MICROMOUNTERS OF NEW ENGLAND NEWSLETTER

The MMNE was organized on November 8, 1966 for the purpose of promoting the study of minerals that require a microscope

No. 306 May, 2010

Current Meeting
Saturday May 15, 2010
Chester Tuttle Post 279
Auburn, MA

Map and driving directions are on last page 15 of this newsletter

For information regarding **MEETING CANCELLATION** due to inclement weather,
Joseph Mulvey
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Welcome to the May edition of the Micromounters of New England Newsletter!

Well it's finally here! The 2010 Annual Micromounters of New England Symposium is just days away! I expect that all of our preparations and my incessant whining will result in another great day of minerals, presentations, reunions and new friends. Hopefully the drive will be safe for all and we will all be in good health.

As you are most likely already aware, we will have two presenters this year. In the morning, long time club member Tom Mortimer will share his knowledge and experience with a talk about New Hampshire minerals. As a systematic collector of NH species, Tom has created a website named MindatNH.org to catalog the best of his collection as representative examples of NH specimens.

After the catered lunch we will have a talk on what's new at the Estes Quarry by Gene Bearss. Yes, our own Gene Bearss whose achievements are well known to all our club members as well as the mineral community at large. Gene has a remarkable record of collecting and identifying new minerals, not only here in New England, but also in the Franklin-Sterling area of New Jersey. Gene has been recognized for his expertise in many ways including membership in the hallowed ranks of the Micromounters Hall of Fame.

Thank you to all those members who so graciously donated specimens to the give aways, sales table and silent auction table.

Thanks to the dealers who donated to the 2010 Symposium:

- ✓ **Dan Weinrich, Weinrich Minerals**
- ✓ **Jim Daly, Sauktown Sales**
- ✓ **Larry Rush, ConnRox Minerals**

I would highly recommend doing business with any of these generous dealers.

Attend the show to get a chance at winning the great door prize – a table top C-Clamp style splitter.

Special thanks to Peter Cristofono for the superb article on the mineralogy of Gloucester, Massachusetts!

Please bring your final donations to the symposium with price coding marked in advance. If you are bringing mounted material for sale, please color code them with price stickers (dots) as follows:

$1.00 yellow, $2.00 red, $3.00 green, $4.00 silver, $5.00 gold.

Anything above $5.00 needs to have an actual price tag.

We hope that each MMNE member donates ten to fifteen specimens for the sales table and a couple of flats or egg cartons of material for giveaways, so that there will be plenty for everyone. Please remember: **Your registration fee covers only part of our operating expenses – your donations cover the rest.**

We also need items for the silent auction which could include hardware, books, posters, other printed material, and mounting supplies (or anything else to pique the interest of a micromounter).

If you do not have the colored stickers, group them by price category, and they can be marked at the meeting.

While the symposium officially convenes at 9:00AM, anyone who can come in earlier to help set up the various venues (sales, silent auction, etc.) will be appreciated.

The ***Newsletter*** is the official publication of the Micromounters of New England (MMNE). The last by-laws revision was May 16, 2009. The MMNE is a member of the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS) (http://www.amfed.org/efmls) and the American Federation of Mineralogical Societies (AFMS) (http://www.amfed.org). Material from the *Newsletter* may be copied in other rock and mineral publications if credit is given to the author and the *Newsletter* and permission has been obtained from the author. If there are questions regarding copying contact the editor. The club address is c/o the Secretary. Meetings are held monthly, September through May, except for December, and usually on an informal basis in July. Meeting sites may change and will be posted in the *Newsletter* as far in advance as possible. Visitors are welcome to attend all meetings. Bring a microscope and light source if you have one.
DUES are $12/year for a single person and $15/year for a family membership, levied on a calendar basis. The family membership includes two adults and all children under 18 living at the same address. One copy of the *Newsletter* will be sent on a family membership.

Schedule of Upcoming Meetings
Saturday, May 15, 2010…….The 2010 Micromounters of New England Annual Symposium

MMNE Secretarial Report April, 24, 2010

President Joe Mulvey brought the April meeting to order at the Chelmsford MA Trinity meeting location at approximately 10 AM. His first order of business was to verify coverage for the May meeting sales table (Hal Herard), silent auction (Gordon Jackson) and door prize process (Gene Bearss).

Discussion then turned to the issue of May Symposium dealers. The president indicated that he had been in contact with board members regarding the matter. He said there had been no one who had responded negatively to the idea of having dealers at the Symposium. He said that there had been individuals who had donated a variety of specimens to the club in the past that would like to be dealers.
And, he also said that a gentleman in Ontario recently contacted him regarding the possibility of being a dealer. A range of concerns arose during the discussion, among them being: dealer requirements, rules, number of dealers and/or tables, and dealer fee amounts. Joe wondered what issues or problems a member-dealer might present as opposed to outside dealers. He suggested that perhaps the club include guidelines in the club by-laws.

