



PICK & SHOVEL

INSIDE...

DICHROSCOPES

FIELD TRIP

BOOK REVIEW...and more

Volume 29, No. 7
March, 1989

Lincoln Gem and Mineral Club, Inc.

P. O. Box 5542

Lincoln, Nebraska 68505

1989 ELECTED OFFICERS

President: Fred B. Holbert, 2822 S. 13th St., Lincoln, NE 68502	423-5639
1st Vice President: Gerald Moore, 2305 S. 35th St., Lincoln, NE 68506	489-4184
2nd Vice President: C. David Heffelbower, 1819 Washington St., Lincoln, NE 68502	475-4713
Secretary: Vera Lyman, 420 N. 56th St., Lincoln, NE 68504	464-6089
Treasurer: Phyllis Parks, 2435 So. 19th St., Lincoln, NE 68502	476-6798
Board Member: Francis Belohlavy, 1919 "K" St., No. 4, Lincoln, NE 68510	477-4337
Board Member: Roger Pabian, 315 "D" St., Lincoln, NE 68502	474-2034
Board Member: Donald Phillips, 5901 Spruce St., Lincoln, NE 68516	489-7637
Board Member: Shirley Rockel, 1134 West Avon Lane, Lincoln, NE 68505	464-3059

NOMINATIONS COMMITTEE

3 Years: Kevin Schwartman, Chair.
Roger Pabian
Eddie Ridge,
2 Years: Phyllis Parks, Janet Wright
1 Year: C. David Heffelbower,
Bill Rockel

LONG RANGE PLANNING AND BY-LAWS COMMITTEE

3 Years: Kevin Schwartman,
Jim Marburger
2 Years: Bob Wright, Linda Parks
1 Year: Claude Scott,
Phyllis Parks

STANDING COMMITTEES

Calling: Shirley Rockel
Education: Roger Pabian
Field Trips:
Historian: John & Lillie Lewis
Hospitality: Wilma (Billie) Heffelbower
Housing/Property: Jim Parks
Junior Activities: Janet Wright
Librarian: Jim Parks
Membership: Gerald Moore

MWF Liaison: Vera Lyman
Programs: Francis Belohlavy
Scholarship: Marie Taylor
Christmas Party:
1989 Rockhound/Year:
Roger Pabian
1989 Show: John Harrison
1990 Show: Roger Pabian

AUDITING COMMITTEE, 1987-1988

Shirley Rockel
Don Phillips
Francis Belohlavy

YOUR PICK & SHOVEL STAFF

Publisher: Lincoln Gem & Mineral Club, Inc., P. O. Box 5342, Lincoln,
Nebraska 68505
Editor: Roger Pabian
Business Reporter: Vera Lyman
Financial Reporter: Phyllis Parks
Circulation: C. David and Wilma Heffelbower

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CALENDAR OF EVENTS

- MARCH MEETING:** Saturday, March 25, 7:30 PM
Norfolk Room, Nebraska Center
33rd & Holdrege Streets
- PROGRAM:** Video tapes. Part 1. Gold dredging in Idaho. Part 2. Geology Day at Chet Ager Nature Center.
- JUNIOR MEETING:** 7:00 PM. Program: to be announced.
- ANNUAL SHOW:** 31st Annual Lincoln Gem & Mineral Club Show.
Saturday, March 18, 9:00 - 8:00
Sunday, March 19, 9:00 - 5:00
Pershing Municipal Auditorium
226 Centennial Mall South
EXHIBITORS, WORKERS NEEDED
- COMING EVENTS:** April 14-16, Macomb, IL, Mid-America Paleontological Society, Show

April 21-23, Hastings, NE, Central Nebraska Gem & Mineral Society, Show
- WELCOME:** Craig, Jayne, and Jeremiah TenHulzen, 167 Mormon Trail, Lincoln, NE 68521 435-6722. Welcome to Lincoln Gem and Club. We hope you will enjoy your membership and find it a rewarding experience.

REGIONAL SHOWS

Del Mar, CA	Hickory, NC	Kalamazoo, MI	Portland, OR	Stillwater, OK	Arlington, TX
May 12-14	Apr. 28-30	June 22-25	June 8-11	July 14-16	June

ATTENTION! BIBLIOPHILES**LIBRARY NOTES:**

Thanks to David and Billie Heffelbower for the book "Time Stands Still," a new light on Megalithic Science. Author: Keith Critchlow. Color Photographs: Rod Bull.

We wish to thank Tom Rule for returning the third mineral case - it was---"...gone but not forgotten." The set of four cases was taken to Chet Ager Nature Center for Geology Day, Sunday, February 19.

Thanks to Kevin Schwartman for the halite specimen to go in the above case. Marvelous how these things deteriorate in an enclosed glass case. (Looks like Mr. Cranston is licked before he starts.)

Mike Smith has placed the Brazilian Amethyst/Agate video tape in the club library. It is VHS. Thank you, Mike.

PRESIDENT'S MESSAGE

On behalf of the board, we offer condolences to Roger Pabian and his family for the loss of his mother. She passed away during the early morning hours on March 7, 1989. Our prayers go out to his mother who suffered so long and it is our hope that you all will offer support to Roger who has contributed so much to this club for so long. As continuing witness to that fact was the success of Geology Day at Chet Ager Nature Center which Roger organized. Thanks Roger.

It was with great pleasure that we witnessed this year's scholarship winners, Ted Huscher and Kevin Schwartman, receive their awards. It should be noted that during the board's voting for the awards, that Roger Pabian and Shirley Rockel each abstained from voting for a recipient because of their personal involvement with one of the candidates. The presentations by Ted and Kevin reinforced the validity of our selection of them. It was again a pleasure to see Dr. Treves and meet the new Geology Department Chairman, Dr. Durrance. Being somewhat of an Anglophile, we found Dr. Durrance's apology for his accent unnecessary. One wonders if giving scholarship awards to a past LGMC president (Kevin) has set a precedent? We have been studying (collecting, hoarding, hunting, cutting, and polishing) sundry agates and opals for years. While Roger Pabian is studying the new science of Chaos, my collection is in chaos - sure could use a scholarship to help straighten it out.

Club members will find card stapled inside this issue of the Pick & Shovel. As most of you know, the board is exploring the possibility of forming study groups within the club to further enhance the enjoyment of our interests. These will be informal groups which will decide upon their own structure and what activities they might want to participate in, i.e. discussions; book review & study; swapping; field trips; lectures; demonstrations; museum trips; gem show trips; LGMC and outside gem show displays and demonstrations. The program is for LGMC members only and juniors are encouraged to join (in many cases however, a parent will need accompany a junior during activities). Each group will have a coordinator. When sufficient cards are returned, the board will analyze the returns and formulate the program. Depending upon the response, some groups may stand alone or may be combined with others.

