

Pacific Northwest Chapter



NEWSLETTER

NOVEMBER 1994

PRESIDENTS MESSAGE

Hi everybody,

Wow, what a year I'm thinking to myself as I'm looking back through this years newsletters. We had some really great times together. Business meetings, open houses and those fantastic field trips. Quite a few of you were able to break free from your busy schedules to share yourselves with us and we were all enriched by it. Heck, people even outright in public confessed to having a wonderful time at our Chapters gatherings. This really made me happy and thankful to have been involved and sharing those times with you. Sure there were some rocky times, but what the hey, that's part of the learning curve and I can't help but think that we're moving forward stronger than ever.

This brings me to this years symposium. This is a wonderful time to be your President let me tell you. I finally get the chance to see all of you again and personally thrill to the quiet strength all of you show as seemingly effortlessly you band together to bring Order to Chaos and create that ultimate of your miracles, our symposium. This year being the Master of Ceremonies I can only tell you how incredibly thankful I was that you were all out there ready and willing to help. I was nervous, boy was I nervous!, but you all were all there cool and collected. I knew I'd get through it, and you know what, I did. So a big Thank You goes out from me to each of you. THANK YOU !!!

Moving onward. I'd like to ask you to come on out to our next activity in legion. Jack Frasl has graciously opened his store Earthlight Minerals for us special this upcoming Sunday, November 20th in downtown Kirkland. Lets get together and share some holiday spirit.

On January 14th we will have our winter meeting in Vancouver again. This typically is our most popular and most important meeting and this one will certainly not be any different. We will have a small program prior to the start of the business meeting. During the meeting we'll review the symposium and the budget for 1994 and then move right into 1995 business. We'll be deciding our 1995 symposium theme, soliciting help from individuals going to Tucson to acquire speakers and represent our Chapter at the FM National meeting. We'll discuss membership and appeal to members for ideas for activities in 1995. This is the key meeting for the chapter and I whole heartedly hope you'll all make it. This meeting has also always been a great time to bring out those minerals you'd misplaced and didn't take to the symposium. Usually multiple tables are available and filled with trading material and selling stock. So bring all of your treasures along and we'll see you there. Remember we're one short as long as you're not there. Have a Merry Christmas and a terrific safe New Year!!

John Cornish

The Washington State Division of Geology and Earth Resources Library recently recieved this information.

On Saturday, September 23, 1994, 133 museum quality mineral specimens and 522 fossils, with a total value of over \$50,000, were stolen from the Geology Department at Carleton College in Northfield, Minnesota. The mineral specimens were removed from several large hallway display cases and the fossils were taken from other display cases and from an adjacent lab. The fossils included several good quality mammoth and mastodon tusks, teeth and jaw bones and several hundred marine shell fossils from Miocene deposits in Florida.

Each of the specimens is identified with a catalog number in black pen lettering on white paint on the back or bottom.

A complete inventory of the stolen specimens is available from the Geology Department (507)-663-4401.

Thanks for your help in telling me how to disseminate this information.

CALENDAR OF EVENTS

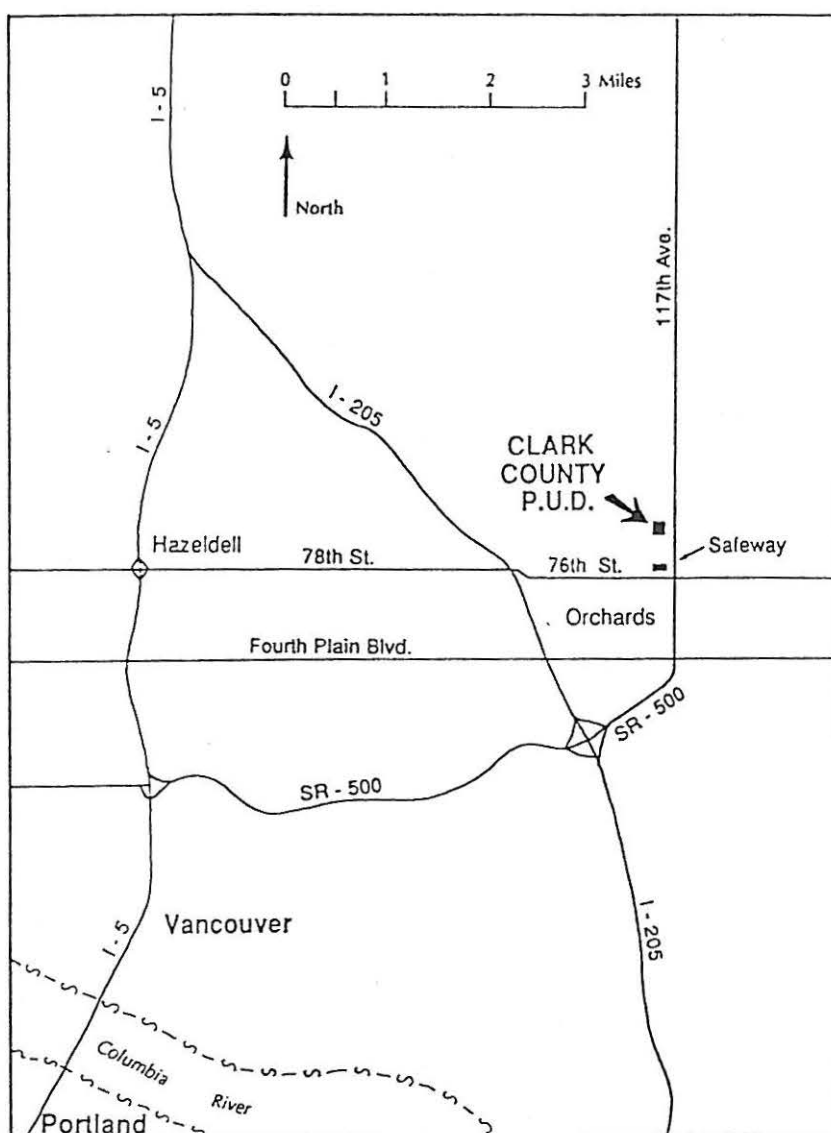
Nov. 20, 1994 - Jack Frasl has invited us for a special showing of minerals at his Kirkland store, Earthlight Minerals. Jack will bring out some of his exclusive goodies for us as well as having his stores already impressive inventory of minerals and jewelry for us to see. He has offered a 20% discount off all sales during this special event. The showing will be on Sunday, November the 20th from 5:00 - 6:30 PM. Jack will have some munchies and beverages out for us while we're there and also mentions that many fine restaurants are within a few block radius of the store. To get there get on I - 405 and head towards Kirkland. Take the #18 Kirkland exit and go downhill and into town. Go through the stoplights until you come to a stop sign. Turn left here into Marina Park. Park anywhere, the store is on the North side. The stores address is 46 Lakeshore Plaza and the phone number is 828-3872. We'll see you there for a little pre-Christmas holiday mineral cheer.

