PICK & SHOVEL

INSIDE...GRINDERS AND GRINDING

FOSSIL UPDATE

Volume 31, No. 8
April, 1991

Lincoln Gem and Mineral Club, Inc.
P. O. Box 5342
Lincoln, Nebraska 68505

1991 ELECTED OFFICERS

President:	**Fred B. Holbert,** 2822 S. 13th St., Lincoln, NE 68502	423-5639
1st Vice President:	**C. David Heffelbower,** 1819 Washington St., Lincoln, NE 68502	475-4713
2nd Vice President:	**Charles Wooldridge,** 836 S. 31st St., Lincoln, NE 68510	475-9034
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:	**Billie Heffelbower,** 1819 Washington, Lincoln, NE 68502	475-4713
Board Member:	**Shirley Rockel,** 1134 West Avon Lane, Lincoln, NE 68505	464-3059

NOMINATIONS COMMITTEE

3 Years: Kevin Schwartman, Chair.
Gerald Moore
Don Phillips
2 Years: James Null, Michael Smith
1 Year: Ed Ridge, Roger Pabian

LONG RANGE PLANNING AND BY-LAWS COMMITTEE

3 Years: Kevin Schwartman
Jim Marburger
2 Years: Bob Wright
Linda Parks-Lundgren
1 Year: Phyllis Parks
Charles Wooldridge

STANDING COMMITTEES

Membership: Shirley Rockel
Education: Roger Pabian
Field Trips: Francis Belohlavy
Historian: John & Lillie Lewis
Hospitality: Eddie "Lightning" Ridge
Study Group Coordinator:
Housing/Property: Jim Parks
Junior Activities: Janet Wright
Librarian: Jim Parks/Charles Wooldridge
"Gem Pallette" Corresdpondent: Sandra McNiff
"Geology Day" Coordinator: Charles Wooldridge

Programs: Charles Wooldridge
MWF Liaison: Vera Lyman

Scholarship: Dwight Miller
Christmas Party: Billie Heffelbower
1990 Rockhound/Year: Charles Wooldridge
1991 Show: John Harrison
1992 Show: Phyllis Parks
1991 Swap: David Heffelbower
1992 Swap: Roger Pabian

AUDITING COMMITTEE, 1987-1988

David Heffelbower
Francis Belohlavy
Shirley Rockel

YOUR PICK & SHOVEL STAFF

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

CALENDAR OF EVENTS

APRIL MEETING: Saturday, April 27, 7:30 PM
Nebraska Center for Continuing Education, 33rd & Holdrege. Norfolk Room.

PROGRAM: **Two presentations from:** our 1991 **LG&MC Scholarship winners,** plus **AGATES: new ideas on an ancient subject** by Roger K. Pabian.

JUNIOR MEETING: 7:00 PM. Program: Summer field trip planning.

COMING EVENTS:

MEETING: Nebraska Academy Sciences
April 26, 27, Olin Hall
Nebraska Wesleyan University, Lincoln

SWAP: 100th Meridian Rock Club
May 4, 5, LaFayetter Park, Gothenburg

SWAP: Northeast Nebr Rock & Mineral
July 27, 28, Stanton Co. Fairgrounds
Stanton, NE

SWAP: Fort Kearney Rock Club
Sept. 7, 8, Cotton Mill Lake, Kearney

SHOW: Fort Kearney Rock Club
Nov. 2, 3, Hilltop Mall, Kearney

REGIONAL SHOWS:

San Jose, CA June 14-15-16	Tampa, FL Sept. 19-22	South Bend, IN Aug.30-Sept.1	Seattle, WA July 26-28	Salt Lake, UT June 14-16	Lubbock, TX June 7-9

FUTURE MEETING DATES, PLACES: MAY 18, 7:00 P.M., Bethany Park Shelter House. Program will be a gem dig with leftover aggregate from show. Bring lights to aid you. Note earlier meeting time.

DISPLAY MATERIALS Bring items that relate to April (diamonds), specimens of items acquired at show. Cases will be furnished for exhibitors.

PRESIDENT'S MESSAGE

1991 SHOW: As we reflect upon the marvelous experiences shared during our recent gem show, we hope that our computer will hold up long enough to crank out this missive before boxing it up and shipping it back to the manufacturer for repairs.

Preliminary reports indicate that the show broke all recent records for attendance and income going back to the last national show which was hosted by Lincoln.

