

The Philip Foster Micro-mineral Collection

Tom Mortimer

Presentation made possible by the dedicated efforts of
Dana Morong, Madbury, NH



HISTORY

Philip C. Foster (1892 - 1974)

Lived much of his life in Dover, NH

His family was the publisher of *The Foster Daily Democrat* newspaper, Dover, New Hampshire, (est. 1873).

Mineral collecting inspired in childhood by great-uncle who live about two miles from the Parker Mtn. Mine, Strafford, NH.

Field collected and traded New England minerals for many decades.

HISTORY - continued



Joined the Maine Mineralogical and Geological Society (1928)

Member of the Boston Mineral Club – 1940's

Founding member of the Southeast New Hampshire Mineral Club – 1956.

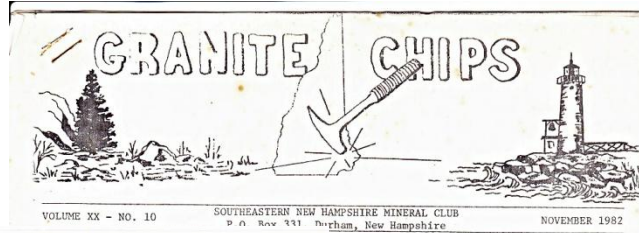
A trustee of the Woodman Institute in Dover, N.H

A member of Micromounters of New England, founded in 1967, but attended few meetings.

Contemporary associate of Gunnar Bjareby, Philip Morrill, Clayton Ford, Peter Zodac, and Clifford Frondel

HISTORY - continued

Contributed numerous articles to mineral club newsletters.



THE PARKER MOUNTAIN MINE (1)

By Philip C. Foster

(Ed. Note: Since a field trip is planned to Parker Mountain on November 6, I thought it appropriate to re-print this article which appeared in the bulletin in September 1964. Mr. Foster, now deceased, was the most knowledgeable person of his time, or since, concerning the minerals found at Parker Mt.)

The old mine located in pegmatite on a spur of Parker Mountain in Strafford, NH, is rapidly gaining fame as a locality for many of the rare lithium and iron-manganese phosphate minerals. Originally called the FOSS MINE in U.S. Geological Survey literature, from the family that owned the property, it was opened up in the 1850's as a source of mica. Operations were suspended for many years and were resumed by a Mr. Buzzo about 25 years ago, when it became known as the BUZZO MINE. More recently it was reopened for beryl and mica. Now it is called the PARKER MOUNTAIN MINE.

Little attention was paid to the place until George Switzer, then at Harvard University and now associated with the Smithsonian Institution, was the author of an article that appeared in the American Mineralogist of November, 1938. The paper listed 21 minerals identified at that time in this mine. During the 26 years since, an additional 29 have been recorded, for a total, to date, of an even 50 distinct Dana species. Some of these have been found within the past few years, several by members of our own society. Such a number of significant minerals indicates that the Parker Mt. Mine may well be the source of lithium and phosphate minerals.

(Continued on

VOLUME XX - NO. 10

SOUTHEASTERN NEW HAMPSHIRE MINERAL CLUB
P. O. Box 431 Durham, New Hampshire

NOVEMBER 1982



Volume IV, Number 5 SOUTHEASTERN NEW HAMPSHIRE MINERAL CLUB May 1966

MAY MEETING

The May meeting of the Southeastern New Hampshire Mineral Club is scheduled for Wednesday, May 11, 7:45 p.m., at the First Federal Savings and Loan Association Building, 19 Wakefield Street, Rochester.

Edward Newison, Program Chairman, announces a "Mineral Identification Contest" for this meeting. Prizes will be given to each member of the TMM attaining the highest score for properly naming twenty minerals which will be on display. Streak plates, hardness checks, and mineral books will be allowed.

Two minerals will be given as door prizes - one to a member and one to a guest!

Help
Eliminate
Litter
Please!!

Club member Nina Trueman offers some clues to test your ability to identify this mineral from its description.

1. Generally found in crystalline form, prismatic or bipyramidal, striations.
2. Non-metallic vitreous luster.
3. White streak.
4. Poor cleavage. Uneven fracture.
5. Can scratch glass and be scratched by quartz. (6.5)
6. Specific gravity 3.4 (medium weight).
7. Color: generally green or brown (sometimes yellow or blue).
8. Common name from a famous location abroad.

(See Page 4 for answer)

SIX NEW PARKER MT. MINERALS

Philip C. Foster

Members of our club have shown interest in the old mica, feldspar, and beryl mine on Parker Mt., in Strafford, N. H. From a relatively insignificant pegmatite deposit, we have seen its potential as a source of rare minerals grow during recent years.

From Dr. Switzer's first paper published on the mineralogical features of this locality in 1938, when only twenty-one mineral species were mentioned, we have seen a gradual enlargement of the possibilities of the Parker Mt. Mine and its immediate vicinity. No less than seven issues of our club Bulletin have carried articles on this place since November, 1963. These articles have increased the number of species from the original twenty-one to fifty-five.

This article will increase this number by six to sixty-one species, with but little doubt about their authenticity. There are also a few unknowns still to be determined at this locality. One of the best features at the Parker Mt. Mine is that many of the rarer species occur in such small quantities that positive identification has been difficult. Even so, there is still some minor doubt about the certainty of a few identifications.

NEW MINERALS

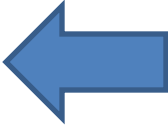
Bart Kelly, one of our members, was the first to call my attention to opal being found at the Parker Mt. Mine. He gave me a specimen of alpha-eucryptite, which fluoresced the characteristic dark red. The "rind" of the original spodumene crystal altered to cyanotile, showed a dull green fluorescence. Similar eucryptite in my own collection showed the same.

(Continued on Page 2)

The Philip Foster Micro-mineral Collection

His collection of over 3600 micro-mounts was said to be one of the most detailed in New England.* [Dana Morong census: 3740 specimens]
[tm estimate – present in Morong salvaged boxes: about 2500 to 2700]

530 NH
890 ME
32 CT
107MA
6 RI
0 VT



ME and NH are in
tray boxes 1 - 94

Organized by Dana System number followed by specimen number.

Example Brazilianite: 41.5.10 - 1

For the silicates, numbers are from the 6th edition.

Examples: quartz is 210, and petalite is 310

- Ellen Akers, 1961, *Southeast New Hampshire Mineral Club Yearbook #3*.
- There is also a 35 box, 1235 pseudomorph collection.

Foster catalog card

Pyrite

2911
50

Road Cut, Rte. 93 - - - New Hampton, N.H.

Cubic xls. on Dolomite xls.

