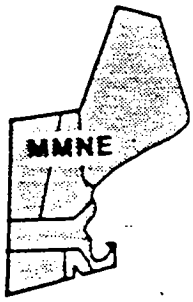

MICROMOUNTERS OF NEW ENGLAND

The MMNE was organized on November 5, 1966 for the purpose of promoting the study of minerals that require a microscope.

July/August 1990 Newsletter #142

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Dues are $5.00 per year and are due on January 1st, payable to the Treasurer

Contributions of news items for the Bulletin are welcome and should be sent to the Editor.

NEXT MONTH

The next meeting will be an informal one, on **Saturday, August 25, 1990**, at the Sunapee Show. (The Sept. meeting will be on the 15th.)

The next meeting of the Micromounters of New England will be our informal annual summer meeting at the home of John Reiner, on Krainewood Drive, in Center Harbor, NH, **on Saturday, July 14, 1990.** Remember, in addition to your usual equipment, please bring tables and chairs as well as some food dish or item you would like to share with other members. **SEE MAP PAGE 4.**

A message from the President:
Seventy dollars was raised at the May meeting in donations towards the special New Hampshire Rocks and Minerals issue. I believe enough money has been donated to publish the issue in its full length, as was submitted to the publisher. Your contributions were very helpful in achieving this goal. Thank you very much. -- Bob Janules

Editor's Note: I have recently had the opportunity to look at the upcoming New Hampshire Rocks and Minerals issue. It is quite impressive. I am happy to note that our club membership is heavily represented in this issue as either authors or subjects of articles. This is an issue I would highly recommend to our members if they are not already subscribers. (You may even want to pick up an additional copy, which I am sure will be available at many places, including the Sunapee show.)

And speaking of mineral magazines, I have heard (though I have not been able to confirm) that the upcoming issue of Mineralogical Record, either July/Aug. or Sept./Oct., will feature SAINT HILAIRE. Now that is an issue I'm sure a lot of people would like to have! Details will follow as soon as I obtain them.

MORE THANK YOUs: Still more minerals for sale and giveaways were brought to the Northeast Meeting. Russ Buckingham, Jack and Jean Downing, John Ebner, Forrest Fogg, Jean McKenna, and Vi Robinson all contributed. Special mention should be given to Marilyn Dodge for her framed Old print for which we sold $49 in chances (and thanks to Vera Fogg for soliciting and collecting that money). The winner, Elaine Solé, was delighted. Thanks to all the donors, and to others we may have missed. (If we didn't mention your name, perhaps you forgot to put it on your specimens.)

EMMONS QUARRY by Gene Bearss (*continued from last month*)