Joe announced that there were a variety of nice items contributed to the silent auction table by Dan Weinrich (a large apophylite specimen, Missouri suite of minerals), Mike Swanson and Jim Daly (Spanish and Portuguese minerals).

Hal Herard asked it there was a way to dispose of material that has not moved at the sales table. He said some of the specimens were not particularly good. Suggestions ranged from selling "twofers" or "threefers", selling flats of them for a low price, moving them to the giveaway table or giving them to schools.

Nate Martin said he had a quantity of 20 power LED hand magnifiers that he would sell for $10 each.

Joe Mulvey confirmed that officer elections would in deed occur (according to the by-laws) at the May Meeting.

Discussion then followed regarding eligibility and duties of club directors. In the past it was noted that directors were generally officers "retired" from some previously elected office. It was unclear if holding prior office was a requirement in the by-laws. Gordon Jackson suggested that this might be an impediment to luring people into an elected position. Directorial responsibilities have simply been limited to being a wise counselor. Tom Mortimer said that recently directors were given the job of being the yearly officer nominating committee. No formal actions were taken and it was left as a "something-to-think-about" issue.

The meeting was adjourned at about 10:30 AM.
Respectfully submitted,
Bob Wilken, Secretary

The Connecticut Museum of Mining and Mineral Science, Kent, CT has removed from their inventory several thousand specimens from the John Schroder collection and will be selling them at their 8th Annual Mineral s Show and Swap on Saturday June 12, 2010. The collection consists of tn's to cabinet size specimens from all over the U.S. and eastern Canada. For information call the museum at (860) 927-0050 or check our website at www.ctamachinery.com

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March 30, 2010|By Thomas H. Maugh II

Meet the periodic table's newest resident: copernicium

Copernicium, a heavier relative of zinc, cadmium and mercury, was first seen in 1996 by German researchers. Named after Polish astronomer Nicholas Copernicus, it is element 112 and its symbol is Cn. Named after the 16th-century Polish scientist Nicholas Copernicus, it is element 112 and its symbol is Cn.

Copernicium, a heavier relative of zinc, cadmium and mercury, was first seen in 1996 by researchers at the Society for Heavy Ions Research in Darmstadt, Germany, after they bombarded a lead target with zinc ions.

It took the International Union of Pure and Applied Chemistry, which regulates nomenclature, nearly 14 years to resolve disputes between the Germans and American researchers over who was first to produce the new element, but the agency reported in the March issue of the journal Pure and Applied Chemistry that the Germans had priority and are thus entitled to propose a name.

Physicist Sigurd Hofmann, leader of the German team, said in a statement that the researchers' intent was to "salute an influential scientist who didn't receive any accolades in his own lifetime, and highlight the link between astronomy and the field of nuclear chemistry." Copernicus was the first scientist to conclude that the planets of the solar system revolve around the sun rather than the Earth.

The new name follows in the recent tradition of naming synthetic elements after famous scientists. Others include:

* Element 111, roentgenium, named after German physicist Wilhelm Roentgen, who discovered X-rays.
* Element 109, meitnerium, named after Austrian born Swedish physicist Lise Meitner, who worked on the team that discovered nuclear fission.
* Element 107, bohrium, named after Danish physicist Niels Bohr, who made fundamental contributions to the understanding of atomic structure and quantum mechanics.
* Element 106, seaborgium, named after American physicist Glenn Seaborg, who pioneered the discovery of artificially produced elements.
* Element 110 is named darmstadtium after the city where it was discovered, while 108 is named hassium from the Latin name for the German state of Hesse, where Darmstadt is located.

Scientists Discover Heavy New Element

By JAMES GLANZ

Published: April 6, 2010

A team of Russian and American scientists has discovered a new element that has long stood as a missing link among the heaviest bits of atomic matter ever produced.

The element, still nameless, appears to point the way toward a brew of still more massive elements with chemical properties no one can predict.

Element 118, Heaviest Ever, Reported for 1,000th of a Second (October 17, 2006)

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The team produced six atoms of the element by smashing together isotopes of calcium and a radioactive element called berkelium in a particle accelerator about 75 miles north of Moscow on the Volga River, according to a paper that has been accepted for publication at the journal Physical Review Letters.

Data collected by the team seem to support what theorists have long suspected: that as newly created elements become heavier and heavier they will eventually become much more stable and longer-lived than the fleeting bits of artificially produced matter seen so far. If the trend continues toward a theorized “island of stability” at higher masses, said Dawn A. Shaughnessy, a chemist at Lawrence Livermore National Laboratory in California who is on the team, the work could generate an array of strange new materials with as yet unimagined scientific and practical uses.

By scientific custom, if the latest discovery is confirmed elsewhere, the element will receive an official name and take its place in the periodic table of the elements, the checkerboard that begins with hydrogen, helium and lithium and hangs on the walls of science classrooms and research labs the world over.