in vug

mod. by oct. on corners

one xl elongated to $1\frac{1}{4}$ mm

7

white matrix 25 mm

Foster card file



Salvage and Restoration

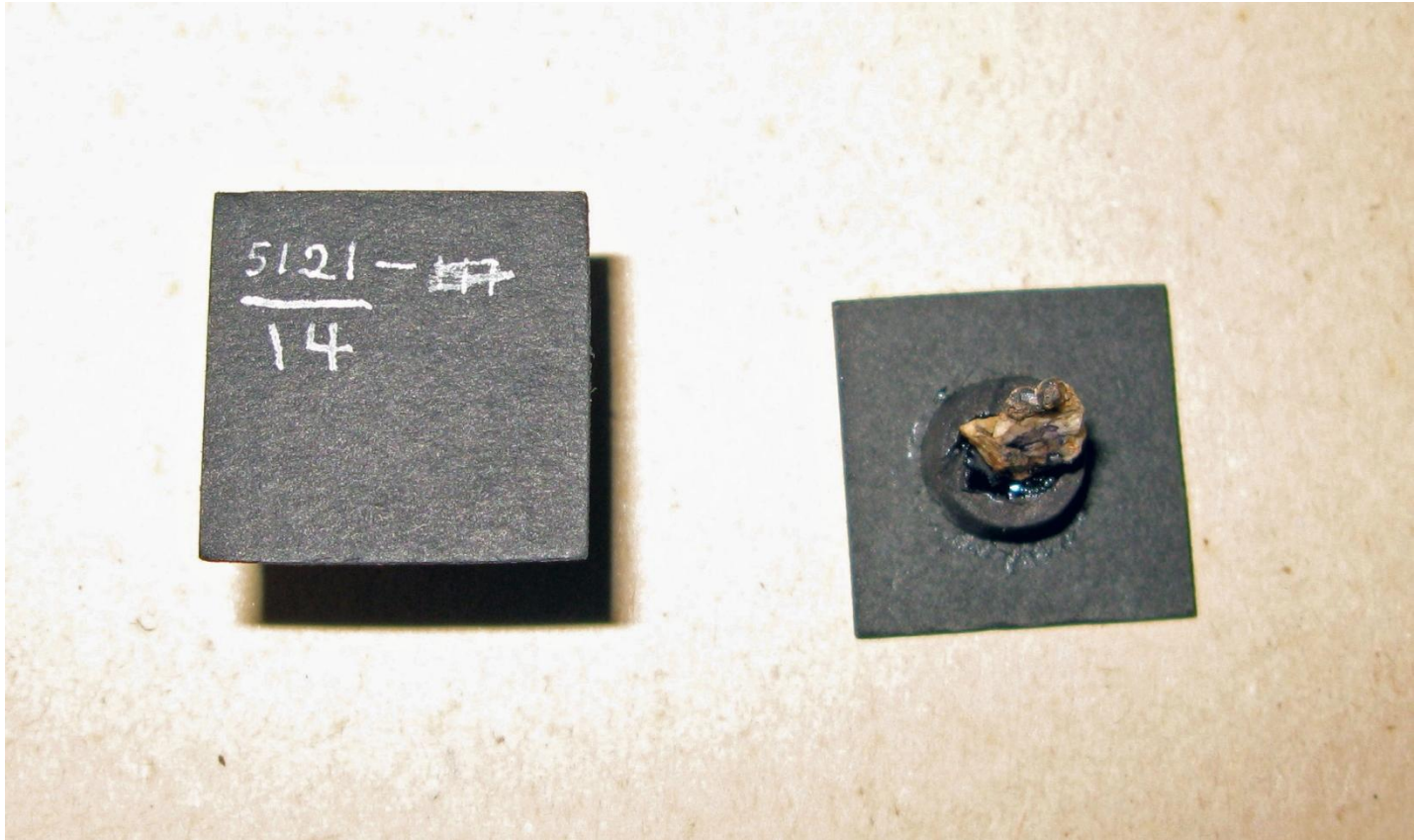
The Foster micromount collection donated to UNH geology department on his death.

In spring 2008, UNH decides to “de-acquisition” the Foster micromount collection. Former UNH geology graduate Dana Morong, aware of the importance of the collection, agreed to save it from ignominy. Pat Barker was helpful in facilitating the collection transfer to Dana.

Over several years Dana:

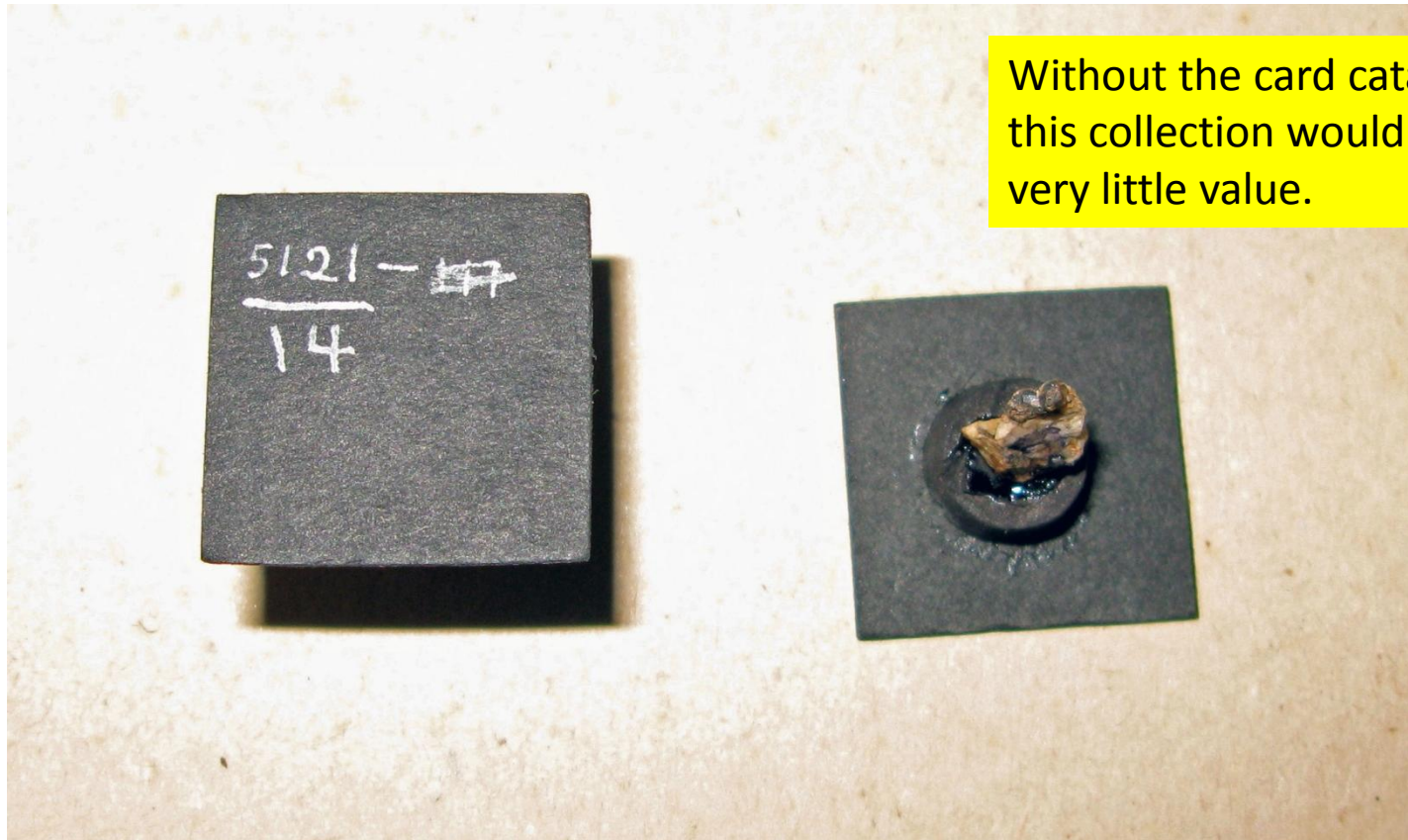
- Cleaned the tray boxes
- Re-attached specimens dislodged from corks
- Returned specimens to their photo-hinge locations
- Created multiple computer, searchable, data-base records of the collection
- Authored several articles on the collection

A Philip Foster micromount (0.8 inches square)



Blackened corks on black photo album paper. White ink on backside.

A Philip Foster micromount (0.8 inches square)



Blackened corks on black photo album paper. White ink on backside.

A tray of Foster collection specimens (8" x 10")



Small white cards on left side indicate species and Dana number.

Foster trays - exterior



Total of 141 tray boxes. Three boxes are missing

Foster collection storage



Collection presently stored in five cardboard boxes – three shown here.

Each box 24" x 18" x 10"
(2.5 cubic feet each)

Total 12.5 cubic feet

Card catalog files, Dana Morong notebooks, and CD ROM are included in these boxes.

Some issues with Foster's mounting methodology

Specimens can become dislodged from their photo-hinge docking location

Corks can break free from their photo-paper base. A problem when multiple specimens become dislodged within a tray box. **The consequences of dropping a tray box are substantial.**

You must remove the specimen from the photo-hinge docking station to verify its catalog number. The photo paper is old weak, and friable.

SPECIMEN PHOTOS

Mostly New Hampshire –
with apologies ...



