GEM & MINERAL JOURNAL

Official Monthly Publication of the Gem & Mineral Society of Lynchburg, VA, Inc
www.lynchburgrockclub.org

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President's Message:

Hello To All,

WOW!! What a snow storm. There were only sixteen faithful members at the January meeting. I was really surprised to see anyone. We were suppose to install officers for the 2016 terms but did not have enough there to proceed. Maybe at the February meeting we will have better luck. The field trip for January to J.M.U. had to be postponed until February 27th. I hope the weather will cooperate then.

There are some new items we want to teach anyone that would like to get involved in to make at our monthly workshops. We may need some expertise from someone that is familiar with crafting like stain glass windows. The plans are to take agate slabs along with geode slices and turn them into beautiful Sun Catchers, by soldering then together with a thin metal border. We saw some at the Salem Gem & Mineral Show made by dealers from Ohio, they were real attention grabbers. They sold for around $100 each, we will have to see how much it takes to make them before pricing. It will depend on size and design as well. We have learned everything else one step at a time, so why not this project as well?

It is good to see some bare ground slowly appear now from under the snow, I hope it won't be too long before we can get back to collecting. Speaking of collecting, after the J.M.U. trip I hope to take a side trip to South River in Green County and collect some of that beautiful Lava Rock that is filled with Epidote Crystals and Red Jasper. It makes great bookends, clocks, candles and cabachons. We will talk about this at the February 17th meeting. I hope to see you all there.

Keep Looking Down,
John Haskins

From the First V.P.

From the...

May all enjoy the most wonderful Valentine's Day this year. It is so important to choose just the right gift for our loved one. So many of us think of roses and chocolates, but how about earrings, a bracelet, or a ring? What should the gemstone be? How does one decide? What will become our rock of choice? The article that follows gives us lots of information on diamonds. Perhaps a diamond is in your loved one's future. Taken from http://geology.com/minerals/diamond.shtml

Diamond

The most popular gemstone. The hardest known substance. An amazing number of uses.

What is Diamond?

A round, brilliant cut diamond showing "fire". © iStockphoto / Greg Stanfield

Diamond is a rare, naturally-occurring mineral composed of carbon. Each carbon atom in a diamond is surrounded by four other carbon atoms and connected to them by strong covalent bonds. This simple, uniform, tightly-bonded arrangement yields one of the most durable substances known.

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January Meeting Minutes

Meeting: Wednesday, Jan. 21, 2016

Attendance: 16 members

Host: Pam and Eric Routon were host for tonight's meeting. Noel Weller will host the February meeting.

On Time Drawing Winners:
Dave Woolley, Bob McIntire, Josh Baroch, Eric Routon, Noel Weller, Pam Routon.

50/50 drawing winner: Dave Callahan

President - John Haskins- Old Business: Announced there would be no installation of officers at this meeting.

New Business: Asked if anyone was interested in doing a program for the Summit and there were no volunteers.
Dave Woolley asked if anyone was interested in taking a class from him on Gem Identification which would be 3 one hour sessions.
Also if you can help with rearranging the case at Easter Island, see him for details.

First VP: Jack Curtin- not present.
Second V.P. – Dave Callahan: Upcoming field trips: The January 23 fieldtrip to James Madison University has been postponed until February 27th.

Treasurer: Frank Midkiff- not present at the meeting.

Program: Video on Gems

Minutes submitted by Linda Noble, Secretary

Lynchburg Gem and Mineral Society Inclement Weather Policy:

Please remember- if the Lynchburg City Schools are closed or close early due to the weather conditions, then our meeting will be cancelled.

2016 ELECTED OFFICERS

PRESIDENT - John Haskins
(434) 525-8430
JMHaskins1@netzero.net

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(434) 941-1899
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Treasurer - Frank Midkiff
(434) 660-1565
midkiffsml@gmail.com

Members At Large-
Bernardino Rivera &
Eric Routon

COMMITTEE CHAIR PERSONS:

Field Trips– David Callahan
Hospitality- Monthly Volunteers
News Articles– Natalie Darling
Silent Auction– Warren Darling
Swap for Rocks–Warren Darling
Website– Casper Voogt
Workshops– Dave Callahan
FRA Adult Liaison- OPEN
Membership- Thom Noble

PROGRAMS

The program for the January 21,2016 meeting was a video on Gemstones.

For the February 17, 2016 meeting, please join Natalie Darling for a program on her personal experience exploring Rock Formations and Under ground Cities of Cappadocia, Turkey.

Below: panoramic photograph taken at the rock city of Cappadocia, Turkey, 4/2015; N. Darling

BenchTips by Brad Smith

"Get all 101 of Brad's bench tips in "Bench Tips for Jewelry Making" on Amazon"

SHARP KNIVES FOR CUTTING MOLDS

Cutting molds is easier and more precise with a sharp blade. A new Xacto blade is sufficient for cutting RTV molds but is usually not sharp enough for vulcanized rubber. For that it's best to use scalpel blades available from most jewelry supply companies.

