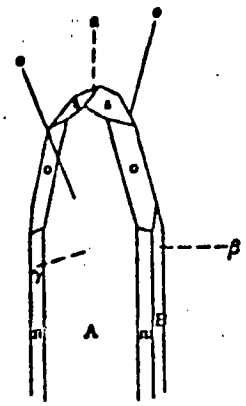

Fig. 630.—Acmite, A (100), m(110), B (010), e(111), c (001).

MICROMOUNTERS OF NEW ENGLAND

PRESIDENT — Norman Biggart, 4 Baron Park Lane, Burlington, MA 01803, 617-272-1537

VICE PRESIDENT — Cleaves Dodge, 22 Wilford Street, Keene, NH 03431, 603-357-4023

BULLETIN EDITOR — John Anderson, 17 Ginley Road, Walpole, MA 02081

TREASURER AND SECRETARY — Ralph Carr, Jr., 25 Farnum Road, Warwick, RI 02888, 401-467-3823

NEWSLETTER #43 — June 29, 1978

July 15 and 16, 1978 weekend in New Hampshire

Once again we will have our summer meeting at the Reiner's, on the shores of beautiful Lake Winnipesaukee, and collect the following day at the Palermo Mine, in North Groton. Bring your scopes, chairs, and folding tables and discuss minerals and what was found by some of our members on the New Haven Club's trip to St. Hilaire and Francom, in May.

Anyone who missed the last meeting at B.U. will have another chance to pick out micros sent to us by the Nassau (Long Island) Mineral Club's micromount group in the recent exchange package.

As you can see by the heading on this newsletter, we have a new slate of officers for the coming year - good luck to them.

WELOGANITE

Ann P. Sabina, J. L. Jambor and A. G. Plant
Can. Mineral., 9, 468-477, 1968

Weloganite, named in honor of Sir W. W. Logan (first director of the Geological Survey of Canada, 1842-1869), occurs in an alkalic sill at St. Michel, Montreal Island, Quebec. Crystals are roughly hexagonal in outline, and oscillatory growth {001} produces striations and grooves, parallel to the base, on prism faces. Terminations are pyramidal (either pointed or ending in a pedial face) and weloganite crystals range in size from 3 cm down to 2 mm parallel to the elongation. Their color is lemon-yellow to amber, and basal sections are often zoned (white to yellow). The mineral exhibits perfect basal cleavage, vitreous luster, white streak, conchoidal fracture with a hardness of 3-1/2. Weloganite twins on {001} forming prominent recentrants.

Chemical analysis yields the empirical formula $Sr_3Zr_3C_{9.2}H_{9.2}O_{27.2}$ or, ideally, $Sr_2Zr_2C_5H_5O_{15}$. Infrared spectroscopy and thermogravimetry suggest that CO_2 and water are complexly bound to zirconium.

Associated with weloganite are euhedral calcite, quartz and dawsonite, and also hydrous barium-aluminum-carbonate. Additional species found with weloganite include plagioclase, siderite, dolomite, strontianite, barite, celestite, fluorite (both black and colorless), cryolite, zircon, anatase, a new barium analog of dundasite, marcasite, pyrite, galena and sphalerite.

Trigonal—space group $P3_1$ or $P3_2$

a = 8.96, c = 18.06 A

G = 3.22; 3.260 (calc.) Z = 2

$n\alpha$ = 1.558 Biaxial (-)
$n\beta$ = 1.646 2V about 15°
$n\gamma$ = 1.648

Strongest x-ray lines: 2.81(10), 4.35(9), 2.59(7), 2.227(7), 2.009(7)

