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.

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Dues are $6.00 per year and are due on January 1st, payable to the Treasurer

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

NEXT MONTH

The next meeting of the MMNE will be Saturday, March 9th, at the Auburn Public Library.

February 1991 Newsletter #147

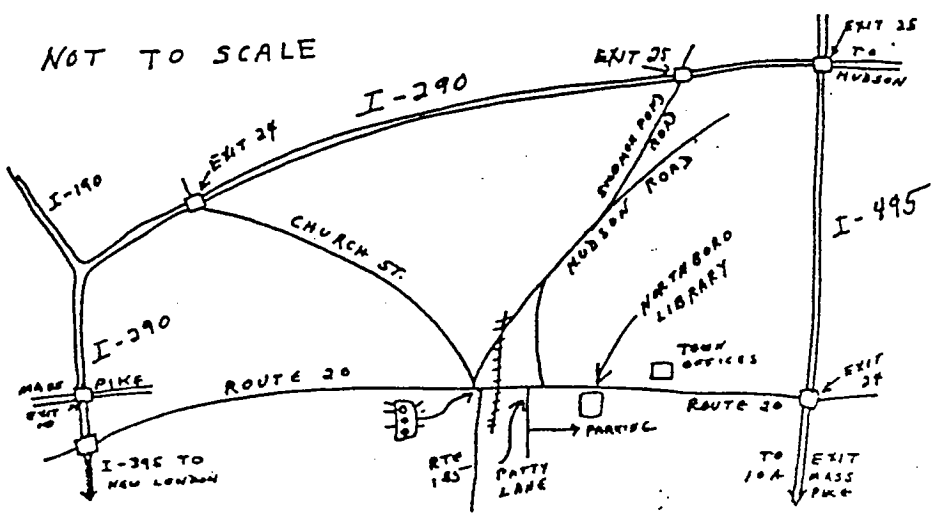
Our next regular meeting of the MMNE will be on Saturday, February 9, 1991, at the Northborough Public Library. Gene Bearss will give a short talk on the cleaning of mineral specimens. This talk ties in with the article which is currently appearing in installments in our bulletin.

How's the Weather?
If the weather is threatening on the day of a meeting, you can dial a forecast. For the Worcester area (Northborough, Auburn, etc.), dial (508) 791-3657; for the Boston area, the number is either (508) or (617) 936-1234. Regular charges apply to all calls. You may want to add them to your personal telephone list for future reference.

MMNE Micromount Photo Album
Since many of our members have excellent slides of minerals in their micromount collections, I thought it might be a good idea to convert some of these to prints to fill a photo album. This album will be available for view during meetings; and when filled, it can be loaned out to regional shows. There, it can be part of the displays to help introduce microminerals and our organization to the public. If members approve of the cost that it will entail, I am willing to co-ordinate this effort. I look forward to your feedback on this proposal. -- President Bob Janules

REMEMBER, DUES ARE NOW DUE! Please bring your dues ($6 per member) to our next meeting or mail them to our Treasurer (address in adjacent column). Checks should be made payable to: Micromounters of New England. Please note that a small time lag may occur between the receipt of your check and the change to "91" on your mailing label. We attempt to make changes as quickly as possible, but checks and bulletins may cross in the mail.

Please note address change:
Dana Morong
117 Piscataqua Bridge Road
Madbury, NH 03824



Sales Table Donations--Give-Aways, Etc.

It is not too early to begin setting aside mounted specimens to be donated to the May meeting sales table. Please deliver all such donations, with a suggested price, to Steve Cares. Also, Steve, as always, will happily receive more material for the give-away table.

In order to ensure a good variety of material at the give-away table throughout a meeting, please make your selections and return cards to the table expeditiously. Also, if you remove the last specimen from a card, please return the empty card. This way we know which species need to be replenished.

With my favorite collecting areas finally under a blanket of snow, it is not too early to begin thinking "SPRING". --- Bob Janules.