The #11 blade is triangle shaped, and the #12 is hawksbill shaped. I find the hawksbill is particularly nice for cutting the registration keys of the mold.

USE YOUR THUMB

When using multiple bits in a Foredom, we often have to deal with several different shaft sizes - the usual 3/32 inch burs, the larger 1/8 inch shafts sizes and of course the many different sizes of drills. For some reason I really dislike having to turn the key multiple times to open or close the jaws of the handpiece chuck.

So I have two ways to speed up that task. For opening up the jaws, I just remember "four", the number of turns I have to make to open the chuck just enough from the 3/32 bur shaft size to the larger 1/8 bur shaft size.

For closing the jaws around a smaller shaft, there's a neat trick. Hold the new bit in the center of the open jaws of the chuck, put your thumb lightly onto the outer toothed collar of the chuck, and gently start up the Foredom. As the chuck turns, it will naturally tighten the jaws around the bur shaft or the drill bit. Then all you have to do is a final tightening with the key.

FIELD TRIP REPORT…

Contact Information for Field Trips
David Callahan,
Field Trip Chairman
Home phone: 540-297-1853
Cell Phone- 540-874-5201
E-mail dbcall1@aol.com

The January 23rd field trip to JMU was re-scheduled to February 27th because of the big snow storm. If you want to attend the February 27th trip, you must sign up again. Please see the new broadcast below.
Thank you.
David

RE-SCHEDULED OFFICIAL COMBINED GMSL and RVMGS FIELD TRIP
SATURDAY, FEBRUARY 27, 2016 (weather permitting, use your own judgement)
9AM until NOON
JAMES MADISON UNIVERSITY,
Harrisonburg, Virginia
GEOLOGY DEPARTMENT and MINERAL MUSEUM

Sign-up is required…call me, e-mail me or see me at the meeting

We will all provide our own transportation and park in the JMU parking lot in the front of Memorial Hall (The old High School). Plan to arrive between 8:45 to 9AM. See the directions below and walk directly to the Geology Lab. If you need transportation or any other information, please call or e-mail me for assistance. This is Dr. Kearns only available date. If the weather is bad, use your own best judgment before driving.

JMU has a fully equipped geology lab with state of the art equipment. Dr. Kearns is well known in his profession and has generously allowed us to visit his lab, museum and dedicate this Saturday morning to our clubs. Dr.Kearns will soon be retiring and the geology lab and museum will be moved back to Miller Hall on campus. It is unclear at this time if these trips will be continued by his replacement so it is important to visit these facilities now.

If you have any minerals that you want to identify, bring them along. We should have time to run five or six specimens thru the x-ray diffraction equipment. There will be microscopes available and other equipment for testing and viewing. Dr. Kearns also has a large fluorescent mineral collection for our viewing pleasure. Dr. Kearns may have some surplus mineral books, specimens, miniatures and micros for sale to benefit the museum, be sure to bring cash or your checkbook. This material will be first class and all the proceeds go toward future museum purchases. The museum will be open for our viewing pleasure.

Driving directions to JMU in Harrisonburg, VA. from I-81 north bound

* I-81 to Harrisonburg, VA. (About 2.5 hours driving time from Lynchburg and 1.5 from Roanoke).

(One good way from Lynchburg is Rt. 29N, Rt. 6W, Rt. 151N, Rt. 250W, I-64W, I-81N)

* Exit 245 (Turn left on Port Republic Road)

* Proceed to South Main Street (Rt. 11) and turn right at the light.

* Proceed northward on South Main Street to the third traffic light and turn left on to Cantrell Ave.

Continued on next page

Up Coming Field Trips

For additional information or to sign up for field trips, please contact Dave Callahan, Field Trip Chairman

Home phone: 540-297-1853
Cell Phone- 540-874-5201
E-mail dbcall1@aol.com

JMU Trip:

* Proceed over the bridge to the traffic light on South High Street (RT. 42).

* Memorial Hall (the old Harrisonburg High School) is directly in front of you. Go straight into the parking lot on your left. Try to arrive between 8:45 and 9:00 AM.

* To enter the Geology Department, walk around the building to the left (Grace Street Side)

* When you enter the building, go down the flight of stairs on your left. Enter the double doors and you are in the Geology Department. Walk around to your left and follow the hall. The mineralogy lab will be open on your right.

* The new Mineral Museum will be open so we will spend some time here. As you enter the building, turn right and walk to the end of the hall. The Museum is on your right. Notice the brass plaque on the Virginia mineral collection cabinet. Bring your camera, the minerals and displays are world class.

