November Newsletter

11/2020 Volume 2020, Number 11

In This Issue

Meeting at Miller Center
301 Grove Street
Lynchburg, VA 24501
3rd Wed of the month
7:00 pm until 9:00 pm

Wintery weather meetings schedule is if the Lynchburg schools are down for weather then the meeting is cancelled

Workshop is the 2nd Saturday of the month.

Meetings are cancelled until further notice.

President's Meanderings:

By James Tomlin

I was going to be a Geologist…..but I heard it was a rocky career.

Hello Everyone,

This month we were preparing for the show in Salem, however due to COVID-19 we are unable to attend. The Governor has implemented restrictions on gatherings larger than 25 for public and private events. We are saddened by this news, but realize this is in the best interest for the health of our club members and their families. We are still looking forward to future shows in the spring if things start looking better. I would like to take the time to thank everyone who made it out to the workshops in order to help with club inventory. I would like to give special recognition to Thom Noble, Rodger Linkenhoker, and Nancy Linkenhoker for coming every Saturday for several months now. They have been very diligent in making sure the club we all love thrives in all we do. Dave Callahan deserves our recognition as well for hosting our workshop and his ingenuity with inventive ways of furthering our clubs productivity.

The program this month will be a joint meeting hosted by the FMVA on The History of the JMU Mineral Museum by Dr. Lance & Cindy Kearns. Seats are very limited so please click the link and RSVP if you are interested on attending:
https://us02web.zoom.us/meeting/register/tZYodOCpqjsiG9Lz1fEexxNR8tCr3plix3gN

Your Fellow Rockhound,
James Tomlin

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GMSL CLUB EQUIPMENT AUCTION

We are still working on the auction and as soon as we feel safe in gathering the equipment pictures and the equipment we will make this happen.

Newsletter Editor pick

Minerals of Virginia

COMMON MINERALS OF VIRGINIA

Copied from Virginia.gov - DMME

A wide variety of minerals occur in Virginia. These minerals form the basic building blocks of the rocks that shape the landscape. Minerals exhibit distinctive properties that makes each unique. In Virginia minerals are mined for industrial purposes, collected by enthusiasts, and used for scientific research to help us better understand the Earth. The list of minerals below highlights a few of the most common or popular minerals that are found in Virginia. If you would like more details on the distribution of minerals in our state. Copy & paste https://www.dmme.virginia.gov/DGMR/pdf/vamin/VAMIN_VOL33_NO01.PDF

Amazonite
$KAlSi_3O_8$
A variety of microcline feldspar that typically forms in coarse-grained igneous rocks called pegmatites. The presence of lead results in a greenish or blue-green color. Amazonite is occasionally used as a gemstone.

This mineral is mined in Virginia near the town of Amelia.

Epidote

$(Ca,Ce,Pb,Sr,Y)_2(Al,Fe,Mn,V)_3Si_3O_{12}(OH)$ or
$(Ca,Ce,Pb,Sr,Y)_2(Al,Fe,Mn,V)_3Si_3O_{11}(OH,F)_2$

A mineral that typically appears as a pistachio green granular mass within a low-grade metamorphic rocks, such as greenstone.

Kyanite

Al_2SiO_5
Forming aggregates of long and thin bladed crystals, this pale blue mineral is commonly found in metamorphic rocks such as gneiss or schist. Kyanite is actively mined in Virginia in Buckingham County. Copy & Paste link for more information. Photo courtesy of Rob Lavinsky.

https://www.dmme.virginia.gov/DGMR/kyanite.shtml

Staurolite

$(Fe,Mg,Zn)_2Al_9(Si,Al)_4O_{22}(OH)_2$

Staurolite forms interesting brownish black twinned crystals, also known as ”Fairy Stones” that can appear in medium-grade metamorphic rocks such as gneiss or schist. Staurolite can be found in Patrick County, Virginia. Photo courtesy of Rob Lavinsky.

Hematite

Fe_2O_3
An iron oxide mineral, hematite is commonly metallic gray, brown, or reddish in color. It is an ore of iron and can form naturally in sedimentary, igneous, or metamorphic rocks. Hematite is a primary constituent in what is perhaps the most famous rock in the world – the Banded Iron Formation which formed as Earth’s atmosphere first became oxygenated 2.2 billion years ago. Although the Banded Iron Formation is not found in Virginia, hematite has historically been mined in the Valley and Ridge Province.

Feldspar

$(Na,K)AlSi_3O_8$
Feldspar is an extremely common mineral. It can be found in many varieties of rock, especially metamorphic or igneous rock types. Feldspar is usually milky white, but can have color due to impurities in the crystal structure. Feldspar is currently mined in central Virginia and is very common in the Piedmont and Blue Ridge Provinces. Photo courtesy of Rob Lavinsky.

