

MAPS Digest



Volume 4 Number 2

December, 1980

Official Publication of the
Mid-America Paleontology Society

FROM OUR PRESIDENT

It is finalized. The National Fossil Expo III will be held at Western Hall Gym, Western Illinois University, Macomb. This building is just west of Tanner Hall. Everything will be on the ground floor. Plan now to join hundreds of your fellow members from around the world in attending this fantastic fossil activity. It will be an experience you'll never forget. I'm also asking MAPS members in the Quad City area to try to free their schedules for the week following the Expo in order that members coming from a distance can be taken collecting while here.

MAPS is a member of the Midwest and American Federation of Geological Societies. Our dues for this membership are 50¢ for each of our members, resulting in an approximate cost of \$200 for next year. Madelyne reported that the Digest work is requiring a minimum of 40 hours a month, meaning we will probably need to hire some help. Consequently, I had Paul Caponera request special consideration for extremely large clubs, maybe a maximum charge (if we double again next year, we'll need to pay \$400). Besides the dues, MAPS had a special exhibit, conducted a symposium, and gave the Federation a slide program. On November 1, both MAPS and the MWF were meeting and I ex-

plained at the MAPS meeting what we were requesting from the MWF. Those present at the MAPS meeting unanimously agreed that our request was reasonable and desirable. However, Paul Caponera reported back to me that the MWF found our request totally unacceptable. We should pay the full dues or get out. About all we get from the Federation is exposure in the Directory, making persons in other clubs aware of our existence. Any of you members who have any thoughts on this seeming dilemma, I'd be happy to hear from you. (Continued page 2)

MARK YOUR CALENDARS

- 6 Dec MAPS Meeting -- Augustana College
1:00 p.m. Board Meeting
2:00 p.m. Program - Brachiopod Identification. Bring your Brachs.
- 24 Apr NATIONAL FOSSIL EXPOSITION III
25 Western Hall Gym, Western Il-
26 linois University, Macomb, IL.
Greatest Show on Earth!! Start planning now for 3 days of as close as you'll come to Utopia.

GIVE A FOSSIL FOR CHRISTMAS

MINUTES OF THE MEETING

The regular meeting of MAPS was called to order at 2:00 p.m. November 1, 1980, by President Don Good. There were 15 members attending.

Because the slate of nominations for officers was not ready it was moved that the slate be presented in December. Moved by R. Fairbank and 2nd by B. Cray.

Doug DeRosear was appointed new chairman of the nomination committee.

Don asked Lois Rabe to become MAPS Historian. Lois asked for any news clippings, pictures, and the like.

There being no other business the meeting was adjourned and the program given by Don Good on Anatomy and Taxonomy of Brachiopods was presented.

Submitted by
Tom Miller, Secretary

NOVEMBER - DECEMBER PROGRAM

Don Good gave the November program on the Anatomy and Taxonomy (To order) of the Brachiopods. Those present expressed an interest to continue this study at the December meeting. At the next meeting we will have a lab on brachs that will prove helpful for learning to identify your species of brachs. Bring your brachs to the meeting with as much information as possible (especially location and geologic age). If you have the book THE INVERTEBRATE FOSSILS by Moore, Lalicker & Fisher, you will find it helpful to study the chapter on brachs before the program. Also, if you possess a personal copy, please bring your copy of this book with you to the meeting.

TEASER

Paleontology word scramble--

otgpradsao razboyo hardpoorat

They're not new genera, although little difference. See page 5 for answers.)

FROM OUR PRESIDENT (Continued)

I would remind you to get your 1981 dues in. It's that time of year again and I know you don't want to miss a single issue of the Digest. Many of you have already mailed your \$7.00 to Treasurer Alberta Cray. Our membership now contains about 2 dozen professional paleontologists at numerous universities and museums as well as beginning collectors. We're delighted with the broad scope of interest MAPS is enjoying.

Allyn Adams reports that many of you are requesting the slide program. The reviews after seeing it have been most positive. You may be interested to learn that a lesson on Brachiopods will soon be ready to be checked out for personal use. It will be tested at the December meeting.