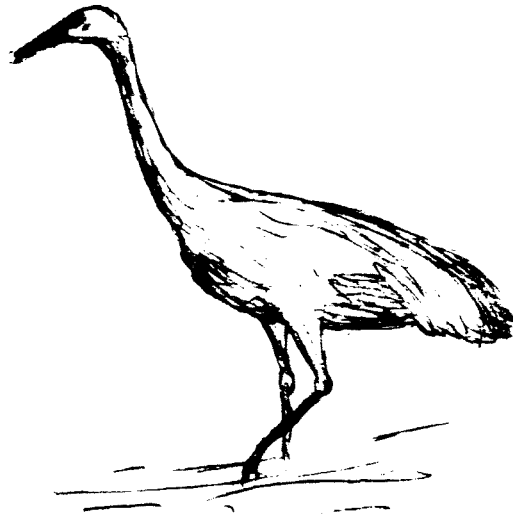
To indicate interest please mark any of the appropriate blanks on the card. If you have an interest not listed, please complete the "OTHER" blank. Please PRINT your name and evening telephone number clearly in the blanks indicated. Please include your name and address on the face of the card, affix a stamp and mail this card (or give it to me or any other board member in person). Please return the completed cards as soon as possible so that we can start formation before the club's summer hiatus. Additional cards will be available at the gem show. This card is only to show interest and is not a commitment. Lets hope that there is enough response so that this program will be workable.

Fred B. Holbert

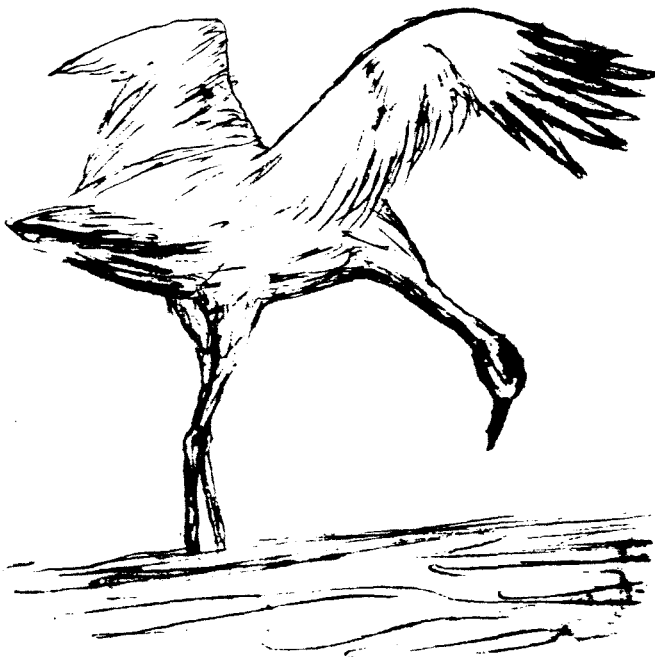


Sunshine Corner

Such good news to hear,
Jim Taylor is much
better.



Fore cast for the LGMC
show March 18th & 19th -
Skies blue and sunny
Conditions mostly
crowded -



May this season
of Easter Joy - bring
you happiness -
Billie Sunbeam

LINCOLN GEM & MINERAL CLUB, INC. - BOARD OF DIRECTORS - Feb. 6, 1989

ISCO Bldg. West 'O' & Sun Valley Blvd. - Mon. Feb 6, 1989 7:30 P.M.

Seven Board Members present & guest Wm Rockel. Phyllis Parks ill; Dave Heffebower had plumbing problems in his home.

Minutes of the Jan. Meeting were read. Correction under "SCHOLARSHIPS": (Both by unanimous decision); should have read: with one abstention for each nominee. Motion for approval as corrected by Francis Belohlavy, 2nd by Gerald Moore. Carried.

Due to absence of Treasurer, there was no Treasurer's report and no bills were presented for payment.

OLD BUSINESS:

Program for Feb. will be 2 mini films (Amethyst Mining In Brazil and Agate Mining In Brazil).

Scholarship recipients will give a mini presentation on their field of study.

STUDY GROUPS: The following are possible study groups which might be pursued:

- #1. Fossils #2. Lapidary & Gemology #3. Minerology
- #4. Jewelry & Metal working #5. Quartz Minerals

(Example of possibilities of any study group)

- #1. Fossils
 - Field trips
 - Labs - preparation & preservation
 - Library - accumulation of data
 - Swapping
 - Museum visitation
 - Displays at meetings and shows
 - Demonstrations

(Potential Fossil Group) Roger Pabian could furnish a place at UN for group to meet and perhaps involve in preparation experience.

Anyone can join any study group, but each must be a paid up member of LGMC. Juniors must be accompanied by parent or adult guardian.

A small form requesting interest will be printed in Pick & Shovel for members to return.

NEW BUSINESS:

Kevin S. passed along budget for '89 Show.

Shirley Rockel requested possibility of hot sandwiches & pie at Pershing during Show. (suggestions were barbeque beef & roast beef and also potato salad & cole slaw) For set-up day on Fri., rolls, donuts and possibly cookies.

Misc.: No audit yet due to illness.

Who's Who will be ready for Feb. Meeting if at all possible.

Thank You to Marie Taylor & LGMC from Kevin S. for scholarship nomination.

Tom Rule had 4 cases for sale. Further discussion at March Meeting.

MEMBERSHIP: Gerald Moore

Received new membership application at swap.

Craig & Jayne TenHulsen, Jeremiah Sponsor: Ruth Krecji
167 Mormon Trail Lincoln, NE 68521 435-6722

Motion for approval by Vera Lyman, 2nd by Roger Pabian. Carried.

Membership application Forms will be at ticket sales desk at Show.

Respectfully submitted,

Vera Lyman
Vera Lyman, Secretary

LINCOLN GEM & MINERAL CLUB, INC. - GENERAL MEETING - Feb. 25, 1989 7:30 p.m.

Meeting called to order promptly at 7:30 P.M. with all Board members in attendance.

Motion for approval of the minutes as printed was made by John Harrison with 2nd by Ewald Paul.

Treasurer's report was read with motion for approval by Francis Belohlavy, 2nd by Paul Brauch. Both motions approved unanimously.

Hospitality reported that 34 members, 9 Juniors and 4 guests were present.

OLD BUSINESS:

Roger Pabian reported on Chet Ager Day (2/17 - Sun. "Geology Day"). There were various displays, gem cutting demonstrations and lectures. A great deal of interest was shown and considered a successful event. Roger thanked those who participated.

NO NEW BUSINESS

SHOW REPORT: Chairman John Harrison reported that all was progressing as planned; and that a number of chairpersons would be contacting members for their assistance before, during and perhaps immediately after Show. Show committee meeting Tue. Feb. 28 at Rockel home.

AUDIT REPORT: Shirley Rockel reported that the audit committee met on 2-18-89. Found the books in order. Complete report in March Pick & Shovel. Treas. Phyllis Parks thanked the committee for their excellent attention to the books.

ANNOUNCEMENTS:

President announced that Jim Taylor is doing much better, gaining weight, blood count is up, etc. Wish him speedy return to excellent health.

NE Academy of Science Meeting - for those interested.

Tickets available for Witchita Gem Show.

Kansas City Gem Show week before ours. Huge, fantastic show. Omaha Club had bus with several seats still available for trip to KC.

SCHOLARSHIP PRESENTATIONS:

Roger introduced former Chairman, Dr. Treves and the present Chairman Dr. Durantz. Dr. Durantz commented that this was the 13th occasion for Scholarship presentations by LGMC, and Ted Huscher & Kevin Schwartman were the 25th & 26th recipients. Each recipient thanked the Club and gave a slide presentation of their respective studies.

Ted Huscher: Upper Pennsylvania Cyclic Sedimentary Deposits in SE Nebraska and NE Kansas (Closed presentation with "sunrise".)

Kevin Schwartman: Geologic Study Of Lower Whitney Ash In Western Nebraska (Closed presentation with "sunset".)

Meeting adjourned.

