



CRYSTALS AND CABS

Newsletter of the Capital Mineral Club
Concord, New Hampshire

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Capital Mineral Club News

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Please note A CLUB MEETING TIME CHANGE for the months of January, February and March:
1:00PM – Second Saturday of those 3 Months only

The CMC will meet Saturday, February 10th at 1:00 PM at the Salvation Army Building on Clinton Street in Concord, NH.

Our guest speaker for the January meeting is Chris Wong. Chris will be talking to us about Tennessee Fluorites and Calcites. The display theme for this meeting will be Calcites and Fluorites. Anyone who would like to donate a mineral specimen to the club raffle, please bring it with you.

Refreshments this month will be provided by Howard Ewing. Thanks to Scott Higgins for last months refreshments.

About Greens farm Roxbury Connecticut

Greens Farm Garnet Mine is an old, classic location. Large almandine garnet crystals to 1" across can be found in both hard rock or loose in the soil. The old mine dumps are also scattered around the woods and provide loose crystals without much work. The garnet is a dark wine red to black color, and commonly dodecahedral crystals in a schist matrix. Much of the matrix is very soft, but the best garnets are found in the harder schist. The mine is located in a rural area of northwest Ct.

Minerals: Almandine Garnet, Staurolite
Fees: \$2.00 per person

Editors Note:

The **deadline** to get info to me for publication will be the **3rd Saturday** of every month

• My e-mail address: steffenh@comcast.net

• CMC Website: www.capitalmineralclub.org

• Website maintained by:
Robin Edgewood-Reece &
Steffen Hermanns

2007 MEMBERSHIP DUES ARE DUE!

MEMBERSHIP RATES:

Adult Single \$10 per year;
Family \$15 per year;
Subscriber \$5 per year (includes mail newsletter)
Or one time fee \$2 (only includes email newsletter)

Please make checks payable to the
"CAPITAL MINERAL CLUB"
and submit or mail them to:

Vincent Valade
35 Plimpton Road
Goffstown, NH 03045
OR

Donald Dallaire
829 Candia Road
Chester, NH 03036



The January meeting of the Capital mineral Club called to order at 1315 hours. A motion was then made to defer the business portion of the meeting until after our guest speaker, Mr. Ted Johnson made his presentation. This motion was carried and we then enjoyed a very stimulating discussion on the "top 10" Classic Pegmatite Localities in Connecticut. The talk presented each locality in some detail and by the end of the session most in attendance were ready to head South for some collecting. The images presented really showed the areas to advantage and the images of the specimens were very good. The talk was enjoyed by all 20+ members and guests in attendance. After the presentation door prizes were handed out to many lucky winners.

At the conclusion of the presentation, refreshments provided by Scott Higgins were served and then the meeting was called back into session at 1440 hours. During the refreshments and continuing after the meeting was called back into session the club was able to discuss a proposal from one candidate for this year's scholarship program. Mr. Dillon Bush from Keene State College had met early in the day with the scholarship committee and during the club meeting the committee reported its recommendations and Dillon was able to outline to the membership his goal of attending a summer field camp. Dillon's long term plans include attendance at the Colorado School of Mines and his discussion of his plans was well received by the membership. A vote on scholarship awards and other proposals in this area will be upcoming at future meetings.

Resuming the business portion of the meeting, the club accepted the secretaries report as published in the newsletter. the treasurers report was read and accepted after some discussion. There was no correspondence received so the club moved on to reports from standing committees. Thanks were rendered to those who made the Christmas party such a success both by working hard and by having a great turn out. The show committee report indicated that last years show was successful and showed slightly higher "net revenue" than the previous year. the club once again thanked those who worked so hard making the 2006 show a success. 2007 show discussion followed outlining progress made to date. Currently 19 of 28 dealers have returned contracts and possible lodging arrangements have been made in the area for dealers attending the show. Notifications are being made to local and national media publications and handouts were provided to members for distribution. It was agreed that the next show committee meeting will be at the March meeting held at Gordon Jackson's house.

Under field trip committee discussion, a proposal to go on a NY road cut tour to see some interesting structural geology features was met with approval by attendees. More details to follow. A discussion about a return trip to Harvard was also mentioned with no action taken at this time. Also discussed was a possible spring trip to Connecticut to explore some of the localities discussed earlier in the meeting and also to possibly look for garnets. More info to follow on those ideas as well.

Moving on to old business the club discussed the current status of dues and it was decided that dues could be submitted to Don as well as to Vince for this year.

