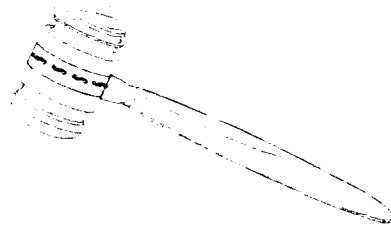


# CALENDAR



## President's Message

Regular Meeting Saturday, May 16, 7:30 PM  
Antelope Park Shelter  
31st & Sumner Streets  
**PIE SOCIAL, We'll make coffee, provide plates & forks. You bring PIE!**

Program **GEM DIG** We plan to use the materials left from the show and see who can find the best 'GEM'. Bring a light & magnifier!

Youth Come at 7:30, join us for Gem Dig and Pie.

Sat. June 27-- We're all invited to bring a covered dish at anytime after 2 PM for a picnic at Past President Charles Wooldridge and his family's new home located at 21013 A Street, near Eagle. (Map on Page 4B with full instructions.)

Grinding Party Pioneer Park Nature Center Sunday July 26, 1 to 4 PM, Eddie Ridge, Chairman

Next Regular Meeting-September 26, Nebraska Center

**NO MORE PICK & SHOVEL UNTIL SEPTEMBER**

Welcome New Member -when she attends her first club meeting:  
Charlene D. Bingell  
615 W. Butler Ave.  
Lincoln, NE 68521  
Phone 441-1588

For those of you who missed the April meeting David Heffelbower gave an excellent program on Opals. He started off with a film on Opal Mining in Australia. We were then given hand outs showing where the mines are located and how the Opals are graded and priced. Very informative and very well done. Thanks David!

I would urge each of you to take time, make time, to be at the grinding party at Pioneers Park, July 26th. Not only is it a fun day it lets the club show others what we're all about.

**Jerry**



## NEXT LGMC SHOW - MARCH 27-28, 1999, Pershing Auditorium

### Nearby Shows to Visit

May 16-17	SWAP	Rolla, Missouri, Central Missouri Regional -Fairgrounds
June 13-14	STATE SWAP	Grand Island, NE, Grand Island Earth Science Club
Aug. 8-9	SHOW	Mitchell, So. Dakota, Corn Palace Rock Club
Oct. 3-4	SHOW	Omaha, NE, Nebraska Gem & Mineral Club
Oct. 9-11	SHOW	Detroit, Michigan, Greater Detroit Gem & Mineral Show
Oct. 17-18	SHOW	Grand Island, NE GI Earth Science Club

### 1998 REGIONAL SHOW SCHEDULE

#### EASTERN FEDERATION

November 6-8

Stamford, Connecticut

#### CALIFORNIA FEDERATION

July 3-5

Monterey, California

#### SOUTH CENTRAL FEDERATION

February 28 and March 1

Corpus Christi, Texas

#### NORTHWEST FEDERATION

June 12-14

Billings, Montana

#### SOUTHEAST FEDERATION

November 14-15

Charleston, South Carolina

#### ROCKY MOUNTAIN FEDERATION

October 23-25

Tulsa, Oklahoma

#### MIDWEST FEDERATION

/ AFMS Combined

August 11-16

Houghton, Michigan

### YOUTH NOTES

May has arrived with all those wonderful blooming flowers and blossoming trees. Let's enjoy the sunshine !

Congratulations are in order for several people. First, congratulations to our junior member, Emily Rieur, who was one of ten Lincoln youth receiving an Optimist Club "Focus on Youth" Award. Emily is an eighth grader at Lux Middle School, and has a 4.0 average.