New Publications

Subscribers to the Mineralogical Record are already aware that the 1991 edition of Fleischer's "Glossary of Mineral Species" is now available. If you are in a hurry, you may order directly from the publisher at a cost of $15 plus $1 postage (see page 2 or 5 of the Jan./Feb. issue of the Mineralogical Record).

Almost simultaneously, another book, much like the "Glossary", has been released under the title of "Mineral Reference Manual" at a cost of $14.95 (plus postage?). It is reviewed below.

Member Jim Grandy has generously offered to look into getting the "Glossary" and possibly the "Manual" at a discount for MMNE members. At the February meeting there will be a sign-up sheet for those interested. If you can't get to the meeting, send or call your order to Janet Cares (address on masthead) or telephone (508) 443-9180 by the day of the meeting, or let Jim Brandy know before February 12th. Write him at 524 Brooksvale Avenue, Hamden, CT 06518, or call him at (203) 248-0440. Savings will hopefully be $3 or more. Do not send money, as MMNE will pay Jim and collect from you when you pick up the order. The Club will not mail orders to members because of prohibitive costs.

THE MINERAL REFERENCE MANUAL: A REVIEW

This publication by E. H. Nickel and M. C. Nichols (1991) is similar in content, but with more information than the well-known "Glossary" by Fleischer. Mineral species are listed alphabetically with formula, type locality, reference to original description (including foreign journals), plus data such as color, crystal system, hardness, specific gravity, etc. Those of you who make frequent use of any of these facts may find it more useful than the "Glossary", though it lacks the information on mineral groups which is given in the latter publication. Varietal and discredited species are listed in an appendix. I is bound in the usual paperback manner, so it may not readily lie flat when open.

If you prefer to order directly, the publisher is Van Nostrand Reinhold. 7625 Empire Drive, Florence, KY 41042 (Telephone: (606) 525-6600). The quoted price is $14.95. It is not known whether postage is additional. -- JWC.

A GUIDE to MINERAL CLEANING by E. L. Steyn (*continued from last month*)

CHEMICAL CLEANING

Always add acid to water, never, but never the other way, as considerable heat is generated, causing splashes. Remember AAA to W. Always Add Acid to Water. Add the acid slowly, stirring all the time. It is usually more effective to use acids in a warm state as this speeds the reaction. a double boiler is the proper way to do this. The outer container can be of any heat proof material as only water comes into contact with it. The inner container, preferably a Pyrex glass dish, is set on three spacers, wood or bits of tile, with a minimum of 25mm under. When using hydrofluoric acid, do not heat at all, and use polyethylene containers only. Glass is best for most chemicals when heated. Stainless steel containers are used cold.

Having ascertained the composition of both the mineral as well as the unwanted element, find the correct chemical to use by means of the solubility table, then prepare the solution. Warm this if necessary. Proceed by immersing a scrap of the mineral to be cleaned in the solution and observe the result, if any. Hold it there for a minute if no bubbling action occurs, but if it does effervesce, remove and inspect with the ten power loupe. Note the effect, whether the mineral is affected or the unwanted material. If no effect, leave for a longer period with frequent inspections. Use stainless steel tongs to manipulate the specimen and before inspection, dunk the specimen in a hot water bath to avoid any splashes. Jot down the results, and from this, the method can be recreated at any future date.

If after 24 hours no results are obtained, another method or chemical must be tried. Only when the correct procedure has been found should the actual specimen be treated. Frequent inspections will safeguard it, so do this often.

When finished, rinse in the same temperature water; never let it stand in the solution longer than necessary, then use the proper neutralizer for a few minutes to counteract any further reaction, then wash well with water. Let the specimen dry naturally in the open, under shade. Be careful not to put a hot specimen in a cold solution as thermal shock could shatter the specimen. This holds true for the washing water as well.

