PRESIDENT'S MESSAGE

The time has arrived for us to carefully consider MAPS' services to its membership beyond the Quad Cities area and our participation as members of the Midwest Federation. At the March Board Meeting a study group was named to analyze the pro's and con's of MAPS-MWF relations and to provide recommendations for members' consideration. Concurrently, I have begun to assess my relationship as the MWF Paleo Committee Chair to my role as MAPS President.

Obviously, there are many tributaries which flow into the mainstream of amateur paleontological study. However, the goals of the MWF Paleo Committee are congruent with the general goals of MAPS. Personally, in my dual role, I feel that one of two things must be decided upon. One option is for MAPS to immediately begin to divorce itself from the MWF and allow each to go its own way. The other is for MAPS and MWF to join energies in order to SYSTEMATICALLY impact the amateur study of paleontology.

I would like to offer a proposal for the latter, first to MAPS leadership prior to EXPO III in order to receive feedback from members at the April meeting or through the mail. My goal is to reach some resolution on the topic at EXPO III's general membership meeting and then present our decisions to the MWF at their July Board Meeting.

A PROPOSAL FOR COOPERATION—MAPS & MWF

Introduction: As a unique multistate member of the MWF, MAPS could serve as the essential catalyst for the articulation and dissemination of programs and activities regarding amateur paleontological study throughout the midwest. This function can be closely linked between the two associations though sponsorship would rest with MAPS and its membership.

(continued page 2)

MARK YOUR CALENDARS

4 Apr  Ronald Lewis, Knox College, Lecture and Lab on crinoids. Bring your crinoids for identification

24 Apr  EXPO III -- Western Hall Gym, 25 Western Illinois University, 26 Macomb, IL
          GOOD SHOW -- LIVE AUCTION!!

23 May  Chicagoland Show --
          24 - 25 Field Trip

23 July  Midwest Federation Show--
          26 South Bend, IN

31 July  Bedford Swap, Bedford, IN
          1 Aug 2

"A LOVE OF FOSSILS BRINGS US TOGETHER"
MINUTES OF THE MEETING—March 7

The meeting was called to order by the Vice President, Cheryl DeRosear, and last meeting’s minutes were read and approved. The treasurer reported a final balance for the month of $1,574.14.

EXPO III is bursting out all over!! See the beautiful ad about it in the March issue of The Lapidary Journal. To date 31 dealer tables and 31 feet of display have been reserved by members from 12 states. The possibility of acquiring a public address system for the live auction is being investigated. Also, volunteers will be needed to sign up for night security duty on the exposition floor.

In past meetings, the possibility of disassociating MAPS from the Midwest Federation has been raised by several members. Problems cited included the conflict between payment of family dues in MAPS, and the Federation’s insistence on per capita payment of their levy. Other questions concerned what MAPS was receiving for its money. Dues from MAPS to the Federation are paid—through December, 1981. A committee consisting of Gil Norris and Don Good was appointed to prepare a statement of the case for presentation at the May meeting.

The DeRosears will present "The Story Fossils Tell" at the Geodeland Show, March 21 and 22 in Macomb.

All renewals of membership should be submitted to: Alberta Cray, Treasurer 1125 J Avenue NW Cedar Rapids, IA 52405

Dick Johannesen gave a preview showing of the new slide show on echinoderms. Discussion of possible revisions followed.

Respectfully submitted
Dennis Sievers, Secretary

PRESIDENT’S MESSAGE, Continued

Neither MAPS nor MWF could think that they could adequately serve all of their members from one location separately. Pockets of MAPS membership are evident in every MWF state. The pockets would provide "target focal points" for outreach activities via many formats: study groups, shows, swaps, seminars, etc. These "focal points" would be linked by a common bond: MAPS, and would form a network for communication and information sharing.

Recommendations: DEVELOP A MAPS OUTREACH NETWORK

1. a task force should be formed under the leadership of MAPS to study and assess the specific program and study group needs of membership living within the MWF; especially those living 150+ miles from Rock Island.

2. pockets of MAPS membership should be identified throughout the MWF area in order to begin to plot out a network of "focal points" for potential activities accessible to local MAPS members.

3. potential services which the MWF could provide to the emerging MAPS OUTREACH NETWORK should be identified and discussed with MWF leadership; the necessary organizational linkages to effect mutual support would also need to be explored.

