

# Friends of Mineralogy

## Colorado Chapter Newsletter

November, 1990

President: Dan Kile  
Vice President: Pete Modreski  
Treasurer: Jim Hurlbut  
Secretary: Regina Modreski

Directors: Don Belsher  
Ed Gray  
Bill Smith

**November Program - Thursday, November 8<sup>th</sup>, 7:30 p.m., Rickettson Auditorium, Denver Museum of Natural History:**

"Laws and Regulations Governing Mineral Collecting,  
Exploration, and Development on Public Land"  
Jim Rhett, Bureau of Land Management

Mr. Rhett has kindly consented to give a presentation on the rules that govern collecting on public lands, including BLM and Forest Service land, as well as that which is designated as wilderness and wilderness study areas. Mr. Rhett is a graduate of the University of South Carolina, and is currently employed as a geologist with the Bureau of Land Management, Fluid Minerals Section, and is also a National Environmental Policy Act Coordinator. With recent controversy and seemingly ambiguous interpretations of collecting rules in Colorado and elsewhere (New Mexico and Idaho), this promises to be an informative and interesting program, and will include ample opportunity for questions. It is Mr. Rhett's opinion that there is a need for greater involvement by mineral collectors in formulating policy for collecting on public lands. Since a primary goal of Friends of Mineralogy is to protect and preserve collecting localities (defined here as insuring a continuing right to collect, this meeting presents an opportunity to find out what degree of involvement, if any, the Colorado Chapter might wish to coordinate.

### Notes From the President:

It's that time of year again when everyone gets to reelect incumbent officers [or vote the bum(s) out of office], and elect new officers for vacating board positions. The primary duty of the board of directors (in my judgment) is to serve the interests and goals of the members. The corollary to this tenet is that the members need to express their support or disapproval the one time of year when it counts. Ballots for this year's election are enclosed in the newsletter - PLEASE take the time to (a) vote *in absentia* and send the ballot to Jim Hurlbut c/o the Geology Department, Denver Museum of Natural History, City Park, Denver, Colorado, 80205, or, (b) attend the November meeting and turn in your ballot. Please do not sign your ballot, as all votes are confidential. Also, if you feel the slate of nominees does not include your choice for a candidate, feel free to write in any other name of your choosing. Thanks to Don Belsher, Gene Foord, and Carol Smith for volunteering to coordinate the nominations process.

The date for the FMCC board meeting is Monday, November 5<sup>th</sup>; the meeting will start at 6 p.m.

Thanks are due to Bryan Lees and Don Belsher for their contributions to the "What's New in Minerals" part of this newsletter, and to Mark Jacobson for his article on U.S. beryllium production.

### Update to the 100-Year Record Progress Report:

This subject will become a regular section in the newsletter, intended to convey ongoing progress of this important project. To reiterate recent discussion: a vote taken at the last general meeting (September) indicated that 85% of the members who voted were dissatisfied with the progress of the update, and almost 70% voted to consider formally "de-obligating" FMCC funds pending formulation of a satisfactory completion date and protocol for the project. To this end, an authors meeting, attended by myself and the four authors, was held on the 4<sup>th</sup> of October, for the purpose of establishing some sort of agreement and management protocol that will assure timely completion of the update. While there is still much work that needs to be done following this meeting (another meeting is scheduled for the 1<sup>st</sup> of November), I feel that progress has been made:

- (a) Rik Collins was elected to be the project manager; a more detailed definition of responsibilities needs to be made.
- (b) The authors were each assigned species for which they are responsible to complete, based on alphabetical order (with exceptions for species where work is already in progress): Murphy, A - F, plus rhodochrosite, gold, and uranium and silver minerals; Collins, G - M; Foord, N - S, plus mica and feldspar minerals; Cobban, T - Z.
- (c) A completion date of January, 1993 was agreed to; this is the third draft completion and does not include final review, or map and photograph preparation. Each of the authors designated a monthly "rate" of third draft completion for mineral species as follows: Cobban  $\leq 15$ , Murphy  $\leq 10$ , Foord  $\leq 5$ , and Collins  $\leq 5$ . Based on these figures, approximately 420 species can be completed and ready for final review within one year, if these projected rates are maintained. Reviews will be made by the four authors, and forwarded by the project manager (Rik Collins) to the update coordinator (P. Modreski) who will in turn send it to outside (final) qualified reviewers.
- (d) Other items were discussed at the meeting, which will be further addressed at the next (November) authors' meeting.

