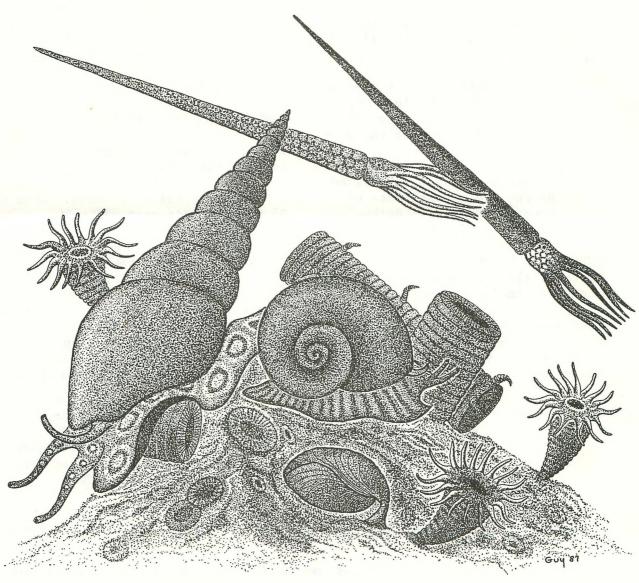


Official Publication of Mid-America Paleontology Society

Volume 11 Number 1 January, 1988



Mid-Pennsylvanian Seascape St. Louis County, Missouri

MARK YOUR CALENDARS

9 Jan MAPS MEETING -- Fryxell Museum, Augustana College, Rock Island, IL

1:00 Board Meeting.

2:00 MAPS MEETING -- Kelly Emert,
Geology Department, Monmouth
College, Monmouth, Illinois,
who was unable to speak at the
December meeting, will have a
presentation on collecting trilobites with MAPS member Tom
Johnson, summer of '87, Ceasar
Creek, Ohio.

6 Feb MAPS MEETING -- Geology Department Monmouth College, Monmouth, Illinois

1:00 Board Meeting.

2:00 MAPS MEETING -- Larry Wiedman, Prof. Geology, Geology Dept. Monmouth College, Monmouth, Il will be in charge of the program.

> Always a pleasant day hosted by the Geology students of Monmouth College. Enthusiasm reignes omnipotent!

22 Mar EXPO X -- FISHES

23 Western Illinois University,

24 Mcomb, Illinois

You ready? Already the inquiries roll in. A note from Piero, he'll be there. It will be spring. With spring comes----FISHES.

DUES ARE DUE

MAPS dues remain \$10.00 per household for 1988.

Overseas Members -- if you are having trouble receiving your DIGESTS, an alternate suggestion is an additional \$15.00, Total Dues \$25.00, for air mailing your DIGESTS. If you are satisfied with present arrangements, \$10.00 will have Surface Mail on the DIGESTS as usual.

New Library Rate \$25.00

Make all checks payable to MAPS and mail to new Treasurer Mrs. Sharon Sonnleitner 4800 Sunset Dr. Fairfax, IA 52228

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MAPS BADGES -- A NEW SOURCE

It has been awhile since Fred Farrar was able to make MAPS BADGES.

A New Source has been found. Send checks for \$5.50 (includes postage) to:

Stuart A. Leman 4030 Blackhawk Rd. Rock Island, IL 61201

Make certain you include the name of your city and state. Don't forget your Name. That may sound trite, but it has happened. The badge will have a blue background with white logo and name, city and state. Helps at EXPO!

ABOUT THE COVER -- Artist Guy Darrough, has drawn a Pennsylvanian seascape. Guy with wife, Doris, live at #47 Pomme Manor, Arnold, MO 63010. If you have attended a recent EXPO, you have probably already seen some of the Darroughs' beautiful and unusual gastropods. If you missed them, look for Guy and Doris at EXPO X.

A description by B. L. Stinchcomb, Geology Department, St. Louis Community College at Florissant Valley, 3400 Pershall Road, St. Louis, MO 63135.

SEASCAPE OF MID-PENNSYLVANIAN TIME, ST. LOUIS COUNTY MISSOURI

A diversity of mollusks, particularly gastropods, graze upon algal matts 240 Million years ago, now preserved in Pennsylvanian age sedimentsfilling a small basin forming the St. Louis County Pennsylvanian outlier. These strata, which crop out in creek beds, excavations, and road cuts in the St. Louis metropolitan area, are locally chock full of a plethora of different families, genera, and species of snails.