ANATASE Road Cut, Littleton, NH

7 mm quartz crystal with orange anatase crystals, mounted on blackened cork

TiO₂



ANATASE Road Cut, Littleton, NH
0.8 mm anatase crystal, two views

Catalog # 452-106

TiO₂



APATITE-CaOH Palermo Mine, N. Groton, NH
6 mm apatite cluster

Catalog #41.5.10-1



ARROJADITE Palermo Mine, N. Groton, NH Catalog #40.2.1-6
1.7 mm arrojadite crystal Phillip Foster had cataloged as "dickinsonite"



ARROJADITE Palermo Mine, N. Groton, NH Catalog #40.2.1-6
1.7 mm arrojadite crystal (There are multiple crystals on this specimen.)

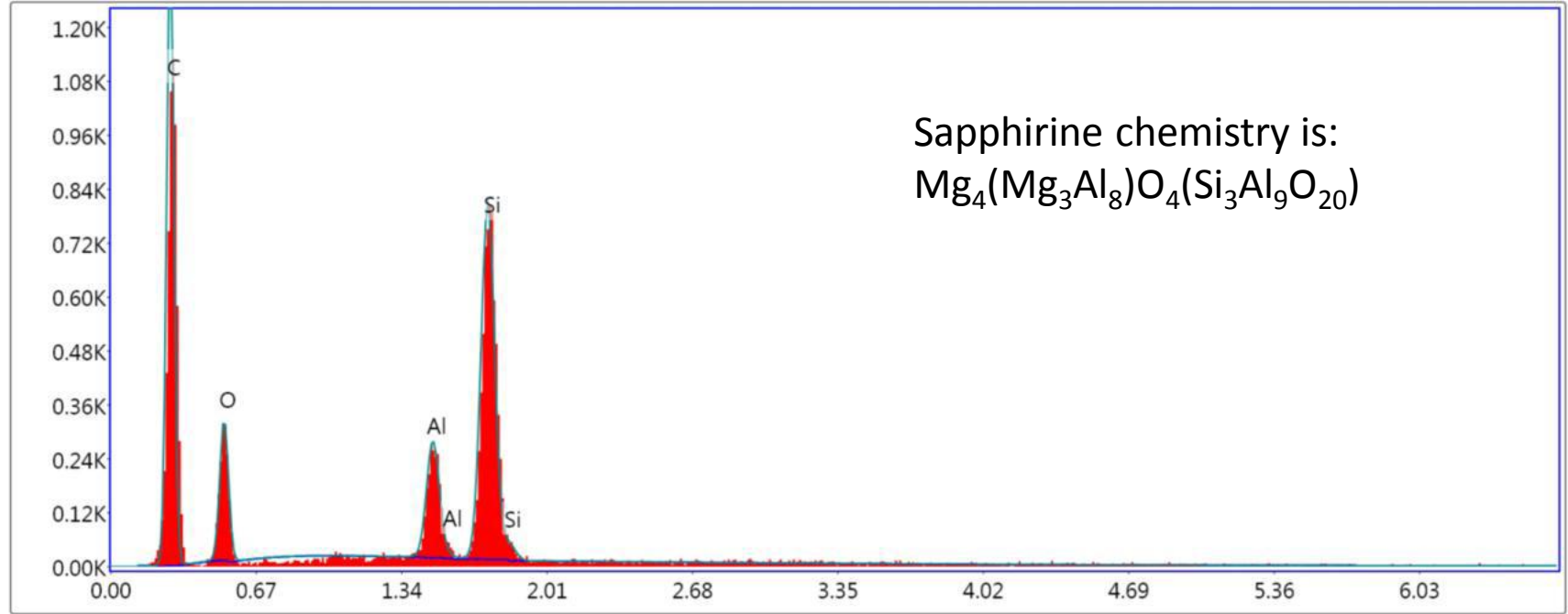


ARROJADITE Palermo Mine, N. Groton, NH Catalog #40.2.1-6
6.5 mm field of view (There are multiple crystals on this specimen.)



BERYL Ossipee, NH
Left: 5 mm FOV

Catalog #4.30-1
(Foster had this specimen labeled as sapphirine.)



Sapphirine chemistry is:
 $Mg_4(Mg_3Al_8)O_4(Si_3Al_9O_{20})$

Lsec: 50.0 0 Cnts 0.000 keV Det: Octane Plus Det



BERYL Ossipee, NH Catalog #4.30-1
(Foster had this specimen labeled as sapphirine.)

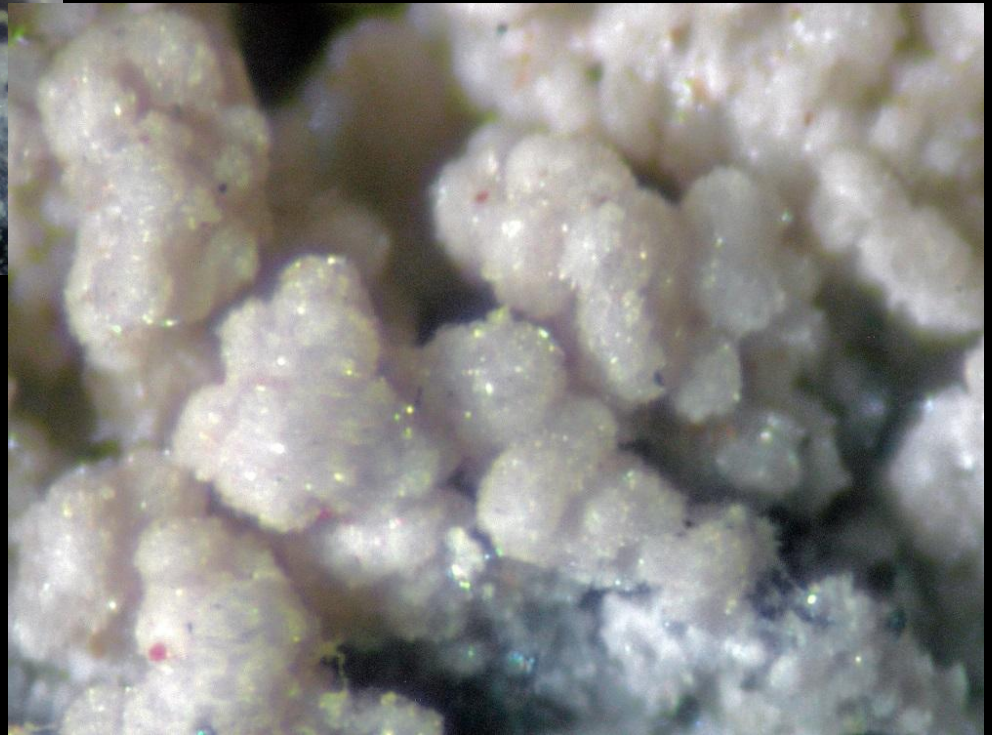


BRAZILIANITE Palermo Mine, N. Groton, NH Catalog # 41.5.10-1
7 mm brazilianite crystal



CORDIERITE Soapstone Quarry, Richmond, NH
4.5 mm terminated crystal

Catalog # 353-3



CRANDALLITE Palermo Mine, N. Groton, NH
2.5 mm field of view. Zoom view: 0.8 mm

Catalog # 41.5.8.4-6
Testing recommended for this one !



