



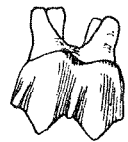
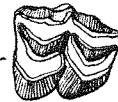
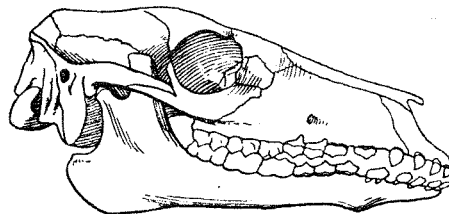
# THE PICK & SHOVEL

*highlights in  
this issue...*

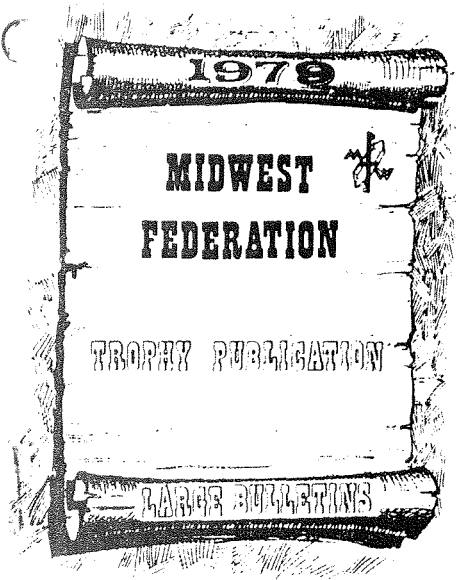
## MALACHITE



## CAMELS



Volume 20  
Issue 9  
May, 1980



OFFICIAL PUBLICATION OF

# Lincoln Gem and Mineral Club, Inc.

P. O. Box 5342

Lincoln, Nebraska 68505

LINCOLN GEM AND MINERAL CLUB, INC.  
P. O. Box 5342, Lincoln, NE. 68505

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.

MEMBER: Midwest Federation of Mineralogical and Geological Societies (MWF)  
American Federation of Mineralogical Societies (AFMS)  
Nebraska Association of Earth Science Clubs, Inc. (NAOESCI)  
Nebraska Academy of Sciences  
Community Arts Council of Lincoln

Regular Meetings: 4th Saturday of the month, September thru May, 7:30 P.M.  
1980 - Trabert Hall, Lower Level, 2202 South 11th Street

1980 ELECTED OFFICERS

President.....	Roger Pabian	315 "D" St	Lincoln, 68502	474-2034
1st Vice Pres...	Larry Bigley	6126 Hartley	Lincoln, 68507	466-0211
2nd Vice Pres...	Edwin Johnson	1800 Pawnee	Lincoln, 68502	423-9075
Recording Secy..	Vera Lyman	420 N. 56th St.	Lincoln, 68504	464-6089
Treasurer.....	Phyllis Parks	2435 S. 19th	Lincoln, 68502	476-6798
Board Member....	Marita Bigley	6126 Hartley	Lincoln, 68507	466-0211
Board Member....	Virginia Green	6120 The Knolls	Lincoln, 68512	423-5032
Board Member....	Frank Rule	6333 Kearney	Lincoln, 68507	466-1697
Board Member....	Farel Hyland	6934 Francis	Lincoln, 68505	466-3387

Nominating Committee--3 years..Bob Walker, Irl Everett; 2 years..Wilfrid Wittman,  
Edwin Johnson; 1 year..Marita Bigley, Lynn Wells

STANDING COMMITTEE CHAIRPEOPLE:

Programs	Howard J. Taylor, Jr.	Liaison and Calling	Marie Taylor
Education	Marilyn Smits	Refreshments	Mary Walker
Hospitality	Goldie Quinn		
Historian	Lois Everett		
Librarian	Kay Graber	Scholarship	Howard Taylor
Membership	Mary Lambert	Outside Displays	Bruce Simon
Field Trips & Safety	Walt McCoy	Housing and Property	Dick Roberts
Sunshine Corner	Susan Taylor	Publications	Glen Litzenberg
NAOESCI Reporter	Evelyn Ulrich	Auditing Comm. 1980	TBA
1981 Show	TBA		

LONG RANGE PLANNING AND BY LAWS COMMITTEE

1 year remaining Nelda Oliver, John Harrison; 2 years remaining, Jim Parks,  
Phyllis Parks; 3 years remaining, Howard Taylor, Marie Taylor

1980 National Show Planning Committee - Selected, 1977 General Meeting -  
Howard Taylor, John Harrison, James Marburger, Tom Simmons, Roger Pabian and  
Frank Rule. Committee selected Howard Taylor as Chairman and added Ray Lambert  
as Secretary.

PICK & SHOVEL STAFF: Chairman...Glen Litzenberg  
Editor Evelyn Ulrich, 3521 S. 48th St., Lincoln NE 68506 (488-9051)  
Club News Helena Baegl Artwork  
Sunshine Susan Taylor Publisher  
Typists Flossie Litzenberg, Marita Bigley, Linda Parks

DEADLINE 1st of Month of Issue. Articles may be reprinted by credit and bulletin copy.

CALENDAR

General Meeting...May 31, 1980, 7:30 P.M.  
 Trabert Hall, 2202 S. 11th  
 East entrance, south door.

Program.....1980 Show

Refreshments will be served.

Board of Directors' meeting...To be announced.



NOTICE

There will be a June issue of the PICK & SHOVEL. Copies will be distributed at the 1980 National Show. It is imperative that all articles for the June issue be ON THE EDITOR'S DESK no later than May 26, 1980.

1980 Dates to be Remembered

- May 31-June 1      Hebron, Ne.      Fort Butler Rock & Gem Club, Swap.
- June 6-7            Topeka, Ks.      Rocky Mountain Federation Convention and Show, Hosted by Topeka Gem & Min. Soc., Exposition Center Shawnee Fairgrounds.
- June 12-15         Lincoln, Ne.      AFMS and MWF Convention and Show. Hosted by Lincoln Gem and Mineral Club. Bob Devaney Sports Center, Nebraska State Fairgrounds.
- June 21-22         Beatrice, Ne.     Homestead Gem & Mineral Club Swap.
- July 19-20         Columbus, Ne.    Loup Valley Gem & Min. Soc. Show, Holiday Inn.
- Aug. 30-31  
  Sept. 1             Omaha, Ne.      Nebraska Mineral & Gem Club, Show.
- Sept. 27-28        Ogallala, Ne.    State Show, Hosted by Prairie Rockhounds.
- Oct. 18-19         Grand Island, Ne. Grand Island Earth Science Soc., Show.