COVER Cont'd This diverse gastropod fauna was the basis of J. Brooks Knight's "Gastropods of the St. Louis Missouri Pennsylvanian Outlier",

Journal of Paleontology, Vols. 4-7, 1930-34, a publication where the rich diversity of late Paleozoic gastropods was first sorted out. This work predated the Treatise Of Invertebrate Paleontology, a major effort to sort out, organize and illustrate in a set of volumes, the entire record of fossil invertebrate life on earth.

Knight, a Paleontologist with the U.S. National Museum, who was originally from St. Louis, was the first to thoroughly sort out, classify, and organize the bewildering array of gastropods and gastropod-like? mollusks of the entire Paleozoic era, J. B. Knight, Paleozoic Gastropod Genotypes; Geological Society America, Special Publication 32, 1941.

ADVERTISING SECTION --

Ads \$3.50 per inch (6 lines, 1 column). Send information and checks payable to MAPS to:
Mrs. Gerry Norris, 2623 - 34th Avenue Ct., Rock Island, IL 61201 phone 309-786-6505

Can't find or afford the real thing? We make fossil reproductions that look like the real thing. We offer an easy way to start or add to a collection without suffering sticker shock. Below is a selection from our <u>Isotelus</u> collection. Add \$3.00 each item for shipping, excess refunded. Satisfaction guaranteed.

Isotelus maximus a fantastic 9½"
specimen from Ohio. RT14. \$25.00

<u>Isotelus latus</u> another large 9" specimen on matrix, Canada. RT139. \$24.00

Isotelus iowensis a very nice 4½" specimen with a 4½" negative next to it, from Missouri. RT127. \$14.00

Isotelus gigus an excellent 3½" black specimen on matrix from the Ordovician of Canada RT140. \$12.00

Lists available. Mid-Land Scientific, P.O. Box 601, Stryker, OH 43557

THANK YOU

It's been 10 very exciting years. One of Don Good's favorite words was neophyte. In the beginning that described me, all right, with a capital "N." All I'd had was one night course at The Field Museum of Nautral History, Chicago. It was there Larry Osterberger, also a member of the course, said a new fossil club was forming in Rock Island. I made the second meeting. LuckEEEEE! MAPS has grown, and me right with it. It would not have been so fast or so easy except for YOU.

When I accepted the challenge of Editor nine years ago, I worried about how I would ever get material. Dick Johannesen told me he'd give me a packet of clippings and any articles he had. He said I'd get more. I went to

The University of Iowa bookstore and bought three books and began reading. I finally had the tools of how to begin this entriguing discovery of fossils—desire, enthusiasm, books and, tho I didn't know it then, YOU. What I did know was that many of you were miles ahead of me but you accepted those early forays into reading and recording from those books. Your articles surely did come.

You are the most beautiful group of people one would ever dream of encountering. I cannot give you enough accolades. When I asked you personally for articles, not one of you ever let me down. That is an amazing statement to be able to make. Nothing is forever, though, and the time has come to welcome a new Editor. She will need that

that same support. She cannot produce a monthly publication without your help.

As for me, I will miss the mail which brings beautiful covers, interesting articles, and your many personal notes. But now I will have more time to correspond with my friends, to master Pascal, and to put my collection in order.

So Slinky Linky and I say Sayonara, a million thank yous, we'll miss you, but we'll be around. See you at EXPO.

My love

Maddy

())) ()))

LET ME INTRODUCE YOU

To your new MAPS DIGEST Editor, Sharon Sonnleitner, 4800 Sunset Dr., Fairfax, Iowa.

Sharon is married to Bill and they have two young children. Perhaps you met her last year at EXPO. She worked at the desk getting your EXPO packet ready. If you attend the Cedar Rapids Show you will see her fossil display. She can spot those illusive trilobites.

Sharon has expressed an interest in working with the DIGEST for some time. She is a quiet woman, you know the adage "still water runs deep", and comes highly recommended by those who know her well.

She will have new ideas and fresh approaches. She is eager to accept the challenge of Editor and begin to work.

