

MINI MINERS MONTHLY

Vol. 3 No. 9

September 2009

Howdy, Mini Miners,

Looks like we're back to school. Good luck, everyone. Did you have a good summer collecting minerals? Most of our Mini Miners live in North America where summer is soon ending and we will now head into autumn. However, our friends in Australia are ending winter and heading into spring! This issue is dedicated to our Mini Miners in "The Land Down Under," the beautiful nation of Australia.

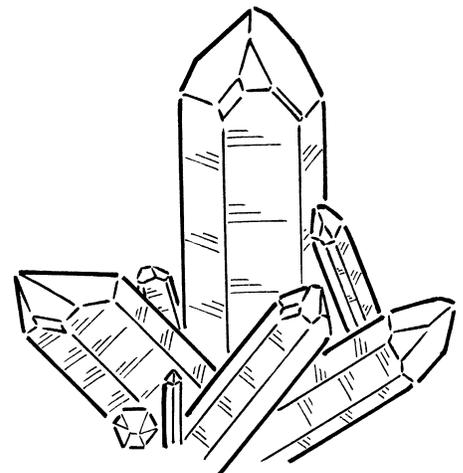
Caleb T. from New York was very upset with me after the August issue came out. "Where are the games? I like to play the games." So, we'll remedy that this time and provide some activities for you to keep your minds and hands busy. Sorry, Caleb.



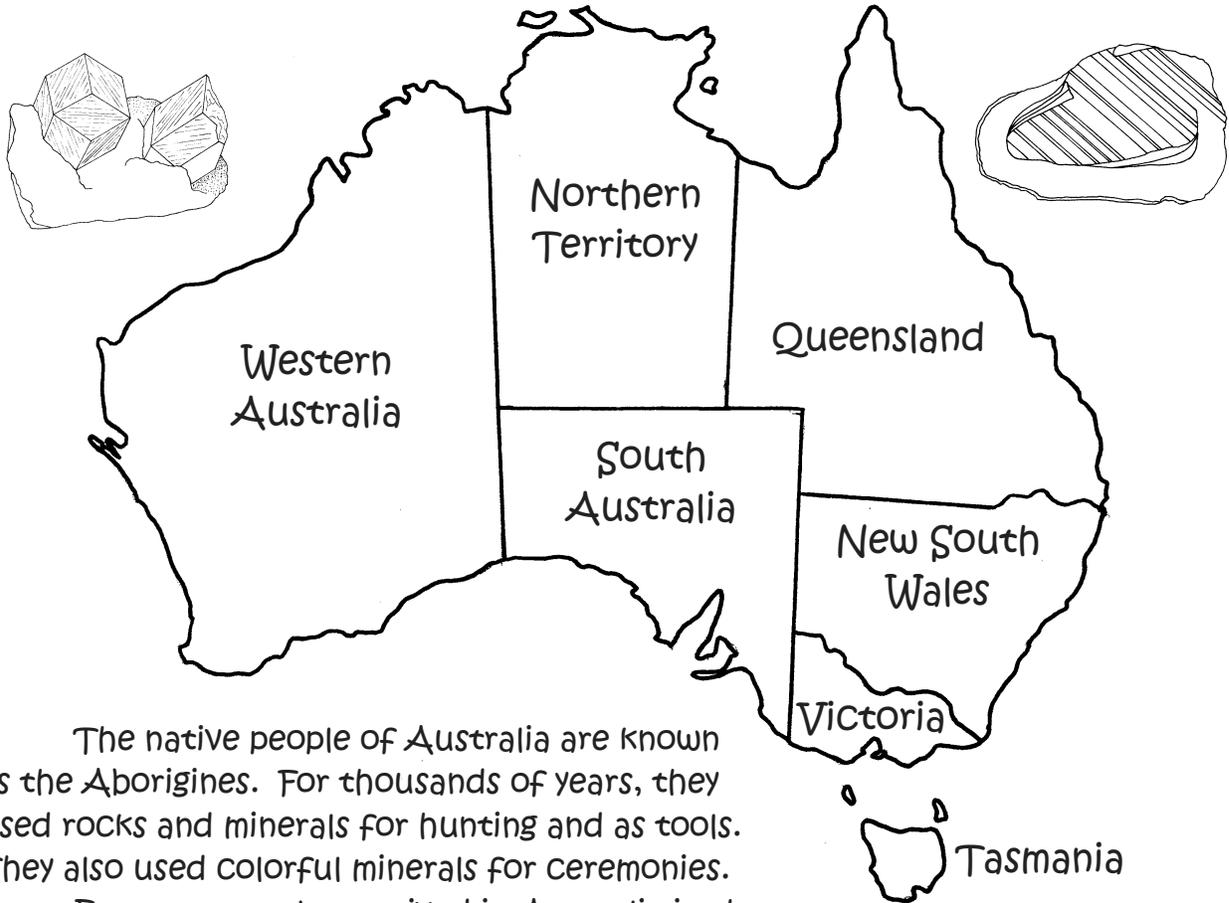
This month we welcome young Mr. Kyle Zeller to the writing staff of *Mini Miners Monthly*. Kyle is an 8th grader and has been building a very fine mineral collection for a number of years now. His mom and dad take him to wonderful mineral collecting sites every summer. He will be sharing his adventures with you. Remember, we are always looking for articles and would be thrilled to print *your* article. Simply email it to us and we'll look to include it in a future issue.

