Rocky Reader

The Monthly Newsletter Of The

Toledo Gem And Rockhound Club

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The Show is next month and we need YOU! There are many openings left in the volunteer work schedule that we MUST fill. We're only asking for 2 hours of your time and in return you'll get free entrance to the Show the day you volunteer. If you have any issues with the online forms or don't have internet access, contact Suzanne Shimatzki (419-861-0147) for the list of available slots. Check out the article on page 4 for more details on how you can support the Show. And don't forget to submit your Exhibitor's Form to Nancy Grove by the end of August.

PRESIDENT'S MESSAGE

It's been a VERY busy summer so far! I have travelled a lot, and expect to be in and out most of August. I'll be in Alaska til the 12th, then in Monroe, MI and Mt. Clemens for the next two weekends, and in Peoria for the MWF Convention at the end of the month – so if you see me and I look frazzled, that's why!

We have made arrangements to order club Polo style shirts. They will be Royal Blue, with a gold/yellow embroidered logo. The cost will be about $13 - $14, XL – 3XL a couple dollars more. Those members with email access will be sent an email link to an order form. If you don't get email, or can't access the form, contact Suzanne Shimatzki or myself, and we will take your order. We must have your order by the Club meeting in August - (8/18/2010) for this round of orders. They will be available for pick-up at the Show, and must be paid for at the time of pick-up.

As soon as we have finalized an order process for T-Shirts, we will send that information to you as well.

Remember, now is the time to be searching through your material for donations to the Show. We need tumbled stones, shells, small crystals and rough specimens for kids, larger specimens for Club Sales and Silent Auction, and the really nice specimens, jewelry, etc. for the Raffle.

Try to Keep Cool!
Jerri Heer, President

FALL OPEN HOUSE

Sign up sheets for the November Open House will be available at the August club meeting. Tables are available on a first come first serve basis so don't delay if you're interested. See Carla Burleson for details.

TG&RC MEETING MINUTES – July 21, 2010

President Jerri Heer called the meeting to order at 7pm. After the Pledge of Allegiance, the speaker, Dr Phil Barnhart, presented a program on the "Origin of the Elements". Following his presentation, there was a short break before the business meeting.

Secretary: Tom Marok moved to approve the minutes as written. Diana Holt seconded. The motion carried.

Treasurer: Steve Shimatzki said the club's treasury is healthy. Ed Reynolds moved to accept the report as presented. Tom Marok seconded. Motion carried.

Old Business: Jerri Heer said vendors want to know the number of shirts for pricing. T-shirts will be silk-screened and Polo shirts will be embroidered. There is a sign up form in the back.

New Business: Shirley Stieb reported that at the recent resident organizations meeting, TBG announced they are still searching for a Director. The gardens have received a grant for paving. Sunday, August 1st, will be the Arts in the Garden program 11-5. Resident organizations members can sell their work without a charge.

Jerri announced that a local gallery was offering to sell artist work on the Thursday Art Walk without the usual commission.

Diana Holt requested help on future programs. She would like the groups to present a short program in September on what they are doing.

Mike Burcewicz announced that he and Ed Reynolds will be helping with the geo journey program in August, teaching skills.

Steve Shimatzki said Rock and Gem magazine will give a donation to the club for every subscription made or renewed through the club Treasurer. Contact Steve for further information.

Shirley Stieb said she wanted to thank everyone who voted for her jewelry.

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Groups

TBG: Chet King said he has material for bracelets and boxes as done last year for Art in the Garden and would like someone to take charge. The stuff will be in the clubhouse. Gemcrafters will be open for cutting that day and there will be no charge.

Gemcrafters: Elie Ghanime said everything is running well and there are fewer people now on Wednesday. Elie suggested cutting open cutting hours down. Tonia Wallace said she would prefer not to do Saturdays right now since people aren't coming. The members agreed to cancel open cutting on Saturdays.

Faceteers: Elie said attendance is down for the summer.

Metalcrafters: To be published. The group does have a new kiln and Deb Hofmaster will be teaching on Thursdays again.

Beaders: Nancy Grove said classes will stop after November and they are currently finishing up the selected projects on the third Monday of every month at 6 pm.

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Extreme Beaders: Shirley said the group is currently meeting Mondays from 9-5 through the end of August.