Mica

$KAl_3Si_3O_{10}(OH)_2$ or $K(Mg,Fe)_3AlSi_3O_{10}(OH)_2$
This distinctive mineral is easy to identify by its platy appearance. Commonly seen as shiny flecks in sedimentary, igneous, or metamorphic rocks, mica easily flakes off into thin crystal plates. Two common varieties of mica are muscovite (typically pale in color) and biotite (darker brown to black). Mica is commonly found in the Piedmont and Blue Ridge Provinces of Virginia. Photo courtesy of Rob Lavinsky.

Calcite

$CaCo_3$
As a very common mineral, calcite can be seen in many different rocks including limestone, dolomite, and marble. Although calcite is commonly white, it can appear in various colors due to chemical impurities. Calcite can be distinguished from other similar looking minerals (such as quartz and feldspar) by its effervescent reaction with weak hydrochloric acid. Calcite can be found throughout Virginia.

Quartz

SiO_2
One of the most common minerals in the world, quartz can be found in sedimentary, metamorphic, and igneous rocks throughout Virginia. Quartz typically appears as clear or whitish crystals within a rock such as granite. Amethyst, agate, chalcedony, chert (flint), and opal are all varieties of quartz. Copy & Paste link for more information on quartz veins in Virginia.

https://www.dmme.virginia.gov/DGMR/pdf/vamin/VAMIN_VOL45_NO03.PDF

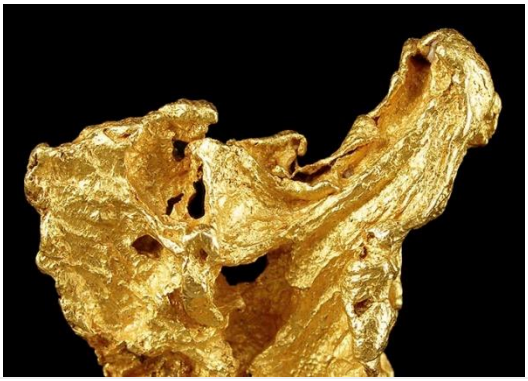
Pyrite
FeS_2
Often mistaken for gold, pyrite is easily recognizable by its metallic luster and brass-yellow color. Pyrite forms into cubic crystals or as a mass of shapeless grains within sedimentary nodules, coal seams, or other rock veins. It is commonly associated with gold and found in the Gold-Pyrite belt of Virginia. Photograph courtesy of Rob Lavinsky. Copy & Paste Link for more information.

https://www.dmme.virginia.gov/DGMR/pdf/gold.pdf

Garnet

$(Ca, Fe, Mg, Mn)_3(Al, Cr, Fe, Mn, Si, Ti, V, Zr)_2(SiO4)_3$

Typically dark reddish brown, garnets are commonly found in medium- to high-grade metamorphic rocks such as schist of the Piedmont and Blue Ridge Provinces.



Gold
Au

Probably the most popular mineral in Virginia is gold. Gold occurs in small amounts throughout a large portion of the Piedmont and Blue Ridge Provinces. Copy & Paste link below for more information about gold.

https://www.dmme.virginia.gov/DGMR/gold.shtml

Program for this month

The History of the JMU Mineral Museum
by Dr. Lance & Cindy Kearns

Date: Wednesday, November 18th
When: 7:00pm ET
Description: A look at the historic events that built a new Mineral Museum. Entertaining stories about the many ways of mineral acquisition. Follow the details of the JMU folks in bringing home and displaying the amazing Peter L. Via collection. Of course there will be many photos of world class specimens for you to enjoy.

RSVP Link (seats limited, please reserve now if you can make it):

https://us02web.zoom.us/meeting/register/tZYodOCpqjsiG9Lz1fEexxNR8tCr3plix3gN

If the link does not work by email just copy and paste in the address line of your internet page.

Will update to the three month ahead once we get a good handle on things.

Note from the Editor

Hi All,
Another month has past and the show this month in the Roanoke has been cancelled. We will just have to wait longer together so please stay safe and hopefully we will get back to normal. Please join the meeting with JMU's Dr. Kearns for the history of JMU's mineral museum.

I plan to make some changes in the newsletter in the coming months. If you have some ideas let me know. I plan to make it longer for those that get it by e-mail and have added pages but with the cost of mailing we need to keep the page count down for the mailed version.

Remember to send me your "Why I became a Rockhound" short story.
My email is stevegordon@comcast.net

Note from the Membership Chair-person

Debbie Wade

REMINDER: If you pay your dues to renew your membership before December 31, 2020, you will get a free year of membership in 2021 because of the pandemic. If you do not renew by then and choose to join us again, you will need to pay as a new member in 2021. Contact Debbie Wade, Membership Chair at - debbie5227@yahoo.com - if you want to know if you have paid your 2020 dues or not.