Last month we began an experiment of sorts. You were invited to submit your name to receive a quality mineral specimen to borrow for a month. The first specimen is a quartz crystal cluster from Mt. Ida, Arkansas. It is 5 inches by 4 inches and the largest crystal is 2 inches high. The crystals are glass clear and undamaged. The value of the specimen is approximately \$50. The first Mini Miner to borrow this specimen is Heather E. from Virginia. Would you like to borrow this quartz specimen? Simply send a brief email to Diamond Dan at diamonddan@rochester.rr.com explaining why you

would like to borrow this specimen and you will be added to the list! It's that simple!



Australia



The native people of Australia are known as the Aborigines. For thousands of years, they used rocks and minerals for hunting and as tools. They also used colorful minerals for ceremonies.

European settlers arrived in Australia in the late 1700's. It took many years, but eventually very important mineral deposits were discovered. Copper was discovered in 1840 in South Australia. Important gold discoveries were made in the 1850's in Victoria and New South Wales (and more important gold discoveries are still being made!) Aluminum ore (bauxite) was discovered in Queensland and the Northern Territory in the 1950's. The 1960's saw the discovery of huge deposits of iron ore in Western Australia, manganese in the Northern Territory and nickel in Western Australia. Uranium was discovered in the Northern Territory in 1970's.

Some of the world's most important and interesting mineral deposits are found in Australia. For example, the great silver-lead-zinc deposit at Broken Hill, New South Wales is known as one of the world's great mineral deposits. A number of Broken Hill specimens are pictured in this issue.