As indicated earlier, there is still a lot that has to be accomplished in the way of management protocol in order to assure that these projected times can be met, but I feel that a step in the right direction has been taken.

### Current Rumors and Events:

The following nominations for officers for the 1991 Greater Denver Area Gem and Mineral Council were submitted: President, Glen Johnson; Vice-President, Sandy Walden; Secretary, Betty Duvall; Treasurer, Gloria Charette. The fourth quarterly meeting will be open and all interested club members are invited to attend. It will be held November 28<sup>th</sup> at 7:30 p.m. in the Gates Roof Garden.

The proceedings Volume of the Franklin-Ogdensburg Mineralogical Society-Lehigh University Symposium on the origin of the Franklin-Sterling Hill zinc ores of Sussex County, New Jersey, is available for \$12.50 plus \$2.50 for postage and handling. This 118-page volume contains all of the papers presented at the symposium. Requests for the volume, accompanied by a

check for \$15.00 made payable to F.O.M.S., should be sent to: John Cianciulli, Treasurer of F.O.M.S., 60 Alpine Road, Sussex, New Jersey, 07461.

Update on the Edwin B. Eckel Memorial Fund: contributions to the Edwin B. Eckel Memorial Fund for Engineering Geology have now reached \$10,293, with an additional \$2,600 in pledges expected. Consequently, the fund is now formally established and universities with graduate programs in engineering geology will be notified next spring. The first grant could be awarded at that time. Consulting engineering geology firms will also be notified and encouraged to contribute additional funds to help enhance the field of prospective employees.

### News of Members:

Mark Jacobson is in the process of settling into his new environment in Jakarta - - complete with geological field excursions consisting of snakes, malaria, and contaminated food. His list of field supplies includes malaria pills, mosquito repellent, bottled water, imodium AD, amoxicillin, and other items. Also necessary are visits with the local police, army, district chief, and governor, suitably documented by photograph as protection during civil disturbances. And here I thought the \*@#! gnats at the Grand Junction Book Cliffs were a pain in the butt. . . .

Congratulations to Bill Chirnside, who won the Prospectors' Trophy at the 1990 Denver show, with a large (~1") phenakite from Mt. Antero, collected in August of 1990 (along with some nice aquamarines, all of which were displayed at the October FMCC meeting).

I regret to report that Bruce Carlson, Mine Manager at the Edgar mine (the Colorado School of Mines "experimental mine"), was killed in a mine accident on October 3<sup>rd</sup>; he was helping a student at the mine, whose foot had been pinned by a rock. Although Bruce was not a member of Friends of Mineralogy, his contributions to mining, education, and mineralogy were nonetheless in keeping with the tradition of FM. A resident of Carbondale, he worked in the coal mines before obtaining a degree from the School of Mines - he had been the mine manager at the Edgar mine for five years. Bruce was instrumental in the project to recover minerals from Clear Creek Cave for a reconstruction at the School of Mines Geology Museum, and had attended the FMCC program on the specimen recovery effort. His enthusiasm and abilities will be hard to replace.

### What's New in Colorado Minerals:

Fayalite,  $\text{Fe}^{+2}\text{SiO}_4$ : The summer of 1990 has provided a new find of fayalite from the Crystal Park area. The fayalite was located in the central portion of a coarse pegmatite which consisted of quartz, microcline, and biotite. It is noted as dark brown, glassy, anhedral "lumps" weighing as much as two lbs. Fayalite, a common minor constituent in some granitic rocks, has not been previously noted from within pegmatites. It has also been noted from Stove Mountain, in the St. Peter's Dome area a few miles away.

- - Don Belsher

Bryan Lees kindly provided the following description of some of the new Colorado finds he has had the good fortune to be associated with:

## RECENT MINERAL DISCOVERIES IN COLORADO

### Ouray and Harris Park

By: Bryan K. Lees

1990 brought some interesting new Colorado mineral occurrences to light. During February an agreement was reached with Royal Gold, Inc., to mine mineral specimens at the Camp Bird Mine near Ouray, Colorado. During the first two weeks of mining, we targeted the 5-level area where the original scheelites of 1987 were discovered. Using drills and dynamite, we created a stope upward along the old scheelite trend and several small pockets were discovered. The pockets were clay-filled and stained with iron. This made it difficult to see what we were collecting, so we set up a washing screen underground and proceeded to clean everything that came out of the pockets. The pockets ranged in size from 3" to 8" in diameter and occurred in a white granular fluorite vein about 6 feet wide. The digging finally stopped along this trend when we broke into an old stope, about 25 feet above the tunnel level.

