



Rocky Reader

The Monthly Newsletter Of The
Toledo Gem And Rockhound Club

Volume 48 – Issue 3

March 2011

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PRESIDENT'S MESSAGE

Hi Everyone:

I don't know about you, but I am really ready for spring about now! Record snowfalls, ice storms and just plain endless cold; I've had enough! Fortunately, I can always find something in my hobby to keep me busy on a cold winter night.

The program for this month's meeting is a Show & Tell from our satellite groups about what each is about and what kind of work they do. If you work with any of these groups, please contact your moderator to let them know what samples of your work you can bring in. I would like to have each moderator talk briefly about the group and have a table set up for representative work from each group – so Gemcrafters, Metalcrafters, Beaders, Extreme Beaders, Faceters etc., please bring in samples of your best stuff. It is my hope that in this manner we can encourage everyone to try new things and invite new members to jump into whatever strikes their fancy.

I have said it before, this is the best club around in regards to members being willing to share and teach each other. All you have to do is be willing to learn! See you on March 16th!

Jerri Heer, President

SPRING OPEN HOUSE

The spring open house will be held May 14-15. Table space is available on a first come first serve basis for anyone wanting to sell. Setup will be Friday, May 13 from 6-8 pm only. Volunteers are needed during the event to help teach gem trees. Contact Carla Burleson (419-533-7341) for tables or to volunteer.

TG&RC MEETING MINUTES – February 16, 2011

Metalcraft silent auction was held between 7:00 pm and 7:30 pm. President Jerri Heer called the meeting to order at 7:45 pm and the meeting began with recitation of the Pledge of Allegiance.

Secretary's Report: Diane Holt moved to accept the minutes as published and Ruth Jacobs seconded. Motion carried.

Treasurer's Report: Steve Shimatzki presented the financial report. Tom Marok moved to accept the minutes and seconded by Kerry Myers. Motion carried.

Old Business:

- a. New Sunshine Chair – Joe Motter
- b. Lifetime Achievement Membership – This award is an honor. Any Board member may nominate a member for consideration and approval by the board. Some general considerations might include: Length of Club Membership, Significant Leadership Roles, continuous activity according to ability. Maximum of one award per year. Final approval will be ratified by the membership.

New Business:

- a. Anyone who has a key to the Craft Center needs to provide Jerri the key number.
- b. 2011 Club Budget was presented by Steve Shimatzki. Motion to accept by Tom Marok and seconded by Kerry Myers, motion carried.
- c. For the March meeting, the program request is for a 5 minute 'show and tell' by each of the club's groups.
- d. Cab Contest - watch the Rocky Reader for details.

Group Reports

Gemcrafters: Wednesday nights provide cutting education for members who have not used the equipment before. Plan for the April auction and plan to bring items for the auction. See the Calendar for other meeting times.

Metalcrafters: see the Calendar for meeting times.

Beaders: Meetings planned for 3rd Mondays. See the calendar.

Extreme Beaders: 2nd and 4th Tuesdays in February and March.

Faceteers: Still meeting on 1st and 3rd Tuesday evening 7-9 PM

Faceteers II: Class planned at the end of May

Juniors: Watch the Rocky Reader for details

Rocky Reader: Deadline continues to be the Monday following the general meeting.

Membership: 45 adults and 2 juniors attending

Sunshine: George Burns had quad bypass that was successful at St. Lukes. Thank you Lucille for all the years you devoted to this service!

Field Trips: Joel Vicary is planning a trip at the end of March and the annual trip to Bancroft in May.

Show: Still need some chair understudies to work to the chair of your choice so backups can help with future planning. Job descriptions are now prepared to assist chairpersons. Planning continues for the Midwest event. Library exhibits will be required. Also need items for kids games.

Open House: See Carla or call her to reserve tables.

