TAR HEEL ROCKHOUND

GEM AND MINERAL CLUB, INC. Catawba Valley HICKORY, NORTH CAROLINA Organized 1969

JULY 2012

CATAWBA VALLEY GEM & MINERAL CLUB, INC.

2012 OFFICERS AND COMMITTEES

President:	Baxter Leonard 828-320-4028	Editor:	Velda McLean 828-572-1826	Show Chairmen:	George Max 828-328-9107
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Secretary:	Dean Russell 828-330-0034		Bob Tallent 828-851-8434		

Club Address: PO Box 2521, Hickory, NC 28603-2521
Regular Meetings: Second Tuesday, 7:00 PM
St Aloysius Catholic Church
921 2nd St NE Hickory, NC
Annual Dues: Family, $18; Individual, $12; Junior, $6

The purpose of the Club is to increase the individual's knowledge of the earth sciences and to aid in the development of lapidary and related arts and skills; to promote fellowship and exchange of ideas; to hold exhibitions, contests, lectures and demonstrations for educational purposes; to help interest more people in the gem and mineral hobby; and to capture and preserve the beauty of nature, the arts, and the works of man.

2012 PICNIC VIDEO

Click or use this link to view video.
http://youtu.be/AXHNf-5HZKg

INSIDE

CATAWBA VALLEY
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PRESIDENT'S MESSAGE

Baxter Leonard, Club President

I hope everyone is having thus far an enjoyable summer. If the weather is keeping more of us indoors, just remember, that we all can benefit from self-learning by reading about and studying materials concerning our hobby. There are so many diverse aspects of our hobby--minerals in general, crystals of one system, or multiple systems, thumbnails or micromounts, local minerals verses regional verses state verses national verses world locations. If you include various forms of lapidary, then the spectrum increases further.

We should never be satisfied with our knowledge of our hobby or lack of knowledge if you look at it "from the other slant". There will be mineral shows in our area in the future. By all means, take advantage of the opportunity to learn more from the knowledgeable vendors. Vendors who have a true passion for the hobby and their work are more than happy to teach anyone and answer questions. They could show each of us something we would never see if we did not ask and show interest. Remember, learning carries with it a responsibility to share with others when asked such as giving a program or in providing an exhibit at our annual show.

Baxter Leonard

CATAWBA VALLEY GEM AND MINERAL CLUB, INC.

No monthly business meeting was held for minutes to be recorded at the annual club picnic which was our June program.

JULY PROGRAM

Joan Glover, Program Director

Ron Ruschman will be giving the program *Arizona Minerals - Arizona Centennial* at the July meeting.

Joan Glover

FIELD TRIP NEWS

Harry Polly, Field Trip Coordinator

The July field trip will be to the Ray mine on July 21st. This will be one week later than usual, but I am tied up on the 14th. We will meet in Hudson at the pink Quonset hut on Hwy 321 N, just past the community college. Meeting time will be 8:00 am. Digging tools, crack hammers, chisels are needed. Appropriate footwear is a must. Food, water, and raingear are needed. There are no facilities. There is a strenuous walk-in of 1/2 mile uphill. There is no charge to dig, but digging is designated to specific area. Carpooling is suggested.

Harry Polly

RAY MICA MINE

Yancey County, North Carolina /Last Updated: May 30th, 2012

The Ray Mica Mine is one of the most famous mica mines in the area having produced some of the highest quality muscovite mica from the early to mid 1900s. As book mica occurs in veins in the pegmatite, it was mined using shafts and tunnels in order to follow the veins. Some of the shafts can be observed when collecting in the mine area. But, it is best to avoid them from a safety standpoint and because there are bat preservation restrictions in effect for the shafts. In addition, the US Forrest Service may be in the area working on installing a grate covering one of the shafts and filling other shafts. This activity may affect your collecting options.

Mica from this mine produced "books of mica" which were separated from the unwanted matrix pegmatite rock. The unwanted rock was composed of mostly of feldspar and quartz and some mica but also contained valuable accessory minerals such as garnet, aquamarine, golden beryl, and tourmaline. The best collecting is from these "tailings". You can get to the collecting area from a trailhead followed by an easy hike through beautiful trees for about 1/2 mile until you reach a creek which flows down through the "tailings" from the actual mine location toward the top of the hill.

Ray Mica Mine Trailhead/Creek Runs Through "Tailings"

There two approaches to collecting minerals from the "tailings" at the Ray Mica Mine. The first is to sample the surface material and collect small rocks or use a rock hammer to break larger rocks into smaller ones hoping to find some nice specimens. The second requires digging and takes more time and patience and can only be done in a designated rock collecting area at the top of the hill. The Pisgah National Park has restricted collecting to the surface only in the creek area. Bo's Mine Tours recommends surface collecting for the first experience at Ray Mica Mine but does have shovels and sieves if digging is desired.

