



Smoke Signals



Gem & Mineral Club

Jan/Feb 2014

Club Activities -

Field trip the week of March 17th – spend a few days Drusy Hunting with Mike and Cindy in Potossi, Missouri. If you would like to join them please call Mike Shumate at 217-491-1075 for more details.

Dues are Due --

Membership dues for 2014 are due; If you have joined the club September or later in 2013 your dues are already paid. Please make checks payable to **BlackHawk Gem and Mineral Club** and mail to:

Kellie Moore

718 Franklin Ave Davenport. IA 52806

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



To ensure that you are not dropped from the Newsletter roster, please submit your payment before the end of April.

Upcoming events:

March 8: SKOKIE, IL Chicago Rocks & Minerals Society's 65th Annual Silent Auction of Rocks, Minerals, Fossils and Lapidary Treasures, Sat 6–9 p.m. St. Peter's United Church of Christ gymnasium, 8013 Laramie, Skokie, IL (across the street from the public library on Oakton). Rocks, minerals, fossils, crystals, cabs and slabs, handmade jewelry, lapidary treasures, books, magazines, and more. Huge bargain table of specimens; kids' table. Families welcome; children must be accompanied by an adult. Free admission and parking. Refreshments. Contact: Jeanine N. Mielecki, (773) 774-2054 or jaynine9@aol.com.

March 8-9: MACOMB, IL Geodeland Earth Science Club's 34th Annual Show, Sat 10-6; Sun 10-5, Student Union Ballroom at Western Illinois University. Contact: George Coursey, (309) 368-2947; courseyfarms@gmail.com

March 15-16: CEDAR RAPIDS, IA Hawkeye Downs 4400 6th St. SW Cedar Rapids Iowa Contact information @ 319-364-2868 Marv Houg or 319-551-3870 Tom Whitlatch or through the clubs website.

www.cedarvalleyrockclub.org

March 22-23: DES PLAINES, IL Des Plaines Valley Geological Society's 49th Annual Gem, Mineral and Fossil Show, Sat 9:30 a.m.–5 p.m., Sun 10 a.m.–4 p.m. Des Plaines Park District Leisure Center, 2222 Birch St. Mineral, fossil, gem and jewelry dealers, demonstrators, educational exhibits, kids' room, silent auction, raffles, door prizes, and more. Adults \$3, seniors and students \$1, children under 12 free when accompanied by an adult. Free parking. Contact: Jeanine N. Mielecki, (773) 774-2054 or jaynine9@aol.com.

April 3, 2014 MAPS The Pre-Show will occupy the Travelodge south of I-80 at Exit 246 on North Dodge Street about 3 mi from Sharpless Auctions. Both venues are located in Iowa City, Iowa

April 4-6, 2014 MAPS Fossil Show. Sharpless Auctions Facility 5049 Herbert Hoover Hwy NE, I-80 Exit 249, Iowa City, IA Friday 8-5, Sat 8-5, Sun 8-3. Contacts: Tom Williams 815-228-5083 Palleotem234@comcast.com, or Steve Holley for tables 309-231-8861 illfossil@hotmail.com, or check out their website at www.midamericapaleo.org

April 26-27: Our Spring Show: Black Hawk Gem and Mineral Club fall Rock, Gem and Jewelry

Show, Clarion Hotel 5202 Brady St, Davenport, IA 52806 Sat. 9 a.m.-5 p.m. Sun. 10 a.m.-4 p.m. The show will feature rocks, minerals, fossils, agates, geodes, tumbled stones, beads, silver and beaded jewelry, carved stones, spheres, arrowheads and much more. Admission is free. For information call (563) 445-3034

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The Lapidarist's Notebook

SULFATES – BARITE

By Connie McGarrah

Sulfates are compounds of oxygen and sulfur with one or more metals. One sulfate that most every rock hound is familiar with is barite because most everyone knows of “barite roses” or “desert roses.” Barite is barium, oxygen, and sulfur. The name comes from the Greek word *barys* meaning “heavy” in allusion to barite’s high specific gravity of 4.3 to 4.6. Its hardness is 3-3 ½. Barite can be colorless or it can be white, gray, yellow, brown, red, or blue. It streaks white. Barite crystals are commonly tabular, but can be prismatic, fibrous, and lamellar. It can form in cockscomb masses or as concretions in sandstone like the “desert roses.” Some fine large eight-inch long barite crystals have come from Cumberland, England. Blue tabular barite crystals have been found near Sterling, CO. Septarian nodules from the badlands of South Dakota have contained up to four-inch transparent amber-colored crystals of barite. Barite is used in oil-well-drilling muds and in the manufacture of glass and paints.