Jan. 14, 1995 - Friends of Mineralogy will be having their winter meeting at the Orchards PUD building, 8600 NE 117th Ave. at 10:00 AM. We will start things off by doing some trading and then a short program before getting down to the business portion of the meeting. Those traveling a good distance might give a friend a call and pool rides for this event. For more info check the Presidents message.

Feb. 9-12, 1995 - Tucson show and Friends of Mineralogy National meeting.

Aug. 11 - 13, 1995 - 6th annual Washington Pass clean-up on the North Cascade Highway along with some mineral collecting and of course hearing or telling the tall tales around the evening camp fires.

Sept. 22 - 24, 1995 - 21st annual Pacific Northwest Friends of Mineralogy Symposium in Tacoma at the Sherwood Inn.



Some summer field trips are also being planned, including one in the Oregon area. When the plans are finalized we'll let you know. Let us know if you have some ideas for field trips. A good place to let us know your thoughts will be at the January meeting. If you can't make that, then don't hesitate to drop us a note.

1994 SYMPOSIUM SPEAKERS

By John Cornish

We had a wonderful group of speakers gathered together for this years symposium. Pete Richards, our first speaker gave a total of three talks during the weekend. The first talk on "The Morphology of Calcite Crystals" proved to be very well prepared and presented. When considering the monumental task involved in understanding the morphology of a mineral such as calcite, which has 696 forms, 328 of which are certain, 303 of which are probable and 63 which are improbable but still possibly possible maybe (?), it seems amazing that Pete was able to discuss this subject with such ease.

Pete's other talk that afternoon was an abstract overview of "Calcites from various Midwest localities". Traveling from quarry to quarry and state to state we were able to see and appreciate the specimens coming from this area of the USA.

The last talk presented by Pete was given during the Sunday program "Computer Applications in Mineralogy". Pete discussed "The SHAPE Crystallography program" which he authored.

Our second speaker on Saturday was Peter Magaw. Peter gave us two talks with the first being on "Calcites and the things that started out as Calcite from the Santa Eulalia District, Mexico" and the second being on "Minerals from the Rhodocrosite bearing skarn ore bodies of the Polosi Mine, Santa Eulalia, Mexico". Both talks were very informative discussing the geology and histories of the mines and it's people. Detailed maps and charts offered us insightful overviews of the mines and productive specimen areas within them. The thrilling suites of minerals available seemed almost endless as Peter showed us picture after picture of the breathtaking specimens from the mines.

Peter, who gave us our last talk for Saturdays program also inadvertently provided us with a means to shake away some of the dust which had been settling on us Northwest folks. John Cornish our Master of Ceremonies

after the talk introduced Peters wife Allison and their daughter Lauren. Peter had told us earlier that he'd needed to ask his daughters permission to come to our symposium since Saturday would be her first birthday. Luckily for us she said it'd be OK, so lo and behold here they were. So with everyone wondering what was going on, John asked if we could all sing happy birthday to Lauren. And with creaking, raspy voices we all sang to Lauren a happy birthday song which I'm sure she'll not soon forget. It was great fun as smiles lit up the faces of all those there!

Backtracking a little here we come to our third speaker for Saturday. Our own Bob Boggs presented "Photography through the Microscope". This talk proved to be very interesting as Bob showed us how he's designed and constructed the setup which he uses to photograph those incredible micro minerals with which he's so familiar. Using ingenuity and a few odds and ends Bob has brought to life the world beneath the lenses of a 60 power microscope for all of our enjoyment.