Dixie Mineral Council Field Trips

The Southeast Federation of Mineralogical Societies, Inc

The Friendly Federation - Founded in 1976 to serve
DMC Program of the SFMS Field Trip Committee

An Official Field Trip of the Georgia Mineral Society (Atlanta, GA) (HOST)
An Official Field Trip of the GMSL and RVMGS

Saturday, March 12, 2016
Clarkesville, GA
10:00 AM

Fee: $10 per person
TRIP: This location was a popular collecting location many years ago but had not been visited for a long time. Jim Haege was instrumental in getting the site reopened a few years ago and since then it has been a fun and productive site.
COLLECTING: Kyanite blades and cobbles, small mica books, and graphite specimens (rare). The kyanite ranges from gray to pale blue and may contain graphite. Some of the blades can be polished and, because of the graphite, they have a curious depth and shimmer when they are polished.
BRING: Material is plentiful and weathering out onto the surface. Bigger blades and cobbles are found by digging. Scratching tools and baggies are all you need for surface collecting, shovel and pick for digging. All holes must be refilled. This site can be muddy at times, so a change of clothes would be good too.
FACILITIES: There are no facilities at the site, but GMS members will have free water and snacks available for everyone.
CHILDREN: This field trip is suitable for children but they must be supervised at all times.
PETS: Because this is a working farm, pets are not allowed.
SAFETY: There are electrified fences on the farm so do not touch any fences. Field trip leads will open and

continued on next page

Up Coming Field Trips

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close gates. This is a working farm and there may be animals present – do not approach any of the animals. Do not enter pastures where animals are present.

DIRECTIONS AND WHERE TO MEET
We will be meeting at 10:00 am Eastern time
Ingles Market (the only Ingles in Clarkesville)
199 East Louise Street (US Old/Historical 441)
Clarkesville, GA 30523

Coordinates: 34.603124,-83.517801

1) From Atlanta, take I-985 North towards Gainesville
2) I-985 will transition to GA 365/US 23
3) Continue on GA 365/US 23 to GA 197
4) Take GA 197 north to Clarkesville (about 3.5 miles)
5) Ingles is on the right, we will meet in the parking lot close to the highway.

CONTACT: Charles Carter, GMS Field Trip Chair
Home: 770-998-7949
Cell: 770-891-5947
fieldtrips@gamineral.org

Kyanite Blade

Kyanite Cobble

The following should be of interest to all rockhounds.

The following is from Senator Creigh Deeds via our member Mary Loose DeViney

On a much lighter note, today the Senate passed legislation I sponsored to designate Nelsonite as the official state rock. Last fall, a group of government and geology students from Piedmont Virginia Community College (PVCC) came to me with this proposal. The students had done their homework. They garnered the support of the state geologist, the chairwoman of the Nelson County Board of Supervisors, our friend Connie Brennan, as well as Frank Friedman, the President of PVCC. Virginia is one of four states that does not have a state rock, mineral or gemstone. Nelsonite is named after Nelson County and had a significant impact on the local economy in the early 20th Century and is mined as far away as China. The bill was amended to include the American Dogwood as the state tree and the Northern Cardinal as the state bird. The General Assembly made those designations in the 1950s, but they were omitted inadvertently. Another article, which was printed in the local Lynchburg newspaper was submitted by Franklin Midkiff, and can be found on page 15.

SFMS Field Trip Committee Announcement

MESSAGE FROM JIM FLORA, PAST SFMS FIELD TRIP CHAIR AND DMC PROGRAM CREATOR

You may or may not be aware that I started the DMC field trip sharing program way back in 1998 with an initial membership of 11 SFMS member clubs. Our very first field trip occurred during March of 1999. Currently we have 30 SFMS member clubs sharing one of their field trips with the other clubs of the DMC. It's now time that I pass on the responsibilities of the SFMS field trip chair and DMC program coordinator to some younger mineral collectors. Charles and Lori Carter of the Georgia Mineral Society will be taking over my SFMS Field trip duties (Charles) and DMC email/scheduling jobs (Lori) during the first month of 2016! I have known the Carters for over 20 years and I have full confidence that they will do an even better job in the future with SFMS field trips. They both are I.T. professionals and are doing an outstanding job with field trips at the Georgia Mineral Society. They have been successfully opening up new locations to field collect minerals and fossils and have been actively sharing GMS collecting trips with other clubs in the southeast. So, it will not be a big jump for them to run the DMC and SFMS field trips. I will be working in the background to assist them while they take over field trip duties and DMC operations.

I hope that all of the clubs will help them transition into their new jobs by keeping them informed as to new club email addresses and working with them with the scheduling of future DMC field trips hostings.

I am glad that the DMC concept of shared field trips gave a lot of SFMS clubs the ability to attract new members by offering monthly field trips to mineral and fossil locations throughout the southeast.