Juniors: Will meet Sunday, July 25 from noon-2pm.

Rocky Reader: The deadline is Monday, July 26th.

Fossils: Tom Marok said they have been looking at collecting sites and have found a quarry in Piqua. They are planning a field trip either the end of September or the beginning of October. The fossil group meets the 4th Tuesday of the month.

Membership: Tonia said there were 37 members present and 1 junior.

Sunshine: no report

Field Trips: Harold said Joel Vicary had a trip to Alpena, Michigan planned for Aug 4-8. There will be a TG&RC field trip to Flint Ridge July 31st.

Show: Jerri said cleanup day will be Saturday, August 7 from 9-2. The club needs volunteers to move and haul equipment for the show and clean up the garage. All library displays are set. Raffle tickets are coming soon. There is a member contest for getting the most people to the show via tickets.

The banner at Westfield announcing the show has been approved. Sign up sheets for hospitality and various volunteer slots are now ready. The volunteer forms can also be found online.
Yard signs are ready to be put out in August.

Jerri said we still need donations for kids games and the donations should be geology or hobby related. Raffle donations and silent auction donations are also needed.

Exhibit forms are in the Rocky Reader and should be submitted to Nancy Grove by the first of August.

Open House: Carla Burleson said she would have sign up forms by the August meeting.

There being no further business Carla moved to adjourn the meeting. Without objection, it was so ordered.

Respectfully submitted, Lyn Kalinoski, Secretary

METALCRAFTERS

The metalcrafters will meet August 12, 15 and 26. We will not meet on August 1 as that is ARTS IN THE GARDEN. Sunday meetings are from 1:30-3:30 and Thursday meetings are from 6:30-8:30. If you are interested in enameling, our enamelers meet on the 15th concurrently with the regular metalcrafter meeting.

If you HAVE NEVER ATTENDED, please call or e-mail me to schedule a three meeting slot to complete your instructional pendant. When you do so, PLEASE LEAVE YOUR FULL NAME AND CONTACT INFORMATION.

Many people admire the silver techniques of the Southwestern Native Americans. If you are one of them, we have several books for you: Indian Jewelry Making, Indian Silversmithing, Ray Manley's Southwest Indian Arts and Crafts, Southwestern Turquoise, and, for inspiration, Arizona Highways.

Debby Hoffmaster, Metalcraft Moderator

DAYTIME GEMCRAFTERS

If you have time during the day, join us on Thursdays from Noon to 4 PM. We have had a steady core group of members cutting and polishing, taking advantage of the extra time to work. Jerri Heer, Mike Burcewicz and Tom Marok moderate, and take time to show visitors around when we are open.

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.

FACETEERS

The Faceteers met at the home of Don and Betty Ault on July 14th. The next meeting will be at the home of Dick and Arline Bower on Wednesday evening, August 11th. They will make out their forms for their displays for the show and decide who will be demonstrating.

JUNIORS

Summer is a busy time for our Juniors, but we are still getting together once a month. One Junior is joining the Flint Ridge field trip group at the end of July. Several of our Juniors are joining together to put in a Junior Case at the Show. In July we met to plan our case, which will display their favorite projects so far. The next meeting will be Sunday, August 22. See you there!

SEPTEMBER SHOW

August is the last month before the Show, and we have plenty going on. Saturday, August 7th will be a work day with Harold spearheading the session to sort Silent Auction material, pack grab bags, and organize everything for the truck. Work starts at 9 AM til done or about 2 pm whichever comes first.

Library displays should be going in, so take time to visit your local library to check them out.

Raffle Tickets and postcards will be going out shortly, and don't forget to distribute coupons to give your friends discounts for admission.

Gather up your excess rocks, fossils, gems and minerals for the Silent Auction, Raffle, Kids Area etc. We'll help you get rid of all that extra rock cluttering up your garage!

Advance Sale tickets are available through Suzanne, remember you don't have to pay unless they are used.

Use the online link to sign up for work slots during the Show and Hospitality food items to bring. Go to: *http://tinyurl.com/287t46q*

We are taking orders for Polo Shirts with the Club Logo. We would encourage you to wear these shirts when you work the Show if you choose to purchase them. Deadline to order is August 18.