Excellent brown-grey scheelite specimens were discovered. Specimens contained many 3/8" to 5/8" crystals on a granular fluorite matrix. The main difference between the previous scheelites and the new ones is the color. The newer ones exhibit a trend towards translucent grey. The higher we went up in the stope - the greyer they became. Through microprobe analysis by Peter Modreski, it was determined that the grey color is due to slightly higher amounts of molybdenum in the crystal structure.

A second and very interesting discovery came on 6-level when we opened up a large fissure containing what are best described as quartz speleothems (cave growths). The fissure, measuring 25 feet high x 15 feet wide x 4 feet thick, had hundreds of calcite-coated quartz stalactites growing from the floor and ceiling. Through years of deposition, many pieces had fallen into the floor "muck". These pieces were easily collected. Several others had to be carefully removed from the walls.

The speleothems were dipped in acid to remove the calcite which revealed a delicate helictite nature. Looking much like the calcite helictites from Mexican caves, the Colorado pieces show gravity defying twists and turns. While calcite helictites are common, quartz helictites are quite rare and few have ever been documented.

A third and equally notable discovery came in July when Willis Weber, of Morrison, Colorado found a very large pocket of amazonite in the Harris Park area. A newcomer to Colorado, Will was looking for a place to dig amazonite. Unable to locate the usual digging areas, Will headed west. He parked his truck and walked up a wash about a half-mile and found a worn piece of float. Figuring the float came from up higher, he walked up an adjacent wash about another half-mile and came across pieces of

amazonite float up to 8" long! After just scratching the surface, several very large crystals began to appear.

Will showed us some of the material and invited us to help him collect the pocket. After several weeks of on-and-off digging, the pocket was finally exhausted. Total pocket dimensions were about 2-1/2 feet in diameter and 30 feet long. At least eight hundred specimens were pulled out. Of the eight hundred, only about half were of good quality. The inside of the pocket had been severely mixed and compressed during formation, thus destroying many of the crystals. The collapsed pocket created hard-packed digging conditions. No open voids were observed. The mixed condition severely damaged many of the crystals and made it difficult to reconnect or repair several of the important specimens. However, a half dozen beautiful groups were successfully reconstructed. This included one particularly good 10" Baveno twin group.

Included in the pocket were several areas of columbite mineralization. Crystal size ranged from 1mm up to 8mm. Upon examination of a topographic map, we determined that we were digging about 2-1/2 miles west of the Littleton claim area.

Many notable pieces came from the pocket including Baveno twins, some up to 10" long, and several Manebach twins up to 8" across. Some of the Manebachs showed a "chevron" structure. Other notable pieces included single crystals 5" in diameter x 6" tall and many perfectly-terminated zinnwaldite crystals growing alongside amazonites. These made very attractive groups.

Some of the pieces were for sale at the Denver Show. Many excellent pieces of quartz speleothems, scheelite and amazonite are still available through the Collector's Edge.

## FMCC Activities:

From Pete Modreski:

I'd like to express my thanks to all the people who helped at the FM mineral identification booth at the Denver Show (I hope I haven't missed anyone): Howard Bachman, Don Belsher, Bill Chirnside, Susan Eriksson (Blacksburg, Virginia), Jim Hurlbut, Bill Hutchinson, Ed Raines, Sam Rosenblum, Bill Smith, Jack Thompson, and Dave Weller. It was fun!

-- Pete Modreski

The following article on "Pegmatite Mining for Beryl in the United States" was provided by Mark Jacobson (see news of members):

Pegmatite mining in the United States for beryl:

The beginning of the end.

Mark I. Jacobson  
Amoseas Indonesia Inc.  
P. O. Box 2782/JKT  
Jakarta 10001 Indonesia

Most mineral collectors are well aware of the boom in pegmatite mining that occurred during and just after World War II for strategic minerals such as mica, beryl, and tantalum. The occurrence of a second smaller boom in pegmatite mining for ore beryl is not as well known nor the fact that the development of a new type of beryllium ore deposit essentially signaled the end of pegmatite mining for ore beryl in the United States.

During World War II, the search for strategic minerals was of national importance—especially for beryl since its new use was as a "control" in nuclear reactions. It was needed for the Manhattan Project. As part of the nationwide investigation into beryllium sources, which continued after the war, many U. S. Geological Survey geologists and U. S. Bureau of Mines personnel made reconnaissance examinations of all types of beryl deposits in the United States. Some of these people are well known to mineral collectors in Colorado such as John W. Adams, M. H. Staatz, W. R. Thurston, H. C. Meeves, and A. F. Trites, Jr.