CHEMICALS USED FOR CLEANING MINERALS

AQUA REGIA

Usually one part nitric acid to three parts hydrochloric acid by volume. Mix as required as this solution does not keep for long, and discard when finished. Do not store. Bicarbonate of soda is the neutralizing agent for this acid.

ACETIC ACID CH_3COOH

Glacial acetic acid is the usual form that this acid is supplied in, and is 28% strength. Household vinegar is a 5% solution, and, at this strength, we only use it for neutralizing alkalies. Bicarbonate of soda is the neutralizer.

ACETONE CH_2COOH_3

Used for minerals soluble in water, this liquid is highly volatile and requires plenty of ventilation, and is also highly inflammable. Do not heat, or smoke while using this, and keep away from fires and heater. No neutralizer is necessary.

ALCOHOL

Comes in various forms such as grain, wood and methylated. Useful to dry minerals that have been in water, the fast evaporation carries the water away, thus drying the specimen. Do not heat; very inflammable.

AMMONIA NH_4

Obtainable at the grocer and chemists, but use with care. It stings the eyes and nose, and blisters the skin. Vinegar is the neutralizer.

CAUSTIC SODA -- Sodium hydroxide NaOH

This is obtainable at the grocer as caustic soda or as washing soda in lesser strength. A dangerous alkali, it burns the skin on contact and is very corrosive. Neutralize with vinegar at once, then wash well with water.

CITRIC ACID $C_6H_8O_7$

This is a very safe though weak acid; it is used in soft drinks. Neutralize with water.

CYANIDE Hydrocyanic acid HCN

Very poisonous, extremely dangerous chemical that is used as a 2% solution. Do not swallow, inhale or touch. Leave this chemical alone if it is at all possible. Do not mix with any acid as this forms the deadly hydrocyanic gas, which is used in most American gas chambers.

HYDROCHLORIC ACID HCL

Muriatic acid when impure, this is one of the most used acids, obtainable at any hardware store as spirits of salts, and as swimming pool acid. When pure it is colorless but expensive. Yellow tinted, very corrosive at 38% strength is the usual solution. This 38% is usually diluted three or two to one. Bicarbonate of soda is the neutralizer. Use glass containers as much as possible as it does attack plastics, though somewhat slowly.

HYDROFLUORIC ACID HF

This is the most powerful acid and therefore extremely dangerous. It causes painful, ulcerous sores that are very difficult to cure, even by a doctor. When the sores appear, it is too late for self treatment; the immediate attention of a doctor is needed. The fumes are also very dangerous and can cause death if inhaled. Leave this acid to the experts in their well-equipped laboratories. This acid corrodes most materials, but the main attraction to us is that it will attack the silicates, and these are some of the most difficult minerals to remove from a specimen. Polyethylene containers with long solid handles are used so as to keep the acid at a distance from the user. Lots of ventilation in a proper lab is the only place for this extremely dangerous acid.

NITRIC ACID HNO_3

Usually in a 70% solution, this is a strongly corrosive acid, and comes in dark brown bottles as it is decomposed in light. Do not use plastic containers as the acid penetrates the plastic as a gas. It then attracts water from the atmosphere and reforms into acid again. The bottle must stand in a glass dish because of this. Store in darkness. Neutralize with bicarbonate of soda, and wash well with water. Do not use rags or newspaper to wipe up spills as spontaneous combustion could take place. Sprinkle neutralizer on any spills then wash away with water.

OXALIC ACID $COOHCOOH \cdot 2H_2O$

Normally comes as a white crystalline substance. Working solution is usually 60 grams per 5 liters, but this can be strengthened if necessary. Poisonous, it will also burn the skin. Use distilled water when using the weaker solutions as the calcium in tap water will neutralize the acid. Good for limonite and rust stains, it also attacks the carbonates. Neutralize with bicarbonate of soda and wash well.