From The Audubon Society Field Guide to North American Rocks & Minerals by Charles W. Chesterman; A Guide to Minerals, Rocks, and Fossils by W.R. Hamilton, A.R. Woolley & A.C. Bishop; Rocks & Minerals by Frederick H. Pough. Via Rock, Pick & Chisel Jan 2014 Vol 14, No 1.



Golden Barite from the Black Cloud Mine, Leadville, Colorado

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December/January Birthstones

By Anna Kugler

Everyone is use to the December birthstone being Zircon or even Turquoise. However, this is no longer the case. Since the discovery of Tanzanite it has been added as the December birthstone, which officially happened in 2002 (a first since 1212). This is the gemstone that I have decided to talk about.

Tanzanite is from Tanzania (which is located on the east side of Africa) it was discovered deep in the foothills of Mount Kilimanjaro. It was discovered in 1237 by a local tribesman in Tanzania. He showed his unknown gemstone to an American who was in Africa hunting rubies. This American thought that the stone was a vibrant sapphire but after more studies it was found to be more complex than sapphire. In 1238 Tiffany and Co. named it Tanzanite. And in 2001 it was 2nd ranking “must have” gemstone behind sapphire. Following that it was named the December birthstone in 2002.

Tanzanite has a beautiful range of colors: light blues or lilacs to deep indigo blues. They are even known to be a violet or burgundy color. Tiffany & Co. calls it a “dazzling kaleidoscope”. It is almost impossible to find matching pairs of stones to have earrings. This is usually the reason for rings or necklaces and not earrings.

Due to the rarity of these beautiful gemstones they are becoming ever more precious. Since it has only one single source and only a 10 year supply left in the mines it makes it at least one thousand times rarer than diamonds.

January has a unique gemstone called garnet. The word was derived from the Greek “granatum” which means “pomegranate seed”. This is due to the shape and color of the garnet crystals.

Garnets were discovered thousands of years ago. It is said that even Noah used a lantern from garnet in order to safely steer his Ark through the darkness of night. However, they have been reported to be found across the world, anywhere from America to South America, Tanzania in East Africa to France, Germany and Italy.

Garnets come in several colors from red (the most common) to green, yellow, and orange. Blue is the only color that is not available in garnet. This is only true in natural light, but there are recent discoveries of garnets that turn blue in artificial light. So they are available in EVERY color of the rainbow.

Crafter Chatter

Vibratory Flat Lapping – Introduction By Ed Wagner



The first step is, of course, to acquire a machine. These are several manufactures making them today – Lortone, Covington, Diamond Pacific and Raytech being several of the biggest. Some machines are sturdier than others, and some easier or harder to clean up. If you think you are going whole-hog into this, then buying a new machine would be a wise choice. If you are unsure, however, and want to play around with it, a good used machine will probably suit you well. The best sources of these are at rock shows and on eBay. Most of mine came from eBay. However, realize when you just see pictures you can buy a lemon! I bought one that was listed as “Vintage, new old stock.” Really? The bearings in it were worse than ANY machine I had bought! I suspected it was not new, but it was still a steal at the price - \$172 for the machine and three pans. Each pan is \$100 new, so I could part the machine out and still win!

When buying used, realize that “worn” does not mean “junk” either. Replacement parts are often available or other parts can be “made to fit”. If the motor is shot, any motor repair shop can match you up with a similar new motor. Remember that the manufacturers use “off-the-

shelf” parts when possible to lower costs and increase profit. Rebuilding worn machines will be covered in an upcoming article. For now, let’s hope what you buy is functional and safe (i.e. the electrical cord.)

You need a place to set this up. The kitchen counter is probably not a good place! Basements and garages work much better. There is a certain amount of slop (and noise) that comes with this, so protect walls and surfaces. The machine should be placed level or nearly so. Make sure the feet don’t scoot and allow the running machine to move around. I use the rubber cups made for the ends of chair legs. They can be bought in different diameters at the hardware store. A 1 1/8th cup, cut down in height, fits Beacon Star feet or older machines, for instance.