A most hearty welcome to you, Sharon. You are in good hands.

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From MAPS member Richard E. Hill, 4632 East 14th St., Tucson, AA 85711 ...I just got my latest issue of the DIGEST (December) and wondered if you happened to notice that the first four sentences read nearly like poetry, and that with little modification they make interesting verse! (Jim Cocke/Terry Berkland, A TYPICAL (and Beautiful) PENNSYLVANIAN HORN CORAL, Vol. 10, Number 8, p. 3).I've enclosed an example of what I mean

Fossil corals are rarely sought, if found are commonly not collected if collected are invariably neglected. 'Tis sad but certain fact!

If beauty is skin deep then surely solitary corals must be cast aside. But beauty of the corals is not skin deep; it is "bone" deep inside.

FLUORITE - REPLACED FOSSILS -- by Alan and Debbie Goldstein, 3123 Radiance Road, Louisville, KY 40220

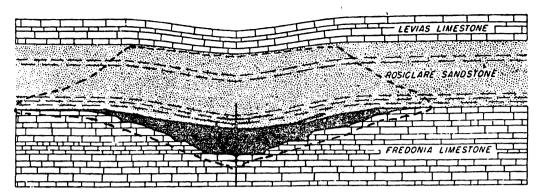
Fossils can be replaced by a variety of minerals. Calcite, aragonite, quartz, and pyrite are four common minerals. Under varying conditions other minerals can replace fossils (see Holmes, 1986).

Replacement of fossils by fluorite (calcium fluoride) is rather rare, occurring only when conditions of alteration are exact.

Fluorite occurrences in the Kentucky, Indiana Illinois area are not uncommon. The area known as "Cave in Rock:, a part of the Illinois-Kentucky fluorspar district, is an area with widespread fluorite deposits. Fluorite was deposited in vein and bedding replacement at 150° Celcius. Other areas outside of this mineral district have fluorite in pockets (scattered, though in pure limestones) that were deposited at lower temperatures 100° Celcius). In these other areas, fossil replacement has not been found.

Replacement does not occur in the scattered pockets for two major reasons. First, the pockets themselves are very rare, occurring in non-fossiliferous beds. Secondly, the creation of the pockets requires the host rock to be dissolved. This obliterates traces of the fossil(s) where the fluorite crystals form. It is not unusual for a mineralized pocket to occur in stromatoporoid or coral heads, but where mineralization occurs, the fossils are dissolved away!

Let's look at the conditions where fluorite-replaced fossils can and do occur. First, fluorite must be an abundant mineral. So abundant, in fact, that wholesale replacement of the rock strata (presumably limestone) is possible. On the other hand, too much replacement obliterates fossils. There must be a balance.



ORE BODY SYMMETRICAL ABOUT CENTRAL FISSURE

Fig. 1. Area where fluorite-replaced fossils may be found (within the dashed line). Impressions are found at the contact with the main fluorite ore body (in black) and the surrounding strata. Modified diagram after Grogan (1949). Scale 1 cm = about 3 meters.

Wall replacement in vein deposits are not favorable for fossil replacement except along the margins of the vein. Bedding replacement, where illumination. Further diligent searches are horizontal rock strata are replaced, as compared to narrow vertical veins, are better for fossil preservation (discussed below). These writers have found the best fluorite replaced fossils to occur in bedding replacement deposits in an area northwest of Cave in Rock, Illi nois, called "Spar Mountain". The location we have collected is where surface fluorite mining has been carried out. The collecting area is an active quarry and is generally off-limits to collectors. The writers have collected specimens during research and while leading university field trips.

Fluorite rises from deep within the earth along fracture and mini-fault lines and in brecciated tubes. In order for replacement of host rock to occur, a shale layer must be a cap. This dramatically slows vertical solution movement. Spreading laterally, the fluorite replaces the limestone. Vertical fractures allow replacement of calcite in overlying calcareous sandstone beds (when present). Towards the periphery of the deposit, only pure calcite tends to be replaced. This results in specific replacement of calcite fossils by fluorite and is especially prominent in the sandstone, where the quartz grains are only slightly affected (see Fig. 1).

Where silicified fossils are involved, the spaces within the fossil may be replaced with fluorite massive or crystalline.

