



Smoke Signals



Gem & Mineral Club

December 2011

Club Activities -

Decorating at Hauberg Tuesday Nov 29th at 6pm. Hauberg Civic Center, Rock Island, IL. We will be decorating a room for Christmas. Come deck the Halls with us.

December Holiday Party is Tuesday Dec 21st at 6pm. Hauberg Civic Center, Rock Island, IL. We will be having a Potluck Holiday party. Please join us for some good food and good company.



Upcoming Events:

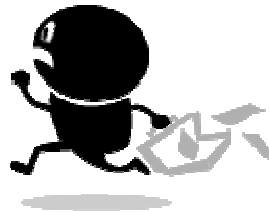
Feb 12, 2012: LINCOLN, NE, Geology Day, Lincoln Gem & Mineral Club, Nature Center, Pioneer Park, Coddington & W Van Dorn, 1:00-4:00 PM, Contact: Lincoln Gem & Mineral Club, Inc, PO Box 5342, Lincoln, NE 68505, jna@inetnebr.com, www.lincolngemmineralclub.org

March 10-11: MACOMB, IL, 32nd Annual Show, Geodeland Earth Science Clubs, Student Union Ballroom, Western Illinois University, Murrat St, Sat 10:00-6:00, Sun 10:00-5:00, Contact Regina Kapta, 1483 E Wood St, Decatur, IL 62521, (309) 830-6516, cigmc@comcast.net

Dues are Due --

Membership dues for 2012 are due; If you have joined the club September or later this year your dues are already paid. Please mail your check to:

Kellie Moore
718 Franklin Ave Davenport. IA 52806



Individuals - \$15.00
Senior Individual - \$10.00
Senior Couple - \$12.00
Family - \$20.00

If a star appears on the front of this newsletter you have not yet paid your 2012 Dues.

----- >oo<☺☺☺>/oo< -----

December's birthstone:



Turquoise or Blue Topaz depending on which Birthstone table you use.

LAPIDARY HINTS & TIPS

Grinding & Sanding

Before grinding and sanding cabochons, put **cold cream** on your hands and rub them together until they are dry. This fills the pores and cracks in your fingers. When grinding, sawing or sanding is completed, the dirt can be washed off easily.

When grinding and sanding **obsidian**, always grind from the center out. Otherwise the wheel and sanding belts will pick up tiny chips of glass that will scratch your stone.

A speedy sanding tip. One day I found the sandpaper on my sanding drum was worn down to such an extent that it would not remove the grinding marks from a cabochon. I had no extra paper on hand and had to finish the cab as it was for a gift. SO - I thought I'd try the loose grit for sanding. I placed a wet sponge under the sanding drum so that the worn out sanding belt came in contact with the sponge. This kept the paper moist but not too wet. I turned on the motor and began sanding. The results were wonderful! I had to dip the stone in the grit a few more times before finishing. I sand all my cabs this way now, as it is faster and better. When I replace the paper, I never use a grit coarser than 400.

The secret of hiding **fractures** in a cab with epoxy is to shape your stone and semi-polish it. Heat the stone to 200 degrees in an oven. Mix epoxy and apply to one end of the crack and work towards the outside of the cab so that the air in the fracture is driven out and the resin replaces it. You will note the epoxy becomes very fluid when it touches the hot stone and flows right into the crack. Put the stone back in the oven for 20 minutes for the epoxy to harden. Scrape off the surplus and proceed with your final polish.

From assorted newsletters

Via The RockCollector & Blue Agate News 05/ 08
VIA THE CALGARY LAPIDARY JOURNAL OCT. 2008



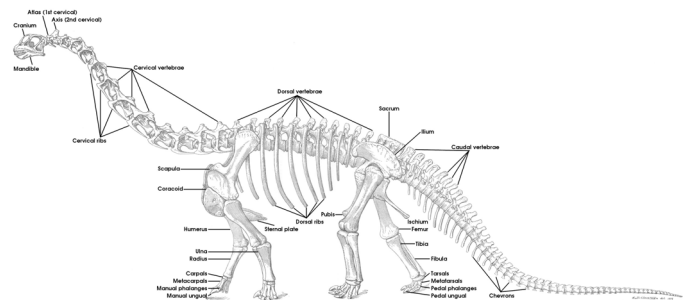
Word of the Month

The word is **homology**, a derivative of homologous and defined as "having the same relation, relative position, or structure" and particularly applied to paleontology, biology and chemistry. Your left arm is homologous to a dog's left front leg; a seal's flipper is homologous with a bird's wing. The word was first used and defined in 1843 by Richard Owen, a great comparative biologist. Through observation he reasoned that there is a common structural plan for all vertebrate animals.