CALIFORNIA	EASTERN	MIDWEST AFMS SHOW	NORTHWEST	ROCKY MOUNTAIN	SOUTH CENTRAL
August 1-3, 1980 Pasadena, California	June 20-22, 1980 Charleston, West Virginia	June 12-15, 1980 Lincoln, Nebraska	August 1-3, 1980 Boise, Idaho	June 6-8, 1980 Topeka, Kansas	August 15-17, 1980 Shreveport, Louisiana

Last Month... Fifty-one adult and four Junior members were present at the April General Meeting of the L.G.M.C. Four guests were also in attendance. The usual business meeting was held and a 1980 Show report was given by Irl Everett. Irl was presented with a 25 year Charter Member pin and Flossie Litzenberg distributed ribbons designating the number of years of membership in L.G.M.C. to those who had not been present at the 25th Anniversary dinner to receive their ribbons. Slides of the Grotto of the Redemption were shown. After the program refreshments were served and a social hour was enjoyed by those present.

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From the  
history files  
of  
Lois and  
Irl Everett

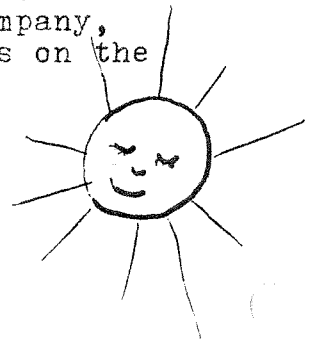
10 Years Ago....May 1970

Meeting was held one week early at the Van Dorn Shelter House 8th and Van Dorn.

There was a dessert supper. Each family brought a pie. The business meeting was held after the social hour.

20 Years Ago....May 1960

Regular meeting was held at Morrill Hall. Thirty-five members and three guests were present. Mr. Casey J. Ben, an employee of Humble Oil Company, gave an interesting talk and showed slides on the geology and oil development of Alaska.



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Hello from the Sunshine Corner:

Friendship is the shadow of the evening, which strengthens with the setting of the sun of life.

-La Fontaine

During the past month a get-well card was sent to George McGinnis. A congratulations card was sent to Barbara Stock on the birth of her baby.

Suze Sunshine

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The  
Highest Good

To attain the highest good  
Of true man and woman hood,  
Simply do  
Your honest best-  
God with joy  
will do the rest.

- James Whitcomb Riley

## PRESIDENT'S MESSAGE

Every day its a gettin' closer, goin' faster than a roller coaster. Since we first embarked on the 1980 National Gem and Mineral Show in late 1977, much water has passed under the bridge. Its almost here now and in six weeks it will be all so much history. Judging from the excellent dealers that are lined up, I predict that I will be the first one in bankruptcy court on Monday the 16th.

There are a couple of shows the weekend before ours. Norfolk will host its annual show and the Rocky Mountain Federation Show will take place in Topeka. Both of these promise to be good events and it is hoped that the LG&MC will make itself well known at these shows. Of course, it would be impossible to go to both but let's all try to make one or the other.

The wuality of this spring's shows has been quite high. Kansas City, Vermillion, and Hastings all had excellent shows. The dealers all had excellent materials to offer, and all of the displays at these events have been a cut or two above the average.

Pre-registrations are rolling in at a pretty good clip, but a little bit behind the 1974 pace. Meal events are all a little bit slow in filling up, but this may be due more to the price of the meals rather than the event. Even though the meals are the most reasonably priced at this show of most regional or national events I have attended, they are still pretty high.

The show still can use some workers and every member is urged to get in touch with his favorite committee director. Information booth and swap area can use a good deal of help and just about every committee can use help.

After the National Gem and Mineral Show is over, we will be able to set some new goals for the club. We will have to decide what these goals will be and how to go about reaching them. Fortunately, we will have a whole summer to think of things to work for.

There will be a few summer swaps around and we will have a few field trips and workshops when the big event is over. We should probably plan on a club picnic or gathering of some sort to celebrate the end of the show.

My own goal after the show will be to do some additional cutting and working on developing tools for doing small carvings, bowls, etc., and to spend quite a bit of time writing for national publications. I have planned some additional articles on agates and lapidary techniques that I would like to publish. I will also spend quite a bit of time in developing the rockhounds magic show, with Carl Wells of Sioux City, and George Van Dam. I am very surprised at how well rocks adapt to sleight of hand.

I hope to take a couple of summer trips but these will probably be somewhat abbreviated and shorter than in previous years. No Oregons or Nova Scotias this year but maybe in 1981 the latter will be the goal. There are some excellent agates to be found in the Bay of Fundy area.

The immediate problem, however, is that I have a small mountain of work in front of me for local publicity for the show. There is an awful lot of writing and arranging time for radio and TV and buying advertising and in getting flyers put up around town and in getting a couple of pre-show displays in shopping areas in Lincoln and other things like that. Next week will be takes as vacation so that it can all get done.

Lets all get to work on the displays now.

Roger K. Pabian  
President

NOTE: Because of many members being gone for the Memorial Day Holiday, I have set the meeting date back one week, until May 31, 1980

From the editor's desk...The Loup Scoop, the Columbus, Nebraska Club bulletin, edited by George Cihacek, is one of your editor's favorite bulletins. It is always original and interesting, so is read from cover to cover. In the May issue there is an editorial that was of particular interest, a portion of which follows:

"It was a pleasure to have our godfather, Howard Taylor and his wife, Marie, at our April meeting. I think calling Howard our godfather is very appropriate since he was in our club's birth and in one way or another has nurtured us along as we grew, always interested in our well-being. I have known Howard for about nine years and have never ceased to marvel at his enthusiasm and stamina. If we all emulated him, we could not help but have the best club in the country because each of us would reflect his zeal for our hobby which is bound to be contagious."

Howard has done a lot to help Nebraska clubs and we are very proud of him. It is nice to hear these words of appreciation for him.

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Here is some interesting information concerning the month of May:

- May 4...Be kind to animal week
- May 6..."Penny Black", the world's first postage stamp was issued 1840.
- May 7...Birth of Robert Browning, famous English poet.  
Birth of Peter Illyich Tchaekovsky, composer of symphonies, operas, and ballets.
- May 8...The first U.S. patent for an automobile was awarded to G.B.Selden in 1879.
- May 10..Golden Spike Day. In 1869 the first transcontinental railroad was completed and a golden spike was driven into the ground to celebrate.
- May 11...Mothers' Day
- May 12..Birth of Florence Nightingale
- May 14..Birth of Gabriel Daniel Fahrenheit, 1714, inventor of the thermometer.
- May 21..First bicycle made its appearance in New York City, 1819.
- May 24..Samuel Morse first sent his code over wires in 1844.
- May 26..John Wayne was born, 1907.
- May 27..Robert Ripley, creator of "Believe it or Not" was born.
- May 27..Bob Hope was born.
- May 30..Hall of Fame dedicated.
- May 31..Birth of Walt Whitman.

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IRS agent to businessman: "It's not sufficient, sir, simply to list expenses as 'astronomical' and your income as 'peanuts'. You must itemize."

-Stan Hunt, Chicago Tribune-New York News Syndicate

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HIGHLIGHTS from HELENA

The Waddles wish to thank the club for making them life members. They are thrilled at the honor, which was well-deserved for all the years of service they have rendered the club--especially at our shows; printing those attractive signs for our displays, and their exhibits of beautiful treasures they accumulated over the years. Thanks, Marion and C. Ray!