Discussion: MAPS OUTREACH NETWORK would look like?

It would become a family consisting of many small groups of members sharing study and collecting ideas throughout the MWF area (and later beyond) held together by leadership in two locations:

MAPS governance would be headquartered in Rock Island, IL

"focal point" locations would be guided and managed by appointed leadership living locally

Augustana College is a good example of a "focal point" to which a significant number of members can come to meet and which has an adequate meeting place and good resources to back up amateur study.

The MAPS OUTREACH NETWORK could become the most expedient system for the support of amateur study within the MWF and would not interfere with any MWF club’s activities.

(continued page 9)
ON EXPO III from Gil Norris

EXPO III officially opens at Western Hall gymnasium, University of Western Illinois, Macomb, IL at 1:00 PM, 24 April. However, doors will open for setting up at 9:00 AM, 24 April. Hours will be: Friday 1 - 9 PM, Saturday 8 - 5 PM, Sunday 9 - 1 PM.

The Buffet-style sit-together banquet is set for 6 PM Saturday, 25 April at the college Union. Sign and pay when you arrive at EXPO.

A brief business meeting will be held at Western Hall at 7:30 PM immediately after the banquet and will be followed by the Live Auction. Donations for the Live Auction from members not attending EXPO should be sent to:

Carol Osterberger
7 Q Fernwood Drive
Bolingbrook, IL 60439

You will receive a postcard of its receipt.

We will need volunteers to man the reception desk and guard the exhibition hall at night. The cost of hiring security is about $15.00 per hour so we will provide our own night guards (no one!! except the guard will be allowed on the exhibition floor outside of the above listed show hours).

Field trips can be arranged but because of problems with getting access for large groups, advance arrangements will be required. Trips will be prior to and after EXPO on a small group basis. Contact: Gil Norris
2623 - 34 Avenue Ct.
Rock Island, IL 61201
309-786-6505

for before trips. My field trips will be out of Rock Island area Tues, Wed, Thurs (April 21, 22, 23) before EXPO.

RESULTS OF MEETING OF COMMITTEE TO CONSIDER CONTINUATION OF FEDERATION AFFILIATION

When MAPS was established, it was voted to have the organization be affiliated with the Midwest and American Federation of Mineralogical Societies. During the last year or so there have been several members of our group who have questioned the value of this association. At the regular March meeting of MAPS, Gil Norris and Don Good were appointed to work on this project, in order that a consensus vote might be taken at the meeting during the EXPO III.

REASONS FOR CONTINUING FED. AFFILIATION

1. Some advertisement for MAPS when we participate in AFMS & MWF activities.

2. MAPS may have greater credibility, whereas it operates within the jurisdiction of the Federations.

3. MAPS, as a member of the Federations, meets the eligibility requirements for its members to enter competition in the regional and national shows.

4. MAPS could have input in determining more realistic rules for competitive display.

REASONS FOR DISCONTINUING FED. AFFILIATION

1. The cost of dues ($.50 for each adult member) may become prohibitive, whereas our higher priorities of: A Conducting the National Fossil Exposition, B: Publishing the MAPS DIGEST, and C: Developing educational programs are all expensive ventures.

2. There is the possibility of administrative problems. For example, members living in Texas would still be required to operate within the guidelines of the Midwest Federation.

3. The dues structure is unfair. Nearly 30% of our members live outside the MWF boundary, must pay dues, but receive no benefits.

4. Although attempts have been made on 3 occasions to compromise our differences with the Midwest Federation, it has been to no avail—we being given the alternative of complying or getting out.

Gilbert Norris 3-23-81
Donald L. Good 3-23-81

What beats the Kentucky Derby? EXPO!!
HELP HELP HELP

Once again as EXPO III rolls around we are asking for help. Those of you who come early can assist in setting up tables and doing some of the other small jobs that are required to put the EXPO in motion.

Doug Johnson is in charge of security and will need volunteers to guard the show area Friday and Saturday night in two hour shifts.

Allyn Adams is in charge of the information desk and needs volunteers for Friday, Saturday, and Sunday to assist at the desk in two hour shifts.

Please sign up to help: (1) at the regular April meeting or (2) at the EXPO Information Desk. Allyn Adams—

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UNCLE MAPS WANTS YOU!!