Jim Flora
Past SFMS Field Trip Chair
Past DMC Coordinator

MESSAGE FROM LORI CARTER, INCOMING DMC COORDINATOR

We all owe Jim Flora a debt of gratitude for pioneering the DMC field trip sharing program and keeping it successful for 17 years! I hope to continue the success of the program and I will need your help.

Keeping everyone informed of upcoming DMC field trips requires current email addresses. So, if you are not getting DMC emails, just let me know the email addresses for your club and I will update the list. Don't miss out on these great trips because of outdated email contacts.

Also, member clubs need to be able to announce DMC field trips to their membership in a timely manner, so please submit your field trip form on time (before the 1st of the month before the month of your trip). Then your club can continue sharing DMC field trips and that is good for all of us.

The DMC field trip sharing program has been a tremendous asset to the Southeast Federation and it is the responsibility of all of us to keep it that way.

Lori Carter
DMC Coordinator
sfms-dmc@amfed.org
dmc@gamineral.org

MESSAGE FROM CHARLES CARTER, INCOMING SFMS FIELD TRIP CHAIR

The SFMS has been instrumental in helping clubs in the southeast provide field trips for their members. As I assume SFMS field trip chair responsibility from Jim Flora, I will strive to continue the good work that he has done for so many years.

If you have any ideas for an SFMS field trip, please let me know. Help keep the SFMS field trip program active and vibrant.

Charles Carter
SFMS Field Trip Chair
sfms-dmc@amfed.org
sfms-fieldtrips@gamineral.org

UPCOMING EVENTS

Feb 20-21- Gem and Jewelry Show sponsored by the Treasure Coast Roak & Gem Society. Vero Beach Community Center, 2266 14th Ave, Vero Beach, FL. Email tcrandgs@bellsouth.net

Feb 27- Annual show and sale sponsored by Imperial Valley Gem, Mineral and Fossil Society. Saturday 9-4:30. 175 Lake Hollingsworth Drive, Lakeland, FL. Contact Kim Price at 863-412-9156 www.bonevalley.net

March 6-8- 45th annual Gem, Jewelry and Mineral Show and Sale. Sponsored by the Suncoast Gem & Mineral Society. The Minnreg Building, 6340 126h Ave N. Largo, FL 33773. Contact Bill Schmidt at 727-822-8279 www.sgams.com/shows/show.htm

March 11-13, 2016 -28th annual Aiken- Augusta Gem, Mineral & Fossil Show; Fri & Sat 10-7, Sun 11-5; Julian Smith Casino; 2200 Broad St. Augusta, GA www.aikengmfs.org

March 19-Special Club Auction sponsored by the Southeastern Massachusetts Mineral Club. Mitchell Memorial Club, 29 Elm St. Middelboro, MA.

April 2-3- 43rd Annual Mineral, Gem, Jewelry & Fossil Show sponsored by the New Haven Mineral Club. Amity Regional Middle School, Sheffield Rd, Orange, Ct.

April 16-17- Western Mass. Mineral, Jewelry & Fossil Show presented by the Connecticut Valley Mineral club. NOW LOCATION: Hadley Farms Meeting House, 41 Russel St. Hadley,MA. For additional info: <westernmassmineralshow.com>

February 2016

SUN	MON	TUES	WED	THURS	FRI	SAT
	1	2	3	4	5	6
7	8	9	10 Ash Wednesday	11	12 Lincoln's Birthday	13
14 	15 Presidents Day	16	17 Meeting 7PM	18	19	20
21	22 Washing-ton's Birthday	23	24	25	26	27 JMU Field Trip
28	29					

REMINDER…

Club workshops are held on the second Saturday of each month at Dave Callahan's home. Workshops are open to members only, and all members are encouraged to attend when possible.

There will be some discussion at this months meeting about possibly offering other days for the workshops also.

This is a great learning & fellowship opportunity, as well as a way to contribute to your club. You can "learn" while helping to fabricate items for sale at our fall festival, then use the equipment available to complete your own personal pieces.

Please consider coming out, regardless of your level of experience. All help is needed and appreciated!

Rock Tumbling Contest

Submitted by club member Mary Loose DiViney

Entry Information for the 2016 Contest

The rock for 2016 is petrified wood from Arizona. Learn More about how the rock formed. (http://www.featherriverrocks.org/images/rock_tumbling_contest/Arizona_petrified_wood_information.pdf) Entry fee is $30.00 for 3 pounds of rough rock for continental US residents. This includes shipping the material to you. Outside the USA will be $30.00 plus any additional shipping. Contest Rules application (http://www.featherriverrocks.org/images/rock_tumbling_contest/tumbling_rules_application_2016.pdf) Form is fillable via free pdf software.