The Litzenbergs will be in Kansas City to attend granddaughter Mary Litzenberg's wedding on May 17th. A large reception is planned, with "ponset" shrimp, pork, chicken, vegetables, etc. etc. Sounds luscious. A detailed description, Flossie? Another granddaughter is flying from Hawaii for the wedding, bringing her baby, so Flossie and Glen will get to see their great-granddaughter, too.

Rev. Raymond Pfeiffer will again conduct the worship service at our Big Show in June, as he did at the 1974 show. It is hoped that a goodly group of our own club will be there to help with the singing that Sunday.

Have all of you seen and read Roger Pabian's scholarly and interesting article "Gem Collecting in Nebraska" in the May issue of Lapidary Journal, page 462? Excellent, and wonderful publicity for our state.

Your reporter and friend, Adeline Nolde, made our usual day-long looking, oh-ing, and ah-ing, at the big antique show on Saturday, May 3, in Ag Hall, fairgrounds. Adeline couldn't resist a beautiful Sterling silver (hand-made, I believe) chain with lapis lazuli beads, while I only acquired an empty Regal china elephant whiskey bottle to add to my collection. These Regal bottles are similar to the fancy Beam whiskey bottles. By-the-way, anybody have a gray Beam "sitting cat" bottle I can dicker for?

Until next time. . . . .

HRB

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**SANDING DISCS:** Instead of throwing away your used sanding discs, try this. Mix in a small container,  $\frac{1}{2}$  teaspoon of waterglass (sodium silicate) mixed with  $\frac{1}{2}$  teaspoon water. Mix and apply to used sanding discs and let dry for two hours. You will have discs as good as new.

Via Rock Chips - Pomona - Pegmatite Bulletin

**TOOTHPASTE FOR BURNS:** In Venezuela I learned that putting a bit of toothpaste on a small burn was a quick pain reliever and burn healer. At first I thought it was gag, but when I saw that everybody did it, I started to use it too. Now I even put it on mosquito bites. Rock Chips - Pomona - Pegmatite Bulletin

**HINT:** Use  $\frac{1}{4}$  lb. soluble rouge to polish a batch of tumbled stones to a high luster. This is the rouge silversmiths' use and comes in  $\frac{1}{2}$  lb. bars selling for about 65¢. Cut bar in two and put one in tumbler with usual amount of water along with other polishing compounds. This will improve depth of luster on tumbled stones.

Rezo-odical - Galco Pebble Patter

*yes  
Slab and  
slab*

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POTPOURRI

John Loftus in an article "Crisis in Corundum", Jewelers' Circular Keystone, states that the sky-high prices for rubies asked for at Chantaburi, Thailand's principal ruby mining area, is "absolutely crazy". What used to be \$500 to \$800 a carat a few years ago is now \$4000-\$5000. Some dealers even ask \$8000 a carat for medium quality stones. He believes the market is geared to investors and to a tremendous scarcity of fine larger stones and heightened demand. Eager new buyers have helped push corundum prices to record levels. Stones up to 12-13 carats used to be seen, but now you're lucky to find one that's 5 carats.

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Two-Fisted Kindness...Our favorite Sunday School teacher saw a three-year-old with fists doubled up threatening one of the other children. She stepped in quickly to stop the fight, asking what it was all about. The belligerent youngster said: "I'm gonna teach this kid how to be kind."-Woodmen of the World Magazine

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A Bomb In Your Pocket?? If you're in the habit of carrying a pocket calculator around, be careful. The Journal of Environmental Health warns that an improperly shielded pocket calculator can explode.

A man carrying a calculator in his shirt pocket was knocked down by such an explosion, the Journal reports. It seems that a metal object in the pocket touched the calculator's unprotected battery charge contacts. The result was a thermal run-away, shorting out the nickel-cadmium batteries, and causing the explosion.

According to the Journal report, even a pencil's lead can cause such a thermal run-away. What can you do to avoid it? The Journal says the best preventative action you can take is to carry the calculator in its case unless you're using it.

From FMC Ord Leaf, Breccia via Gemdrops

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From the Washington Scene-AFMS Newsletter..."It is a good thing that some collectors are working to help preserve field trip activities. Finally a statement from the MHS ( Mine, Health, Safety Act) Bulletin of May 22, 1979, quoted the following: "Rock collectors are considered visitors to a mine, and as such, are not covered by the training regulations. However, the mine operator has the ultimate responsibility for the safety of all visitors who enter the mine, including the collectors. Thus the operator must make assessment of the nature of the visitors activities at the mine to determine if any action is necessary on his part.....HBL603 was introduced in Congress to exclude gravel pits and rock quarries from the Federal Mine Safety and Health Act. This information should be brought to the attention of all clubs and copies shown to quarry or surface mine operators if they are reluctant to permit collecting."

## ROCK OF THE MONTH: MALACHITE

The rock Malachite is hydrated copper carbonate. The name malachite comes from the Greek "malache" because of the attractive green color of the mineral and the green color of the leaf of the plant. Its chemical formula is found in several forms: as small needle-like crystals in the monoclinic system which terminate as wedge-shapes atop 8-sided prisms (Sinkankas, 1964); as compact masses with a radially fibrous structure; and as compact masses that are earthy and not crystalline (Bauer, 1969). Bauer reports that the finest quality malachite most "suitable for ornamental purposes occurs as nodular masses often of considerable size, the surface of which may be rounded, reniform (kidney-shaped), botryoidal (grapes-like), or stalactitic...with a radially fibrous structure... built up of concentric shells" (p. 525). The external black and dull surface is contrasted by the beautiful green on the inside, with narrow bands that follow the external outlines of the stone. The Specific Gravity ranges from 3.5-4.05, and is high because of the copper content (57.4%). Mohs Scale hardness is 3.5-4; it may be scratched by fluorspar. Although brittle the massive material with interlocking crystals can be quite tough. Fracture is uneven to splintery.

Coloring ranges from intense emerald-green of the crystals to banded dark and pale green in the compact massive material. Luster is described as vitreous, adamantine, and sub-adamantine for the crystals, silky in the fibrous type material, and dull in the earthy type. Refraction is biaxial with a negative optical sign; refractive indices are described as 1.56 (1.77 in massive material) and 1.91. Tests for this mineral include placing a piece of it in cold dilute hydrochloric acid (or dropping HCl on the stone) and observing the release of carbon dioxide with brisk effervescence plus the production of a green solution. This solution turns deep blue with an excess of ammonia. In the blowpipe, malachite readily fuses yielding an emerald-green colored flame. When fluxed with borax on charcoal, the mineral turns black and eventually becomes a malleable bead of copper.

Sinkankas (1964) describes the formation of malachite crystals in more detail: Malachite "develops acicular crystals which, though sometimes developed as cottony tufts of brilliant green color, prefer to form as compact masses coating cavity walls in banded layers, from a fraction to several inches or more in thickness....Close examination shows that the seemingly solid layers are composed of multitudes of tiny crystals, all growing away from the walls. All crystals are locked closely together in nearly parallel positions. Malachite begins growth in the same manner as drusy quartz, and again only those crystals which happen to be pointed upright continue to grow while others are suppressed. The result is near-parallelism, with crystals oriented at right angles to cavity walls, and grown to about the same length. One may say a malachite cavity lining is a druse carried to its ultimate conclusion" (p. 93).