Thelma Postlewaite's Family News

August Birthdays:

3 Mark Chandler
6 Jeff Madanski
12 Jerri Heer
14 Garett Holmes
16 Rita Grove
18 Joel Mahoney
19 Jim Crocker
21 William Collins
21 Diana Holt
28 Shirley Stieb
30 Victoria Reiman

If you have any questions related to the Show contact Jerri Heer at 419-344-9999, *jheerx6@aol.com* or Suzanne Shimatzki at 419-376-2650, *sshimatzki@gmail.com*.

Thanks for all your support!
Jerri Heer and Suzanne Shimatzki, Show Co-Chairs

ROCKY READER

Submissions for the September Rocky Reader **must be received by noon on Monday, August 23rd**. Many groups are not sending regular notices. From now on, 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.

WELCOME NEW MEMBERS

Jeff & Kimberly Erdman (Holland, OH)
Betty Snider (Sylvania, OH)

CLASSES

The following schedule is a listing of upcoming classes. To enroll, please send fees to the instructor three weeks prior to the class.

October 16, 2010. Woven bracelet. Instructor Su Drake. Fee $60.00. Make a woven copper and silver bracelet. This is a beginner-friendly class. No soldering is required.

November 17, 2010. 10AM. Chainmaille bracelet. Instructor Kathy Petersen. Please contact Kathy for fees and details.

January 22, 2011. 10AM. Keum-boo. Instructor Debra Hoffmaster. Fee $60.00. Learn this ancient Korean technique.

February 12, 2011. 10AM. Twisted wire heart. Instructor Debra Hoffmaster. Fee $20.00. Participants will make a simple wire heart, half of which is twisted. This class requires only basic soldering skills.

March 19, 2011. 10AM. Chasing and repousse. Instructor: Debra Hoffmaster. Fee $30.00. 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. 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. 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.

CONGRATULATIONS SHIRLEY!

Congratulations to Shirley Stieb, for winning the Meant to Bead Summer 2010 Bead Challenge with her necklace entry "Tidepool". This is a contest sponsored by Meant to Bead bead store, based on pre selected materials provided by the store in a kit, and used by the contestant to make an original design beaded project. Shirley is a member of both the Monthly Beader Group and X-treme Beaders, as well as Metalcrafters and Gemcrafters. Way to go, Shirley!!!

COMING EVENTS
from Chetty King's Flyer Table

August 21: Clio, MI. Flint Rock & Gem Club's 8th Annual Swap Meet; G-11350 N. Saginaw Rd. (M54); ½ mile S. of Vienna Rd.; Sat. 9-5; CONTACT: Jim Adames, (989) 723-6951, *jdljha@earthlink.net*.

August 27-29: South Bend, IN. Michiana Gem and Mineral Society's 47th Annual Jewelry, Gem, and Mineral Show; St. Joseph County 4-H Esther Singer Building, 5177 S. Ironwood Rd.; Fri. 2-7, Sat. 10-6, Sun. 10-4; CONTACT: Marie Crull, 574-272-7209, crull2@comcast.net or Joe Perry, 574-295-9050, marty.perry@verizon.net.

Popular Mineralogy

Interesting mineralogy and earth science for the amateur mineralogist and serious collector - #29

Pearls and the Mother-of-all-Pearls

by Andrew A. Sicree

What is nacre?

Nacre is the pearly lining found on the inside of the shells of mollusks. It is more popularly known as "mother-of-pearl." The formation of nacre is unique to the mollusks.

On the microscopic level, nacre is composed of flat platelets of aragonite (orthorhombic $CaCO_3$). But nacre is not totally inorganic mineral matter: it incorporates proteins between and within the aragonite platelets. Chitin, a tough and semitransparent polysaccharide compound, also helps hold layers of nacre together. You're probably familiar with chitin without realizing it – chitin occurs in outer skeletons of insects, shrimp, lobsters, and crabs.

Each aragonite platelet is oriented with its central crystallographic c-axis perpendicular to the plane of the nacre layer (i.e., at a right angle to the surface of the shell or the pearl). Organic components such as chitin and proteins segregate the aragonite platelets into compartments. These small compartments reflect light and cause interference in the light – the result is the beautiful iridescence and desirable "pearly" luster of nacre.