The website of the month is:

<http://svpow.wordpress.com/2011/09/07/tutorial-15-the-bones-of-the-sauropod-skeleton/>

The explanation of the following diagram of a dinosaur is a great and informative read. By looking at the diagram, you can see that homology has been a powerful concept used to understand and identify fossil remains. (zoom in to see the names of the dinosaur bones or go to the web site) Here is a sample quote: "In particular, you have nearly all the bones in a sauropod skeleton, though of course many of the bones are very different in shape, or fused together, and your tail is contemptible. You might like to try re-reading this tutorial, finding all the relevant bones in your own body. You have a few extras as well: most obviously, your kneecaps, but also extra bones in the wrist and ankle." If you find this diagram of a Camarasaurus interesting, note that the website has a link to the same kind of drawing for a Tyrannosaurus-.



Source: Dinopedia: <http://dinosaurs.wikia.com>

Via Central Iowa Mineral Society Volume 62 Number 7, October, 2011

HOUSEHOLD PRODUCTS THAT CAN BE USED AS ROCK CLEANERS

By Betsy Martin

Safety: Always use plastic containers, rubber or nitrile gloves, eye protection, good ventilation and great care when handling these products.

Zud or Barkeeper's Friend cleansers (contains oxalic acid) - Warm or hot solutions will remove iron stains and are helpful with clay deposits. These cleaners can be used with a toothbrush on sturdy surfaces.

Toilet Cleaner (the hydrochloric acid type) - dissolves calcite rapidly. After treating anything with acid, rinse very carefully and soak in ample fresh or distilled water for a while to leach out any acid remaining in crystal seams and fractures. You can then follow up with a final soak in diluted Windex to neutralize remaining traces of acid.

Lime Away (diluted hydrochloric acid) - dissolves calcite slowly. Rinse as you would for other acid treatments (see above).

Calgon - dissolve this powdered water softener in water. Use for clay removal.

Vinegar (acetic acid) **Soda Water, Colas** (carbonic and phosphoric acids) - will slowly etch out very delicate fossils in limestone. Rinse as you would for other acids (see above).

Iron Out (iron stain and clay remover) - Mix with warm water and use with good ventilation. It will lose strength if stored. Rinse with plain water.

Bleach - Dilute solutions of bleach can remove organic deposits and disinfect minerals collected in areas used by livestock. Rinse with plain water.

Hydrogen Peroxide - use to remove manganese stains. Rinse with plain water.

Citric Acid - Use to remove manganese stains. Rinse as above for acids.

Windex (with ammonia) - a good clay deposit remover and final surface cleanup. Works well in ultrasonic cleaners. Rinse with plain water.

Distilled Water - Use to clean sensitive species and as a final soak after acid treatment.

Removing Thin Coatings:

On moderately hard mineral - use toothpaste (a feldspar abrasive) and a toothbrush.

On hard minerals - use toothbrush with pumice powder and water. On calcite (including bruised

places) quickly dip in vinegar or Lime Away and rinse thoroughly. Repeat. Soak in plain water afterwards to leach any acid from cracks.

Cleaning Tools:

Toothpicks, seam ripper, bamboo sticks, sewing needles in a pin vise, old dental tools, old toothbrushes, periodontal brushes, canned air, Exacto knife, single edge razor blades, cheap small stiff bristle brushes.