The incentive that caused a nationwide flurry of beryl prospecting was a new U. S. government program. The General Services Administration announced on October 7, 1952 a program for the purchase of beryl from small domestic producers for the national stockpile of strategic minerals (Griffith, 1952). Prior to this announcement, beryl sold for approximately \$32 dollars per short ton unit. A short ton unit of beryl was required to contain 20 pounds of beryllium oxide.

The program authorized existing U. S. Government mica-purchasing depots to buy beryl in shipments up to 500 pounds of beryl (that contained not less than 8% beryllium oxide) at a flat rate of \$40 per short ton unit delivered to the depot in Custer, South Dakota. Beryl containing 8% or more of beryllium oxide was accordingly purchased for \$400 per short dry ton upon delivery to the depot. If the amount offered for sale was more than 500 pounds, chemical analysis of the beryllium content would be done at the sellers request. The Small Defense Plants Administration announced on December 26, 1952 that small businesses are urged to expand their ore beryl production by 2,000 tons per year for the next three years. Small mine plants desiring to expand were told that rapid tax writeoffs would be granted for the expansion (Griffith, 1952).

This program of financially motivating small producers to expand their beryl production was intended to be needed for only a short period of time since the announced termination of the program was June 30, 1958. As it turned out, the Domestic Beryl Purchase Program (as authorized in 1953, 83rd Congress, public law 206) was actually terminated on June 30, 1962. This buying program created a min-pegmatite mining boom with small prospects being worked across the United States. In Colorado it not only started the activity on Mount Antero but also caused the beryl mining at Badger Flats, and renewed mining in the Crystal Mountain, Texas Creek and Clear Creek Districts.

The termination of the beryl purchase program in 1962 caused the spot market price of beryl to drop to \$30-32 dollars per short ton unit (Eilertsen, 1962). At this price a lot fewer domestic beryl producers could operate at a profit. The profitable mines were often those that also produced good quality sheet mica, tantalum or lithium ore.

New developments in 1968 shepherded in a new beryllium ore, which signaled the demise of pegmatite ore-beryl mining (as opposed to gemstone-beryl mining) in the United States. The Brush Beryllium Company in 1968 started construction of a \$10 million dollar beryllium ore processing plant near Delta, Juab County, Utah. The ore rock was extrusive rhyolitic tuffs containing disseminated fine-grained bertrandite. The ore grade was 0.6 to 0.7 % beryllium oxide.

In August 1969, Brush Beryllium Company finished their mill and started processing 500 tons of bertrandite ore per day from the Roadside Open Pit Spor Mountain, Juab County, Utah. Although a competitor, Topaz Beryllium Company started investigating its Spor Mountain beryllium properties, they were probably too late and abandoned their beryllium project.

Just prior to 1970, ore beryl prices on the imported spot market had risen to \$37-40 dollars per short ton unit (ore containing 10-12 % beryllium oxide) from the 1962 low of \$30-32 dollars per short ton unit.

The effect of the Spor Mountain beryllium mine was crippling. Whitman (1970) announced that the "the beryllium industry of the United States became independent of beryl ore as its sole raw material source [of beryllium] because of the Spor Mountain mine. The new mine has ample reserves and capacity to support the entire domestic industry." By 1971, the imported spot market price of beryl had dropped to \$35-37 per short ton unit, delivered into the United States. For example, the beryllium ore from the Boomer mine (in the form of beryl and bertrandite), Badger Flats District, Park County, Colorado, which was discovered in 1955, was the major source of beryllium ore in Colorado until the Utah deposits were exploited.

Continued expansion of the Spor Mountain mine contributed to further drops in the price of beryl ore so that by 1974, imported beryl was quoted at \$30 per short ton unit. In conjunction with the decrease in the price of beryllium during 1973-74 was the jump in the rate of inflation in the United States associated with the first of several oil price increases and President Nixon's ineffective price freezes. The result is an economic environment in the United States where pegmatite mining solely for beryl-ore will probably never be profitable again.

#### Acknowledgements

I want to thank Art Smith in Houston, Texas for the suggestion of compiling this information.

#### References Cited

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- Griffith, R. F. 1952. Beryllium: U. S. Dept of Interior Minerals Yearbook, V. 1, p. 203-214.
- Whitman, R. A. 1970. Beryllium: U. S. Dept of Interior Minerals Yearbook, V. 1, p. 225.



