



# Cedar Valley Gems

## Cedar Valley Rocks & Minerals Society

### Cedar Rapids, Iowa

CEDAR VALLEY GEMS

JANUARY 2015

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## President's Message

2015 is here! I hope everyone made it into the new year in great shape and that the holidays were a fun and fulfilling time for you.

Now for the reality, our 2015 CVRMS show is just a little over two months away and we still have a lot of things to do to get ready for the show. I hope everyone that is available at the time of our show will be able to help in setting up the show and working at the show. However, we still need help before then. One thing we desperately need is material for the pebble pit as well as material for the silent auction and also for prizes at our drawings.

Please look for some of these items ahead of time and let Sharon, Tom, or myself know what you can bring. We accept a wide variety of items but prefer that it be rock related. We will be getting more information out in the next month or two concerning the show, so please pay attention to Dale's emails, Dave's newsletters, and our web site for updates.

Last but not least, we have excellent programs coming up at our monthly meetings, so I hope we can get a better club turnout for these meetings.

Our speakers put a lot of time and effort into getting a program ready so if at all possible please try and make the meetings.

Thanks and stay warm,

*Marv Houg, CVR&MS President*

## Tips for Rockhounds in 2015

A new year has begun and is filled with possibilities. To optimize your time and resources in the pursuit of all things rockhound, here are some suggestions to make the experience the best it can be.

Plan your discovery trips. Find out what quarry or collecting trips will be offered through the CVRMS and prepare your plan of attack.

Update your equipment. Take a look at your collecting equipment. Is it still doing the job or needs replacing or supplementing? Talk to club members to find out their best practices.

Increase your knowledge. What areas are you interested in learning more about rocks, geology, lapidary and gems? Pursue that line with using club members as resources for firsthand experience or as guides.

Attend a rock show or rock auction. Each month there is a sampling of rock show events around the Midwest listed in this newsletter. Make plans to attend those that interest you. Each show will have its own flavor of items offered but more importantly you will meet people with similar interests.

Pass the passion. You know why you are interested in rockhounding. Pass that spirit along to others or help a child with his or her natural interest in rocks to become a lifelong learner, and a potential club member.

Show off your collection. Assess your collection. What items do you need to make it better? Assess the display method of your collection. Do you want to share it with others? Talk to others for ideas to make your collection even better. And plan on what to do with the collection down the road.

Be a club speaker. You have the passion for rockhounding. Share it with club members at a monthly meeting. It doesn't have to be a lengthy presentation, just something that others might find interesting and may learn from you.

Document your finds. Take a camera and notepad (or electronic device) into the field. Document your finds for further research. Note where you found it, how the object was oriented in or on the ground, and why it caught your attention. Snap a photo of the find or with your collecting party.

And above all, have fun enjoying the outdoors and talking to other rockhounds.

## CVRMS Board Meeting

The January 2015 Board meeting was called to order at Marv Hoag's home on January 13, 2015. The following are highlights from the meeting – not the official minutes.

Potential programs for upcoming show with speakers

- Michael Lace – Coldwater Creek Cave
- Ray Anderson – Gypsum, Potential Mineral Resources in Precambrian Rocks of Iowa
- Ryan Clark – Mining
- Mark Anderson – Archeological topics to be determined

Sign up list for show duties is now available.

Sidewalk chalk project discussed and is being developed. Ray will make a sketch. Dale and Ray will meet with the artist. Logistics of where, when, etc. being worked out.

Flyers are available for distribution. Sharon will have at next meeting. Need to remind people to check the website for more details.

Advertising - Dell has Collector's Journal, free stuff, Rock and Gem (done), radios, Hoopla. Dale has contacted Iowa Source.

Auction action – we are still collecting material for the September auction.

Other – CVRMS has received various requests from schools to present programs. We are looking for club volunteers.

Respectively submitted,  
Dell James, Secretary

## Iowa's Geologic Puzzle

Iowa's geologic puzzle is yet unsolved, many questions remain for the those who seek. Minerals and fossils continue to entice students of all ages, amateurs and professionals alike continue to make discoveries.

Today the Geological Survey Bureau, a division of the Department of Natural Resources, investigates the state's geology. Activities conducted by the GSB include: investigations into groundwater pollution, new fossils, Coldwater Cave, abandoned coal mines, and evidence of meteor impacts. What else is below our feet? Talk to club members who have spent years collecting within Iowa—they may have more answers in piecing together our state's past.