Field Trips

The Salem Show 11/27 – 11/29 has been cancelled.

Why shouldn't you lend a geologist money?

They consider a million years ago to be Recent.

September Executive Meeting Minutes

A short email version of the executive meeting was mailed out with the following topics:

1. Salem Show volunteers
    a. Doing a call around.
2. Incentives for volunteers
    a. The Roanoke show has been CANCELLED
    b. We came up with a drawing each day for those that spent at least 2 hours and an extra drawing for those that were there all 3 days are in another drawing:
    c. 
    Amazonite Moorefield
    
    Dolomite xls Appomattox
    
    Sphalerite Bonnie's Run Fluorescent
    
    Barger Quarry Calcite (12" x 8" x 2") Finale drawing

    Choice of one of the first three each day one less the next day

3. Officers for next year 2021
    a. Due to Covid can the slate of officers (vice president dropped because of health issues) remaining stay the same as we did for club members for 2021?
4. Ways to get more engagement for the club members
    a. Still working on things that we as a club can do safely.

Article for this month: You too can be a part of Faceting Hisory

By Dave Woolley

GEM MATERIAL DATA

Gem Material	Critical Angle	Star	Crown Main	Crown Break	Pavilion Break	Pavilion Main	Refractive Index	Hardness	Dispersion	Polishing Agent*	Lap To Use	Ultralap On Plastic
Andalusite	38°	28	43	50	41	39	1.64	7-7.5	none	Any	Any	Any
Apatite	38°	28	43	50	41	39	1.64	5	low	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Benitoite	34°	22	37	44	44	42	1.76	6-6.5	high	Cerium Oxide	Lead-Tin Alloy	Cerium Oxide
Beryl (Aquamarine, Emerald, Golden, etc.)	39°	27	42	49	45	43	1.57	7.5-8	low	Cerium Oxide	Plastic	Cerium Oxide
Brazilianite	39°	27	42	49	45	43	1.58	5.5	weak	Tin Oxide	Lead-Tin Alloy	Tin Oxide
Chrysoberyl	35°	22	37	44	44	42	1.75	8.5	low	14,000 Diamond	Lead-Tin Alloy	N/A
Cubic Zirconia	27°	20	35	42	43	41	2.20	8.5	high	14,000 Diamond	Lead-Tin Alloy	N/A
Corundum (Ruby, Sapphire, etc.)	34°	22	37	44	44	42	1.76	9	medium	14,000 Diamond	Lead-Tin Alloy	N/A
Diamond	24°	20	35	42	43	41	2.41	10	high	Diamond Powder	Cast Iron	N/A
Epidote	35°	22	37	44	44	42	1.74	6-7	high	Tin Oxide	Lead-Tin Alloy	Tin Oxide
Fluorite	44°	26	41	48	47	45	1.43	4	low	Aluminum Oxide	Plastic	Aluminum Oxide
GARNETS												
Almandite	35°	22	37	44	44	42	1.78	7.5	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Andradite	32°	22	37	44	44	42	1.89	6.5	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Grossularite	35°	22	37	44	44	42	1.73	7	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Pyrope	35°	22	37	44	44	42	1.73	7-7.5	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Spessartite	34°	22	37	44	44	42	1.80	7	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Uvarovite	32°	22	37	44	44	42	1.87	7.5	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Opal	43°	26	41	48	47	45	1.44	6-6.5	none	Cerium Oxide	Plastic	Cerium Oxide
Peridot	37°	28	43	50	41	39	1.65	6.5-7	medium	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Quartz (Amethyst, Clear, Smoky, Citrine, Rose)	40°	27	42	49	45	43	1.54	7	low	Cerium Oxide	Plastic	Cerium Oxide
Spinel	36°	22	37	44	44	42	1.72	8	medium	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Spodumene (Kunzite, Hiddenite, Clear, etc.)	37°	28	43	50	41	39	1.67	6-7	low	Any	Any	Any
Titania (Rutile)	21°	15	34	41	43	41	2.90	6.5-7	high	Aluminum Oxide	Lead-Tin Alloy	N/A
Topaz (NOTE: orient table 7° off cleavage plane)	38°	28	43	50	41	39	1.62	8	low	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Tourmaline	38°	28	43	50	41	39	1.63	7-7.5	low	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Zircon	31°	28	43	50	41	39	1.94	7.5	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Zircon (Crystal shape)	31°	20	35	42	43	41	1.94	7.5	high	Aluminum Oxide	Lead-Tin Alloy	Aluminum Oxide
Y.A.G.	30°	20	35	42	43	41	1.83	8	high	14,000 Diamond	Lead-Tin Alloy	N/A

*Diamond will polish any of the gems indicated. Diamonds are cut and polished on one large cast iron lap spinning over 2,000 RPM and the process takes about 16 hours per stone. Exquisite results are obtained polishing stones with a hardness of 8 or more on the Ceramic Lap with 50,000 diamond spray.