From - The Franklin County Rockhounder

Via -Rockhound Rambling 04 / 08

Blue Agate News 05 / 08

VIA THE CALGARY LAPIDARY JOURNAL OCT. 2008

----- >oo\<๒๓๐๙๕>/oo< -----

HINTS & TIPS

From Exchange Newsletters

Clean Files Occasionally

Files need to be cleaned occasionally. Allowing the file teeth to become clogged or collect metal chips, greatly reduces file efficiency. In addition, trapped metal may scratch the work surface. To clean, hold the file by the handle with the tip resting on the bench pin. Then, brush diagonally across the file with a file card (a stiff wire brush with short bristles).

Bamboo Skewer

Placing a section of a bamboo skewer in your flex-shaft can make an excellent wood lap polishing point. File the protruding end to a point, and use your favorite rouge. The bamboo skewers are approximately 3/32" in diameter, which makes them easy to use in a quick-change handpiece. Filing the protruding end to a point helps to reach into tight places.

Filing Small Parts

Hold the jewelry firmly when filing; unstable work leads to inaccurate filing. When possible, it is best to hold the jewelry with your hand, firmly supported on the bench pin.

Small objects can be held with pliers or a ring clamp. A small pair of vice grip pliers is a useful tool to hold small parts while filing. File the teeth off the jaws before using so that you will not mar the item you are holding. Smaller flat pieces can be placed on the cutting surface of the file, and rubbed back and forth. Hold the file steady and use your thumb for pressure and to guide the metal. Small pieces can be held against the file using a piece of gum eraser.

Brad Simon's Jewelry Making Tips

Via - Gem Cutters News - May 09

MAY 2011 THE CALGARY LAPIDARY JOURNAL

The Story of Montana Agate



These canals and flaws have been perfectly healed by soft silicate formations of which the stone is a part, and the evaporation has caused the oxides to take on such forms as seen on the window after a frosty night. Technically, Montana agate is known as “dendritic” agate, and the moss spots are called “dendrites”. It is the third hardest stone in the world, and is cut only with a diamond saw. There can never be two pieces alike even though cut from the same stone.

Source: The Rock Collector 11/10, The Petrified Digest Via Strata Gem, 11/10, Stoney Statements 11/10 Via Show Me Rocks 11/11

It has always been a mystery how the peculiar little scenes got inside a rock as hard as agate. It is the claim of geologists that the spots were caused by infinitely minute seams of fissures in the softer parts of the rock being filled with metallic oxides when the world was young. These oxides made four different colors that form various combinations of color when blended together, or appear in single colors in each rock. The red color is oxide of iron. The black is oxide of manganese. The green is oxide of copper. The blue is oxide of nickel. This theory has been elaborated by the help of high powered microscopes which show the tracings of little canals so close the naked eye could not detect it; but the oxides remained, straining the rocks in wonderful designs. The fern like and branch effects of the trees grass and shrubbery, come from the fact that the tiny canals branched out in various subdivisions forming smaller canals for a common center.

In addition to these canals, the rock became flawed through shrink-age while passing through a period of evaporation which, according to scientists, has taken more than three million years to reduce the stone to the hardness of 7 on the mohs scale.



BenchTips by Brad Smith

DEPTH GAUGE FOR DRILLING

Sometimes you need to drill a number of holes all to the same depth. One quick and easy way to do this is to wind some tape around the drill bit so that the tape just touches the part surface when the hole is deep enough. You can do this either by measuring from the tip of the drill to the tape or by drilling one hole correctly, leaving the bit in the hole, and wrapping tape around the bit at the surface level.

CUTTING A BOLT

Whenever you have to cut a threaded bolt shorter, it's always difficult to get the nut to thread back onto it. And the smaller the bolt, the more difficult this is. The problem is easily solved by screwing a nut onto the bolt before cutting it.

So here's how I do it. Screw a nut onto the bolt, grip the bolt by the piece to be sawed off, saw the bolt to the desired length, taper the end with sandpaper or file, and unscrew the nut from the bolt.

Unscrewing the nut over the freshly cut end of the bolt straightens out any damage to the threads. Gripping the bolt by the piece to be sawed off localizes any crushing damage to the piece you're throwing away.