## Christmas Party Recap

**From Marv.** Good weather, great food, fun games, lots of talking and fellowship pretty well sums up the CVRMS Christmas Party this year which was held on December 16, 2014 at the Fairfax Branch of Guaranty Bank.

All the great food that everyone brought was supplemented with turkey and ham prepared by Dell, her daughter Laurie, and the rest of her crew. Dell's Christmas decorating touch really added to the atmosphere of the evening.

After eating we were entertained with some games that Julie Whitlatch and Dell brought. Julie brought some fun and entertaining games and Dell provided bingo, which everyone enjoys.

I would also like to thank everyone that brought gifts that served as our bingo prizes. It was very apparent that we did not have a shortage of prizes.

As a part of the evening we also collect money for local charities. Dale reports that we collected \$322 for these charities. A big thank you for everyone's donation. If you didn't make it you missed a fun time and hope you can make it to our 2015 Christmas Party.

**From Dell.** The Christmas Party was a huge success with about 45 people showing up. At one count I had 42 and at another 48 so I guessed. The food was "off the hook" with potluck dishes that showed the maker's pride. Lots of questions about who made the corn casserole in the 9x13 dish. There wasn't any left when I went through.

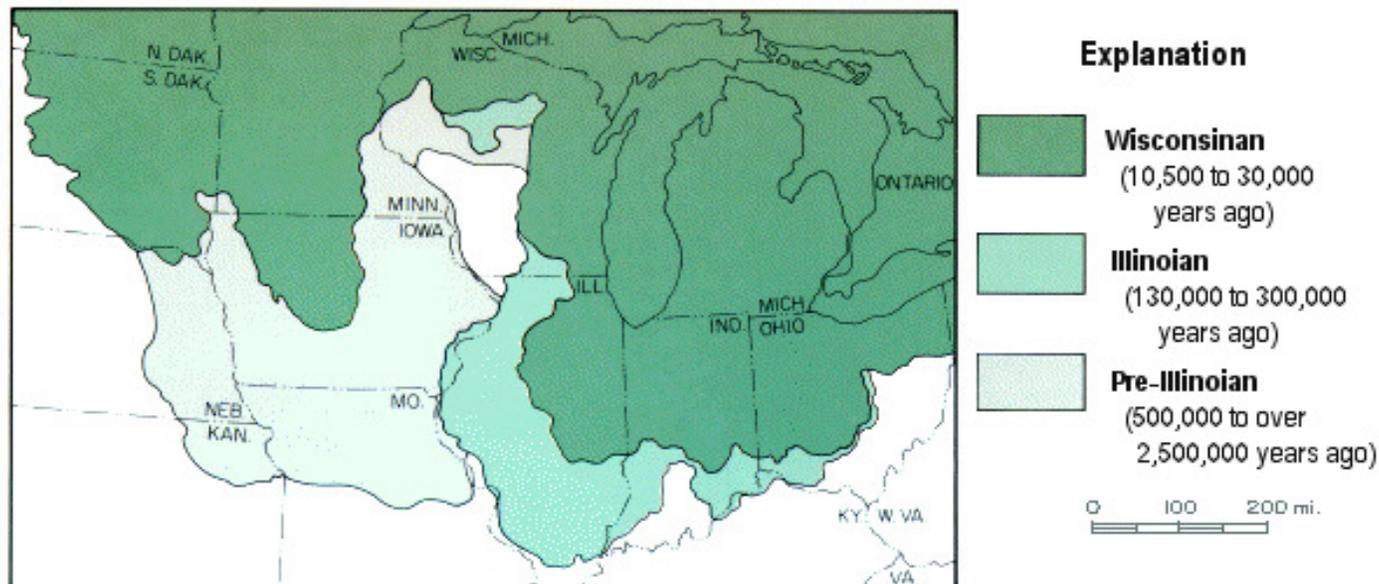
Thanks to Julie for providing us with some fun games which included the kids. Those reindeer boys were too cute. The photo booth was popular and thanks to Tom for playing photographer. If you want your pictures though, you have to bug him to get them. Lots of fun and thanks to everyone for the help.