66. This chart, found in the Graves Company Catalogue, lists useful information including *Basic Faceting Angles* for many gem varieties. For Standard Round Brilliants, or creating your own designs, this list is an adequate starting point: no “recipe” is needed. Most important: *The Pavilion Main Facet Angles given are within “*The Pavilion Angles Critical for Faceting” to prevent “Fish Eye” gems*.*

Facet Designs are typically given for the *approximate* Refractive Index of Quartz (1.54). [Quartz has two refractive Indices (1.5533 and 1.5442) depending on Crystallographic Orientation.] Some Facet Designs are created for a specific gem variety at lower or higher Refractive Index such as Fluorite (1.43) and Corundum (1.76). Most Facet Designs can be modified for a different Refractive Index gem with a simple **Angle Conversion Chart** or **Angle Conversion Calculation**. See Long and Steel’s “Facet Design” listed below or Internet sources.

Caution: The Graves Chart lists only one Critical Angle and one Refractive Index for materials which represents *that small range* of values for the many gem varieties listed. The chart is therefore somewhat misleading for *Gem Identifications*, except for Cubic Crystal System gems that each have a single Critical Angle and Refractive Index values. Glass varieties, non-crystalline mixtures of components, have the *widest range* of values: for each glass variety, a *single* Refractive Index and Critical Angle. Lead Glass used in Atomic Reactor windows have a very high Refractive Index and a very high Refraction and high Dispersion of rainbow colors.

For all other gem materials, each has a ***small range*** of Refractive Indices - two or three - depending on the **Crystal System**, and two or three Critical Angles, depending on Crystallographic Orientation. This is where faceting becomes interesting: a basic knowledge of Crystallography assists in the Orientation and the selection of *the most advantageous* Pavilion Main Facet Angle to cut. Higher Refractive Index *Orientations* make the stone look deeper, often appearing richer in color, and add to the Dispersion of the refracted rainbow colors. Different gem orientations may also offer different colors. Some detrimental colors can be eliminated by orientation and selecting Pavilion Main Facet Angles that are “incorrect”; they do not reflect back through the Crown: unwanted colors can be made to “leak out” the Pavilion instead. Emerald Cut Tourmalines with an unwanted color are often cut with too steep a Pavilion Main Facet at the ends to eliminate the unwanted color.

High Refractive Index gems like Sapphire may be cut at higher than the standard recommended Pavilion angles. This technique captures more internally reflected light that would otherwise be lost at the standard Pavilion Angles making the finished gem look more alive.

The Crystal Systems are: Cubic, Tetragonal, Orthorhombic, Hexagonal, Monoclinic, and Triclinic. [See the Lynchburg Gem and Mineral Society collections for illustrations and examples at the “Easter Island” store.]

Does anyone know if Graves Company is still in business? Can never get through on the phone with them. Would like to order some spare parts for my back up machine.

From what I have read. The old man passed and the son has run it into the ground.

I know Peter Graves he passed away. For some reason his remaining family hasn't or don't want to remove his web-site or disconnect the phone, but the web-site will not actually accept or take money and the phone is never answered,. It's in memory of Peter or he paid in advance and his kin are letting it burn-out itself then get shut off.

Other Links that you may want to check out:

I got this from another club's newsletter and thought that I would just post the link and not the whole article. Just copy and paste the link below and if that does not work, I can email the whole article just let me know and I will send it to you.

Mineral Cleaning for Amateurs

John's website is full of information that all mineral collectors will find useful and interesting.

http://www.johnbetts-fineminerals.com/

Morefield Mine Tour:

https://www.youtube.com/watch?v=u5aQp57HMso

A Guide to Ethical and Conflict-Free Jewelry
https://ethicaljewellery.org/introduction.

Insurance Institute of Jewelry Appraisal
https://instituteofappraisal.com/Investigation_of_Artificial_Color_Infusion_of_Gemstones.pdf
https://instituteofappraisal.com/Exposing_the_GIA_Juggernaut.pdf

Rock collecting guide for geology beginners
https://www.basementguides.com/rock-collecting-and-geology-basics/

Facebook Link for the club
https://www.facebook.com/groups/432839874271992/?ref=share

If you need to renew your club membership you can let me or Debbie Wade know and we can email you the form. You can make checks out to GMSL.
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