Nacre sandwiches

These "sandwiches" of aragonite platelets and organic materials also endow nacre with an extraordinary toughness. Note that toughness is not the same thing as hardness. Toughness is the general resistance to breakage (cracking, fracturing, cleaving, etc.) while hardness reflects resistance to scratching. Nacre, being mostly calcium carbonate, falls with calcite (hexagonal $CaCO_3$) at about 3 on Mohs scale of hardness.

Pearls made by oysters are structurally the same as the nacre lining the inside of the oyster shell. The Japanese oyster, *Pinctada fucata*, and other oysters, clams, and mussels produce pearls by wrapping a nacre lining around any small irritant that gets inside their shells. Pearls can have a variety of colors and shapes but the most desirable pearls are those that are perfectly spherical. Oblong pearls, teardrop-shapes, etc., occur and are referred to as "baroque" pearls. Black pearls grow in the black pearl oyster, *Pinctada margaritifera*, and are comparitively rarer than white pearls.

Pearls, being made of nacre, have Mohs hardnesses of about 3. People sometimes test pearls by rubbing a strand of pearls across their teeth. Real pearls feel "smooth" as they rub across your teeth. This is because the enamel of your teeth, being made mostly of hydroxyapatite, has a hardness of about 5 on the Mohs scale. So you're really scratching pearls when you rub them across your teeth!

The world's largest pearl

In 1934, a giant clam near the island of Palawan in the Philippines produced the world's largest natural pearl. This pearl weighs about 14 pounds (6.4 kg) and is an irregular white mass. Its surface is non-nacreous so it has a porcelain-like appearance rather than a pearly luster.

Purists might object that pearl aragonite is not a true mineral because the oyster, an organic entity, produces it. It has, however, become apparent to geochemists that a large percentage of the Earth's minerals owe their origin to biological (typically bacterial) processes. *©Andrew Sicree, 2009*

Ref.: Kroger, Nils, 2009, "The molecular basis of nacre formation," *Science*, v. 325, 11 Sept. 2009, p. 1352-1352.

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.*

Mineral names with "–ite" endings

Why do mineral names have "*-ite*" endings? While not true in all minerals, a great number of minerals do have names ending with "*-ite*." The *–ite* ending is a noun-forming suffix that has its origin in the Greek ending *–it*, meaning "of, related to, or belonging." Thus an occupant of ancient Israel becomes an "Israelite."

Among its present-day meanings, the suffix can be used to indicate that a substance is a mineral. Use of the *–ite* ending first entered the English language in the 13th century, but its use became more widespread in the 19th century as advances in sciences such as mineralogy were accompanied by an expanding nomenclature that borrowed heavily from Latin and Greek roots.

In the 5th edition (1868) of his *System of Mineralogy*, James Dwight Dana made an effort to systemize the endings of mineral names by changing many of their endings to the *–ite* form. For example, pyrrhotine and chalcosine became pyrrhotite and chalcosite. Not all of Dana's changes were accepted. Analcime is still used along with analcite, for instance. Of course, there were minerals whose names were in such common and widespread use that even a scientist with the prestige and talents of Dana could not change them. No one would have accepted "goldite" or "berylite."

Dana also condemned F. S. Beudant's use of the *–ise* ending for minerals such as "uraconise," which Dana called "uraconite" (which was subsequently recognized to really be the mineral zippeite).

In 1876, Professor C. U. Shepard proposed reserving the *–ine* ending for those mineralogical materials whose identity and nature was still in doubt. While Dana's penchant for *–ite* endings has been more widely adopted for new mineral names in recent years, Shepard's proposal for use of the *–ine* ending has been ignored. Likewise, Dana's suggestion for the use of the *–yte* suffix for endings of rock names never caught on with scientists or the public.

Interestingly, the use of the suffix *–lite* for mineral names does *not* have the same etymological roots as the *–ite* ending, but rather it appears to derive from the German *lith* (and Greek *lithos*), meaning "a stone."

Ref.: A Dictionary of the Names of Minerals Including Their History and Etymology, Albert Huntingdon Chester, John Wiley & Sons, New York, 1896, 320 p.

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Is your granite countertop killing you?

For trendy, up-scale kitchens, granite countertops are all the rage. They are beautiful, durable, and expensive. But over the past several years, concerns have been growing over the fact that some granite countertops are rather radioactive. Could they be a health hazard?