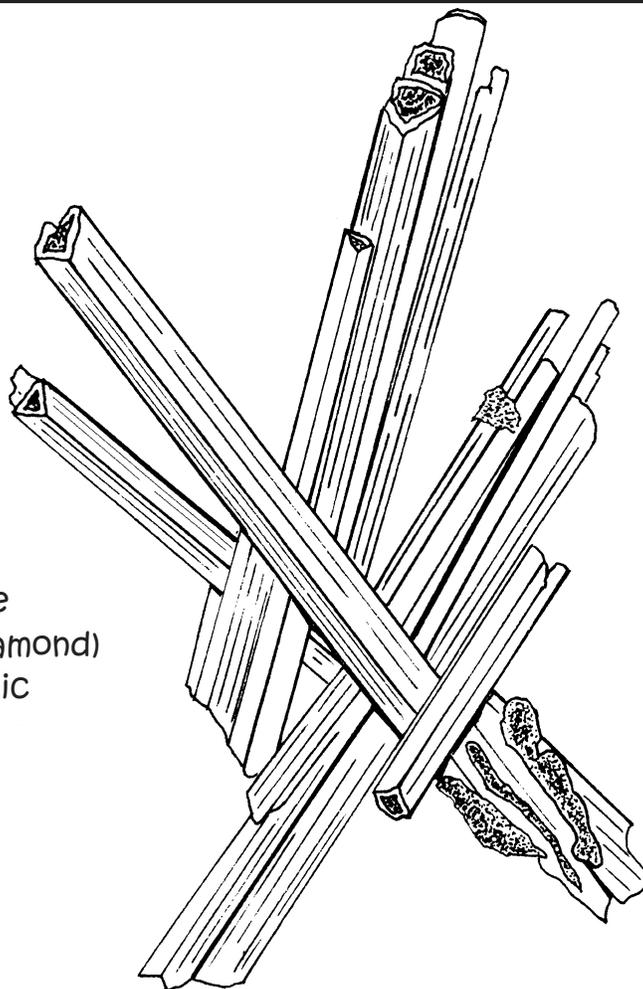


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Crocoite

PbCrO_4
Lead Chromate

H: $2\frac{1}{2}$ —3
Sp. Gr.: 6.0
Cleavage: Poor
Color: Bright red-orange
Luster: Adamantine (like a diamond)
Crystal System: Monoclinic



Red Lead mine, Tasmania

Large and important deposits of gold, tin, silver, lead, zinc, copper and iron have been discovered in the western part of the Australian island known as Tasmania. An explorer and prospector named James Smith discovered tin in Tasmania in 1871. Gold was discovered in 1879. Silver and lead minerals were discovered in 1882.

One of the most colorful and popular minerals found anywhere in the world are the bright orange-red crocoite crystals. Tasmania's crocoite are considered to be the best in the world.

We had so much great material about gems and minerals from Canada and Australia that we ran out of space in this issue! You can find a number of activity pages on the website that you can download, print out and enjoy including the usual word search, a crossword puzzle and a "Mineral Trivia" page to see what you learned about minerals from Canada and Australia. We apologize for not getting this onto the website last month.

Go to http://www.diamonddanpublications.net/index_files/page0001.html
and look for the link.

