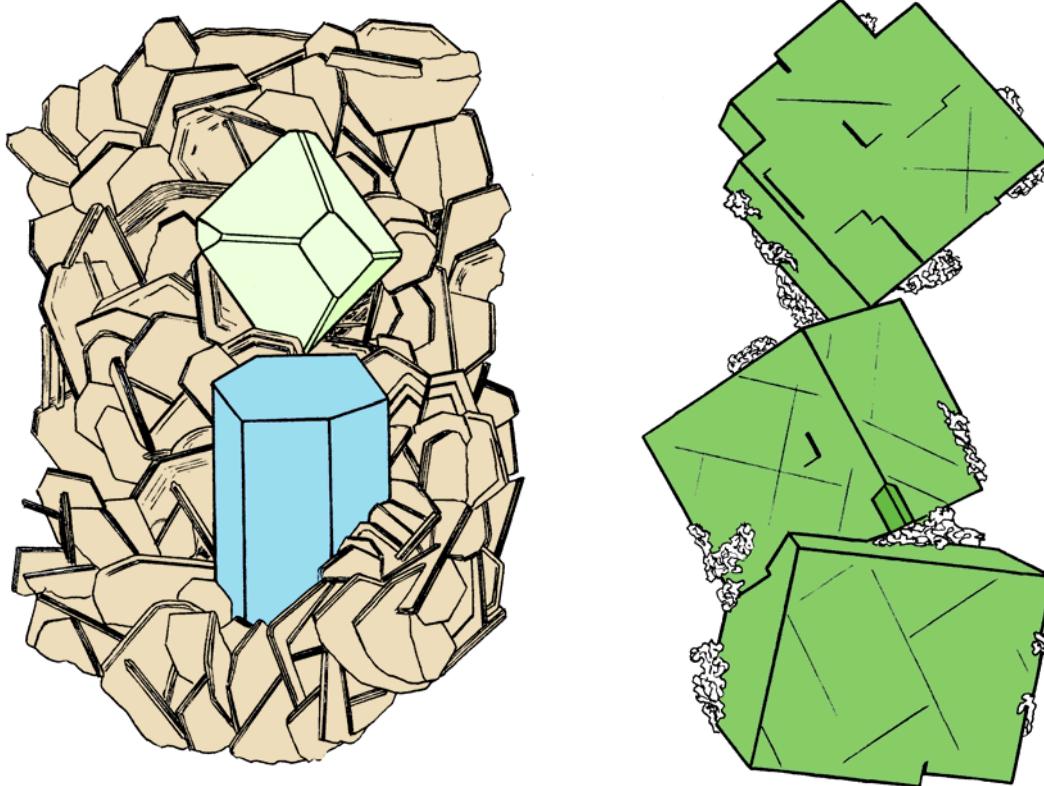
**Name:** In the past, when people heated their homes by burning wood in stoves, the stoves would have windows. These windows were made of sheets of muscovite. The country of Russia was once called "Muscovy." This mineral was used there in wood burning stoves and was called Muscovy Glass. In the 1800's, the name was changed to *Muscovite*.

**Color:** Muscovite can be colorless, yellow, golden, green or even red. These crystals are silvery.

# Special Offer

Featured in this issue are selected pages from the first 8 years of the special mineral books created for the annual Tucson Gem & Mineral Show™. Each book is available as a special PDF file for \$2/title (the covers of these special editions do not indicate the Tucson Gem & Mineral Club, but the contents are the same). The February issue will feature the second 8 years of special publications.

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