Malachite occurs as a "secondary mineral in oxidized portions of deposits in which copper sulfides are available for alteration. (It is) abundant in sulfide vein deposits but also is disseminated deposits, as in the so-called 'porphyry coppers' of southwestern

## ROCK OF THE MONTH: MALACHITE continued

United States. (The mineral) forms crusts and stainings, usually with azurite, in practically all classes of rocks at or near the surface, providing some copper-bearing species, or native copper, was originally present. (It is) very commonly associated with azurite, but more abundant than that mineral; also associated with cuprite, tenorite, limonite, calcite, and other secondary copper species. (Malachite) commonly alters from azurite crystals, partly or wholly replacing same." (Sinkankas, 1964, p. 378). When malachite samples are polished while retaining some of the gangue or worthless material associated with the original source ore, they are termed malachite matrix.

Malachite is more stable than azurite and has more water content (8.2% vs. 5.2% in azurite). The pseudomorphism that occurs between these two minerals is noted by Hurlbut (1968): "Azurite and malachite are so alike chemically that a small variation in the surrounding moisture is sufficient to make one change to the other. Thus if azurite is found in botryoidal masses, it may be assumed that it has been altered from malachite. Unlike malachite, azurite often occurs in crystals of characteristic shape, some as large as three to four inches across. When therefore, one sees malachite in the crystal form of azurite, it is a pseudomorph, that is, azurite altered to malachite. At one time, finely ground azurite was used by artists as a paint pigment but it was most unsatisfactory, for the blues of the painting would frequently turn green after a few years as azurite altered to malachite" (p. 172). The term azurmalachite is applied to material consisting of malachite and azurite in intimate association.

Several of the original sites where malachite has been mined are now depleted. The largest and purest masses were found in the Ural Mountains, Russia where copper mines at (a) Nizhni-Tagilsk, (b) Bogoslovsk in the northern part, and (c) Gumeshevsk near Sverdlovsk at Sissersk are now all exhausted for good material. Bauer (1969) reports that at the time of his writing quality malachite was coming from the Medno-Rudiansk mine near Nizhni-Tagilsk. This material occurs in nest-like masses in veins in limestone, is mined with ordinary methods, cut from the rough at Ekaterinburg, and then sold. In the past the best material in greatest abundance has come from the Gumeshevsk mines out of reniform, stalactitic, and tube-shaped masses embedded in red clay; the largest single mass found here is preserved in the Institute of Mines, St. Petersburg and is a smooth reniform mass weighing 3240 pounds approximately  $3\frac{1}{2}$  by  $3\frac{1}{2}$  feet. (Bauer, 1969). The greatest single mass ever known came from Nizhni-Tagilsk in 1835: it was 17.5 x 8 x 3.5 feet in dimensions, weighed 25-30 tons, and displayed a fine emerald-green color (Bauer, 1969).

Australia yields fine quality stone in Queensland such as at the Peak Downs copper mine, in New South Wales, and in South Australia at Wallaroo and Burra-Burra. United States gem material originates from Arizona at Bisbee, Cochise County, Morenci, Greenlee County, (banded crusts and stalactites with alternating layers of malachite and azurite), and the Globe district, Pima County. The Copper Queen Mine at Bisbee produces the best quality of "beautiful geodes,

## ROCK OF THE MONTH: MALACHITE continued

lined with velvety malachite, sometimes dotted with rosettes of azurite" (Sinkankas, 1964, p.378). New Mexico, Utah (e.g., Bingham Canyon), and Nevada yield material. Mexico contains some malachite but of lesser grade than that of the U.S.

Other locations include Katanga in the Congo, (Etoile du Congo mine for example), South-west Africa (e.g. Tsumeb), northern Rhodesia, Bwana Mkubwa), Cuba, Chile, and Cornwall. France has yielded malachite as an alteration product of single crystals of cuprite at Chessy, near Lyon but this supply is now depleted.

English and Jensen (1958) have reported that fine malachite pseudomorphs after azurite crystals have come from Bisbee, Arizona and Tsumeb, South West Africa. Tsumeb especially reveals large blue crystals of azurite partially changed to the green color of malachite.

Malachite is made into candlesticks, inkstands, trays, bowls, vases, ashtrays, and paper weights. Large pieces are formed into table tops and inlay work. Usually these are just a veneer of malachite; Russian craftsmen do much ornamentation in this manner. The Czar of Russia has given many European royalty gifts of such large and beautiful examples of this attractive mineral. The Heritage Museum in Leningrad shows many examples of veneered urns and table tops with matched pieces of stone. This author found a matched pair of Russian malachite columns topped by large vases decorated in metal at the entrance to a room in one of the small buildings of the Smithsonian Museum, in Washington, D.C. The Isaac Church in St. Petersburg is famous for its massive columns of malachite. Columns from the temple of Diana at Ephesus have been moved to the Sophia Church at Constantinople. The most expensive examples of malachite are combined with azurite: the Chessy cuprite pseudomorphs and the alternately banded fine specimens of azurmalachite. Some writers have viewed malachite as too soft for jewelry but today we can obtain many samples of pendants, earrings, beads, and rings. However, it is wise to be protective of such pieces like the latter which may be exposed to much wear in daily use.

Lapidary techniques: Bauer (1069) states stones are usually cut with a plane or slightly convex surface. Sinkankas (1962) notes that the varying shades of green in malachite indicate changes in density of the mineral with darker sections denser and easier to polish and lighter sections less compact are more difficult to polish. He continues: "Because it breaks readily along the fibrous grain, cabochons are cut somewhat thick to lend strength. (It is) heat sensitive but care in dopping prevents fractures. Grind cautiously to avoid lopsided stones. Fine sand on 400 cloth using plenty of water to produce high gloss. Polish on leather with Linde A or chrome oxide. Undercuts on felt or cloth. Finish polish by hand with clean leather dipped in a very thin suspension of water and chrome oxide, to which a little soap is added. Hand finishing is tedious but results are worth it. Polishing is speeded by adding a drop or two of weak acid to the polishing suspension; vinegar or dilute muriatic or oxalic acid, are suitable. To prevent marring when

## ROCK OF THE MONTH: MALACHITE continued

when using acid-polish solutions, keep surfaces wet and as soon as work is completed, dip entire piece into clean, pure water. Touch up surface with acid-free polish suspension" (p. 268).

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- English, G.L. & Jensen, D.E. Getting Acquainted with Minerals. New York: McGraw-Hill, 1958 (revised edition).
- Hurlbut, C.S., Jr. Minerals and Man. New York: Random House, 1968.
- Sinkankas, J. Gem Cutting: A Lapidary's Manual. New York: Van Nostrand, 1962 (2nd edition).
- Sinkankas, J. Minerology for Amateurs. New York: Van Nostrand, 1964.