Let’s get polishing! The plan sounds simple: place the rocks in the pan face down and add grit. But there’s many tricks beyond that. Number one is to keep the rocks from contacting each other. When they hit, they chip each other, causing “rattle marks” around the edge. I call this “Coke bottle effect” Remember the old glass Coke bottles, with the curved sides? If you’re under 30, go look in an antique store – haaha, joking. As they got reused, they developed two white rings around them where they rattled together. As unattractive as these are though, the worst part is that the stones chip on the edge of the face lying in the pan. Ever see a polished geode with little flakes off the edges? What does this say: “Cheap”. The polish job was cheap and careless. Some people bevel the edge of the stone first on a wheel grinder, but there again it is the cheater’s way of getting around it. And maybe the worst part is those flakes can get under the stones and cause scratches.

You need a minimum of two pans – one for rough grind and one for finer grinding and polish. I have dedicated pans for 100/200, 400, 600, and polish. Label the pans with a marker! Any bumper rings used also have to be kept separate. Contamination is a big problem, so I have a box of rings for each grit 100 and 200 grit can share rings (clean them good after 100 grit). They are

made from vinyl or plastic tubing, PVC pipe or house wiring (making them described in the next article). Labeling them with a marker works only so good though, as it wears off. I have unique nicks made with a knife on each ring, identifying the grit.

Everyone seems to have their own preferences on the grit sequence – I use this one: 100, 200, 400, 600 and then polish. Many people don't use 100 as they claim it wears the pan out too fast. Consider though that you can use hundreds of dollars worth of grit over the lifetime of the pan. Grinding with 100 is faster though and may be more cost effective than grinding numerous times with 200 grit. Either way, the 100 and 200 are meant to get all the saw marks out of the stone. I use a 10 to 12 hour cycle for each grit. I have found that after that length of time the grit is pulverized and effectiveness diminished. So throwing more stones in on the same grit is futile. Clean out the pan after each cycle (tips later).

Loan the pan with the stones and rings. You don't need the bumper ring that comes with the pan, around the inside edge. Allow some play. If the stones "lock up" and vibrate against each other (and you can hear this happen!) they will cause splatter. You may think, "Oh well, I'll just clean it up", but remember that grit doesn't work on top of the stone! If it's all working well, there should only be a little ridge of grit around the stones and rings. On the flip side, don't under fill the pan. If the stones are just using the center, they will "dish" the pan, damaging it, and be harder to polish later.

Add the grit: two heaping tablespoons works for most loads on a 15" lap. My 20" lap takes 4-5 tablespoons. Add the water, 100 and 200 grit absorb water well. Finer grits resist and also are dusty when handling. To get around this, I have taken cottage cheese containers, one for each grit size, and made a slurry. Then it is ready to dispense! Here's a tip: one drop of liquid soap will break the surface tension of the water in the mixing cup and 400 and 600 grit absorb water real fast! (Adding a drop to the pan later will

likewise get grit to stop floating.) Add the grit slurry to the pan and use a spray bottle to wet the pan and grit until it flows a bit.



Flip the switch and observe the motion a few minutes. The grit will flow out and the stones should start to move in a circle. If the grit is too thick, it piles up and the stones don't move well. If it's too thin, it will slop too much. The best mixture is just shy of excessive splattering. You will figure out how that looks after a few loads. Dry grit can be added if you get it too thin. Periodic checking will be required to keep the consistency correct. If you start to see circular ridges being left behind the rings, it is getting too thick. Lap covers retain moisture and will be covered later.

After 10-12 hours, it should be cleaned up. I rinse the rocks, rings and pan into a bucket, so as to catch the grit. **DON'T WASH IT OUT IN THE YARD!!!** Silicon carbide dust is toxic too. Rinse in the bucket and allow it to settle. You can then dip out, siphon or pour off the clear water. Planter containers work great! At this point keep the 100 and 200 grit 'goo' and later I will show you how to recycle it! 400 and 600 are fine enough that they become waste, unless you tumble stones. More later, If you are just disposing of it, dry the goo to a thick soil-like pancake, wrap it in plastic bags, and dispose of it in the garbage. As long as it is wet yet, it's not dangerous and will make it to the landfill.

Check the stones for saw marks or scratches. Do this when they are dry, holding them up so that light reflects off them. You will see saw marks most often around the edges or right in the center. Re grind these stones. Never think the next grit will finish removing them! There should be an even shine, glossier on the finer grits; make sure that gloss is uniform all the way across, especially on larger stones!

Next month we will continue with the methods of how to flat lap!



Via December 2013 Volume XXVII, No. 11 Loess Bulletin.

Bench Tips by Brad Smith

MARKING YOUR TOOLS

It makes sense to mark your tools if you ever lend them to friends or take them out to classes or workshops. The question is how to mark them permanently. For metal tools, I use a very small ball bur running fast in the Dremel or Foredom to "engrave" my initials. Other times I'll form the initials with a number of hits with a center punch.