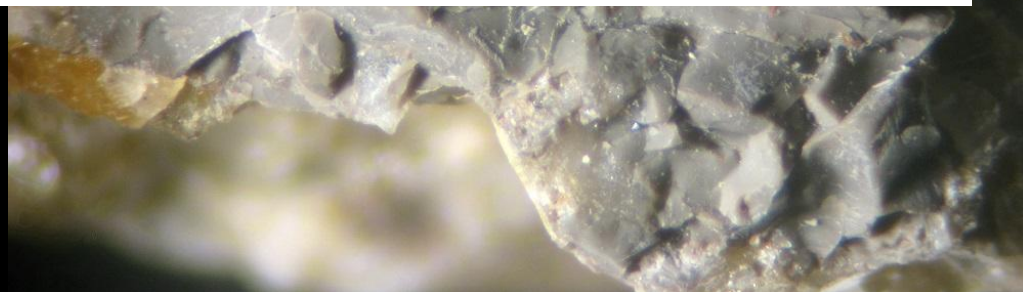
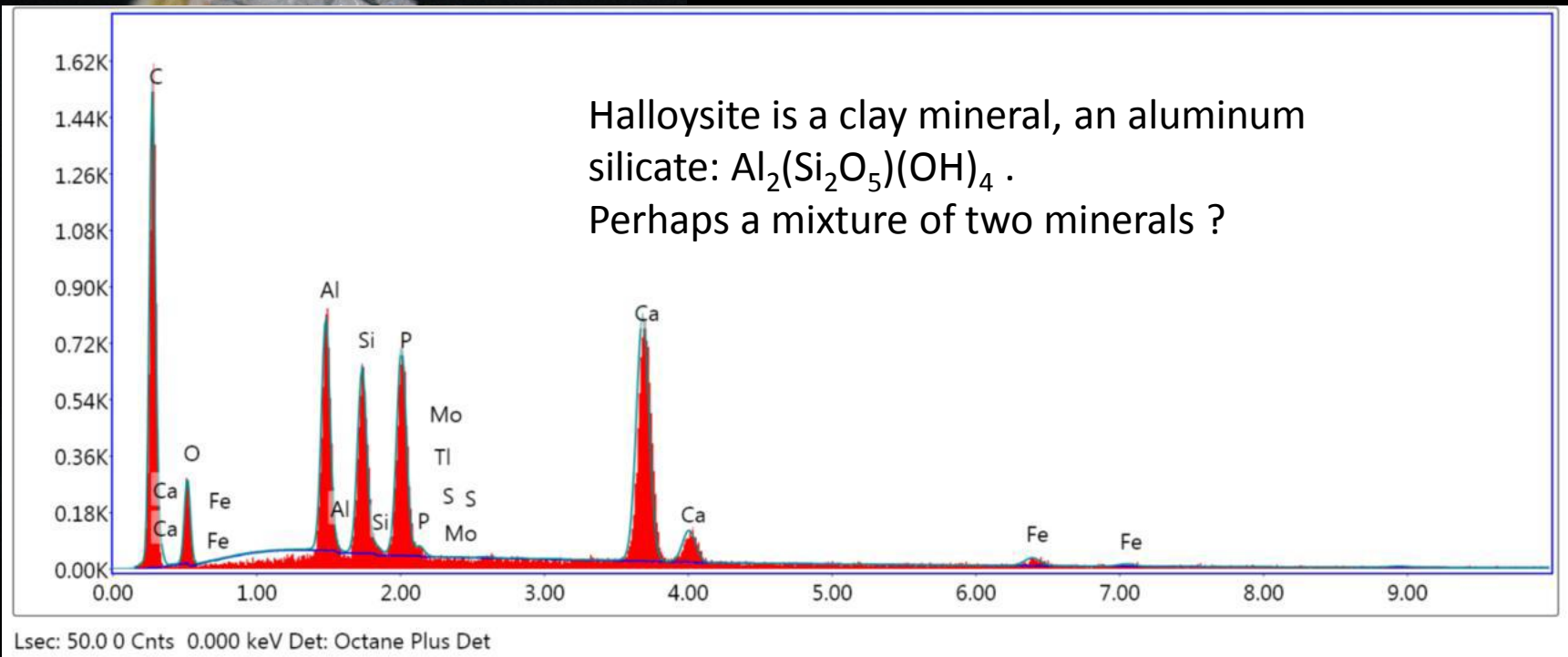
GRAFTONITE **Parker Mtn. Mine**, Strafford, NH

Catalog # 38.3.2-7

12 mm field of view



“HALLOYSITE” (A miss-identification) Palermo Mine, N. Groton, NH **Catalog # 493-4**
1 cm field of view. Full view: 1.8 cm specimen



“HALLOYSITE” (A miss-identification) Palermo Mine, N. Groton, NH **Catalog # 493-4**
 1 cm field of view. Full view: 1.8 cm specimen



HUREAULITE Parker Mtn. Mine, Center Strafford, NH **Catalog # 39.1.3/3-9**
5 mm field of view

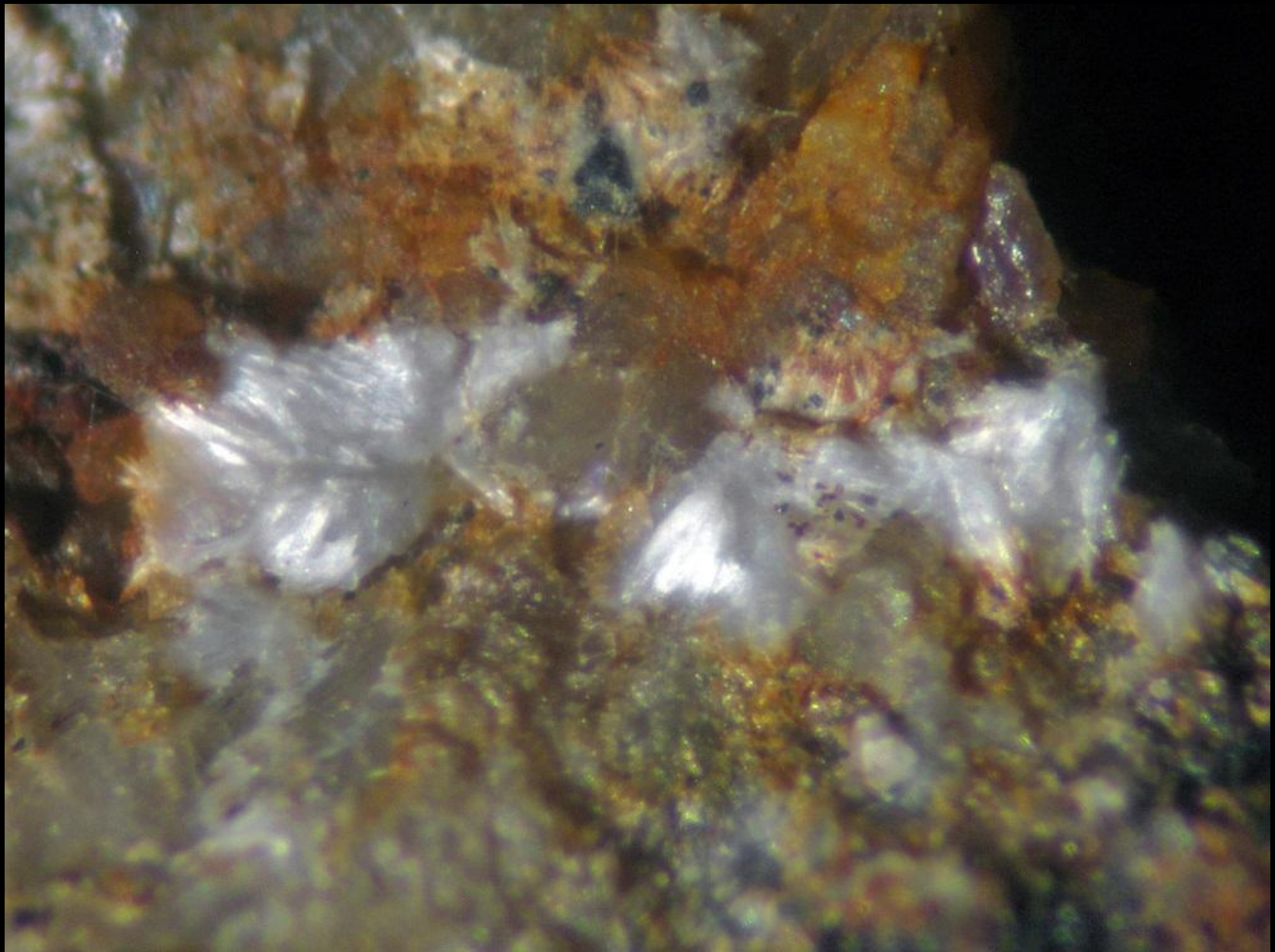


KASOLITE Ruggles Mine, Grafton, NH **Catalog #**
1.9 cm specimen



- Very fine, hair-like, crystals are discernible at high magnification.
- Matrix is quartz.
- Kasolite chemistry is: $\text{Pb}(\text{UO}_2)[\text{SiO}_4] \cdot \text{H}_2\text{O}$.
- The kasolite identification is per Foster's catalog.
- There are several crusty uranium minerals with similar appearance, (e.g. uranophane).
- It is unknown how Foster made the kasolite identification.
- An EDS analysis should be definitive, as kasolite is the only Pb, U, Si mineral.
- Kasolite is reported from the Ruggles Mine.