The club owes a debt of gratitude to show chair, John Harrison, and all of the people who chaired various committees. However, most of all we give thanks to all those unsung workers who year after year contribute their labor, but are not recognized via show programs or club bulletins. Because of the number of workers and out of fear of failing to note each one of them, except for Mr. Harrison, we anonymously thank all of those people who slaved for the show. However, we must single out one additional person by name. The computer that was used to compile the list of workers for the show program, apparently had a virus that feeds on certain letters of the alphabet used in certain combinations. That being the case, the name of one show's busiest workers (in addition to being a director on the board of LGMC) was omitted from the program. Honored herein, then, is Billie Heffelbower who is unsung no more.

Also included in our thanks is the UNL Geology Club which manned the gem dig as well as all of the exhibitors and demonstrators, some who traveled great distances from outside our club to participate in the event. They all contributed a great deal to the show.

Adding to the appeal of the show was the gem dig, the fossil dig and the rock races. We personally justified the partaking of the delicious catered meal Saturday night by drinking Slim-Fast during the day. That didn't help our waistline but did assuage the guilt feelings.

Tempering our enjoyment of the show, however, were thoughts of departed club members, two of whom will be remembered this year by having scholarships granted in their honor. As with the rebirth of nature in the spring, though, several new members took root at the show and their blossoms will contribute to the LGMC family garden plot in the future.

On a personal level, we enjoyed the interaction with the public, the camaraderie of club members, and the satisfaction of being part of a team that cares and shares. It's fun to have show visitors recognize you, your work, and your exhibits from prior shows. Its even more remarkable when they tell you so much about yourself and you don't have the slightest idea who they are or remember ever seeing them.

(continued on page 3)

It's a joy to instruct, demonstrate, and exhibit to those visitors who have genuine interest, especially the youngsters. We conducted several impromptu tours for groups of young people and marveled at the flashes of understanding that swept across the young faces as they inquired about things that we take for granted.

One girl, who we would estimate to be about eight years old, made a reference to "polishing" a stone as we demonstrated on our flat lap. We gently pointed out that, in fact, we were grinding the stone and not polishing. She was shown the different laps with their the progressively finer grits and was encouraged to feel the texture of each. The individual processes were explained and named. Each of the steps involved: grinding, sanding, pre-polish, and polish use increasingly smaller diamonds to make increasingly finer scratches on the surface of the stone. Finally, the scratches become so fine and shallow that with burnishing all the eye can perceive is a shiny surface. Great care was taken to present the explanation in terms carefully constructed to be grasped by someone of her age.

Within seconds, her father arrived upon the scene and remarked about our polishing the stone. Thereupon, his daughter corrected him noting that we were grinding it. In fact, we had six more laps to go before we completed polishing. Dad was made to touch each of the laps and was issued a lecture on gem stone cutting that was the equal to ours. I wouldn't have been surprised if Dad was given a test when he got home.

The last of our thanks go to the dealers who make the whole thing possible. One long-time dealer finished the show with more sales than any time in the history of their company. Only about six strands of beads remained unsold from what was to be their entire year's inventory. They extended their appreciation to us and remarked that the club must be doing something right for such a successful show. We had favorable comparisons with the Kansas City show as well as Quartzite/Tucson from a number of sources. On the scale of world events, our show is certainly small potatoes, but it is our hope our club can feed on the residue of show spirit and gain strength through increased membership and continued participation.

WE have received cards and letters from dealers thanking us for the invitation to the gem show. One card had a picture taken by world famous photographers, the Van Pelts. It was of a mineral specimen consisting of one beautiful crystal each of Smokey Quartz and Amazonstone attached to a ground mass of Albite. When shown the photo of this Colorado specimen, one of the women we work with asked what the white fuzzy stuff was in the photo. We replied, "Albite". In the finest tradition of Abbott and Costello's "Who's on First" routine, she said, "No no, **I'll bite**; what's the white stuff called?"

FRED B. HOLBERT

FOSSIL UPDATE

By Roger K. Pabian

The diversity of ancient life from Nebraska becomes better known with each passing year, and 1990 proved to be no exception. The late Pennsylvanian and early Permian deposits of southeastern Nebraska seem to yield new things with each trip and new data and interpretations give us some insight into previous discoveries.

In the late 1970's and early 1980's Ted White of Omaha and I did quite a bit of collecting in the fissile (slaty) black shales exposed along the Lower Platte River Valley in Cass and Sarpy Counties. We found some very nice examples of platysomoid and iniopterygian fishes as well as some excellent examples of sharks, many of which will become part of the new Time-Line Gallery at Morrill Hall. Our trips produced a large number of shrimp that were subsequently described by Fred Schram of the San Diego Museum. A large number of bivalved arthropods that we then called phyllocarids were also collected.