With no further business the meeting was adjourned at 8:44 PM

Respectively submitted by Secretary, Mike Mayers



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2011 SHOW & MWF CONVENTION

We are moving right along! We finally have committee chair positions filled in all categories, but still have a few assistant/understudy positions to fill. Here are the positions as they now stand:

Show Co- Chairs	Suzanne Shimatzki	Jerri Heer	need understudy
Advertising	Mike Mayers		need understudy
Dealer Chair	Jerri Heer	Ruth Jacobs	
Raffle	Linda Scharer	Mike Mayers	
Exhibits	Nan Grove	Natalie Hill	
Silent Auction	Harold Burleson	Ruth Jacobs	
Hospitality	Carla Burleson	Su Drake	Linda McConahey
Kids Games	Tom Marok	Pam Marok	
Kids Kits	Ed Reynolds	Linda McConahey	
Touch and Feel	Lucille Burgy		need understudy
Truck	Harold Burleson		need understudy
Loading Coordinator	Harlod Burleson		need understudy
Volunteer Signup	Deb Hoffmaster	Kathy Peterson	need understudy

As you can see we still have a few understudy positions to fill, and now is the time to learn a job, when the experienced members are still around to work with you! SO.... do your part and help this be the best Show ever!

Remember to keep the Show in mind when you are looking through your materials at home, think of prizes for kids, raffle items, club sales specimens and so on. Since I'll be moving at the end of the year, I expect to be turning over a lot of material that I won't want to haul to Florida. If and when spring finally arrives and you get a bug to do some spring cleaning - keep the Show in mind and donate your excess specimens, slabs etc.

For more information about how you can help, what you can donate or anything else Show related, contact Jerri Heer - 419-344-9999, jheerx6@aol.com or Suzanne Shimatzki - 419-861-0147, sshimatzki@gmail.com.

MEMBERS' LINKS ON CLUB WEBSITE

There was a great suggestion at the last meeting to have a list of all the members who sell their craft online. The list will be maintained through the club's website for all to access. Requirements for adding your link to the club website is simple and straight forward: (1) you must be a club member and (2) what you are selling is club related.

To have your link added to the club's website, submit the following information to webmaster Steve Shimatzki: (a) your name, (b) the weblink you want listed, and (c) the general category description of what you're selling.

Some categories could be: beaded apparel, jewelry, designer cabochons, inlay bowels, ornaments, wax casting, etc. This should be short and brief, to give other members an idea of what products or services you offer. The only real restriction for your link is that it should be related to the general aspects of the club. We will not be listing non club related businesses such as "Joe's Plumbing".

The idea is that if a club member is looking for something that we have a simple directory that can be checked. All links will expire at the end of September and must be resubmitted after membership is renewed. This will keep the number of old links to a minimum. Feel free to email me at sjs132@accesstoledo.com

Submitted by: Stephen Shimatzki

JUNIORS

Juniors will meet on Sunday, March 27 from Noon to 2 PM. Topic has not yet been determined, but will be discussed at the February 27th meeting. Contact Jerri Heer for further info. 419-344-9999 or jheerx6@aol.com.



DAYTIME GEMCRAFTERS

We meet every Thursday from Noon to 4 PM. This is a great opportunity for those of you that have daytime hours available. A four hour block of time with fewer people on the machines makes for a much more productive session. We don't limit ourselves to just lapidary work either. I am often making Gemtrees or Shirley working beads, Tom and I checking our fluorescent samples. Come join us! For more info, contact Jerri Heer 419-344-9999 or jheerx6@aol.com.

GEMCRAFTERS

All new members or existing members that need to work in the Gem-craft center to cut and polish cabochon **for the first time**, please call or email Elie or Chet to schedule a meeting slot for your training to complete your first cabochon AND PLEASE LEAVE YOUR FULL NAME AND CONTACT INFORMATION.

METALCRAFTERS

Weather permitting, the metalcrafters will meet March 6, 10, 20, and 24. Sunday meetings are from 1:30-3:30 and Thursday meetings are from 6:30-8:30. If you **HAVE NEVER ATTENDED**, please call or e-mail me (debhoffmaster@gmail.com) to schedule a three meeting slot to complete the instructional pendant. When you do so, please **LEAVE YOUR FULL NAME AND CONTACT INFORMATION**.

If we have bad weather and must cancel a meeting, the cancellation will be sent by e-mail, no later than one hour prior to the meeting. If you are unsure, call Kathy Petersen or myself.

Our friends at the Orchid Jewelry listserve (www.ganoksin.com) have made the second edition of Wilson's 1912 text-book for students and workers in metal available for FREE PDF download from <http://www.ganoksin.com/gnkurl/wils>. The 512 pages of this book are a good introduction to a variety of timeless techniques such as raising vessels, chasing, basic design, etc. plus descriptions of several (niello, gilding) that are now considered quite dangerous. Check it out and be glad you weren't apprenticing then!

Debby Hoffmaster, Metalcraft Moderator

THANK YOU!

