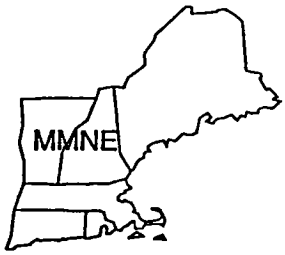

MICROMOUNTERS OF NEW ENGLAND NEWSLETTER

#212 January, 1998 1999

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

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Dues are $7.00/year and due on January 1st, payable to the Treasurer.

News items for the *Newsletter* are welcome and should be submitted to the Editor.
The *Newsletter* may be quoted if credit is given.
The Club address is c/o Editor.

Upcoming Meetings
No meeting December, 1998.
March 13th, 1999, 9:30 AM – Northboro, MA Public Library.

Next meeting

The next MMNE meeting will be held on Saturday, February 6th at the Fletcher Library in Westford, MA. Doors open at 10 AM. The business meeting will be held at 11 AM, followed after lunch by a presentation by Bob Janules. He will discuss his recent collecting activities.

Please plan to pay your dues at this meeting if you haven't already done so, as we plan to include a revised membership list in the March newsletter. Also please remember to inform us of any changes in address, ZIP code, telephone number, or email address. Please use the form on the third page of this newsletter.

January proved to be a casualty with both scheduled and postponed meetings called off due to hazardous road conditions – ah, the pleasures of a New England winter! On Jan. 16th the Auburn Library did not open until 1 PM due to ice buildup in the parking area. A few of our members did their best to notify as many members as possible. We apologize to any who made the trip in vain.

In the future, perhaps we might think about designating a point person to contact when the weather threatens to turn... Obviously, someone living near the meeting location would be responsible for a local 'weather report'. An answering machine could be updated within 24 hours or so of the meeting, carrying a message indicating postponement.

Specimen trade

A package of nearly 100 micromounts was sent to the Southern California Micro-Mineralogists earlier this month for their annual symposium sales table. In return, the MMNE will receive an equivalent number of micros representing Western localities.

I have since received a package of material from them. A variety of western minerals was enclosed including Oregon and California zeolites; copper secondaries and arsenates from Arizona; osumilite from McKenzie Pass, Oregon; realgar and orpiment from Nevada, etc. There are some very pretty clusters of almost acicular natrolite from Washington studded with minute crystals of apophyllite, calcite and analcime. These were apparently collected by Rudy Tschernich, of zeolite fame. A very impressive batch of material!

All these specimens will appear on the sales table at the annual MMNE symposium held in May. As always, we're looking for a wide variety of sales and giveaway materials – mineral specimens, books and magazines, article reprints, mineral photos or artwork... Donations can be brought to any MMNE monthly meeting, where the proper person(s) will take charge of them.

A fairly fast mounting technique

I currently have a backlog of several hundred specimens sitting loose in their hinged boxes, waiting to be mounted. This is a task I've never looked forward to – lots of finicky work for clumsy fingers! Some hobbyists use little blobs of the mineral tack or putty to render the specimen immobile (keeps the piece from rattling about and bruising the interesting stuff). Personally, I prefer the specimen mounted on an unobtrusive pedestal and the interior of the box blackened. Mounted this way, the specimen seems to float in space under the 'scope and reduces annoying glare from the shiny interior of plastic boxes. Some micromounts in my collection have black paper liners in a slip-top box with the tiny rock sitting on an all-but-invisible pedestal – truly exquisite work! However, the thought of cutting and sizing those little bits of paper...

In mounting a number of specimens for the trade with the California club, I came up with an assembly-line method that allowed me to mount 40 or so specimens in rapid order. I use the 1 x 1 x 7/8 inch hinged box with clear top and black base. Further supplies include

1) small corks (probably ½ inch or so in length), tapering to one end.
or
balsa wood stock ¼ inch or less square.

Calendar of upcoming events

Feb. 6, Westford, MA. MMNE regular monthly meeting. Fletcher Library, Westford, MA. Doors open at 10 AM.

Feb. 27-28, Meriden, CT. Meriden Mineral Club "Rainbow of Minerals" Mineral-Fossil-Gem Show. Maloney High School, Gravel St. (exist 16 off I-91, west on Main St., 3rd right). Hours: 10-5. Info: (860) 267-4644.

March 6-7, New York City, NY. New York Mineralogical Club Gem & Mineral Show. Holiday Inn Manhattan, 440 West 57th St (between 9th & 10th Avenues). Hours: Sat 10-7, Sun 10-6. Info: (914) 739-1134.

March 13, Northboro, MA. MMNE regular monthly meeting. Northboro, MA Public Library. Doors open at 9:30 AM.