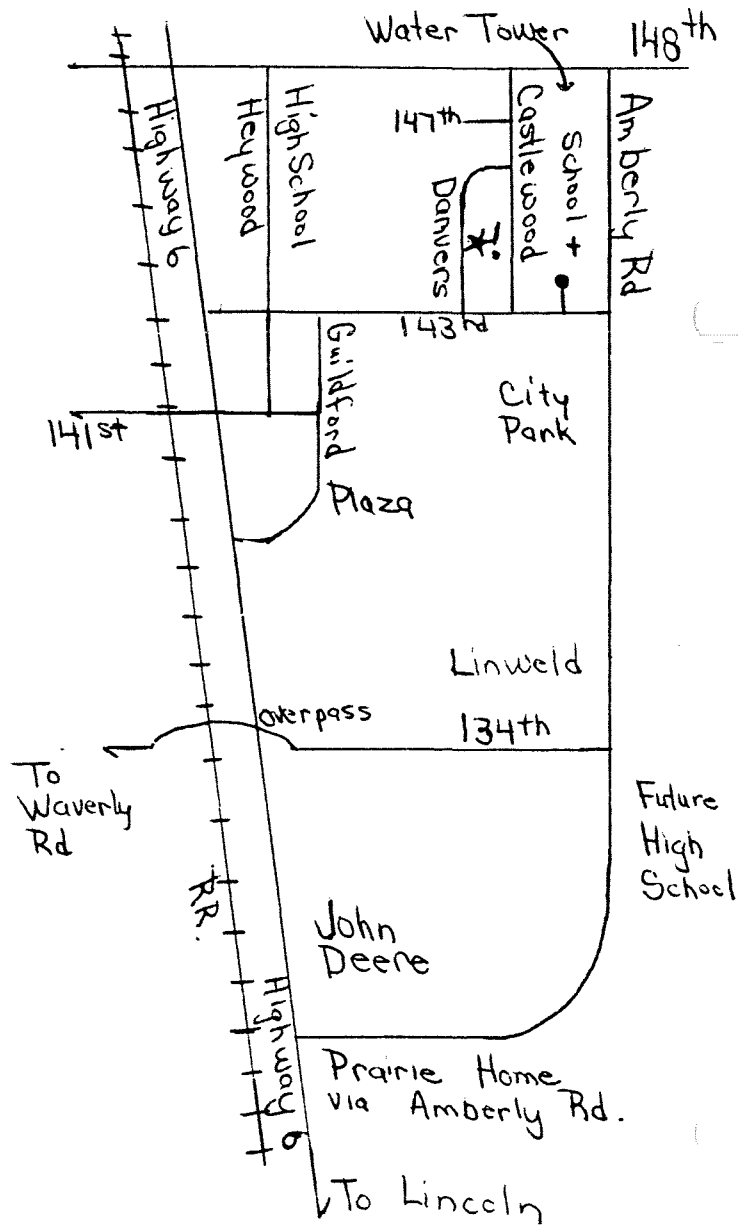
Secondly, congratulations to Brett Jurgens, a former junior member, who will be graduating from Waverly High School. Brett, along with the rest of our family, considers our friendships formed in the Lincoln Gem and Mineral Club to be some of the best and the dearest we have, and for that reason, we would like to extend an open invitation to everyone to attend our graduation celebration for Brett and our exchange student, Terje Bratseth, from Norway.

The only thing you need to bring is your appetite!

*You are cordially invited  
to attend  
a celebration of the  
graduation of our son  
Brett Michael Jurgens  
and  
Terje Floestmark Bratseth  
our exchange student  
on  
Saturday, May 16  
four to seven o'clock  
at our home  
14421 Danvers Street  
Waverly, Nebraska*

# CONGRATULATIONS!

Map of Waverly





# Denver Museum of Natural History

April 3, 1998

Mr. Roger Pabian  
Lincoln Gem & Mineral Club  
PO Box 5342  
Lincoln, NE 66505-0342

Dear Mr. Pabian,

On behalf of the President, Raylene Decatur, and the Board of Trustees of the Denver Museum of Natural History, I would like to thank you for your donation of specimens for the mineral and micromount collections. They will certainly enhance our geology collection.

I have enclosed our Donor Record Form. Please sign the original and return it in the stamped envelope provided. Retain the copy for your files. Again, thank you very much for your donation and for your support of the Museum.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kelly Goulette".