This led into new business and a discussion about possible changes to the competition which is held each year at the meeting. Several ideas were discussed and look for more information in upcoming newsletters. Also discussed as part of new business was the need to make capital investments in the club trailer and in our cases. The club will need to spruce up the cases this year and do some long deferred work on the trailer. These expenses will be presented to the club for approval and it was recommended that we budget for them in the future as a regular expense. Discussion was raised on the the need to expend funds to install electrical service to the dealer's tables for our 2007 show. Just like at Sunapee, the club will need to work with the existing electrical system to meet our show needs. These expenses will also be presented to the club for approval. At the conclusion of discussion of new business, a motion was made to adjourn and the meeting was concluded at about 1545.

Respectfully submitted,
Scott Higgins
President and Secretary pro tem

**Capital Mineral Club
Concord, New Hampshire**

From the Capital Mineral Club Grant committee:

On January 6, 2007, the committee agreed to recommend to the club body the award of \$1500.00 to Dylan Bush. The committee would like this voted on at the February meeting.

This grant will be used to offset some of the cost for a 6-week geologic field course that Dylan will be taking. The course is for 6 credited hours given by Indiana University at their Judson Mead Geologic Field Station. This type of course is also a prerequisite for the Colorado School of Mines graduate school, to which Dylan has applied. If you want to know more about the course outline check the Indiana University Judson Mead Geologic Field Station web sight for course G429.

On another note, the committee has proposed to have the club body vote on the issue of changing the grant criteria. There are 2 or 3 positions that will be posted in the February and March club newsletters. The March meeting will provide an opportunity to talk about these issues. The proposals will be presented to the club body at the April meeting for an up or down vote.

James S. Tovey

Capital Mineral Club Grant Program Position 1

Purpose:

In accordance with Article #2 of the by-laws of the Capital Mineral Club, the purpose of the grant is to further the knowledge of mineralogy and geology by providing funds to a recipient in one of the following categories.

Assist recipient in the pursuit of a degree or professional certification (license) from an accredited New Hampshire College or University in the mineralogical or geological fields.

Provide funds to a recipient for an educational program or project that will provide knowledge of mineralogy or geology to a larger segment of the population of the State of New Hampshire.

Provide funds to help the recipient with a specific project that will further the current knowledge of the mineralogy or geology of the State of New Hampshire.

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Mineral Clubs - Meeting Dates

Saco Valley Gem and Mineral Club: 3rd Thursday of each month at the Tin Mt. Conservation Center, Albany, NH – 7:00 PM

Keene: 1st Saturday of each month at Keene State College, Bldg. 18, Keene, NH – 7:00 PM

Nashua: Last Wednesday of each month at the Boys and Girls Club of Greater Nashua, 47 Grand Ave., Nashua, NH – 7:00 PM

North Shore (MA): 3rd Friday of each month, St. Paul Episcopal Church, Washington St., Peabody, MA – 7:30 PM

Boston Mineral Club: 1st Tuesday of each month, Harvard University Geological Lecture Hall, 24 Oxford St., Cambridge, MA – 7:30 PM

Southeastern NH Mineral Club: 2nd Wednesday of each month, St John's Methodist Church, 28 Cataract Ave., Dover, NH – 7:00 PM

(Continued from page 3)

Candidate Requirements:

Full time enrollment in accredited New Hampshire College or University and pursuing Degree or certification in the fields of Geology or Mineralogy to obtain a degree or license.

Or

Full description of a program or project to spread the knowledge of geology or mineralogy to a larger audience and how geology and mineralogy are relevant to society. (E.g. enhance earth science programs in schools). Candidate must also demonstrate their credentials to effectively carry out the program or project.

Or

Present evidence on how the candidate's project will provide new knowledge or insight into the geology or mineralogy of the State of New Hampshire and their credentials in being able to effectively carry out and complete the project.. (e.g. new research leading to how pegmatites formed in state or work on new mineral species for the state).

And

The successful candidate(s) will prepare a report outlining the results of their training, educational program or project for presentation to the Capital Mineral Club at their regularly scheduled November meeting following the award of the grant.

Application Procedure:

Candidate must complete the Capital Mineral Club Grant Request Letter along with any brief and relevant supporting information for request. The Grant Request Letter can be found on the Capital Mineral Club web site (www.capitalmineralclub.org).

Completed Grant Request Letter and any supporting information must be submitted to the Capital Mineral Club website, to the Grant Committee mailbox, no later than November 1st to be considered for a grant for the following year.