Not all granite is granite

Strangely enough, much of the granite sold for "granite countertops" is not true granite. The ornamental cut stone trade has two broad classes of materials. Stone dealers tend to label all carbonate rock as "marble" and all silicate rock "granite." Sold as "marble," a rock might be a marble (a metamorphic rock), or it might really be something like a travertine (which is a layered, chemically-precipitated sedimentary rock). In the trade, "granite" can be a true granite, or it might be a diorite, granodiorite, gabbro, pegmatite, or even a gneiss. It is important to distinguish between a trade name, devised to help sell the stone, and the petrologically-correct name. For instance, the stone sold as "Nero Black Granite" is known to petrologists (the guys who study rocks) as a gabbro.

Where is the radioactivity?

First, it is helpful to understand why your kitchen countertop might be radioactive. Naturally-occurring radioactive isotopes can be found throughout your environment. Your body, for instance, contains a small amount of the radioactive isotope carbon-14 (C-14). Any rock that contains potassium feldspars contains a small amount of radioactive potassium-40 (K-40). Likewise, there was radioactive potassium-40 in

all those bananas that your mom made you eat because they were "good for you!"

In granite and related rocks, the elements of concern are uranium and thorium, which can be present in a variety of minor minerals. Much of the uranium content of a granite, for instance, is usually present in minerals such as uraninite, thorite, monazite, allanite, zircon, epidote, sphene, rutile, and apatite. Minerals like uraninite (UO_2, cubic) are always radioactive because uranium is part of the chemical make-up of the mineral. Other minerals such as rutile (TiO_2, tetragonal), zircon ($ZrSiO_4$, tetragonal), and apatite ($Ca_5(PO_4)_3F$, hexagonal) may be radioactive if they contain traces of uranium or thorium, but uranium and thorium are not essential parts of their formulas. Although these minerals may be radioactive, at best they only make up a minor part of any granite. Some granites may have few of these minerals and thus be only slightly radioactive, while other granites with more uranium- or thorium-bearing minerals can be much more radioactive.

Uranium is present as the isotopes uranium-238 and uranium-235 and thorium is mostly thorium-232. All three of these isotopes slowly decay to lead isotopes, giving off alpha and beta particles and gamma rays in the process. Naturally-occurring radioactivity confined within the granite has little health impact because exposure levels are low (because, for instance, you don't spend much time sitting on your kitchen countertop).

Uranium and thorium decay, eventually, to lead, but along the way they must pass through a step in which they are in the form of radioactive radon isotopes. Because radon is a noble gas (as are helium and neon, for instance), it is possible for it to escape from the granite countertop. Once the radon gas is floating around in the air in your kitchen, it *might* impact your health adversely if the radon levels are high enough.

Problems with testing

Radioactivity in a granite countertop does not automatically translate into a radon problem. Common sense tells us that a granite with low levels of uranium is less likely to release radon than one with higher levels of uranium, but it also matters where the uranium is located.

Heterogeneity (uneven distribution of uranium-containing minerals) may occur within the particular slab that was cut to make your kitchen countertop. If most of the uranium is locked up in rare uraninite grains and your countertop happens to be cut so that some of the grains are right at the surface of the polished granite, radon can easily escape the granite. On the other hand, if few of the grains are near the surface, the radon may remain trapped with the granite.

Variations may also occur from one slab to the next. For instance, granite slabs from one quarry may be consistently low in radon production. But if the quarry hits some coarse-grained pegmatite zones within the granite, radon problems may occur with slabs that contain portions of the pegmatite, because pegmatites tend to concentrate uranium and thorium in their crystalline centers.

Thus, while the industry can take steps to exclude stone from quarries that are known to produce highly-radioactive slabs, individual slabs from otherwise "safe" quarries might still produce enough radon to be of concern. The only way to be sure that your particular slab doesn't produce much radon would be to perform a radon check on your kitchen air before installing the slab, then again after the slab is installed. The radon monitor should not be set directly on the slab, by the way. Note that it is possible for radon to get into your kitchen even if you do not have a radon-producing granite countertop. Radon can move upward through or along the sides of the kitchen drainpipe, for instance.