Some of the "phyllocarids" were eventually loaned to W.D. Ian Rolfe of the National Museum of Scotland in Edinburgh while he was on leave and at the Field Museum in Chicago. After the fossils were returned, they were put back in the cabinet and forgotten until October of 1989, when Roger Ridley of Grand Island showed me one that he had found in Illinois. I told Roger that it was a phyllocarid and gave him what information I had on these fossils.

Upon returning to Lincoln I was tempted to go to the literature and see if any further work had been done with these creatures by Dr. Rolfe. The literary search revealed a paper by Derek E. G. Briggs (of Burgess Shale fame) at the University of Bristol in England, and Dr. Rolfe. They had concluded that the creature we knew as Concavicaris sinuata was not a phyllocarid and that it belonged to a new order that they called Concavicarida, which possibly has crustacean affinities. In their 1983 paper they described a number of concavicarids and referred the Nebraska material to an undescribed species.

While updating my information bank on Nebraska's Pennsylvanian and Permian fossils, I decided to write Dr. Rolfe and see if the Nebraska phyllocarids had ever been assigned to a new species. It had not yet been assigned to a new species. Dr. Rolfe forwarded my letter to Dr. Briggs, who also replied. The two of them sent me quite a bit of information of concavicarids and they are really quite bizarre creatures to say the least. Shrimp-like tails were fortuitously thought to fit into the concavity of the carapace. The newer interpretation shows that the compound eyes fit into this concavity and the animal had seven pairs of appendages, most of which fit snugly inside the carapace.

Dr. Rolfe also sent along some unpublished pictures of the newer interpretations of concavicarids and their lifestyle. I'll not publish them here but will take the liberty of drawing up an example of one of our Nebraska concavicarids based upon the the data Drs. Rolfe and Briggs provided me. See page 11.

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SCHOLARSHIP WINNERS

Teresa Dunn and Hannan LaGarry of the Department of Geology at UN-L have been selected as the club's 1991 scholarship winners. Scholarships will be given in memory of Howard J. "Jim" Taylor and Frances Tracy.

LINCOLN GEM & MINERAL CLUB INC. - BOARD OF DIRECTORS - March 4, 1991
Nebraska Hall Rm 115 7:30 P.M.

President Holbert called the meeting to order. Minutes of the previous meeting and Treasurer's report were read and approved.

BILLS: All bills presented for approval and payment, those already paid, and Show bills were approved with motion by Dave Heffelbower, 2nd by Roger Pabian. Carried.

OLD BUSINESS:
Kaye Jergens and son Brett will take cases to Persing School.
Board expressed appreciation and thanks for all the work and repair of the 2 cases.

Thanks to Charles Wooldridge for fine Geology Day.

Keep in mind - process of selection of videos etc for Library donation (after sale of "Gems Of America") Possibly preview before purchase.

NEW BUSINESS:
Lynn Wells recovery is slow. Had to suspend therapy for now.

Chair of Geology Day also include special exhibits such as school requests, & the 2 cases traveling to Shows.

How do we police Show Committee expenses?
Discussion of dealers advertizing during Club functions or Shows without paying.
Give some thought to both these maters until next meeting.

Alexander & Alexander Ins. has switched to The Hartford Ins. Co. to improve service to customers; cheaper for us. Motion by Billie Heffelbower & 2nd by Roger Pabian for approval of payment of Liability Ins. premium. ($ 200. total)

The $ 5,000. Certificate of Deposit reaches maturity. Reinvest at short term at best rate.

AUDIT: Thanks to Phyllis Parks, Treas. and audit committee. Board to approve audit next month. First Vice to chair Audit Committee as permanent position.
SCHOLARSHIP:
Student must be working on project that includes Nebraska and also working on something that interests us. Try to support students who are working toward our interests.
Roger to help select recipients since he has knowledge of students & visit with Prof. Durance.

STUDY GROUPS:
Mineral Group - Coordinator, Dave Heffelbower Meeting 2nd Tues. March 12 at Reunion.
Quartz Group - Coordinator, Roger Pabian Meeting March 5 Rm 115

Board Meeting - April 1 at NE Hall Rm 115
May General Meeting - Bethany Park Shelter House.