March 26-28, College Park, MD. 27th Atlantic Micromounters Conference. Hosted by the Micromounters of the National Capital Area. University of Maryland, College Park, MD. Info: Steve Weinberger PO Box 302, Glyndon, MD 21071-0302.

March 27-28, East Windsor, CT. Connecticut Valley Mineral Club 13th Annual Gem & Mineral Show. Best Western Colonial Inn. Hours: 10-5.

April, Rochester, NY. 26th Annual Rochester Mineralogical Symposium. Info: Dr. Helen Chamberlain, PO Box 85. Manlius, NY 13140.

April 17, Sudbury, MA. MMNE regular monthly meeting. Fairbank Senior Center, Sudbury, MA. Doors open at 9 AM.

May 8-9, Topsfield, MA. North Shore Rock & Mineral Club Show. Topsfield Fairgrounds. Info (781) 592-4148.

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2) Duco Cement or its equivalent (some use Elmer's for its solubility in water).

3) India ink.

4) A hobbyist's or model maker's saw - long rectangular blade, finely serrated on one edge. (the blade on mine is 4 ½ x ¾ inches in size)

5) Exacto blade – the holder and the blades.

6) flat black modeler's paint, acrylic, which cleans up with water. (the pigment in this paint is extremely fine-grained, giving a very flat appearance and application by brush is less messy than spray paint)

7) small paint brushes.

The small corks and Duco Cement can be found in hardware or drugs stores, while the other materials can be found in a good hobby supply store.

Let's start with the pedestal material first. If the little corks are available, dump a bunch of them in a small jar and pour in enough India ink to evenly wet (and blacken) all the corks. India ink is preferable for this step, as it is easily available and dries quickly to a very flat black. When all the corks are black, decant off the excess India ink and spread them out on newspaper to dry. Balsa stock can be cut quickly to ½ inch or so lengths with the modeler's saw and treated similarly. The point here is to make the pedestals black.

While the pedestals are drying, take the plastic micro boxes and, using the Exacto blade, scribe a series of crisscrossing lines in the interior center of the base on each box. This roughens the area where the pedestal will later be glued, affording the glue a better 'grip'. Once the pedestals have dried thoroughly (solvent-based glues like Duco Cement don't adhere well to moist things), start gluing the pedestals into the boxes. I find that a small dollop of glue applied to both the roughed area in the box and the base of the pedestal, then allowed to dry for twenty seconds or so, makes for a quick tight bond. Press the pedestal firmly into the box for 10 seconds, then set aside. A large number of boxes can be prepared very quickly in this manner. Allow the glue to set and harden thoroughly.

Once the glue has dried, use a small brush to paint the interior of the micro box base with the flat black modeler's paint. This can be done with a few quick strokes of the brush. Little attention need be paid to the vertical sides of the base, as they are scarcely visible with normal viewing angles under the 'scope. Set the boxes aside to dry thoroughly. Small unblackened spots on the pedestal and the glue joint can also be touched up at this point.

Any number of micro boxes can be prepared in this fashion and kept on hand. Now we ready to begin mounting. Since my specimens have already been trimmed to fit a micro box and hopefully cleaned, it's simply a matter of orienting the specimen and gluing it onto the pedestal. Always try to pick the most unobtrusive yet strongest support when sizing pedestal to specimen. If the specimen appears to be too 'tall' to fit (this can be checked by eyeballing the specimen next to a box with pedestal), I gently saw off a portion of the pedestal with the modeler's saw. Sawing at an angle or making a 'V' cut into the top of the pedestal can accommodate specimens with irregular or angled bottoms. Be sure to gently blow off or otherwise remove the resultant sawdust before proceeding. Having a variety of pedestal diameters or cross-sections affords even the smallest rock an unobtrusive mount. Certainly, very small or single crystal mounts may be better displayed on pedestals consisting of toothpicks, porcupine quills, or even cactus needles or cat's whiskers.

Some things to remember. Everything looks much bigger under the microscope, including oversized pedestals and errant droplets or hairs of dried glue. A dirty paintbrush can leave specks of dust embedded in the paint used to blacken the box interior; specks of sawdust can also clutter the view and even dirty the specimen. Have fun and don't forget to label the box!

MMNE Membership Application or Renewal

Dues of $7 are due in January Please bring to meeting or mail to Treasurer to be sure your name is on The membership list for the following year.

Name(s)_____

Address _____

_____

Phone _____

Email _____

Special Interests or remarks

_____

_____

_____

Jan. 25, 1999

Dana Martin Morong
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Madbury, NH 03820-6805

NOTES ON TESTING TECHNIQUES

In the Microminerals column of the September-October 1998 issue of *Rocks & Minerals*, use of the carbonate test and use of the polarizing microscope were discussed.