PROGRAM: Agate mining in Brazil. Amethyst mining in Brazil. Excellent video-tapes from the Michael Smith Library.

Followed by refreshments of cake and coffee.

Respectfully submitted,

Vera Lyman
Vera Lyman, Secretary

LGMC Treasurer's Report for January 1989 Checking Balance 01/1/89 \$ 73.40

Money Received -

'88 Accounts Receivable-P & S Adv.	70.00	
'89 Membership Dues	129.00	
'89 Susp.-Gem Palette Subs	14.00	
'89 Show Incomes	395.00	
Donation LGMC Scholarship Fund	1.00	
Jan. Silent Auction-for AFMS Fund	43.85	
Junior Activities Fund	4.00	
Swapper Bucks Surcharge/Donation	<u>76.65</u>	733.50
Funds transferred to checking from Money Market		350.00

Payments -

'89 Swap/Jan.Meeting Flyers	36.93	
Jan. Pick & Shovel Prtg.	76.54	
Precancelled Stamps for P & S	83.50	
Historian's Expenses	11.58	
34th Anniversary Cake	25.00	
Misc. Postage/Copies Officers/Comm.	36.51	
'89 Show Expenses	231.50	
Suspense-'88 Show Tax Payable	<u>170.88</u>	672.44

NBC Checking Balance January 31, 1989 \$ 484.46

LGMC Treasurer's Report for February 1989. Checking Balance 1-31-89 \$484.46

Money Received -

Membership Dues	72.00	
Suspense Gem Palette Subs	2.00	
Show Incomes	<u>295.00</u>	369.00

Payments -

Forward balance NAOESCI GP Subs	18.00	
January Meeting Rent/Coffee	149.98	
Printing for '89 Show	<u>124.17</u>	292.15

NBC Checking Account Balance February 28, 1989 \$ 561.31

Once again I'd like to 'Thank' the LGMC Auditing Committee for their concentrated attention to the matter of our club financial books and statements. Copies of the 1988 reports will be inserted in the March Pick & Shovel. If any members wish clarification on any items please feel free to call me.

Thyella N. Parks, Treasurer

*accepted
at Jan. Meeting
2/25-89*

LINCOLN GEM & MINERAL CLUB, INC.

1988 Operating Statement

December 31, 1988

INCOME:

1988 Membership Dues & Registrations	462.50	
** 1988 Annual Show Gain	2166.56	
* 1988 Interest on Savings	1380.87	
January Swap Surcharge on Bucks	<u>16.48</u>	
Total Income		4026.41

EXPENSES:

* Dues to Organizations	165.40	
Memorials &/or Curtesy	15.00	
Scholarships presented in 1988	300.00	
* Social Hour	352.43	
Rent for Meetings	406.00	
Rent for Storage Unit	360.00	
* Miscellaneous Expense	419.89	
P. O. Box Rent & Bulk Mailing Permit	99.00	
* Pick & Shovel Net Expense	<u>629.15</u>	
Total Expenses		2746.87

Net Operating Gain for 1988 1279.54

* Separate Reports

** Annual Show Report complete as printed Page 4c in April 1988 Pick & Shovel

Prepaid 1989 Expenses-Balance Sheet

'89 Show Bills	141.54
'89 Deposit Pershing	300.00
Pres./Rockhound Awards	55.33
Decor. '89 Anniv.Cake	17.50
3 months Storage Rent	90.00
'89 Dues-Organizations	<u>128.90</u>
	733.27

Junior Activities - Balance Sheet

Account Balance 1-1-88	8.66
From Jan.Swap Auction	21.37
From Show Participation	98.20
Donation for case	<u>5.00</u>
	133.23
Less Paid on Lap.Classes	<u>70.00</u>
Balance Account 12-31-88	63.23

Interest Income-

Nat'l.Bank Commerce Cert.Deposit	960.00
Nat'l.Bank Commerce Money Market	57.38
First Federal Certificate Deposit	<u>363.49</u>
	1380.87

The Pick & Shovel-

Expenses - Mailing	199.05
Printing	450.08
'88 Who's Who	8.97
Summer Issue	17.38
Labels & Misc.	<u>32.67</u>
	708.15
Income -Advertising	70.00
Subscription	<u>9.00</u>
	79.00
Net Expense	629.15

Dues to Affiliate Organizations-

Midwest Federation	86.00
Nebr.Assn.Earth Science Clubs	29.40
Friends of Museum	<u>50.00</u>
	165.40

Miscellaneous Expenses -

'88 Swap	25.11
'87 Rockhound Award	27.06
Library Books	61.02
86-87 Financial Report	11.82
Postage Spec.Mailing	12.50
Membership Committee	8.25
Officer Perf.Bond	100.00
Stationery	48.83
Programs at Meetings	58.00
Secretary Exp./copies	19.35
Treas. Exp./copies	20.89
" Ledger/rct.books	<u>27.06</u>
	419.89

Social Hour at Meetings-

'88 Anniversary Cake	25.00
Coffee Jan.Swap & Meet.	70.99
Feb. Cake & Coffee	52.78
'88 Show Set-up	30.08
Oct.Meeting in Park	13.01
Christmas Dinner	109.56
Christmas Decor/Favors	<u>51.01</u>
	352.43

LINCOLN GEM & MINERAL CLUB, INC.

Balance Sheet December 31, 1988

ASSETS:

Cash on Hand		20.00
Nat'l Bank of Commerce Checking		73.40
Nat'l Bank of Commerce-Money Market Acct.		897.72
Nat'l Bank of Commerce-Long Term Cert.Dep.		15000.00
Nat'l Bank of Commerce-Short Term CD		2500.00
First Federal Savings & Loan-Money Mkt.		59.38
First Federal Savings Cert. of Deposit		5000.00
U.N.L Foundation Scholarship Deposit for '89		300.00
Account Receivable		115.00
* 1989 Expenses paid in advance		733.27
LGMC Pins & Patches on hand		41.00
Equipment	1820.92	
Res.Depr.Equip-	<u>1756.98</u>	63.94
Show Cases (16 Gless)	1210.38	
Res.Depr.Cases	<u>1210.38</u>	.00
		<hr/>
Total Assets		24803.71

LIABILITIES:

Advance '89 Member Dues		211.00
Advance Dealer Fees for '89 Show		2625.00
Prepaid '89 Subscription Pick & Shovel & GP		7.00
Nebraska Academy Fund Balance		16.80
LGMC Scholarship/Education Fund		41.22
* Junior Activities Balance on Hand		63.23
Suspense 1988 Sales Tax Payable		170.88
Net Worth	20389.04	
1988 Gain	<u>1279.54</u>	21668.58
		<hr/>
Total Liabilities		24803.71

* Separate Reports

Stanley M. Rockey
Donald R. Phillips
James E. Bullock

THE DICHRSCOPE

The dichroscope is another piece of gem testing equipment that can be easily and inexpensively built at home. It can give you a lot of information about the gem that you are testing, especially if the gem is dichroic and if the gem is uniaxial or biaxial. A dichroscope consists of a calcite prism that is set in soft wood or cork. There is a window on one end that passes light, the calcite prism, and an eyepiece at the other end (Fig. 1).