As a parting sidelight, I thought I'd add the following short item to the newsletter. Of the overabundance of ilk and other such stuff that accumulates around the house, business cards seem to have a way of sneaking into any empty corner, desk drawer, or seldom-seen void. Actually, I've kept a more or less organized file of them in past years, partly as a means of finding addresses or other information, and partly because some of them provide interesting reading material. One such example, dispensed by a local FM member, goes so far as to include a likeness of the author:



Others, being more practical-minded, state their purported principal business activities,

*Claim Jumping & Mine Highgrading Co.*  
*"Your Claim is our Aim"*

*Fine Mineral Specimens*  
*Micro to Cabinet Size*

*Featuring Minerals of New Mexico*

*Robert H. Dickie*  
*6 Camino Del Sol*  
*Los Lunas, N.M. 87031*

*(505) 865-4034*

USED CARS—LAND—WHISKEY—MANURE—NAILS  
 FLY SWATTERS—RACING FORMS—BONGOS

**DICK LEHMAN**

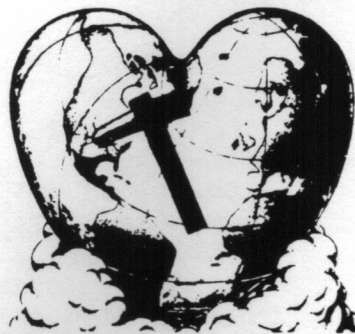
Minerals Explorationist

WARS FOUGHT  
 REVOLUTIONS STARTED  
 ASSASSINATIONS PLOTTED  
 GOVERNMENTS RUN  
 UPRISINGS QUELLED  
 P.O. BOX 193

CREEDE, CO 81130

TIGERS TAMED  
 BARS EMPTIED  
 COMPUTERS VERIFIED  
 ORGIES ORGANIZED  
 WHORE HOUSES RAIDED  
 303-658-2548

while still others simply state the obvious (tongue-in-cheek):



**Devastator**  
**Minerals**

"Raping Mother Earth  
 For Fun and Profit"

**BRYON BROOKMYER**

502 North 40th Street  
 Harrisburg, PA 17111

(717) 561-8733

Not to be outdone, however, is this last card, which simply gives detailed business hours:

NOTICE TO CUSTOMERS

Due to my independent position as a salesman, I have decided to show my lines at a time best suited to my convenience.

At the present time it pleases me to permit you to view merchandise on Tuesday and Thursday between the hours of 2:00 and 4:00 p.m. This will allow me to start and extend my week-ends without interruption, and also permit me to devote my mornings to rest and recreation.

NOTE—The above regulations apply only as long as there is a scarcity of materials. After that I will be around kissing your ass as usual.



Whitman's  
Whitman's

Reading Motor Barn  
For Fun and Profit  
BRYON BROOKMYER  
502 North 40th Street  
Hampden, PA 17117  
(717) 711-8733

# Friends of Mineralogy

Colorado Chapter Newsletter

January, 1991

## BALLOT FOR 1990 FMCC OFFICERS

President: Dan Kile \_\_\_\_\_ or \_\_\_\_\_

Vice President: Pete Modreski \_\_\_\_\_ or \_\_\_\_\_

Treasurer: Jim Hurlbut \_\_\_\_\_ or \_\_\_\_\_

Secretary: Dale Denham \_\_\_\_\_ ; Carol Smith \_\_\_\_\_ ; or \_\_\_\_\_

Director \* - Choose TWO of the following four nominees:

Bob Barrel \_\_\_\_\_

Gene Foord \_\_\_\_\_

Glen Johnson \_\_\_\_\_

Ed Raines \_\_\_\_\_

or \_\_\_\_\_

\* Note: Bill Smith returns as director for a second year of a two-year term.

If you pay in person, please use a personal check (as opposed to cash) - it ensures that proper credit is given.

Enclosed in this newsletter is the intimated MEMBERSHIP SURVEY form we have been promising. The primary intent of this survey is to gather information about your interests, specialties, and backgrounds. We want to facilitate and encourage communication among members. It is important that everyone fill this form out and return it to Mary Zinn; this information will then be compiled and included in a future newsletter (it will not be included in the next newsletter). Please check off a space to check off if you prefer not to have this information published, but please fill out the form and return it to Mary anyway, especially if you feel that there are areas in which you may wish to contribute; it will also give us a chance to extend our appreciation to you.

I read in a recent *Rock and Mineralogy* article (Vol. 65, No. 6, 1990) that what has to have been *garnets*. Found this past year in Buckfield, Maine, this specimen was