Respectfully submitted,
Vera Lyman
Vera Lyman, Secreatary

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Vera Lyman, Secreatary

GRINDERS AND STONE GRINDING

By Bill White

There are still many people using abrasive type silicon carbide or aluminum oxide, vitrified grinding wheels. I am one of these people. The diamond grinding wheel is great, runs true, cuts fast, clean, and cool. I love my diamond grinding wheels but they are not the ultimate answer to all lapidary problems. I intend to hang on to my silicon carbide grinding wheels and suggest to anyone that is into lapidary to do the same.

The grinders used for home lapidary shops are Type I wheels designed for peripheral grinding only. Keep your wheels at or below the manufacturer's recommended peripheral speed; a slower spinning wheel will cut stones faster; however, the grinding wheel wears away more rapdily at lower speeds. The centrifugal force of an energized grinder rapidly increases the outward pressure on the periphery of the wheel as speed increases. Stay in the manufacturer's recommended speed range. This is a safety factor too.

We all know about contamination of any sort around our stones or polishing equipment. It's bad news. We should apply the same care in respect to our grinding wheels. Keep them clean, no oil, frost or freezing, dropping or bumping, or such other shocks. Also, be sure to check all flanges, blotters, shafts, and nuts. If you remove your grinding wheels, store them in a dry place and protect them from freezing temperatures. If your grinding wheels are subjected to freezing or frost, allow them to reach room temperatutre before re-installing them on your grinder.

When you dop your stones for grinding, use a dop stick that is nearly the same diameter as the smaller dimension of the stone or as large as the cabochon will permit. Some people use broomsticks cut into short lengths for their large cabochons. Keep the length of your dop sticks as short as you possibly can and still be able to hold them securely and maintain control of the stone with ease. A long dop stick can cause whipping or chattering at the point of hte contact with the grinding wheel and result in chipping or other damage to the stone and grinding wheel and perhaps the operator.

Present your stone to the moving grinding wheel slowly and gently without bumping and as near to the horizontyal center of the grinding wheel as possible. Placing the stone above the center of the wheel will cause tearing of the stone as you pull down and prevent good control of the stone as you grind. Below center tends to push your work away from the grinding wheel, creating bumbing or chattering, and, perhaps, knocking yhour stone off the dop stick.

Shaping a 30 mm x 40 mm oval cabochon, held free hand on the end of a dop stick and trying to maintain proper posture in relationship to the point of wheel contact is very difficult. The best way, in my opinion, is to present your stone slowly, steadily with light pressure as near the center as you can allow, allowing the abrasive wheel to cut. Excessive pressure will cause the ripping and, perhaps, undesirable heat build up. The removal of any unwanted material requires time and any attempt to hurry this procedure will only cause problems for you and maybe damage to both the stone and grinding wheel. Take your time.

There is a data sheet available from the Fertilizer and Agricultural Chemicals Section of the Industrial Division, National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611. Ask for the data sheet on bench and pedestal grinding wheel operations. +++

ANNUAL MEETING OF THE NEBRASKA ASSOCIATION OF EARTH SCIENCE CLUBS

The state meeting of NAOESCI was held Sunday, March 17, 1991 at the State show at Pershing Auditorium. The meeting convened at 9:30 A. M. with Pres. Barry Rose calling the meeting to order and delegates from enough clubs to constitute a quorum.

Officers were elected for a two year term beginning Jan. 1, 1992;

President: Herb Quigley- Omaha
Vice President: Dave Heffelbower- Lincoln
Sec-Treas: Margaret Hohnholt- Kearney (one year only)

Bd. of Dir.: (2 years) Ted Kohler- Norfolk
Dolores Rose- Grand Island
(1 year) Eldeen Zamzow- Hastings

Nom. Comm. Charles Wooldridge- Lincoln
Irma Pharaoh- Omaha

1992 State Show: Grand Island
1992 State Swap: Kearney

1991 State Swap: Stanton; Stanton co. Fairgrounds

Donations for 1992: $25.00 each to the State Museum, Trailside Museum and Ashfall Park.

Club Liability Insurance: NAOESCI has procured a $1,000,000 liability policy to cover all Nebraska members for all club sponsored events to these limits; $1,000,000 liability, $50,000 fire and $5,000 emergency medical. This coverage will be paid for by a $1.00 per member charge.