Finally, I want to comment on my year as president of MAPS. It has been an exciting and enjoyable year. A sincere thank you to the many of you that helped in all sorts of ways. I do appreciate it. It would be impossible to name everyone and although it is cautioned not to be specific for fear of leaving someone out, I do want to name a few people who provided specific help--Ray Fairbank on Constitution and By-laws; Allyn Adams and Dick Johannesen on the slide program; the DeRosears, Noris', Osterbergers, Harris' Allyn Adams and Robert Kenyon for help at Expo II; the Crays for the special MAPS exhibit at the National Show; and of course Madelynn L. for being Digest Editor.

Don

(Ed. note--This will be the last issue with Don's name at the end of the letter from our President. He has been great!! While he was at the helm MAPS has grown and grown. Comments from you have been to the effect, "I love to get the Digest to see what Don has to say." Don, on the other hand loves to get the Digest to see where you, our members, are from. Working with him has been most interesting. He is a dreamer!! and then he goes into action to cause his dreams to become realities--the slide program, and a symposium. One can almost hear the wheels turn when sitting with him talking about future possibilities for MAPS. It's been an excellent year. Thanks, Don and much love from all of us.)

EUROPEAN FOSSIL TRIP -- submitted by Gil and Gerry Norris

During the month of October, 1980, I visited several European fossil collectors both MAPS members and non-MAPS members. I am not naming the collectors because I feel visits should be arranged on the basis of past trading. I have been trading with the collectors for from 6 months to 5 years.

In England I was met at the airport and driven 80 miles to the home of my friend. He had arranged very nice rooms at a reasonable price--do not expect to stay at the collector's home as most people have apartments which are too small to have guests. He then devoted the next 3 days to showing us the country and taking me collecting. From there we (Gerry and daughter, Ann, went on this trip) went to London for sightseeing but I did spend a day with another collector north of London.

From London we went to Belgium where I was met at the train by my host. As we left London we were the only tourists with 10,000 Brittons going to the last Beer Fest of the season. So the train to Dover was mobbed as was the ferry boat crossing the English channel to Belgium. The train was awash with flats of empty beer cans. The person with the empty beer can concession must be a millionaire now.

My host met me at the train and devoted the weekend to showing us Belgium. I did not collect as it was too wet but was able to trade for trilobites and make friends for future visits (visits to U.S. or again to Europe,) and trades. (We were amazed at the number of English speaking people and embarrassed at our poor attempts at other languages.)

The next week was spent sightseeing in Switzerland. (Be prepared for much sausage-type meats.) Then I went to the Munich Show which I have covered in a separate article. (Ed. note, see page 4.)

From there I visited in France where I traded. I found a very large plate of excellent shrimp called Logastrano. These are not in my collection, however, as after lunch there was nothing on the plate except broken pieces of shell.

Through Spain we were regular tourists, but in Portugal I was met at the train by a friend and collector and we drove north in the country to Figueira da Foz area where ammonites seemed to have formed some hills. The feeling of us who were hunting was that it is mighty nice. Bulldozers and road builders operate and take off the overburden. Time slips away in these hunting locations as quickly as around home--and fossils in cummulation all weigh tons.

Through all the countries of Europe where possible we visited museums of history, geology, paleontology, even to the Archives of Seville which has papers under glass signed by Christopher Columbus and George Washington and others, as well as original architectural diagrams of forts from St. Augustine, Florida, to the Phiippines, including central and South America, and along the walls--floor to ceiling, loose leaf letters stored in fragil paper files of the activities of Spain's business in a given area for a year. Some 20 files were missing from the rooms we saw.

Europe does a lovely example of displaying in depth the artifacts of man and fossil of the ages. School children use and study and trace in the Natural History Museum especially and the places have controlled swarms of busy interested young ones identified by uniform as to group. (Continued page 4.)

MUNICH SHOW

The Munich Show showed the differences between the European and American emphasis in the rock hobby. I would say the show was 25% fossil, 35% mineral and 40% jewelry. The jewelry was as finished product only--no slabs, findings or cabs were in evidence.