What type of fossils can be replaced? Virtually any fossil is fair game. In the Illinois-Kentucky fluorspar district, fossils are of the middle Mississippian (Visean) age. The writer and wife have found a variety of replaced fossils, including some rare species. Calices wholly replaced and fluorite-encrusted silicified crinoids have been found. A rare Diploblastus glaber was found attached to a fluorite cube! In addition, the impression of an Orthotetes brachiopod was

found on the back of a crystalline mass. It is virtually invisible without a low angle of planned.

In drill cores, the writers have found crosssections of fossils filled with fluorite. One of the most beautiful is a brachiopod partially filled with pale blue fluorite. As fluorite takes up less volume than the calcite it replaces, voids are common.

At a vein mine dump, small fossils in limestone were found to be replaced by sphalerite in non-replaced limestone. This is another sample where only pure calcite was re-mineralized.

Although the writers have not found specimens replaced by barite, conditions of deposition after fluorite were such that the low-grade fluorite was partially replaced by barite. It is possible that fossils replaced by barite exist.

The table below lists other fluorite-replaced fossils found by the writers.

	Mostly Replaced	Partially Replaced
Blastoids	•	
Pentremites	x	x
Diploblastus	x	
Brachiopods		
Dielasma	x	
Spiriferid	x	x

	Mostly Replaced	Partially Replaced		Mostly Replaced	Partially Replaced
Brachiopods (C	ont'd)		Corals	-	-
Composita	x	x	Lithostrotian	x	x
Girtyella	x	x	Triplophyllites		x
Orthotetes	(Impression)		"Zaphrentis"		x
Bryozoans			Crinoids		
Fenestrate	x		Stems	x	x
	ntar arabaw		Calyx	x	x

Grogan, R.M. 1949. "Structure Due To Volume Shrinkage In The Bedding-Replacement Fluorspar Deposits Of Southern Illinois": Econ. Geology, v. 44, no. 7 pp. 606-616.

Holmes, F. C. 1986. 'Palaeobiological Mineral Deposition and Fossil Pseudomorphs': The Fossil Collector, Bulletin 20, October, p. 22-30.

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Please update your MEMBERSHIP DIRECTORY with the following changes. HIEDI JOHNSON, 174 Quality Hill, P.O. Box 1221, Bisbee, AA 85603

Teacher. Collector 30 years. Jamor interests Cenozoic insects, plants; gastropods. Will trade. Collecting site information. Visitors welcome. Call if in the area.

Edward, Lois & Gaila Ries, 4611 - 37th St., Lubbock, TX 79414

Please ADD The Following New Members to Your DIRECTORY

GERARD BECKER 5075 Darlene Ct Gurnee, IL 60031-

BRIAN BADE 27108 Sprague Rd Olmsted Twp, OH 44138 216-235-9797

SAMUEL J. CIURCA, JR. 48 Saranac St. Rochester, NY 14621

LARRY DECINA

Philadelphia, PA ?

WILLIAM J. DI BRINO
P. O. Box 184
Croydon, PA 19020-0932

LARRY FRENCH 1508 Park Peoria, IL 61604 309-676-1543

BUCK & ALLIE GARRAHAN 820 - 4th St. Apt 107 Havre, MT 59501 406-265-4760 Mechanic. Will not trade now. Major interest blastoids, Paleozoic invertebrates, and fossil literature. Wants to learn about fossils and meet people with the same interest

Vice President of Delaware Valley Paleo. Society of Philadelphia. Interest Miocene whale, porpoise, shark teeth, Cretaceous ammonites, trilobites. Has shark's teeth, whale material and trilobites to trade.

Factory Worker. Will not trade. Interested in fossils and geology in general. Wants to learn from others through what MAPS has to offer.

Retired. Will trade. Major interest dinosaurs & ocean fossils & fish. Has dinosaur, fish & ocean fossils. Wants to meet other people that have the same interests & learn & trade with them. Also wants to find new areas for collecting.

NATIONAL FOSSIL EXPOSITION X -- 1988

LOCATION AND TIME

EXPO X will be held at the Student Union, in the Grand Ballroom, on the campus of Western Illinois University, Macomb, Illinois. The simplest way to the site is to turn off IL 67 west on University Drive, then south to the Union. (Follow the signs.) Set-up is permitted on Friday, April 22, at 8:00 a.m.

