

M.A.P.S. *Digest*

Official Publication of
Mid-America Paleontology Society

Volume 19 Number 3
March, 1996



A LOVE OF FOSSILS BRINGS US TOGETHER

MARK YOUR CALENDARS**12 APR 1996 MAPS NATIONAL FOSSIL
13 EXPOSITION XVIII—BRACHIOPODS
14**

Fri., Apr. 12: 8am - 5:30pm
Sat., Apr. 13: 8am - 5pm
Sun., Apr. 14: 8am - 3pm

**14 JUL MAPS FIELD TRIP, POTLUCK PICNIC
AND MEETING**

At Karl Stuekerjuergen's, 1503
265th Ave, West Point, IA 52656
(319) 837-6690

10:00 - 1:00 Field trip to
Burlington Formation near West
Point: Crinoids, Blastoids, and
Brachiopods

1:00 Potluck Picnic

Board & General Meeting
combined, following picnic.

**7 APR 1996 DINOFEET II, ARIZONA STATE
UNIVERSITY, PHOENIX, AZ.
21**

Contact: Don Wolberg
(202)720-7178 OR Ed Stump
(606)965-5081

**20 APR CINCINNATI FOSSIL FESTIVAL,
21 CINCINNATI MUSEUM CENTER IN UNION
TERMINAL**

Sat. a.m.: Recreation of city's
life 450 MYA by experts from
all over U.S.
Sat. p.m.: Displays and
identification.
Sun.: Field trips.

Contact: Nigel Hughes at 513-345-
8500 or Nigel.Hughes @uc.edu.

28 SEP FALLS FOSSIL FESTIVAL, FALLS OF
29 THE OHIO STATE PARK, CLARKSVILLE,
IN.

Sat.: "Rare Fossils-I" by Charles
Oldham.

"Rare Fossils-II" by Larry
Osterberger

"Rebuilding Ancient Ecosystems"
by Dr. David Meyer

"Trilobites: Curious Creatures
of the Ancient Sea" by Tom
Johnson

Sun.: Fossil Collecting Workshop
"Those Fabulous Crawfordsville
Crinoids!" by Bob Howell

Are your dues due? You can tell by checking your mailing label. The top line gives the expiration date in the form of year followed by month--96/03 means 1996/Mar. Dues cover the issue of the Digest for the month in which they expire.

We do not send notices but will let you know if you are overdue by highlighting your mailing label on your Digest. We carry overdues for two months before dropping them from our mailing list.

Please include your due date and name exactly as it appears on your mailing label--or include a label.

Dues are \$20 per U.S./Canadian household per year. Overseas members may choose the \$20 fee to receive the Digest by surface mail or a \$30 fee to receive it by air mail. (Please send a check drawn on a United States bank in US funds; US currency; a money order; or a check drawn on an International bank in your currency.) Library/Institution fee is \$25.

Make checks payable to MAPS and mail to:
Sharon Sonneleitner, Treas.
4800 Sunset Dr. SW
Cedar Rapids, IA 52404

ABOUT THE COVER

This month's cover photo of an Arachnid (ventral view) was sent by Walter H. Leitz, Wilmington, Illinois. Walter found the 280 to 350 million year old spider years ago at Mazon Creek. The photo is scheduled to be on the cover of a book to honor Dr. Eugene Richardson (deceased).

EXPO XVIII—BRACHIOPODS

EXPO is fast approaching now, and it will be only a short time after you receive this *Digest* that we will be seeing many of you the show. Hope you're all ready. We are.

All tables are taken and 42' of display space is spoken for, so this EXPO promises to be another good show. If your plans need to change and you no want or need all of the table space you have reserved, please let Karl Stuekerjuergen know, since there are always people on the waiting list.

Friday's keynote speaker, Tom Dutro, is presently in Taiwan, and we look forward to his address on brachiopods.

Saturday's live auction is always a good time. Remember that each dealer is requested to donate a specimen or specimens equal in value to the cost of his/her table(s). Proceeds go to the Paleontological Society for scholarships.

The next *Digest* is the issue on brachiopods that will come out at EXPO. The next *regular* issue is the May/June issue, which you can expect in early June.

SEDIMENTARY NOTES

Yvonne Albi, Playa del Rey, California, wrote that she went to see the Webb School Museum of Paleontology near Pamon. She says it has the largest collection of fossil tracks on display in the U.S. and was very well done.