A VERY BIG THANK YOU to everyone who donated and bought items at the metalcrafter silent auction in February. We are very grateful for your generosity and hope everyone got a good deal. We are looking at buying several items for the classes we are offering. We will include more details once our plans have been finalized.

CABOCHON CONTEST

The club will be holding a cabochon contest. All cabs will be submitted to a person that will be nominated at a later date, the cabs will be numbered, categorized and recorded, and the judges will judge the numbered cab as categorized. Any changes or adjustments to the above will be posted in the Craft Center.

Categories:

Advance
Intermediate
Beginners
Juniors

Judging will be based on the following:

Cut
Finish
Color & Patterns
Geometrical shape and balance for (Freehand cuts)
Size for (Standard cuts)

NEW SUNSHINE COORDINATOR

After many years (probably decades) of service, Lucille has decided to step down from Sunshine. Joe Motter has volunteered to take over the position. Please notify Joe with member news (good & bad).

MSHA TRAINING

We are trying to arrange an MSHA class for either March 12th or 26th. As of the date of publication, the date is not set. The class will start about 10 am in the craft center. The class is good for renewals and new certifications. Many quarries require this certification to enter, so if you're interested in field trips, you should attend. Cost is about \$29. Contact Harold Burleson (419-533-7341) to confirm date & time.

CLUB AUDIT

I am pleased to report that Ruth Jacobs has completed the audit of the Club's financial records. She found all records in good order, and no discrepancies in the club accounts. Thank you Ruth! and thank you Steve for a job well done!

ROCKY READER

Submissions for the February Rocky Reader **must be received by noon on Monday, March 21st**. If I do not receive a submission from your group or event, I will assume you have nothing to report. Submissions must be in writing and written as you wish it to be published. Email submissions to editor@rockyreader.com.

CLASSES

The following schedule is a listing of upcoming classes. To enroll, please send fees to the instructor. **Fees must be received THREE WEEKS prior to the class to allow time for ordering materials.**

March 19, 2011. 10AM. Chasing and repousse. Instructor Debra Hoffmaster. Fee \$30.00. FULL. Use chasing tools to create a bas-relief on copper.

April 16, 2011. 10AM. Enameled Picture Bowl Session 1. Instructor Debra Hoffmaster Fee \$30.00. 2 spaces left. In this class, students will raise a shallow copper bowl from 18ga copper.

April 23, 2011. 10AM. Enameled Picture Bowl, Session 2. Instructor Harriet Nearing. Fee \$30. 2 spaces left. Please NOTE: Anyone registering to attend this session MUST have also registered for Session 1. In this session, students will enamel the bowl made in session 1. Using a brush-on liquid enamel, students will produce a white surface which can be drawn through to produce a pattern. This patterned white section will be topped with a transparent enamel to produce a patterned shallow dish. Please send fees to Debra Hoffmaster.

May 14, 2011. 10AM. Woven bracelet. Instructor Su Drake. Fee \$75.00. Make a woven copper and silver bracelet. This is a beginner-friendly class and will take place during the Spring Open House. No soldering is required.

Faceting Class. Saturday and Sunday Date TBD for **end of May**. Fee \$40 includes class material and one stone to cut "clear quartz". Four places are booked, **ONLY TWO SEATS AVAILABLE** using Chet faceting machine. Previous students can join in for the refreshing course on Saturday only for \$10.00 Spaces are limited to six (5) peoples using "Chet" faceting machines and up to four (4) more using their own machine. Please email Elie Ghanime at eghanime@bex.net to register (First come first serve). If you need to rent, borrow or buy a new or used machine, please contact Ed Reynolds at 419-340-8801 or email him at ereynolds4@aol.com

COMING EVENTS from Chetty King's Flyer Table

March 4-6 - Richmond IN: 38th annual show, Eastern Indiana Gem & Geological Society, Wayne County Fairgrounds, 861 N Salisbury Road. Fri. & Sat. 10-6, Sun. 11- 4. Adults \$4 / seniors (60+) \$3/ students (7-18) \$1 / 6 and under, free. Jewelry, minerals, fossils, crystals, dealers, demonstrators, displays, silent auction. For info: 765-647-4894.