Minerals of the Blackburn Circle Area, Gloucester, Massachusetts

By Peter Cristofono

Blackburn Circle is a traffic circle, or "rotary," on state Route 128, in Gloucester, Massachusetts on Cape Ann. In 2008, construction of a new shopping center began just southeast of Blackburn Circle (42°37'30"N 70°39'42"W). Bedrock and boulders of Cape Ann granite were exposed by blasting for building construction and for new access roads. Minerals were collected in 2009 prior to the completion of the project late in the year.

The Cape Ann peninsula in Essex County, Massachusetts has long been of great interest to geologists and mineralogists, from the early part of the nineteenth century to the present day. The rock of Cape Ann consists primarily of the "Cape Ann granite", an Ordovician plutonic rock ranging from medium- to coarse-grained, leucocratic alkali granite to alkali quartz syenite (Brady and Cheney, 2004). Interesting minerals occur in the granite, syenite and in their associated pegmatites.

In this study, the name "Cape Ann" will be used to refer to the area of land east of the Annisquam River, including all of Rockport and the eastern part of Gloucester. Minerals found by the author and others in the Blackburn Circle area are listed in alphabetical order below in Part I along with a brief description. References in the literature for each mineral occurring on Cape Ann are provided as well. Minerals not found during the present study, but previously reported from Cape Ann are listed in Part II.

Part I: THE MINERALS

Aegirine $NaFe^{3+}Si_2O_6$ A mineral believed to be aegirine occurs as crude green crystals often showing alteration to a blue/black amphibole, in coarse-grained quartz syenite. Results of analysis by SEM-EDS suggested aegirine (this study).
- Aegirine is reported from Cape Ann by Sears (1905), Dale (1908, 1923), and Hon, Hepburn & Laird (2004).

Albite $NaAlSi_3O_8$ occurs in granite as a component of microperthite; and as good colorless to pale yellow crystals in miarolitic cavities; In one cavity it was found as white to pale blue crystal aggregates of the variety, cleavelandite.
- Reported from Cape Ann by Cooke (1867), Knowlton (1873), Washington (1898), Sears (1905), Dale (1908), McKinstry (1921), Dale (1923), Warren & McKinstry (1924) and Dennen (1992).

Above: Albite: 3 mm crystal
Below: Albite: FOV= 3.5 mm

Amphibole (sodic*)* occurs commonly as large black crystals to several centimeters long in pegmatite. SEM-EDS analysis (this study) of one specimen suggested ferrorichterite, $Na[CaNa]Fe^{2+}{}_5(OH)_2|Si_8O_{22}$, or arfvedsonite, $Na_2Fe^{2+}{}_4Fe^{3+}(OH)_2|Si_8O_{22}$. A range of compositions probably exists at the locality. The only other amphibole found by the author was a distinctly blue mineral, probably riebeckite, $Na_2Fe^{2+}{}_3Fe^{3+}{}_2Si_8O_{22}(OH)_2$.
- Amphiboles reported from Cape Ann include ferro-anthophyllite by Warren (1903), McKinstry (1921), Warren & McKinstry (1924) and Bozhilov & Evans (2001); Grunerite by McKinstry (1921), Palache (1950), Bozhilov & Evans (2001); and hastingsite (= ferrohastingsite) by Lyons (1972, 1976) and Hon, Hepburn & Laird (2004); General descriptions of amphibole include "green hornblende…with secondary blue hornblende" (Washington, 1898); "green sodium-iron amphibole" (Dennen, 1992); and "black hornblende" (Dale, 1908).

Annite $KFe^{2+}_3[(OH)_2|AlSi_3O_{10}]$ The most common mica throughout the granite and pegmatites of the locality is a dark green to black *biotite* and most, if not all of this is believed to be annite. Large greenish-black masses also occur along with magnetite as an alteration product of fayalite. This mineral was identified as annite by SEM-EDS (this study). Most of what was called *lepidomelane* in older references is probably annite. Rockport is the type locality.
- Reported from Cape Ann by Dana & Brush (1868), Smith (1877), Wadsworth (1878), Clarke (1886), Washington (1898), Sears (1905), Emerson (1917), Warren & McKinstry (1924), Brady & Cheney (2004) and Hon, Hepburn & Laird (2004).

Astrophyllite $(K,Na)_3(Fe,Mn)_7Ti_2Si_8O_{24}(O,OH)_7$ Golden brown sub-metallic radial groups occur in quartz syenite. Rare acicular micro-crystals can make excellent micromount specimens. Associated minerals are blue/black sodic amphibole, yellow/brown zircon, purple fluorite and rarely, orange/red thorite. Identification was confirmed by SEM- EDS analysis (this study). Titanium is partially replaced by niobium (Nb) in the analyzed sample.
- Astrophyllite was reported from Cape Ann by Sears (1905); McKinstry (1921) and Warren & McKinstry (1924) listed it, following Sears; also Lyons (1976).