Marilyn R. Smits, Ph D.  
Education Chairperson

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Some Handy Hints... Add a couple of tablespoons of liquid detergent to your cutting oil, -if your saw has a plastic lid, this will be the first time you have been able to see through the top after cutting a slab.

Tumble Rumble via Slab & Gab

For that gloss finish on tiger eye, polish once, dry the stone, then put a drop of vinegar on it. Leave a couple of minutes and then give it a second polish. The result should be that deep gloss finish.

Sooner Rockologist

A good shield for a large saw is a bicycle fender. It is just the right size and shape to keep lubricant flowing over the blade.

Worn diamond blades can still be used to cut soft materials such as malachite, turquoise and azurite.

If piece is too small to clamp safely cut it by cementing them to a block of wood with waterglass, then clamp the block with the stone on it and cut the stone. Stone is removed by soaking in water. Oils won't attack waterglass cement, but water dissolves it.

via Chips & Facets, Fall 1978

A dandy small "stove for your shop can be made from an old iron. Remove the handle and place it on asbestos stand to heat coffee and warm glue. For the rockhound, to heat your dop wax and stones.

via Grannite Chips and Geode, S.I.E.S

## CAMELS - Fossil and Recent

-by J.D. Young

Fossil remains of ancestral camels are found in Nebraska and neighboring states, indicating that this was the original home of the well-known, but somewhat misunderstood beast, "the ship of the desert". According to some geological time scales this may go back to the early Cenozoic Era, approximately 65,000,000 years.

The world-renowned fossil quarries at the old O-4 Ranch (now Agate Springs) of the late Capt. James H. Cook in Sioux County, N.W. Nebraska, have yielded many camel specimens as well as many other fossils. It is recognized as one of the greatest deposits known, and it is now a National Monument.

My first of several visits to Agate Springs ranch was in 1919 before highways came near. I opened at least 30 barbed wire fence gates to get there from Scottsbluff area. Cattle guards were almost unheard of for easier travel in that country, the Nebraska Kinkajids. My latest trip there was in the late 1960's accompanied by my wife, Myrtle, and L.G.M.C. Honorary Member, Dr. John G. Neihardt. The Cook family were oldtime friends of the poet, and also of my relatives, the Prof. E.P. Wilsons at Chadron.

When camels migrated from North America to other continents is not exactly known. They have been beasts of burden in desert lands for millenia. Alpacas, llamas and vicuñas in present South America are related to them. There are many legends and myths about camels, some questionable. In addition to their importance as transportation aids they are also sources of meat, milk, hides and wool in some parts of the world.

Leaving the fossils and considering more recent stories in our own country I shall refer to several publications: "Jefferson Davis's Camel Corps", Natural History Magazine, pp. 70-75, May 1980. Camels in Texas, The San Jacinto Museum, Texas, 1956. Illustrated Library of Natural Sciences, Vol. I, American Museum of Natural History, pp. 522-531, Simon and Shuster, 1958.

A serious effort was made in the 1850's to import and use modern camels in Texas and southwestern states. Railroads were not yet built through "the Great American Desert", and a practical transportation system was needed. Because camels had proved their worth in foreign desert lands for untold centuries it seemed logical to try them in our southwest.

There were several favorable qualities—the camel's amazing ability to go for long periods of time without food or water, its endurance to heat and poor travel conditions. That awkward-looking beast could subsist on vegetation that horses and cattle would not touch, for example—prickly pear cactus and mesquite. Negative points were also noted—they scared horses, were ill-tempered and smelled bad!

So it happened that an army officer, Major Henry C. Wayne, became enthusiastic about the use of camels. He studied the subject and learned among other things of the two great species, the one-humped Arabic Dromedary and the two-humped Bactrian. The dromedary

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CAMELS--Fossil and Recent, continued

seemed to be better for saddle, speed and endurance, but the bactrian was heavier and of slower gait--capable of bearing heavy loads. Each had its advantages.

Major Wayne made his way through "red tape" to recommend that camels be imported to test the idea of a camel cavalry. This appealed to Jefferson Davis, at that time chairman of the Senate Committee on Military Affairs. He was already familiar with the animal's value in foreign lands, and he understood communications in arid regions. The Southern Pacific Railroad was yet to be built south of the Gila River. Trade with China and the California Gold Rush added impetus. This was several years before Davis became President of the Confederacy.

Davis tried in 1851 for a \$30,000 appropriation to purchase 50 camels and to employ 10 camel drivers, but the expense seemed prohibitive. Finally in 1855 the amount was approved, supported by western legislators and President Pierce. Major Wayne and Lt. David D. Porter were dispatched to procure the camels. After consultations in Europe and Africa the two men became well-qualified camel traders. The cargo of over 30 camels, including some dromedaries, arrived in Texas in late April 1856. After the long voyage the animals, after feeling solid earth again, became highly spirited, causing much excitement and amusement to the Texans.

"A grand time was had by all", poetry was written about the exotic arrivals, and one woman knitted a pair of malodorous socks of camel hair for President Pierce, for which he expressed due thanks. Though the camels were mostly docile, excepting the rutting season, there was much dislike from the traditional hostlers and wagon masters, and their horses scorned the odor. Texans and other Westerners were reluctant to "learn the ropes" of camel tending-- horses suited them better.

During the Civil War the Confederates seized the camels maintained at Val Verde, Texas, but they did not carry on with the experiment. Some camels were used by Southern Post Office departments; some were used to carry cotton bales, salt or other commodities. California camels then were sold to circus buyers and zoos. In Texas after the war some were sold to circuses and many were set free in Arizona where they multiplied. Nevada passed a law in 1875 prohibiting camels running at large. Occasional sightings were reported for many years, and some observers were dumbfounded by such strange beasts. Gen. Douglas MacArthur was reported to have seen one in New Mexico when he was a small boy.

The original camel drivers stayed with some of the circus purchases. It was probably one of the jobs requiring certain skills and aptitudes, and maybe a weak sense of smell. Many of the legends and stories have been debunked by some "authorities", so it is hard to say whether the strange critter was "haughty, insolent or stupid!"

P.S. Some people have said they would "walk a mile for a camel"; but it seems those Texans would rather walk a mile from one!

J.D.Y.

JUNIOR PAGE

Hi Juniors:

Vacation days are almost here. I suppose you are looking forward to getting out in the nice, bright sunshine. Are you going to do some rock hunting? Hope you are getting a case ready for the big '80 Show. I found another good puzzle in the Loup Scoop which I am borrowing for you. I hope you will enjoy it.

