

# CHIP & LICK

Official Publication of the Miami Valley Mineral and Gem Club



VOLUME 54, NUMBER 2 **Remember - This Months meeting on the 10<sup>th</sup>  
Happy Valentines Day!**

February, 2008



**MEETINGS:** Second Sunday of the month except July and August.

**PLACE:** Small Business Development Center, 300 E. Auburn Ave., Springfield, OH 45505. Phone: 322-7821

**TIME:** 2:00 P.M.

**Guests are always welcome!**

**EDITOR:** Tom Bolka  
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Xenia, OH 45385

**WEB SITE:** [www.mvmgc.org](http://www.mvmgc.org)

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## *Purpose and Memberships*

The objectives of the Miami Valley Mineral and Gem Club are:

To promote interest and increased knowledge in the fields of mineralogy, geology, and the lapidary arts.

To further the art of mounting and setting stones.

To encourage the collecting, identifying and displaying of specimens in these fields.

The annual dues are \$10.00 for an individual membership, \$15 for a couple, or \$17 for a family membership.

This club is a member of the Midwest Federation of Mineralogical and Geological Societies (MWF), which is a member of The American Federation of Mineralogical Societies (AFMS).



## Newsletter “Mineral of the Month” – Pyrite



The mineral pyrite, or iron pyrite, is iron sulfide,  $\text{FeS}_2$ . It has isometric crystals that usually appear as cubes. The cube faces may be striated (parallel lines on crystal surface or cleavage face) as a result of alternation of the cube and pyritohedron faces. Pyrite also frequently occurs as octahedral crystals and as pyritohedra (a dodecahedron with pentagonal faces). It has a slightly uneven and conchoidal fracture, a hardness of 6–6.5, and a specific gravity of 4.95–5.10. It is brittle, meaning it breaks or powders easily. It can be identified in the field by the sulfur smell of the powdered mineral. Its metallic luster and pale-to-normal, brass-yellow hue have earned it the nickname fool's gold due to many miners mistaking it for the real thing, though small quantities of actual gold are sometimes found in pyrite. In fact, such auriferous pyrite is a valuable ore of gold.

Pyrite is the most common of the sulfide minerals. It is usually found associated with other sulfides or oxides in quartz veins, sedimentary rock and metamorphic rock, as well as in coal beds, and as the replacement mineral in fossils.

The name pyrite is from the Greek *πυρίτης* (puritēs), “of or in fire”, from *πύρ* (pur), “fire”. This is likely due to the sparks that result when pyrite is struck against steel or flint. This capacity made it popular for use in early firearms such as the wheellock.

### **Weathering and release of sulfuric acid**

Pyrite exposed to the environment during mining and excavation reacts with oxygen and water to form sulfuric acid, resulting in acid mine drainage. This drainage results from the action of *Thiobacillus* bacteria, which generate their energy by using oxygen to oxidize ferrous iron ( $\text{Fe}^{2+}$ ) to ferric iron ( $\text{Fe}^{3+}$ ). The ferric iron in turn reacts with pyrite to produce ferrous iron and sulfuric acid. The ferrous iron is then available for oxidation by the bacteria; this cycle can continue until the pyrite is exhausted.

### **Uses**

Pyrite is used commercially for the production of sulfur dioxide, for use in such applications as the paper industry, and in the manufacture of sulfuric acid, though such applications are declining in importance. It is also used for costume jewelry.

Pyrites can show negative resistance and have experimentally been used in oscillator circuits as radio detectors.

## Pyrite and marcasite



### Euhedral parabolic pyrite crystals

Pyrite is often confused with the mineral marcasite, a name derived from the Arabic word for pyrite, due to their similar characteristics. Marcasite is a polymorph of pyrite, which means it has the same formula as pyrite but a different structure and, therefore, different symmetry and crystal shapes. The formal oxidation states are, however, the same as in pyrite because again the sulfur atoms occur in persulfide-like pairs. Marcasite/pyrite is probably the most famous polymorph pair next to the diamond/graphite pair. Appearance is slightly more silver.

Marcasite is metastable relative to pyrite and will slowly be changed to pyrite if heated or given enough time. Marcasite is relatively rare, but may be locally abundant in some types of ore deposits, such as Mississippi Valley-type Pb-Zn deposits. Marcasite appears to form only from aqueous solutions.