Phosphoferrite/reddingite	as dark reddish-brown masses, which if vugs are present, will show typical slightly distorted octahedral crystals. Phosphoferrite/reddingite, together with rhodochrosite, is usually the matrix for stewartite, strunzite, and hureaulite crystals. Masses of this mineral are usually found as intergrowths with rhodochrosite, amblygonite/montebrasite, and lithiophilite/triphylite. Phosphate masses have been found by the author that have areas up to 10cm in size that are solid phosphoferrite/reddingite. When the author first encountered this mineral at the Emmons, he took it to be lithiophilite -- this, because of the massive nature of the mineral, coupled with the color and size.
Phosphosiderite	as botryoids and as tabular crystals. Whether the botryoidal mineral found at Emmons is this mineral or strengite or both is not known to the author. I would suspect the latter case to be true. The botryoids are white, pink, and deep purple in color. The crystals are thin, tabular and colorless to light pink. The crystals are often twinned. Both the botryoids and the crystals occur on a matrix of Fe/Mn oxides which may have originally been rockbridgeite. The crystals could be confused with tabular hureaulite crystals, but hureaulite is found on phosphoferrite/reddingite or rhodochrosite, not Fe/Mn oxides.
Pollucite	massive, but suffering from etching so that individual pieces of pollucite are only several millimeters in size. However, the masses themselves may be in the order of tens of centimeters in size. Looks like milky, very light tan-colored quartz. Usually found with "montmorillonite".
Quartz	occurs as colorless, milky-white, smoky, and rose-colored masses (also as colorless, milky-white, and smoky crystals). Rose quartz has not been found by the author, but it was found in the lower workings of the quarry in an area that is now covered over by dumps and the remnants of a road. The author has found quartz crystals in all of the above mentioned colors except rose. The smoky crystals can be quite esthetic. The largest crystals found by the author were about 10cm in largest dimension, but larger crystals have been found. Several quartz pockets were opened at the Emmons, in the west wall, in the mid 1980s. The author has found quartz crystals associated with bertrandite, apatite, hydroxyl-herderite, and rarely, perhamite. The bertrandite association is odd in that you will often find a specimen showing good, relatively large quartz crystals on one side with the opposite side of the specimen having a lattice work of drusy, minute quartz crystals and larger distorted quartz crystals. The bertrandite always occurs only on the drusy quartz side.
Rhodochrosite	occurs both massive and as minute crystals. Massive rhodochrosite is found as part of the phosphate nodules. Many times this massive rhodochrosite will have small vugs (less than one centimeter in size) where the rhodochrosite has formed minute, sharp, scalenohedrons which appear almost colorless. Perched on these rhodochrosite crystals are hureaulite and stewartite crystals and on occasion, strunzite whiskers. The author has always thought it might be interesting to see if the massive rhodochrosite and the adjacent crystals both have the same manganese content or if the manganese phosphates have taken up some of the manganese.
Rockbridgeite	as typical greenish-black, composite crystals. Not a common mineral at Emmons. The author has only three or four specimens and these only show one or two composite crystals on each specimen. The size of the "crystals" is 1mm or less. The rockbridgeite is found on a matrix of phosphoferrite/reddingite and is usually near an area of Fe/Mn oxides. The author has always wondered if the Fe/Mn oxides might not have formed from altering rockbridgeite.
Schorl	occurs as typical black, frozen in pegmatite, crystals. I have never found a well terminated schorl crystal at the Emmons. As is usually the case with schorl in the state of Maine, the crystals are extremely friable.
Scorodite ?	as greenish crust and coating on loellingite
Spodumene	a typical Maine pegmatite occurrence. As large subhedral crystals. Usually opaque and white in color, but occasionally light pink or the lightest shade of green. The light pink crystals often have areas that are transparent or translucent and one might cut an extremely small faceted stone from such areas.
Stewartite	as extremely small light yellow to lemon yellow crystals. Stewartite often occurs as minute balls of crystals. These are not really botryoids since individual crystals are readily discernible. Stewartite is one of the more common secondary phosphate minerals at the Emmons. Occurs in phosphate nodules with phosphoferrite/reddingite, hureaulite, and strunzite on lithiophilite/triphylite or rhodochrosite. The author has also found stewartite with an undetermined mineral that might be bermanite. If so, this assemblage would be reminiscent of the Fletcher Mine, North Groton, New Hampshire. However, Emmons doesn't have the large masses of rockbridgeite that the Fletcher does.

(*conclusion next bulletin*)

NOTE: Dr. Eberto Tealdi, the Editor of Revista Minerlogica Italiana, has kindly given us permission to republish the English summaries of two articles from this excellent quarterly magazine.

One is "The Narssarssuk Pegmatite" (appearing in this issue) by Ole V. Petersen, chosen for the similarity of its minerals to those of Mont Saint-Hilaire. The other (to be printed in the next issue) is "The Minerals of the Old Slags from Laurion, Greece" by C. Rewitzer and R. Hochleitner. (More about this article next issue.)

The original articles are profusely illustrated, and present much greater detail. Even without a knowledge of Italian, the captions for the photos are quite readily understandable, and mineral information may be gleaned from the text with some effort. (See review in MMNE Newsletter #97, April 1985). Present annual subscription rates are $28 surface mail and $38 air mail. Note that surface mail may take as long as four months. Back issues are $8. Personal checks or money orders may be sent to:

Gruppo Mineralogico Lombardo
c/o Museo Civico di Storia Naturale
C.so Venezia 55, 20121 Milano, Italy

THE NARSSARSSUK PEGMATITE by Ole V. Petersen

Even though Greenland to most people is still a very remote place, tourism has steadily increased at least in its south-western part, that boasts scenic beauty, historical monuments and foremost, beautiful and rare minerals.

Geology and geography

The area has a basement of metamorphic rocks, overlain by sandstones and basaltic lavas. Both basement and supracrustal rocks are intruded by dykes and alkaline central complexes. The ensemble constitutes one of the world's most remarkable alkaline igneous provinces: igneous layering is the hallmark of the intrusive units of this province. The comparatively small outcrop of the Narssarssuk pegmatite is at the westernmost margin of the Igdlerfigssalik intrusive center, comprised in the Igaliko nepheline-syenite complex.

History

In 1893, the Swedish mineralogist G. Flink examined a large collection of minerals from Greenland and identified in it two species new to science, neptunite and epididymite, plus some other 12 species. The locality where this collection came from was unknown. One year later, a third new specie, elpidite, was identified by Lindstrom. In 1897, Flink went to Greenland for mineralogical investigations; the author reports an abstract of his exciting account of this journey, which gives a good picture of the working conditions of mineralogists in Greenland last century, and a report of the discovery of Narssarssuk, the locality where the collection came from. This collection will subsequently be referred to as the Lytzen Collection from the name of Igaliko's Factor at the that time. The newly found locality immediately proved to be extremely rich and interesting. Flink collected a large amount of material there, then further material was collected by Greenlanders. S. Gordon of the Academy of Natural Sciences in Philadelphia also visited the locality in 1920. The author collected there in 1963 as a student with Prof. H. Micheelsen; then again in 1968, 69 and 70, digging a 4 m deep trench across the occurrence and thus discovering many other minerals.