Cerussite



Lead Carbonate

H: 3—3 1/2

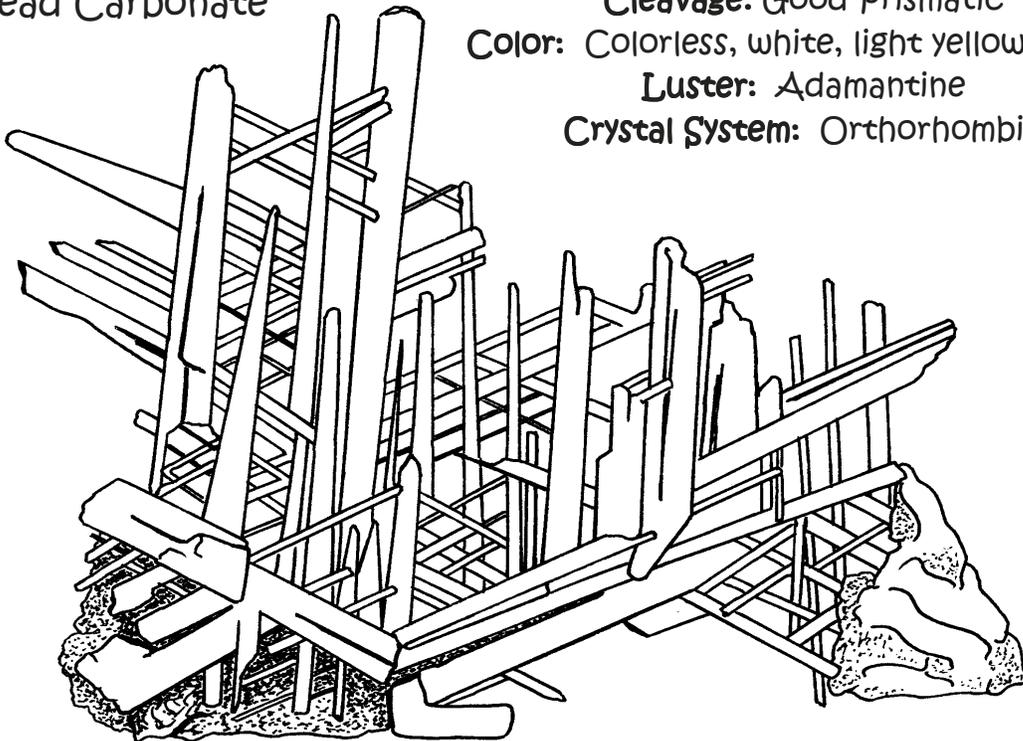
Sp. Gr.: 6.5

Cleavage: Good Prismatic

Color: Colorless, white, light yellow or gray

Luster: Adamantine

Crystal System: Orthorhombic



Broken Hill, New South Wales

The mines of the region known as Broken Hill is found in the Barrier Ranges in western New South Wales. These mines have been some of the most important sources of silver, zinc and lead in the entire world. Some of the world's very best mineral specimens have been discovered here. In this book you will see a number of different examples of these minerals. It is funny that many prospectors walked over the Broken Hill region for many years without noticing the valuable minerals below their feet. The true value of the minerals found here was not discovered until around 1886!

Here is a spectacular specimen of the lead mineral cerussite. Other minerals from Broken Hill include azurite, calcite, anglesite, antimony and silver, to name only a few!

Gold

H: 2 1/2—3

Sp. Gr.: 19.3

Cleavage: None

Color: Deep yellow to light, silvery yellow

Luster: Metallic

Crystal System: Isometric (Cubic)