Because calcite is strongly doubly refractive a beam of light passing through it is broken into two rays. If a gem is uniaxial, it is also doubly refractive, and has one optic axis, the direction through the stone in which the refractive index does not vary. Ruby, for example, is uniaxial and doubly refractive. If a beam of light enters a ruby, it is bent (refracted) and broken into two beams. The ruby selectively absorbs light; one direction of travel through the ruby will absorb red light whereas the other will absorb blue. We do not see this with the unaided eye,

but the strongly doubly refractive calcite can separate the two rays, the one deficient in red appearing blue, the one deficient in blue appearing red. What we see in the dichroscope is half the window appearing red and the other half appearing blue (Fig. 1B). If you rotate the stone or the dichroscope the windows will alternately change colors. Examine the stone in several directions to be sure the test is complete.

If a stone is triply refractive, it is biaxial, that is, it has two optic axes. Triply refractive or biaxial gems may be trichroic; that is, three different colors can be detected through the dichroscope, but only two at a time. Olivine is biaxial and sometimes trichroic. Biaxial stones are not always trichroic. Through one direction, the olivine (peridot) may appear green and yellow and through the other, green and brown, or yellow and brown, but never all 3 colors at the same time.

To detect dichroism and trichroism the stone must have a fairly strong body color. The stone should be held close to the window of the dichroscope and the eyepiece should be close to the eye.

A simple dichroscope can be made with polaroid material that is available from most scientific supply houses. Polaroid material polarizes light, making it vibrate in a single plane. To orient the two pieces of polaroid material, rotate one atop the other until they pass no light. Cut out two peices about 1/2 x 1 inch and lay them side by side and secure them (Fig. 1C). Metal slide holders work very well here. I will bring both kinds of dichscopes to the meeting; you will see they do the same thing.

Reference: Liddicoat, R. T., 1969. Handbook of gem identification. 8th Ed., Gemological Inst. America. 430pp.

Roger K. Pabian

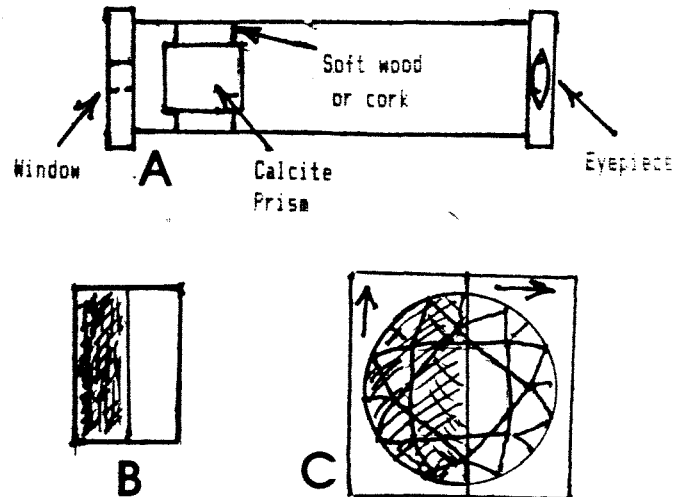


Figure 1. A. Cross section of a dichroscope. B. View of a dichroic stone showing different colored windows. C. Dichroscope made from polaroid material. Arrows show vibrational directions of light. Each window will show a different color.

BOOK REVIEW

Beryl, John Sinkankas, Peter G. Read, Editor. Butterworth's Gem Books, \$29.95

Mr. Sinkankas has put together another great book for the gem enthusiast. The price is similar to most of his other works---high. The quality is proportional to the price, and it will be a boon to us when his books become published in paper back form.

The history of Beryl begins in ancient Egypt and winds through antiquity. There are interesting and informative stops in the East, Mediterranean, Europe, and the Americas. The history of the use of gem beryl parallels the history of precious stones in general and provides a good basic understanding of the roots of gemology. The professional journalistic style provides a literal plethora of tangential reading materials but the extensive references and cross references at times are cumbersome.

The book has five and one half pages of color plates of some fine beryl specimens and two and one half pages of water color paintings by the author. This seems a meager amount of color pictures given the nature of the work. Lack of color is especially apparent in the chapter on collections of beryl gemstones.

Six chapters are devoted to the physics, chemistry, and crystallography of the beryl family. These chapters provide a very comprehensive and complete list of the various gemological properties of beryl. Various charts, graphs, illustrations, and diagrams provide a wealth of information especially pertinent to the identification of the various species of beryl, beryl simulants, and synthetic beryl.

Sinkankas has included a very abridged chapter on cutting and polishing beryl. This subject is limited to the lapidary features of beryl and is not intended as a guide to lapidary techniques in general. Persons interested in a more comprehensive discussion on the lapidary aspects of beryl are best referred to Sinkankas' work Gem Cutting.

Beryl deposits and world sources of beryl are included in the final chapter. An appendix entitles "Beryl names and terms" is included and it includes a mini-dictionary of interesting references to beryl.

If you are into the science of gemology to the level where you own a refractometer, dichroscope, polariscope, and specific gravity liquids, you definitely should own this book. Otherwise, I would recommend that you check it out from the Lincoln Gem and Mineral Club's library and invest the thirty dollars in Mr. Sinkankas' Lapidary Bible---Gem Cutting, a lapidary manual or the previous mentioned equipment, or some new material to work up.

Charles Woolridge

NEW CONTRIBUTORS

Charles Woolridge and Don Phillips have contributed articles for this month's "Pick & Shovel." Both Charles and Don are first-time contributors. I am sure that you will enjoy the articles that they have submitted. Welcome, Charles, Don, to the pages of "Pick and Shovel." RKP

ROADSIDE GEOLOGY OF NEBRASKA

Number 1 in a series, **JEFFERSON COUNTY**

By Don Phillips

Nebraska is rich in history from recent times to dust bowl days, farmers in sod houses, Plains Indians, and pre-historic man. It is easy to follow Nebraska's recent history through documents, tools, artifacts, folklore, and oral tradition. Nebraska is fortunate, though, in that its history can be traced back much further---in fact, hundreds of millions of years of history have been recorded in Nebraska's rocks. Rock outcrops have made it possible to look back into Nebraska's past. Over millions of years, shallow seas, winds, glaciers, volcanoes, and rivers have laid down thousands of feet of sediments across Nebraska---up to 20 thousand feet in Kimball County, but only about 12 hundred feet in the study area. These layers of sediment (strata) contain the remains of fossilized plants and animals which tell the story of past life. These sediments also contain minerals which may give an account of the paleoenvironments when they were deposited.

It is my wish that through this and future articles, I can share with you some of the details about some events in the geologic history of Nebraska that can be seen in roadcuts and other artificial rock exposures.

It is also my intent to give you information that will assist you in exploring these areas yourself. One might look at this series of articles as a summary of **Roadside Geology Trips of Nebraska**.

This first trip takes us into Jefferson County to view Late Cretaceous rocks that are about 95 million years old, a time when dinosaurs still roamed the earth and most of Nebraska was covered by a shallow sea. This time period is called the **Cretaceous**, which is the youngest time period in the **Mesozoic Era**.