The hall was larger than the one used in Lincoln, NE and filled with dealers who rented the space. No displays from collectors or dealers were in the hall. Dealers were present from all over free Europe.

All fossils were very high priced. For example a Jurassic gastropod, 4 inch, excellent quality, priced at \$45 and a prime Trigonia Cretaceous bivalve at \$45. Very few brachiopods were in evidence at the show. Only one dealer had Bohemian trilobites. The large majority of the fossils were Mesozoic and Cenozoic.

Friday was for serious collectors and Saturday and Sunday open to the general public. Saturday when I was there it was impossible to get to the tables because of the number of people going through the hall.

Gil Norris

EXPO III -- ROOM INFORMATION

Room information from University Union.
Contact -- Marjorie Bradshaw
University Union
Western Illinois University
Macomb, IL 61455
309-298-1941 - Ext. 53

Single	---	\$19.50	} + 5% tax
Double	---	28.00	
3 people	--	34.00	
4 people	--	36.00	

10% discount if MAPS reserves 10 or more rooms.

They have 29 rooms total. First come first serve.

Other room information at a later date.

Don

EUROPEAN FOSSIL TRIP, Cont'd.

The high point of the trip for us has been the friendships we made. All the people we met are now our friends. They were all perfect hosts and went out of their way to make our visits memorable and opened their homes to us.

If anyone ever receives a letter saying a collector would like to visit you this is your chance to make a friend. Accept the opportunity. Do everything you can to make that person's visit with you the best you can: to see the sights of your area, to take them out digging, to introduce others in your area with similar interests, etc.

If you are travelling to Europe, bring plenty of fine trading material. There are very few fossils available before the Jurassic so what you bring will be welcome. Crinoids and trilobites trade the best but all fossils are welcome. Your host will always have something in his trading stock you want--also be generous--you cannot put a dollar sign on the friendships you make.

Fossils are the joining interest of personalities but the entering into new lives and growth of experiences and friendships by all is beyond recognizing.

We will be happy to write any one interested in going places we have been to give travelling tips on where we ate, slept, costs. One thing we tell all--travel as lightly as possible. Dark clothes show a minimum of soil and wrinkling. Clothes that layer allow for some change as well as adjust with the climates of the land you are in. Suitcases become most cumbersome and expensive (stairs in railway stations and/or parlors where there are any.)

If you thought Paleontology was just the study of ancient life, here's another way to define it:

"A methodical inquiry into the eschewal of a pedantical pedagogical approach to obfuscation."

Dr. J. E. Canright
Arizona State University

Submitted by The Konecnys

SEDIMENTARY NOTES

Rick Poropat writes from St. Louis that he planned a last trip to Indiana hunting before winter sets in. Rick often comes to our MAPS Field Trips but was not there in October. We missed you, Rick. The next field trip will be to Expo III. Some field trip. SEE YOU THERE!

Mrs. Addal Staael, Stanley, ND writes to say her hunting is limited to Burke County and glacial debris. She says she finds mostly broken and badly weathered pieces. Petrified woods are the most common fossil. She enjoys MAPS and likes reading the scientific studies so many have made of these ancient wonders. Thanks, Mrs. Staael.

Bonnie Faurote, Bowling Green, KY. Even though she finds very little time to devote to her fond hobby of fossil collecting and displaying she says she appreciates so much being a part of MAPS. She, too, is hoping to be able to attend Expo III. She has enrolled her son, a 4th grader, as a junior member. Welcome, Brandon! He has already been collecting 3 years. (He's been at it longer than I. Wow! Ed.) Brandon, talk your Mom into Expo III. There will be fossils everywhere, and I mean everywhere.

The other night the phone rang. A voice said, Madelynne? Madelynne Lillybeck? It was Judy Owyang. Not the Irish clan-- she's from the East, the Far East. Judy is very peppy and pizzazzy. In fact, when speaking of Judy one switches to superlatives. She has been to Expo I and some Midwest shows. She's a one woman dynamo. She truly loves this organization and many people in it. She is almost a protectorate of MAPS. That's good. If something seems amiss, she is on it immediately and does not stop until things are in focus again. MAPS is fortunate to call her friend. Judy has a little shop FOSSILS/ETC. on Sawtelle Blvd. in West Los Angeles. I loved visiting her last summer in her oriental environment. You coming to Expo III, Judy? I bet she will.