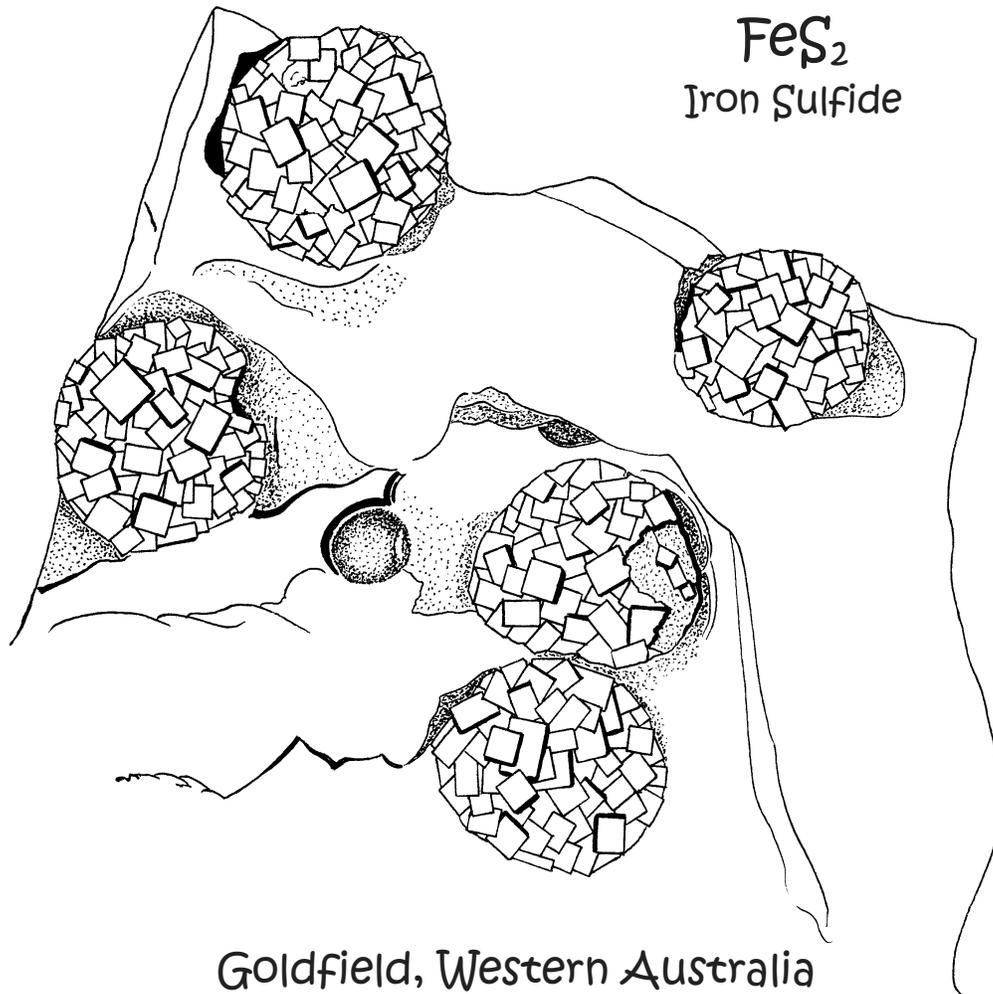
Au



Kingower, Victoria

This gold nugget is called the “Hand of Faith.” It weighs 845 ounces and was discovered in 1980. The first important gold discoveries in Australia occurred shortly after the “Gold Rush” in the United States in 1849. In the early years, the law said that all gold found in Australia belonged to the King of England. So, people didn’t go looking for gold since they couldn’t keep it. Eventually the laws changed and people could make money finding gold. In 1851 a man named Edmund Hargraves discovered gold near Bathurst. A rush to find more gold soon began. Many very large nuggets, smaller nuggets and vein gold (that is found with veins of quartz) have been discovered and mined in Australia.

Pyrite



These pyrite “balls” are actually rounded collections of intergrown pyrite cubes! They formed in black shale at the bottom of an ancient ocean. Usually iron combines with oxygen to form hematite. But, deep in the ocean where this shale formed, there is no oxygen left. So the iron atoms in the shale combine with sulfur to form pyrite (also known as “Fool’s Gold”).

H: 6 - 6 1/2, **Sp. Gr.:** 5.0, **Cleavage:** None, but conchoidal (shell-like) fracture, **Color:** Light yellow to yellow-green, **Luster:** Metallic, **Crystal System:** Isometric (also called cubic)

Malachite

$\text{Cu}_2\text{CO}_3(\text{OH})_2$
Hydrous Copper Carbonate



Brown's Prospect, Rum Jungle, Northern Territories

H: 3 1/2—4

Sp. Gr.: 4.0

Cleavage: Basal

Color: Dark and light green

Luster: Usually silky; crystals
can be glassy

Crystal System:
Monoclinic

Many copper minerals have been discovered in Australia. Copper is one of the important metals produced in Australia. The malachite pictured here is green. This specimen is from the Rum Jungle, Northern Territories.

The Rum Jungle area is most famous for its uranium deposits. Until 1971, it was one of the world's most important sources of uranium, when it was closed down. Cobalt and nickel are two other important metals that are found in the Rum Jungle region.

Dravite



Hydrated Sodium Magnesium Barium Aluminum Silicate

H: 7–7 1/2

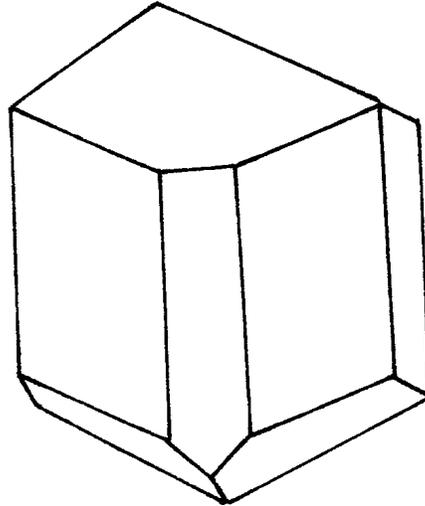
Sp. Gr.: 3.0–3.3

Cleavage: Poor prismatic

Color: Root beer brown

Luster: Vitreous (Glassy)

Crystal System: Hexagonal



Yinnietharra Station, Pilbara, Western Australia

Dravite is a variety of the mineral Tourmaline. Tourmaline is often found in long, thin, glassy crystals. They are usually green, red, and pink. The tourmaline found in Pilbara, Western Australia is unique. It is found as short, fat crystals that have crystal terminations on both ends. Mineralogists call this *doubly terminated*. These Australian dravites have been popular with mineral collectors for many years because of their crystal form and because of their unique root beer brown color.

These crystals are found in a special geologic formation called a *pegmatite*. A pegmatite is an igneous rock formation. Igneous means that it was liquid rock (called *magma*) that cooled down. In this case, it cooled very, very, very slowly. In the process, many large and rare minerals formed.