Sunday is usually a short day designed around Northwest collecting activities but this year we decided to do something a little different. This also proved to be quite successful since by presenting the Demonstration of Computer Applications in Mineralogy program, we drew the largest Sunday morning crowd together in memory. Rick Dillhoff was our Session Chairperson for the three demonstrations to be given. Our first speaker was Pete Richards who was in turn followed by our own George Gerhold who presented "Progress Report:CD-Rom". He demonstrated this by showing all of us the incredible amount of detailed information which this program can provide to it's user, a very thorough and well thought out instructional and educational program. Our last speaker for this years symposium was Joe Nagle who presented his demonstration of "Computers in Mineral Curating". Joe did this by first and foremost dealing with the fact that while a mineral specimen is important, it's the information provided with it that truly makes it an important addition to a collection. Joe then demonstrated the program which he has designed to curate the U.B.C. collection. Showing us all of the relevance of such information and how it can be used to provide details which can be used directly or cross referenced into other areas of importance.

This years symposium speakers provided lectures which were both educational and enjoyable and a sincere thank you goes out to all of them for their excellent presentations.

1994 FM SYMPOSIUM DISPLAYS

described by
Raymond Lasmanis

The symposium display cases provided for a unique educational opportunity to view calcite and carbonates from many classic localities. It was obvious from the amount of calcite displayed that the mineral is very popular with Northwest collectors. There were a total of 18 cases, down from 24 the year before. For our 1995 symposium, an extra effort will have to be made to increase the number of displays, especially from institutions.

Five of the cases (28%) featured calcite exclusively. Two cases by Wayne Sorensen were filled by the best of Elmwood Mine calcite. And, there was one case each of specimens from the Cadman Quarry, Monroe, WA; the Brushy Creek Mine, Viburnum Trend, MO; and from the Santa Eulalia Dist., Mexico.

For collectors who are interested in what is popular in Northwest collections, I have come up with a few statistics on calcite. Counting all 18 cases, there were six displays (33%) that contained calcite crystals from the Elmwood Mine, Smith Co, TN and from the Cadman Quarry at Monroe, WA. Next in representation were three cases each (17%) of specimens from Walker Valley, Skagit County, WA and from the Viburnum Trend, SE Missouri. The following localities were represented twice (11%) in four different cases: Robertson Pit, Mason Co., WA; Pend Oreille Mine, Metaline Falls, WA; Pine Point, NWT, Canada; and, the Tri-State District, MO-OK-KS.

In terms of displays, the center piece had to be the gigantic world-class doubly terminated calcite crystal shown by Wayne Sorensen from the Elmwood Mine. It weighs 175 pounds! The compound crystal, laying on its side, on matrix, is 30" long, 17" high, and 15" wide. Adjacent to the single giant, Wayne had a case containing eleven of the most beautiful, golden colored, clear, 5" to 7" long crystals, also from the Elmwood Mine. Some of these are on a matrix of black sphalerite, cream colored barite, and purple fluorite. Thank you Wayne for bringing them to the symposium.

R. Peter Richards put in a educational exhibit titled "Twinning in Calcite". It had four sections: twin laws in calcite; recognizing a twin; angled or inclined twins and potential traps; and, other subtleties. A copy of his display narratives can be ordered from me (see other page for order blank). The display contained twinned specimens from the R. Lasmanis collection: N-32 Pit, Pine Point, NWT (coll. 1967), the Schullsburg Mine, Schullsburg, WI (coll Jan. 1964); and from Rudniy, Kazakhstan. A second educational display, "Calcite and History", was prepared by Lorna Goebel. Illustrated with specimens, the display covered discovery and naming, cleavage and double refraction, and crystal structure.

Mary Foster put in a case with 30 calcite crystal groups from various localities. From Washington state she had: two specimens of bladed crystals from the Cadman Quarry with 1" to 2" pinkish xls on 5"x7" matrix and white 2" xls. on 4x8" matrix; tiny yellow scalenohedral xls from Port Ludlow; 1" xls. dusted with goethite on quartz xls from Walker Valley; and, 3/4" xls. covering 12"x14" matrix from the Pend Oreille Mine. Other Northwest material was small white xls. in a 3"x5" group from Priest Lake, ID, 2" blue calcite cleavages from Jefferson County, MT, and acicular 2" xls from The Dalles, OR.

Rick and Tad Dillhoff combined their material into a case with 23 specimens. Of special note were two calcite crystal groups from the Spruce Claim, King Co., WA: five 1" white xls. on pyrite and a 1 1/4" doubly terminated xl. perched on the tip of a 2" long quartz xl. From Washington state they also showed a single 2" calcite xl on matrix from the Cadman Quarry and a 3" bladed crystal hemisphere filling a 5" quartz lined vug from Walker Valley.