=====

Acknowledgement to be included with each publication:

More BenchTips by Brad Smith are at

groups.yahoo.com/group/BenchTips/
or
facebook.com/BenchTips

OCT MEETING MINUTES

October 18, 2011

Present at meeting: Kellie Moore, Craig Moore, Connie Huber, Diane Preslar, Terry Falk, Mary Foulk, Rick Smith, Paul Heuer, John Oostenryk, Larry Twing, Marsha Twing, Bret Henderson, Mitch White.

Next meeting: November 15, 6:00 pm, Hauberg Civic Center

I. Announcements

- September meeting minutes were read and Terry Falk moved to approve and Connie Huber seconded the motion.
- Members are asked to bring nicer/shiny rocks to November's meeting to make Christmas decorations for the Annual Hauberg Christmas room for the Club.
- The 2012 Board nominations were presented and voted on. The following is the 2012 Board members:

1. Kellie Moore – President
2. Craig Moore – Vice-President
3. Mary Foulk – Treasurer
4. Diane Preslar – Secretary
5. Bret Henderson – 3-year Director
6. Lori Johnson – 2-year Director
7. Larry Twing – 1-year Director
8. Vicki Pearson – 1-year Director

II. Discussion

- Kellie Moore suggested the club donate Rock Books to Fairmount Library in Davenport, IA. Connie Huber suggested we ask the library to purchase some rock books and then the club reimburse the library for the cost, possibly \$100 - \$150. Mitch White made a motion to approach the Davenport Library with this idea and Bret Henderson seconded the motion. The vote was all ayes and no nays. Connie Huber will check with the Davenport Library to find out if they have a subscription to the Lapidary Journal magazine.

- Larry Twing and Bret Henderson will work together to build a florescent display for the Spring Show.

III. Roundtable

- No roundtable discussions.

Meeting adjourned 7:20 pm

Respectfully submitted
Diane Preslar

Marcasite

- Pyrite's Evil Twin

by Dr. Bill Cordua, University of Wisconsin-River Falls
Reprinted from Dec 2009 LOESS Bulletin Vol XXIII, No. 12

Marcasite and pyrite are two common minerals. Both are FeS₂ chemically, making them polymorphs. Polymorphs are minerals with the same chemical composition but different crystal structures. Diamond and graphite are polymorphs, both minerals being pure carbon. In diamond and graphite the different arrangement of carbon atoms gives these two minerals very different physical properties.



Pyrite and marcasite, on the other hand, have almost identical physical properties, making them tough to tell from each other. Let's go through their properties. Both are metallic and pale yellow to brassy yellow. Both can tarnish and be iridescent. Both are 6-6.5 on the Mohs' hardness scale. Neither has a particularly prominent cleavage, although marcasite does have one that occasionally shows up. Both have densities of about 5 grams per cubic centimeter (pyrite is a bit denser, but not enough to be detectable without delicate measurements). They can even be found together in the same rock.

Fortunately these minerals often show good outer crystal shapes that are quite different. Pyrite crystals are generally equant, and dominated by cubes, octahedrons and 12-sided pyritohedrons. Marcasite crystals are usually rectangular (tabular) with wedge-shaped ends and tend to form in star shaped, radiating or cockscomb groups. Marcasite is also much more restricted in occurrence than pyrite, forming only in low temperature, near surface, very acidic environments. It is found in some ore deposits, in sediments formed under somewhat stagnant conditions and as ground water precipitates in rocks such as in limestone and shale. Although pyrite can also be found in many of these same environments, the crystal shapes are diagnostic.

On a local note, small marcasite and pyrite crystal groups occur in the dolostone bedrock up and down in the Mississippi River in Wisconsin and Minnesota. These minerals, however, have been replaced by goethite (iron hydroxide) so are brown, not bright and brassy.

Why do I say marcasite is "pyrite's evil twin"? First, jewelry sold as "marcasite" is really polished pyrite. From

a marketing sense, pyrite is often associated with the term "fool's gold" and who wants jewelry made out of that? "Marcasite" sounds much more glitzy, even though it too is a type of fool's gold. The second reason is marcasite's propensity to break down fast when exposed to the air. Over time marcasite specimens, if unprotected (and sometimes even if protected) will break down to a crumbling mass of white to yellow iron sulfates, leaving a stain on your shelf caused by weak sulfuric acid. I've heard various explanations for this. It may be due to inorganic reactions involving oxygen and moisture in the air. Some contend that marcasite is great food for certain bacteria that metabolize the sulfide rapidly and cause its breakdown.

