



THE GOLDRUSH LEDGER



CHARLOTTE GEM & MINERAL CLUB

APRIL 2017

THE PREZ SAYZ

This past Saturday was the Sharpe's Emerald Prospect dig that we sponsored for the Dixie Mineral Council. The trip took me about an hour and 43 minutes from my house in Rock Hill and was a pleasant drive up I-77 before the traffic really shows up. I got there just before 8 am and was greeted by Murray, who was on the side of the road making sure no one missed the turn into the dig site. The weather was perfect, and we had a pretty good turnout of about 45 people.



My usual process on digs that I go to is to show up, dig a little, find nothing, then look for yard rocks. This was how it worked on my previous digs so I was looking to change things up a little this time. Two large holes and an hour later, nothing was found. Now is the time to utilize the brain and not the brawn (what little there still is). After walking the site, I found a deep pit with a white vein. Ahaaa!!! Something was different. This called for investigation. Shelly Pawlyk joined me in working the vein and quite a few nice smoky quartz pieces were found. If there is emerald on that site, it is still there. No riches were coming my way here.

I saw and chatted with quite a few club members that also showed up to dig. While we didn't find any museum quality pieces, we were happy to look for them and enjoyed the opportunity to spend the day in great weather doing something we don't get the opportunity to do very often.

Sam Baker is already working on trying to find a place for club members to dig sometime in the fall. If anyone has any leads on dig sites, especially private property sites, please contact Sam or me

so we can pursue the opportunity. It really is a great way to spend a day. I hope you join us for the next dig!

Kim Gwyn
President
Charlotte Gem & Mineral Club



You didn't
find me!



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WORKSHOPS AT THE DAIRY

This is home to our workshops.



Art in The Dairy

7701 Tuckaseegee Rd.

Charlotte, NC 28214

Currently scheduled classes:

(Classes are from 9:00 am to Approx 4:00 pm)

Please Note:

For **insurance** purposes, 2017 CGMC dues must be paid or be current before taking class. Non-members must join.

(\$20/yr single membership, \$25 family membership)

Faceting Classes are available on an “as available” basis. If you are interested in **learning** to facet, contact Kim at gwynkim@gmail.com to arrange a time(s).

Anyone who wishes to **sign up** for any of our classes should contact

Martha Rogers at :

charlottegemclub@gmail.com



The first bordered cab's class went very well. We are in the process of adding more exciting classes with a variety of different skills and levels – stay tuned for updates. And remember, a gift certificate makes a great gift!

Charlotte Gem and Mineral Club Monthly Meeting

Thursday April 20, 2017

Location:

Tyvola Senior Center
2225 Tyvola Rd., Charlotte NC 28210 (704)
522-6222

Social Hour from 6:00 – 7:00

Meeting to Start at 7:00

Come early and bring a friend!

Junior Rockhounds

April 29 – Matthews Community Center
Upstairs Conference Room

We are doing Rock ID and helping you to display YOUR collection! Bring 5-15 of your favorite specimens. If you need rocks to be ID'd bring them too!

This is the LAST meeting of the 2016-2017 school year. The next meeting will be in September.

To sign up, contact **Mary Fisher** via email:
CharlotteJuniorRockhounds@mail.com



Azurite

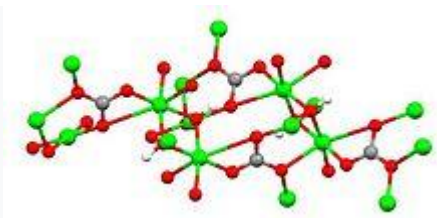
From Wikipedia, the free encyclopedia



Azurite is a soft, deep blue **copper mineral** produced by weathering of copper ore deposits. It is also known as **Chessylite** after the **type locality** at **Chessy-les-Mines** near **Lyon, France**.^[2] The mineral, a **carbonate**, has been known since ancient times, and was mentioned in **Pliny the Elder's Natural History** under the Greek name *kuanos* (κυανός: "deep blue," root of English *cyan*) and the Latin name *caeruleum*.^[4] The blue of azurite is exceptionally deep and clear, and for that reason the mineral has tended to be associated since antiquity with the deep blue color of low-humidity desert and winter skies. The modern English name of the mineral reflects this association, since both *azurite* and *azure* are derived via **Arabic** from the **Persian lazward**, an area known for its deposits of another deep blue stone, **lapis lazuli** ("stone of azure").