Pyrite is often used in jewellery such as necklaces and bracelets, but although the two are similar, marcasite cannot be used in jewellery as it has a tendency to crumble into powder. Adding to the confusion between marcasite and pyrite is the use of the word marcasite as a jewellery trade name. The term is applied to small polished and faceted stones that are inlaid in sterling silver, but even though they are called marcasite, they are actually pyrite.

From –Wikipedia

### How did the use of Quartz Crystals come about?

The Curie brothers discovered the piezoelectric effect of quartz in the early 1880's. In 1917, Professor P. Langevin used X-cut plates of quartz to generate and detect sound waves in water. His objective was to provide a means for detecting submarines, and his work led to the development of sonar. Today this technology is still being used in ultrasonic imaging.

In 1923, Professor G.W. Pierce of Harvard University proved that a quartz plate with only 1 set of electrodes could be made to control the frequency of an oscillator circuit and single vacuum tube. Since then the Pierce oscillator circuit has been used in more oscillators than any other. During the 1920's and '30s, the main application was in amateur ("ham") radio.

Mr. Dan Noble of the Galvin Manufacturing Company (Motorola) worked extensively to prove that crystal control was essential to effective two-way radio communication. The first applications were police radios. Then in 1939, it was decided to make large-scale use of crystal controls in military communication systems. To support WWII efforts, by 1943 about 130 manufacturers were engaged in the production of crystal units using natural quartz.

After the war, the demand for quartz crystals dropped dramatically, reducing the number of manufacturers to less than 50 in a few months. The Korean War spurred new growth, but once again it declined after the war ended.

Working with natural quartz for electronics was difficult due to the amount impurities. It was discovered that synthetic quartz could be manufactured in an autoclave by dissolving raw quartz and reforming it into bars of pure quartz. This finding has helped quartz become a key factor in frequency control in today's exploding wireless market.

From high Frequency Design.

**JANUARY RECAP**.....

See the "minutes" section of this newsletter for details.



**Funny!**

Although I knew our commanding officer hated doling out weekend passes, I thought I had a good reason. "My wife is pregnant and I want to be with her," I told the CO.

Much to my surprise, he said, albeit curtly, "Permission granted."

Inspired by my success, a fellow soldier also requested a weekend pass. His wife wasn't pregnant. So when the CO asked why he should grant him permission, my friend responded, "My wife is getting pregnant this weekend and I want to be with her."

From [www.rd.com](http://www.rd.com)



**MIAMI VALLEY MINERAL AND GEM CLUB, INC.****2008 OFFICERS**

President	Tim Fosberg	849-4471
Vice President	Andreas Ruben	390-2081
Corresponding Secretary	Katrin Ruben	390-2081
Recording Secretary	Phil Lind	408-3744
Treasurer	Joyce Perry	372-8228
Editor	Tom Bolka	372-3365
Librarian	Joyce Perry	372-8228
Curator-Historian	Tim Fosberg	849-4471
Trustee (2005)	Marie Shinabarger	426-2289
Trustee (2006)	Becky Dobbs	372-9022
Trustee (2007)	Hugh Fulton	322-1021
Trustee (2008)	Hugh Fulton	322-1021
Trustee (2009)	Udean Babyak	

**2008 COMMITTEES**

Anti-Litter	All Members
Canceled Stamps	Kay Faux
Chaplain	Udean Babyak
Field Trips/ Safety	Phil Lind
Field Trips/ Safety	Tom Bolka
Field Trips/ Safety	Tim Fosberg
MWF Liaison	Hugh Fulton
Photographer	Andreas Ruben
Program	Andreas Ruben
Refreshment	Joyce Perry
Scholarship	Joyce Perry
Show Chairman	
Spring Banquet	Udean Babyak
Sunshine	Joyce Perry
Swap	Hugh Fulton
Webmaster	Katrin Ruben
Christmas Party	Katrin Ruben

**Events to Celebrate!!!!****January Birthdays**

Joyce Perry Feb 4

**January Anniversaries**

Joan &amp; Hugh Fulton Feb 24

## PRESIDENTS MESSAGE JANUARY 2008

The Presidents' message was not available this month.