Candidates will be notified by December 1st if their request will be further considered and invited to an interview by the second Saturday of January. (Date may be adjusted for the convenience of the Grant Committee). The interview process will provide the candidate with the opportunity to further explain and describe their degree or licensing program, education or project goals.

Discussion should be relevant to how they would benefit from the grant and how others may benefit from their efforts.

Candidates will be expected to attend the January meeting of the club to be introduced to the membership.

Selection Procedure:

Grant Committee will review the grant requests as received.

Grant Committee will discuss grant requests, decide which candidates will be interviewed for further consideration.

Grant Committee will notify the candidates whether their request will be considered further by December 1st.

The Grant Committee will interview the candidates to further understand the grant request and be able to make their recommendations to the club membership for the award(s).

The Grant committee will present their recommendations to the club at the February meeting for final vote on the successful grant recipient(s).

The Grant Committee will also indicate to whom the actual funds will be paid to. (Grant funds for instructional courses should be disbursed to the institution where recipient is taking the course or as recommended by grant committee for other projects).

Role of Grant Committee:

The role of standing Grant Committee is as follows:

Seek out grant candidates and encourage them to apply for the grant.

Review all grant requests and perform any needed research to make an informed recommendation to the Club

Interview the candidates.

Introduce the interviewed candidates to the club membership.

Make the recommendation to the club regarding grant recipient(s) for the year and how funds are to be disbursed.

Final vote rests with the club membership.

**Occurrence of barian celestine at the Elmwood zinc deposit, Smith County, Tennessee
Mineralogical Record, May 1996 by Jensen, Martin**

INTRODUCTION

Since opening in 1974, the Elmwood mine in the central Tennessee zinc district has been studied by a number of workers (Kyle, 1976; Kearns and Campbell, 1978; Gaylord and Briskey, 1983). Various aspects of both the geology and mineralogy have been examined; however, concise data on the mineralogical occurrences has remained relatively brief.

The most commonly observed and recognized minerals continue to be barite (strontian), calcite, dolomite, fluorite, quartz and sphalerite. Rarer species include "anglesite," celestine, chalcopyrite,* enargite,* galena, glauconite,* marcasite* and pyrite. The occurrence of anglesite would be of particular interest, as it would be the only secondary species in the deposit. Recent analyses of several specimens previously believed to be anglesite indicate that the mineral in question is actually a barian celestine.

GEOLOGIC SETTING AND OCCURRENCE

The Elmwood zinc deposit was discovered at a depth of approximately 400 meters in 1967 by a random walk/search drilling program (Callahan, 1977), and was brought into production in late 1974. Additional orebodies have subsequently been discovered on the property, and a total of three mines (Elmwood, Gordonsville, and Cumberland) are currently in production. Zinc mineralization, as iron-deficient sphalerite, occurs predominantly in stratabound breccia bodies hosted by interbedded limestones and dolomites of the lower Ordovician Mascot Formation. The barian celestine specimens examined for this study have been recovered from each of the three mines, specifically from open cavities within the ore zones. The presence or absence of barian celestine, and its absolute size, appears to be independent of the physical dimensions of the vugs. Distribution of the mineral is widespread and erratic, such that it is observed only rarely.

MINERALOGY AND CHEMISTRY

Barian celestine occurs ubiquitously as aggregates of opaque, cream-white, thin to thick, fibrous crystals somewhat resembling jack-straw cerussite. The most typical specimens exhibit mats to cm of randomly oriented fibrous crystals; however, larger examples reach sizes of up to 10 cm and display a classic ram's-horn morphology. Unfortunately, most specimens are exceptionally soft and brittle and crumble easily upon removal from the mine. Paragenetically, barian celestine is later than barite, galena and sphalerite, but has been noted as inclusions within orange, scalenohedral, twinned calcite crystals (third generation of Kyle, 1978).

Previous analytical data on this fibrous material was apparently obtained using only X-ray diffraction (XRD), and may have been generally characteristic of an anhydrous sulfate, but was misinterpreted by anglesite by Kearns and Campbell (1978). Recent studies of my own on similar material yielded variable results, and so

decided to either prove or disprove the existence of anglesite at the deposit. Fractions of all known specimens previously labeled as anglesite were acquired, including fragments from the type specimen (Smithsonian specimen number 142547). Initial analyses were conducted utilizing a JEOL 840A scanning electron microscope with a Kevex Delta-class energy-dispersive (EDS) chemical micro-analyzer. Qualitative data from this analysis disclosed the presence of major strontium and sulfur, with lesser barium. No lead whatsoever was detected in any of the samples.