Mrs. Ulrich



Word Hunt  
by  
Jean Beran

Oklahoma Specimens

R Q H Y X T F P B E V H O B G A F  
 A X P E W B R A A P S L E F S I T  
 I A H O M S M J R V C T J E E D T  
 Y L T P S A N I I S L D T H L H R  
 S I D E R I T E T D L I S G E I E  
 V M W N K R R I E L M A V D N J L  
 J O Z X M D E K T O U H P S I P A  
 T N Q C T T L G L E G S Z O T Z H  
 R I K S L O Z O A S I T E M E N P  
 S T U K F T D U R M R O N O F E S  
 R E Q Z O T U F E T I C L A C F Q  
 Q P K R E I S B V E T O D I P E T  
 B I O T I T E O Y S U M T F P R S

Barite	Limonite
Dolomite	Selenite
Sphalerite	Biotite
Epidote	<b>Calcite</b>
Siderite	Zoasite
	Hematite

Fossil Collection

Why not start a fossil collection for yourself or your school? Fossils are common in many parts of the country, in limestone, shale, and sandstone. Label each specimen, giving its name, where found, the age of the rock and how you found it.

Making a Cast... Use plaster of Paris, a powder that quickly "sets" hard after it has been moistened with water. Prints of any hard object can be made by pressing the object into the moist plaster of Paris. Cover the object with Vaseline before making the imprint. Try shells such as scallops and clams.

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BURIED FOREST TELLS GLACIAL TALE

A forest of hundreds of erect spruce trees, some of them up to two feet in diameter, has been accidentally unearthed from more than 25 ft below the surface of a Michigan bog where it had been buried for 10,000 years. Unearthed during a mining company's excavations, about 15 miles from Marquette, the forest may lead to rewriting the history of the great glaciers that alternately advanced and retreated across what is now Lake Superior.

The trees were discovered by heavy-equipment operators of the Cleveland-Cliffs Iron Co., who were digging in an area now called the Gribben Basin to make a pit in which to deposit mine tailings. At depths of 25 to 30 feet, they encountered a layer of "gravel" in which were the tops of the trees. Further excavation revealed the surviving portions of the trunks to be from 12 to 15 feet high, with growth rings indicating that they had lived as long as 150 years. The 800 ft. wide pit ended up being about 2,000 feet long, with trees over all but about the last 300 feet of the length.

Soil and rock deposits in the pit suggest that the forest was drowned by the melt-water preceding a glacier that advanced upslope to natural drainage. The "gravel" carried along with the water apparently ground off the trees' upper portions.

The new find may require "substantial revision" of theories about glaciation in the upper Great Lakes region, says geologist John D. Hughes of North Michigan University, who has been studying the site with NMU botanist W. James Merry. It has been thought that the last glacial advance in the region occurred some 11,850 years ago, an episode called the Valdres stadial. Now, says Hughes, it appears that "as recently as 10,000 years ago, glacial ice filled almost all if not the entire Superior basin." The Valdres stadial could have lasted longer than previously believed, but there may have been a whole additional retreat-advance episode. Growth ring studies of one 130 year old tree suggests that the climate was slowly cooling for the first hundred years, followed by more rapid cooling over the last thirty, Hughes says. A possible inference is the onset of a new glacial stage.

The forest was actually discovered more than a year ago and kept secret while the NMU scientists studied it with the aid of a \$16,000 grant from the mining company whose cooperation throughout the project is highly praised by both researchers. The secrecy, says Hughes, served both the company, by preventing what could have been long-lasting protectionist delays, and the scientists, by preserving the site. As soon as the age of the forest was made public, in fact, says Hughes, "one of the stumps disappeared overnight."

The wood in the Gribben Basin trees was "remarkably well reserved," says Merry, with only the bark and a fraction of an inch of the outer layer showing carbonization. The only comparable finds, according to Hughes, have been a glacial forest unearthed about 50 years ago at Two Creeks, Wisconsin, showing the 11,850 year age, and a 6,000 year old one discovered in Cochrane, Ontario, about 300 miles northeast of the Gribben site.

# Midwest Federations NEWSLETTER

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May 1980 - Issue No. 204

## WISCONSIN GOVERNOR PROCLAIMED GEOLOGY AWARENESS WEEK

*By Bernice McCloskey, MWF President*

Through the efforts of Margaret Pearson, a member of the Wisconsin Geological Society and Midwest Federation Geology Committee assistant, Governor Lee Dreyfus has issued a proclamation that designated April 20 as Geology Awareness Week in the State of Wisconsin.

The Governor called upon the citizens of the state to become familiar with the many geological societies of Wisconsin, and recognized WGS in particular for its activities in education and fund raising for geology scholarships believing that "today's student is tomorrow's problem solver."

The proclamation stated that "we live in a time when an understanding of our nation's natural resources is of primary concern to many, yet ignorance of our earth and the distribution of its natural wealth has caused serious concern about the future of national and world environmental preservation..."

If you would like further information on "geology awareness", contact Margaret Pearson, 9034 West Lisbon Ave., Unit 24, Milwaukee, WI 53222 or Chairman Armin Steinhauser, 1397 Chelmsford St., St. Paul, MN 55108.

There is no better time for geological societies to disseminate knowledge. Our Geology Committee can help you!

## SAFETY TIP

*Do not work or go near the edge of a high vertical wall. The edge of the wall may cave or a slip may cause a serious injury or a fatal fall.*

## MIDWEST AFMS SCHOLARSHIP FOUNDATION HONORARY AWARD WINNER ANNOUNCED FOR 1980

Dr. Thompson Mylan Stout, Prof. of Geology and Associate Curator of Geology, University of Nebraska, Lincoln, has been selected as the Midwest AFMS Scholarship Foundation Honorary Award Winner for 1980. He will make the selection of the students to receive the scholarship awards.

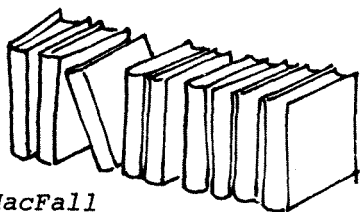
After graduating as the most outstanding student from Wentworth Junior College, Lexington, MO., he received his B.S. and M.S. degrees from the University of Nebraska and Ph.D. from Columbia. In addition to long periods of special study at the American Museum of Natural History, Dr. Stout had six extended missions to museums, libraries and universities in Western and Central Europe. He is a past president of the Nebraska Geological Society and the Nebraska Academy of Science. The author of many publications, Dr. Stout has presented papers at such diverse locations as Christchurch, New Zealand and Birmingham, England. He has been especially helpful to graduate students, serving as faculty advisor for 35.

## 1980-81 DIRECTORIES READY

The new 1980-81 Midwest Directories are ready. Copies are now being mailed to all clubs and others on the mailing list.

Additional copies are available at \$2.00 each postpaid. Send your order, with check to cover, to our Director of Supplies, Clinton Heckert, 725 Stewart Ave., Elgin, IL 60120. Be sure you tell Clinton where you want your copies sent and give him your complete address.

## BOOKS



By Russell P. MacFall  
P.O. Box 309, Coronado, CA 92118

One of the occasional pleasures and problems of reviewing books for such an estimable publication as the AFMS Newsletter arises when this reviewer writes a book. The book, *ROCK HUNTER'S GUIDE*, is published by Thomas Y. Crowell Co., of New York in a volume of 246 pages with what is no doubt the most up to date reference material about sources, bibliographies, etc. on what is undoubtedly the most confusing subject in the mineral world.