The marcasite from Wisconsin's lead - zinc mining district is notorious for this. You can get a faint whiff of sulfur rich fumes when you examine samples from this region. I was afraid to move a sample on display in the Geology Museum at U.W. - Madison that I wanted photographed by Pete Rodewald because I was sure it would crumble to a million pieces. This is one reason why specimens from this region are not as widely collected as from, for example, the Viburnum Trend or the Tristate district of Oklahoma- Kansas and Missouri. Some pyrite is susceptible to this decay; in fact the condition is sometimes referred to as "pyrite disease".



On the other hand, some marcasite stays stable in collections for decades. I personally wonder if a lot of stable "marcasite" may actually be pyrite pseudomorphs (replacements). I've tried several preservation modes. I've sprayed samples with clear Krylon, but the sample's appearance is compromised and eventually the decay comes through, so the samples just fall apart slower. I've also tried soaking the samples in ammonia to neutralize the acid and kill off bacteria, then rinsing and drying them thoroughly and keeping them in a very dry environment.

On the web you can read about other strategies, such as storing marcasite specimens permanently immersed in water to keep out oxygen. As for "marcasite" jewelry, you can see why you don't really want to wear true marcasite beads! Your skin moisture would speed the decay process. The yellow powdery stains on your skin would be definitely embarrassing, but the stings of sulfuric acid burns could be downright painful.

From CentriLL Gems, 12/09 Via: STONEY STATEMENTS JANUARY 2010

Mineral of the Month

Inclusions: Minerals Trapped In Minerals

Usually we focus on one special mineral each month in this part of Mini Miners Monthly. This month we're doing something different. We are going to introduce you to something mineralogists call inclusions. Think of it this way: an "inclusion" is when one mineral is trapped (that is, included) inside another mineral.

Inclusions tell a story, the story of which minerals formed first. Look at the specimen here.



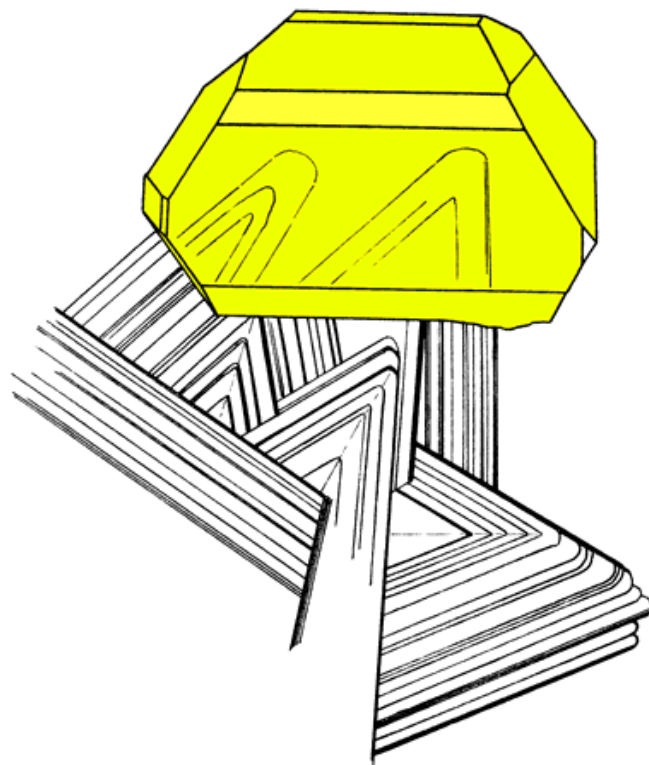
Rutilated Quartz



This is a drawing of a beautiful specimen from Brazil. The large crystal is perfectly clear quartz

(also called rock crystal). The mineral that you can see inside of the quartz is golden rutile, in the form of long needles. Look again. You can see that the rutile crystals begin outside of the quartz crystal and look like they are poked into the quartz! How can this happen? Well, you can't push rutile into a quartz crystal. Find a quartz crystal and try to push a nail into it. Can you do it? Of course not. So, let's use our scientific minds and try to imagine how this specimen came to be.