* 3 lbs. of rough will be shipped to you when application and check are approved beginning in early January 2016.
* Deadline for application is June 1st, 2016.
* Mail 5 (yes, only 5) of your best finished rocks and a copy of the entry form postmarked no later than August 15th, 2016.
* Apply early and take your time to tumble!
* Cash prized= $250, $100, and $50 for first, second, and third place winners!

To enter the contest:

* **Digitally:** Fill out the application and email the form to: tumbling@FeahterRiverRocks.org (save to your desktop of print to pdf) and pay via PayPal (see link at bottom of page)
* **Hard Copy:** Print and fill out the application, Mail the application and a check or money order payable to FRLMS to: Tumbling Contest, C/O Lori Millard, 2660 Cherokee Rd. Oroville, CA 95965

For more information: call (530) 533-2968 or email tumbling@FeatherRiverRocks.org

Re-cap from the 2015 Worldwide Rock Tumbling Contest

We were very pleased to see many of the contestants' polished obsidian returned to us this year. I wish that all of you would have returned your stones. This was the toughest rock, per se, that we have challenged you with so far. And the results were stunning.

It took our illustrious judges nearly four hours to go through the returned stones and determine the top three placement winners. It then took another half hour to judge the first place winner. It came down to an X20 loupe to determine the first from the second place winner, Ricky Waters of Big Sandy, TN, and the grand prize first place winner of The Worldwide Rock Tumbling Contest:

ANDREA WILSON of PEORIA, AZ.

This year, along with the top three winners receiving cash prizes, Andrea will receive a beautiful trophy. The slab of obsidian used for the base of the trophy was cut and polished by board member, Manuel Garcia. Pictures of the finished trophy will be posted on our website shortly, along with the winning stones.

I encourage all of you to join in the 2016 contest. We have carefully chosen petrified wood from the Dobell Ranch, located near Holbrook, Arizona. It is some of the most colorful petrified wood I have ever laid eyes on.

Once again, thank you all for joining in on the fun!

WHAT IS IS?
Reprinted from Feb. 2016 issue of The Quarry, Newsletter of the Cincinnati mineral Society

Is it a Cubic Zirconia or a diamond? If the stone is loose, turn it upside down on its table and slide it over a black line printed on a piece of paper. When looking straight down through a CZ, you will see a dot in the center of the stone. A diamond won't do this.

Citrine or Topaz? Clean the stone then, using a toothpick, put a drop of water on the table of the stone. The water will form a high bubble on real topaz. On quartz the water flattens out.

To clean non-plastic metal costume jewelry immerse it in rubbing alcohol for five minutes. Rinse in warm water and dry with a lint-free cloth.

To prevent metal costume jewelry from tarnishing, store it with a piece of white chalk.

Mica

By Bev Eisenacher, *reprinted from Feb. 2016 issue of Rock Buster News*

Mica is a group of sheet silicates (phyllosilicate). Its most prominent characteristic is that it has nearly perfect basal cleavage. Mica forms monoclinic, pseudo hexagonal crystals and often is found formed as a compilation of thin layers called books. The common micas are: biotite, lepidolite, muscovite, phlogopite and zinnwaldite. It is found in almost all igneous and metamorphic rocks and is prominent in granite, diorites andesites, schists, gneiss and hornfels. Mica is widely distributed, but until the 19y century large crystals were rare and very expensive. The price dropped dramatically in the early 19th century when large reserves were found in Africa and South America. As of 2005, the largest deposits were in Koderma district, Jharkhand State, India. China is the top producer, closely followed by the U.S., South Korea and Canada.

Mica has a unique and extensive list of physical properties: splits into sheets, chemically inert, dielectric, elastic, flexible, hydrophilic, insulating, lightweight, platy, reflective, refractive, resilient. It ranges from transparent to opaque. It is stable when exposed to electricity, light, moisture and extreme temperatures. Whew!!

Mica can be used in sheets, books, flakes, films, splittings and scrap. Scrap is usually ground by one of three methods; dry grinding, wet grinding or mocronising depending on the use it is intended for. Only muscovite and phlogopite are generally used in commercial industry. However, the list of uses is enormous. Here are some, but definitely not all. I have not given the properties that make mica a useful ingredient specific to each use. However, Wikipedia does an excellent job of this.

In the house and around the yard:
In the U.S. fifty four percent of ground mica is used in joint compound for drywall. The second most prevalent use is in paint. Other uses: rolled roofing and asphalt shingles; decorative coatings on wallpaper, concrete, stucco and tile; insulation; in concrete blocks; soil conditioner and potting soil; radiation apertures of microwave ovens; windows for ovens and kerosene heaters and laytex balloons.

It is also an important ingredient in many cosmetics: blushes, eyeliner, eye shadow, foundations, hair and body glitter, lipsticks and glosses, mascara, moisturizing lotions and in some toothpastes.