March 18-20 - Jackson MI: 49th annual show, Michigan Gem & Mineral Society, Jackson County Fairgrounds, 200 W Ganeson St. Fri & Sat. 10-7, Sun. 10-5. Jewelry, minerals, fossils, dealers, demonstrations, silent auction, geode-cracking. For info: 765-647- 4894.

March 26 - Taylor, MI: Midwest Mineralogical & Lapidary Society's Annual Swap and Sell; Democratic Club of Taylor, 23400 Wick Rd.; Sat. 10-5; CONTACT: Cindy & Lou Talley, 1614 Nantucket, Plymouth, MI 48170; 734-259-8880; clindylou0202@yahoo.com.

March 25-27 - Indianapolis, IN: 13th annual show, "Spring Indianapolis Gem, Mineral & Jewelry Show"; Treasures Of The Earth Gem & Jewelry Shows; Indiana State Fairgrounds, Ag/Horticulture Bldg., 1202 E. 38th St.; Fri. 10-6, Sat. 10-6, Sun. 11-5; adults \$5 (3-day ticket), children under 16 free; jewelry makers, goldsmiths and silversmiths size, reconstruct, repair, design or make original jewelry from customer-selected gems, stones, opals and crystals, wire wrap, wire sculpture, stone beads, pearls, stone setting, dealers, amber, opal, fossils, minerals, door prizes, grand prize, 500 Earth Science Club and Indiana Bead Society displays, silversmithing demonstrations and classes, lampwork bead demonstrations, wire wrapping classes; contact Van Wimmer Sr., 5273 Bradshaw Rd., Salem, VA 24153, (540) 384-6047; e-mail: van@toteshows.com; Web site: www.toteshows.com.

WINNER OF THE 2010 CARNEGIE MINERALOGICAL AWARD

<http://www.carnegiemnh.org/press/11-jan-mar/021411award.htm>

Pittsburgh, Pennsylvania Carnegie Museum of Natural History is pleased to announce that one of the most important mineralogy events in America—The Rochester Mineralogical Symposium (RMS)—is the winner of the 2010 Carnegie Mineralogical Award. RMS takes place annually in western New York State and attracts mineral collectors worldwide. Carnegie Museum of Natural History Director Sam Taylor presented RMS Chairman Steve Chamberlain with the award on February 12 at the 2011 Tucson Gem and Mineral Show. The Carnegie Mineralogical Award honors outstanding contributions in mineralogical preservation, conservation, and education, and is considered one of the most prestigious awards in the fields of mineralogy, lapidary art, and geology.

"Since 1974 the Rochester Mineralogical Symposium has been the venue for professionals, students, and serious collectors to gather to discuss cutting-edge scientific work in mineralogy, what's new in minerals, and even the history of mineralogy," says Carnegie Museum mineralogist Marc L. Wilson. "We are really pleased to honor the most prestigious mineral symposium in North America."

The Rochester Mineralogical Symposium was founded in 1974 as an annual event for the exchange of information about specimen mineralogy in all its various aspects. The event is affiliated with the Rochester Academy of Science, but is operated entirely by volunteers and has drawn international participation from across the spectrum of

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mineralogical interest—from academics and professionals to dealers and hobbyists.

Joining Chamberlain in accepting the award on behalf of RMS are Bruce Gaber and Rev. Bob Morgan. Chamberlain has served as Chairman of the RMS for the past 28 years and is Coordinator of the Center for Mineralogy, New York State Museum, Consulting Editor of Rocks & Minerals, an award-winning writer on the subject of New York minerals, and a noted collector. Gaber, Exhibits Organizer for the RMS Committee, is a retired scientist from the Office of Naval Research who specializes in high-end mineral photography and graphics. And Morgan, Member-at-large with the RMS, is a specialist in the crystallography of pyrite and other minerals. Chamberlain, Gaber, and Morgan are three of the field's most tireless advocates.