The carbonate test is very handy. I use two types of hydrochloric acid. One is the pure type used for testing for cations, such as Fe^{+2} and Fe^{+3}, where purity of acid matters, and the other is common muriatic acid (the yellow tint is often due to a trace of iron) which is used where impurities don't matter, such as for effervescence. I dilute to proper amounts to fit into 1-ounce dropper bottles (available at many drugstores), thus safety and convenience are combined when one wants only a drop, or a bit more in the bottom of a test tube.

I once received a sample of suspected rhodochrosite (altered from triphylite) small as the head of a pin. Somehow dividing it into two parts, I found that one part effervesced in acid, the other part yielded the Mn bead test. Another test, although not a carbonate, involved two tiny crystals of torbernite, all I would spare, suspected due to color and tetragonal morphology. On a slide under the microscope, in a tiny droplet of acid, I watched it dissolve into platelets (torbernite is a sheet phosphate) and color the acid green. The other microscopic crystal had too little copper to color a bead, but the bead did fluoresce vivid green in UV light, a sensitive test indicative of uranium.

Despite a claim that sulfur and iron require reagents not commonly found in the kitchen (MR, 1975, p. 259), both of these can be tested with kitchen chemicals. Sulfur is easy to test using soda and an old silver-plated spoon (James Smithson was the first to publicize this test; he also mentioned copper, and I have found it useful to distinguish large amounts of sulfur from mere trace amounts). Once one knows there's a lot of sulfur in it, sulfates are easily distinguished from sulfides.

As for iron, a prospector in Bolivia uses such common kitchen chemicals as tea, sugar, and soda to distinguish Fe^{+2} from Fe^{+3} in soluble minerals. This is but a variant of the old tannic acid test, using tea (which often contains much tannic acid); the other reagents serve their chemical purposes well. I have used the old tannic acid test in testing for a certain state of iron.

Zinc is another common metal useful in testing; it is usually obtained from used common batteries. It reduces several other metals, useful in the test for cassiterite (with muriatic acid), also in the test to distinguish graphite from molybdenite (in case one doesn't want to bother testing that for sulfur or for molybdenum): that test only requires a few drops of muriatic

acid, a tiny crumb of malachite (scrape it from some copper plumbing), and a bit of zinc. Although this test isn't in it, many other tests are to be found in Dr. Pough's classic *Field Guide*.

Polarizing microscopes are so much more expensive than stereo microscopes that many cannot afford them. Furthermore, refractive index fluids can be too expensive for the average collector although affordable to the high-priced professional. However, you don't need a polarizing microscope to use refractive index fluids, as some of the principles used can be adapted for use with the good old stereo microscope.

For example, I have a couple of pieces of cheap polarizing film, one which is inserted just under the glass stage (which has a mirror below to reflect the light up through), the other film placed under the objectives to get a crossed-polaroids effect, and the sample is rotated on glass to check for anisotropism.

Otto G. Bartels in the Nov.-Dec. 1955 issue of *Rocks and Minerals* magazine, wrote on the "Use of Refractive Indices to Identify Minerals" (vol. 30, p. 580-582). He used a microscope of 100x to 200x (a monocular scope might work, or a high-power lens on a stereo scope). He used the Becke line method to see whether a sample was above or below the refractive index of a fluid, and listed several common liquids and their refractive indices (such as glycerine, whose index is closer to 1.47).