Dave Heffelbower, reporting

Re: IDENT-A-STONE contest sponsored by Sartor-Hamann Jewelry at 33rd Annual Show

Younger person closest on # of carats -
Robin Gentry, 2816 Sheridan Blvd., 68502 - phone 474-9463

Missing only 1 question and drawn for place -

No. 1 M. Ulanowski, 5607 S. 48th St.,Ohama,NE 731-4447

No. 2 Erma Pharaoh, 12905 Lakeview Drive, Springfield, NE 68059 253-2291

No. 3 Darin Southworth, 1018 12th Avenue, Laurel, Montana 59044 406-628-7616

No. 4 Dan Pabian, 654 East 15th , Wahoo, NE 68066 443-3785

LINCOLN GEM & MINERAL CLUB YOUTH

Our April meeting will be held at seven o'clock in the Continuing Education Building located at 33rd and Holdrege. We will discuss the details of the summer fieldtrips that night. Each LGMC Youth may also bring at least one new specimen to show to the group.

A special thanks goes to everyone who contributed to the success of the LGMC Youth booth at the show this year. Bill and Betty White were major contributors. Betty helped by staffing the booth and they provided specimens and of course the now famous " ROCK WHEEL OF FORTUNE " .

Our Youth, their parents and sponsors gave time and specimens. Thanks especially to: Pam Killion, Ren Rieur, and Emily; Ilene Hames and Aaron; Kay Jurgens and Brett and Janelle; Russ McNiff; Adam Wyhrick; Nick Fraley: Steve Sim and Joe & Jonathan & David Quinn.

We had an very nice representation of displays. I am very proud of the work that was contributed to the show by the Youth and their parents. Thanks to Bruce and Fern Simon for the nice mineral specimens and to Roger Pabian who gave the agate specimens. We couldn't get along without the wonderful adult support provided by the club.

Please welcome Mark Sellmyer to the group. Mark is the first of our new recruits but we are expecting several more. We had twenty young people sign a sheet saying that they were interested in joining.

KANSAS CITY SHOW

The greater Kansas City Association of Earth Science Clubs held its annual show at the Trade Mart on March 8, 9, and 10, 1991. There were many excellent dealers in both the retail and wholesale areas. Working demonstrations included sphere making, cabochon cutting, metal workers, and faceters. The swap area had many nice items, especially for the agate and mineral collectors.

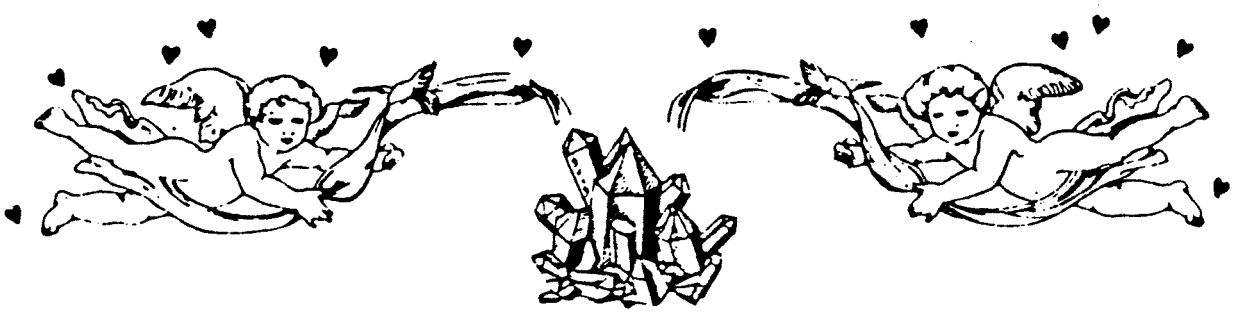
Although the displays were of very high quality, there were fewer than in previous years. It appeared that many dealers who had provided displays in previous years had neglected to to so this year and their lack of participation left a big hole in the display area.

There were some very good programs, especialy those on world jewelry and history of jewelry by Russ and Doris Kemp. For the first time in several years I did not have a program at this show and tended to enjoy my newly found freedom.

I had a chance to visit with many friends and acquaintances and was able to pick up quite a bit of new information on new gems, techniques, and other aspects of the hobby. RKP

HOSPITALIZED

Lynn Wells is currently at Tabitha Home and his condition has not been well. Cards or letters to Lynn and Marie would be appreciated. +



"Love That Quartz"

COLOR VARIETIES OF QUARTZ

(ED. NOTE: This is the second of four articles on quartz by MMLSD member Joyce Hanschu. "Love That Quartz" is the theme slogan for the MMLSD gem and mineral show to be held May 17-19 at the Dearborn Civic Center.)