Mineralogy

Azurite is one of the two basic copper(II) **carbonate minerals**, the other being bright green **malachite**. Simple **copper carbonate** (CuCO_3) is not known to exist in nature. Azurite has the formula $\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$, with the copper(II) **cations** linked to two different anions, **carbonate** and **hydroxide**. Small crystals of azurite can be produced by rapidly stirring a few drops of **copper sulfate** solution into a **saturated solution** of **sodium carbonate** and allowing the solution to stand overnight.



Chemical structure of azurite (color code: red = O, green = Cu, gray = C, white = H).

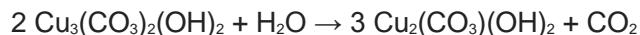
Azurite crystals are **monoclinic**. Large crystals are dark blue, often prismatic.^{[2][3][6]} Azurite specimens can be massive to nodular. They are often stalactitic in form. Specimens tend to lighten in color over time due to weathering of the specimen surface into malachite. Azurite is soft, with a **Mohs hardness** of only 3.5 to 4. The **specific gravity** of azurite is 3.77 to 3.89. Azurite is destroyed by heat, losing carbon dioxide and water to form black, copper(II) oxide powder. Characteristic of a carbonate, specimens effervesce upon treatment with hydrochloric acid.

Color

The optical properties (color, intensity) of minerals such as azurite and malachite are characteristic of copper(II). Many **coordination complexes** of copper(II) exhibit similar colors. As explained within the context of **ligand field theory**, the colors result from low energy d-d transitions associated with the d^9 metal center.

Weathering

Azurite is unstable in open air with respect to malachite, and often is **pseudomorphically** replaced by **malachite**. This weathering process involves the replacement of some the carbon dioxide (CO₂) units with water (H₂O), changing the carbonate:hydroxide ratio of azurite from 1:1 to the 1:2 ratio of malachite:



From the above equation, the conversion of azurite into malachite is attributable to the low partial pressure of carbon dioxide in air. Azurite is also incompatible with aquatic media, such as saltwater aquariums.

Pigments

The greenish tint of the Madonna's mantle in **Raphael** *Madonna and Child Enthroned with Saints* is due to azurite weathering to malachite

Azurite is not a useful pigment because it is unstable in air. It was however used as a blue **pigment** in antiquity.^[7] Azurite is naturally occurring in Sinai and the Eastern Desert of Egypt. It was reported by F. C. J. Spurrell (1895) in the following examples; a shell used as a pallet in a **Fourth Dynasty** (2613 to 2494 BCE) context in **Meidum**, a cloth over the face of a **Fifth Dynasty** (2494 to 2345 BCE) mummy also at **Meidum** and a number of **Eighteenth Dynasty** (1543–1292 BCE) wall paintings.^[8] Depending on the degree of fineness to which it was ground, and its basic content of copper carbonate, it gave a wide range of blues. It has been known as *mountain blue* or *Armenian stone*, in addition it was formerly known as Azurro Della Magna (from **Italian**). When mixed with oil it turns slightly green. When mixed with **egg yolk** it turns green-grey. It is also known by the names **blue bice** and **blue verditer**, though **verditer** usually refers to a pigment made by chemical process. Older examples of azurite pigment may show a more greenish tint due to weathering into malachite. Much azurite was mislabeled **lapis lazuli**, a term applied to many blue pigments. As chemical analysis of paintings from the **Middle Ages** improves, azurite is being recognized as a major source of the blues used by medieval painters. **apis lazuli** was chiefly supplied from Afghanistan during the Middle Ages, whereas azurite was a common mineral in Europe at the time. Sizable deposits were found near Lyons, France. It was mined since the 12th century in Saxony, in the silver mines located there.^[9]

Heating can be used to distinguish azurite from purified natural **ultramarine** blue, a more expensive but more stable blue pigment, as described by **Cennino D'Andrea Cennini**. Ultramarine withstands heat, whereas azurite converts to black copper oxide. However, gentle heating of azurite produces a deep blue pigment used in Japanese painting techniques.