This site is 8 miles south of Fairbury on Nebraska State Highway 15 (Fig. 1), where there is a large roadcut on the east side of the highway. There are several layers of alternately light and dark strata. The exposed rocks are part of the **Colorado Group** (Fig. 2), and consist of the upper part of the **Graneros Shale** and most of the **Greenhorn Limestone** formations. The Graneros Formation consists mostly of shales, which are very fine-grained sedimentary rocks consisting of silts and clays. The Greenhorn Formation consists mostly of limestones, which are calcium

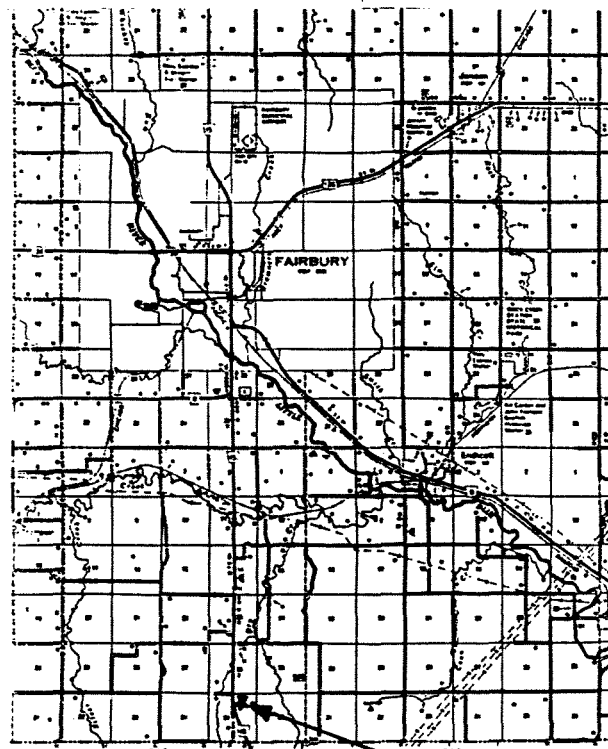


Figure 1. Index map showing locality of exposure. Base map: Nebraska Department of Roads, 1/2 inch/mile.

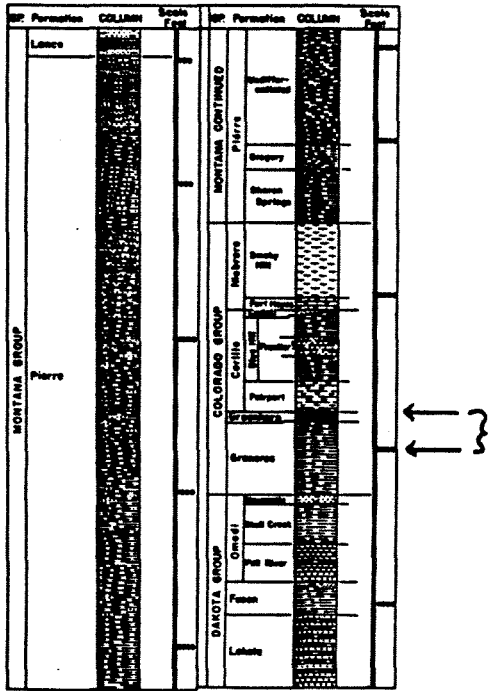


Figure 2. Cretaceous section of Nebraska. Arrows show approximate stratigraphic interval to be seen at exposure in figure 1. After Condra, G. E., and E. C. Reed, 1949. The geological section of Nebraska. Nebraska Geol. Surv., Bull 14a, 82pp.

Many of these fossils have been found already weathered out of the matrix and just lying on the surface, which makes collecting easy. Do not discard the rocks themselves, as many fine specimens have been found still cemented within the shales and limestones. You should not have too much difficulty in finding fish fossils in about the lower 2/3 of the hill, but they are rarer in the upper 1/3. There is a well-exposed limestone layer that is about 2/3 the way up the hill to help you distinguish this division.

Do not limit your collecting to the lower 2/3 of the hill. Just above the well-exposed limestone layer, for several feet, are some well-broken limestone blocks that have produced both molds and casts of the ammonite Watinoceras reesidei (Fig. 3E).

carbonate, much of which is secreted by algae, which settles to the sea floor. The shales were most likely deposited in shallow, near-shore environments, whereas the limestones were deposited in deeper, off-shore environments.

Besides collecting very fine specimens of shale and limestone, you will find that a vast amount of life history has also been stored as fossils in these sediments. I will devote the remainder of this article to the fossil record here.

As you explore the exposure, you will soon see signs of fossils, most of which are pieces of bivalves (clams), most of which are of the species Mytiloides labiatus (Schlotheim) that have been eroded from a higher bed in the section (Fig. 3A). You should pay very close attention to the ground and look very carefully. The major item you are looking for, and that which makes this site so popular with fossil collectors are the remains of both cartilaginous and bony fishes, including teeth, jaw sections, vertebra, fins, spines, and coprolites even, all of which have been found at this site (Figs. 3B-D).

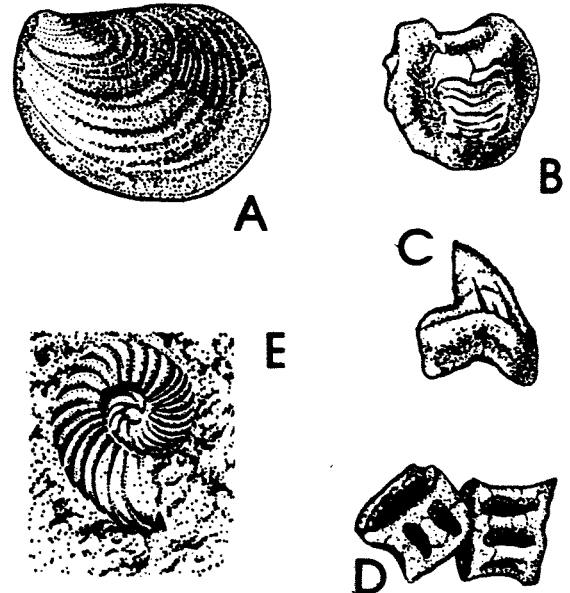


Figure 3. Typical fossils from Fairbury site. A. Bivalve, Mytiloides labiatus (Schlotheim), X1/2. B, C. Shark teeth. B. Ptychodus sp., X1. C. Squalicorax. X1. D. Unidentified fish vertebra, X1. E. Ammonite imprint, Prionocyclus woolgari (Mantell), X1. Magnifications approximate. From Field Guide, Jefferson County, Conservation and Survey Division, University of Nebraska.

IMPORTANT NOTICE

The May meeting will be Saturday, May 20, at Bethany Park Shelter House. It will be a dessert supper. Watch for additional news on this date. RKP

Most of the upper 1/3 of the section is completely covered with many broken pieces of the clam Mytiloides labiatus (Schlotheim) (Fig. 3A). Some very nice, large, complete clams have been found here.

If you plan to take a trip to this site, I recommend that you take it in the spring, late summer, or early fall. There is no protection from the sun and the mid-summer heat makes searching very difficult.

Soils are quickly forming on this site, and soils are also filtering down from above and settling over much of it. Vegetation threatens to eventually cover most of this exposure.

FROM DARLINE JANZEN

We went to the International Airstream Rally in Huntsville, Alabama, this summer. Following the rally, we joined the Rockhound Caravan which lasted 28 days, from July 5 to August 2. We toured North Carolina, Tennessee, and northern Georgia---rock collecting all the time. Came home with sapphires from the Spruce Pine area. The entire group were guests at a meeting of the Franklin Club. Caravan ended near Spruce Pine. Stayed over a couple of extra days to take in the Spruce Pine show.

TESTED LAPIDARY TIP

HOW TO DO FLAT LAPPING WITHOUT A MACHINE

This process of flat lapping is so simple that you can do it without a flat lap. So go ahead, polish those bookends or make that clock face. Just get a piece of aluminum about 12 or 14 inches square. Place it on a flat surface. Take a teaspoon of 120 grit, (or 90 if you have saw marks on the slab). Mix it with Vaseline or water (Vaseline holds the grit better.