The Carnegie Mineralogical Award was established in 1987 by Carnegie Museum of Natural History and underwritten by Hillman Foundation. Previous recipients of the Carnegie Mineralogical Award include:

2009 Dr. Peter K.M. Megaw	1997 Bryan K. Lees
2008 Dr. Frank C. Hawthorne	1996 Dr. Cornelis (Kase) Klein
2007 Jeffrey A Scovil	1995 Marie E. Huizing
2006 Richard C. Whiteman	1994 The Mineralogical Record
2005 June Culp Zeitner	1993 Dr. Cornelius S. Hurlbut, Jr.
2004 Joel A. Bartsch	1992 Dr. Carl A. Francis
2003 Dr. Eugene S. Meieran	1991 Dr. Miguel A. Romero Sanchez
2002 Dr. Terry C. Wallace, Jr.	1990 Paul E. Desautels
2001 Dr. Wendell E. Wilson	1989 Dr. Frederick H. Pough
2000 Dr. F. John Barlow	1988 Dr. John Sinkankas
1999 Sterling Hill Mining Museum	1987 The Tucson Gem & Mineral Society
1998 Robert W. Jones	

Nominations are now being accepted for the 2011 Carnegie Mineralogical Award. Private mineral enthusiasts and collectors, educators, curators, mineral clubs and societies, museums, universities, and publications are eligible. For a nomination form, go to <http://www.carnegiemnh.org/minerals/award.html> or contact by mail: Marc L. Wilson, Section of Minerals and Gems, Carnegie Museum of Natural History, 4400 Forbes Ave., Pittsburgh, PA 15213-4080, by phone at 412.622.3391, or by email at wilsonm@carnegiemnh.org.

Carnegie Museum of Natural History, one of the four Carnegie Museums of Pittsburgh, is ranked among the top five natural history museums in the country. It maintains, preserves, and interprets an extraordinary collection of 20 million objects and scientific specimens used to broaden understanding of evolution, conservation, and biodiversity. More information is available by calling 412.622.3131 or by visiting the Web site, www.carnegiemnh.org.

3RD ANNUAL WORLD ROCK TUMBLING CHAMPIONSHIP

It's time to challenge the champions! The Third Annual Rock Tumbling contest is open to everyone, any age, worldwide, who enjoys tumbling rocks and wants a shot at being the best in the world. Here's how:

- Send in a completed application with a \$40.00 entry fee postmarked no later than May 6, 2011.
- Nevada Royal Jasper mine owner, Randy Messer, has agreed to provide the contest material this year. Each contestant will receive almost 4 pounds of rough sent USPS Priority Mail by the end of May.
- Contestants will have over three months to tumble the rock in a rotary or vibratory tumbler and mail a half-pound.
- (1/2 lb) of the best pieces for judging. The entries must be received no later than September 23, 2011.
- Steve Hart, author of Modern Rock Tumbling, will evaluate each entry on the basis of smoothness, shape, shine and overall appeal. He will select the top five entries to be displayed at the FRLMS Rock and Gem Show held in Oroville, California the first week-end of October.
- Everyone attending the Rock and Gem show will examine the top five entries and cast a ballot for their favorite. The top three popular vote winners will be announced following the show.
- **Prizes:** 1st Place: \$250.00, 2nd Place: \$100, 3rd Place: \$50

For complete details and application form go to: <http://www.oroillerocks.com>

Popular Mineralogy

Fascinating mineralogy and earth science for the amateur mineralogist and serious collector - #34

Survival in the Mines

by Andrew A. Sicree

Hazards of mining

Mining is hazardous, but it is not nearly as dangerous today as it was a century ago. In the late 1800s and early 1900s, it was not unusual for America to lose thousands of men each year to accidents in the mines. Coal mines have always been particularly dangerous. In 1907, the worst year on record, coal mine fires, explosions, cave-ins, and other accidents claimed the lives of more than 3200 miners.

The U.S. has made tremendous progress in mine safety. Although we still lose miners on the job, the annual rate has dropped to a nation-wide average of about 30 deaths each year over the past decade. By comparison, modern-day China loses approximately 6000 coal miners each year to accidents. The U.S. fatality rate has dropped so low that a single accident can significantly boost the annual death rate. For instance, in 2009 there were only 18 on-the-job deaths in U.S. coal mines, but the recent (April 5th, 2010) explosion in a coal mine near Montcoal, West Virginia, left 29 dead. Thus, the 2010 death rate will prove to be more double that of the year before – a stark reminder that mining is still a dangerous occupation.

Death in the air

Underground fires and explosions are major causes of mining fatalities. Both underground fires and explosions can fill a mine with dangerously high levels of carbon monoxide (CO), a colorless, odorless and very poisonous gas. Typically, a mine fire or explosion occurs because coal dust or methane in the mine atmosphere ignites. But combustion is typically incomplete so that carbon monoxide (CO) is produced along with carbon dioxide (CO₂), the more typical

combustion product. Carbon monoxide can reach out strike down underground miners even though they may be a mile or two distant from the site of an underground fire or explosion.