Walter Lietz, who sent this month's cover photo, is a long-time collector of the Mazon Creek, Illinois, nodules, according to a 1993 article in *Cache* magazine. He opens many of the concretions by freezing them in the freezer or in buckets of water and then whacking them with a hammer. Like many fossil-aficionados, he has a room filled with fossils.

CHARLES ASHER PASSES AWAY

MAPS charter member Charles Asher died September 2 in Peoria, Illinois, at age 84. Once active in MAPS, he had been in ill health recently. His wife, Helen, also a charter member of MAPS, sent his obituary recently, saying she has not been well lately. Our heart-felt condolences to her and her family.

CINCINNATI FOSSIL FESTIVAL

from Dry Dredgers, Greg Hand, ed.

...The Cincinnati Fossil Festival will be held April 20 and April 21, celebrating Cincinnati's unique fossil heritage. Most events—including the Tri-Cities Paleo Conference hosted by UC, will be held at the Cincinnati Museum Center in Union Terminal.

On Saturday, April 20, experts from all over the country and beyond will recreate the city's life and times 450 million years ago. The presentations will be aimed at complete beginners.

Bring your fossils for identification by the world's leading experts. This is a once-in-a-lifetime opportunity to see some of the best private collections of Cincinnati fossils. Local amateur collectors will display the pick of their collections...

Sunday, April 21, will be devoted to field trips. Collect your own fossils and get them identified by joining on-site guides at some of the best sites for finding fossils in the Cincinnati region. Learn useful collecting tips from amateur and professional collectors. Three sites will be open, each staffed from 10 AM to 4 PM with people eager to identify your finds and answer your fossil questions...

In addition to the field trip program, the Karl E. Limper Geology Museum at Miami University has agreed to a special opening from 10 AM to 4 PM...

See Calendar for contact. (ed.)

THE TOOLS AND MATERIALS FOR THE PREPARATION OF MARINE CONCRETIONS

by Johnathan M. Campbell

from *Rocky Mountain Federation News*, January 1996, via *PaleoDiscovery*, Doug Hanson, ed.

With the introduction of the air scribe pneumatic impact tools, many preparators do not use chisels as much as they should. It is becoming a lost art because of this. With a good sharp 1/16 inch chisel it is possible to remove matrix faster and with precision equal to that of the pneumatic tool, but it takes practice! Because of the amount of time required to master the basic chisel technique, the chisel technique has fallen by the wayside. The air scribe type tool has become the choice over the chisel because it can be mastered in a few minutes by the average person.

Do not get me wrong! The air scribe is a tool no preparator should be without. But when it comes to working out fossils from a concretion, the chisel and hammer should be the first line of attack. Use the air scribe for the fine details, after you have used the chisel to get the fossils exposed. The chisel is more flexible in its use, and it is tragic that the chisel is being forsaken for the Pneumatic air scribes. If you have ever seen some of the ammonites that were prepped before the invention of the air scribes, you would understand why I consider the use of the hammer and chisel an art.

With practice it is possible to work the major fossil types out of a concretion with a small chisel within a few hours. This is generally done by completely removing all matrix from the fossil so that it becomes completely loose, or by removing the matrix surrounding the fossil and leaving it attached to the core of the concretion. Specimens completely removed from the matrix are better for study, while specimens left attached to the core make good display specimens. It may be necessary to sacrifice one fossil to save another; in time your skill and judgment will let you know what to forsake to save the better specimen!

It is all but impossible to buy 1/8 inch or smaller chisels at the local hardware store, so it is necessary to grind your own chisels from pin punches. For about five dollars you can get a good hardened steel

pin punch that will last for years with proper care. When grinding the point, it is important that it does not get overheated. If this happens, the metal will become soft and will dull much faster. Once a good chisel point is achieved on the grinding wheel, it is possible to keep it sharp with just a whet stone. I also recommend having two other sizes of chisels: one that is 1/8 inch for doing rough removal of the matrix and one for very detailed work. A straight sharpened dental pick works wonders; use it just like it was a chisel.

It may be advantageous to use a larger chisel, around 1 inch or so, to first open up some concretions. It can help in the opening of concretions that contain one single fossil in the middle. Place the chisel against the side of the concretion and give a good blow with your rock hammer, working around the concretions edge until it pops open. I would recommend not using a large chisel on concretions that have many fossils in them. A good blow with a 2 to 8 pound crack hammer, depending on the size of the concretion, will usually break the rock up, along with the larger specimens inside.