Lanny Ream had a display titled "Unknown localities (24) found by prospecting and tracing leads from geologic publications and looking for lost locations". From Washington state, amethystine quartz xls in a 2 1/2" vug, Dog Mtn., Skamania Co. (coll. 5/93). From Shoshone County, ID, Lanny had a collection of garnet xls: pretty red

1/2" xls. in matrix and a 2" almandine xl., Moses Butte (coll. Aug. 94); a 1" almandine xl from Goat Mtn (coll. Aug. 94); and, 1 1/2" almandine xl from Freezeout Mtn (coll. Aug. 94). From Ruby Rapids, Riggins, Idaho Co., ID he had up to 1" almandine garnets in chlorite schist (coll. July 94). Other Idaho specimens shown were: 3" amethyst lined geode, Thompson Cr., Muldoon, Blaine Co. (coll. June 93); up to 3/4" light green fluorite cubes on matrix, Anderson Mine, Meyers Cove, Custer Co. (coll. Aug. 94); 3 1/2" calcite xls (similar to those from Cadman Quarry) from Malm Gulch, Custer Co. (coll. June 93); 3/4" lustrous andradite xls from Seven Devils Mining Dist. (coll. 7/92); 1 1/4" amethystine scepter xls, Estes Mtn, Yankee Fork, Custer Co. (coll. 7/94); beautiful bright green fibrous 3/4" sprays of malachite on goethite, Empire Mine, Shoshone Co. (coll. 93 & 94); 3/4" octahedral green fluorite xls on 2 1/2 x 3 1/2" matrix, Little Fall Cr., Custer Co. and from the same mine, quartz epimorphs of fluorite (coll. 92 & 93); 3/8" stilbite xls on quartz, Lime Cr., Custer Co. (coll. 6/93); 2 1/4" long staurolite cross in schist, Bathtub Mtn, Shoshone Co. (coll. Aug. 93); and, brown 1/2" grossular xls. on matrix or single 5" xls associated with 1 1/2" green chlorite xls and 2 1/2" magnetite xls from an unspecified Idaho location (coll. Aug. 94). There were a number of specimens from the Calvert Hill mine, Beaverhead Co., MT collected during Sept. 94: 1" garnet xls in quartz; 1" wide and 4 1/2" long epidote xls (some terminated) in smoky quartz; and, acicular, up to 2" long, thin aquamarine xls with epidote xls in a 2 1/2" calcite filled vug. Other Montana material displayed was: yellow 1" calcite xls on 3x5" matrix, Old Stage Rd., Livingston (coll. May 92); up to 8" long radiating sprays of 3/8" thick natrolite xls, Rocky Boy Indian Res., Rocky Boy (coll. May, 94); and, clear golden 1" barite xls on yellow calcite, Arrow Cr., Stanford, MT (coll. May 92).

Peter Megaw brought with him 23 specimens for a display titled "Calcites and Associated Minerals from the Santa Eulalia District, Chihuahua, Mexico". This case contained many of the specimens discussed by Peter during his lecture on the district. A description of the more interesting specimens follows. From Level 10, Silicate Orebody, Mina El Potosi there was a single 2 1/4" rhombic rhodochrosite xl on sphalerite with 3/8" quartz xls; a siderite pseudomorph after 1 1/2" x 2" calcite rhomb; and, 3/4" pyrrhotite xls perched on a 2" calcite rhomb. From Level 21, Condesa Zone, Mina El Potosi, Peter had 2 1/2" pink manganocalcite xls in a 4"x5" group. From Mina San Antonio two specimens caught my eye: smithsonite pseudomorphs after 1 1/2" calcite xls, Level 8 and calcite pseudomorphs after 1"x3" ilvaite (?) xls, Level 12 (?). Finally, his case had very unusual fluorite pseudomorphs after 3/8" scalenohedral calcite xls from the Independencia Prospect, East Camp.

Two cases contained calcite crystals from a single locality. Bill and Kellie Jo Conn displayed eleven of his favorite bladed white calcite xls on chalcedony from the Cadman Quarry, Monroe, WA. The groups ranged in size from 3"x4" to 6"x12" with individual xls up to 5" wide and 3 1/2" high. Robert Belcher had three crystal groups of doubly terminated, gray, scalenohedral calcite xls on drusy pyrite from the Brushy Creek Mine, Viburnum Trend, MO. Recovered in 1994, the xls are 6" to 12" long with the largest specimen 13"x17".

A second case by Robert G. Belcher featured 12 calcite specimens. The center piece was a 12"x18" group of bladed calcite xls on chalcedony, Maharashtra State, India (#012596). From the Elmwood Mine he had a nice 6"x12" doubly terminated golden calcite xl and from the Denton Mine, southern IL, a nice 4"x7" group of 1 1/2" xls. Rob had crystals from Italy, Spain, England, Kazakhstan, China, Brazil, and from Athabasca, Alberta yellowish xls lining a 4" vug (#012958). My favorite in Rob's case was pale pink manganocalcite (1/2") xls forming a crown-like group 3 1/2" high and 4" high with pyrite and quartz from Pachapaqui, Peru (#012926).