In your automobile:
These are some of the possible places where you might find mica in your car (other than in the rugs etc. that rockhounds are likely to track in): plastic fascia and fender, brake linings and clutch plates, metallic paint, axle grease, spark plugs, starter, generator, armatures, navigation compass, tires, electrical components and electronics.

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Mica

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Electrical Components and electronics:
Mica is used in: motors, generators, field coils, as electrical insulation and in capacitors.

Isinglass:
While new materials like Pyrex are being used to replace isinglass (thin transparent sheets of mica) it is still widely used for peepholes where high temperatures and/or radiation is involved.

Miscellaneous:
Mica is indeed a versatile substance. Some of its other uses are: as magnet and commutator core insulation; an additive to drilling fluids; as a filler in rubber; in heat shields and temperature insulation; to strengthen plastics, nylons and polyesters; in optical filters and in diaphragms for oxygen breathing equipment.

Mica has been known and used since prehistoric times. There are indications of its use in ancient India, Egypt, Greece, Rome, China and by the Aztecs. The earliest discovered use was in the paint of cave paintings (40,000BC – 10,000BC). The Pyramid of the Sun at the ancient site of Teotihuacan near Mexico City has considerable layers of mica up to 12 in. thick. Mica was and still is used by the Taos and Pictures Pueblos of New Mexico. Powdered mica was and is used to decorate clay pots in India, Pakistan and Bangladesh. In Pakistan it was used to add glitter and embellish women's summer clothes.

Sources:
Complete Guide to Rocks and Minerals, John Farndon, Hermes House
https://en.wikipedia.org
http,//www.mineralszone.com
Photo by author

Biotite from Bancroft, Canada.
K(Mg, Fe)3(AlSi 3O10) (OH)2 Biotite is a rich, dark black color that may turn golden when weathered. It often forms in books that can grow to a considerable size.

A Message from Dave Callahan..

Good morning
I failed to mention in my report that there in a new program on the National Geographic Channel called “the Great Human Race”. The premier showing was Monday, February 1st at 10pm. It is a weekly series and those that have taken knapping classes from Errett Callahan may find this especially interesting. The main character in the series is Bill Schindler, associate professor in anthropology and archaeology at Washington College. He is Errett’s student and has spent a lot of time with him over the years learning primitive survival skills.
In the first program filmed in Africa, Bill and his co-star, survival instructor Cat Bigney, tried to replicate the challenges that faced Homo habilis thousands of year ago. Their only tools were sticks and rocks during this time period. Watching how Bill broke rocks to fashion and use primitive tools was exactly how Errett showed us in his workshop. It was obvious where he learned to do this. Future programs in this series will follow early man as he progressed, the stone and wood tools he developed, fire, shelter and clothing making. It should be a very interesting series worth watching.

ATTENTION CLUB MEMBERS AND FRIENDS

I HAD THE PLEASURE OF MEETING A GENTLEMAN BY THE NAME OF PHILLIP DURSTON. HE HAS A GOOD DEAL OF MATERIAL FOR SALE THAT MAY BE OF INTEREST TO MANY OF US. PHIL HAS AN IMPRESSIVE COLLECTION OF FACETING AND CABBING ROUGH, MACHINES, BENCH JEWELRY TOOLS, KILN, SAWS, AND BEAUTIFUL SPECIMENS.

PHIL HAS AGREED TO BRING SOME OF THE ITEMS TO OUR MEETING ON FEBRUARY 17TH, SO COME EARLY AND BRING YOUR $$$. I AM PRETTY SURE THERE WILL BE SOMETHING OF INTEREST TO JUST ABOUT EVERYONE!

Geology Word Search

Find the names of various rocks hidden in the puzzle.

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

AMETHYST
BERYL
BORAX
COPPER
CUPRITE
DIAMOND
FELDSPAR
FLUORITE
GALENA
GARNET
GOLD
GRANITE
GRAPHITE
GYPSUM
HALITE
JADEITE
LEUCITE
MALACHITE
MICA
PLATINUM
PYRITE
QUARTZ
RUBY
SILVER
SULFUR
TOPAZ
TURQUOISE
ZIRCON

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Diamond

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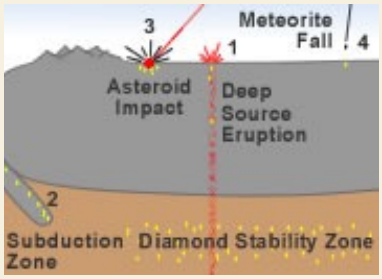
Diamond is a fascinating mineral. It is chemically resistant and it is the hardest known natural substance. These properties make it suitable for use as a cutting tool and for other uses where durability is required. Diamond also has special optical properties such as a high index of refraction, high dispersion and high luster. These properties help make diamond the world's most popular gemstone.