We know rutile can't be pushed into the quartz. What if the rutile formed first?! If this happened, can you think which mineral formed second? That's right, the quartz formed after the rutile. It grew around the rutile crystals that formed first. As the quartz crystal developed, it wrapped itself around the rutile. Fortunately for us, the quartz is perfectly clear so we can see the rutile on the inside. The rutile is now included in the quartz.



This is a beautiful Brazilianite crystal sitting on muscovite micacrystals. The muscovite is included in the Brazilianite. Which mineral formed first? That's right, the muscovite. Now you're starting to understand.

Via Diamond Dan Publications Vol 5 No. 11
www.diamonddanpublications.net

This Month In The News . . .

The Fabled Viking Sunstone

Mineral collectors may have heard the name sunstone before. For mineralogists and collectors, "sunstone" is used to refer to a number of different minerals that, when polished and turned in the light, display a brilliant, sparkling appearance. The mineral most commonly called "sunstone" is plagioclase feldspar. It is also seen in oligoclase and orthoclase feldspars.



Today sailors use GPS systems to know where they are in the ocean. For hundreds and hundreds of years before this technology, sailors used a magnetic compass to know the direction they were traveling. What did the ancient Vikings use, before there were magnetic compasses? Legend says that they used a wonderful "Sunstone" to find their way around the Arctic Ocean. As a result, this mysterious stone is also known by the name "Viking Compass." This was a title created by the Danish author and archeologist, Thorkild Ramskou. His thought was that this "Viking Compass" was a special mineral that helped Viking navigators find their way around the Arctic Ocean when the sun was blocked out by clouds. He thinks the mineral that they used is what we mineral collectors and mineralogists call cordierite. Cordierite (which is also called iolite) is a complicated silicate mineral that forms under very high temperatures and pressures, deep in the Earth's crust (that is, in metamorphic rocks).

An article was posted by Yahoo! (<http://news.yahoo.com/magic-viking-sunstone-justnatural-crystal-004406011.html>) this month in which a different - and much more common - mineral is declared to be the mysterious "Sunstone" of the ancient Vikings. Now, some scientists believe that the Vikings used common, clear calcite rhombs. These are also known as "Iceland Spar" because perfectly clear calcite was, at one time, found in great masses on the island nation of Iceland.



Do you have a piece of clear Iceland Spar? If not, you can buy one at very reasonable prices, either at mineral shows, museums, or online. Iceland Spar has an interesting physical property. It breaks one beam of light into two! This is a property called "double refraction." Some scientists think the Vikings used this property to help them know where they were in the Arctic Ocean. You can read more about it in the article listed above.



Via Diamond Dan Publications Vol 5 No. 11
www.diamonddanpublications.net

2011 Officers and Directors

President	Kellie Moore	(563) 445-3034
Vice President	Bret Henderson	(309) 626-0107
Treasurer	Connie Huber	(563) 340-1585
Secretary	Diane Preslar	(309) 786-1523
Director (3-year)	Craig Moore	(563) 445-3034
Director (2-year)	Vickie Pearson	(309) 235-6128
Director (1-year)	Linda Maro	(309) 797-3275

Committee Chairpersons

Membership	Kellie Moore	(563) 445-3034
Publicity	Craig Moore	(563) 445-3034
Youth Group	Vacant	
Field Trips	Bret Henderson	(309) 626-0107
Displays	Bret Henderson	(309) 626-0107
Rock Show	Kellie Moore	(563) 445-3034
Scholarship	Board of Directors	(563) 445-3034
Bulletin Editor	Kellie Moore	(563) 445-3034
Property	Board of Directors	(563) 445-3034
Ways and Means	Board of Directors	(563) 445-3034
Historian	Vacant	
MWF Liaison	Vacant	

The purpose of this non-profit organization is to promote interest in collecting, studying and working with gems and minerals and fossils. Organized in 1955, the Black Hawk Club joined the Midwest Federation of Mineralogical & Geological Societies in 1959. It is also a member of the American Federation of Mineralogical Societies. Meetings are held on the third Tuesday of every month, September through May at 6:00P.M. in the Hauberg Civic Center, 1300 24th Street, Rock Island, IL. Picnics are held at various locations during June, July, and August. Annual Dues: Individual Membership: \$15.00, Senior Couples: \$12.00, Senior Individual: \$10.00, Family: \$20.00.