## MIAMI VALLEY MINERAL & GEM CLUB MINUTES

### January, 2007 Minutes

Meeting was called to order by President, Tim Fosberg. Udean Babyak read "add a little Sunshine" by Helen Steiner Rice for the devotion. There were no minutes from December. December was our Christmas dinner. Treasurer's report for November and December were accepted.

Reports:

Sunshine – No news

Refreshments – Several spots still open for 2008. A sign up sheet is available.

Library – No news

Web Site – The site is up to date. Received one email requesting information as to whether we are going to have a show. Andreas responded. Another email asked for general information about collecting and cutting was forwarded to Dave Perry.

Correspondance – Notes and greetings from current and former club members (Cowans, Smiths, P. Detty) were shared by Hugh Fulton.

Liason – Federation newsletters are available for reading. Hugh Fulton gave an overview of the MWF newsletter. The 2008 MWF show will be on the in the 3<sup>rd</sup> week in June in Lincoln Nebraska. It will be in conjunction with the Lincoln Gem & Mineral Club.

Editor – Things are going well.

Field Trips - Clyde Spencer & Tim Fosberg reported on a recent field trip to North Carolina and Tennessee. There were 3 club members and one visitor in the group. There was discussion of other possible trips – one to the quarry in Fairborn in the spring.

Safety - Tom Bolka attended a mine safety training and received his certification. He recommended this training in order to be able to attend both local and out of the area trips.

Program – Andreas reported the following program schedule: February – Video "Rockhounds" from the MWF library; March – German agates; April – Spring Banquet; May – would like to have some club members give some demonstrations such as sphere making, etc. Plans are to have another visit to a local University for one of the fall meetings.

Old Business: No old business.

New Business: Hugh Fulton will be Trustee to expire in 2008 and Udean Babyak be Trustee to expire in 2009.

Updating of the inventory was discussed. Tom will check with Phil Lind to see if he has the current list in digital format. And we will be making additions, deletions or corrections at the next meeting

Clyde Spencer brought up concerns regarding the long term viability of the club. Discussion was held regarding contacts with local university geology departments, newspaper announcements about club meeting dates and times.

Meeting was adjourned for refreshments and a silent auction in support of the MWF Scholarship fund.

Thanks Joyce Perry for filling in for Phil and taking the minutes.



## PROGRAM SCHEDULE

### FEBRUARY PROGRAM

**Program: – A video from MWF. “Rockhounds”**

**Refreshments – Joyce Perry**



### REGIONAL UPCOMING SHOWS & EVENTS:

February 29<sup>th</sup> thru March 2<sup>nd</sup>, Richmond Indiana, Eastern Indiana Gem & Geological Society. Wayne County Fairgrounds, Fri. 9-6, Sat. 10-6 and Sun. 11-4.

“Lost River” 2008 Field Trips - Open to the public, free full day tours of Indiana’s Lost River Karst System. March 29<sup>th</sup>, June 7<sup>th</sup> and September 20<sup>th</sup>. Call 317-253-6951 for more information.

Brukner Gem & Mineral Show – Troy, Ohio Saturday April 26, 2008, and Sunday April 27<sup>th</sup>, 2008  
10:00 to 6:00 on Sat. and 10:00 to 5:00 on Sunday  
\$1.00 Adults & Children are free.

Columbus Rock & Mineral Society Annual Show – Columbus, Ohio, Veterans Memorial, 300 W. Broad St. Saturday 4/5 from 10:00 to 6:00 and Sunday 4/6 from 11:00 to 5:00.



### FEDERATION NEWS



Everyone should be receiving a copy of the MWF newsletter by email. If not, it is always available at the monthly meetings.



**SCHEDULED FIELD TRIPS**

There are no formal field trips planned at this time. Although I am sure our members are always scheming and planning. See the field trip committee with questions and ideas.



**FIELD TRIP REPORTS**

No field trips were reported for the month of January.



**Rock Word Search**

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

**Basalt, Chalk, Coal, Dolomite, Flint, Granite, Gypsum, Lignite, Limestone, Mudstone, Pumice, Sandstone, Shale, Slate, Soapstone**



**A sign-up sheet will be available at the monthly meeting for refreshments, displays, and programs. Please sign up. I know each of you has a specialty that would interest the entire club.**

Tom Bolka - EDITOR  
2275 Capestrano Dr.  
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SAVE COMMEMORATIVE STAMPS