Kelly Goulette, Registrar  
Collections & Research Division

## DESCRIPTION

Specimens for mineral and micromount collections:  
2-Kinoite crystals, Christmas mine, Globe, Arizona  
1-Cuproadamite crystals, Hilarion mine, Laurion, Greece  
1-Annabergite crystals, Laurion, Greece  
1-Manganidocrase crystals, Asbestos, Quebec, Canada  
1-Cinnabar crystals, Fenghuang, Hunan Province, China  
1-Sal ammoniac crystals, Pamir Mountains, Russia  
1-Siegenite crystals, Buick mine, Reynolds Co., Missouri

CLUB & 1998 SHOW News & Notes:

From Adeline Nolde we received news that Congratulations are in order for friends and club members who were recently honored for service to UNL:

Samuel B. Treves	40 years
Roger K. Pabian	30 years
Francis Belohlavy	25 years
Renan J. Rieur	20 years

The awards are pins with the University emblem and various jewels designating every five years or a desk piece with the emblem. Dr. Treves service was in Geoscience, Roger & Francis in Conservation & Survey, Rennan in University Television. **Congratulations each of you on your awards.**

Adeline also reminded us of the Optimist Award to our youth member Emily Rieur who deserves much praise for her outstanding **4.0 grade point average.**

.....  
 FALL FIELD TRIP- We have all been included in an invitation from Florence Lueninghoener to come to Fremont, Midland College, and have a special guided tour to view the 'Glismann Collection' which was given to Midland for display and class use. Florence has been working with the college officials to present this very special group of minerals, petrified wood and other gems to the best advantage for all to enjoy. Those who have already seen parts of the display say it is worthy of much attention so we hope many of you will be able to go.

Florence and Midland are trying to set up a date in late September or in October and let us put it into our agenda. As soon as we have a date the Board is planning to contract a bus and start taking reservations for as many as can plan on going. We hope to have more information by May 16, at our **PIE SOCIAL.**

As many of you know Florence is a 35 plus year member of LGMC, a retired Science Teacher from Lincoln Public Schools and only moved to Fremont after her retirement. Her late husband, Gilbert Lueninghoener was a long time Professor at Midland College with much acclaim for his scientific contributions.

'The Glismann Collection' was donated to Midland College by Leonard & Clementine Glismann because of their association with the College- having been students there and knowing the Lueninghoeners. The Glismanns, of Salt Lake City, were related to our late and beloved Life Members Julius (J.D.) & Myrtle Young.

Expect more information as soon as a date is firmed up and get your reservations in early as we expect the bus to fill up very quickly--**Plan to make it a day!!**

For those members who missed the March 28 and/or April 25 club meetings-Our 1998 **Ruby Anniversary** Show is history! Better than ever with many fine exhibits, much good cooperation, a few less paying customers but a success in all ways. Several of our dealers have already written of their pleasure in the show and expressing desires to return again next year. Our contracts for the next three years at Pershing Auditorium are in the file and all systems are go for 1999.

Our special Thanks to our 1998 Dealers for their contribution toward a good show both in terms of good will and by donating generously to our Silent Auction, most of which funds went to the State Association to benefit the state publication, The Gem Palette.

Thanks also go to the other state clubs who brought displays, visitors, and materials for the Silent Auction.

Our very special 'Thanks' go to Mr. Jim Hurlbut and his wife who brought the featured displays from The Denver Museum of Natural History and gave several fine programs while here. On the previous page you saw the letter of Thanks to Show Chairman, Roger Pabian for the minerals which Mr. Hurlbut selected at our show, and which Roger thought you might enjoy sharing.

.....  
 From the Cedar Valley Gem News--  
**BIG AUCTION COMING UP!!!!** June 6, 1998  
 Jasper County Fairgrounds, Colfax, Iowa  
 Jewelry and Lapidary equipment and materials of Mr. C.S.Morris who was in business for many years. The Auctioneer is Melvin Montgomery of Baxter, IA 50028, if you would like more information.

**REMEMBER:**

- June 27-Picnic at Wooly's
- July 26-Grinding Party at Pioneer Park
- Aug. 11-16 MWF/AFMS Field Trip Convention
- Sept. 9, Wednesday-Next Board Meeting
- Sep. or Oct.-Field Trip to Fremont
- Nov. 21 -Meet before Thanksgiving weekend
- Dec. 13-Christmas Pot Luck Supper
- January 23, 1999-Annual Indoor Swap

.....  
**'Thinking is the hardest work there is,** which is the probable reason why so few engage in it'. **Henry Ford**  
 Borrowed from The Rockfinder, Michigan G&M Soc.