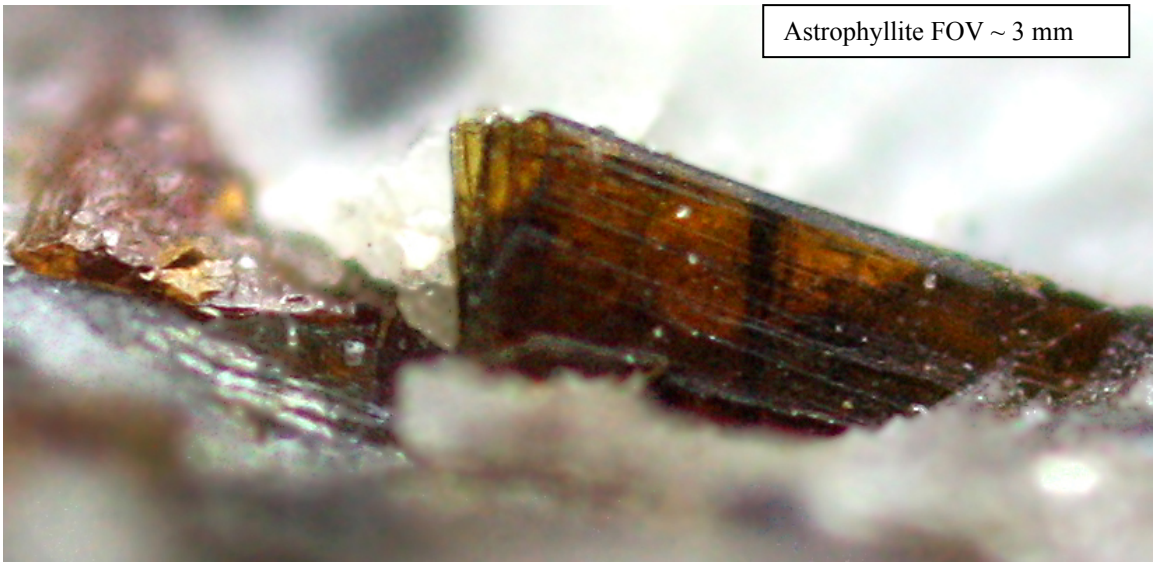
Right Top: Amphibole: 42 mm crystal

Right Middle: Amphibole: 11.5 mm crystal

Right Bottom: Amphibole inclusions in quartz: FOV ~ 2 mm

Left Top: Astrophyllite: FOV= 14 mm

Left Bottom: Astrophyllite: FOV= 3 mm


Astrophyllite FOV ~ 3 mm

Columbite/Tantalite $(Fe,Mn)(Nb,Ta)_2O_6$ Small black prismatic crystals (< 1 mm) on quartz crystals associated with cleavelandite, from a miarolitic cavity, resemble columbite/tantalite. Not analyzed.
- Knowlton (1873) reported "columbite" and "yttro-tantalite." McKinstry (1921), Warren & McKinstry (1924) reported on a crystal of "tantalite" in the Harvard collection. Carl Francis (pers. comm. 2009) reports that no modern analysis for this specimen has been done.

Danalite $Fe^{2+}_4Be_3[S|(SiO_4)_3]$ is pink-red, generally massive, in granite. EDS analysis shows Fe>Zn>Mn (this study). The type locality is Rockport (Cooke, 1866). Dale (1908) erroneously reported "garnet" in the Rockport granite, which can only be danalite. Jackson (1863) reported "rhodonite" from Rockport which was likely danalite or genthelvite. Dunn (1976) provided analyses for both iron-dominant danalite, as well as its zinc-dominant analogue, genthelvite, from Rockport.


Danalite: 4 mm crystal


Danalite: FOV= 14 mm

- Danalite was reported from Cape Ann by Cooke (1866, 1867), Dana & Brush (1868), Knowlton (1873), Wadsworth (1878), Clarke (1886), Washington ((1898), Iddings (1906), Emerson (1917), McKinstry (1921), Warren & McKinstry (1924), and Dunn (1976).

Fluorite CaF_2 can be colorless, purple, red-purple, green, or blue-green. Purple, cube-shaped micro-crystals on quartz crystals occur in clay-filled pegmatite pockets. Massive green fluorite is found in proximity to sulfides, and is weakly fluorescent (white, LW). Massive purple fluorite associated with zircon and thorite could be what was


Fluorite: 0.75 mm crystal.


Fluorite: 7 mm crystal

called "yttrocerite," but has not been analyzed. An unusual 7 mm red-purple octahedral crystal was found by Suzanne Wall (photo below).

- Reported from Cape Ann by Barden (1863), Haskell (1865), Knowlton (1873), Washington (1898), Emerson (1917) and Hon, Hepburn & Laird (2004).