James and Sylvia Konecny used to live in Chicago and have retired to Prescott, AZ. Several times a year comes a letter with little articles, definitions, poetry, fillers for the Digest. He sends carbon copies to Denny's Doin's, too. I have to race to beat to get them in. I don't always win. They don't send a note, just clips. Missed them at the Pasadena Show by one day, but they are constant and keep supplying facts for all of us. Good members. What is the temperature in Arizona in April, Konecnys? say about the 24th? You could meet your Chicago friends in Macomb and maybe beat the heat. We'd all love to say "hello", too.

There's someone else you need to know about. Her name is Peggy Wallace, Dubuque, IA. She happens to be my sister. She's an English major and she gets at least one call every Digest. She listens while I read something out loud and she corrects a preposition here or construction there. It kind of spoils the Digest for her so I try to low key that a bit, but she's another behind the scenes Gibraltar. They are the special ones! Thanks, Peggy.

BC why haven't I heard from you? You read the Teaser? Guess who would be the perfect person for that monthly contribution? You could write enough at one sitting for the next 6 issues and be finished all year. When I see you I could relax because you would already have vented your teaching frustrations on the MAPS public. Think what you'd teach me--us. Do it, BC. There are colored pictures of diatoms in SCIENCE 80, December. WOW!

Some of these people I know more than others, obviously, but all of these people are part of this gorgeous MAPS family.

See BC. You can do better than that. I need you, BC.

gastropod bryozoa arthropod

TEASER ANSWERS

Nature, which governs the whole, will soon change all things which thou seest, and out of their substance will make other things, and again other things from the substance of them, in order that the world may be ever new.

DINOSAUR MAY BE HAUNTING SWAMP IN WESTERN AFRICA, SCIENTIST SAYS --

Submitted by James & Sylvia Konecny
The Arizona Republic, October 15, 1980

CHICAGO -- A mysterious elephant-size animal with claws, a long neck and tail seen in the swampy jungles of Western Africa may be a dinosaur, an expert on "hidden animals" said Tuesday.

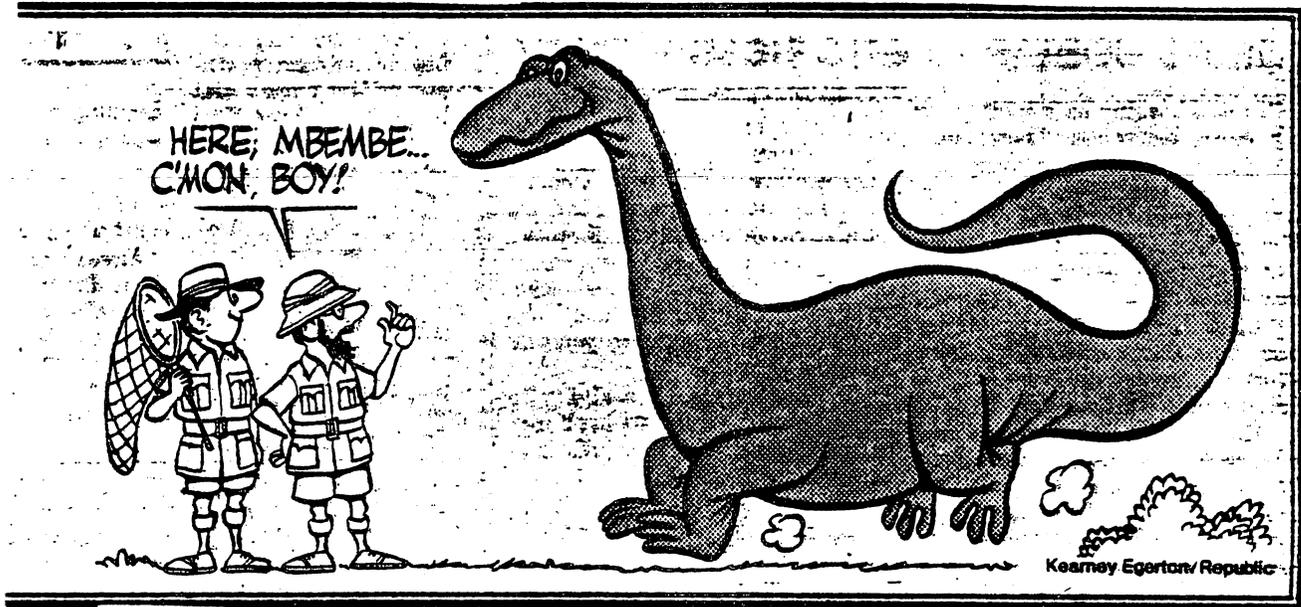
University of Chicago scientist, Roy Mackel said inhabitants of a remote section of the Congo call the swamp-dwelling beast "mokele-Mbembe" and describe it as 15 to 20 feet long.