EXPO HOURS: Friday, April 22 -- 8:00 a.m. - 7:00 p.m.

Saturday, April 23 -- 8:00 a.m. - 5:00 p.m.

Sunday, April 24 -- 8:00 a.m. - 3:00 p.m.

TRANSPORTATION There are 2 highways leading into Macomb -- IL 136, an east-west route, and IL 67, a north-south route.

No plane service to Macomb at this time, but we will help to arrange transportation from Moline, Illinois, airport if you will make ADVANCE arrangements with Mrs. Gerry Norris, 2623 - 34th Ave. Ct., Rock Island, IL 61201 (309-786-6505), or Mrs. Madelynne Lillybeck, 1039 - 33rd St. Ct., Moline, IL 61265 (309-764-0921).

LODGING Persons traveling in self-contained camping units may park on the parking lot. See Public Safety located in the Union. IDENTIFY WITH MAPS.

Macomb area code -- 309

Macomb zip code -- 61465

Starr Motel -	- Hwy 67 S and 1507 E. Jacks		Time Out Motel	- Hwy 67 North 311 University I	r.
837-4817	Single	\$21.80	837-4838	Single (Queen)	\$28.34
(per night)	2 (one bed)	25.07	(per night)	2 (one bed)	30.52
	2 (two beds)	27.25		2 (two beds)	34.88
	3 (two beds)	32.70		4 (two beds)	38.15

Holiday Inn -- 1400 N. Lafayette -- 833-5511 or 1-800-HOLIDAY

(per night)Single\$49.05Each additional\$5.30 per personDouble55.59(Possible MAPS discount)

Travel Inn -- 1414 West Jackson -- 833-4521

(per night) Single \$32.70 2 (two beds) \$43.60 2 (one bed) 38.15 4 (two beds) 43.60

Union -- Contact Gil Norris, 2623 - 34th Avenue Ct., Rock Island, IL 61201 309-786-6505. If rooms are available send payment to Tom Walsh with table reservations.

DO NOT CONTACT Western Illinois University. These rooms must be rented for both Friday and Saturday. You must request rooms early. You may wish to be on standby.

Single \$57.24 (weekend) 3 people \$89.04 (weekend)

Double 80.56 (weekend) 4 people 99.64 (weekend)

DON'T FORGET -- In all cases identify with MAPS. In all cases lodging includes tax.

PARKING

For those living in the Union, parking will be east of the Union with room permits. For others, get visitor permits from Public Safety. Parking in specified lots. After 5:00 p.m. Friday ample parking. Before 5:00 p.m.—PATIENCE NEEDED.

MEALS Meals are available in the Union. Fast food stands in the lower level.

Ice cream! There are restaurants in town and a deli bar in a grocery nearby.

EXPO REGULATIONS

Everyone is requested to make advanced registration by MARCH 31, 1988.

Mark you calendars now so you don't forget! Send the registration form found in the DIGEST with your requests for tables, display space, and Union housing reservations to: Tom Welsh, 501 East 19th Ave., Coal Valley, IL 61240 Phone 309-799-3626.

ALL TABLES WILL BE ASSIGNED. If you want a table next to someone, or specifically located, PLEASE say so when you send your money. Cost of tables is \$10.00 each for a 6' table for the weekend. Half tables may be rented for \$6.00.

The Committee insists that all materials be fossil or fossil related. Mountings, gemstones, minerals, Indian relics, etc., are not permitted.

DISPLAYS

EXPO is special because of displays. They are a gift. Take time to give everyone a glimpse into ancient epochs. When the floor becomes overwhelming take a little respite and find a quiet space among the displays. Display tables are provided at no cost—8 ft. limit. If you need more space, please contact Show Chairman Gill Norris. This is the YEAR OF THE FISHES.