There were some "first timers" at the party this year and hope to see them return next year. Next month's hosts are Bill and Karen Desmarais. If anyone else wants to help them out, give them a call.

By the way, some orphan utensils that found their way home with me. A metal pie server, an ice cream scoop, and a black plastic serving spoon. If no one claims them, they are officially adopted. I will bring them to the next meeting or call me to claim, 319/446-7591. Happy 2015!

# What's with Iowa's Glaciers?

by Ray Anderson



On about a dozen occasions during the Pleistocene Epoch, between 2.5 million and 12 thousand years ago, large sheets of glacial ice moved into and across the Iowa landscape. These ice sheets, called continental glaciers, flowed outward from broad mountains of ice that formed in Canada, both east and west of Hudson Bay.

Changes in weather patterns caused huge volumes of snow to accumulate in these areas, piling up to thousands of feet in thickness, compressing the bottom layers into ice. The pressure ultimately caused the ice to flow slowly outward, into and across Iowa, and eventually as far south as central Missouri and southern Illinois (see Fig. 1). At their maximum continental ice covered about 200 million square miles, 1/3 of the Earth's land surface. The ice reached maximum thicknesses of about 6,000 feet in Iowa, which would suggest about 40 million cubic miles of ice on Earth.

And where did the water to create all of this ice come from? Most from the sea, lowering sea level about 300 feet below today's level. And since a cubic mile of ice weighs about 4 trillion tons, the weight of the ice actually caused the Earth's crust to sag as much as 250 feet. Iowa did not sag that much and has since rebounded, but areas from Lake Superior and north are still slowly rebounding.

In the Midwest we currently recognize three major episodes of Pleistocene continental glaciation, the Pre-Illinoian, the Illinoian, and the Wisconsinan (see map). As they slowly advanced, these glaciers plowed the landscape flat, and

deposited the glacial materials that formed Iowa's varied landscapes and became our fertile soils.

The glaciers plucked and picked a wide variety of rock types from the bedrock of Canada, the Dakotas, Minnesota, Wisconsin, Illinois and dropped them in Iowa, some as large erratics. They ground bedrock to silt which choked the valleys of the rivers that carried melt water from the glaciers. Winds eventually blew the silt out of the valleys and onto the landscape in the form of loess to create Iowa's rolling hills.

And in northeast Iowa the glacial flood waters in the Mississippi River cut a deep channel that reached outward along tributary streams eroding most of the glacial materials from the nearby landscape creating Iowa's "driftless area", which would be more accurately called the "eroded drift area". The area of southwest Wisconsin and adjacent Illinois east of the Mississippi River (see white area on map) was never glaciated, Why?? No one knows.

## Iowa Iron

Iowa's only iron production was from a Cretaceous-age sedimentary iron deposit called Iron Hill near Waukon in Allamakee County. The deposit was originally explored in the 1870s and first mined in 1899. The mine operated intermittently for 20 years between 1899 and 1918, and it is estimated that about 67,000 tons of iron ore concentrate was produced. Original reserve estimates of 10 - 12 million tons indicate that a substantial quantity of ore remains.

## American Federation – It's Up to Everybody

ALAA President Shirley Leeson opened the meeting and stressed that it is really up to the club, and the individual, to "do something about it"—the closures and all the permits that we are now forced to buy to use "Our Public Lands." ALAA does not have the manpower or budget to keep track of (or even just comment on) all that is going on in the entire United States.

Though ALAA is a national organization, we pretty much operate locally. Communicate with ALAA about what is going on in your area and what you did about it, if you attended meetings and/or wrote letters about your situation.



Shirley encouraged us to "turn in" those individuals who violate the AFMS Code of Ethics, especially those who use industrial equipment to do their digging, and those who dig underneath trees and roads. They do the damage and leave the scars on the land but we, the rockhounds, get the blame. Do not dig in or next to streams, dig away from the streams so that there is no sediment going into the stream. Stay away from active logging operations. Get permission when it is needed, such as on private land.

Next Doug True talked about the closure of Lolo National Forest and Weyerhaeuser forests to rockhounds because of the scars left by individuals and showed pictures to emphasize the point. Rockhounding in any form is now prohibited in the Lolo National Forest. Weyerhaeuser and Georgia Pacific own a whole lot of forests in the Northwest and Southeast part of the United States.