We need you to serve guard duty on April 24th and 25th at MAPS EXPO III. Friday night there will be six - two hour shifts (9 p.m. - 9 a.m.) and on Saturday five - two hour shifts (11 p.m. - 9 a.m.). We will need eleven volunteers by the April meeting.

A sign up sheet will be available at the April meeting or contact Doug Johnson at Box 184, Donnellson, IA 52625, phone 319-835-5957. Doug Johnson—

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FOLLOW THE YELLOW BRICK ROAD

There's a bit of wizzardry coming up—and that's a fact! Go pick out your very most favorite fossil. You already know every detail, I know. But look at it again. Not the finest mind in the Universe could have created that magnificent, awesome piece of rock. If you were lucky enough to have found it yourself, then in addition to the spectacular in front of you, you know, too, about the environment in which it was preserved. Only a Power mightier than any of us could have designed it and then preserved it for lucky you to find.

In a few days there will be a gathering in a little town, in one of the plains states. Doesn't matter which yellow brick road you take—67, 136, United—they all lead to "the wonderful things He duz".

Cheryl DeRosear is beaming again, 400 feet of space already spoken for and a month to go. Just run into any MAPS member anywhere and the conversation immediately switches to friends, fossils and fellowship—synonym for EXPO III.

It's time to: Dust off your suitcase, close out your Fossil Savings Club Plan at the bank (but don't forget to make the first deposit for EXPO IV), wrap up your treasures from the seas, put your NAME TAG into your suitcase, throw away your troubles, (you can stop fantasizing for awhile, too) because what's about to happen is a dream come true. April 24, hurry up!! It's better'n an ice cream cone to a 5 year old, an 8 lb. walleyed pike to a fisherman, a first date to a 14 year old, creamed new peas and potatoes, a ride on the roller coaster, a new outfit—what more can I say?

Follow The Yellow Brick Road, Follow The Yellow Brick Road!!

*****
AN INTRODUCTION TO THE CHAROPHYTES

submitted by John J. Chiment
Resident Research Associate
Paleontological Research Institution
1259 Trumansburg Road, Ithaca, NY 14850

As we drive through the country in early spring our thoughts turn easily to birds and flowers. Everything is so full of color that we overlook the pale green, matty growth just starting to clog the drainage ditches and cover the roadside ponds. Without beautiful flower or fragrant scent, these branching mats of vegetation are the Charophytes. On closer inspection we may detect their dark fruits the seed-like oogonia, looking like ground pepper on a plate of grated cabbage. Closer still and we discover these fruits are actively secreting a limey carbonate, producing a durable nut often incorporated into lucustrine sediments and, occasionally, into the fossil record.

Fossil chara (an informal term applied to fossil oogonia and the name of the modern genus, Chara) are small, usually about 1 or 2 millimeter in diameter. When well preserved they are spherical, composed of 5 spiral cells occasionally ornamented and augmented by other, smaller structures.

While their appearance is distinctive, they look enough like so many other things to have caused considerable problems in their classification. When first described in 1785, fossil oogonia were regarded as a kind of echinoderm. Lamark subsequently considered them to be mollusks and it was not until 1812 that Leman recognized their similarity to the female reproductive spore of the modern charophytes. Today they are known to be plants and are often allied with the algae. Their relationships with other plant groups is a topic of current study.

Chara are known from Silurian through Recent, are particularly abundant in Eocene and Oligocene sediments, and, until quite recently, were thought to be solid indicators of freshwater lake environments. Studies of ephemeral salt lakes in the Australian desert have shown, however, that modern charophytes can grow in brine situations and some paleo-environmental interpretations may need to be revised. Fossil charophytes are very rare in marine rocks and no modern representative of the group is marine.

The best places to find chara are calcareous shales and limestones laid down in fresh water. Well preserved specimens, both oogonia and branching stems, often occur in great abundance in ancient lake beds—they seem to have dominated these environments in much the same way that their modern relatives crowd out all competitors. Such classic concentrations of chara, however, rarely preserve other kinds of fossil organisms and these paleo-monocultures are of diminished interest in ecologic and stratigraphic studies. Less common, but more interesting, are chara preserved in channel sandstones. The loosely packed sand and clay sediments of ancient streams preserve not only the remains of chara, but terrestrial gastropods and freshwater mollusks, fish, reptiles, and mammals. Coordinated studies of this varied fossil flora and fauna can yield a fairly detailed picture of an ancient environment.