If it weren't for the last minute nothing would get done.  
 From Tule Smoke Signals, Visalia, CA



LINCOLN GEM & MINERAL CLUB, INC. - BOARD OF DIRECTORS - April 8, 1998  
 7:00 P.M. - Kinkos @ 48th & Vine ( Conference Rm )

Meeting called to order by President Moore. Minutes and Treasurer's report were both approved.

Discussion of Founders Award. Motion by Shirley Rockel, 2nd by Marcia Hamilton to approve Founders Award as legitimate Club expense. Motion carried.

BILLS: Presented for approval & payment. Both Show bills & Club bills approved with motion by Marcia H., 2nd by Vera L. Carried.

OLD BUSINESS: Roger Pabian, Show Chairman, suggested that proceeds from "Ruby Raffle" (\$200,) be donated to the AFMS Scholarship Foundation. Motion made by Phyllis P. & 2nd by Vera L. Carried.  
 Motion by Ken Doe to set aside at present time the proceeds from Silent Auction - decide at future date how to dispense. 2nd by Phyllis P. Carried.

NAOESCI MEETING: (7 of 10 Clubs represented) NAOESCI will be making a new Directory. If anyone (as a member of LGMC) does not want their phone number listed in this State Directory, please call Phyllis and inform her of same.

NEW BUSINESS: Remainder of "40th ANNIVERSARY PINS/PATCHES:  
 Motion by Marcia H. & 2nd by Ed R. to transfer balance of 40th Anniv. pins/patches to Club and future proceeds go into Club receipts.  
 Motion by Phyllis P. & 2nd by Ed R. to do same with 25th Anniversary pins. (No patches remaining) Both motions carried.

SHOW: Chairman Roger Pabian gave an in-depth report. Receipts in some areas down and up in others. However, indicated a good show profit. Exact amount not known, due to several outstanding bills. He indicated there was difficulty getting help for Show; but also that this was not unique to our Club or Rock Clubs in general, but other hobbies as well. Roger also recommended that the 1999 Show Chairman obtain Show budget approval this spring so that Show business could get into gear in Sept.

Future Meeting dates announced & Meeting adjourned.

Respectfully submitted,

*Vera Lyman*

Vera Lyman, Secretary

L.G.M.C. Treasurer's Report April 1998

	NBC Checking Balance	3/31/98	\$2342.98
Receipts:			
	New Membership & Registration	15.00	
	1 40th Anniv. Show Patch	<u>3.00</u>	18.00
Payments:			
	P & S April Printing	24.28	
	P & S Covers April & May	19.06	
	Board Meeting April	20.00	
	Postmaster-300 @ .32 for 3 months P & S	96.00	
	Postmaster-20 .32 stamps Treasurer	6.40	
	Order New Book for Library	<u>43.00</u>	<u>208.74</u>

NBC Checking Balance 4/27/98

2152.24

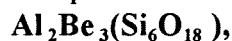
## **E**merald, a 55th Anniversary Stone and May's Birthstone

**Roger K. Pabian**

**M**ark the dates on your calendar now! March 23, 24, 2013, those are the projected dates for Lincoln Gem and Minerals Club's 55th Annual Show. It will be the Emerald Anniversary and the theme of things will be green. Saint Patrick's Day will fall a week earlier so it might be nice to move the show up a week to have a truly green event.

Emerald is the stone that is used to celebrate the 55th Anniversary according to the World Almanac and Book of Facts. It is probably suitable that such a rare gem as emerald is used for this event as few events or happenings, aside from birthdays, reach this many years. Fine emeralds are probably among the rarest of gems. They are probably rarer than fine diamonds (the 60th Anniversary Stone) but diamonds more strongly signify endurance than emeralds.

Emerald is a green to blue green variety of the mineral Beryl, which has a slightly complex chemical formula:



a silicate of Beryllium and Aluminum. Crystals are hexagonal, 7 ½ to 8 hard, 2.65 to 2.75 in specific gravity. Emeralds, as all other beryls, can range from being opaque to transparent.