—From the ALAA Newsletter (Oct.-Dec., 2014)

ALAA is the lobbying arm of the American Federation, working on behalf of rockhounds to keep public lands open and accessible to all including the elderly and handicapped.

## El Capitan - A Big Rock



California's El Capitan was in the news this week for being the site of two equipment-less rock wall climbers' greatest challenge.

Geologically, the 3,000 foot rock is almost entirely made up of a pale, coarse-grained granite.

On January 14, 2015 Tommy Caldwell and Kevin Jorgeson completed the first free climb of the Dawn Wall after 19 days, one of the hardest climbs in the world.

## WEBSITE OF THE MONTH

Its January in Iowa. For snowbirds it is time to head to the American Southwest. If you are a rockhound there is one place that is a must see for all things rocks—Quartzsite, Arizona. It's been a rockhound's paradise since the 1960s. These days, it's also a mecca to well over a million visitors each year, most of whom converge on this small town in a wave of RVs during the months of January and February.

Some 2,000 vendors of rocks, gems, minerals, fossils and everything else imaginable create one of the world's largest open air flea markets in Quartzsite. Eight major gem and mineral shows as well as vendors of raw and handcrafted merchandise peddle their wares to snowbirds, collectors and enthusiasts, making Quartzsite the place to be the first two months of each year. Prominent on their web page is an average expected temperature range to help lure you there.

<http://www.desertusa.com/cities/az/quartzsite.html>

## Spotlight Gemstone: Star Sapphire

## EVENTS

Its beauty, its magnificent colors, its transparency, but also its constancy and durability are qualities associated with this gemstone. The sapphire belongs to the corundum group, the members of which are characterized by their hardness (9 on the Mohs scale). Their hardness is exceeded only by that of the diamond – and the diamond is the hardest mineral on Earth. Thanks to that hardness, sapphires are easy to look after, requiring no more than the usual care on the part of the wearer.



The gemstones in the corundum group consist of pure aluminum oxide which crystallized into wonderful gemstones a long time ago as a result of pressure and heat at a great depth. The presence of small amounts of other elements, especially iron and chrome, are responsible for the coloring, turning a crystal that was basically white into a blue, red, yellow, pink or greenish sapphire.

However, this does not mean that every corundum is also a sapphire. For centuries there were differences of opinion among the specialists as to which stones deserved to be called sapphires. Finally, it was agreed that the ruby-red ones, colored by chrome, should be called 'rubies' and all those which were not ruby-red 'sapphires'.

Star sapphire is rare variety of sapphire that exhibits a rare asterism under specific lighting. When viewing star sapphire, a six-rayed star will appear to float across the surface of the stone. The effect is best viewed under a direct light source and while tilting and rotating the stone from different angles. Star sapphires contain unusual tiny needle-like inclusions. Aligned needles that intersect each other at varying angles produce the asterism.

Star sapphires can range in color from blue in various tones to pink, orange, yellow, green, lavender, gray or black. The most desirable color is a vivid, intense blue. Most star sapphire exhibits a white star, but star sapphire from Thailand is famed for its gold colored asterism.

Owing to star sapphire's superior hardness and durability, it's nearly unmistakable, despite several other gem types that are known to occur with similar colors and luster. Star sapphires are generally mined in SE Asia but have been found in Montana too.

*Edited from [www.gemstone.org](http://www.gemstone.org)*

**Feb. 7:** Darwin Days, Macbride Hall Auditorium, Museum of Natural History

**Feb. 21-23:** Indianapolis, IN. GeoFest, 12th Annual Indiana State Museum Fossil, Gem and Mineral Show. [www.indianamuseum.org](http://www.indianamuseum.org).

**March 7-9:** Richmond, IN. Eastern Indiana Gem & Geological Society Annual Rock & Gem Show.

**March 27-29:** Hickory, NC— EFMLS (Federation Show)

**March 28-29:** CVRMS annual rock show—Hawkeye Downs, Cedar Rapids, IA

**April 5-6:** Columbus, OH. Stark County Gem & Mineral Club Annual Show.

**April 10-12:** Ogden, UT—NWFS (Federation Show)

**April 10-12:** Iowa City, IA—MAPS EXPO XXXVII, Sharpless Auction House

**April 25,26:** Black Hawk Gem and Mineral Club Spring 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, and arrowheads. There will be demonstrations on Glass bead making, faceting, and flint knapping. Learn to make arrowheads and/or crack you own geodes. Admission is free. For information call (563) 445-3034.