Dress: Recommend sturdy shoes and long pants/jeans (shorts at the discretion of the tour participant). Eye protection and work gloves are recommended.

http://bo-smith.net/bosminetours/raymicmine/

Minerals Which Have Been Found in the "Tailings" at Ray Mica Mine

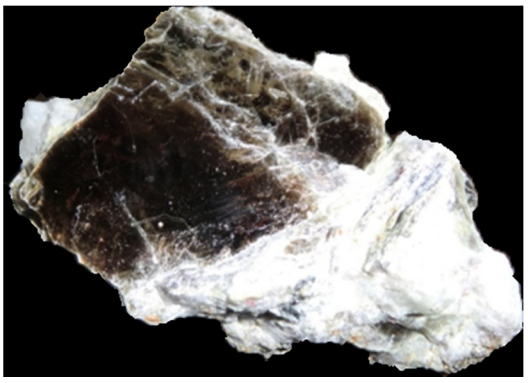
Black Tourmaline (Schorl) with feldspar and quartz

Golden Beryl crystal with Mica and Feldspar

Aquamarine in feldspar

Green colored Muscovite Mica

Muscovite Mica



Black Tourmaline crystals in rum colored Muscovite Mica

Blue Kyanite crystals in quartz

MINI MINERS MONTHLY

VOL. 6 NO. 6 A Monthly Publication for Young Mineral Collectors JUNE 2012

WHY IS MY HALITE BLUE?

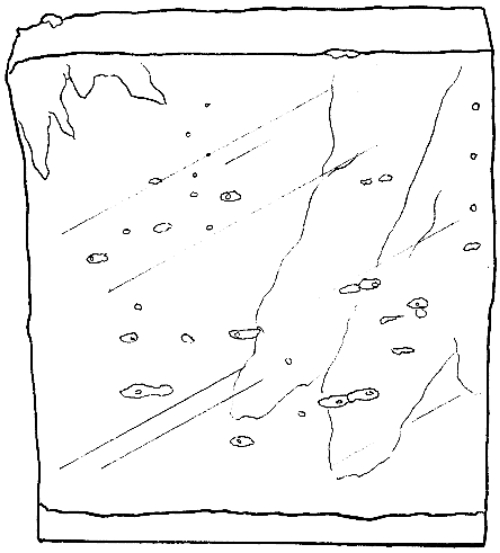
The chemical formula for halite is NaCl, sodium chloride. You use this common mineral every day. You know it as table salt. In nature, pure halite is colorless. But impurities can cause it to be white, pink, black, yellow, orange, green or purple. Blue and purple halite specimens are beautiful because the purple and blue colors seem to hang in the middle of the specimen like smoke. What causes halite to be purple or blue?

There are a lot of details in the explanation, so follow closely. Sometimes some of the sodium in halite (look at the chemical formula above) can be replaced by the element potassium (which has the chemical formula K). A rare type of potassium is radioactive.

When the radioactive potassium breaks down, it causes changes in the halite crystal. Those changes cause the blue or purple colors.

Not all scientists think this is correct. Others think that these colors are created by very small amounts of lead, copper or gold trapped in the halite.

Some think it is due to very rapid crystal growth. Mineral scientists are still working on this. Maybe you could go to college, study mineralogy and do the research that figures out, once and for all, what causes the blue and purple color in some halite specimens.



Colorless halite with wisps of blue "floating" around inside the crystal like blue smoke!

You can color it in.

MINERAL COUSINS

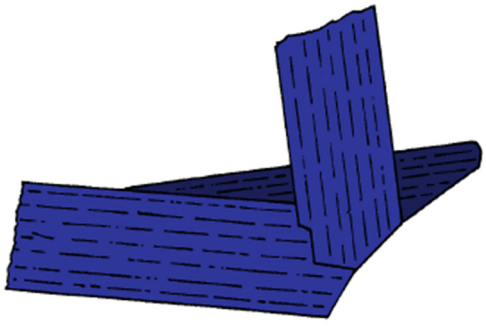
In the mineral kingdom, there are some minerals that are closely related to each other. Mineralogists and mineral collectors call this category of minerals polymorphs (the word polymorph is from the word poly which means many and morph which means form). What we mean here is that there are some minerals that have the same chemical formulas but crystallize in different crystal systems. They can also have other different physical properties. What causes the difference in crystal form if the chemical formula is the same? One answer is that the different minerals form under different pressure and temperature conditions. As a result, you can use the minerals to determine the temperature and pressure conditions that existed when the rock formed. (See below for some examples that will make this more clear to you.)