I note that in general, risks presented by radon-producing countertops are minor, especially because levels are low and most kitchens are well-ventilated – which limits radon accumulation. It all boils down to a question of risk. Just about everything you do has some level of risk associated with it, and those countertops sure do look nice. Are you going to live forever?

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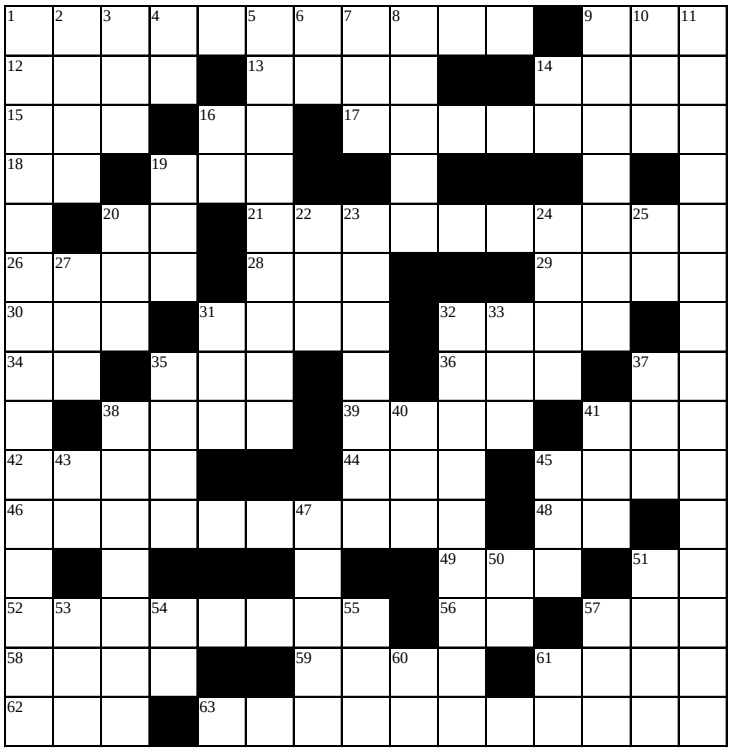
Not "ites"



ACROSS

1 with a regular internal atomic order
9 bulletin board
12 deserve it
13 what a Uke has in its bed
14 artist Romain de Tirtoff also known as
15 more than one train track
16 light-weight component of many minerals
17 not found in selenites
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19 to and ___
20 where Crater Lake is
21 minerals having phosphorus are
26 park on a driveway, but drive on a ___
28 boy's nickname
29 used on scary apples
30 comes with a yang
31 Egyptian dry river
32 produced by rock drill
34 found in uranium mineral
35 noise made by mining
36 Alley ___
37 Nazis
38 river in Normandy
39 gotten from Google
41 found on a ladybug
42 used to display minerals
44 science funding agency
45 Hawaiian dance
46 half a sphere
48 for example
49 big mean meat eater
52 volcanic glass
56 another Ph.D.
57 TGI
58 found on horse
59 gypsies
61 constituent of magnetite
62 energy dispersive spectroscopy
63 pigment made from lapis

DOWN

1 cerium-rich pyrochlore mineral
2 valuable minerals
3 years (ab)
4 found in stannite
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6 not hi
7 ___ mujeres
8 better ____
9 rocks that crack
10 British Thermal Unit
11 having crystalline parts
14 inside (suffix)
16 quartz crystal state
19 way to cook
20 once you buy mineral
22 have in the past
23 greenish silicate mineral
24 retirees
25 Iowa
27 killed in action
31 not too low
32 temporary dam
33 fine steel wool
35 German three
37 the Sun
38 reversed to desalinate water
40 National Swine Registry
41 how he got minerals
43 after Earth
45 six-sided crystal
47 what a steinkern looks like
50 emergency room
51 in the core of the Earth
53 stratigraphic layer
54 indium
55 neither…___
57 last work day
60 where Harvard's mineral collection is located
61 beyond the red

LAST MONTH'S SOLUTION: Blue Green

G	L	A	U	C	O	P	H	A	N	E		O	O	F
L	A	V	A		C	H	A	D			S	L	U	R
A	B	E		P	T		D	I	G	E	N	I	T	E
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T	I	T	O			A	L	P	S		J	A	D	E
E	V	E		H	E	L	I	O	T	R	O	P	E	S

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August 2010

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

Rocky Reader Editor
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