"We don't know exactly what it is we're talking about," Mackel said. "A small dinosaur fits the picture. But we hesitate to claim that. You can make an equally good case for a large monitor lizard."

Mackel wrote a book on "hidden animals" and has been searching for Scotland's legendary Lock Ness Monster for more than a decade.

He and James Powell, a herpetologist living in Plainview, Texas, spent February traveling through swampy jungles in a largely unmapped area asking the inhabitants about Mokele-Mbembe. They plan to return next August.

Mackel and Powell did not see any of the creatures, but the natives told them the animals have smooth, brownish-gray skin, a long tail and flexible neck, and three-clawed feet as big as frying pans.



"We would show them picture books of normal animals--buffalo, elephants--and they would identify them. We would also show them pictures of reconstructions of extinct animals. When they saw a picture of the brontosaurus or of any of the sauropods, they pointed at it and called it Mokele-Mbembe

"The response cut across all ethnic, geographic, cultural and educational lines. We admit we're biased by the consistency of the description; we, think it's a real animal rather than a bogeyman type of thing."

The brontosaurus and other dinosaurs are believed to have died out 70 million years ago.

THE BUOYANCY OF THE CHAMBERED NAUTILUS CONCLUDED -- SCIENTIFIC AMERICAN, Oct. 80

In the emptied (nautilus) chambers the (cameral) liquid has been replaced by a gas that is essentially air from which most of the oxygen has been removed and into which some extra carbon dioxide has been secreted, presumably by the siphuncular cells...

Because the seawater in which the nautilus swims is in chemical equilibrium with the atmospheric gases of the surface of the ocean, and since nautilus blood is in chemical equilibrium with seawater, it is not surprising that the pressures of nitrogen and argon in the chambers filled with gas are the same as the pressures of those gases in sea-level air. In any case the gas does not contribute to the buoyancy of the animal. Actually it slightly decreases the buoyancy, because the gas after all has weight whereas a vacuum weighs nothing. The point of putting gas in a balloon is to establish the balloon's size and shape. Those functions are served in the nautilus by the rigid shell itself.

A nautilus weighs from one gram to five grams in seawater, regardless of its size. Hence the animal maintains its neutral buoyancy as it grows. It does so by keeping two rates in balance: the rate at which its growing shell and soft parts add weight and the rate at which it empties the shell's chambers of their liquid...

X-ray images of a growing nautilus show that the growth involves a sequence of processes. First the part of the mantle investing the forward part of the body at the open end of the shell secretes new shell material. The open end thus grows both longer and wider, thereby enlarging the body chamber for the growing soft parts of the animal. When the open end of the shell has got long enough, the animal moves forward in the shell, leaving a volume of cameral liquid behind. The mantle forms a seal between the animal and the walls of the body chamber. A thin layer of a slimy substance may complete the seal.

Next the posterior mantle secretes a new calcareous septum, starting at the edges of the shell and progressing inward toward the centrally located siphuncle. At the same time the siphuncle secretes its own calcareous covering...At this stage.. the newly forming septum is not yet fully thickened, and the liquid in the newly formed chamber is acting as a brace against the pressure of the surrounding seawater, which is transmitted to the septum through the body of the nautilus. If the liquid were removed before the septum were sufficiently thick, the new chamber would collapse. Moreover, the siphuncle would explode from the pressure of the blood inside it if the cameral liquid were absent while the siphuncle lacked its calcareous sheath.