**April/May:** Collect fossils, crystals & agates in Morocco! Join ZRS Fossils in Spring 2015 on a rock collecting trip of a lifetime! This will be the fifth year that ZRS has offered this fantastic opportunity for U.S. fossil and mineral collectors to travel throughout Morocco. John at 612.803.5301, email [info@zrsfossils.com](mailto:info@zrsfossils.com)

**May 3-4:** Cincinnati, OH. GEOFAIR 2015

**May 23-24:** Wheaton, IL—MWF (Federation Show)

**June 12-15:** Lodi, CA—CFMS (Federation Show)

**July 16-18:** Cody, WY—RMFM (Federation Show)

**Oct. 23-25:** Austin, TX—AFMS (Federation Show)

# Lapidary Basic Introduction - Things You Should Know

Lapidary means do to with stones. Craftspeople who create carvings and designs out of stones are called lapidaries. They cut, form and polish stones that are employed in jewelry, sculptures and other ornamental art works. Diamond cutters don't come under this title as their work is highly specialized.

Specialized lapidaries work in commercial stores and they create original pieces for their customers. But now lapidary is becoming favored for the beginners who enjoy it as a pastime and finish up spending many hours making jewelry and other pieces. Lapidaries use many hand tools which include saws, sanders and chisels to make their pieces. One specialized form is inlaying marble and gemstones.

The Medici Chapel in Florence has many inlaid hardstones. In China they are skilled in jade that has been continuing since the Shang dynasty.

There are three kinds of lapidary strategies:

1. Tumbling
2. Cabochon cutting
3. Faceting

Pretty much all lapidary work is done using machines. But the older techniques are way more well liked by folks who are doing it for a hobby.

Bonded grind wheels of silicon carbide and a diamond tipped saw are used. Diamonds can't be cut with this system as they're really hard, they need the specialized diamond tools.

Another meaning of the word lapidary is of inscriptions. These are scribblings that are chiseled into stone. This needs a particularly experienced person to be ready to produce the crisp and correct style of condensed writing.

Lapidary is only used with stones that can be polished. The most common is quartz. There are plenty of kinds of quartz, for example: Amethyst, citrine, topaz, agate, tiger eye which get their names from their traits.

The main process is shaping the stone with a grinding wheel or disc and then regrinding to get the glossy surface. The polishing is done with differing types of mineral oxides.

Tumbling is the method given to erratically formed stones, what this does is with a tumbling machine it repeatedly perturbs the stones with a succession of coarse to fine grits and water. These stones are inexpensive and are used to make easy jewelry and other novel items like key rings.

For the beginner they should find out how to cut and polish a cabochon (cabs for short). These are gems that have flat backs and rounded tops. They can be any shape round, square and oblong.

*Edited from <http://ezinearticles.com>*

## Rock & Mineral Auction You Do

### Not Want To Miss

Andreas & Associates, Auctioneering & Appraisals  
 January 31, 2015, 12 PM  
 Elks Lodge  
 5420 NE 12th Ave, Pleasant Hill, Iowa  
[andreausauctions.com](http://andreausauctions.com)

Des Moines area rockhounds are having a personal auction of rocks and minerals that you won't want to miss. For wire wrappers their are excellent gem stones cut, polished ready for wrapping. For collectors there is an excellent collection of fantastic minerals.

Amongst the highlights: Large mineral collection; Militaria inc. great group of German medals, large collection of Civil War items (many dug relics) & more; RR items inc. lock collection & signs. Fine & Costume jewelry including a large collection of Native American sterling/turquoise examples. Hundreds of loose precious stones. Dozens of pocket watches, clocks, higher-end collectible wristwatches. And more.

Lots 1-25: Boxes of Gemstones inc. Rubies, Jade, Emerald, Sapphires, Lapis, Opals, Garnets, Tourmaline, Amethyst, Pearls and more. This is a large lifetime collection of minerals and stones of all types.

Most gemstones are "jewelry" ready. See photos of each lot in the photo gallery...most groups contain hundreds of gemstones. Even if you don't purchase anything it will be an interesting experience and entertaining.