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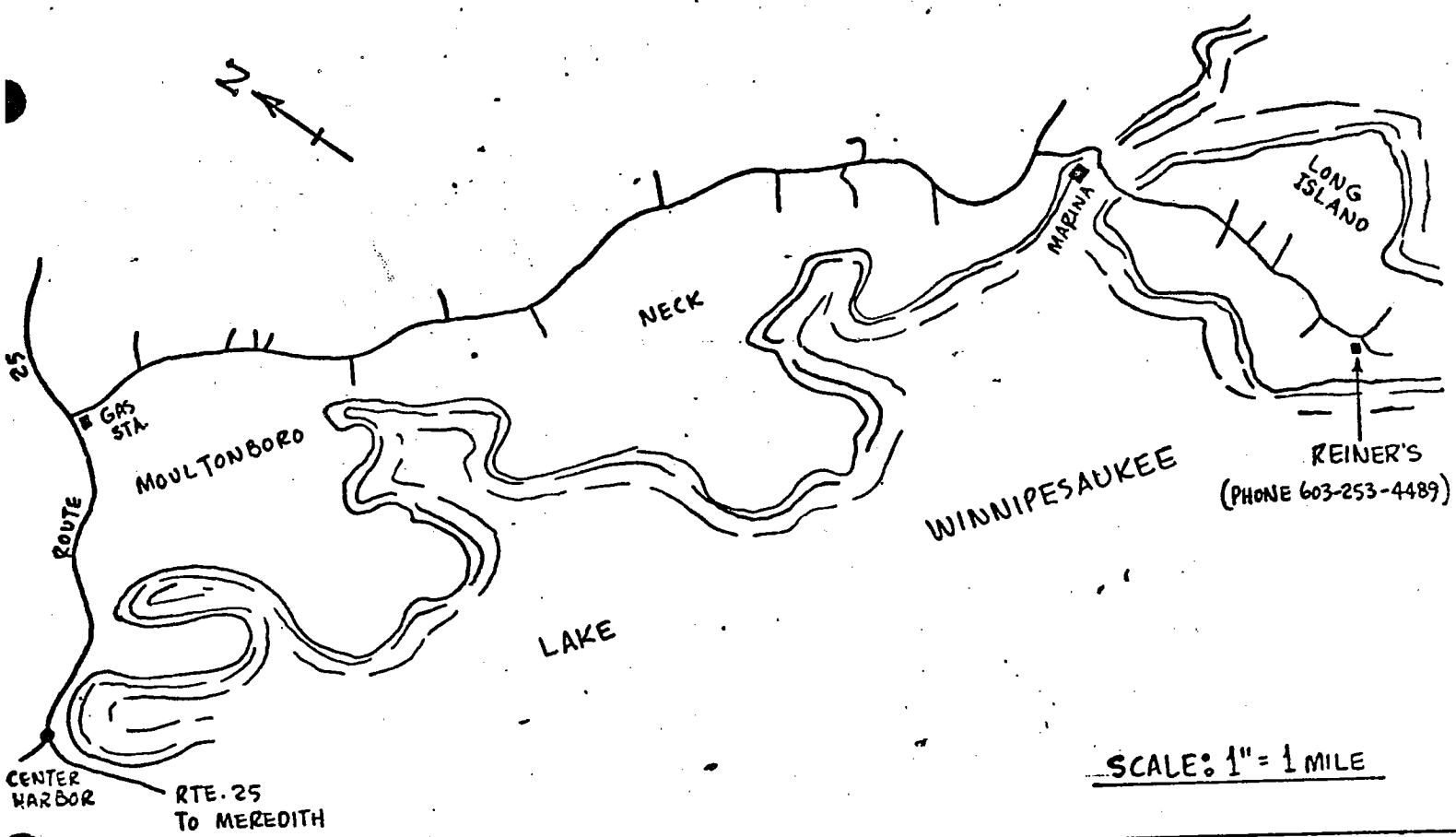