Minerals have definite names and chemical formulas; rocks do not enjoy such scholarly definition or even agreement. Nonetheless, this reviewer is happy to announce this, the most up to date publication in the subject, and leave its merits to the mercy of other reviewers. *ROCK HUNTER'S GUIDE*, so far as he knows, is the first book about rocks for the guidance of the collector, and as gem and mineral locations are depleted, rocks will still remain to satisfy the spirit that drives us all to collect. Rocks, unlike minerals, can be used for building, decoration and even crafts. Nearly 175 pages of locations to find rocks are described.

Fluorescent minerals provide their own excitement when the lamp is turned on. Several books about them have appeared but are badly dated and somewhat awkward to consult. Into this gap in the mineral information gap, Mark C. Blazek has stepped with a slender paperback *WHERE TO COLLECT FLUORESCENT MINERALS IN THE UNITED STATES*. With a title like that and with Ultra-Violet Products of San Gabriel, California, as the publisher, the book's purpose is obvious. Proved sources are listed in some detail by states, with a good index. From some familiarity with the subject, this reviewer finds the booklet of 34 pages a real bargain... accurate, up to date, and well printed. The price is only \$1.50, and if dealers don't stock it, they are missing a good thing.

## DOUBTFUL EMERALD MINE WILL OPEN THIS SUMMER

H. W. Collins, co-owner of the Crabtree Emerald Mine, Little Switzerland, N.C. says that due to legal litigation it is doubtful that the Crabtree Emerald Mine will be open to the public this season.

Collins is concerned that people from all parts of the country might drive to the mine only to find it closed to the public. He suggests you call 704-765-2289 or write to him at P.O. Box 163, Little Switzerland, N.C. if you were planning to come to check on the current status of mine visits.



By June Zeitner

WITH FIELD TRIPS becoming less numerous because of the price of gas, and other reasons, many clubs which formerly met 9 times a year, are changing their club year to include meetings all summer.

BY LOOKING at early All American reports, it seems that Junior activities are becoming more and more important in our clubs.

ALTHOUGH MANY SHOWS are still down in attendance, small, well advertised local shows appear to be holding their own, and even passing previous records. Interestingly enough, shows held on or near holidays... formerly avoided... are doing exceptionally well.

POSTAGE may soon rise again. Already many bulletins are thinner than before. Clubs are having to raise dues, add on separate bulletin subscription rates for mail, or have money making events to aid their bulletins. A brainstorming session at the next board meeting might be devoted to the future of your bulletin. There are ways to cut costs and keep communication going.

## SPECIAL ISSUE PLANNED

The May-June issue of *Rocks & Mineral* magazine will be a special show issue featuring Nebraska, host state for the 1980 combine MWF-AFMS show and convention.

The entire issue will be devoted to exploring the state's mineralogy, paleontology, and geology. Also included will be field trip locales and information on collections to see. In addition, there will be a special section on the show itself which will be held June 12-15.

Individual copies can be obtained for \$2.00 by writing *Rocks & Minerals*, 4000 Albemarle St., N.W., Washington, D.C. 20016. Annual subscription is \$10.00. Copies will also be available at the show. As official publication of the Midwest Federation, *Rocks & Minerals* will have a booth on the floor.

*Marie Huizing, member of the Cincinnati Mineral Society, is the Managing Editor of Rocks & Minerals magazine. She is also editor of the clubs bulletin, "The Quarry".*

## IMPRESSIVE LIST OF SPEAKERS, FEATURES, SYMPOSIA ANNOUNCED FOR NATIONAL SHOW

*By Roger K. Pabian, Publicity Director, National Show*

The combined Midwest-American Federation National Gem and Mineral Show promises to be an exciting affair. It will be held in the Bob Devaney Sports Center in Lincoln, Nebraska from June 12 thru 15. Many interesting features, speakers, and symposia for the rockhound as well as the general public have been scheduled. Some exceptional silver and ruby displays will be on hand in commemoration of the 25th Anniversary of the host Lincoln Gem and Mineral Club and the 40th Anniversary of the Midwest Federation.

Several specialized symposia will be presented during the show. The symposia were arranged by Roger Pabian, Education Chairman of the Midwest Federation, and each will be chaired by various Federation Committees or special interest groups. The faceting symposium will be conducted by the newly founded Mid-America Faceters Guild. Mrs. Helen Murray, Toledo, Ohio, has developed an excellent faceters symposium for Faceters group. Mrs. Murray has indicated that the symposium will feature Dr. William Hanneman of Castro Valley, California. Dr. Hanneman will speak on "A Close Look at Faceting." In addition to speaking at the symposium, Dr. Hanneman will present several programs for the general show, including one on gem identification without instruments.

Larry Casey, Lapidary Chairman for the Midwest Federation, will convene a lapidary symposium and many specialized topics will be covered, including cabochon cutting techniques, techniques for small carvings, stone drilling, bowl making, and converting existing equipment for specialized lapidary techniques.

Paul Clifford, Mineralogy Chairman for the Midwest Federation, and staff member of the Cleveland museum of Natural History will convene a mineralogy symposium, and the Mid-America Paleontological Society will convene a paleontological symposium. Steven Tarcza of Grandview, Missouri will convene the micromounters symposium. No additional charges will be made for the symposia.

Program Director, Vera Lyman, has arranged for a number of excellent speakers for the 1980 show. Dr. C. Bertrand

*Show... continued on reverse side of this sheet*

## "KISS MY AGATE" BADGES

The 1980 National Gem and Mineral Show Committee has made a limited number of the "Kiss My Agate" badges available to interested rockhounds. The badges were made to promote the 1980 National Gem and Mineral Show. Because of their extreme popularity, a second issue was recently made. The badges are available from the Show Committee, Lincoln Gem and Mineral Club, P.O. Box 5342, Lincoln, NE 68505. The cost of the badges are \$1.50 each, postpaid. Proceeds will go to the American Federation of Mineralogical Societies Scholarship Fund. This is a good way to help somebody and have some fun too.



Schultz, Director Emeritus, University of Nebraska State Museum will present two lectures on migration patterns of fossil animals. Both animals that originated in Nebraska and migrated out and animals that originated outside Nebraska and migrated in will be discussed. LaVerne Lange of the Fort Kearney Rock Club, Kearney, Nebraska, will present a slide program on the excavation of a fossil mammoth from near Kearney. Arjis Leipins of Lincoln, Nebraska will present several slide shows on Latvian amber. Ernest Michaud of Flint, Michigan will present programs on beginning lapidary and on cutting star stones. In addition to the programs, Mr. Michaud will provide several displays of star rubies and faceted stones.

Doris Kemp, South Holland, Illinois, will present the slide program "Diamonds: The Eternal Gem", which tells about mining, cutting, and evaluating these gems. Her husband, Russell, of the Lizzadro Museum of Lapidary Arts, Elmhurst, Illinois, will present a slide lecture on "Scrimshaw" and the art that was generated by the American whaling industry. Mr. Kemp has indicated that the Lizzadro Museum will provide an exceptional display of jade carvings including a Kuan-Yin carving, a jade bowl, and a jade doctor's lady.