Mineralogy

The minerals occur in a very large number of more of less spherical pegmatitic pockets ranging in size from a few cm to more than one meter. K-feldspar and aegirine constitute the main mass of these pockets. Feldspar is frequently epitaxially overgrown with transparent albite xls. All the other minerals form xls in the interstices between feldspar and aegirine, or project into the central cavities. The first phase of crystallization consisted of normal, nepheline-syenite pegmatitic minerals (eudialyte, elpidite, astrophyllite, eudidymite, narsarsukite, catapleiite, neptunite, polylithionite, etc.) and ended with quartz. Later and different hydrothermal solution partly resolved quartz and initially caused the formation of calcite-rhodochrosite, followed by other minerals (fluorite, synchysite, cordylite, ancylite, chalcolamprite, endeiolite, apatite-Y, tetranatrolite-gonnardite, nordstrandite). Further solutions than resolved calcite-rhodochrosite, and caused the formation of 2nd generation aegirine, astrophyllite, epididymite and a few other minerals of the first phase. Later alteration led to the formation of Mn and Fe oxides.

Fifty minerals are known from Narssarssuk. Thirteen of these are very rare. But the locality is mainly famous because it is the type-locality of 15 mineral species and the majority of its minerals occur as well developed xls. A selection of the most interesting are described.

Orthoclase (microcline) Occurs mainly as irregularly bounded individuals, but also as very well developed xls. Their faces may be very plane and shiny, but frequently overgrown with albite. Color whitish to greyish. Very often twinned according to the Carlsbad law.

Albite frequent and beautiful, as extremely well developed xls to 2cm, very rich in shiny faces. Mostly clear and transparent, colorless with a few rose ones. Very pure albite.

Aegirine (acmite) is a decomposition-resisting mineral, therefore it xls are also found in large numbers laying loose in the gravel. Larger xls may be up to 20cm long. Prismatic faces usually shining and striated, other faces uneven and dull.

Neptunite is one of the type-locality minerals. It occurs as good xls with plane and shiny faces on either aegirine or feldspar; size ranges from a few mm to 5cm. Color black, dark-red in thin splinters.

Epididymite another type-locality mineral. As very well developed, rich in faces, pseudohexagonal xls. Usually slender prismatic, sometimes platy; often as aggregates of parallel intergrowths, with longitudinal grooves. Frequently as beautiful penetration twins or trillings. Colorless transparent, with crossed axial plane dispersion.

Elpidite type locality mineral. As rhombic elongated very small and not well developed xls. Larger xls may be up to 10cm long but incomplete, bent or broken and cleft at one end. Often as confused felt-like masses. Smaller xls are colorless, transparent, but color may vary very much from white to grey, yellow and even brick-red. Frequently as pseudo after eudialyte.

Eudialyte Occurs partly as irregularly shaped masses wedged in between other minerals. Also as xls to 5cm, always with dull uneven faces. Clear, transparent, intensively red-colored.

Narsarsukite type locality mineral is very abundant. It occurs as poorly developed, tetragonal tabular xls; color honey-yellow or brownish-grey when altered. Rarely as pseudo cubes. Always associated with quartz.

Astrophyllite one of the most beautiful minerals found at Narssarssuk. Mainly as very thin needles or ruler-shaped, elongated, flattened bodies, grouped either in felt-like masses or grown into other minerals. Size may attain several cm. color is yellow-brown to golden-yellow with metallic luster. The author made a spectacular find in 1969 in the transitional zone at the bottom of the weathering area into the trench, consisting of freestanding needles projecting into pockets.

Catapleiite As tabular hexagonal xls; composed of lamellae of lower symmetry. Size varies from a few mm to 5cm. Colorless to yellowish, transparent with adamantine luster; also grey to greenish-grey and almost opaque with shining and iridescent faces.

Zircon-xenotime Zircon always as well developed xls generally to 1cm, rarely to 3.5cm with shining faces. Color normally brownish, rarely ash-grey. The author found epitaxial overgrowths of xenotime on zircon xl faces, in colorless and transparent layers 1cm thick.

Leifite type locality mineral, established as such in the late 1960s. As incompletely developed hex. prismatic, striated xls to 2cm, very often hairy. Colorless to white, transparent with vitreous luster. It is a Be mineral but BeO was detected only in 1970.