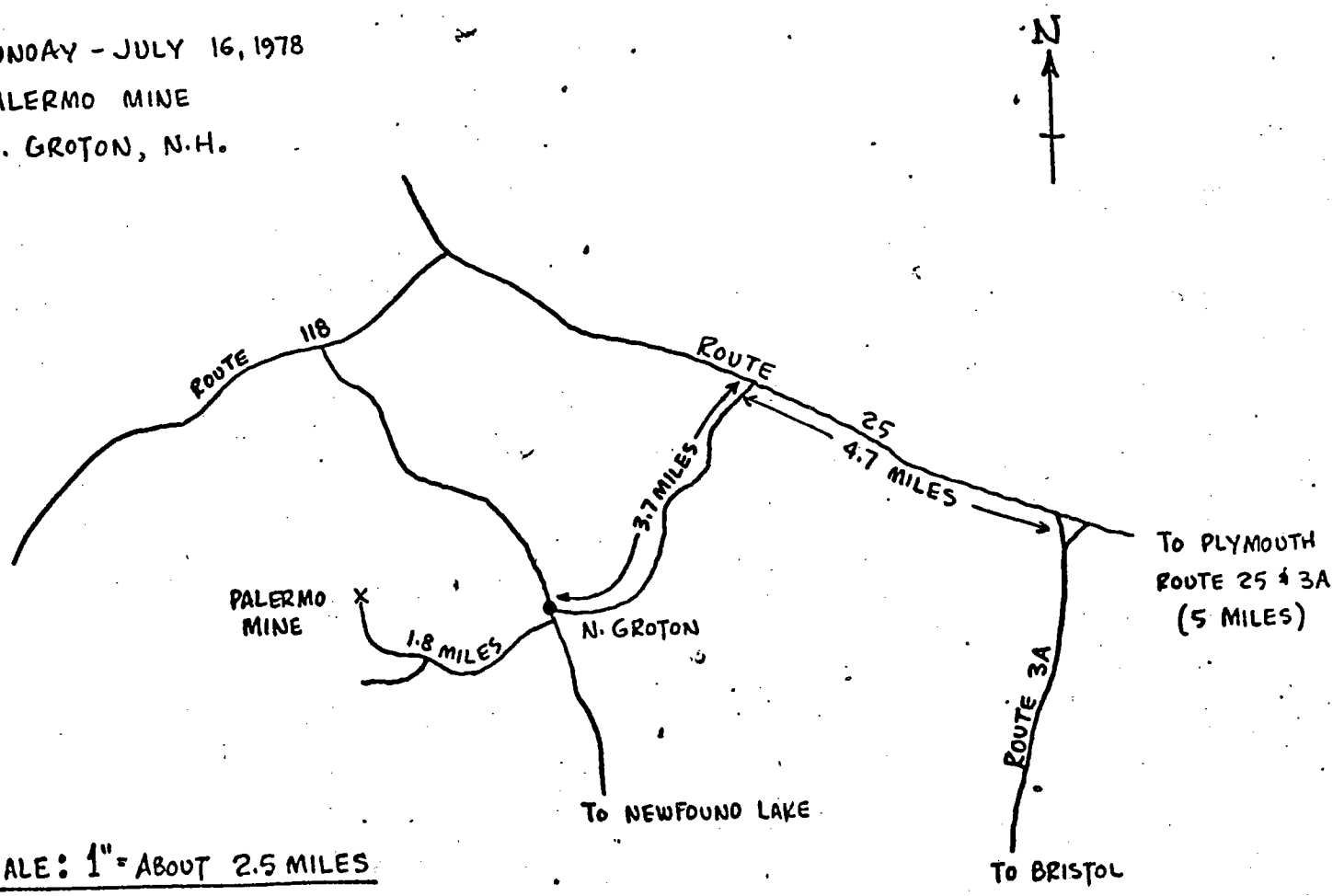
SATURDAY - JULY 15, 1978
JOHN & MARTHA REINER