Beryl has fairly low optical properties. The refractive index ranges from 1.57 to 1.60 with many gems falling in the 1.572 - 1.580 range. Beryl has a low birefringence and are only weakly doubly refractive. It would take a piece of beryl about 15 inches thick to show a double image. The dispersion of beryl is also quite low (0.014) and emerald, as other beryl gems, has to essentially make it on color and pleasing appearance without the brilliant flashes of light that we associate with diamonds or gems of very high refractive index and dispersion.

When one is looking at beryl gems,

there is really no firm boundary between emeralds with a heavy blue tint or aquamarine with a heavy green tint and there is no firm boundary between the green to blue green of emerald and the green of green beryl. This might have been problematical in years past; however, there are now standardized color sets that are available from Gemological Institute of America that every reputable jeweler should have as a tool of the trade.

Emerald owes its color to a small percentage of Chromium Oxide in the crystal lattice---up to 3%. Strangely, this is the same oxide in the same percentage that imparts the red color to ruby when it is in the corundum lattice.

In my gemology classes at the University of Nebraska, I utilize a small color set. These are available from GIA and are produced by Pantone. I suggest that the bG 6/4 or the vslbG 6/4 colors are the only two in the set that represent emerald. The vstbG 5/5 is too blue (it would be a superb aquamarine) and the G 5/5 hasn't enough blue (it would be a superb green beryl).

Emeralds are quite rare because of the rather limited geologic environment in which they can occur. Most emeralds form in contact metamorphic rocks---that is, the narrow, baked zone where a hot magma (lava) comes into contact with sedimentary rocks such as limestones or shales. Many emeralds come from contact metamorphosed black shale beds. Black shales are usually the thinnest beds in a sedimentary rock sequence so there is little potential host rock for starters. Some emeralds form in limestones that have been subjected to contact metamorphism.

Emeralds are usually clouded by many inclusions. The nature of the inclusions is usually indicative of the source of the emerald. Emeralds from Colombia normally have three phase inclusions. These consist of a solid (usually a pyrite crystal), a liquid (salt water?) and a gas (usually CO<sub>2</sub>). Emeralds from India

usually have squarish, dark inclusions (biotite) whereas those from South Africa have dark needle-like inclusions and those from the Ural Mountains in Russia have actinolite needles that resemble bamboo poles.

In the United States, few emeralds have been found and most have been recovered from near Hidden, North Carolina. A very large emerald that became the subject of a bitter law suit was mined there in the 1980's. The tragi-comic outcome was that one of the miners involved sawed the very fine 14 inch crystal (valued at several millions of dollars) in half and destroyed much of the value of this essentially priceless item. Except for the North Carolina finds, no other state has had any significant emerald production.

Almost all emerald is mined from *in situ* localities or deposits that are very close to the mother lode. This is because the emerald is a very weak stone---it will not endure the abuse and rigor of transportation in streams or in glacial ice. This observation does not rule out micro-emeralds as one of the local collectors recently brought in an example of a micro-emerald crystal that was collected from sand in the Dakota Group of late Cretaceous age in southeastern Nebraska.

Australia has been a fairly important producer of emeralds. Several important sites in New South Wales and Western Australia have been described. Many of the emeralds that have been shown in colored prints are probably closer to green beryl but some fine blue green stones are known.

The low physical and optical properties of emerald make it easy to separate from other gems such as peridot (very strong double refraction); tourmaline (strong double refractions and thready inclusions); tsavorite garnet (singly refractive); and glass (bubbles, swirl marks, etc.).

Separating synthetic from natural emeralds is a bit more difficult. There are many would be tests that are non-diagnostic and one

has to be careful. Synthetic emeralds are usually produced by some hydrothermal process in which beryl is caused to recrystallize from a saturated, heated solution in a bomb. The synthetic will usually contain tiny crystals of the flux that was used in the solution, or it may contain micro-phenakite crystals or micro-platinum crystals. Inclusions that are wispy or cob-web like also are seen in many synthetic emeralds.