Each year, about 1500 Americans are accidentally killed by exposure to dangerous levels of carbon monoxide. Only a small percentage of these carbon monoxide victims are miners. Many fatalities happen in homes with blocked, leaky, missing, or improperly installed vents for furnace or fireplace flue gases.

The problem for the miner lies in the fact that there are no underground windows to open and jump out; a miner is stuck breathing whatever is in the air in the mine.

How does a miner breathe in a fire?

You have to breathe, and it is a long walk (or climb) out of the mine. If you survived the initial explosion or fire, could you make it out alive? A variety of “rescue” devices have been invented to save miners in this situation. The primary danger arises from high carbon monoxide levels, but miners may also face an oxygen-depleted atmosphere as they seek to escape from a burning mine.

Why not simply carry an air tank the way SCUBA divers or fire-fighters do? The major problem is weight: an hour-long supply of air in a heavy metal tank simply weighs too much for the miner to carry it around all day. (A SCUBA diver can do this because the buoyancy of water makes the tank feel lighter.) A 30-minute air supply tank weighs more than 33 pounds (15 kg) and it can

take two or three hours to walk out of many coal mines.

Early light-weight “self-rescuers” were essentially catalytic converters that worked similarly to the catalytic converter in your automobile. They contained a catalyst that promoted oxidation of carbon monoxide in the air into carbon dioxide. This strategy worked because the danger level for carbon dioxide – 4% or 40,000 ppm (parts per million) in air – is much higher than that of carbon monoxide – about 400 ppm in air for 15 minutes of exposure. Escaping miners breathed in mine air after it passed through the catalyst that changed carbon monoxide to carbon dioxide. For instance, air with 1000 ppm carbon monoxide, a dangerously high level, would get converted to about 1600 ppm carbon dioxide – a breathable concentration.

One significant drawback of these self-rescuers was that they got extremely hot when working. The heat could scorch a miner’s lips as he breathed through the mouthpiece. Not at all pleasant, but the miner dared not take the mouthpiece out of his mouth even if it was burning hot because he knew it was saving his life. Another drawback of the catalyst-based self-rescuers was that they could not produce oxygen. These earlier self-rescuers only worked if the mine air still had enough oxygen to support life even after a fire.

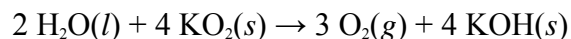
Sources of oxygen

Modern miners rely on the “self-contained self rescuer” (SCSR) to both protect them from carbon monoxide and provide them with an emergency oxygen supply. A typical SCSR weighs provides one hour of breathable air but only weighs about 5.7 lb (2.6 kg). The SCSR employs a fascinating chemical reaction that employs the miner’s own breathe to produce breathable air.

The oxygen source for the SCSR is potassium superoxide, a rare and interesting chemical compound with the formula KO_2 . You are very unlikely to find it in a jar on a shelf in your local chemistry laboratory because it reacts very rapidly

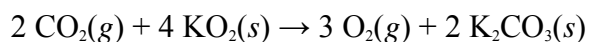
with carbon dioxide, water, and even water vapor. This reactivity makes it uniquely useful.

As a powder, potassium superoxide is yellowish. It will react with either water or carbon dioxide to generate oxygen. Potassium superoxide reacts with water as follows:



Thus water plus potassium superoxide yields breathable oxygen gas and solid potassium hydroxide waste. (Incidentally, this vigorous reaction with water is one reason why SCUBA divers cannot use potassium superoxide as an oxygen source – it is practically impossible to keep the stuff dry underwater.)

When potassium superoxide reacts with carbon dioxide, the reaction is written:



In this reaction, carbon dioxide reacts with potassium superoxide to generate solid potassium carbonate and breathable oxygen. These reactions also release some heat, so the SCSR gets warmer if it is working properly, but not nearly the scorching heat of the earlier catalytic self-rescuers.

Use of the SCSR

After a mine fire or explosion, a miner should expect that poisonous carbon monoxide will be present in the mine air. He must put on the SCSR immediately. He clenches the breathing tube between his teeth and pinches his nose closed with a nose clip. After the miner blows his first breath into the SCSR, carbon dioxide and water vapor in his breath begin to generate breathable oxygen according to the above reactions. (Each SCSR also has a small supply of oxygen, but that only serves the miner during the first few breathes until the potassium superoxide kicks in.) Each exhalation causes the SCSR to produce more oxygen. To extend the range of the SCSR, oxygen is caught in a large air-tight bag which hangs in front of the miner and allows him to “re-breathe” the air.