Now take your slab and dop a piece of wood to it so that you have a handle to hold it down on the grit. Just keep twisting and pushing it over and around on the grit. Be sure that your grit is always under the slab. Don't run it over the dry aluminum. Move the stone in any pattern you wish, adding more grit from time to time. Keep at it until all saw marks are well gone. Wash the stone between grades of grit; wash the aluminum each time also. Use progressive grit, 220, 400, and 600. The slab should be ready for polishing. To polish, use a piece of leather about 12" x 12"; stick it to a board and keep it for polishing only. Don't tack it down because the tack heads will scratch your stones. This is the oldest way to polish stones and works well, IF SLOWLY.

Author not known: Originally published in Mid-Tenn Gem'ers.

GEOLOGY DAY

Geology Day at Chet Ager Nature Center, Pioneers Park, was Sunday, February, 19, from 1:00 to 4:00 PM. We had a good turnout of club members who demonstrated gem cutting, fossil preparation, and marble making. Participants included Jim and Phyllis Parks, Don and Kathryn Phillips, their helpers, Shawn Brock and Gary Bax, Roger Pabian, David and Billie Heffelbower, Mike Smith, Jim Null, Eddie Ridge, Kevin Schwartzman, Charles Woolridge, Bill and Shirley Rockel, and Francis Belohlavy. About 150 people visited and they expressed great interest in the club and its activities. We have been invited back for next year. RKP

PEGMATITES

Pegmatites are extremely coarse-grained igneous rocks that occur as bodies that cut through masses of much finer-grained rocks of usually similar chemical makeup (Fig. 1). Traditionally, the term **pegmatite** was used to describe any extremely coarse grained rock, but more modern usage describes pegmatites as being the bodies made up of coarse grained rocks. Pegmatites are important to the geologist and gemologist in both academic and economic senses. Pegmatites contain an abundance of gemstone varieties, including quartz, tourmaline, emerald, aquamarine, garnet, topaz, and many of the rare gems such as benitoite. Much of the faceting grade material from Brazil comes from deeply weathered pegmatites.

Pegmatites form in the very late stages of the formation of a body of plutonic rock. The minerals are deposited from water that is extremely hot and under extreme pressure. The waters cool very slowly and this allows for the formation of very large crystals. One pegmatite in North Carolina is reputed to have had a feldspar crystal that filled two railroad cars from its' mined products.

An aquamarine crystal from a pegmatite in Brazil weighed over 200,000 carats. With the exception of quartz, most of the gem materials that form in pegmatites are known only in crystalline and not in massive forms. For example, I do not recall ever having seen massive topaz.

Pegmatites are simple, containing quartz, feldspar, mica, and some black tourmaline, or complex, containing all of the above plus rare earth minerals, numerous gem minerals, and numerous rare minerals. Bodies of hot water carrying different minerals in solution possibly arose at different times and deposited their dissolved minerals. As water rose in the pegmatite, not only did it deposit new minerals, but it also dissolved minerals that were already deposited. This is why a quartz crystal may contain, for example, tourmaline crystals as inclusions.

Simple pegmatites are made up of a border zone directly in contact with the host rock, a wall zone, and a core. In complex pegmatites, there are intermediate zones between the wall zone and the core.

The geometry of a pegmatite may be as straight-forward as dikes or sills cutting through the host rock, or they may be lens-shaped, arcuate, or pipy or tube-like in appearance.

For study materials this month, we will emphasize gems and minerals that form in pegmatites. Display cases will be furnished. Since many of the gemstones that occur in pegmatites are strongly dichroic, we will have the dichroscope and polariscope to show their reactions.

REFERENCES

- Sinkankas, J., 1961. Prospecting for gemstones and minerals. VanNostrand Reinhold Publishing Co., 397pp.
 Turner, F. J., and J. Verhoogen, 1956. Igneous and metamorphic petrology. McGraw Hill Book Co., New York, 694pp.

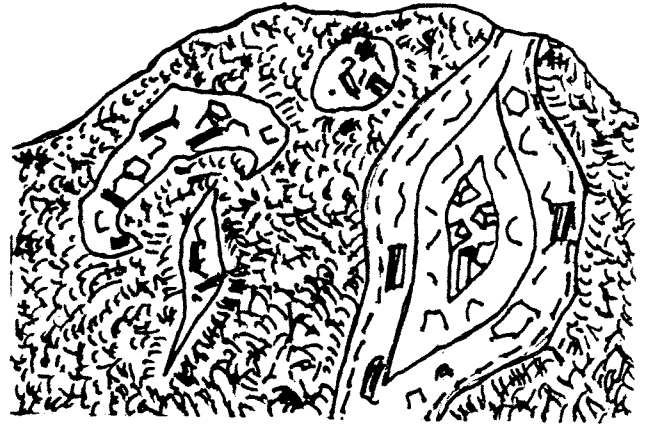


Figure 1. Pegmatites of different geometries in a granitic body. Note zonation in large pegmatite.

Roger K. Pabian

OREGON COAST AGATE CLUB

Dear Club Members:

Get Ready! Plan your vacation around our "Silver Anniversary Gemboree Show" on the beautiful Central Oregon Coast, as you make your way to Portland, Oregon (just 2½ hours away) for the Combined American & Northwest Federation Show the following week.

Newport is rolling out the red carpet for you as our special guests...the Gem & Mineral Society Members. (see other side)

We feel our show is one of the finest of its size in the country and would like to take this time to extend to you an invitation to the 25th annual Oregon Coast Agate Club's Gem & Mineral Show. The show will be held June 2, 3 & 4, 1989, at the Oregon National Guard Armory (541 S.W. Coast Highway, Newport).

Show hours are 10 am to 6 pm Friday & Saturday and 10 am to 5 pm on Sunday. The show is wheelchair accessible and will feature:

- * Over 40 exhibits of gems, minerals and jewelry by members and guests from the Pacific Northwest.
- * Seven dealers providing a wide variety of items, of interest to the hobbyist or collector.
- * Demonstrations in jewelry making, lapidary and faceting.
- * Reasonably-priced, good hot lunches, drinks and homemade goodies.
- * Action Alley, crafts and grab bags.

A general admission donation is requested: \$1.00 for adults, 50¢ for children 8-12, and free for younger children when accompanied by a paying adult.

If you are not from this area, we hope that you will take time to visit some of Newport's other attractions: two historical museums (within walking distance), OSU's Hatfield Marine Science Center, Oregon Undersea Gardens, Ripley's Believe-It-Or-Not, the Wax Works and, if you have time for anything else, make Newport your home base for scouting the surroundings. After all, it's a short trip south to the Sea Lion Caves, or north to the cheese factory and dairy pastures of Tillamook, with scenic vistas and parks in between. And it's just a few minutes to coastal range lumber towns, fresh water fishing streams, country roads and natural hamlets.

We hope to see you at our show.

Sincerely,



Kay Myers
 Show Chairman, 1989
 1125 S.W. Coast Highway
 Newport, Oregon 97365
 (503) 265-6330

Dear members of the Lincoln Gem and Mineral Club,

Thank you for the scholarship!

Your thoughtfulness
 will always
 be remembered.