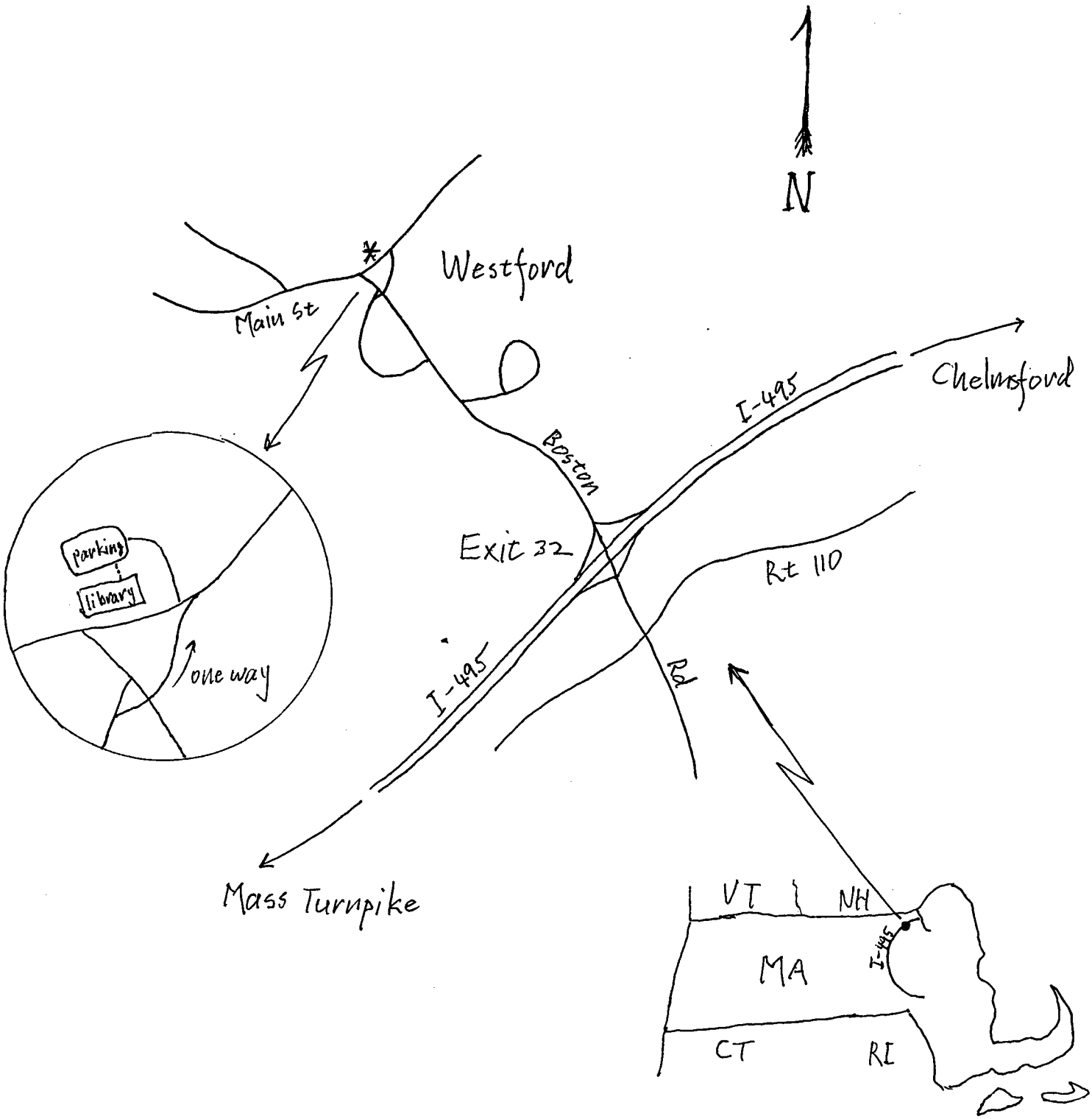
The prospector from Bolivia uses concentrated solutions of sucrose (cane sugar) to get a refractive fluid up to 1.50, and comparison of grains, along with some known samples, in this accentuates differences of refraction of samples. I can understand this as I have noticed, while once panning for another mineral, that topaz in water "glittered" much more than quartz. This may be due to the fact that as air has a R.I. close to 1.00, but as water has one of 1.33, closer to that of topaz and quartz, that the differences of refraction of topaz and quartz are accentuated when in water, and greatly increased when in concentrated sucrose solution.

To sum up, there are many ways one can test minerals without expensive equipment, and many of these are quite informative and enjoyable. To add to the list of books, and the sources thereof, published in my article "A Review of Some Texts on the Qualitative Chemical Testing of Minerals" (*Mineral News*, October 1994, v.10, #10, 6-7), I would like to add a couple of references which are available today:

How to Make and Use a Small Chemical Laboratory, by Raymond Francis Yates and S.A. Pellerano, 1939, paperback, 140 pages.

Blowpipe Analysis, by J. Landauer, Second edition, 1891, 173 pages + a few unnumbered pages.

Both of these are highly recommended by this collector, and are reprinted in paperback for rather modest prices by Lindsay Publications, PO Box 538, Bradley, IL 60915. Ask for their Technical Books catalog. Ω



from Exit 32, take Boston Road northwest for about 1 mile to fork. Take right fork which ends across from driveway to library parking. Go through rear door & down several steps to meeting room on left.

Meriden Mineral Club

"RAINBOW OF MINERALS"

1999 Show

Maloney High School
Gravel Street
Meriden, Connecticut

Saturday, February 27 & Sunday. February 28

10 am to 5 pm

MINERALS GEMSTONES JEWELRY

CRYSTALS FOSSILS DEALERS EXHIBITS

HOURLY DOOR PRIZES! FREE PARKING!

REFRESHMENTS!

Discount Ticket
50¢ off
Limit: Six
Regular Admission:
Adults - 3.00
Children 12 & under
Free
Seniors - 2.00
Students - 2.00