Hammers are a thing of personal choice, just making sure of these things:

- That it does not produce a lot of vibration.
- Its not so big that when you strike, the concretion blows up.
- It doesn't weigh so little that you must strike with all your might to do any matrix removal.

Some types of hammers I have seen used are ball peen, leather and wood mallets, show maker hammers, tack hammer and rock hammers. I do not recommend rock hammers, for they are for rough field work and not meant to do detailed work in the laboratory.

I use a modified tack hammer. The handle is from a 22 oz. claw hammer that has been cut down so only the thickest part from the bottom of the handle is left. It is a

plastic handle, with a fiberglass core that is all but indestructible. I have drilled a 1/2 inch hole straight down the middle of the handle and poured lead into it to add weight and cut down on vibration. It feels good in my hand, it packs a good punch, but is easy to control. Its one drawback for the beginner is that the striking head is small and many misses will happen at first, but with practice it is possible to close your eyes and use it with skill.

An excellent tool for nipping away matrix is a good quality side cutter. This tool is excellent for small concretion fragments that are too small to chisel on effectively. Just nip around the edges working towards the fossil until you get it as close as you want.

I would recommend doing all of your chiseling on a softer surface, such as a sandbag. It cuts out vibrations greatly and helps keep the concretion in one spot. Also, I would recommend that you work on a surface that is a few inches above your work table. This allows you to brush chips away and keep them out of your way. I use a one-foot-square box covered with leather. Not only does it elevate my work area, it cuts down on vibration even more.

It may be to your liking that you do not wish to have any chisel marks showing when you are done working out the specimen. One easy and quick method for removing these marks is the use of a Tungsten-carbide grinding bit. Either mounted in an electric hand grinder, or a pneumatic Die Grinder. These bits are quite durable and should last for years if not abused by trying to grind fast and hard with them and burning them up.

I have tried using air hammers to open up concretions, but I have found that the crack hammer and/or chisel do just as good a job, with a lot less vibration. I would suggest not using this tool.

One tool often overlooked in the preparation of concretions is the rock saw. With a rock saw it is possible to save a great deal of time when trimming down a concretion with one primary fossil you are trying to remove. Just make sure that you do not cut so close that you cut

off any protrusions. Not only will the saw speed up the removal of the matrix, it will allow you to shape the matrix for a base that can look very good when displayed. Use a water based coolant, as a oil coolant can get into the pores of the rock, making it very difficult to get the matrix clean again.

It is a positive bet that when you first crack open a concretion, some of the specimens inside are going to get broken. While it is not always necessary to restore a broken specimen, you will want to at least glue broken pieces of the fossil back together.

There are many types of glues and fillers that can be used to repair a fossil, but the two I prefer are Super Glue and 5-Minute Epoxy. Super Glue, because it is thin, is good for gluing specimens that do not have any clearance at the break--the thicker the glue, the more space there will be between the two sides of the crack when glued. Epoxy is thick and hence will enlarge the fossil by a small amount.

Occasionally a piece will break off the fossil when the concretion is broken open and it will get destroyed or lost. This problem can manifest itself as a void in a crack or perhaps as a missing section of the aperture lip. With the 5-Minute Epoxy, it is possible to fix these problem areas, making them almost unnoticeable. This can be done by mixing up some epoxy with a little crushed matrix and or shell material and working it in to the missing area until set. It may be advantageous to leave a little extra and trim it with a sharp X-acto knife when set. With practice and experimentation, it is possible to match the epoxy to the shell very closely. I recommend doing repairs like this primarily on specimens that are going to be used for display and not ones for study.

I generally do not recommend using plaster, automotive putty or any other thick materials for invertebrates. They tend to look fake and tacky. I know. I have tried them.

Now that I have recommended some materials to use in the preparation, you can get started. Once you have the basic tools, the best thing to do is practice; hands on

is the only way to really master the techniques. I will tell you this much though. Do not use heavy blows of the hammer, ten light blows are better than one good smashing blow. Also be lenient on the glue; do not use any more than necessary. You want to be in control of the concretion, not the other way around. Do not let the hardness of the rock scare you. Your chisel is harder.

RE-DRAWING EXTINCTION CURVES

by Chris Curran, U.C. Science Writer
from *Dry Dredgers*, Nov 95, Greg Hand, ed.