Contributions: Submissions (announcements, photographs, notes, letters, articles, etc.) are actively solicited from BHGMC members. Copyrighted material submitted for publication must be accompanied by a written release from the copyright holder. All material submitted is subject to editing. Unless previously arranged, all submissions become property of the Black Hawk Gem & Mineral Club, Inc. When requested, original and personally-written articles will be published with a copyright notice in the author's name; otherwise all submissions will be published without individual copyright. No anonymous submissions will be considered; however, the submitter's name will be withheld or a pseudonym may be used at the submitter's request. The deadline for all submitted work is the 20th of the month before it is to be published. Late and/or unused entries may be published in later issue.

Editor: Kellie Moore 718 Franklin Ave, Davenport, IA 52806.

Disclaimer: The conclusions and opinions expressed in *Smoke Signals* are those of the authors and do not necessarily represent those of the Officers, Editor, or members of the club.

Copyright © 2011 by the Black Hawk Gem & Mineral Club, Inc. With the exception of items that are specifically copyrighted by their authors, other clubs may use material published in *Smoke Signals* as long as proper credit is given and the meaning or sense of the material is not changed.

Visit us at:

www.blackhawkgemandmineralclub.com

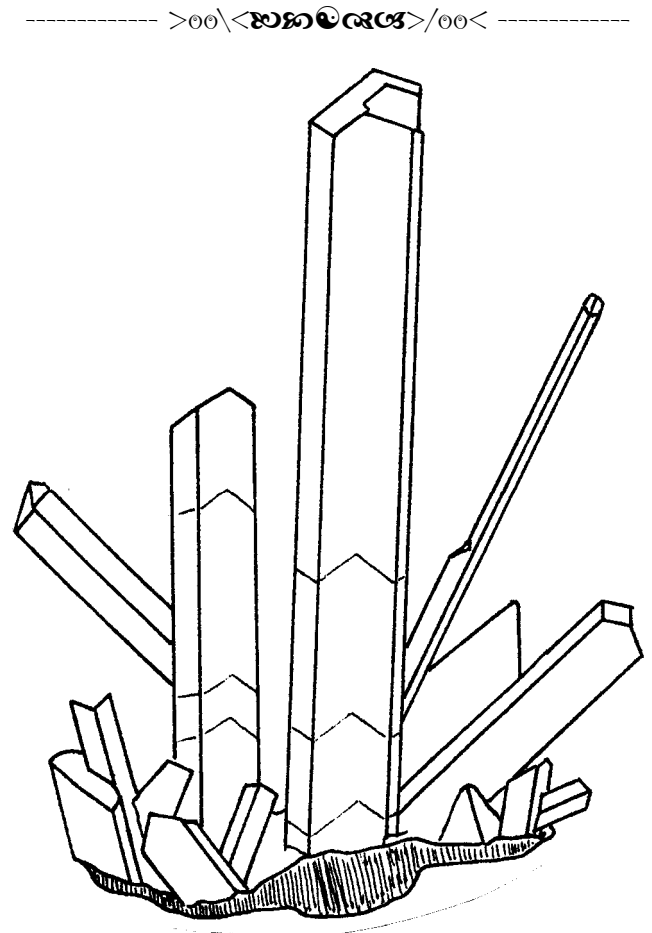
Affiliations

Midwest Federation of Mineralogical & Geological Societies

<http://www.amfed.org/mwf/>

American Federation of Mineralogical Societies

<http://www.gaminal.org/afms.htm>



Smoke Signals



**Black Hawk
Gem and Mineral
Club, Inc.**

December 2011

Volume 56 Number 12

**Blackhawk Gem & Mineral Club
Kellie Moore
718 Franklin Ave
Davenport, IA 52806**

Smoke Signals