# ASK A GEOLOGIST

by Ray Anderson

## How did Iowa's Folds, Faults and Other Structural Features Form?

Rona Bradshaw asked, "When I'm in quarries and at rock exposures I frequently see folds, faults, and other structural features. Since there are no mountains in Iowa, how did these structures form?"

From my studies of Iowa geology, I have concluded that there are several explanations for structural features in Iowa rocks. **Differential compaction** has created some features. This occurs when a rock hill is buried by a new layer of sediments. When these sediments are compacted as water is forced out, the thicker sediments around the hill are compacted more than the thinner materials on top of the hill. This causes the sediment layers on the side of the hill to be tilted, creating a dome feature. A good example of such a dome is the Keota Dome in Washington County where sediments are draped over a quartzite hill.

Another cause of structures is **evaporite collapse**. We see examples of this over much of eastern Iowa, where gypsum beds in the lower Devonian rocks were dissolved away by groundwater, causing the rock above to drop down into the voids. This collapse created the brecciated rocks in the Davenport Member and some of the faults and folds that are seen in the Coralville Lake area.

One of the major causes of larger faults and folds is the **reactivation of underlying basement faults**.

This reactivation is the product of changes in crustal stresses related to the movements of continental crustal plates. Two events in particular, the Allegheny and Ouachita orogenies (continental collisions) in the Early Pennsylvanian, about 318 million to 271 million years ago (see map) are suspects in most of these structures.

*Map: Continental collisions about 300 million years ago.*

While Africa was plowing into the southeast US, South America was colliding with the Gulf Coast region both compressing the crust towards Iowa. We know from studies of rocks in Iowa that the Plum River fault zone in eastern Iowa was active at this time as were faults associated with the Midcontinent Rift in Iowa. The Nemaha Ridge was pushed up in Nebraska and Kansas and the Forest City Basin of the



southwest Iowa area was also formed at this time. In our area I think that most of the faults seen at the Devonian Fossil Gorge were formed as a result of these continental collisions.

Ask a Geologist is a monthly column that gives CVRMS members an opportunity to learn more about a geologic topic. If you have a question that you would like addressed, please send it to [rockdoc.anderson@gmail.com](mailto:rockdoc.anderson@gmail.com), and every month I will answer one in this column. Please let me know if you would like me to identify you with the question. I will also try to respond to all email requests with answers to your questions, regardless of if it is chosen for the column.

### Did You Know?

Iowa Geological Survey geologists have information on historic Iowa earthquakes and significant earthquakes in other areas of the Midcontinent. Only 12 earthquakes with epicenters in Iowa are known in historic times. The first known occurred in 1867 near Sidney in southwest Iowa, the most recent in 1948 near Oxford in the east-central part of the state. The largest (Mercalli magnitude VI) occurred near Davenport in southeast Iowa in 1934. None of these events was instrumentally recorded.

From: <http://www.ihr.uiowa.edu/igs/geologic-hazards/>

## Officers, Directors, and Committee Chairs

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Hospitality .....	Jeff Kahl .....	455-2201
Webmaster.....	Sharon Sonnleitner (sonnb@aol.com).....	396-4016

Club meetings are held the 3rd Tuesday of each month from September through November and from January through May at 7:00 p.m. at the Rockwell Collins 35th Street Plant Cafeteria, 855 35th St NE, Cedar Rapids, Iowa. The December meeting is a Christmas dinner held on the usual meeting night. June, July, and August meetings are potlucks held at 6:30 p.m. at area parks on the 3rd Tuesday of each month.

### CEDAR VALLEY ROCKS & MINERAL SOCIETY

CVRMS was organized for the purpose of studying the sciences of mineralogy, geology, and paleontology and the arts of lapidary and gemology. We are members of the Midwest (MWF) and American (AFMS) Federations. Membership is open to anyone who professes an interest in rocks and minerals.

**Annual dues are \$15.00 per family per calendar year. Dues can be sent to:**

**Dale Stout**  
**2237 Meadowbrook Dr. SE**  
**Cedar Rapids, IA 52403**

CVRMS website:  
[cedarvalleyrockclub.org](http://cedarvalleyrockclub.org)

January Meeting Place:  
 Rockwell Collins 35th St. Cafeteria  
**JANUARY 20@ 7 P.M.**  
 Program by Tom Whittach  
 "Lapidary demos"



David Chase, Editor  
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