KASOLITE Ruggles Mine, Grafton, NH **Catalog #**
1.9 cm specimen

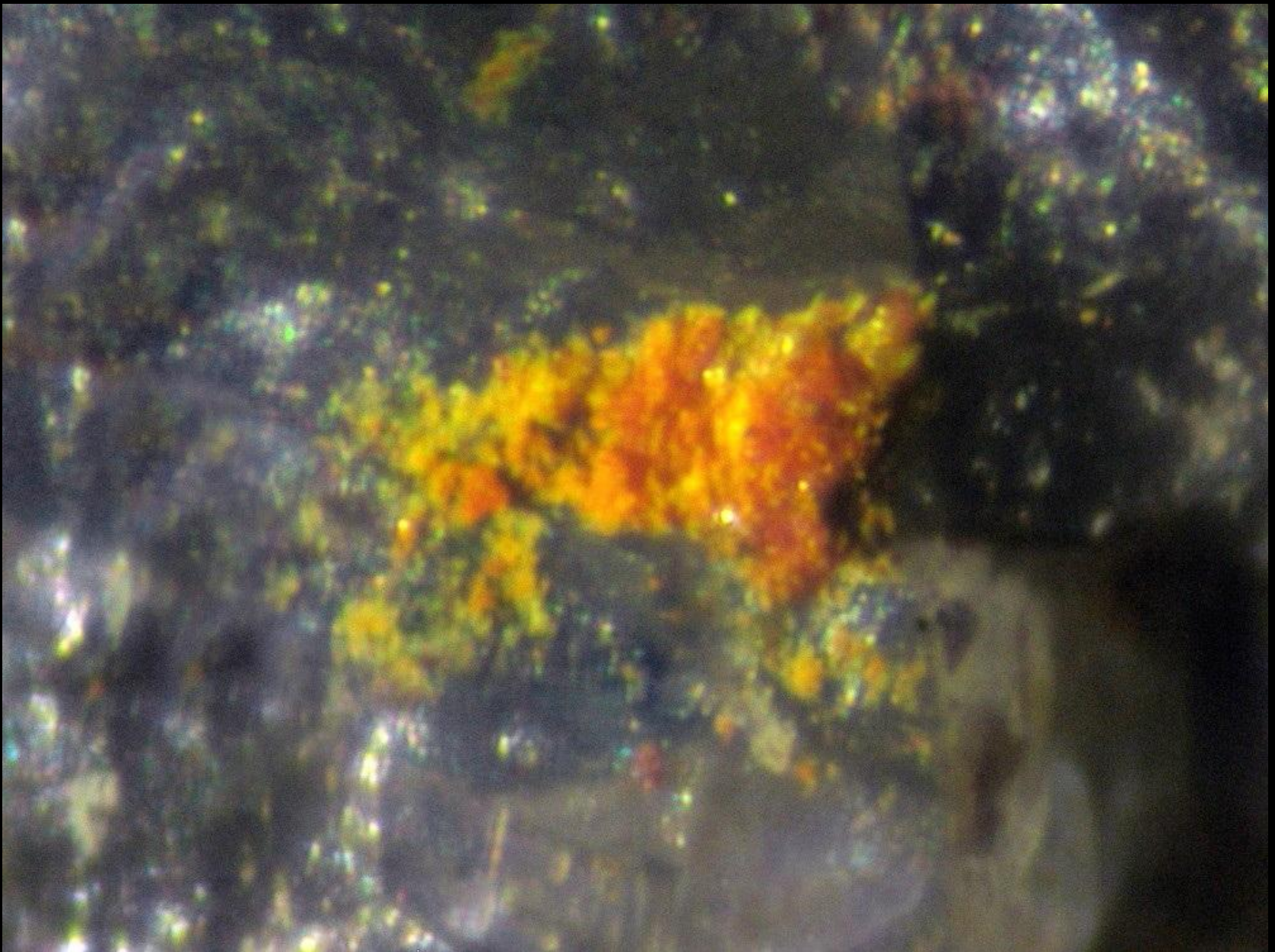


MORAESITE Chandlers Mill Mine, Newport, NH Catalog # Moraesite-New-2
3 mm field of view. Brilliant white moraesite fibrous sprays



OPAL var. Hyalite Gloucester, MA
15.5 mm field of view.

Catalog #



ORPIMENT Parker Mtn. Mine, Center Strafford, NH
1 mm field of view. Crusty mass of orpiment-realgar