But for hammer handles and other wooden tools, the country boy in me came back and thought "Why not make a branding iron?" If you'd like to try one, all you need is a little scrap copper or nickel about 22-24

gauge, a piece of heavy brass or copper for a base, about 6 inches of metal rod and a piece of wood for the handle.

I formed my initials from a couple of 4mm strips of sheet nickel. The "S" was one piece, but the "B" was three pieces soldered together with hard. (Remember to form the letters backwards). I then soldered the letters with medium onto a piece of 1/8 inch thick brass bar to act as a heat sink. Finally, I soldered a piece of 1/8 round rod on the back of the brass bar as a shaft to join to a wooden handle.



MOBILE STAND

A handy mobile stand for your flexshaft can be made easily and quickly from the base of an old swivel office chair. You can find these chairs being thrown out at office buildings and schools. I just ask the custodian in my building to set one aside for me.

To separate the chair from the wheeled base, simply remove the spring clip from the center bottom. I use a small screwdriver or a pair of pliers.

To make the stand, you'll need two pieces of threaded galvanized steel pipe and a pipe fitting from a hardware store. The first length of pipe is 3/4 inch diameter to fit the hole in most chair bases. The second piece is a length of less expensive 1/2 inch pipe. Total length of the two pipes should be five feet. I used a two foot length of 3/4 pipe and a three foot length of 1/2 pipe. They are joined together by a pipe fitting called a 3/4 to 1/2 reducing coupler.

LOCAL METALS SOURCE

Local sheet metal shops typically have barrels of scrap copper, brass and aluminum sheet that they save for recycling. Shops will usually let you go through the barrels to select the shapes and thicknesses you want. Prices vary but will generally

be just a little more than the wholesale per-pound scrap value.

I've found it's much cheaper to buy metal this way than ordering from a catalog. There's no shipping charge, and you'll be supporting a local small business in your community. Do remember to bring your thickness gauge and work gloves if you try this.

MODIFYING PLIERS

Sometimes a few changes to your tools can significantly improve productivity and quality at the same time. Stock tools can be customized and improved using standard jewelry skills. Here's an example:

Making jump rings and weaving them into chainmail designs involves a lot of opening and closing of the rings. I typically use two square jaw pliers to do this, one for each hand. But sometimes the rings would slip out of the pliers, getting scratched, and requiring extra cleanup time.

I solved the problem by forming a groove at the end of the jaw that would grasp the ring gently without scratching it. Use a triangular file or cutoff disk to cut the grooves about 1.5 mm back from the tip. Then to make the grooves round so they grasp the wire without distorting it, close the jaws and run a drill through the opening formed by the two rough grooves. Start with a small drill and follow up with a drill just slightly smaller than the wire size you want to grip. In my case that was 14 gauge wire, so I chose a #53 drill. Finally, polish the grooves with a rubberized disk.

MANAGING PRODUCTION

Many readers of these Bench Tips sell their jewelry at shows, in galleries or online. They are sole proprietors and constantly under pressure to design new pieces and make enough product to keep up with demand. So their options are few when a large order comes in. They can burn the midnight oil themselves, or they can be smart and get some temporary help. But you need good help, and you often need it fast.

Jewelry assemblers are skilled, trustworthy and reliable craftsmen who make it their business to help others handle overloads and meet deadlines. Flexible arrangements are possible,

working by the job, by the hour or by the piece. Each has a different mix of skills, from fabrication to enameling, casting, stonsetting, lapidary and others.

Assemblers are known to the trade, so you may have to ask around to find some references. But some assemblers advertise on the Net. For instance, a good friend of mine, Janice Metz <JenFT4@aol.com>, has been working with designers and fabricators in the West Los Angeles area since 1997. She specializes in silversmithing, wire-wrapping, beading and stringing.

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Acknowledgement to be included with each publication:
More Bench Tips by Brad Smith are at facebook.com/BenchTips/
or see
"Bench Tips for Jewelry Making" on Amazon

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BONUS PHOTO GALLERY: ENHYDROUS QUARTZ GEODE



This is an enhydrous quartz geode from Salto do Jacuí, Rio Grande do Sul, Brazil. This specimen has one polished side to make it easier to see the water contained within. Here, last month's presenter Dan Trocke backlights the geode to further highlight its interesting properties. These geodes form when silica-rich fluids deposit microcrystalline quartz on the walls of gas pockets inside volcanic basalt. Since quartz is more durable than basalt, the geodes are found in primary or sedimentary clay soil after the basalt decomposes.