Fluorite: 8.5 mm crystal fragment


Fluorite: 10 mm zoned crystal

Galena PbS occurs rarely as gray metallic cleavage material in granite and pegmatites.

- Reported from Cape Ann by Knowlton (1873), McKinstry (1921) and Warren & McKinstry (1924).


Galena: FOV= 3.5 mm

Goethite α-$Fe^{3+}O(OH)$ was found as a common alteration product of siderite. Much of what has been termed *limonite* is composed of goethite.
- *Limonite* was noted from Cape Ann by Dale (1908, 1923) and Warren & McKinstry (1924).

Hematite Fe_2O_3 is found as tiny metallic gray crystals, sometimes with blue/green iridescence associated with albite crystals. Also occurs as a gray metallic coating on albite.

- Reported from Cape Ann by Palache (1907), Dale (1908); McKinstry (1921), Warren & McKinstry (1924) and Burt (1980).


Hematite: crystals to 1 mm


Hematite coating on albite: FOV ~ 2mm

Kaolinite (?) $Al_2Si_2O_5(OH)_4$ A white to tan clay mineral which might be kaolinite fills pockets in amazonite-lined miarolitic cavities containing quartz, albite, and fluorite crystals.
- Kaolinite/Kaolin was reported from Cape Ann, as an alteration product in granite, by Palache (1907), Dale (1908, 1923), Warren & McKinstry (1924) and Burt (1980).

Ilmenite $Fe^{2+}TiO_3$ occurs rarely as crude, gray platy crystals.
- Ilmenite was reported from Cape Ann by Knowlton (1873), Warren & McKinstry (1924), Palache (1950), and Dennen (1992).

Clay mineral on Fluorite: FOV ~ 2 mm

Magnetite: 0.75 mm crystals

Magnetite Fe_3O_4 occurs in large masses as an alteration product of fayalite; rarely as micro-crystals associated with massive magnetite; and as grains in granite.

- Magnetite was reported from Cape Ann by Knowlton (1873), Washington (1898), Warren (1903), Dale (1908, 1923), Warren & McKinstry (1924), Palache (1950), Dennen (1992) and Brady & Cheney (2004).

Microcline $KAlSi_3O_8$ Good crystals are found in pegmatite; the color ranges from white to tan to blue-green (variety amazonite). Also white to pink in granite as a component, along with albite, of microperthite.
- Microcline was reported from Cape Ann by Washington (1898) Sears (1905), Dale (1908, 1923), McKinstry (1921), Warren & McKinstry (1924), Palache (1950), and Dennen (1992). Amazonite or "green feldspar" was collected and/or referenced by Barden (1863), Jackson (1863), Haskell (1865), Cooke (1866), Dana & Brush (1868), Knowlton (1873), Clarke (1886), Sears (1905), Dale (1908), and McKinstry (1921).

Microcline var. amazonite in pegmatite: 105 mm specimen.

Amazonite: 19 mm crystal

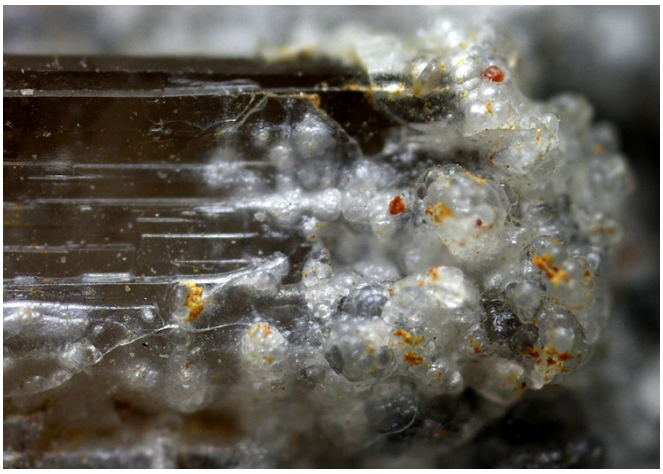
Molybdenite MoS_2 Rare silvery crystals and flakes occur in granite and pegmatite.
- Reported from Cape Ann by Hitchcock (1835), Knowlton (1873), Dale (1908, 1923), McKinstry (1921), Warren & McKinstry (1924) and Dennen (1992).

Muscovite $KAl_2AlSi_3O_{10}(OH)_2$ Pale-colored mica, presumed to be muscovite, is found only in clay-filled cavities associated with amazonite.
- Reported from Cape Ann by McKinstry (1921), Lyons (1976)

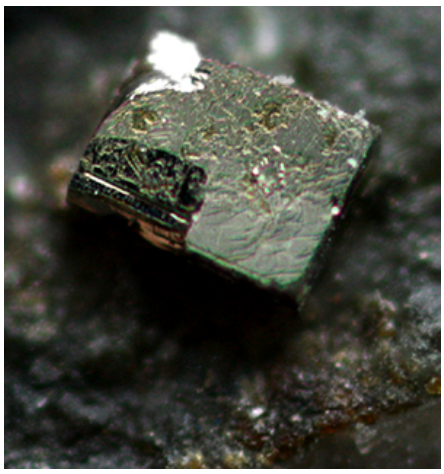
Opal, variety hyalite, $SiO_2 \cdot nH_2O$, is rarely found as colorless botryoids in cavities filled with albite crystals.