Catalog # 26.10=1

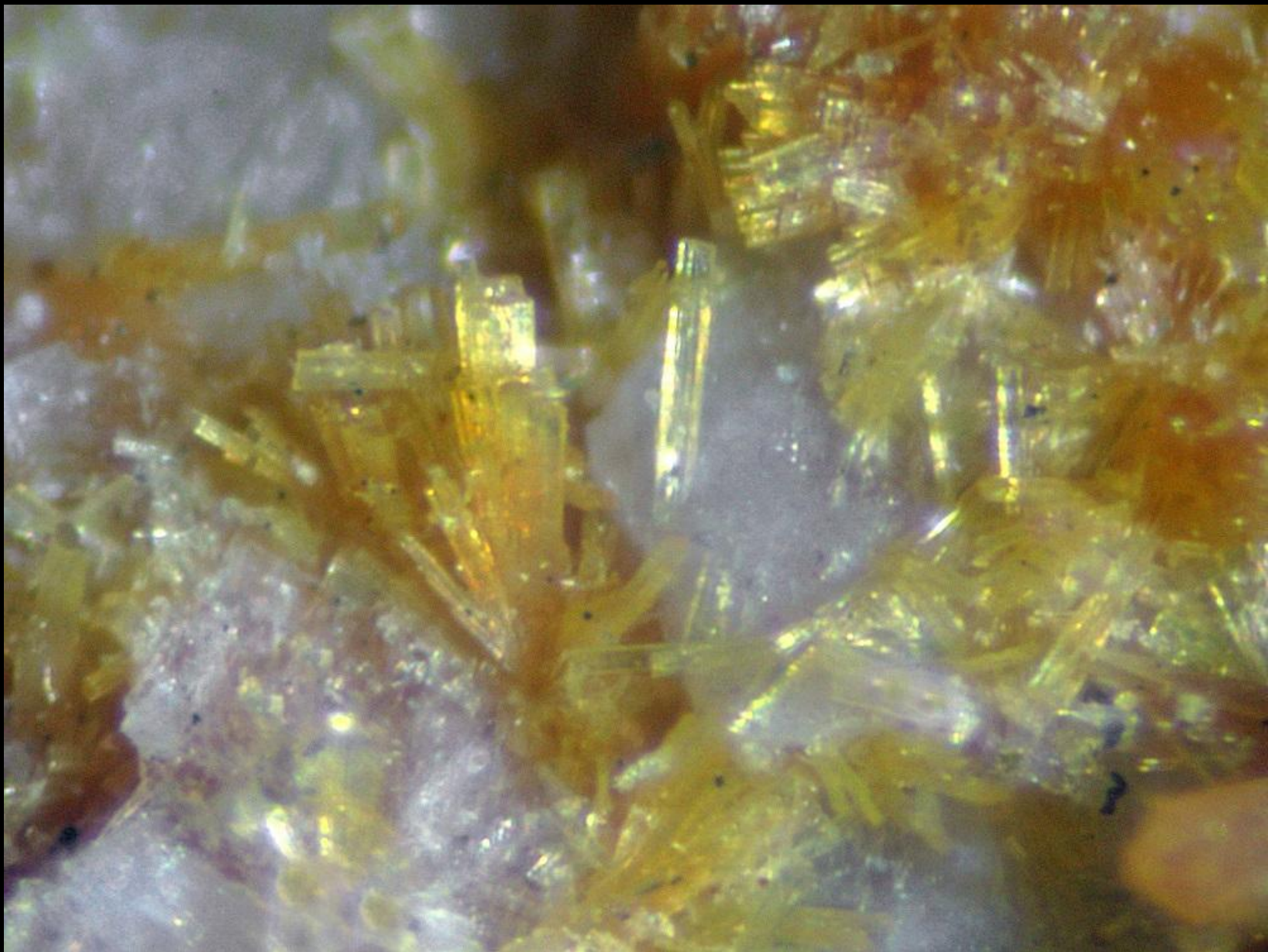


- An article in the December, 1982 issue of "Granite Chips" newsletter of the Southeastern New Hampshire Mineral Club by Phillip Foster reports a find of two "pin-head" sized occurrences of orpiment-realgar from Parker Mtn. This may be one of those specimens.
- Harvard examined the specimen, but was non-committal and indicated the sample was too small for analysis. Gunnar Bjareby opined a possible realgar-orpiment ID.
- The elements in realgar/orpiment are arsenic and sulfur, both of these are present at Parker.
- I [tm] had discounted a realgar-orpiment occurrence at Parker as "folklore." The matrix for this small crusty bleb is triphylite-ferrisicklerite and appears quite legitimate for a Parker Mtn. piece. An EDS analysis is needed.
- A Parker Mtn. Mine species list authored by Art Smith, *Rocks & Minerals*, July/Aug, 2005, pg. 256, includes orpiment. This Art Smith list is likely responsible for the inclusion of orpiment in mindat.org's Parker Mtn. Mine species list (2015).



ORPIMENT Parker Mtn. Mine, Center Strafford, NH
1 mm field of view. Crusty mass of orpiment-realgar

Catalog # 26.10=1

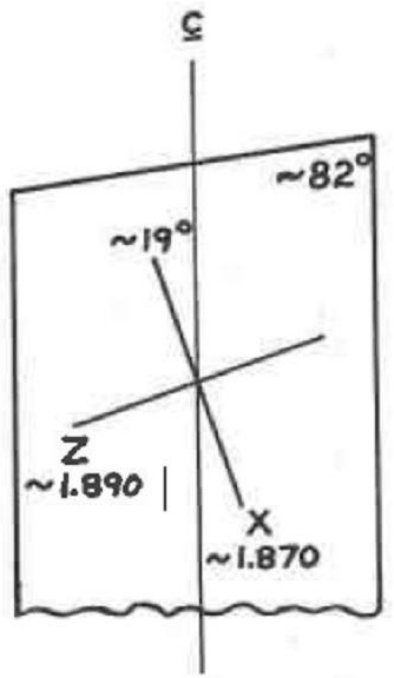
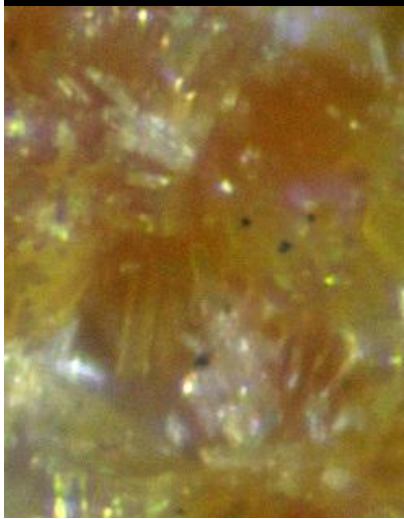


PARSONSITE Ruggles Mine, Grafton, NH **Catalog # 41.8.4-1**
About 1 mm field of view

•The majority of the micro crystals on this specimen are these thin, prismatic, transparent, yellow, crystals with square-ish terminations.

•An *American Mineralogist* article by Frondel Vol. 35, pgs. 245 - 250: "Studies of Uranium Minerals (I)" stated: "Parsonsite from New Hampshire... occurs at the Ruggles pegmatite near Grafton Center, Grafton County, New Hampshire, as crusts of microscopic spicular or lath-like crystals. The mineral occurs sparingly along fracture surfaces in massive feldspar and quartz" ... "The color of the mineral is pale citron-yellow, and the luster is adamantine. ... Most crystals have transparent and relatively perfect terminations."

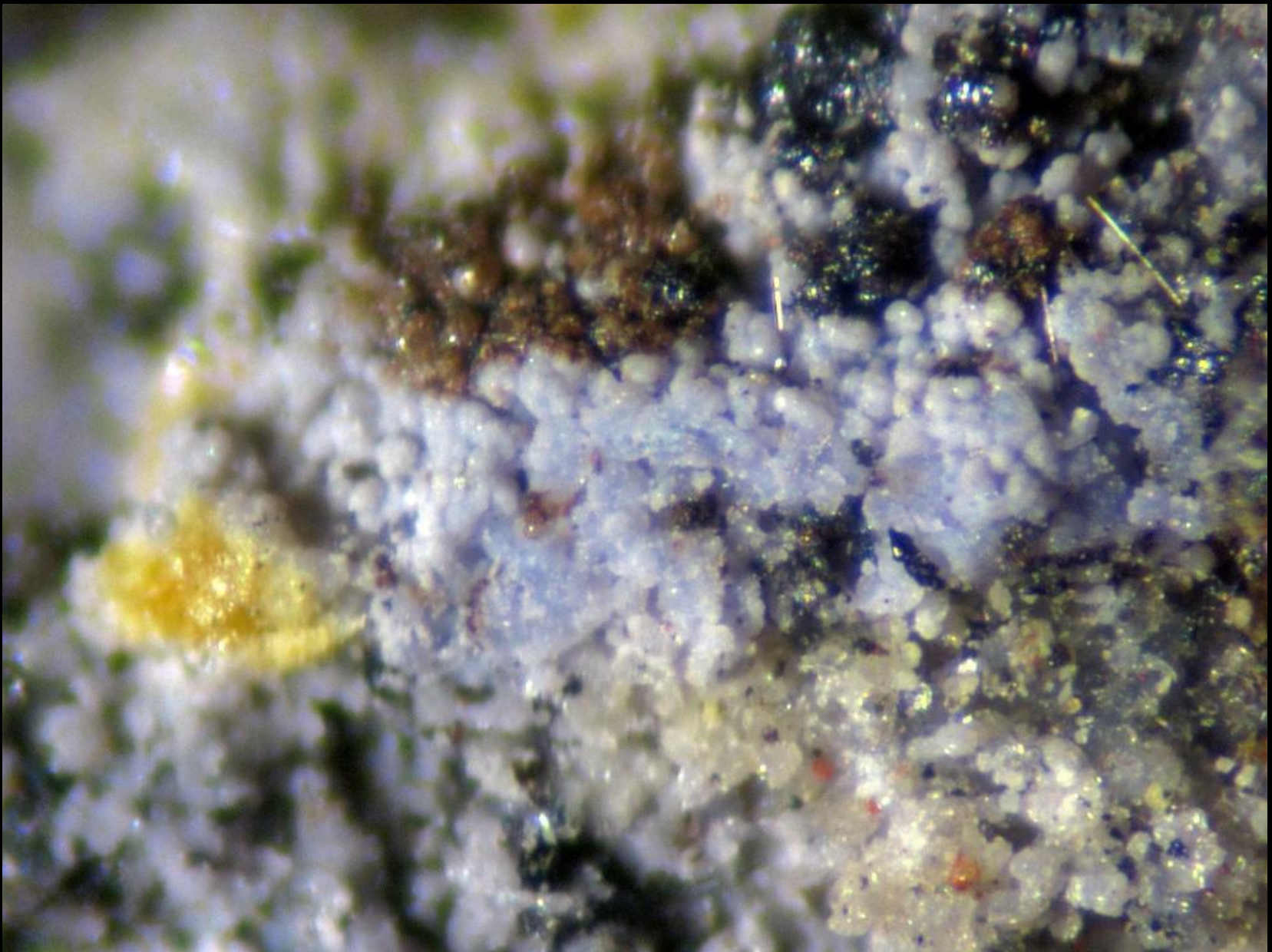
•There are no photos of Ruggles Mine parsonsite (or from any other New England locality) on mindat.org (2015).