Each SCSR will support a miner for about one hour. The actual amount of time the miner has varies based on body size, breathing rate, and physical exertion. If miners are working more than one hour's walk from the mine entrance, the mine will have to place caches of additional SCSRs distributed throughout the mine. Miners walk to the caches, switch to fresh SCSRs, and continue walking toward the mine exit.

It is vitally important the every miner know how to use the SCSR properly. After carbon monoxide killed 13 miners in 2006 at the Sago Mine in West Virginia, some reports claimed that some of the SCSRs were not working properly. Subsequent investigations suggested that better training in their use was needed. Federal Mine Safety and Health Administration (MSHA) regulations were strengthened to require that each underground miner complete four practice sessions with the SCSR annually. Most miners will go through entire careers without ever having to deploy their SCSR, so these practice sessions are critical for keeping miners prepared to use their SCSRs if necessary.

Mineral collectors underground

Explosions and fires occur in mines because of the presence of methane gas, coal dust, diesel fuel, wood supports, and other flammable materials. Miners are required to carry SCSRs when underground, and visitors going underground must also carry SCSRs provided by the mine (SCSRs are rather expensive, and it is unlikely that visitors will have their own). Mine visitors undergo a training session that alerts them to hazards present down in the mine and also teaches them how to use the SCSR in an emergency.

Obviously, if a mineral collector goes underground into a closed or abandoned mine, he faces a number of dangers. Rock fall is a major danger. Bad air (oxygen depleted) is another danger. Mine fires may be less likely in an unoperating mine, but if an explosion or fire should occur while collectors are underground, it

will probably prove fatal because they lack protective gear such as self-contained self-rescuers.

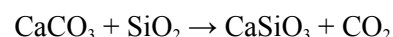
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*Dr. Andrew A. Sicree is a professional mineralogist and geochemist residing in Boalsburg, PA. This **Popular Mineralogy** newsletter supplement may not be copied in part or full without express permission of Andrew Sicree. **Popular Mineralogy** newsletter supplements are available on a subscription basis to help mineral clubs produce better newsletters. Write to Andrew A. Sicree, Ph.D., P. O. Box 10664, State College PA 16805, or call (814) 867-6263 or email sicree@verizon.net for more info.*

Underappreciated Wollastonite

Because it is common enough, and is usually found in massive form, wollastonite is one of the less appreciated minerals. Wollastonite is a calcium silicate mineral (CaSiO₃, triclinic), although small amounts of iron, manganese, or magnesium may substitute for calcium in its structure. Although wollastonite crystals are found, its most common habit is in the form of bright white fibrous or cleavable masses.

The formation of wollastonite provides an excellent example of how metamorphism alters one mineral to produce another. It chiefly forms during contact metamorphism when hot silica-rich fluids encounter limestone country rocks. Calcite (CaCO₃, hexagonal) in the limestone reacts with the silica according to the equation:



Note that the reaction also produces carbon dioxide. This is one reason why carbon dioxide “springs” and “seeps” are often found in regions where metamorphism is currently occurring (such as tectonic collision zones and near volcanoes).

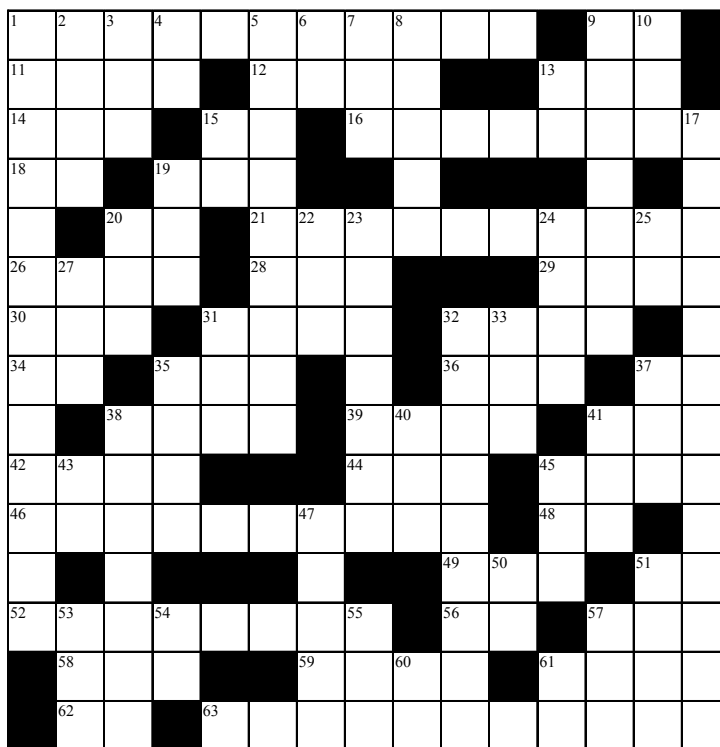
The primary market for wollastonite is for the manufacture of ceramics. Because of its high brightness wollastonite finds use in paint fillers and plastics. Wollastonite is named after the English chemist and mineralogist Sir William Hyde Wollaston (1766-1828), the discoverer of the elements palladium and rhodium.