Amazonite: 20 mm crystal

Molybdenite: 3.5 mm crystal



Opal var. hyalite on albite: FOV= 5 mm



Pyrite: 1 mm crystal

Pyrite FeS_2 Micro crystals are uncommon, and are associated with other sulfides. Sparse cubes occur in pink coarse-grained granite.

- Reported from Cape Ann by Palache (1907), Dale (1908), McKinstry (1921), Warren & McKinstry (1924) , Burt (1980) and Dennen (1992).

Quartz SiO_2 is commonly massive, but good colorless or sometimes smoky crystals also occur. Doubly terminated crystals were found in clay-filled pockets. Inclusions in crystals are sometimes seen which can be black (amphibole) or green (possibly annite). Blue amphibole inclusions, believed to be riebeckite, can be found in massive quartz in quartz syenite.

Riebeckite $Na_2Fe^{2+}{}_3Fe^{3+}{}_2Si_8O_{22}(OH)_2$ An amphibole believed to be riebeckite occurs as blue acicular micro crystals in cavities in quartz syenite, and also as blue crystal inclusions in quartz. Some of this mineral occurs in a blue fibrous form (*crocidolite).*

Quartz: 15 mm crystal

Quartz: 2 mm crystal with albite

- Reported from Cape Ann by Dale (1908, 1923) and Hon, Hepburn & Laird (2004). "Riebeckitic amphibole" reported by Brady & Cheney (2004).

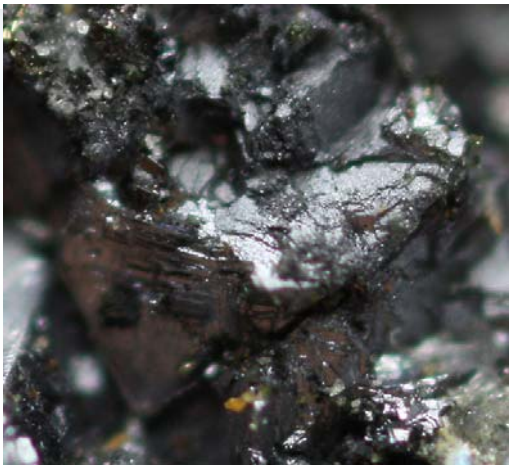
Siderite $FeCO_3$ occurs in cavities as brown or tan, massive cleavage, frequently but not always altered to goethite.
- Reported from Cape Ann by Knowlton (1873), Sears (1905), Palache (1907), McKinstry (1921) , Warren & McKinstry (1924) and Burt (1980).

Riebeckite: FOV= 2 mm

Riebeckite var. Crocidolite: FOV= 3 mm

Siderite: FOV ~ 3 mm

Siderite, largely altered to goethite: 22 mm long



Sphalerite: FOV ~ 3 mm

Sphalerite ZnS Sphalerite is usually massive, metallic gray or brown in quartz syenite; also with other sulfides in pegmatite.

- Reported from Cape Ann by Knowlton (1873), Palache (1907), McKinstry (1921), Warren & McKinstry (1924) and Burt (1980).

Thorite $(Th,U)[SiO_4]$ occurs as reddish brown or orange grains which are strongly radioactive. Found with purple fluorite, astrophyllite, and zircon. Identification confirmed by SEM-EDS (this study).
- Reported from Cape Ann by Knowlton (1873) - var. *orangite*; McKinstry (1921); and Warren & McKinstry (1924) – variety *orangite.*

Zircon $ZrSiO_4$ is very common as tan, brown, and rarely yellow crystals to about 5 mm. Transparent to opaque.
- Reported from Cape Ann by Barden (1863), Haskell (1865), Knowlton (1873), Washington (1898), Dale (1908, 1923), Emerson (1917), Warren & McKinstry (1924), Palache (1950), Dennen (1992); Hon, Hepburn & Laird (2004). Cooke (1867) reported *malacon*, an altered hydrated variety of zircon. Dana & Brush (1868), McKinstry (1921) and Warren & McKinstry (1924) reported the altered variety, *cyrtolite*. Rockport is the type locality of cyrtolite, first described as a new mineral by Knowlton (1867, 1873).

Thorite: FOV= 2mm

Thorite (red) and Fluorite (purple): FOV= 4 mm

Zircon: FOV= 4 mm

Zircon, Astrophyllite: FOV= 1.5 mm

Zircon: FOV= 2 mm

Zircon: FOV= 2 mm

Several minerals, not yet identified were also collected, some of which may be species from the list in Part II.