Over the past 20 years, geologists have been drawing and re-drawing curves which show how global biodiversity changed throughout the history of life. In 1980, several researchers jointly published a consensus paper agreeing that long-term trends of diversification, and extinction compiled from the fossil record could be taken at face value.

During a presentation Monday, Nov. 6, at the annual meeting of the Geological Society of America, University of Cincinnati geologist Arnold Miller argued that it's time to redraw the curve once more.

Miller focused on the Ordovician Period and the six shorter epochs within it. All previous work indicated that there was a significant (three- to four-fold) increase in genus-level diversity during the Ordovician as a whole as well as a drop-off in diversity (or a small extinction event) between the two epochs known as the Arenigian and the Llanvirnian. Miller now says that extinction event probably did not happen.

Geologists for years have suspected that the global diversity picture can be muddied because of differences in the numbers of fossils preserved in different time intervals. They call this the "rock volume" problem: fewer rocks equal fewer fossils.

Various averaging techniques have been used to get a better picture of the actual diversity trends. Unfortunately, Miller said those techniques can be misleading because they do not overcome the specific problem of sample size and rock volume.

PRE-DINOSAUR FOSSILS FOUND IN ANTARCTICA
sources: *The Dispatch and the Rock Island*
(IL) *Argus*. 22 Jan 96; *Quad City Times*.
16 Jan 96.

sent by Tom Walsh and Allyn Adams

Five years after finding the first dinosaur discovered in Antarctica, Bill Hammer, chairman of the geology department at Augustana College in Rock Island, Illinois, returned to the frozen continent to find fossils of animals that are 40 million years older than the dinosaur.

The two-month, five-man expedition netted 120 specimens, a least two dozen of which have partial to complete skeletons. Hammer and his team suspect many of them are new species. The finds include carnivorous and herbivorous mammal-like reptiles and some very small amphibians that "resemble little crocodiles, but (are) in fact amphibians," according to Hammer. "I'd say we found remnants of between eight and 12 different species. Some had skulls as big as a large dog, and one was as small as a half-inch with five teeth on it."

This was quite a different find from the more than 200-million-year-old dinosaur an Augustana team led by Hammer found during the 1990-91 adventure. While that discovery received international attention, Hammer says, "These won't be as big of news in the 'real' world. But in the paleontology world, it is as big as finding the dinosaur.

The specimens are packed in containers, waiting to be shipped from Antarctica. They are expected to arrive at Augustana this spring. Then the work of preparing and identifying them will begin.

The site of the find is in a remote region 300 miles from the south pole and about 100 miles south of the area his 1990-91 team explored. The men worked in temperatures of 15 degrees below zero with winds generally under 30 mph. Because they were the first human beings to set foot on the area, they get to name some of the geographic features, another bonus of the expedition.

Hammer is already making plans to return to Antarctica. He hopes to be able to go back to the dinosaur site.

THE CRETACEOUS-TERTIARY BOUNDARY
by Donald Phillips
from NYPs Newsletter, Sept. 1994

By now, a vast amount of research and speculation has gone into the study of the narrow biostratigraphic layer that marks the great Cretaceous extinction, making it probably the most studied geological layer on earth. Most of you may be quite tired and confused by all the material in print and the media on the recently, so this article is meant as a summary of what is actually known and largely agreed upon by scientists concerning the possible causes of these extinctions, including, of course, that of the dinosaurs. Most controversy has focused on the impact of an extraterrestrial object as a/the cause.

In the early 1980's, Alvarez argued that the percentage of elements like iridium discovered in the Cretaceous/Tertiary boundary could best be explained as coming from the dust thrown up by the impact of a huge asteroid/meteor/comet, since the ratios of these elements matched those in known meteorites, but not in terrestrial rocks. It is believed, however, that the earth does contain the requisite amounts of iridium, etc., but that most are now located deep in the mantle and core, and, at present, no known viable mechanism exists to recycle this to the surface and spew it out into the atmosphere. Large composite volcanos (like Mt. St. Helens) do throw up lots of ash, but this is simply high silica material recycled from the relatively shallow crustal rocks, not from deeper mantle material. The next step was to find evidence for actual mega impacts that would be necessary to explain the widespread distribution of the iridium. Although impact craters have been identified for a long time now, only new technologies and careful large scale mapping have located such huge craters--one in northern Quebec, in the Yucatan (the most promising) and elsewhere. In fact, at this time it is widely agreed by all interested that large impacts have occurred, and that these (and smaller impacts) are the source of the iridium. It is the next step that is crucial to the extinction theory--and also the one that is least agreed upon.