Carroll Chatham, the first person to make synthetic emeralds was only 15 years old when he developed the process. Chatham had a love for chemistry and did his first experiments with explosives. After destroying his laboratory, his father ordered research of a less violent nature. Other companies have followed and most synthetic stones are now called "created" stones.

#### REFERENCES

- Bauer, M., 1896. Precious Stones. A popular account of their characters, occurrence, and applications, with an introduction to their determination, for mineralogists, lapidaries, jewellers, etc. Translated by Spencer, L. J., 1904. Reprinted by Charles E. Tuttle Company: Publishers, Rutland, Vermont & Tokyo, Japan, 647 p.
- Myatt, B., (*Editor*), 1972. Australian and New Zealand Gemstones. Paul Hamlyn Pty. Ltd., Sydney, 511 p.
- Perry, N. & R., 1967. Australian Gemstones in Colour. Charles E. Tuttle, Rutland Vermont and Tokyo, 112 p.
- Schumann, W., 1977. Gemstones of the World. Sterling Publishing Co., New York, 256 p.
- Shipley, R. M., 1971. Dictionary of Gems and Gemology. Gemological Institute of America, Los Angeles, CA, 227 p.
- Sinkankas, J., 1959. Gemstones of North America. Van Nostrand Reinhold Co., New York, 675 p.

## 1998 ELECTED OFFICERS

<b>President:</b>	Jerry Moore, 2305 So.35th St.	Lincoln NE 68506	489-4184
<b>1st Vice President</b>	Edward Ridge, 2507 A Street.	Lincoln, NE 68502	477-8469
<b>2nd Vice.Pres.</b>	Shirley Rockel, 1134 W. Avon Lane	Lincoln, NE, 68505	464-3059
<b>Secretary:</b>	Vera Lyman, 420 N. 56th St.	Lincoln, NE 68504	464-6089
<b>Treasurer:</b>	Phyllis Parks, 2435 So. 19th St.	Lincoln, NE 68502	476-6798
<b>Board Member:</b>	Jim Atkins, 1333 So. 15, Apt. 1	Lincoln, NE 68502	438-2434
<b>Board Member:</b>	Kenneth Doe, 925 El Avado Ave.	Lincoln, NE 68504	466-4877
<b>Board Member</b>	Marcia Eddy-Hamilton, 4903 Hillside St.	Lincoln, NE 68506	489-0716
<b>Board Member</b>	Kay Jurgens, 14421 Danvers St.	Waverly, NE 68462	786-2756

## Nominating Committee

<b>3 years</b>	Roger Pabian Bill Rockel
<b>2 year:</b>	Shirley Rockel Kenneth Doe
<b>1 year:</b>	Vera Lyman Susan Taylor
<b>Chairman: Immediate Past President</b>	

## Long Range Planning & By-Laws Committee

<b>3 years</b>	Charles Wooldridge Kevin Schwartzman
<b>2 Year:</b>	David Heffelbower Jim Parks
<b>1 Year:</b>	Vera Lyman Roger Pabian
<b>Chairman: Immediate Past President</b>	

## Standing Committees

<b>Membership:</b>	Shirley Rockel	<b>Programs:</b>	David Heffelbower
<b>Education:</b>	Roger Pabian	<b>MWF Liaison:</b>	Vera Lyman
<b>Field Trips:</b>	Jerry Moore, Coordinator	<b>Scholarship:</b>	Susan Taylor
<b>Historian:</b>	John & Lilly Lewis	<b>Christmas Party</b>	Shirley Rockel
<b>Hospitality:</b>	Eddie "Lightning" Ridge	<b>1998 Show:</b>	Roger K. Pabian
<b>Study Coordinator:?</b>		<b>1999 Show:</b>	Jim Marburger
<b>Housing/Property:</b>	Jim Parks	<b>2000 Show:</b>	
<b>Youth Activities:</b>	Kay Jurgens	<b>1998 Swap:</b>	Francis Belohlavy
<b>Librarian:</b>	Roger Pabian	<b>1999 Swap:</b>	
<b>Auditing Committee:?</b>			