Color in quartz is thought to be optical (physical) in nature rather than chemical. Some factors causing color are (1) solid inclusions, (2) structural defects and (3) radiation. A list of quartz varieties and their colors follows:

CRYSTALLINE QUARTZ

Amethyst – pale to dark purple/violet; transparent to translucent.

Citrine – pale to deep yellow to yellow/brown, imitates topaz; transparent to translucent.

Crystal, Rock Crystal – pure quartz, colorless; transparent.

Milky – opaque white (due to numerous microscopic liquid or gaseous inclusions).

Rose – pale to medium rosy/pink; translucent.

Smoky (Caringorum) – pale brown or gray to brown/black; transparent to translucent.

CRYPTO/MICRO CRYSTALLINE QUARTZ

(Varieties consisting of submicroscopic crystals)

Adventurine – blue/green; opaque (colored by flakes of mica or hematite).

Agate – concentrically banded; translucent to opaque (many varieties, according to color or location, such as Lake Superior, Moss, Brazillian, Crazy Lace, etc.).

Bloodstone – dark to very dark green with red spots; opaque.

Carnelian (Sard, Sarduis) – reddish, red brown; translucent to opaque.

Chalcedony – waxy masses - white, pale blue, gray; translucent to opaque.

Chert – many colors, usually brownish to reddish; opaque.

Chrysoprase – apple green; translucent (rare, not the same as Prase).

Flint – many colors, usually dark; opaque (hard enough to strike fire with steel).

Jasper – many colors, usually yellow, red, brown or green; opaque.

Onyx – parallel bands, usually light in color; opaque.

Opal – many colors, white to dark green or blue, showing opalescence; translucent to opaque.

Sardonyx - a combination of Sard and Onyx having parallel flat layers of different colors; opaque.

Tiger-eye - a quartz pseudomorph after the asbestos mineral crocidolite, usually banded brown, red or dark blue; opaque.

From: The ROCKPILE
MMLSD, Dearborn, MI,
February, 1991

CLASSIFICATION OF MINERALS- A COLLECTORS VIEW

Edward P. Pedersen

March 11, 1991

There are nearly as many classification systems for minerals as there are students of mineralogy. Over the years some systems have been more widely accepted than others. In general, the system you use depends upon your background and upon the purpose of your study. Because minerals are naturally occurring, inorganic chemical compounds, most of the classifications used by mineralogists are based first upon their chemical composition. The Dana classification is the best known of this type. This is based upon groups of minerals with common anions or anion groups. With the exception of the Native Elements, the other minerals are put into subdivisions like: Silicates, Carbonates, Phosphates, and so forth. If you study mineralogy in a formal (academic) setting this is the type of classification that will be covered. For the hobby collector, I feel that this type of classification is limiting.

For the average mineral collector, or rockhound with a leaning toward minerals, a classification based on chemistry is of little use. This is especially true if you are interested in collecting your own specimens. Classifications based on size are also of little use, unless you are looking at a specific class of AFMS show competition. Size tells you nothing about the minerals themselves, except perhaps the maximum size one particular crystal grew. [There are other reasons to size limit collections which are discussed elsewhere].

A classification based on mineral shape is possible. Most minerals exhibit crystals that fall into one of the main Crystallographic Systems: Orthorhombic, Tetragonal, Hexagonal, and so forth. These are based upon the arrangement of molecules within the crystals. That arrangement is based on the chemical composition of the mineral, modified by the conditions (Temperature, Pressure, Ph, Eh, etc.) at the time of crystal formation. To do a "pure" collection of this type would be much more difficult than one based on chemistry. Also the conditions of formation, for the various crystallographic systems, does not separate the minerals into the types of geologic settings that you can collect them from. This does not completely eliminate collections based on shape. A collection of mineral specimens exhibiting a specific form, such as a cube or octahedron, could make a striking exhibit and be a lot of fun to build.

In my opinion, the best type of classification for the hobby collector of minerals is one modified from the geologists in the mining industry. This is, in part, appropriate because many of the mineral specimens come from mining areas.

This unofficial classification is not strict, but is useful. The groups of minerals are as follows:

1. Non-Sedimentary Rock Forming Minerals: These are the minerals

found in igneous and metamorphic rocks where the crystals have had time to grow to sufficient size to interest the collector. The minerals in this group include all those that were formed at high temperatures and pressures, usually at great depth below the Earth's crust. The most commonly known of these minerals are: most quartz, feldspars, garnets, micas, tourmaline, beryls, aquamarines, and topaz. Most of these minerals fall under the silicate group if classified by chemistry. Many of the gem minerals fall under this group.