Collecting such small fossils (including chara, isolated teeth of early mammals, vertebrae of frogs, scales of fish, smaller gastropods) requires a bit of time,
but no very special equipment. One walks the badlands looking for some of the larger, eye-catching fossil elements—jet black gar scales are easy to spot in the Late Cretaceous and Early Cenozoic deposits of the western U.S. Once a rich area is located several burlap bags of the fossiliferous matrix are collected and taken to a source of water. With the rancher's permission, cattle ponds are an ideal spot. 55 gallon drums, old wash tubs, just about anything will do, however. The matrix is allowed to soak—usually overnight—in hopes that the clays present in the sample will swell and that the sandstone will crumble, freeing any fossils. In some cases, of course, the matrix is resistant to this treatment and must be taken back to the lab for more specialized treatment. If one is lucky enough to have an obliging matrix, the disaggregated much can now be scooped onto a screen. Gentle washing with a hose will send the small sand and clay particles through the screen leaving a concentrate often only a small fraction of the original mass. When this is dry it can be spread out onto a white plate and examined for fossils. In this procedure two items are of the greatest importance: 1) The locality from which the matrix was collected must be carefully recorded and plotted on the field map. One will not know which localities are worth a second visit until the samples have been screened and, by then, memory may be rather hazy. 2) The size of the screen used to segregate the sample must be recorded. Window screen is excellent as it will hold most chara and vertebrate fossils. Finer screens are available, but are a necessity only when looking for foraminifers (single-celled marine organisms). Screens with large holes will allow you to process matrix more quickly, but will lose most chara and many smaller mammal teeth.

My own investigations center around a series of channel deposits which lie close to the boundary of Mesozoic and Cenozoic rocks in eastern Montana. In the early 1900's this area was extensively collected by the American Museum of Natural History and the mounted skeletons of Tyrannosaurus rex in New York, Pittsburg, and Los Angeles are all from here. For the past 10 years field crews from the University of California, Berkeley have been concentrating on the smaller animals which lived between the toes of these monsters. In order to understand the history of these smaller reptiles and mammals it is necessary to understand the superpositional sequence of many fossiliferous localities separated from one another by several miles. Most importantly, one needs to know the precise formation and unit from which each sample is collected. We hope to be able to do this by studying the diversity of the ubiquitous charophyte. Chara are present, though often poorly preserved and distorted, in many of the fossil samples from this area. If we can document the fossil history of this single group we will have a clue to the temporal relationships of all the fossil localities.

In order to understand correctly the history of charophytes in this one region of space and time it is important to be aware of charophyte diversity through much longer periods of time and in distant areas. Without this sort of background the migration of species into our study area might be mistaken for in situ evolution of a new species and the mixing of sediments of different ages (as often occurs when a meandering stream cuts into a bank of older rock) might be overlooked. This use of biology to adjudicate questions of stratigraphy is the basis of bio-stratigraphy.

I would very much appreciate hearing from others with information on charophyte localities. I will be happy to process either matrix or concentrate from localities presumed to be freshwater, channel fill, or overbank and will return a sample of all materials recovered. Anyone wishing to participate in this ongoing research project and who might want more detailed collecting information should correspond with: John J. Chiment, Resident Research Associate
Paleontological Research Institution
1259 Trumansburg Road, Ithica, NY 14850

(Ed. Note—Hope you get burlap bags, 55 gallon barrels, and tubs full of matrix!!)
CRETACEOUS MARINE SEDIMENTS AND FOSSILS IN SOUTH DAKOTA

Submitted by David Jones
East Acres Park
Worthington, MN 56187

For reasons not perfectly known, but probably having to do with plate tectonics, large areas of continents sometimes buckle and sink below sea level. Every square mile of the United States has been at the bottom of the ocean at least once, and in some places several times. Early in the Cretaceous period, a little over 100 million years ago, all the region now occupied by the high plains and the Rocky Mountains began gradually to sink, as did much of the area of the Gulf States and East Coast. The Gulf of Mexico extended far north into Canada. For a time, an arm of the Arctic Ocean reached southeast to connect with this western interior sea, and North America was divided in two by open ocean. A variety of sediments accumulated on the different parts of the ocean bottom. Climate over the sea and the lands adjoining it ranged from mild-temperate to tropical. The waters swarmed with animal life.