Diamond and Graphite
Chemical formula: C (Carbon)
Diamond: Isometric
Graphite: Hexagonal
Diamond forms in high temperature and high pressure conditions (such as deep in the mantle of the earth). Graphite forms in low temperature and low pressure conditions.

The diamond and graphite polymorphs are the most dramatic example of how the physical properties can be very, very different. Graphite is one of the softest minerals in the mineral kingdom - it is only 1 on the hardness scale. Diamond, on the other hand, is the hardest substance on earth and is number 10 on the hardness scale!! And they are both made of pure carbon.

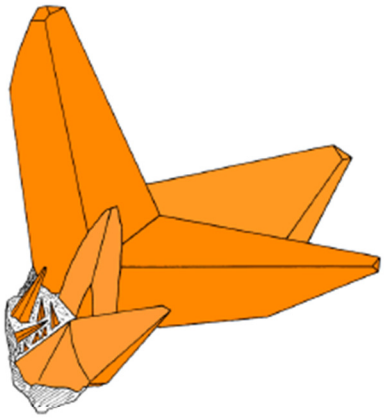
Kyanite and Sillimanite and Andalusite
Chemical formula: Al2SiO5 (Aluminum Silicate)
Kyanite: Triclinic Sillimanite: Orthorhombic
Andalusite: Orthorhombic

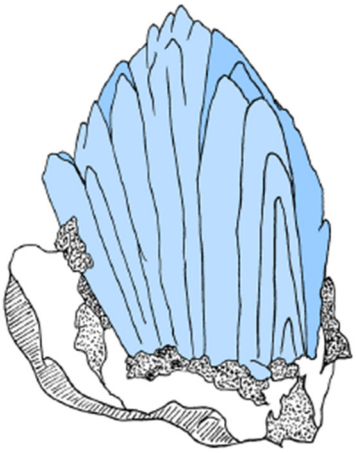
This is a fun set of polymorphs! Kyanite forms in high pressure and low temperature conditions. Sillimanite forms in high temperature and low OR high pressure conditions. Andalusite forms in low pressure and low temperature conditions.



MORE MINERAL COUSINS

◄Calcite and Aragonite



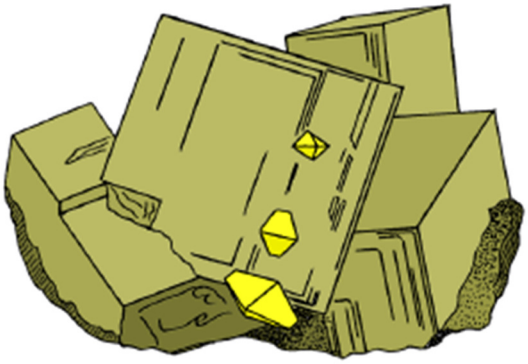


Chemical Formula: $CaCO_3$ (Calcium Carbonate)
Calcite: Trigonal (Hexagonal)
Aragonite: Orthorhombic

Quartz and Tridymite and Cristobalite

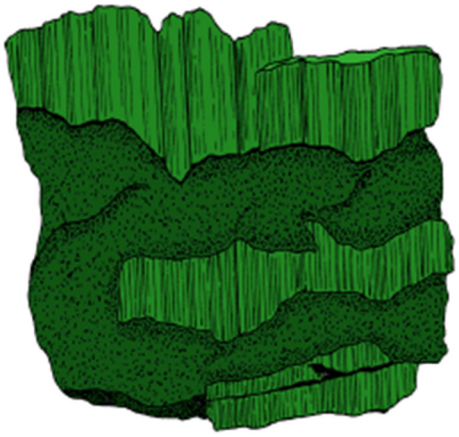
Chemical formula: SiO_2 (Silicon Dioxide)
Quartz: Hexagonal
Tridymite: Hexagonal, Orthorhombic, Monoclinic (Tridymite is a very complicated mineral species! If you feel you are advanced enough, do some research and study this rare and complicated mineral.)
Cristobalite: Tetragonal

Pyrite and Marcasite



Chemical formula: FeS_2 (Iron Disulfide)
Pyrite: Isometric (Cubic) Marcasite: Orthorhombic

Antigorite and Chrysotile



Polymorphs of the mineral group serpentine
Chemical formula: $Mg_3(Si_2O_5)(OH_4)$
Antigorite Monoclinic
Chrysotile: Monoclinic or Orthorhombic
(complicated differences can occur in chrysotile that can result in it crystallizing in either the monoclinic or orthorhombic crystal systems. Mineralogy can be very interesting, can't it?!)

Do you have any polymorphs in your collection?

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First Class Mail

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Club Meeting
Tuesday
July 10, 2012
7:00 PM

St Aloysius Catholic Church
921 2nd St NE
Hickory, NC