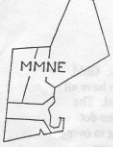

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Next Meeting
Oct. 14, Westminster, VT at the house of Jim Grandy

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.

MICROMOUNTERS OF NEW ENGLAND NEWSLETTER

September, 2000 **no. 224**

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

Next meeting

The next meeting of the MMNE will be held Sept. 9 at the Auburn, MA Public Library. Doors open at 9 AM. The program has not yet been announced.

Future meetings

The October meeting will be held in Westminster, VT at the house of MMNE member Jim Grandy. The November meeting will be held in Burlington, MA.

Hans's excellent adventure - *Johannes Swarts, MMNE bulletin ed.*

This last July, I had to travel to Salt Lake City, UT on business. On my better half's prompting, I decided to try and combine this with a little pleasure - i.e., mineral collecting. Having never collected in Utah, however, I was faced with the problem of where to go. Reading about a locality is one thing. Knowledge of accessibility, explicit travel directions and conditions, location of the 'good spots' - is quite something else. Aha, the Internet! A little lunchtime browsing at work soon produced the names of several collectors - micromounters, no less - living in the Salt Lake City area. Extended email discussions soon narrowed down my possibilities to Gold Hill, Utah, known for a great variety of arsenates; and the Tintic district, type locality for a number of very rare tellurates, as well as various arsenates. My time was limited, and the Gold Hill mineral pictures in the Mineralogical Record looked awfully tempting, so I opted for the former. Plans were laid and soon I was on my way to Salt Lake City, hammer, chisel, and hand lens tucked away in my baggage...

Arriving in Salt Lake on a hot Saturday afternoon, I directed my rental car westward on I-80, speeding across the salt flats to Wendover, Nevada, where inexpensive rooms can be had. This also put me about an hour or so north of Gold Hill. Wendover seems to exist solely for the purpose of supporting a half dozen or casinos. Mirrors, lights, and banks of the ubiquitous one-armed bandit seemed to constitute the sole theme in interior decorating. After parting with twenty dollars in quarters, I went 'home' to watch a bit of TV and get ready for the next days' excursion.

Sunday up early and off to the grocery store for food, ice and an inexpensive cooler. Since the trip was planned as an overnighter, I had also packed along a sleeping bag. I was ready to go! At about 4 that afternoon, I met my new friends from Salt Lake City at a gas station just off the interstate in Wendover. Chuck Adan, accompanied by his friend John Hail, showed up in a small Honda SUV packed with camping equipment, coolers, sledge hammers - all the usual field-collecting paraphernalia. The daytime temperatures in Utah dictated the lateness of our departure in July, generally in the 90s, and over 100 in Wendover at midday. Our collecting would start late in the afternoon and continue until nightfall.

The drive southward from Wendover on Highway 93 is through some very dramatic county, with enormous vistas of brush-covered desert fading off in the distance into purpled mountain ranges. Very little evidence of human habitation is visible, other than the highway and the occasional ranch. To the east, glimpses of the salt flats can be had through the mountains.

The turn from Highway 93 southeast toward Gold Hill is easy to miss - I think we did miss it, because we were too busy talking minerals. The road is paved for fifteen miles or so, wending through lonely hills, then turns to well-packed gravel.

Gold Hill is an actual town that arose because of the mineral wealth of the surrounding mountains. Gold, silver, copper, lead, zinc, tungsten, arsenic, bismuth, and minor antimony, vanadium, molybdenum, and tin have all been recovered in the area from 1857 onward. Today, the town is tiny, dusty and appears nearly abandoned. The remnants of a smelter can be seen near the edge of town, while mine workings and the occasional headframe dot the arid landscape. We drove through the town and got our first view of Gold Hill, a small mountain rising to over 5000 feet scarred with dumps, haulage ways, and other excavations. Some very slow, bumpy 4-wheel driving eventually brought us to a level spot, edged by a dump, that was announced to be our camp for the night. This was also the 300 foot level of the Gold Hill mine, as evidenced by a somewhat caved adit directly by our campsite. We were here!!!

With plenty of daylight left, we wasted no time in grabbing our equipment and proceeding up Gold Hill. A number of higher levels are expressed at the surface as adits and dumps, while the top of the mountain is dominated by a crater-like excavation called the Glory Hole. This is apparently the remains of now-collapsed underground workings. We passed the 80 foot level, which was indicated by Chuck as something we should attend to later and headed for the Glory Hole.

Usually a first visit to a new locality can be somewhat bewildering - "what am I looking for?" - and this was no exception. Limonitic rock glittering with crystals was pointed out as containing **adamite** and **austinite** (Gold Hill is the type locality for the latter), while green-stained rock could contain **conichalcite**, **chrysocolla**, **mixite**, minor **malachite**, possibly **brochantite** and other copper-bearing species. I just started banging on rocks, examining with a hand lens, and throwing interesting-looking stuff into a bucket. Chuck and John were kind enough to point me towards more promising areas in the Glory Hole, including calc-silicate skarn rock containing apple-green botryoidal **conichalcite**, tufts of green **olivenite**, pale blue **chrysocolla** pseudomorphs after ?, blue-green **mixite**, and other things I haven't identified yet. Quartz rock in the south part of the Glory Hole (South Pit) yielded more of the same, including especially fine pale greenish blue **mixite** sprays. This rock also produced a Japan law **quartz** twin. Chuck managed to find a single chunk of ocherous-looking material containing translucent colorless **mimetite** crystals in typical hexagonal barrel-like habit, associated with possible **bayldonite**. Mimetite is quite rare at Gold Hill, so this find pleased Chuck greatly.