Diamonds are a bit of a mystery. They are composed of the element carbon and because of that many people believe that they must have formed from coal. Many teachers still teach this in their classrooms. But that is not true!

How Do Diamonds Form?

Diamonds are not native to Earth's surface. Instead they form at high temperatures and pressures that occur in Earth's mantle about 100 miles down.



Most of the diamonds that have been discovered were delivered to Earth's surface by deep-source volcanic eruptions. These eruptions begin in the mantle and on their way up they tear out pieces of mantle rock and deliver them to Earth's surface without melting. These blocks from the mantle are known as xenoliths. They contain diamonds that were formed at the high temperature and pressure conditions of the mantle.

People produce diamonds by mining the rock that contains the xenoliths or by mining the soils and sediments that formed as the diamond-bearing rock weathered away.

Some diamonds are thought to form in the high temperature-pressure conditions of subduction zones or asteroid impact sites. Some are delivered to earth in meteorites. No commercial diamond mines have been developed in deposits with these origins.

Did you know? Diamonds are mined in Arkansas and Canada?

Gem Diamonds vs. Industrial Diamonds

Gem diamonds are stones with color and clarity that make them suitable for jewelry or investment use. These stones are especially rare and make up a minor portion of worldwide diamond production. Gemstone diamonds are sold for their beauty and quality.

Industrial diamonds are mostly used in cutting, grinding, drilling and polishing procedures. Here, hardness and heat conductivity characteristics are the qualities being purchased. Size and other measures of quality relevant to gemstones are not important. Industrial diamonds are often crushed to produce micron-sized abrasive powders. Large amounts of diamonds that are gemstone quality but too small to cut are sold into the industrial diamond trade.

drill bit >>>
A drill bit used in the drilling of oil wells. Each of the cutting tips has small grains of diamond embedded in the metal. These cut their way through the rock as the bit turns.

Diamond as a Gemstone

Diamonds are the world's most popular gemstones. More money is spent on diamonds than on all other gemstones combined. Part of the reason for diamond's popularity is a result of its optical properties - or how it reacts with light. Other factors include fashion, custom and marketing.

continued on next page

***<<< (A green diamond crystal.** The color and cubic crystal shape are natural. Many natural diamond crystals are cubic or octahedral in shape. This diamond is about 4 millimeters across and is suitable for industrial use.)*

Diamond

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Diamond Consumption in the United States

In 2010 consumers in the United States spent about $19 billion on gemstones. Of that amount $18 billion was spent on diamonds and less than $1 billion was spent on colored stones. Diamonds are the most popular gemstones with U.S. consumers by a wide margin.
Diamonds have a very high luster. The high luster is a result of a diamond reflecting a high percentage of the light that strikes its surface. This high luster is what gives diamonds their pleasing "sparkle".

Diamond also has a high dispersion. As white light passes through a diamond this high dispersion causes that light to separate into its component colors. Dispersion is what enables a prism to separate white light into the colors of the spectrum. This property of dispersion is what gives diamonds their colorful "fire".

^ A natural, uncut octahedral diamond crystal. © iStockphoto / Timo Klein

Diamond Gemstone Quality

The quality of a diamond gemstone is primarily determined by four factors: color, cut, clarity and carats.

Color: Most gem quality diamonds range from colorless to yellow. The most highly regarded stones are those that are completely colorless. These are the ones sold for the highest prices. However, another category of diamond gemstone is increasing in popularity. These are the "fancy" diamonds, which occur in a variety of colors including, red, pink, yellow, purple, blue and green. The value of these stones is based upon their color intensity, rarity and popularity.

Small "fancy" diamonds in purple and canary yellow colors. Stones are about 4 millimeters across.

Cut: The quality of workmanship in a diamond has a large impact upon its quality. This influences not only the geometric appearance of the stone but also the stone's luster and fire. Ideal stones are perfectly polished to be highly reflective and emit a maximum amount of fire. The faceted faces are equal in size and identical in shape. And, the edges of each faceted face meet perfectly with each of its neighbors.

Clarity: The ideal diamond is free from internal flaws and inclusions (particles of foreign material within the stone). These detract from the appearance of the stone and interfere with the passage of light through the stone. When present in large numbers or sizes they can also reduce the strength of the stone.

Carat: Diamonds are sold by the carat (a unit of weight equal to 1/5th of a gram or 1/142nd of an ounce). Small diamonds cost less per carat than larger stones of equal quality. This is because very small stones are very common and large stones are especially rare.

Diamonds Used as an Abrasive

Because diamonds are very hard (ten on the Mohs scale) they are often used as an abrasive. Most industrial diamonds are used for these purposes. Small particles of diamond are embedded in a saw blade, a drill bit or a grinding wheel for the purpose of cutting, drilling or grinding. They might also be ground into a powder and made into a diamond paste that is used for polishing or for very fine grinding.