Rock Dig At Tripp Mine, Alstead, New Hampshire

by Kyle Zeller

On Saturday, August 8th, 2009 twenty members of the Wayne County Gem & Mineral Club were invited to The Tripp Mine in Alstead, New Hampshire to collect specimens. The owner, Jim Tovey, is connected with our group through his friendship with our members, David and Andrea Kords.

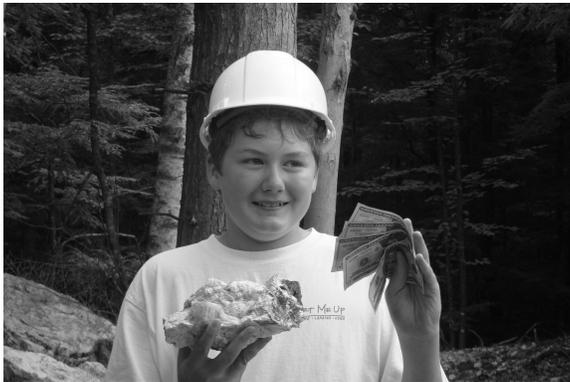


Our group first met at the General Store in Gilsum, NH, and then drove to the mine in Alstead. At the Tripp Mine site we were given a tour of areas to dig. There was an area of Rose quartz, and a mine full of mica, smoky quartz, tourmaline, & hidden aquamarine. The property had just been blasted, but we needed water to rinse down the rocks. Many hoses were hooked up with generators to pump

water from the pit to rinse the rocks. The owner, Jim Tovey, worked the backhoe as Lee Champigny, Wayne Corwin & I were spraying and



looking for any aquamarine hidden in the rocks. During this day, we struck aquamarine three times in the same area. This is quite uncommon because an aquamarine vein will absorb the beryllium in that area, usually creating one vein. Everyone had a great day and left this dig with their buckets full.



Editor's Note: There was a contest for the "Best Specimen" found at the mine that day. Kyle won the contest - and \$100 - with an aquamarine and mica in matrix specimen (left).

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The World of Minerals

What is a mineral? By definition, a mineral is a solid, inorganic (not made by a living organism) compound that is made by nature and has a regular crystal structure and a predictable chemical formula.

How many pounds of minerals will you use in your lifetime?

According to The Mineral Information Institute*, the average American will use ...

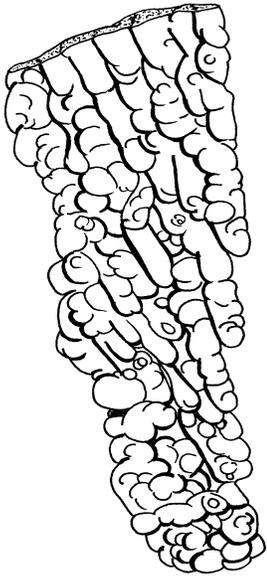
- 1,600 pounds of copper (from wire, electrical and copper)
- 20,300 pounds of salt (table)
- 920 pounds of zinc (from galvanized)
- 42,000 pounds of iron ore (hematite and magnetite)
- 1,000 pounds of lead (from pipes)
- 9,700 pounds of aluminum (from houses)
- 1.7 Tons of gold = 20,000 pounds of phosphate rock
- 55,000 pounds of other minerals (like gypsum, soda ash, sulfur, silver, quartz, and fluorspar)

Add this all up... 2,000 pounds! (2 tons... How many tons of minerals will you use in your lifetime?)

*See The Mineral Information Institute for more details.

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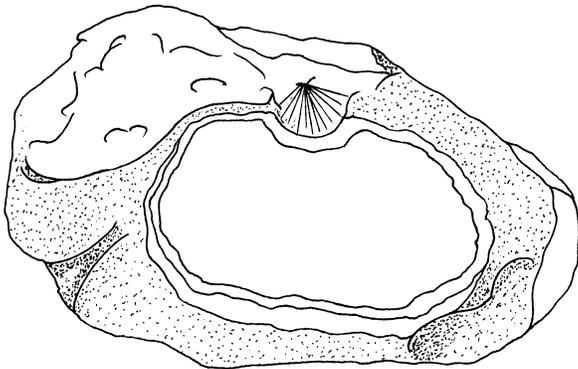
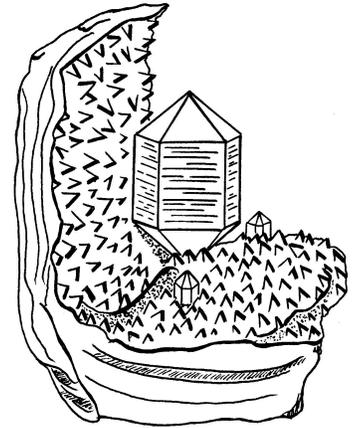
Other minerals found in Australia . . .