By this time, the sky had clouded up and rumbles of thunder could be heard. Rain followed, quite cold, given the daytime temperatures, and lightning started tearing the clouds. This is somewhat disconcerting, given that we were near the top of a metal-bearing mountain! One bolt caught my eye, as it appeared to hit the desert in the distance. Sure enough, a bit later, we could make out the desert brush burning brightly, with a smoke plume drifting off to the south.

Daylight light began to fade, so we decided to head back to our campsite. We lugged our findings downhill and settled in for some food and more rock talk. Chuck described collecting at other Utah localities - uranium/vanadium minerals from San Juan Co., Utah; **vivianite** and **metavivianite** from Utahlite Hill, Box Elder Co., Utah; red **beryl** and other rhyolite minerals from the Thomas and Wah Wah Mountains; tellurates from the Centennial Eureka mine, etc. John is very knowledgeable about early Native American pottery and related stories of various finds and artifacts. Time to sleep!

After a fitful night's sleep under the stars, we were up with the sun. Another climb brought us back to the Glory Hole, where we concentrated our efforts on a small area that had produced **pharmacosiderite**. An extremely tough jasperoid rock grudgingly yielded small bits of matrix glittering with golden cubes of that mineral. Later examination of the material under the 'scope showed **pharmacosiderite** cubes with velvety druses of **arseniosiderite** and **scorodite** crystals coated with same. Occasional **barite** crystals occur as somewhat corroded or rough transparent plates. More digging in the South Pit yielded additional **mixite**, **conichalcite**, **olivenite** and **chrysocolla**. As I was interested in collecting **carminite** specimens, Chuck directed me to scorodite boulders, large chunks composed primarily of that mineral. These boulders gain a distinctive appearance on weathering, displaying a yellowish green or gray color. Breaking the boulders reveals a bluish grey interior glittering with **scorodite** crystals, often shot through with powdery yellow stringers and reddish brown areas. The yellow is **beudantite**, the best just on the verge of showing actual crystals faces. Reddish areas can reveal minute blades and plates of blood-red **carminite**; the best specimen I found shows sharp blades of **carminite** under 1 mm. Minute spots of yellowish green on scorodite may be **thometzekite**, although crystals are at the verge of visibility.

Several hours at the Glory Hole exposed us to an increasingly hot sun and time was running short, so we decided to go underground. Both Chuck and John had brought hardhats and miner's lamps, so rotating said equipment allowed the three of us each to spend some time collecting in the 80 foot level. This level can be accessed a short downhill climb from the Glory Hole.

A hundred feet or so of crouched-over walking brought us to an area known for balls of **adamite** crystals, bright green **cuproadamite**, colorless **austinite**, and apple-green **cuproaustinite**. Minerals occurred in seams and stringers in the walls and ceiling. It's quite an experience to sit on the floor of a tunnel and swing a miner's lamp about, seeing reflections from minute crystal faces glittering everywhere. Chuck managed to acquire several partial balls of **adamite** and I came out with all the aforementioned minerals, some associated with sprays of sky-blue **mixite**. On a previous trip, Chuck has also found purple **adamite**, a very rare find anywhere.

At this point, with buckets full and me wondering how I was going to get all my rocks to Vermont, we decided to call it quits. A drive back to Wendover brought me back to my lodgings, where I said goodbye to Chuck and John. Now I was faced with the problem of getting 50 or so pounds of material back home. Some dumpster-diving outside a liquor store produced a couple of beer cases. Back at the motel, I packed two boxes full of specimens, a sleeping bag, and my field clothes - I wouldn't need the latter for business travel. At the post office, the personnel were kind enough to ship my boxes at book rates, although the beer labels on the outside of the boxes had to be covered with tape before they could be shipped. Some weird rules come out of Washington…

The drive back to Salt Lake City was uneventful, although I did stop at a rest area looking out over the slat flats. Recent rainfall had left some pools of water standing on the salt, in which were tree limbs encrusted with **halite**. I managed to bring a small branch home – the final specimen collected on what turned out to be a very satisfying trip!

Suggestions for micromounter workshop topics

What follows is an informal list of topics for meeting workshops. The list will hopefully spawn some discussion at upcoming meetings and lead to more formalized presentations. MMNE members are encouraged to share techniques and tips and perhaps even volunteer to lead a workshop.

I. Crystallography
- angles and minimum number of measurements to ID a mineral
- references for interfacial angle measurements
- crystallographic orientation techniques and tricks
- visual observations of crystal surfaces – luster, striations, growth hillocks, etc.

II. Trimming, cleaning, mounting
- tools, glues, cleaning reagents

II. Quick and cheap materials for ID
- mini magnets
- UV light with very smal samples
- observations of mineral reaction to acids
- open and closed tube heating of minerals
- testing hardness and streak of micro material

III. Optics
- spectroscopic lens – theory and construction
- polariscopes and dichroscopes

IV. Field problems in extracting delicate micros in matrix

V. Compilation of collecting sites
- lists of species

VI. Reference materials
- books, journals, monographs