SUNDAY - JULY 16, 1978
PALERMO MINE
N. GROTON, N.H.



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NOTES ON FRANCON QUARRY

I believe there will be a more detailed article coming on Francon shortly. In the meantime let me relate a few salient pieces of information. CRYOLITE - no more of the yellow material has turned up, however, white to clear cryolite crystals are not particularly rare. Often crystal cavities of cuboctahedral shape coated with a chalky white material will be a clue that cryolite has been there and careful inspection of other parts of the vug will reveal other xls of cryolite that have not dissolved away. Cryolite tends to be very colorless and marked cubic in crystal habit. BARITE - most barite appears as small clusters of curved needles, sometimes with a pink color. These appear, to me at least, like the crested barite from Europe. I've not seen any larger, well defined prismatic xls which turned out to be barite. CELESTITE - fortunately the main confusion appears to be between celestite and strontianite so a simple acid test will sort them out. In general the white dull fans of needly material associated with fluorite are celestite, as are the radiated sprays of peach colored material. The glassy, colorless prismatic material (which isn't dawsonite) is usually celestite. Occasionally blue celestite turns up. Generally, but not always, the transparent glassy material is celestite rather than strontianite. STRONTIANITE - a variety of forms have been found. If in doubt, suspect strontianite first. The greenish-grey material from the lower level we found this fall is strontianite in trillings. The reticulated stacks of plates that look like haystacks are strontianite. The spherical aggregates with pointed needle terminations are strontianite. A few of the glassy six-sided prisms with striations perpendicular to the long axis are strontianite, but most such xls are celestite. Also most of the beautiful goethite and hematite coated xl sprays are celestite.. Generally, strontianite in any of its various forms has, under higher magnification, a parallel growth sort of appearance as though it were composed of many smaller individuals. It is often sort of a translucent rather than transparent looking stuff. It is perfectly insidious mineral. CALCITE - normally fairly obvious. We have found a couple of chalky large xls in the upper level alcove which turned out to be calcite, and several black almost semimetallic xls which turned out to be calcite with hematite and goethite inclusions. ANALCIME - although, not in my experience particularly common in the currently active parts of the quarry, analcime when it occurs in xl cavities looks just like analcime - trapezohedrons of a white translucent material. DAWSONITE - remember that much of the sill rock is made up of dawsonite. Most cavities, especially in the lower sill have a few dawsonite prisms present. Often these are classically orthorhombic prisms, diamond shaped in cross section and terminated by a flat pedion/pinacoid. The large compound dawsonite xls we found last year are uncommon. WELOGANITE - usually looks like weloganite. The only confusion could be with the strontianite trillings which have the same kind of striations and tapering of the prisms, however, the strontianite often has two large sides and four small ones, unlike weloganite. Also, weloganite often tapers, then flares out again. Strontianite

In my experience does not do this. DRESSERITE - this species and the new species hydrodresserite cannot be distinguished in the hand specimen. At room temperature and humidity dresserite/hydrodresserite specimens are probably the same mineral. Dresserite forms spherules of a white wavellite appearance when the individual xls are very fine. Larger individual xls impart a coarseness to the spherule which shows the characteristic oblique termination of the individual xl. Dresserite usually seems to be associated with weloganite and quartz and is not particularly common. STRONTIODRESSERITE - I examined the type specimen of this new mineral and I'm not sure I'll ever be able to identify it by sight. It is not, in the presently extant specimens, a particularly earth shattering mineral. SYNCHISITE - two forms of synchisite have been observed. One is as small orange granular blobs. The other is as small white cauliflower looking aggregates. BADDELEYITE - look for this material as a yellow coating on pockets from the lower sill which are darkly stained from hematite and goethite. Under magnification baddeleyite appears to be a crossmatch of coarsely formed xls, still appearing granular even at a very high magnification. FLUORITE - usually obvious from the purple color and/or xl form if colorless. The fine sheets of extremely fine colorless to white granular material turn out to be fluorite. UNKNOWN #3 - the dull, lusterless white coatings and small blebs especially found coating weloganite and cryolite are a new material related to gibbsite which is still under study and is just referred to as Unknown #3. UNKNOWN #5 - an Sr, Zr, Ti carbonate forming silky aggregates of fine fibers or flakes. Looks just like #3 except that the surface luster is higher than dull, being more silky. Still under investigation. THENARDITE - a coating on the sill rock, not in pockets. The samples I've seen were white with a distinct bluish cast. Not earth shattering. ANATASE - as blue grains in the sill rock, not as xls in pockets. Some other species that have turned up include SELENITE, HALLOYSITE, KAOLINITE, ILMENORUTILE, MORDENITE, SMYTHITE. There are of course many more common and easily identified minerals such as pyrite, marcasite, goethite, hematite, quartz, etc. which I've not mentioned. This locality is continuing to be a source of excellent, rare and interesting minerals.

(by Steve Chamberlain, CRACK 'N' CAB)

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NON-FIELD TRIP REPORT

Why is this a non-field trip report? Because it's a report on not having a report to report on.

Firstly - West Stafford. The Van Iderstines were there and collected some quartz xls, but where were you? No one else was seen or heard from. They encountered no problems at the entrance, but did have the permission letter, just in case!

Mt. St. Hilaire was rather lean this trip. We found a few good crystals of eudialyte and narsarsukite, but not much else we could identify. Marcelle will research the finds and come up with a fine report as usual, in a future bulletin. We heard nothing about Francon.

- JWG -