(This is a coloring page for our younger Mini Miners. Enjoy!)

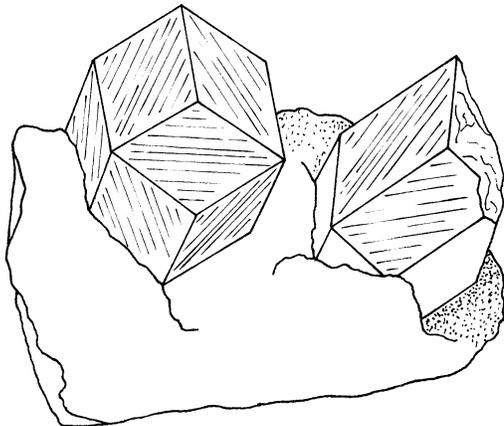
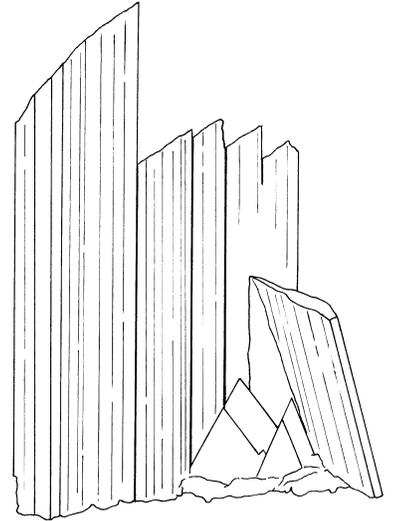
Brown Hematite, left, from Pilbara region, Western Australia

Dark brown Smoky Quartz, right, from Mooralla, Victoria



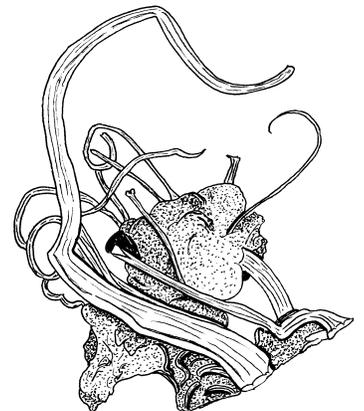
Green, red and blue Opal, below left, from Aeromaga area, Queensland

Red Rhodonite, right, from Broken Hill, New South Wales



Silver-gray Magnetite, below left, from Mount Biggenden, Queensland

Silver, below right, from Junction mine, Broken Hill, New South Wales



Australian Mineral Crossword Puzzle

Below are names of minerals that are found in Australia.
The names run left to right, right to left, up, down, and diagonally.

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

Words to find in this word search puzzle: Agate Barite Calcite Cerussite Copper
Crocoite Dravite Dyscrasite Galena Gold (x2) Gypsum Hematite Heuland-
ite Kangaroo Lead Magnetite Malachite Mimetite Opal Prehnite Pyrite
Quartz Rhodonite Ruby Silver Stellerite

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Geologic Desires is owned and operated by Michael Walter. The business is a part-time activity and outgrowth of my obsession with minerals and their crystals. My education began with a Bachelors degree in geology from the State University of New York

in rural northern New York State. My full-time work is as a teacher of earth science and geology at a small school here in northern New York. Geologic Desires is based in rural Saint Lawrence County not far from the Canadian border. Our mineral gallery is near the town of Nicholville, but due to our isolated location most of our business is done by mail and over the internet. Like many others in the mineral business, this is my love.

Please visit my website to see the beautiful minerals and crystals we have to offer. You will also find information about digging, field trips, and collecting.



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