There is a very large market for industrial diamonds. Demand for them exceeds the supply obtained through mining. Synthetic diamonds are being produced to meet this industrial demand. They can be produced at a low cost per carat and perform well in industrial use.

Other Uses of Diamonds

Most industrial diamonds are used as abrasives. However, small amounts of diamond are used in other applications.

Diamond windows are made from thin diamond membranes and used to cover openings in lasers, x-ray machines and vacuum chambers. They are transparent, very durable and resistant to heat and abrasion.

Diamond speaker domes enhance the performance of high quality speakers. Diamond is a very stiff material and when made into a thin dome it can vibrate rapidly without the deformation that would degrade sound quality.

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Diamond

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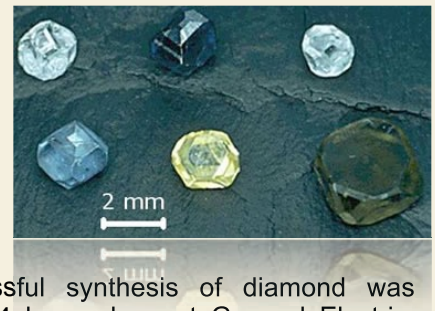
Heat sinks are materials that absorb or transmit excess heat. Diamond has the highest thermal conductivity of any material. It is used to conduct heat away from the heat sensitive-parts of high performance microelectronics.

Low friction microbearings are needed in tiny mechanical devices. Just as some watches have jewel bearings in their movements diamonds are used where extreme abrasion resistance and durability are needed.

Wear-resistant parts can be produced by coating surfaces with a thin coating of diamond. In this process, diamond is converted into a vapor that deposits on the surface of parts prone to wear.

Synthetic Diamonds and Simulants

Diamond is a very valuable material and many people have worked to create synthetic diamonds and diamond simulants. Synthetic diamonds are man-made materials that have the same chemical composition, crystal structure and properties as natural diamonds. Diamond simulants are materials that look like diamonds but have different chemical compositions and physical properties.

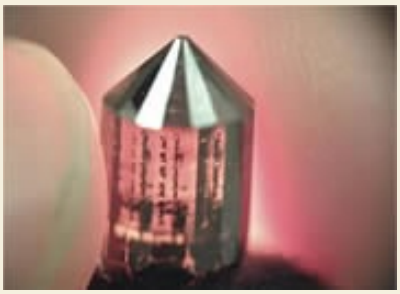


Synthetic diamonds of various colors grown by the high-pressure high-temperature technique. Image by Wikipedia contributor Materialscientist.

The first commercially successful synthesis of diamond was accomplished in 1954 by workers at General Electric. Since then, many companies have been successful at producing synthetic diamond suitable for industrial use. Today, most of the industrial diamond consumed is synthetic with China being the world leader with a production of over 4 billion carats per year.

In the last decade a few companies have developed technology that enables them to produce gem-quality laboratory-created diamond up to a few carats in size in several colors. Some companies are using high-pressure, high-temperature methods while others are using chemical vapor deposition methods. Their stones are being sold in stores and on the internet at a significant discount to natural stones of similar quality and size. These stones are required to be sold with a disclosure that they are "synthetic" or "laboratory-created".

Contributor: Hobart King



Flawless Synthetic Diamonds by Chemical Vapor Deposition

Nelsonite state rock bill passes Senate

By Alex Rohr; *Reprinted from the News and Advance, Lynchburg VA, Saturday, January 30, 2016*
Submitted by Frank Midkiff

RICHMOND- Virginia is one step closer to adding a state rock to a repertoire that includes state freshwater fish Brook Trout and saltwater fish Striped Bass.

The bill to name Nelsonite the state rock passed the senate 35-5 Friday, Sen. Creigh Deeds, D-Bath County, brought the measure on behalf of a joint project by Piedmont Virginia Community College geology and political science classes. Virginia is one of five states without a state rock, mineral, gem or precious stone.

The rock is named after Nelson County and was mined in the Piney River area for titanium and calcium phosphate.

The bill was amended to include the Northern cardinal as the state bird and the American dogwood as the state tree. The cardinal and the dogwood were given these designations, but they were dropped at some point, Deeds said in his floor speech.

The 2015 General Assembly adopted a pair of state songs: “Our Great Virginia” and “Sweet Virginia Breeze.”

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MEETING LOCATION

DIRECTIONS: Fairview Center; 3621 Campbell Ave., Lynchburg, VA 24501 434-847-1751~ From Route 29 expressway or Route 460, take the Campbell Avenue Exit. Follow Campbell Ave. to 3621, which is across the street from a Citgo Gas Station. There is a fence around the building and parking on both streets running along the sides of the property as well as a lot in the back. We will be looking for you!