X-ray diffraction analysis was then performed, but did not serve well to identify the material in question. Utilizing a Philips automated powder diffractometer (APD), samples of the barian celestine were scanned and the resultant data were compared graphically with JCPDS files for barite (24-1035) celestine (5-593) and anglesite (36-1461). Scans were conducted using CuK α radiation, a 2 scan rate of 1 per minute, and operating parameters of 40kV and 25mA. The ten most intense diffraction lines for the Elmwood barian celestine are shown in Table 1, and are compared to barite, celestine and anglesite. In general, the d-values and intensities for barian celestine present a much simpler data set than those observed for the other three anhydrous sulfates. This feature arises primarily because of orientation effects associated with the fibrous morphology of the material. The two principle lines for the barian celestine (at 3.46 and 3.19) probably correspond to the two major peaks for pure barite and celestine, although they exhibit a minor shift to greater d-spacing. Two important lines (at 2.07 and 2.03) for pure celestine are in very close agreement with the same peaks of the barian celestine.

In addition to examining the barian celestine, a sample of typical barite from the deposit was also analyzed. Elmwood barite, which does not form euhedral crystals, occurs as spherical, cream-white mounds consisting of numerous crude, intergrown, minute crystals. It has been known to contain substantial percentages of strontium, but (to my knowledge) has not previously been quantitatively checked. A total of three samples were analyzed, two of barian celestine and one of strontian barite. Each sample was pulverized, weighed to exactly 100 mg, and then fused with 1 gm of Na sub 2CO sub 3 at 850 C. The resultant cakes were then leached with hot, de-ionized water and filtered to remove soluble sulfates. The Ba and Sr carbonates remaining on the filter paper were dissolved with 6N HCl and collected in 100 ml volumetric flasks. To each flask was added 100 mg CsCl to suppress ionization interferences during atomic absorption analysis. Concentrations of Ba and Sr were then quantified using a nitrous oxide/acetylene flame and by comparison of the unknown solutions to matrix-matched synthetic standards containing various amounts of Ba and Sr.



Steffen Hermanns

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Keep on Rockin' in the Free World

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WE'RE ON THE WEB
WWW.CAPITALMINERALCLUB.ORG

CAPITAL MINERAL CLUB MEETINGS

FEBRUARY 10, 2007 @ 1:00PM

Speaker: Chris Wong
Calcites and Fluorites of Tennessee
Howard Ewing - Refreshments

MARCH 10, 2007 @ 10:00AM

WORKSHOP and POTLUCK @ Gordon and Pam
Jackson's House

APRIL 14, 2007 @ 7:30PM

Speaker: TBA
Terry Crowell & Annette Comeau - Refreshments

MAY 12, 2007 @ 7:30PM

Speaker: TBA
Bill Brown - Refreshments

Gem & Mineral Shows

March 10-11, Clifton, NJ - North Jersey Mineralogical Society. Clifton Gem and Mineral Show. Pope John Paul II Elementary School, 775 Valley Rd. 10 a.m.-5 p.m. daily. Bob Horn, 908-813-0808, mineraldog@comcast.net.

March 16-18, Hartford, CT - International Gem & Jewelry Show. Connecticut Expo Center. 301-294-1640, fax 301-294-0034, info@intergem.com, www.intergem.com.

Gem & Mineral Shows

April 14-15, Portland, ME - Maine Mineralogical & Geological Society Annual Gem & Mineral Show. University of New England Gymnasium, Portland, ME.

May 5-6, Topsfield, MA - North Shore Rock & Mineral Club presents the 44th Annual Gem, Jewelry & Mineral Show. Topsfield Fairgrounds, Route 1 North, Topsfield, MA.

May 11-13, Augusta, ME - 18th Annual Maine Mineral Symposium. The Senator Inn, Western Ave., Augusta, ME.

June 23-24, Gilsum, NH - Gilsum Recreation Society presents the 42nd Annual Rock Swap & Mineral Show. Gilsum Elementary School and Recreation Center, Route 10, Gilsum, NH.

September 29-30, Concord, NH—44th Annual Gem and Mineral Festival presented by the Capital Mineral Club, Sat. 9 – 5, Sun., 10 – 4, Everett Arena, Concord, NH, Adults – \$4.00, 12 and under free. **This is a new Venue Location**