In order to exterminate so much life, the impact must send vast amounts of dust/rock into the high atmosphere, where the upper atmosphere winds spread it worldwide. Like a shroud, it then blocks so much sunlight that planet-wide temperatures drop catastrophically, and most plant life is either light-starved or frozen to death. As the food chain collapses, species after species of animal also become extinct. For the scenario to work, the whole event must be relatively brief--lasting only a few months at most, or else there would be few if any survivors of the types that survive today. Problem is, many scientists question whether there would be enough dust thrown up, or whether it would spread enough to cause the event. Some have speculated that the "shroud" would consist largely of soot from the many forest fires caused by a deluge of molten rock showering down after the impact (black soot is an excellent sunblocker, by the way, even better than dust and ash, and it stays aloft longer). The problem is, all these scenarios are unproven, and being based greatly on the not-so-precise-science of climatology, may be totally wrong. Iridium from large impacts--yes; but "nuclear winters," well, maybe not! Enter the fossil record. If close study of the last Cretaceous layer indicates a rapid, unheralded extinction of life, it may bolster the asteroid extinction hypothesis; a gradual decline (fossil sequences are much longer than a few months) would work against it. All paleontologists agree that there was a gradual decline of many Mesozoic groups throughout the Cretaceous, but this took tens of millions of years. In the March issue of the *Journal of Paleontology*, a study by Mike Williams on a detailed analysis of the extinctions in the Hell Creek Formation out west indicates that there was a rapid, but not catastrophic decline, in species--in short, it occurred over a period much longer than the asteroid scenario needs for verification.

So, what is the current belief on the extinction? Still no consensus. Stay tuned!

ADVERTISING SECTION

Ads are \$5.00 per inch (6 lines x 1 column--43 spaces). Send information and checks payable to MAPS to: Mrs. Gerry Norris, 2623 34th Avenue Ct., Rock Island, IL 61201. Phone: (309) 786-6505.
This space is a \$5.00 size.

To extend currently running ads, please send request and remittance to Editor by the 15th of the month. We do not bill. Ads do not run in the EXPO issue (April). Ads up to 8 lines by 54 spaces can be printed in smaller type to fit a 1" space.

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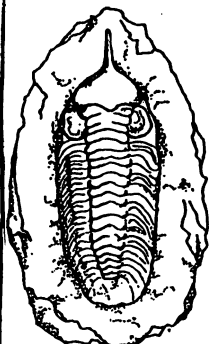
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THE FOSSIL STORE WILL BE SET UP

at The Time Out Motel, rm. 105,
for the sale of wholesale fossils
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GOOD TRADING OPPORTUNITY. Canadian, European and Australian fossils for trade, at MAPS EXPO, Friday from 10 A.M. to 5:30 P.M. For more information, write to Jean-Guy Pellerin. See Directory 1994, p. 68, for address.



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FALLS OF THE OHIO STATE PARK FOSSIL FESTIVAL by Alan Goldstein Naturalist and Festival Coordinator

The Falls of the Ohio State Park, in conjunction with the Clarksville Riverfront Foundation, is holding our second **Falls Fossil Festival** on September 28 and 29. It will feature dealers and educational programs, guided hikes on the fossil beds, fossil collecting pile, courtesy of a local quarry (collecting is not permitted on the fossil beds). Vendors offering fossils, minerals, rocks, books, and craft items will be set up on the park grounds. Over 2,500 visitors from around the Midwestern United States attended our first festival.

Funds raised by vendor space goes toward purchasing material for park education programs.

The Falls of the Ohio feature Middle Devonian limestone beds that contain nearly 600 species of fossils. Observe horn corals bigger than your arm and colonial corals 3-12 feet in diameter. Layers of rock containing thousands of brachiopods per cubic foot may be seen. Be sure to bring your camera! Our 16,000 square foot Interpretive Center sits above the fossil beds and contains exhibits that includes a diorama recreating the Silurian and Devonian seas of the area, and many other aspects of the geological history. An award-winning movie recreates the "living" Devonian coral reef. We are currently developing aquariums and exhibits that will relate a modern coral reef to the ancient fossil beds at the Falls.