**Gem Palette Correspondent:** Vera Lyman

**Geology Day Coordinator:** 2nd Vice President

**L. G. M. C. Web Page Address :**

<http://nesen.unl.edu/lgmc/lgmc.html>

## Your PICK & SHOVEL Staff

<b>Publisher:</b>	Lincoln Gem & Mineral Club, Inc., P.O. Box 5342, Lincoln, NE 68505-0342
<b>Editor:</b>	Phyllis Parks 476-6798
<b>Business Reporter:</b>	Vera Lyman 464-6089
<b>Circulation:</b>	Jim Parks 476-6798

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The purpose of this corporation shall be to study, promote an interest in, and disseminate knowledge of lapidary and various Earth Sciences including but not necessarily limited to geology, paleontology and mineralogy. It shall be a particular purpose of the corporation to provide education in these fields to its members and the general public, particularly youth and student groups.

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Read your bulletin for new materials or specials from the above advertisers.

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

Subscription to the *PICK & SHOVEL* are \$10.00 per year mailed.

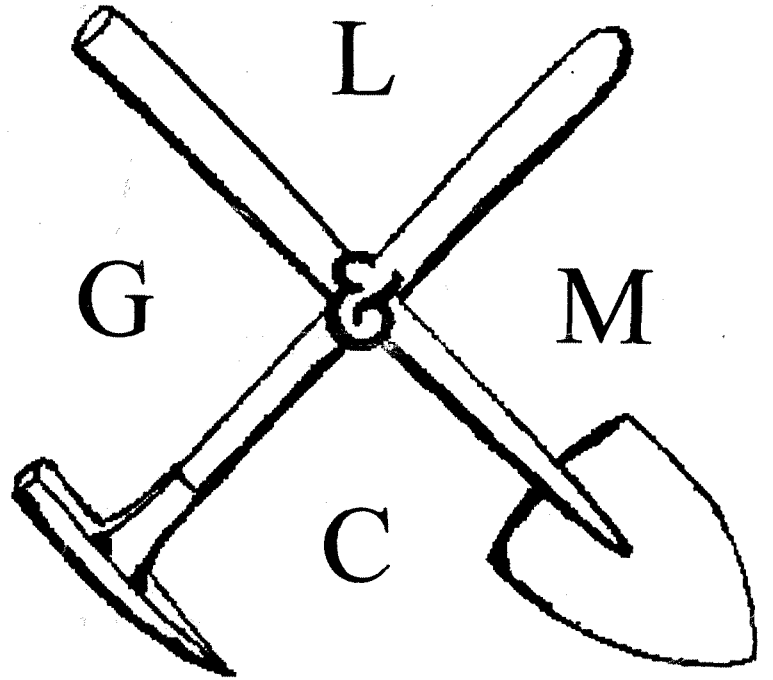
Dues to Lincoln Gem & Mineral Club are as follows:

Adult	(ages 16 and over)	\$10.00/yc
Junior	(ages 12 to 16)	\$2.00/yc
Family Membership	(Husband, wife, resident children under age 16)	\$22.00/yc

New memberships must be approved by the Board, after the applicant attends at least one meeting of the club and pays the above dues plus a \$5.00 registration fee.

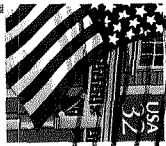
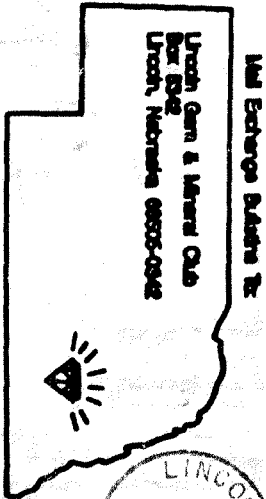
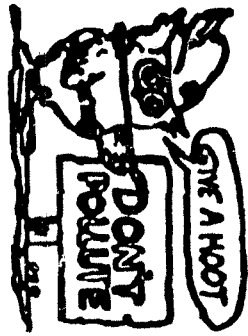
# THE PICK & SHOVEL

MAY 1998



OFFICIAL PUBLICATION OF  
LINCOLN GEM & MINERAL CLUB

LINCOLN, NEBRASKA



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