*I will be glad to give a brief slide presentation
 on my field of study after the scholarship presentation.
 This scholarship is very much needed and I thank you again.*

*Sincerely,
 Theodore L. Hooker*

Member of The American Federation of Mineralogical Societies

NEWSLETTER



Published monthly
Except
June, July, August

FEBRUARY 1989 - Issue 285

Judith Washburn, Ed.
107 Deer Creek Road
Rochester, IL 62563

American Federation
of
Mineralogical Societies



Be My Valentine.

Oops!

Louellen Montgomery, President of the AFMS Scholarship Foundation, has pointed out a discrepancy in the figures we gave in this space last month about the 1989 scholarship grants. Quoting from her letter:

"...The scholarships are for \$2,000.00 a year for two years for each student. Grants were raised to this amount for the current year, with the students receiving the second year of the 1987 grants still receiving \$1,500.00 for the current school year. This school year 12 students are receiving grants of \$1,500.00 each; 12 students are receiving grants of \$2,000.00 each; for a total of \$42,000.00. The students who will receive grants for the 1989-90 school year will be receiving grants of \$2,000.00 each. Two students are selected by the Honorary Award Winners in each of the six Regional Federations."

We apologize for the error, and hope this clears up any misunderstandings which may have resulted. Please try to share these corrected figures with anyone who was given the first information.

The Midwest Federation's Honorary Award Winner and the students selected to receive the grants will be announced at Kalamazoo this coming June.

Sincerely,

Glen R. Hanning

Glen R. Hanning
First Vice-president



February 1989
S M T W T F S
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5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28

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312-323-1682

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Mrs. Kitty Starbuck
7636 V Avenue East
Vicksburg, MI 49097
616-649-1991

Editor's Note



There are many changes taking place out there in local clubs across the Federation. New Presidents are presiding, new Treasurers are tending the coffers, and new editors are editing. In times like these, some confusion and chaos is bound to run rampant. Some things tend to be forgotten. Two things not to forget:

1 - Be sure you've sent all the up-dated information about your club to the Secretary of the MWF. You want to be included in the new directory of MWF clubs.

2 - Take 5 minutes and a 15¢ postcard to let me know the new people who should be receiving your copies of the MWF Newsletter. If you don't let me know, I have to wait for the new directory to make the necessary changes - and that takes a while. Meanwhile the wrong people keep getting the information needed by others.

I'd like to make one recommendation to local club leaders. Your bulletin/newsletter editor should be on your list as one of the recipients of the Federation Newsletter. The process bogs down when the person responsible for disseminating information is not the one receiving that information first-hand. It makes for smoother operating if they're involved directly.

More and more of you have been sending me your meeting notices and bulletins. There are still quite a few clubs that I haven't heard from yet, and I look forward to each day's mail and what it will bring. I hope to hear from your club soon.

Tip for Editors - from *Cam City Rock News*
Cam City Rock Club
Quincy, IL.

Editor Hazel Kuntz, familiar to MWF folks as a Past President, takes her editing job seriously. However, she always makes room for some light-hearted humor. In a section she calls "Bits of Facts & Fun!!," she interweaves light newsy items with humor and short poetry. It gives readers a break between informative articles and important dates and announcements. Keep them smiling, Hazel!

ARCH FACTS....



From assistant Rick VanBeek - the Michigan Connection - came an interesting article authored by Richard H. Harms of the Grand Rapids Public Library and published in the September/October 1988 issue of *Michigan History*. The article is about Mr. Wright Coffinberry, a nineteenth century pioneer of Michigan archaeology.

One of the many Indian mound groups that Mr. Coffinberry investigated in the 1800's was the salvage effort of the Converse group of Grand Rapids. This mound group was the largest, and probably the most important of the Hopewell mound groups in the state. Unfortunately, they were leveled in the course of Grand Rapids' expansion. What we know of them and what they contained can be attributed to Mr. Coffinberry's interest. Through his efforts, much of the Converse material was acquired by the Peabody Museum of Harvard University.

A large grouping of artifacts recovered consisted of two large nuggets of native silver ore, one 7.75 pounds and the other just over 5 pounds; a 13 pound copper nugget and a large copper axe; several deer bone pins; 4 bear canines and 4 or 5 effigy bear canines; a perforated bear molar; a silver peripipe sheath; a platform smoking pipe; an effigy pipe with two bowls; and seven shell beads. Another group of artifacts included a quartz projectile point, two more bear canines, and a carved piece of antler in the form of a beetle.

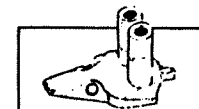
Nice report Rick! If someone wants to know more, they should pick up a copy of *Michigan History* and read more about it.

Before going to press, I had a discussion about the silver nuggets and their possible province with Mr. Ken Farnsworth, an Illinois Archaeologist and an authority on the Hopewellian Interaction Sphere. The discussion revealed that in all cases to date, whenever nuggets of silver ore were described as a part of an artifact assemblage, upon closer examination they turned out to be galena! We'll be checking into this and will give an update later.

Let's hear from the rest of the Midwest Archaeological Connection!

-John Washburn, Chairperson
Archaeology Committee

<p>February 18, 1989 Visiting Cahokia from Iowa and the Upper Mississippi Valley Dr. William Green University of Iowa</p>	<p>March 12, 1989 Aztalan, Cahokia and the Late Prehistoric Frontier John Richards University of Wisconsin-Milwaukee</p>	<p>April 5, 1989 Cahokia Viewed from the Lower Mississippi Valley Dr. Jeffrey Graff Harvard University</p>
<p>Sponsored by the Cahokia Mounds Museum Society and Collingsville Chamber of Commerce</p>		
<p>ALL LECTURES ARE FREE</p>		



BOB MARKERT HONORED

Charles R. (Bob) Markert was honored this past summer by being inducted into the Rockhound and Lapidary Hall of Fame. One of six candidates selected from the entire country, Bob was chosen because of his achievements in the general and educational category. This group includes those who have been writers, photographers, teachers, curators or lapidary business operators. This is a great honor, not only for Bob, but also for the Ishpeming Rock & Mineral Club which Bob organized in 1953. We, the members of IRMC, were delighted to hear that Bob was selected for this honor which he so richly deserves.

The Hall of Fame headquarters is in the Pioneer Museum at Murdo, S.D., and his name has been engraved on a permanent brass and walnut plaque and his biography entered in the Hall of Fame book. Bob continues to do what he does best, and has been doing throughout his career; promoting the hobby of rockhounding through education. A tireless worker and leader, he enjoys a chance to speak to the youngsters in our schools and give away endless samples of the treasures he has collected. Together with his wife Marion, they have coined a philosophy for all Rockhounds -

OUR PURPOSE By Bob & Marion Markert

To enjoy, to learn, to teach and to conserve
The rocks, the gems, the fossils and ores,
To collect, to admire, to brag and to show
The material we've found, we'll trade for yours.

Nice Work!

This article was written by Bruce Spike and taken from The Jaspilite newsletter of the Ishpeming Rock and Mineral Club.

FROM: The Opal, 1/89
Editor - Lillian Keck
West Suburban Lapidary Club

GOLD -- GOLD! -- G O L D !! - CAROLINA GOLD!

The first great gold rush in the United States took place in "The Carolinas", and at one time there were 40,000 people mining and panning the streams in the search for gold. Mecklenburg County North Carolina led the world in the production of gold and all gold mined before 1829 in the United States, and coined at the Philadelphia Mint came from North Carolina.

An act of March 3, 1835 authorized the establishment of the branch of the U.S. Mint in Charlotte. The old Mint building is now used as the Mint Museum of Art in Charlotte.