Part II: OTHER MINERALS REPORTED FROM CAPE ANN

The following minerals have been previously reported from Cape Ann but were not collected in the current study. Minerals with an asterisk (*) are considered to be probable misidentifications or to have come from a source other than the plutonic rocks of Cape Ann.

Actinolite* Sears (1905) (**possibly misidentified aegirine*)
Aegirine-augite Brady & Cheney (2004)
Allanite Washington (1898), Sears (1905), Dale (1908, 1923), Emerson (1917), Warren & McKinstry (1924), Lyons (1976) and Brady & Cheney (2004)
Ankerite Sears (1905)
Anthophyllite* (= Ferro-anthophyllite)
Apatite Washington (1898), Dale (1908, 1923), Emerson (1917), Warren & McKinstry (1924), Lyons (1976), Dennen (1992), Hon, Hepburn & Laird (2004) and Brady & Cheney (2004)
Augite Dennen (1992)
Calcite Dale (1908, 1923), McKinstry (1921), Warren & McKinstry (1924)
Chlorite Palache (1907), Dale (1908), McKinstry (1921), Warren & McKinstry (1924); variety "Ripidolite" Knowlton (1873)
Cryophyllite* Cooke (1867), Dana & Brush (1868), Smith (1877), Wadsworth (1878), Foster & Evans (1962) (**Li-biotite or ferroan lepidolite; Discredited as a species. Rockport was the type locality*.)
Diopside Washington (1898)
Epidote Knowlton (1873), Washington (1898) and Lyons (1976)
Eudialyte Haskell (1865)
Fayalite Washington (1898), Sears (1905), McKinstry (1921), Warren & McKinstry (1924), Bowen & Schairer (1935), Lyons (1976), Hon, Hepburn & Laird (2004) and Brady & Cheney (2004)
Fergusonite Jackson (1863), Haskell (1865), Knowlton (1873), Smith (1877), Clarke (1886), Sears (1905), Iddings (1906), McKinstry (1921), Lyons (1976)
Ferro-anthophyllite Warren (1903), McKinstry (1921), Warren & McKinstry (1924) and Bozhilov & Evans (2001)
Gadolinite McKinstry (1921), Lyons (1976)
Genthelvite Dunn (1976)
Glaucophane* Washington (1898), Clapp (1921). *(*probably riebeckite)*
Grunerite McKinstry (1921), Bowen & Schairer (1935), Palache (1950), Bozhilov & Evans (2001)
Hastingsite (*ferrohastingsite*) Lyons (1972, 1976) and Hon, Hepburn & Laird (2004)
Hedenbergite Emerson (1917), McKinstry (1921)
Kataphorite* Emerson (1917)
Lepidolite* Iddings (1906)
Nepheline Knowlton (1873) and Sears (1905)
Oligoclase Dale (1908, 1923), Warren & McKinstry (1924) and Dennen (1992)
Orthoclase Wadsworth (1878), Washington (1898)
Phenakite Palache (1907), Warren & McKinstry (1924), Burt (1980), an alteration product of danalite
Phlogopite* Sears (1905) *(*possibly misidentified astrophyllite*)
Polymignite (a variety of zirconolite) Knowlton (1873)
Pyrochlore Haskell (1865)
Pyrrhotite Warren & McKinstry (1924)
Rhodonite Jackson (1863) (**probably genthelvite or danalite)*
Rutile Gunda (2008) (in blue quartz)
Spinel* Knowlton (1873)
Titanite Washington (1898), Lyons (1976) and Brady & Cheney (2004)
Topaz Alger (1863), Knowlton (1873)
Wohlerite Knowlton (1873)

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Make checks payable to: Micromounters of New England (MMNE)
Return to: Tom Mortimer
3 Roberts Rd., Amherst, NH 03031

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May 8, 2010, was the closing date for ordering a meal, but can still attend!
48 hours notice is required for cancellation with refund.

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Elections for the 2010-2011 Club Officers will be held during the May Symposium. For current members in good standing unlucky enough to be unable to attend, the opportunity to cast your absentee vote is at hand. Please mail this form or a facsimile thereof to Treasurer Tom Mortimer before May 8.

Seat	Club Nominee from March Mtg	Your Vote for this Position
President	**Joe Mulvey**	_____
Vice President	**Gordon Jackson**	_____
Treasurer	**Tom Mortimer**	_____
Secretary	**Bob Wilken**	_____
Director	**Carlos Gristani**	_____
Director	**Bob Janules**	_____
Newsletter	**Joe Mulvey**	_____