When the septum is complete, the structure of the siphuncle has become the one we think is appropriate for local osmosis, and the chamber begins to empty. When the chamber is full, it contains as much as 30 milliliters, or about an ounce, of liquid. Meanwhile the next newest chamber, and sometimes the one or two before that, contains a few milliliters of liquid. The older chambers are empty. In chambers where the level of the liquid has fallen below the siphuncle the cameral liquid can nonetheless be removed. It can reach the siphuncle by capillary action along the inner surface of the shell.

The removal of liquid from the newest chamber and from the adjacent chambers adds buoyancy to the nautilus at a rate that counters the decrease in buoyancy due to the additions of weight to both the shell and the animal's tissue...Immediately after the chamber is formed the body chamber is relatively short and the volume of cameral liquid is maximal. As the body chamber lengthens, the volume of cameral liquid decreases. The cycle begins whenever a new chamber is formed.

(Continued page 8.)

THE BUOYANCY OF THE CHAMBERED NAUTILUS

The nautilus does not, however, grow indefinitely large. Like many animals it reaches a certain final size, coincident with the attainment of sexual maturity. In the nautilus the approach of maturity is marked by a reduction in the spacing between the final two or three septa. The reduction is quite variable from one animal to another, and it may reflect an ability of the nautilus to make final adjustments to its buoyancy. In any case the crowding of septa can be seen not only in the nautilus but also in the remains of many fossil chambered cephalopods. It follows that many or even all chambered cephalopods had definite limits in size and were not ever-growing.

When the final septum is complete, the nautilus enters on the final processes that act to trim its buoyancy. The open end of the shell again is enlarged and the body of the animal fills the space. Meanwhile the last of the cameral liquid is being removed from the newest of the chambers. Growth has now ended. The animal with its shell is several inches across. The shell has 30 or more compartments. The animal is thought to be at least three years old. The enlarging of the shell and the secretion of septa in it has led up to this point: the attainment of neutral buoyancy in the fully grown nautilus. The buoyancy will remain neutral if the siphuncle continues to bail out the shell against the hydrostatic pressure of the ocean. How long the animal lives is not known...

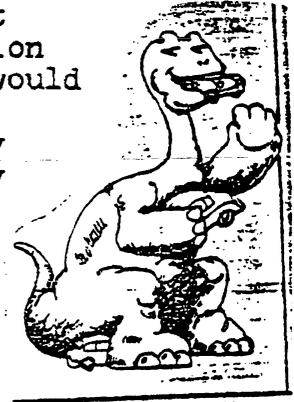
(The question?) Why then does the animal maintain its living siphuncle back to the very first chamber? Its life would be more efficient if it had developed instead a mechanism for permanently making each chamber waterproof after it has been emptied. Perhaps the part of the siphuncle that extends to the early chambers is the vestige of an organ that could flood and empty chambers for the ancestral chambered cephalopods. Those creatures, now extinct, would then have been far more mobile than the ones into which they evolved.

RESPECT FOR THE BRONTOSSAURUS

International Wildlife Digest
May - June, 1980

British dinosaur experts have a bone to pick with Audi cars. It seems that to advertise the "superior evolution" of its automobile line, the company unjustly libeled a creature no longer here to defend its good name. When comparing the dinosaur with cars other than theirs, Audi tabbed the brontosaurus the "worst designed creature of all time," going on to claim that it literally ate itself out of existence" and was "unable to venture onto dry land without collapsing under its own weight."

A British Museum dinosaur authority states that the beasts lasted 140 million years and were miracles of engineering. Existing skeletons do not support the contention that the creatures would collapse out of the water; in fact, they may have been mainly land-dwelling creatures. Global climate change, rather than gluttony, has been advanced as the most likely cause of the dinos' disappearance.