Raymond Lasmanis case contained 20 calcite specimens, most from the Northwest. From Washington state the display contained the following: from the Pend Oreille Mine, Metaline Falls a 3 1/2" crystal and unique 1/2" calcite xl floaters found hanging from the ceiling on palygorskite "strings" in a large cavity on the 2,000' Level and collected by Cheryl (Stewart) Burnell on Nov. 14, 1983; from the Cadman Quarry two 2 1/2" xls on chalcedony collected by John Cornish; 1 1/2" calcite xls on 3 1/2" x 5" natrolite base, Robertson Pit, Mason Co (coll. 3/86); 1/2" rhombohedral xls on drusy analcime and with natrolite needles, Weyerhaeuser Sec. 23 Pit, N. of Doty, Lewis Co (coll. Oct. 93) and from the same pit, up to 3" golden calcite xls on 4"x8" matrix; rhombohedral 3/4" light tan calcite xls coated by lustrous drusy heulandite and stilbite xls, Green Line Pit, Capitol Forest, Thurston Co and collected by Keith Ikerd in March, 1994; and, from the Mitchem Mine, Keller, 1" calcite xls on 4"x6" green fluorite matrix. From the Price Peak Quarry, King's Valley, OR, the case had 1

1/2" rhombohedral xls in a 2"x3" group and from the Bluebell Mine, Riondel, BC, 1" rhombohedral xls on quartz xls. A specimen of 5/8" scalenohedral calcite xls on quartz was in the case to represent calcite from a pegmatite, i.e. Tanco Shaft Orebody, Bernic Lake, Manitoba (coll. Nov. 10, 1977). From the N.W.T., Canada, the case had 3 1/2" xls in a 4"x6" group from the 2nd Bench, N-42 Pit (coll. 1968). From the Midwest the case had: 2 1/2" golden calcite xl, Berry Materials Quarry, North Vernon, IN; 2" golden xls showing white calcite overgrowth, near #29 Shaft, Viburnum, MO; 2 1/2" doubly terminated tan xl on 5"x6" matrix, Alexander Mudd Lease, W. of Picher, OK (coll. 4/64); and 4" scalenohedral xl with marcasite inclusions, Santa Fe Mine, E. of Picher, OK. On display were 2 1/2" yellowish calcite xls from the Lecanto Quarry, Citrus Co, FL. and 1 1/2" calcite xls coated by duftite from Tsumeb, Namibia. Finally, the display had 2" long orange calcite stalactites from near Miles City, MT; I would still like to have a more specific locality on this one. Can anyone help?

Wes and Deborah Gannaway also featured calcite in their case. From Washington state they had: 2" brown rhombohedral xls coated by analcime and laumontite xls, Lincoln Cr (Is this the Sec. 23 quarry?), Lewis Co; 3/8" to 1/2" bladed xls with goethite on quartz xls in a 2 1/2" x 4" vug, Walker Valley, Skagit Co; small calcite xls on "curly" quartz xls in a 1 1/2" x 4" vug, Altoona, Wahkiakum Co., WA. From the Ophir Canyon, Tooele Co, Utah they had a yellowish 4"x7" xl and drusy xls in a 5"x10" group. From the Elmwood Mine the case had a 11" doubly terminated xl, from the Annabel Lee Mine, Hardin Co, IL they had small calcite xls on blue fluorite, and from the Tri-State district 1" to 2" rhombohedral xls on a 8"x10" matrix.

John and Gloria Cornish displayed some great self-collected material. They had the following: five specimens from the Green Line Pit, Capitol Forest, Thurston Co., WA of 3/4" rhombohedral calcite xls coated by pyrite and drusy zeolites with chlorite (coll. 4/94); three specimens of lustrous 3/4" rhombic calcite xls on natrolite from the Robertson Pit, Mason Co, WA (coll. 1/22/94); three specimens of 1 1/2" to 2" brown single rhombohedral calcite xls. from the back of the burned out fossil log cavity, Hwy 30 cut @ Jaquish Rd., Goble, OR (coll. June, 92); two specimens from the Cadman Quarry, Monroe, WA - 2" white calcite xls on 12" x 18" chalcedony matrix and 1" to 1 1/2" thick and 5" long divergent groups of calcite pseudomorphs after aragonite (coll. 1992). From the Red Cliff campground, near Bozeman, Gallatin Co., MT, John displayed 6" golden doubly terminated calcite xls on a 7"x8" matrix and the best self-collected winning specimen of 4" long golden calcite xls attractively scattered on 13"x17" matrix.

Jim Robison had two display cases. The first one was titled "Calcite Group Minerals" and contained 76 specimens. Of Northwest material there was: siderite (var. sphaerosiderite) from Spokane, WA and Estacada, Clackamas Co., OR; siderite from the Galena Mine, Wallace, ID; very nice 3/8" to 1" cerussite xls from the Bunker Hill Mine, Kellogg, ID; and, siderite and aragonite on dolomite from Bohemia, Lane Co., OR. Other specimens of interest were 3/4" x 2 1/2" bright red rhodochrosite rhomb from "Empty Pocket", Tetrahedrite Stope, Sweet Home Mine, Alma Co, CO and a 6"x6" plate of light pink rhodochrosite from the 1050 Level, Burgin Mine, East Tintic Dist., Eureka, Juab Co., UT. Other carbonate minerals were from world-wide localities. The broad range of colors in smithsonite provided for a very colorful display.

The second display case by Jim Robison contained 59 specimens of calcite from localities around the world. There were specimens from former USSR, Ukraine, Romania, Greece, Namibia, England, Mexico, and Canada. The US was well represented by crystals from Arizona, Colorado, California, Indiana, Iowa, Michigan, Missouri, S. Dakota, TN (Elmwood Mine), and Wisconsin. From the Northwest, Jim displayed the following: bladed xls on 5"x10" matrix, Old Monroe Quarry, Lords Hill, Monroe, Snohomish Co., WA; 2 1/2" to 3 1/2" wide bladed white xls on 5" matrix, Cadman Quarry, S. of Monroe, WA; and, twinned milky white xls on 3"x4" matrix from the Dandy Mine, Warren, Carbon Co., MT.