Leucosphenite type locality mineral. Named after its form (white wedge), it has also been found in many other forms. As monoclinic, elongated xls to 5cm. Color white with grey-blue tint, transparent to semi-transparent, often associated with elpidite. Borine content has been detected very recently in material from Green River, Utah.

Ashcroftine the latest found type locality mineral so far. Extremely rare, it only occurs as rosy fibrous aggregates, individual fibers up to 4mm long.

Synchysite frequent, as small xls with elongated pointed form. Some of the larger xls are tapering and transparent at both ends and swollen opaque in the middle part. Color grey to brown, rarely reddish-yellow when very fresh. According to Donnay & Donnay (1953) xls from various localities are always policrystals, syntactic intergrowths of two out of four species: synchysite, parisite, roentgenite, bastnaesite. Narssarssuk xls very probably consist of synchysite between roentgenite tips.

Cordylite as small xls developed with a swollen upper end, resembling clubs. Maximum size to 3mm. Also as hexagonal prism, or bounded by various pyramids, or even by only pyramid and vase. Color variable from white to brownish-yellow; usually pale yellow. Often coated by an opaque ancylite crust.

Ancylite always as xls, up to 4mm, with curved faces, completely developed in entangled masses of aegirine needles. Color brownish to yellowish, semi-transparent due to enclosed aegirine needles.

(Revista Mineralogica Italiana). Reprinted by permission of the Editor, Eberto Tealdi

THE NARSARSUK PEGMATITE

The nepheline-syenite pegmatite at Narsarsuk is of special interest because of its similarity to that of Mont Saint-Hilaire. It is said to be the type locality of fifteen minerals, though this number includes some varietal or discredited names such as chalcolamprite, endeiolite, and spodiophyllite. The list presented here was assembled from several sources which are given below. Many of the original descriptions, notably those of Gustav Flink were written in Danish, but are summarized in English by others. Type species are indicated by an asterisk (*).

Aegirine
Aenigmatite (?)
Albite
Analcime
Ancylite *
Apatite
Arfvedsonite
Ashcroftine *
Astrophyllite
Barkevikite
Barylite
Biotite
Calcite
Catapleiite
Cerussite
Chalcolamprite * (dis.)
Chlorite
Cordylite *
Crocidolite
Elpidite *
Endeiolite * (dis.)
Epididymite *
Epidote
Epistolite
Eudialyte
Eudidymite
Fluorite
Galena
Gonnardite
Graphite
Hemimorphite
Leifite *
Leucophanite
Leucosphenite *
Lorenzenite *
Magnetite
Mesolite
Microcline
Microlite (?)
Narsarsukite *
Natrolite
Neptunite *
Nordstrandite
Orthoclase
Parisite
Polylithionite
Pyrochlore
Pyrolusite
Quartz
Rhodochrosite
Riebeckite
Roentgenite *
Siderite
Sphalerite
Spodiophyllite * (dis.)
Synchysite *
Taeniolite *
Tetranatrolite
Xenotime
Zinnwaldite
Zircon

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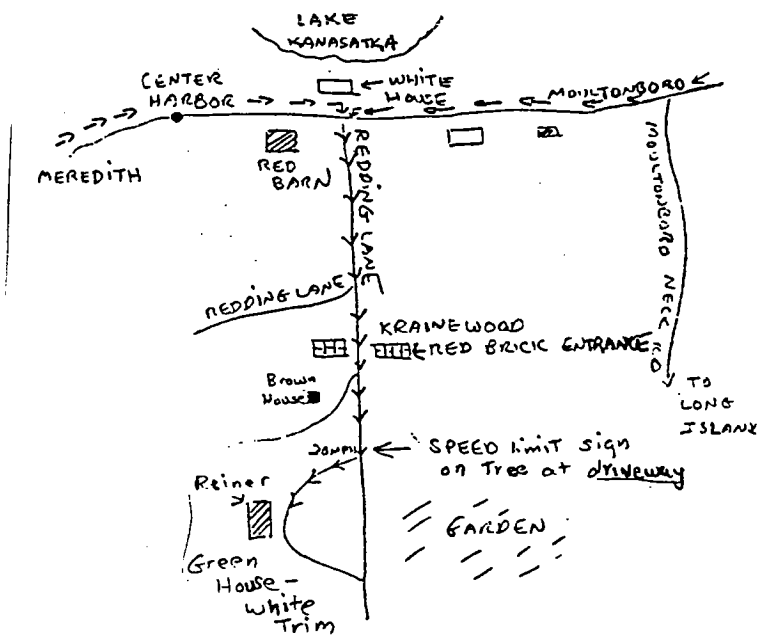
(JWC)

Eitor's Note: At present, I am pleased to say, I have a backlog of submitted articles from members which I will print as soon as space permits. Please be patient. And thank you all for making my job as Editor so interesting. And keep the articles coming!



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