The greenish tint of the Madonna's mantle in **Raphael** *Madonna and Child Enthroned with Saints* is due to azurite weathering to malachite



The background of *Lady with a Squirrel* by **Hans Holbein the Younger** was painted with Azurite

Jewelry

Azurite is used occasionally as beads and as [jewelry](#), and also as an ornamental stone. However, its softness and tendency to lose its deep blue color as it weathers limit such uses. Heating destroys azurite easily, so all mounting of azurite specimens must be done at room temperature.

Collecting

The intense color of azurite makes it a popular collector's stone. However, bright light, heat, and open air all tend to reduce the intensity of its color over time. To help preserve the deep blue color of a pristine azurite specimen, collectors should use a cool, dark, sealed storage environment similar to that of its original natural setting.

Prospecting

While not a major ore of copper itself, the presence of azurite is a good surface indicator of the presence of weathered [copper sulfide](#) ores. It is usually found in association with the chemically very similar malachite, producing a striking color combination of deep blue and bright green that is strongly indicative of the presence of copper ores.

History

The use of azurite and malachite as copper ore indicators led indirectly to the name of the element [nickel](#) in the English language. [Nickeline](#), a principal ore of nickel that is also known as niccolite, weathers at the surface into a green mineral ([annabergite](#)) that resembles malachite. This resemblance resulted in occasional attempts to [smelt](#) nickeline in the belief that it was copper ore, but such attempts always ended in failure due to high smelting temperatures needed to [reduce](#) nickel. In Germany this deceptive mineral came to be known as [kupfernickel](#), literally "copper [demon](#)". The [Swedish alchemist](#) Baron [Axel Fredrik Cronstedt](#) (who had been trained by [Georg Brandt](#), the discoverer of the nickel-like metal [cobalt](#)) realized that there was probably a new metal hiding within the kupfernickel ore, and in 1751 he succeeded in smelting kupfernickel to produce a previously unknown (except in certain [meteorites](#)) silvery white, iron-like metal. Logically, Cronstedt named his new metal after the *nickel* part of *kupfernickel*.



Azurite, cross-section through merged [stalactites](#), [Bisbee](#), [Arizona](#)



Azurite, [Morenci](#), [Arizona](#)

REGIONAL DIGS & SHOWS

Below are some digs or shows that may be of interest

May 6-7

**Lowcountry Gem & Mineral Society Annual Jewelry, Gem, Mineral, and
Fossil Show**

Charleston Area Convention Center
Exhibit Hall A
Sat & Sun 10-5

May 6, 7, & 8, 2016

Franklin, NC

Gem & Mineral Society of Franklin, NC

Fri. & Sat., May 6th & 7th, 10:00 AM – 5:00 PM

Sun., May 8th, 10:00 AM- 4:00PM

Carpenter Community Center, 1288 Georgia Rd. (US441), Franklin, NC

No [admission charge](#), indoor, climate controlled, rough and [finished](#)
gemstone and jewelry, minerals, [fossils](#) and demonstrations.

Contact: Norman Holbert, 828-634-0350, normholbert@jcomcast.net

May 12-14

Gem and Mineral Show, Auction

THE GEORGIA MINERAL SOCIETY

Fri: 10 AM to 6PM; Sat: 10AM-6PM; Sun: Noon-5PM

[Cobb County](#) Civic Center

548 South Marietta Parkway

Marietta, GA 30060

[SATURDAY AUCTION](#) at 1PM !

HOURLY ADULT AND JUNIOR DOOR PRIZES!

30+ Dealers

Email address: mayshow@gamineral.org

GMS Website: <http://www.gamineral.org>

ABOUT OUR CLUB



The Charlotte Gem & Mineral Club

is a member of the *Southeast Federation of Mineralogical Societies* and an affiliate member of the *American Federation of Mineralogical Societies*. The **purpose** of this Club is to foster interest in, and promote knowledge of minerals, gems, fossils, and all earth sciences.

We also disseminate information and instruction in the lapidary arts and the utilization of precious metals in our crafts. These purposes are accomplished through regular meetings with informative programs, study groups, workshops and field trips. Our greatest asset is the knowledge of our members and their willingness to share with others. We subscribe to the basic philosophy of the **William Holland School of Lapidary Arts**, “**Learn one, Teach one**”.