Robert Meyer put together a collection of 27 exceptional calcite crystals from world-wide localities. There were outstanding specimens from China, England, Zaire, Peru, and Mexico. Specimens from the US came from Arizona, Illinois, Michigan, MO (Sweetwater Mine), TN (Elmwood Mine), and the Tri-State District (Mid Continent Mine). From the Northwest, Bob displayed a 4"x4" attractive group of drusy yellowish xls from

Marble Mountain, Grants Pass, OR. The group that stood out was a 8 1/2" x 17" specimen covered by 3/4" dark brown scalenohedral xls with a 3"x5" cluster of 1" to 2" xls at the base from Francisco Portillo, Aquiles Serdan, Chihuahua, Mexico.

One of the most outstanding cases at the symposium was titled "Recent Acquisitions to the Collection of Robert O. Meyer and Calcite Group Minerals". The case contained 44 exquisite specimens, many that are classics which came from the following collections: Vienna Museum of Natural History, Washington A. Roebling, W. F. Davidson, Ralph E. Merrill, A. L. McGuinness, John Parnau, Edwin Ower, Royal Brown, George Higson, Noble Witt, and Marion Goodshaw. Bob's case was the only one to display the following rare carbonates: gaspeite with gypsum from Widgie Mooltha, Western Australia; otavite (cadmium carbonate) from Tsumeb, Namibia; and, the cobalt carbonate sphaerocobaltite from the Kamoto Mine, near Kolwezi, Shaba Province, Zaire. The case contained a superb 3" high group of complex gold xls from Portal #2, Mystery Wind Mine, El Dorado Co., CA and beautiful 2 1/2" azurite xls in a group 6" high from Tsumeb, Namibia. The case also contained a very fine specimen of cyanotrichite and woodwardite (coll. by David Shannon Oct. 1982) from the Maid of Sunshine Mine, Cochise Co., AZ and 3 mm spangolite xls with brochantite lining a 4"x6" cavity, Blanchard Mine, Hansonburg District, NM.

NOBLE V. WITT MEMORIAL
OUTSTANDING SERVICE AWARD

by
Raymond Lasmanis

The second recipient of the Noble V. Witt Memorial Outstanding Service Award is Robert J. Smith of Seattle University. He has served the Friends of Mineralogy both at the national and the local chapter level for more than twenty years.

For many years Bob carried out the duties of the Pacific Northwest Chapter with patience and diplomacy. On a number of occasions he was essentially a one man show. Starting in 1977, Bob was the temporary Secretary/Treasurer of the Pacific Northwest Chapter, Secretary from 1980 to 1982, Vice President in 1986, Chapter President from 1978 to 1984, and during our crisis year of 1987, Bob was Chair of the Board of Directors and assumed the Presidency in May of that year.

If being an officer was not enough, for the members of the Pacific Northwest Chapter, Bob chaired the first symposium in 1975 followed by 1976, 1977, 1978, and 1988. He was the auctioneer at numerous symposia and always displayed material. He hosted meetings at Seattle University and is the custodian of the Locality Data Register for the Pacific Northwest. Bob also published the FM Bulletin from 1982 to 1988.

At the National level, Bob was a member of the Education Committee from 1972 to 1974 and the Locality Preservation Committee in 1974. Bob was the national Secretary from 1983 to 1984 and a member of the Board of Directors from 1981 to 1984.

Thank you Bob from all of us in the Friends of Mineralogy.

FM SYMPOSIUM SALE

CALCITE theme T-SHIRTS @ \$12.00 each

Large (number____).....

X-Large (no.____).....

PYRITE theme T-SHIRTS @ \$13.00 each

X-Large (number____).....

SYMPOSIUM papers @ \$1.00 each

Mineralogy of Butte Dist. by

J. Guilbert & L. Zeihen

Crystallography of Calcite;

Calcite Twinning; and Calcite

in the Midwest by R.P. Richards.....

Postage (add \$1.50 to each order).....

TOTAL.....

Order from: Raymond Lasmanis

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Lacey, WA 98503

Make checks payable to: Friends of Mineralogy

TREASURES REPORT

by
Cheryl Burnell

SYMPOSIUM		Previous balance	
Pre registration deposit	1749.00	Deposits dues	2908.14
Post registration deposit	3533.50	Deposit from symposium	705.00
Total	5282.50	Total	729.84
		Total	
		4342.98	
Expenses:		Expenses:	
T-shirts	424.14	National dues	235.00
Nobel plaque engraving	5.40	Phone	104.15
Speaker air fare	805.50	Postage	110.80
Manilla envelopes	26.66	Corp. dues	10.00
Meals	2522.03	Total	459.95
Room charges	501.93		
Groben refund	17.00		
Hotel deposit	150.00		
Change (door)	100.00		
Total	4552.66		

Ending balance 10/10/94 \$3883.03

Profit to date \$729.84

NOTE: Not all symposium expenses have been turned in. The total registration for the symposium this year was 81, down from 126 in 1993. We now will be able to put on the symposium from pre-registration and the funds on hand. This is a nice feeling.