2. Primary Ore and Gangue Minerals (or the minerals formed by heated solutions moving through cooler rocks): The Primary ore minerals include most of the metallic minerals such as: pyrite, galena, chalcopyrite, stibnite, sphalerite, and some forms of hematite. The Primary ore minerals also include native gold. The Primary Gangue minerals include fluorite, some barites, rhodochrosite, some calcites, some quartz, and a variety of less common minerals. In mining terminology these minerals are called "hypogene".

3. Secondary Ore and Gangue Minerals (or the minerals formed by cooler surface waters moving downward): These minerals are formed by modification of the Primary Ore and Gangue minerals so there will be some duplication of mineral species (especially the metallic minerals, calcite, and barite). In many deposits, especially those with Primary Ore minerals containing copper, the Secondary minerals are strikingly beautiful. These minerals include: azurite, malachite, smithsonite, wulfenite, pyromorphite, and vanadinite. Calcite, barite, a minor amount of quartz, and other similar minerals are also found. These minerals are called "supergene" in mining terminology.

4. Sedimentary and other lower temperature minerals: These are minerals formed by waters moving through sedimentary and volcanic rocks which have low temperatures. The main minerals found are calcite, gypsum, zeolites (some may not be low temperature), some pyrite, marcasite, some barite, and some quartz.

5. Other minerals: Included in these are volcanic vent and hot spring deposits of sulfur crystals. Also included are any minerals that do not fit into one of the classes above.

ON ALBITE?

Albite? (present) Albit? (past) Albitten? (past participle)

MEMBERSHIP REPORT

REINSTATEMENTS

Ed and Connie Whyrick, Aaron, Adam
3940 Washington
Lincoln, NE 68506 483-1737

Bob Fixter
1805 Sumner
Lincoln, NE 68502 476-1885

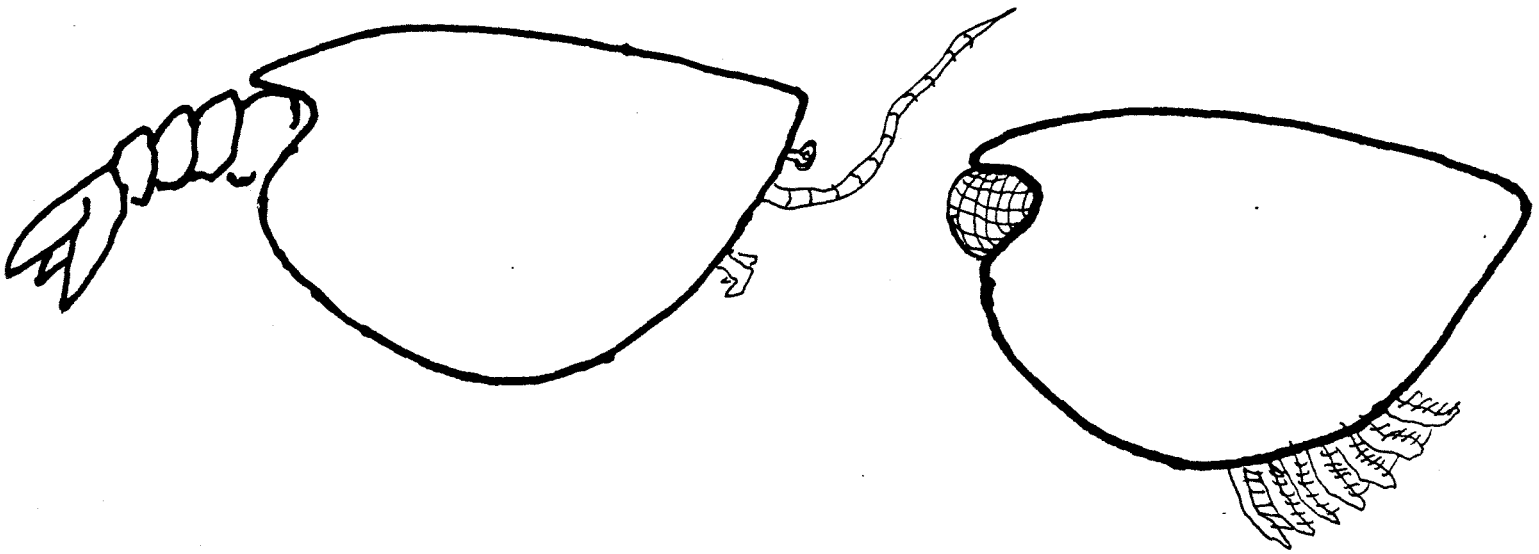
NEW MEMBERS

David and Catherin Sellmyer
2700 Rathbone Rd.,
Lincoln, NE 68502 489-6496

Bill and Betty White
105 South Oxford
Independence, MO 64053 (816) 461-0945

Please add the above to your Who's Who.