Several speakers will give presentations that relate to fossils. If you have questions, please contact:

Alan Goldstein
P.O. Box 1327
Jeffersonville, IN 47131-1317
Fax: (812) 280-7110
E-mail: Deepskyspy@aol.com

Please ADD the Following NEW OR REJOINING MEMBERS to Your Directory:

Fred & Alice Barber
396 Stanley St.
N. Tonawanda NY 14102

R.N./Physician's Assistant. Major interest in all fossils.

Robert Freymuller
2501 Dip Cove
Austin TX 78704
512-443-8053

Petroleum Geologist. Will trade. Major interest fossil fish--Green River, WY--collects and prepares. Has for trade fossil fish.

Michael & Trudy Gumina
Steven & Justin
28252 Maplewood
Garden City MI 48135
313-261-9394

Carpenter/Med. Tech. Have a general interest in fossils, hunting, and collecting.

Gary Leonard
1466 Lakeview Pkwy
Villa Rica GA 30180
770-830-0802

Chemist. Member of Fossil Section of the GA Mineral Society, Atlanta. Wants to increase his knowledge about paleontology.

Tony Manatt
P.O. Box 176
DeWitt IA 52742

Quarry owner. Interested in encouraging good relations between the public and his company.

Andrew L Price
P.O. Box 8742
Lancaster PA 17604

Collecting since 1976. Major interest invertebrates, with particular interest in aurypterids and Paleozoic arthropods. Has material for trade. Wants to photograph or acquire photos of quality specimens, and literature of these fossils.

Steve & Paula Simpson
13476 W. Loran Rd.
Pearl City IL 61062
815-443-9102

Geology Instructor. Major interest Ordovician-Silurian marine invertebrates. Wants information about collecting sites and to meet other fossil freaks.

PLEASE NOTE THE FOLLOWING CHANGES OF ADDRESS OR CORRECTIONS:

Jim Broadstreet
6415 Irwin Ct.
Oakland CA 94609
510-654-3190
JIMBREET@aol.com

Kevin Burgart
& Janet Shapouri-Burgart
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Carl J. Cook
1704 Christine Dr.
St. Charles MO 63303-4014
314-949-2614

Alan & Debbie Goldstein
& Rachel
1607 Washington Blvd.
Louisville KY 40242-3539
502-426-4399
Deepskyspy@aol.com

Donald S. Johnson
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R.N. college health. 1996 collecting fossil algae, eocrinoids & trace fossils. Wild about anything pertaining to the Burgess shale; other interests as well. Wants to meet other fossil lovers; is available for collecting adventures.

S. R. Porter
16143 State Hwy 86
Saegertown PA 16433
814-724-6164

Jim Wyatt
1517 Greentree Lane
Garland TX 75042
214-494-3443
DOC.PALEO@CORVUS.COM

The **M**id-**A**merica **P**aleontology **S**ociety (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: One year from month of payment is \$20.00 per household. Institution or Library fee is \$25.00. Overseas fee is \$20.00 with Surface Mailing of DIGESTS OR \$30.00 with Air Mailing of DIGESTS. (Payments other than those stated will be pro-rated.)

MAPS meetings are held on the 2nd Saturday of October, November, January, and March and at EXPO in April. A picnic is held during the summer. October through March meetings are scheduled for 1 p.m. in Trowbridge Hall, University of Iowa, Iowa City, Iowa. One annual International Fossil Exposition is held in April.

MAPS official publication, MAPS DIGEST, is published 9 months of the year--October through April, May/June, July/August/September.

- President: Marvin Houg, 3330 44th St. NE, Cedar Rapids, IA 52402
- 1st Vice President: Dale Stout, 2237 Meadowbrook Dr. SW, Cedar Rapids, IA 52403
- 2nd Vice President: Karl Stuekerjuergen, 1503 265th Avenue, West Point, IA 52656-9029
- Secretary: Alberta Cray, 1125 J Avenue NW, Cedar Rapids, IA 52405
- Treasurer: Sharon Sonnleitner, 4800 Sunset Dr. SW, Cedar Rapids, IA 52404
- Membership: Dale Stout, 2237 Meadowbrook Dr. SE, Cedar Rapids, IA 52403

Dated Material - Meeting Notice

Mrs. Sharon Sonnleitner
 MAPS DIGEST Editor
 4800 Sunset Dr. SW
 Cedar Rapids, IA 52404

MID-AMERICA PALEONTOLOGY SOCIETY

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