Zeolites

Researchers are trying them out for the needs of the 21st century, including faster computers and cleaner air

Chemistry: Useful in industrial and commercial applications for years, minerals known as zeolites have become a focus in development of computer circuitry and methods to clean up pollutants.

By SUE GOETINCK
Dallas Morning News

You wouldn't want to wash your clothes with powdered coffee creamer or thicken your coffee with detergent. You wouldn't try to mellow your coffee with an odor-eating insole, either, even if it were fresh out of the wrapper.

But the creamer, the detergent and the insole can all contain similar substances — minerals known as zeolites.

Zeolites have been studied for decades, and they already have many household and industrial uses. Now researchers are trying out zeolites for the needs of the 21st century, including faster computers and cleaner air.

The process is a vivid illustration of research being put to industrial or commercial use. By studying the basic structure and dynamics of zeolites, the scientists have found a wide range of ways to make use of the substance.

Zeolites are minerals made from atoms of silicon, oxygen, aluminum and other metals. These elements combine in orderly arrangements full of tiny, sticky holes only several billionths of a meter wide.

Zeolites occur naturally, but scientists also can make them in the laboratory.

Because of their tiny holes and peculiar shape, zeolites can do many things. In coffee creamer, the holes trap water, keeping the powder dry. In detergent, the holes in zeolites capture calcium and magnesium from water to aid the cleaning process. In odor-eating insoles, zeolites' holes capture foot odors. The oil industry also takes advantage of zeolites' channels, using them as tiny test tubes to extract gasoline from crude oil.

Most recently, scientists have been trying to use zeolites to make microscopic wires that could make computers work faster and store more information. Other new research suggests that zeolites may be useful for destroying pollutant chemicals in factory exhaust or as sensors for airborne chemicals.

Scientists also are trying to make new types of zeolites for use in the chemical industry, and are using computer simulations to predict what certain chemicals will do once they get trapped inside.

Researchers at Purdue University in West Lafayette, Ind., are trying to use zeolites as sheaths for wires three-billionths of a meter in diameter, just as plastic is used to coat larger copper wires.

"There is a relentless quest in microchip production to reduce the size," said Thomas Bein, a chemist at Purdue. "The reason is because you can store more data in one fixed area. By reducing the dimensions, you increase the speed."

Instead of filling the holes with metal, the Purdue scientists loaded them with a chain of molecules made up of carbon, nitrogen and hydrogen, called polyaniline. To see if the filled zeolites could conduct electricity, scientists tested whether the compounds could disturb microwaves.

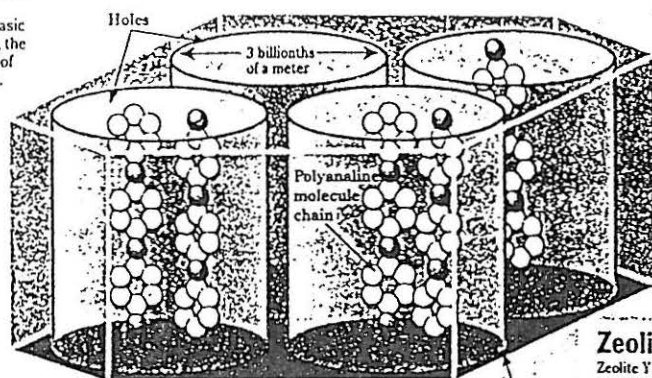
It's a little like putting a piece of aluminum foil inside a microwave oven — turn on the juice and you get sparks. Like foil, the zeolite-polyaniline combination carried a charge, the scientists reported in June in the journal Science.

But the tiny wires aren't ready to replace the standard silicon microchips just yet. Scientists still have to find ways to plug in the filled zeolites to other parts of the circuit.

The polyaniline-filled zeolites also didn't conduct electricity as fast as silicon can. But the zeolite wires are 150 times smaller than the silicon version, so fitting more small wires into the same space

Zeolites for the 21st century

Zeolites are minerals, made primarily from the atoms of oxygen, silicon and aluminum, which occur naturally but can also be made in the laboratory. The elements in zeolites combine in orderly arrangements filled with sticky, microscopic holes that can absorb such things as water or odors. Scientists are now trying to use zeolites to meet the needs of the future, such as faster computers, chemical sensors and devices to convert pollutants into less harmful chemicals.



Making microscopic wires

Scientists have made microscopic wires out of zeolites. Researchers at Purdue University in West Lafayette, Ind., did it by filling the channels in the zeolite MCM-41, shown at right and above, with a long organic molecule called polyaniline. Scientists at the University of Birmingham in Birmingham, England, have also made wires by filling zeolite L with the metal potassium. Both combinations can conduct electricity. The smaller wires could one day be used to make computers faster and store more information.

At home with zeolites

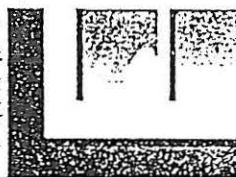
Zeolites can be found in a variety of everyday applications, including:



Kitty litter and odor-eating insoles, to absorb odor-causing chemicals.



Powdered coffee creamer, to absorb water and keep the powder dry.



Between window panes, to absorb water.

Sources: Shell International Petroleum Co.; Thomas Bein/Purdue University; Sie Siepmann/University of Pennsylvania; Andrew Searl/Penn State University

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might compensate for the slower conduction, Bein said.