Gordon Baird of the Field Museum of Natural History, Chicago, Ill. will present a lecture, "Mazon Creek Fossils, A Coal Age Pompeii in Illinois." Dr. Baird will tell of many of the strange plants and animals that dwelled in the coal swamps of the North American Midwest in Pennsylvanian time about 300 million years ago.

An exceptional display of petrified wood will be presented by the Cleveland Museum of Natural History, Cleveland, Ohio. Ken Bouc of the Nebraska Game and Parks Commission will present a lecture on outdoor Nebraska and Larry Hull of KOLN-TV, Lincoln, will present the lecture "Beautiful Nebraska." Pansy Krauw, San Deigo, California, will lecture on Chinese jade carvings. Carl Wells, Sioux City, Iowa, will lecture on Indian Petroglyphs in the North American mid-continent.

Charles Walker will provide a display of cut rubies, both faceted and cabochons.

Linton Riggs, Oklahoma City, Oklahoma, will present a display of his jade carvings including a one piece screen and pieces made from jade from Wyoming, Washington, and the Orient.

Clarence and Vone Luthi of Topeka, Kansas, will present their display of State Seals made from fossils. This display has been very popular throughout many midwestern shows.

Professor J. Lewis will demonstrate a new design in automatic cabochon cutting equipment. The new machine will be unveiled for the first time at the Lincoln show. Professor Lewis indicate that the new machine will produce several different shapes. He has been advised by patent attorneys that the veil of secrecy can now be lifted.

Competitive displays will be judged under the new 5th Edition Uniform Rules. Competition will be opened to all divisions and classes. Exhibitors who have not earned their National Trophy eligibility are reminded that they may enter the regional Midwest Federation competition at Lincoln. Master Class exhibitors scoring over 90 points will be automatically advanced to National Trophy competition.

Show visitors will be interested to learn that there will be an AFMS Scholarship Fund Silent Auction during the show. Anyone wishing to donate materials to the auction may have their club credited with proceeds received for their material. The auction will be under the supervision of Norman Brown, Cedar Rapids, Iowa.

Information packets for the 1980 show are now available and can be obtained by writing Howard Taylor, Lincoln Gem and Mineral Club, P.O. Box 5342, Lincoln, Nebraska 68505.

## SAFETY TIP

DON'T work alone. In the event of an accident that results in an injury, many times the difference between life and death is determined by having someone available to help.

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*Advertising* by a rock-hobby business or interest is permitted with approval of the Board, at a rate now set at \$10.50 per full page per insertion, paid in advance.

1/2 page \$5.25, 1/3 page \$3.50, 1/4 page \$2.75 (min). These ads will be placed throughout the bulletin as space permits.

*Subscriptions* to THE PICK & SHOVEL are \$3.00 per year mailed.

*Dues* to LINCOLN GEM & MINERAL CLUB are as follows:

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

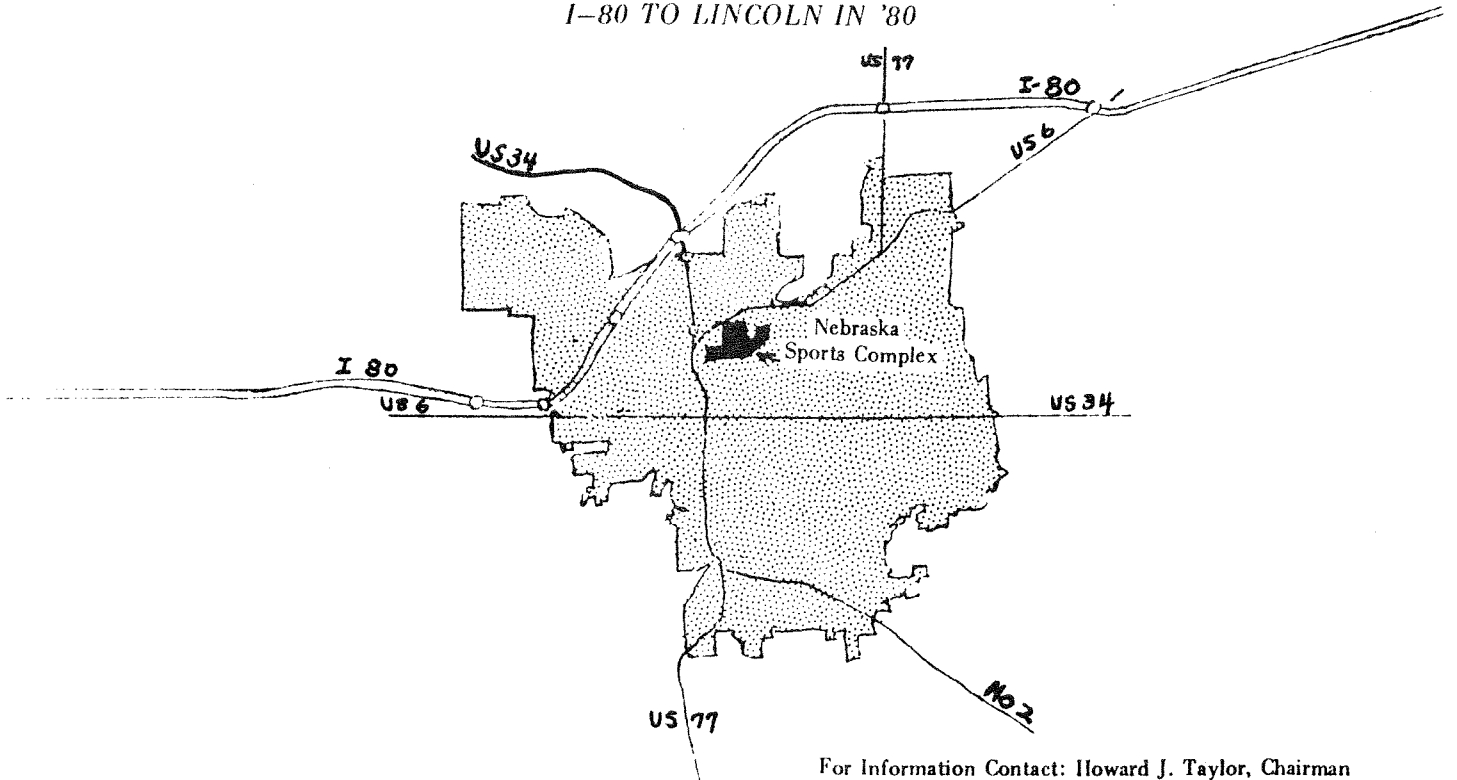
Junior membership fee \$1.00 (age 12-16)

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 O S T T O  
NATIONAL GEM AND MINERAL SHOW, June 12-15, 1980  
I-80 TO LINCOLN IN '80



For Information Contact: Howard J. Taylor, Chairman  
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