There were over one hundred mines surrounding the Mecklenburg area. Some of the more important are: The Gold Hill mine in the village of Gold Hill in Rowan county... The Rudisell and St. Catharines in Charlotte... The Phoenix and Reed mine in Concord. The gold area extending to the famous Haile Gold mine of Lancaster County in South Carolina. The Haile mine became the largest producer of gold east of the Mississippi. The main production years for North Carolina were 1829-59, 1872-91, 1902-06, 1912-15, 1933-42, and for South Carolina 1829-61, 1866-1917 and 1931-43.

Lens-like deposits of gold are still in the earth below this area, but at this time in history recovering the gold is too costly.

--Courtesy of the Charlotte Gem & Mineral Club, Inc.
Via MAGS Newsletter (Memphis) December 1988

FROM: Arrowhead News, 1/89
Editor - Ed Benjamin
Indian Mounds Rock & Mineral Club

WHAT DOES THE MIDWEST FEDERATION DO FOR US ?

I heard that comment while visiting a club in Illinois recently. Yes, they recognized that their club received the MWF and AFMS Newsletters and a Directory. But these items did not reach the membership. I pointed out that usually the president and bulletin editor receive these newsletters and should pass on the contents at meetings and in your bulletin. These communications keep the clubs abreast of news within the federations, and regional and national legislative issues regarding the hobby. The Directory should be in your library and contains the names of clubs and show & swap dates.

DID YOU ALSO KNOW THAT YOUR FEDERATION PROVIDES

- Through the Scholarship Fund, you support two students in their studies for a master's or doctor's degree in the earth sciences for two years. This is the place for your club to show it's commitment in supporting the goal of the your federation to educate with support of the scholarship and endowment funds.
 - The federation provides a large library of slide films to assist your club to present informative programs at your meetings. Each year, the best of the slide program contest winners, are added to the list of programs available. A few video programs are being added.
 - A bulletin editors contest is held each year to award prizes for the best bulletins. This provides a goal for your editor to furnish you with an educational and interesting newsletter including articles from other bulletins. An informative seminar and breakfast for editors will be held at the convention which gives them an opportunity to learn, compare notes and swap ideas.
 - An Education Thru Sharing Award is given so you can provide recognition to a deserving club member who volunteers considerable time to teaching students and members of his knowledge of our hobby.
 - An annual convention where members can see exemplary displays and purchase materials from nationwide dealers. It provides your members with an opportunity to compete with their peers and members of other federation and get recognition for collections or workmanship. Your delegate has a voice in the business of officer elections and operations at the Council meeting.
- AND THE FEDERATION IS A SERVICE ORGANIZATION**
- There are 68 State Directors and their assistants available to assist your clubs and provide literature and supplies on "how to run a show" to "how to exhibit".
 - And there are over 75 other knowledgeable resource people to help your club in more specialized areas of interest:-

- | | |
|--------------------------------------|------------------------|
| • Junior Activities | • Lapidary Arts |
| • Micromounts | • Paleontology |
| • Uniform Rules | • Holotype Displays |
| • Senior Activities | • Archeology |
| • Safety & Field Trips | • Convention & Show |
| • Director of Supplies & Information | • Special Show Display |

• And there are also people on administrative committees who help keep the federation functioning smoothly

Have your club president attend the Council meeting and discuss ideas and problems with other club presidents and meet the chairpersons of the above committees. Their names are all listed in the Directory. The committee people and state directors are just waiting for your letters.

If your club members have lamented about "what does the Midwest Federation do for us", then perhaps the club should ask why they are not using all of those wonderful services available to them!

JOHN BOLAND, LEGISLATIVE COMMITTEE

We Hear...

the WEATHERS

Fine

in '89!





SNEAK PREVIEW!

MIDWEST FEDERATION SHOW AND CONVENTION
JUNE 22-25, 1989 KALAMAZOO, MICHIGAN

CO-HOSTS: KALAMAZOO GEOLOGICAL AND MINERAL SOCIETY
BLOSSOMLAND GEM AND MINERAL SOCIETY
CENTRAL MICHIGAN LAPIDARY AND MINERAL SOCIETY
GRAND RAPIDS MINERAL SOCIETY

● Just some of the Special DISPLAYS ●●●

Bill Stehouwer's Butterflies
Fred Weber's Carvings
The Smithsonian Golden Topaz

Mel Maier's Scale Model Stagecoaches
(made from Petrified Wood)
16" Trilobite - Recent Find

● Just some of the Special EVENTS ●●●

A Petoskey Pounce
A Live Auction
Fabulous Demonstrations
An Ox Roast
Editor's Seminar

Silent Auctions
A Raffle
Field Trips Galore
A Square Dance

● Just some of the Special PROGRAMS ●●●

"A Red, White, and Blue (Made in the U.S.A.) Mineral Show" - Tom Morris, Jr.
"Hawaii and Iceland - A Geologic Tale of Two Islands" - Dr. Richard Lefebvre
"The Illinois Fluorite Story" - Dean Stone & Company
"Gem Tree Making" - Naida House
"Silverworking for Beginners" - Marge Collins
"Keokuk Geodes" - Marguerite Peterson
"Petrified Wood" - Clint Heckert

*** You'll want to BE there!**

WATCH FOR SHOW PACKETS IN MARCH!

MISSING ITEMS REPORT:

Description: Midwest Federation map -- "map of all the clubs which
Ellis Courter had an artist make".
Last Known Sighting: Verne Montgomery's official MMF booth at Murdo '69

Description: Very attractive certificate, suitable for framing,
from Chicago Museum of Natural History.
Last Known Sighting: Gerald Huber hand-delivered it at Normal '68

If you have any knowledge of the whereabouts of these items, please
contact MMF Historian/Archives Chairman Diane Dare immediately. Reward
will be our gratitude plus acknowledgement of your assistance in this
newsletter.

ODE TO A VOLUNTEER

To their spouse
they are so dear

Perfection they
are near.

They only defect
it would appear

In the telephone
growing from their ear.

CNC



Submitted by:

Chuck Collins, whose wife Marge is
Editor of The Exchangite for the
Rock Exchange Club of Garden City
MI and Program Requests Chairperson
for the MMF.

MIDWEST FEDERATION NEWSLETTER
Judith Washburn, Ed.
107 Deer Creek Road
Rochester, Illinois 62563

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Read your bulletin to spot *new materials or specials* of the above advertisers.

Advertising by a rock-hobby business or interest is permitted with approval of the Board, at a rate now set at \$15.00 per full page per insertion, paid in advance. 1/2 page \$7.50, 1/3 page \$5.00 1/4 page \$3.75 (min). These ads will be placed throughout the bulletin as space permits.

Subscriptions to THE PICK & SHOVEL are \$5.00 per year mailed.

Dues to LINCOLN GEM & MINERAL CLUB are as follows:

Adult membership fee \$5.00 (age 16 and over)

Junior membership fee \$1.00 (age 12-16)

Family membership fee \$11.00 (husband, wife and all children under 16 - permanent residents of household)

New membership must be approved by the Board, after applicant attends at least one (1) regular meeting of the club, and pay the above dues plus \$1.00 registration fee.



H.E.L.P.

HELP ELIMINATE LITTER PLEASE!

MAIL ALL EXCHANGE BULLETINS TO:

Lincoln Gem & Mineral Club
BOX 5342
Lincoln, Nebraska 68505-0342



Edward Ridge
2507 A st.
Lincoln NE 68502