An official complaint lodged against Volkswagen, Audi's British distributor, has brought a promise from them to treat the brontosaurus with more respect in the future. They may legally have to--the Advertising Standards Authority has ruled that the dinosaur's image should not be unfairly distorted, and any wrong statements must be corrected.

Submitted by Charles Peterson
Columbia, MO

Nature shows us only surfaces but she is a million fathoms deep.

--Ralph Waldo Emerson

Please add the following to your membership list:

Dixie & John Alf
816 Whippoorwill Court
Bartlesville, OK 74003
918-333-3429

Collecting 7 years. Engineer. Will trade.
Interested in vertebrates and invertebrates.
Wants to learn more on identification of fossils
and how to prepare and preserve them.

Arsen M. Chantooni
4100 Greenwood Drive
DesMoines, IA 50312
515-255-8583

Collecting 37 years. Chemist. Maybe trade. In-
terest very diverse: Crinoid heads, trilobites,
cephalopods, microfossils, petrified wood, and
impressions. Wants to participate in field trips
and exchange information on fossils.

Bob Fife
Box 97
Eureka, UT 84628
801-

Collecting . Miner--metal. Will trade.
Most interested in trilobites. Would like to have
people stop when in Eureka.

Herman & Hilda Jacques
4 Sleendornemlaan
1810 Wemmel
Brussels, BELGIUM
649-2094

Geological Service. Interested in shark teeth
and invertebrates.

Hubert & Josee Huygens
Rue Du Roseau 45, bre 5
1180 Brussels, BELGIUM
02-375-08-78

Collecting 10 years. Official publications of EEC
Will trade. Interested in all fossils especially
vertebrates and shark teeth.

Larry Nuelle
P. O. Box 685
Rolla, MO 65401
374-341-2450

Collecting 14 years. Geologist. Will trade.
Interested in Paleozoic ammonoids & Paleozoic ech-
inoderms & Cambrian-Ordovician cephalopods.

John P. Pope
921 East Washington
Winterset, IA 50273
515-462-3828

Collecting 12 years. Electronic technician.
Will trade. Has Pennsylvanian fossils to trade and
would like Pennsylvanian fossils. Wants to learn
more about fossils.

SSG James F. Roberts
HHB 2/20 F. A.
A.P.O., NY 09358

Collecting 22 years. U. S. Army. Will not trade
at present. Interested in fossils from the Devon-
ian and Permian, but all fossils. Involved in
research on Jurrassic fossils of Germany and wish
to have a club to share information.

Ed Ward
2121 Ohio
Topeka, KS 66605
913-234-0116

Collecting 5 years. Student Kansas State University
Will trade. Interested in invertebrates especially
cephalopods. Has Paleozoic invertebrates from
KS and IA to trade. Wants contacts and to keep up
on what's going on.

Address changes for the following:

Bonnie Faurote and Brandon (son) 3246 A Spring Hollow, Bowling Green, KY 42101
Eric Achterberg 602 Terrace Lake Drive, Columbus, IN 47201
Robert D. Hubbard 720 Poplar Street, Gas City, IN 46933

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.

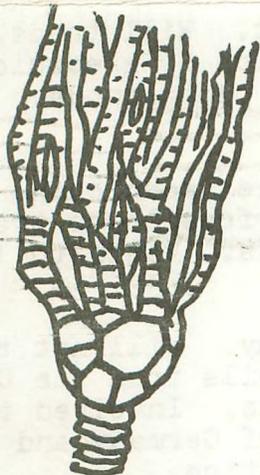
President: Don Good, 410 NW 3rd Street, Aledo, IL 61231

Vice President: Wallace Harris, 325 E. Franklin, Macomb, IL 61455

Secretary: Tom Miller, 3219 West Locust St., Davenport, IA 52804

Treasurer: Alberta Cray, 1125 J Avenue, NW, Cedar Rapids, IA 52405

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Coral Reefs USA 15c
Elkhorn Coral: Florida



FIRST CLASS MAIL

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612 W. 51st St.
Davenport, IA 52806

CYATHOCRINITES

MID-AMERICA PALEONTOLOGY SOCIETY

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MAPS DIGEST Editor
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Moline, IL 61265

Dated Material - Meeting Notice