During the last part of the Cretaceous, 65 million to 75 million years ago, tectonic forces raised the early Rocky Mountains and all the Plains region above sea level. This uplift has continued, in irregular pulses, until today. Rivers which flowed from the Rockies have cut down through the Cretaceous sea-bottom sediments. These sediments crop out extensively over the central and northern Plains States generally, and over South Dakota in particular. The bluffs of the Missouri River and its tributaries in South Dakota are the best places to collect Cretaceous marine fossils.

Just upstream from Yankton is a large lake impounded behind the Gavine Point Dam. Wave action of this lake has cut into thick outcrops of the Niobrara formation. This gray and yellow chalk sediment appears to be formed of the lime carbonate skeletons of microscopic sea creatures which accumulated on the bottom when the interior sea was at its widest extent. The absence of mud and sand shows that the nearest shore was in Utah, western Wyoming, and Montana. The environment of deposition was warm, shallow, open sea, perhaps much like that of the Bahamas and the Florida Keys of today.

At the Lewis & Clark Boy Scout Camp, on the bluffs of the Missouri, 12 miles above Yankton, fossil-hunting and study of the local geology have been a part of the nature-study program for the last few years. Each week during the summer camp season, from the middle of June to the end of July, the Scouts, adult leaders and camp staff find coquina reefs of the small oyster, Ostrea congesta, and fragments of a very large clam, *Inoceramus deformis*, weathering out of the chalk bluffs. Those who are curious and ambitious enough to split slabs of the chalk along its bedding planes find isolated fish bones and scales, usually of the large, herring-like *Portheus* species and the related *Giticus* or *Ichthyodectes*. Mandibles, gill covers, and skull plates of smaller fishes, mostly *Cimolphichthys* and *Pachyrhizodus*, turn up also in the Niobrara fauna. Teeth and bones of mosasaurs, plesiosaurs, and sea turtles sometimes come out of Niobrara chalk bluffs at the Scout camp, but these are rare.

Large aquatic reptiles abounded in the western interior sea. They all gorged themselves on fish. A plesiosaur was a reptile with the body form and paddles of a sea-lion or walrus, and a swan-like neck ending in a head like that of a python. Likely the plesiosaurs paddled around on the surface, raising the head high and looking around to see where the fish were jumping. A quick stab forward like a snake striking, and a snap of jaws full of small, sharp teeth, secured their prey.

Mosasaurs evolved from aquatic lizards. Webbed feet became secondary for propulsion to the long, sinuous, paddle-like tail. The large head had loosely-fitted bones in the skull, and the lower jaws were hinged part way back so that
the wider the mouth opened, the broader it gaped. These features made it easy for the mosasaur to swallow large prey whole, as is the case with some modern lizards and snakes. These creatures ranged in length from 10 to 35 feet, and likely had appetites to match their size. It would have been a sight to see one of them snap up a ten-foot fish and make a meal of him at one sitting.

Fossil evidence shows that mosasaurs snapped at any moving object they saw in the water. Large shells of the ammonite Placenticeras, dented by rows of punctures made by mosasaur teeth, have been found in the Pierre shale bluffs of the Cheyenne River near the towns of Wall and Scenic in western South Dakota.

The Pierre shale is the sediment lying conformably above the Niobrara formation. It is well exposed in the bluffs of the valleys of rivers which cross west-central South Dakota. The index fossils, found everywhere in these exposures, are of the clam Inoceramus and the straight-shelled ammonoid Baculites ovatus. Coll-shelled ammonoids are mostly species of Scaphites and Placenticeras. The sediment is distinct in chemistry and appearance from the Niobrara chalk. Accelerated mountain-building and vulcanism in the mountain West during the latter part of the Cretaceous resulted in a much greater proportion of silicates being deposited on the sea bottom. The dark gray color of the Pierre shale shows the presence of much partly-decomposed organic matter. Whether this unit should be explored as an "oil shale" formation might be an interesting topic of study.

The rock unit conformably above the Pierre shale is the Fox Hills formation, which is largely sand deposited just off shore at a time when the land was being tecbonically raised and the sea was draining away. This sand crops out over a wide area of northwest South Dakota. Fossils of ammonites and other marine invertebrates found in it are sometimes mingled with plant debris washed off the adjoining land.