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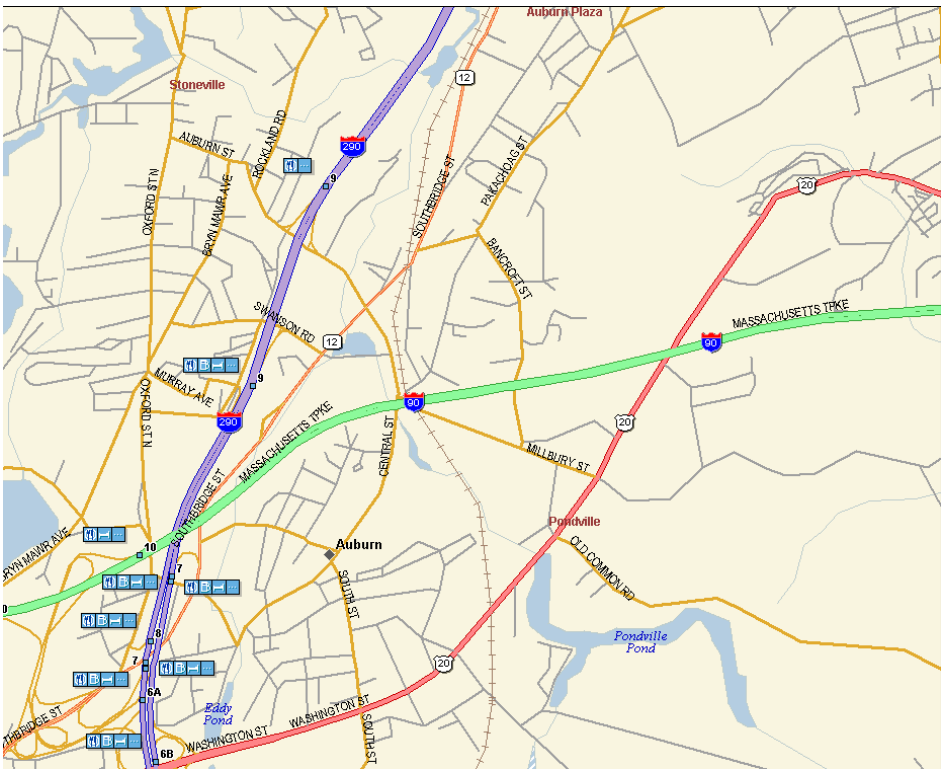

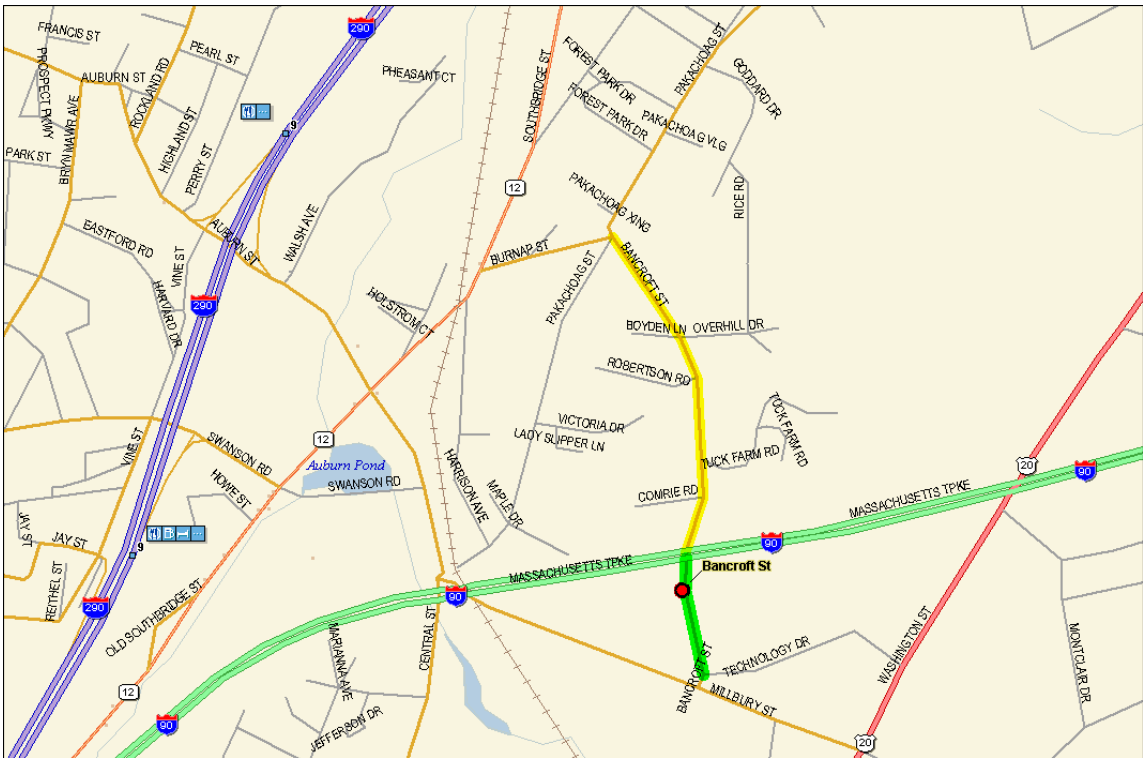

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