THE OLD AND THE NEW



The figure on the left shows how we once interpreted the fossils we formerly called phyllocaroids but now relegate to the concavicarids. The figure on the right is how the living concavicarid might have appeared. Note that the phyllocarid has an abdomen extending from the concavity whereas the the concavicarid has a large, compound eye there.

Note that phyllocarids are still recognized as a valid order, morphologically similar to the creature on the left. The fossils we once considered to be phyllocarids have been relegated to the new order. Other than the interpretation, nothing has really changed. This is an example of self-correction in science.

For several years, I have requested that the postal service issue four stamps depicting some of our early fossils. In 1974 a beautiful block of stamps showing minerals were issued. In 1989, four prehistoric animals of the mesozoic era were issued.

I still believe that stamps depicting the early, small fossils should be the next step. Common fossils such as ferns, trilobites, crinoids, ammonites and brachiopods should be considered. These could be shown in early reconstructed scenes or as a fossil remains of today.

I ask interested collectors (Stamps and Rocks) to write to the Postal Service's Citizens Stamp Advisory Committee and request that our fossil heritage be recognized.

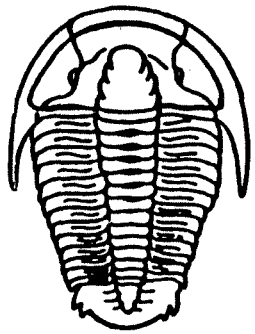
Thank you,

Tony

Tony Verdi
1225 Ledge Rd.
Hinckley, Ohio 44233

Write to:

U. S. Postal Service
Citizens Stamp Advisory Committee
Room 5670
475 L'Enfant Plaza West, SW
Washington, D.C. 20260-6352

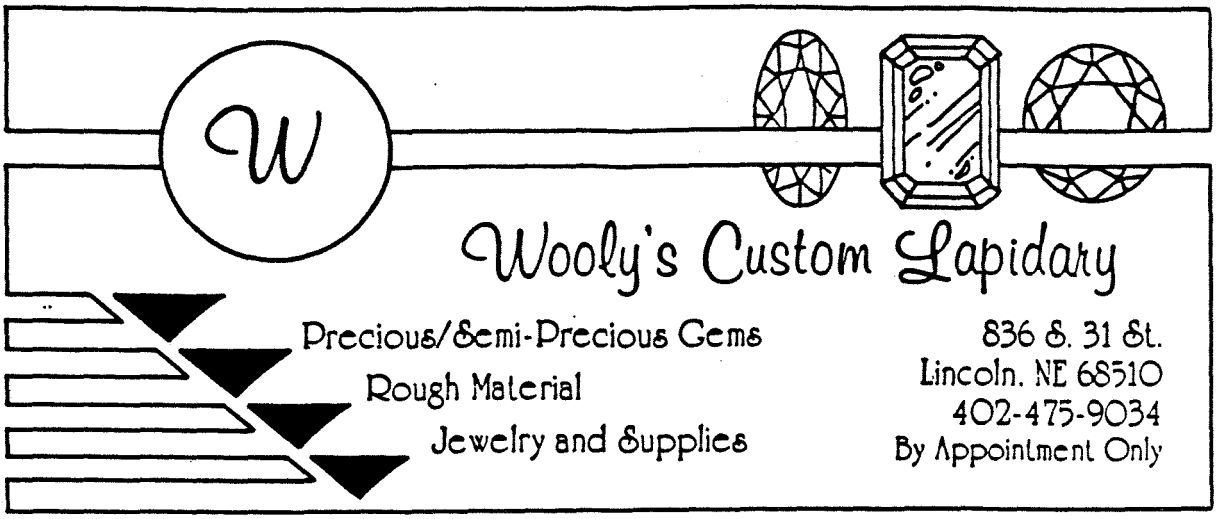


Please encourage club members and friends to write to the Citizens Stamp Advisory Committee requesting the issuance of a set of fossil stamps.

Thank you,

Tony

Tony Verdi



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H.E.L.P.

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