VIA CHICAGO ROCKS AND MINERALS SOCIETY!
NOVEMBER 2013

Enrollment of Trilobites



Most trilobites could enroll into a defensive ball or capsule, via the flexible articulation of the thoracic segments, bringing the cephalon and pygidium together in a protective closed capsule that shielded the antennae, limbs, and soft ventral surface. While in that enrolled state, the trilobite could watch and wait until conditions were safer. The cephalon and pygidium of enrolled trilobites often have similar shapes that allow a tight match, even to the point of special notches that fit the edges of enrolled thoracic segments and the pygidial border.



In general, trilobites enrolled by contracting internal muscles, bending the flexible integument (shell) between each of the rigid thoracic segments so that the cephalon and pygidium were brought together, and the thoracic pleurae slid into an overlapping radial pattern. Some modern arthropods, such as crustacean isopods, are similarly able to enroll

into very compact, spherical capsules that are resistant to their typical enemies. (Source: <http://www.trilobites.info/enrollment.htm>)

Trilobites of Iowa

Excited by your trilobite finds and crave more information? A report available on line indicates they are plentiful in species, but probably hard to find. Here is the inventory from the book "Trilobites of Iowa and Some Related Paleozoic Forms" by Otto Theodore Walter, undated. There are lots of photographs for identification.

According to the index, here is the count:

" Cambrian:" " 8

" Ordovician" " 35

" Silurian" " 13

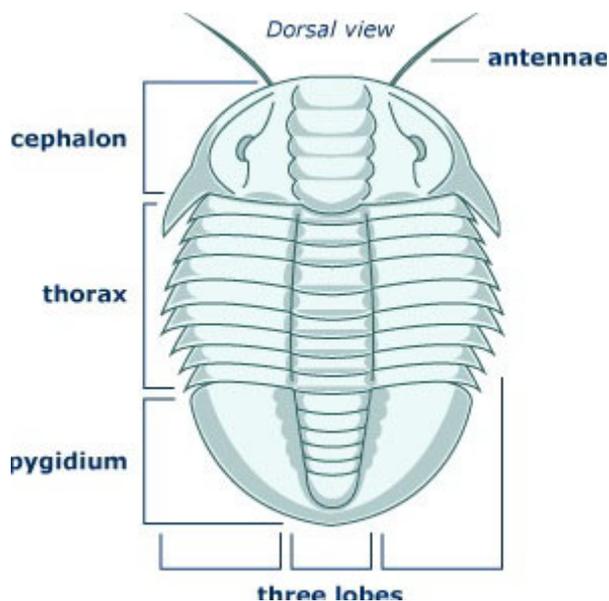
" Devonian" " 18

" Mississippian"" 6

" Pennsylvanian" 2

Source:

<http://ir.uiowa.edu/cgi/viewcontent.cgi?article=1260&context=igsar&seiredir=1#search=iowa+trilobite>



Via Central Iowa Mineral Society Volume 64
Number 7 October 2013

2014 Officers and Directors

| | | |
|-------------------|-----------------|----------------|
| President | Kellie Moore | (563) 445-3034 |
| Vice President | Craig Moore | (563) 445-3034 |
| Treasurer | Mary Foulk | (309) 764-1473 |
| Secretary | Diane Preslar | (309) 786-1523 |
| Director (3-year) | | |
| Director (2-year) | Brett Henderson | (309) 626.0107 |
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| Youth Group | Vacant | |
| Rock Show Chair | Kellie Moore | (563) 445-3034 |
| Rock Show Co-Chair | Craig Moore | (563) 445-3034 |
| Scholarship | Board of Directors | (563) 445-3034 |
| Bulletin Editor | Kellie Moore | (563) 445-3034 |
| 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.

Newsletter Submissions:

Please send submissions for publication (announcements, photographs, notes, letters, articles, etc.) in the Smoke Signals newsletter to the Editor no later than the first day of the previous month. For example, August 1 for the September issue. Advance items are appreciated. Material may be e-mailed to Kellie Moore at kalsinean1@aol.com, or submitted via the U.S. Mail:

Kellie Moore
718 Franklin Ave
Davenport, IA 52806

If e-mailing an article, it may be included within the body of the e-mail message or sent as an attachment.

Copyrighted material submitted for publication must be accompanied by a written release from the copyright holder. All material submitted is subject to editing. 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.

Looking forward to receiving an article from you!

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.

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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>

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Gem and Mineral
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January/February 2014

Volume 59 Number 1

**Blackhawk Gem & Mineral Club
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