Bein also has found that graphite-filled zeolites conduct even faster than the polyaniline version. He reported his results in July at the International Zeolite Conference in Garmisch-Partenkirchen, Germany.

Scientists in England also are trying to use zeolites to make conducting wires. Peter Edwards and Paul Anderson at the University of Birmingham have filled the channels of zeolites with potassium. These zeolites passed the microwave test, too.

But in their current form, a powder,

the zeolites can't be used in electronic devices. Edwards is trying to develop large crystals that can be attached to wires.

Besides being good support structures for tiny wires, zeolites also can hold elements that can catalyze chemical reactions. Chemists are figuring out how to take advantage of the catalytic sites to destroy air pollutants.

One of the major pollutants produced by the nylon industry is nitrous oxide, said John Armor of Air Products and Chemicals Inc. in Allentown, Pa. Nitrous oxide contributes to global warming and the ozone problem. The company has

devised a zeolite that contains cobalt to convert nitrous oxide into harmless nitrogen and oxygen. Nylon producers are considering using these zeolites to clean up their exhaust, Armor said.

Zeolites are more efficient at these types of reactions than current materials, Armor said, because the zeolites' honeycomb structure makes for more surfaces where the reactions can take place.

The holes also make zeolites good candidates for devices that can sense airborne chemicals, said Bein of Purdue. He and graduate student Sue Feng have figured out how to grow many zeolite crystals oriented in the same direction on

a piece of quartz. Because the crystals all point the same way, they would be more predictable as sensors than crystals that were oriented randomly, Feng said.

Bein and Feng reported their results in April in the British journal Nature.

To use the zeolite-quartz combination as a sensor, scientists apply an electric current to make the dime-size piece of quartz vibrate. Molecules absorbed by the zeolite from the air would weigh down the quartz and change the speed of vibration, Bein said. He is working with a company to make such a sensor to measure humidity.

"That concept can really be carried quite a bit further," Bein said. Because zeolites have pores of different shapes and sizes, certain zeolites might be used to detect only certain molecules, he said. Bein also has developed a zeolite that can distinguish ethanol in the presence of water.

The oil industry already has turned to zeolites to distill gasoline and other fuel products from crude oil.

"Every gallon of your gasoline is passed at least once through a zeolite,"

Bein said.

Gasoline contains organic molecules called alkanes. Alkanes come in two types, linear and branched. Linear alkanes, as their name implies, are straight molecules, while branched alkanes have offshoots from the main stem.

The branched alkanes make better fuel, said Dr. Ija Siepmann, a computer scientist at the University of Pennsylvania in Philadelphia. Oil companies convert the linear type to the branched inside zeolites, he said.

To make the oil-refining process more efficient, Siepmann said, it would be useful to know more about how the different components of fuel snake through the zeolite channels.

Siepmann and his colleague Bernd Smits of Shell Research in Amsterdam, Netherlands, developed a computer technique that simulates the behavior of alkane molecules inside zeolites.

The researchers published their results in May in Science.

Using a computer to simulate real conditions saves time and effort, Siepmann said.

"If you design your zeolite with a catalytic site in a place that the alkane can't get to, it won't do you any good," he said.

Scientists at the Catholic University of Leuven in Leuven, Belgium, have developed a new zeolite that mimics an enzyme, normally found in cell membranes, that catalyzes the same type of reaction used by the petrochemical industry.

The new zeolite is 300 times more active than other zeolites, the scientists wrote this month in Nature, and should be useful for industrial-scale reactions.

The size and shape of zeolite pores can favor certain chemical reactions over others, said Armor of Air Products and Chemicals.

For many years, chemists trying to make a common solvent, known as dimethylamine, had to get rid of a related, but undesirable, side-product: trimethylamine.

But if the reaction is carried out in a particular zeolite, Armor said, trimethylamine, the larger of the two products, can't form — there isn't enough space.

"I believe that the continued application of zeolites' shape selectivity... has a lot of value," he said. "People don't want to generate any more pollution than they have to, people don't want to generate any more waste. Things have really begun to change."

NWMMSG

The winter meeting of the NWMMSG was held on Nov. 5th in Vancouver, Wa. The meeting was very well attended with many of the members bringing numerous flats of materials. Predominantly NW materials were offered, however specimens from Russia, Pakistan, India and various U.S. localities were also available. The give away tables were absolutely loaded with pieces donated by members for the members to share. Minerals like Hematite, Calcite, Autinite and many types of Zeolites were there for the taking. After a short business meeting, three slide presentations were given. Rudy Tschernich gave the first talk on Mount St. Helens area Zeolite localities which he's found while driving the seemingly endless logging roads of that area. He also offered up information on the Wolf Point quarry, which the group would field trip to on Sunday. The next slide presentation was given by Bob Boggs on his recent collecting adventures during the summer of this year. The third and last talk was by Lanny Ream, who spoke on collecting the Thomas Range of Utah. He brought several dozen specimens of Topaz with associated Bixbyite and several pieces with an un-named new mineral with accicular yellow crystals similar in appearance to golden rutile which were found in the same area associated with the new mineral, and in some instances included within red beryl. These were quite attractive. We had a wonderful time and enjoyed ourselves as usual with this group of local mineral enthusiasts. We left prior to the evening pot luck.

John Cornish and Keith Ikerd

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