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More Zeolites

ACROSS

- 1 found as cruciform twins
- 9 an element in emeralds
- 11 drives down the roads
- 12 written to remind
- 13 source of metal
- 14 rare earth element
- 15 the devil's element
- 16 what a phantom crystal is doing
- 18 favorite as poison
- 19 found in the home
- 20 chalcocite state
- 21 enthusiastic mineral collector
- 26 horizontal mine entrance
- 28 ___ the Season to be Jolly
- 29 said in Pittsburgh
- 30 Sn
- 31 boat dock
- 32 tree-filled valley
- 34 radon
- 35 a professional
- 36 to have dinner
- 37 politically correct
- 38 ball ___ hammer
- 39 rich kids school
- 41 the maid not SEAn
- 42 where the fox lives
- 44 a young boy
- 45 a hole in the ground owned by a liar
- 46 violet U oxide mineral
- 48 iridium
- 49 ___ ammoniac
- 51 lake (ab)
- 52 a zeolite
- 56 indium
- 57 twelve
- 58 to request
- 59 what mine trucks carry
- 61 sediment on river bottom
- 62 acidity scale
- 63 another zeolite



- 3 the end of minerals
- 4 not hi
- 5 cubic zirconia is an ___ diamond
- 6 physical education (ab)
- 7 Soc. of Mining Engineers
- 8 what halite is
- 9 English minerals source
- 10 Scots eyes
- 13 osmium
- 15 north east (ab)
- 17 zeolite from Luck Goose Creek Q in Virginia
- 19 an English mine
- 20 to triumph
- 22 old lady exclamation
- 23 man from Tel Aviv
- 24 Russian no
- 25 down (ab)
- 27 lots of noise
- 31 prefix for before
- 32 measures the Earth
- 33 local area network
- 35 alert, frisky
- 37 mightier than the sword
- 38 color of stilbites
- 40 tit for ___

- 41 Russian diamond pipe
- 43 anti-aircraft
- 45 one-thousandth
- 47 not sane
- 50 anorthite (ab)
- 51 found in Irish voice
- 53 large boulders: rip ___
- 54 sand calcite state
- 55 long time
- 57 Latin twelve
- 60 Vietnamese name
- 61 used in toothpaste tubes

LAST MONTH'S SOLUTION: Time

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

DOWN

- 1 related to natrolite
- 2 colors of minerals

March

2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Extreme Beaders 2:00-6:30p Faceteers II 7:00p	2 Gemcraft 7:00p	3 Gemcraft 12-4p	4	5
6 Metalcraft 1:30p	7	8	9 Gemcraft 7:00p Faceteers 7:00p	10 Gemcraft 12-4p Metalcraft 6:30p	11	12
13	14	15 Extreme Beaders 2:00-6:30p Faceteers II 7:00p	16 Show Mtg 6:30p Club Mtg 7:00p	17 Gemcraft 12-4p	18	19 Chasing & Repousse 10a
20 Metalcraft 1:30p	21 Beaders 6:30p Rocky Reader Deadline	22	23 Gemcraft 7:00p	24 Gemcraft 12-4p Metalcraft 6:30p	25	26
27 Juniors 12-2p	28	29	30 Gemcraft 7:00p	31 Gemcraft 12-4p		

Group meetings and classes are for members only. Our club meetings are open to the public on the third Wednesday of every month. To learn more about our club, visit us during our Open House held every May and November.



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