MAPS members who find themselves in eastern South Dakota in the period of June 9 to July 25 are warmly invited to visit the Lewis and Clark Boy Scout camp, which is 12 miles west of Yankton on State Highway 50. Good Hunting to all from David Jones, Worthington, MN

(Ed. note--A typical generous invitation from hospitable, kind MAPS family member.

THE EXCHANGE
If you have the fossil requested in this column, please write or call before answering the ad. Ad to appear two times.

Wanted: Blastoids (other than Pentremites, if non-Mississippian, all the better).
Will trade: Blastoids (Devonian), assorted invertebrates. Send description and what you'd desire in trade, will send list of available material.

Dieter Gebauer, Romerhof 32, D-8940 Memmingen (Amendingen), WEST GERMANY.
Wanted to buy: Perfect fossils like trilobites, ferns in nodules from Indiana or Illinois, echinoids, cephalopods, Fox Hill ammonites and any other good and perfect fossils. Write first.

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THE WALL STREET JOURNAL, 24 February 81
"Some Investors Placing Their Trust Only in Petrified Wood and Fossils"
As an inflation hedge, diamonds don't quite cut it. But take petrified wood. Now there's an inflation hedge. "Nature isn't making petrified wood fast enough to fill demand for it."...
After gold, silver, diamonds, antiques, art and now colored gems, what next?...
"Do you want a good investment tip?" As he talks he fiddles a rock etched with the outline of a minnowlike creature.
"Fossils," he says. "There's only one way the price can go. Up."

Judy Owyang and
Paul Caponera

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EDUCATION COLUMN

There is a need for a new column in the Digest—an Education Column.

It's too big an undertaking for one person, but go down the membership and see the potential for contributors. Everyone loves all fossils but different ones of you have special choices and with it special knowledge. I'm thinking of a continued series of information. If you would like us to get a book to study along with your information, submit the title and publishing company and we will study with your leadership.

The series should be kept to one page of the Digest, per issue, continued for as long as necessary. (Probably every subject should end with the summer issue, a new subject to begin again in September.

Here's an opportunity for you to share your love and knowledge of a specific subject and while you teach, the rest of us learn.

We're ready! Who among you will initiate The Education Column?

Madelyne Lillybeck

PRESIDENT'S MESSAGE, Concluded

The MWF could support the MAPS OUTREACH NETWORK in many ways, primarily in the communications and interstate relations areas.

Conclusion: MAPS can no longer stand in two camps. We have within our group the opportunity to single-handedly impact the entire world of amateur paleontological study: First, by getting our act together in the midwest area, then by branching into other areas in the U.S. and beyond.

We need to be more systematically, cautiously, and cooperatively aggressive before our organizational strength is tapped out. I am asking that every member review the proposal, the MAPS OUTREACH NETWORK model, and our relations with the MWF very carefully. Please send your reactions to me right away in writing. We will discuss this formally at EXPO III and consider any next steps at that time.

Paul F. Caponera, President
2330 Collins Street
Blue Island, IL 60406
The Mid-America Paleontology Society (MAPS) was formed to promote popular interest in the subject of paleontology, to encourage the proper collecting, study, preparation, and display of fossil material; and to assist other individuals, groups, and institutions interested in the various aspects of paleontology. It is a non-profit society incorporated under the laws of the State of Iowa.

MAPS is affiliated with the Midwest Federation of Mineralogical and Geological Societies, and with the American Federation of Mineralogical Societies. Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

Family membership $7.00; individual membership $7.00; junior membership $5.00 (between ages 8 and 16); dealer membership (non voting $20.00).

MAPS meetings are held on the 1st Saturday of each month (2nd Saturday if inclement weather) October thru May at 2 PM in the Science Building, Augustana College, Rock Island, Illinois.

President: Paul Caponera, 2330 Collins St., Blue Island, IL 60406
1st Vice President: Cheryl DeRosear, Box 125, Donnellson, IA 52625
2nd Vice President: Tom Walsh, 501 E. 19th Ave., Coal Valley, IL 61240
Secretary: Dennis Sievers, 414 E. 9th, Davenport, IA 52803
Treasurer: Alberta Gray, 1125 J Avenue, NW, Cedar Rapids, IA 52405

CYATHOCRINITES

MID-AMERICA PALEONTOLOGY SOCIETY

Madelynne Lillybeck
MAPS DIGEST Editor
1039 - 33rd St. Ct.
Moline, IL 61265

Dated Material - Meeting Notice