3. New Hampshire



PARSONSITE Ruggles Mine, Grafton, NH Catalog # 41.8.4-1
About 1 mm field of view



PHOSPHOSIDERITE Palermo Mine, N. Groton, NH **Catalog # 40.3.2.2-5**
3 mm field of view - pale blue balls of phosphosiderite



PREHNITE Walpole, NH
4 mm field of view

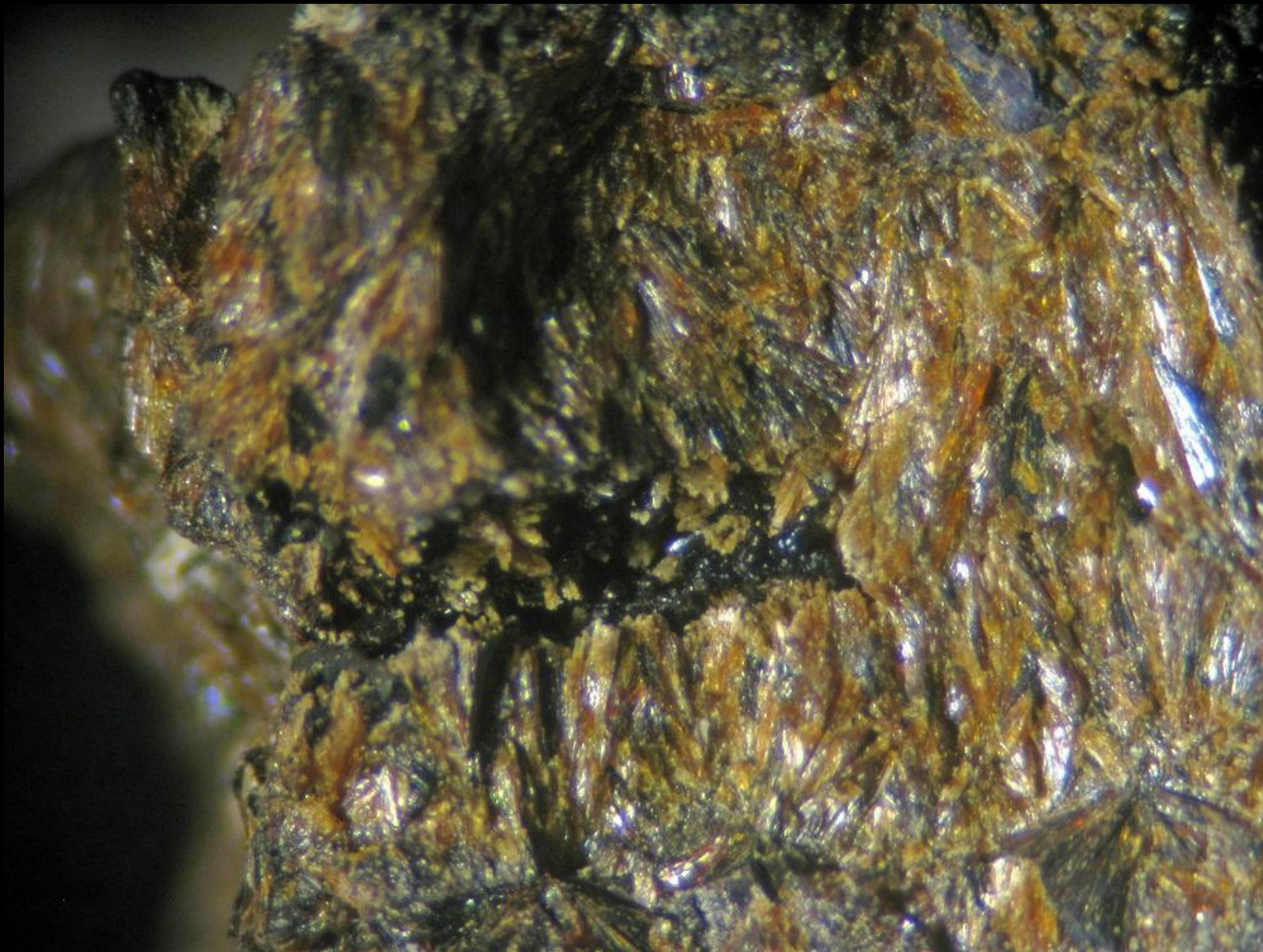
Catalog # 411-5




PREHNITE Hamden Quarry, West Springfield, MA

19 mm field of view

Catalog #

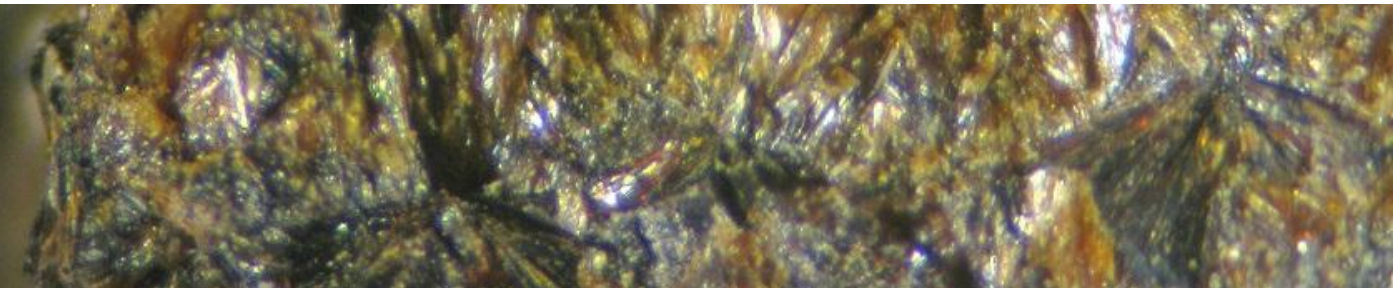


ROCKBRIDGEITE - manganoan Fletcher Mine, N. Groton, NH Catalog # 41.6.6.1-1
8 mm field of view. Foster has this specimen labeled as "Frondelite."