SODIUM DITHIONATE $NA_2S_2O_6 \cdot 2H_2O$

This acid is milder than hydrochloric acid and is used when the latter is too strong for a particular mineral. White to colorless crystals, soluble in water, in a ratio of three dessert spoons to a liter of water. It is good in removing calcite and also ferrous stains from carbonates and phosphates. Do not use too long on the last tow as they are slightly attacked. Wash off with water.

SODIUM PYROSULFITE $NA_2S_2O_5$

This mild acid is used mainly to remove manganese oxide stains while having little effect on other minerals. Wash with water.

SULFURIC ACID Oil of Vitriol H_2SO_4

A thick, viscous liquid, colorless when pure, this is the acid used in car batteries, and a weak form can be purchased from most garages. Very poisonous and corrosive, so use with the utmost care. Neutralize with bicarbonate of soda; then wash well with water.

The fumes given off are also dangerous. This acid also attracts atmospheric water so the glass stoppered bottle should also stand in a glass dish so as to catch this solution. Remember to add the acid to the water, stirring all the time. This acid attacks living tissue as well as any organic material, so do not use rags or newspaper to wipe up any spill. Sprinkle with bicarbonate of soda and wash off with water. When used as a strong, hot solution, it will attack the silicates, but somewhat slowly.

Table of solubility of minerals included in next month's bulletin.

A SPECIAL NOTE.....
By way of tribute to Vi Anderson, some of her friends thought it would be fitting to donate funds to purchase a special specimen for the Royal Ontario Museum in her memory. Donations to this fund can be sent to the attention of Dr. Bob Gait, c/o Mineralogy Department, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6. Please make checks payable to The Royal Ontario Museum. Tax receipts will be issued by the museum.

From CMMA "MICRONEWS", November 1990, Muriel and Eric Wood, Editors.

FLUORESCENT MINERALS OF MONT SAINT-HILAIRE

Analcime - Some analcime from Mont Saint-Hilaire will fluoresce bright green under short wave ultraviolet with weaker response under long wave.

Apophyllite - clear glassy masses of apophyllite, found with other silicates, will fluoresce green under short wave, occasionally yellowish under long wave.

Catapleiite - This rare mineral is found in a range of sizes, usually as dense clusters of thin transparent tan crystals with other silicates, occasionally as large tabular crystals. The fluorescence is occasional, and is bright green under short and long wave ultraviolet.

Elpidite - A rare mineral, elpidite is found as fine hair-like needles or small elongated white crystals. May fluoresce green or yellowish green under short wave ultraviolet.

Gaidonnayite - A very rare mineral for which Mont Saint-Hilaire is the type locality, is usually seen as very small balls of crystals, sometimes speared on aegirine, colored weak tan or grey. Fluoresce is bright green under short or long wavelength. Fluorescence provides a handy way of locating these small crystals in a tangle of other minerals which may take up a specimen.

Genthelvite - Found with other silicates as very small glistening crystal clusters, sometimes slightly tan in color, this very rare mineral fluoresces bright green under short and long wave ultraviolet.

From CMMA "MICRONEWS", January 1991, Muriel and Eric Wood, Editors.

ATLANTIC MICROMOUNTERS CONFERENCE

The Micromineralogists of the National Capital Area sent our club an invitation to the **1991 Atlantic Micromounters Conference**, which will be held April 5-7, 1991. The sessions on the 6th and 7th will be held at the University of Maryland's University College Center of Adult Education, at Adelphi Road and University Boulevard, College Park, Maryland, 20742. The pre-conference reception, held on the 5th, will be at the Museum of Natural History, Smithsonian Institution, Washington, DC.

Speakers this year will include Bernard T. Kozykowski talking about the story behind the saving of the Sterling Hill Mine, and Robert Jaxel talking about secondary minerals of the slag dumps of Europe (not Laurium). A panel discussion on mineral photography composed of experiences photomicrographers, including members Paul Smith and John Ebner, is planned. For more information, several packets will be available at the next meeting.