ALL RESERVATIONS WILL BE ACKNOWLEDGED

OTHER ACTIVITIES

No continuous slide program this year. However, 5 slide programs will be available. Perhaps you would like a copy for yourself, or your club. You will be able to order Echinoids: Cephalopods and Mollusks; Trilobites and Crustacians; Brachiopods and Bryazoans; and/or Sponges. Gil Norris has spent many hours for your viewing pleasure. There will be a speaker Friday evening at 7:30 p.m. followed with a short business meeting. No banquet this year at membership request. A LIVE AUCTION Saturday evening. Everyone is asked to provide a quality specimen, with full data and the name of the fossil doner. Specimens can be left at the Information Desk until 3:00 p.m., Saturday. If you wish to mail a specimen, send it with pertinent information to Paul Rechten, 7405 Shields, Harvard, IL 60035. Paul will send a postal acknowledgement on receipt of specimen.

If you have any questions, please contact any of the above.

Piscataway, NY 08854

NATIONAL FOSSIL EXPO X -- REGISTRATION FORM

Please complete the form below, enclose a check payable to MAPS, and mail to: Tom Walsh, 501 East 19th Avenue, Coal Valley, IL 61240, before March 31, 1988

NAME:	: PHONE NO:			
ADDRESS:				
		city	state	zip
Yes, I will provide a d 8 ft maximum		It will require	linear f	eet of table.
I request (number) of 6 ½ table \$6.00	' tables for sell . 6 tables maxim			
Number of chairs I will	need.			
Will you attend EXPO fo	r all three days?			
I request to be next to swap table.			for	my sell/
Will you help run EXPO?				
Front desk	Fri a.m. Sat a.m. Sun a.m.	p.mF p.m.	Evening	
Elevator Friday: Sunday: 1	9-10, 10-11, 1-12, 12-1,		1-2, 2-3	
NO ONE EXCEPT THE GUARD IS ALLO	OWED ON THE SHOW I	FLOOR FOR ANY RE	ASON AFTER SHOW I	HOURS.
GORDON J. GELDHOF 7021 Hallet Shawnee, KS 66216 913-268-6722	Will trade trade.	. Has fossils f	rom the Pennsylva	anian for
STEPHEN J. KRISPIN 9809 Knollshire St. Louis, MO 63123 314-842-7712	invertebra	te paleo Mississ	1 trade. Major in the special prize in the special	cifically
WILLIAM W. MORGAN 113 Sharano Drive San Antonio, TX 78231 512-492-9163	est echino: Has some ed	ids, trilobites, chinoids from Te	y. Will trade. crinoids, ammon xas, Cretaceous; ified wood. Alrea	ites. gastropods
PATRICK M. RADOMSKY 148 Middlesex Ave		tudent. Will tr lobites, meteori	ade! Interested tes and minerals	

for trade.

extensive collection of U. Cretaceous teeth from NJ

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.

Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

Membership fee: January 1 through December 31 is \$10.00 per household. Institution fee is \$25.00. Opptional Overseas fee \$25.00.

MAPS meetings are held on the 1st Saturday of each month (2nd Saturday if inclement weather). September, October, May, July, and August meetings are scheduled field trips. The June meeting is in conjunction with the Bedford, Indiana Swap. November through April meetings are scheduled for 2 p.m. in the Science Building, Augustana College, Rock Island, Illinois. One annual International Fossil Exposition is held in the Spring.

MAPS official publication, MAPS DIGEST, is published 9 months of the year--October through June.

President: Karl Stuekerjuergen, Rt. 1, West Point, IA 52656

1st Vice President: Peggy Wallace, 290 South Grandview, Dubuque, IA 52001

2nd Vice President: Doug DeRosear, Box 125, Donnellson, IA 52625

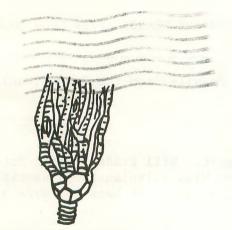
Secretary: Jo Ann Good, 410 N.W. 3rd Street, Aledo, IL 61231

Treasurer: Sharon Sonnleiter, 4800 Sunset Dr., Fairfax, IA 52228

Membership: Tom Walsh, 501 East 19th Avenue, Coal Valley, IL 61240



S. Sall



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FIRST

CYATHOCRINITES

MID-AMERICA PALEONTOLOGY SOCIETY

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

Dated Material - Meeting Notice

Allyn & Dorris Adams 612 W. 51st Street Davenport, IA 52806 12/87