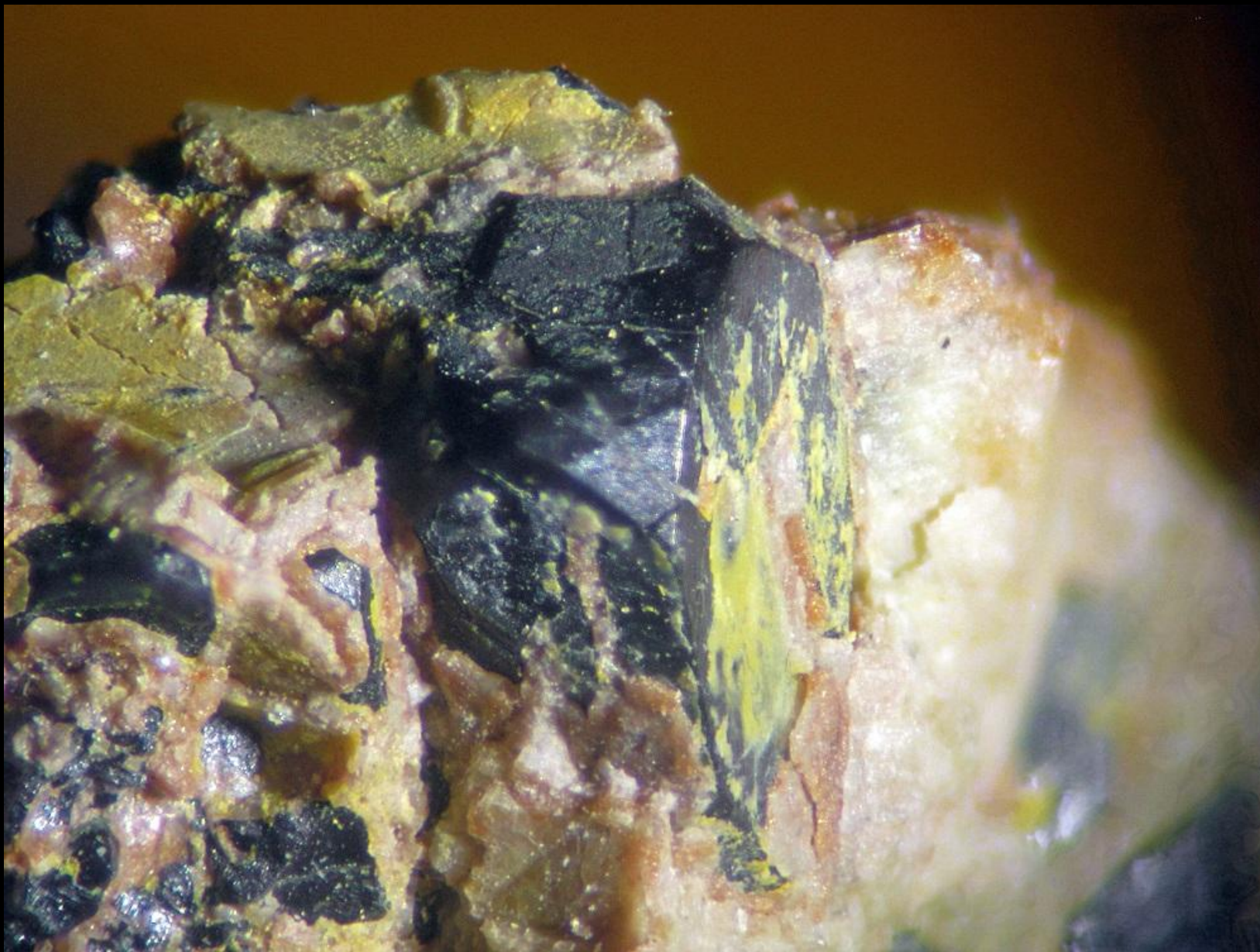


American Mineralogist article, "Frondelite and the Frondelite-Rockbridgeite Series" vol. 34,(1949) pgs. 541 - 549 , by M. Lindberg, includes analyses of two Fletcher Mine rockbridgeite specimens. The article notes the occurrence of "manganoan rockbridgeite (Fe^{II},Mn^{II})Fe₄^{III}(PO₄)₃(OH)₅, from the Fletcher quarry, North Groton, New Hampshire Ferrous iron may oxidize to ferric iron. At Fletcher quarry green rockbridgeite (Fe^{II}, Mn^{II})Fe₄^{III}(PO₄)₃(OH)₅ oxidizes readily to brown rockbridgeite, (Fe^{III}, Mn^{II})Fe₄^{III}(PO₄)₃(OH)₅“

A basic conclusion of the article is that this mineral at the Fletcher Mine is manganoan rockbridgeite, not frondelite.



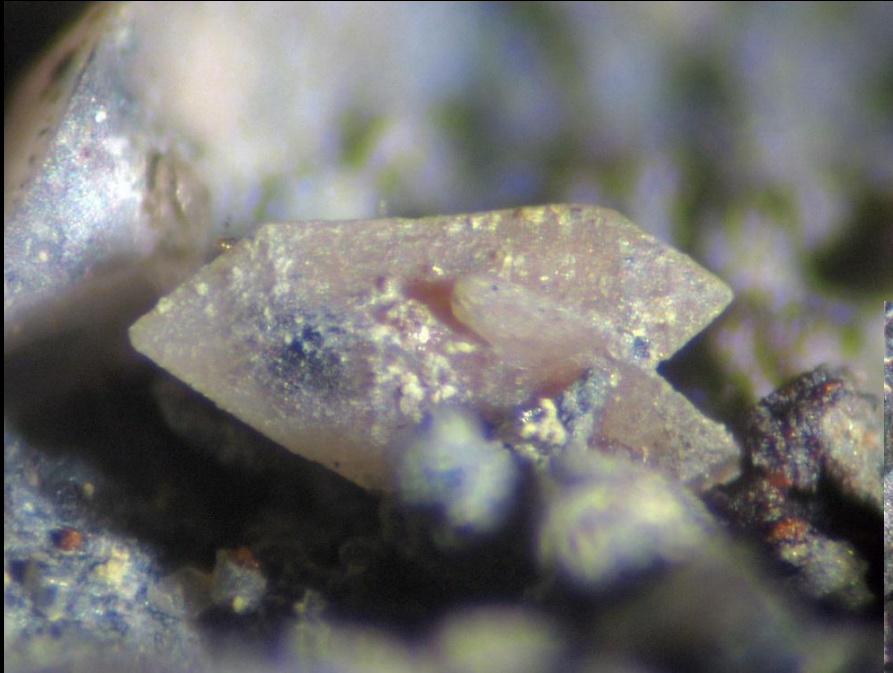
ROCKBRIDGEITE - manganoan Fletcher Mine, N. Groton, NH **Catalog # 41.6.6.1-1**
8 mm field of view. Foster has this specimen labeled as "Frondelite."



URANINITE Ruggles Mine, Grafton, NH

Catalog # 5121-13

1.7 mm blocky uraninite crystal with uranophane coating. Octahedral faces are also present.

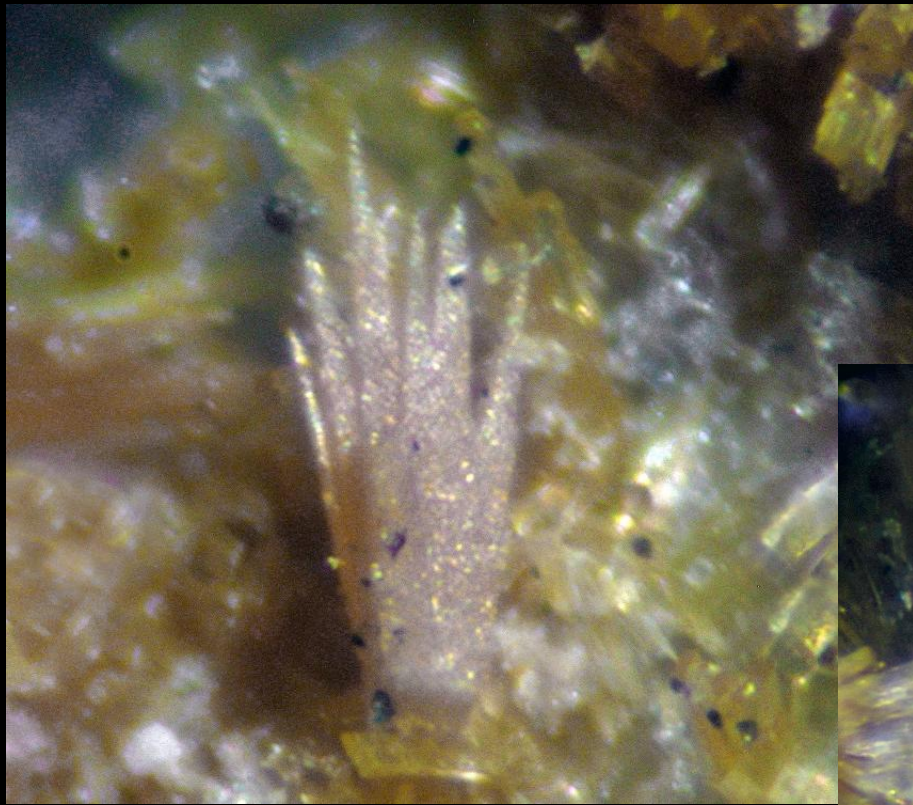


UNKNOWN Palermo Mine, N. Groton, NH

Catalog # 40.3.2.2-1

Top photo: 1 mm crystal, Lower photo: 7 mm field of view.

These crystals are on phosphosiderite, which is underlain by rockbridgeite.



UNKNOWN - with yel. Parsonsite Ruggles Mine, Grafton, NH

Catalog # 41.8.4-1 1

Top: 0.5 mm spray. Bottom: 0.8 mm cluster of crystals.

The Future of the Foster Micromount Collection

Historically, a very important collection

However, the majority of the specimens are quite pedestrian.

About 5% are most remarkable for species or locality occurrence.

What repository is willing to take on a collection that requires a microscope to appreciate?

Philip Foster a candidate of Micromounters Hall of Fame (Old Timers) ?