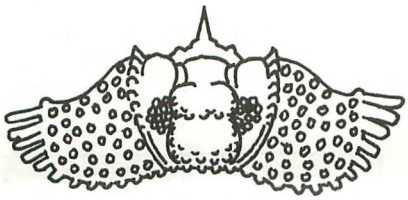
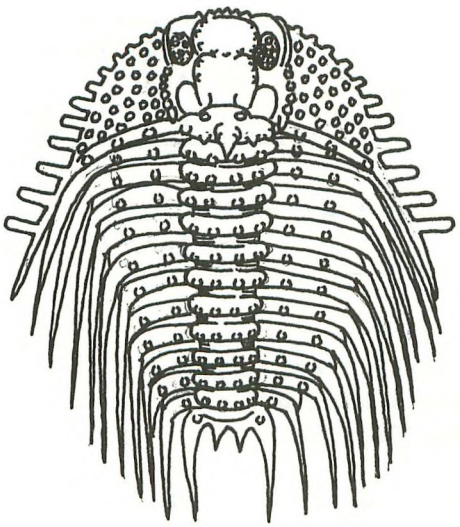
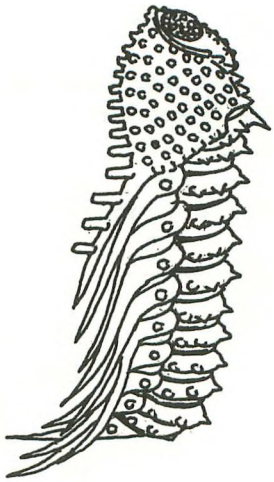
# M·A·P·S Digest

Official Publication of
Mid-America Paleontology Society

Volume 11 Number 6
June, 1988







The Odontopluerid Trilobite Leonaspis williamsi

A LOVE OF FOSSILS BRINGS US TOGETHER

# MARK YOUR CALENDARS

28 MAY
29

MAPS FIELD TRIPS to Davenport Cement Buffalo Plant and Kistler Quarry, Monmouth, IL.

Saturday: 10:00--Buffalo, IA
Meet at the Davenport Cement Buffalo Plant just east of Buffalo on Hwy 22.

Bring hard hats and safety glasses.

We will be looking in Cedar Valley Limestone for trilobites. (Doug says there also are a few crinoids and an occasional blastoid plus lots of brachs, etc., in the quarry.)

Sunday: 10:00--Monmouth, IL
Meet at the Kistler Quarry 3-4 miles north of Monmouth on Hwy 67.

We will be looking in Mississippian, Burlington Fm., for crinoids and blastoids.

You will be required to sign a waiver at both sites.

For more information, contact:
Doug DeRosear
Box 125
Donnellson, IA
(319) 835-5521

10 JUN
11

BEDFORD, IN, SWAP, 4-H Grounds.
MAPS meeting scheduled for Sat., June 11, 1988, at 2:30 p.m.

5 AUG
6
7

"The Great Dinosaur Caper," the Geology Club of San Antonio's first annual National Field Trip.

21 OCT
22
23

5th Annual "Florida Fossil Fair--The Shark," sponsored by the Bone Valley Fossil Society and the City of Mulberry.

Oct. 21: Children's Day and tentative field trip to IMC
Oct. 22: Fossil Auction and Barbeque
Oct. 23: Last day of Fair

For more information contact:
B.V.F.S. c/o Eric Kendrew
4436 Tevalo Dr.
Valrico, FL 33504

21 OCT
22
23

FOSSILMANIA VI, sponsored by the Austin and Dallas Paleo Societies

For more information see page 2 and/or contact:
Frank Crane, Show Chairman
1603 Twilight Ridge
Austin, TX 78746
ph. 512-327-4005

1989 APRIL 14, 15, 16--EXPO XI
Macomb, IL

# ABOUT THE COVER

by Mark McKinzie
Oklahoma City, OK

This month's cover drawing is of the Odontopluerid trilobite Leonaspis williamsi from White Mound, Oklahoma. This unusual trilobite is characterized by a cranidium covered with rounded tubercles, small eyes, free cheeks fringed by 13 marginal spines, and a well-developed median tubercle on the occipital ring. There are 8-9 thoracic segments, well-developed plueral spines, and a small spinose pygidium.

Beautiful specimens of this lower Devonian trilobite can be collected from the fossil Haragan formation at White Mound, Murray county, Oklahoma.

## EXPO X

EXPO X--Fishes is now history, but the thoughts of friends made and fossils displayed there will remain for a long time with those of us who had the opportunity to attend.

There were fossils and people from everywhere: beautiful fossil crabs from Italy, fabulous crinoids, nautiloids from Montana and South Dakota, trilobites from all over, bison bones, displays of microfossils by Harold Tichenor, Chicago, and a cute little fossil frog (plus a polliwog) by Dennis Kingery, Wyoming, just to mention a few.

Members and nonmembers came from Florida, California, Washington, New York and many states in between, Canada, Germany and Italy. One very new member from Germany said he just had to come when he saw the announcement of the Fishes EXPO. Some people just happened upon EXPO while they were visiting students on campus and were anxious to know when next year's show will be. Those of us who had been there before knew what to expect--and yet it's still amazing.

Madelynne Lillybeck, with Dennis Kingery's help, turned out a terrific EXPO X--FISHES Digest. Dr. Richard Lund, Garden City, New York, entertained us Friday night with his excellent presentation on the fossil sharks he has found in Montana. Saturday night's auction was a great success. I'm sure everyone left happy--and tired--on Sunday.

And now it's time to start planning for EXPO XI, which will have mammals as the theme. Madelynne has already started gathering ideas for articles for the EXPO Digest, so if you can contribute or know of someone who can, please let her know.

## THANKS, MANY THANKS

Sincerely, Ernest Hammons

Onsby and I would like to thank every member of MAPS for bestowing upon us the great honor of being nominated for the Strimple Award. Even though an Englishman was selected, we feel just the nomination was a great honor. We feel a special thank-you is in order for those who did the work of typing and forwarding many letters on our behalf.

## FOSSILMANIA VI

by Frank Crane

The Austin and Dallas Paleontological Societies are now formulating plans for Fossilmania 1988 to be held at Oakdale Park, Glen Rose, Texas, October 21 to 23.

This will be the fifth year for Fossilmania at this location and it still features the traditional Friday night potato bust followed by the barbeque and auction on Saturday night. (Participants in Fossilmania are asked to donate one item for the auction.)

Accommodations include cabins, RV hookups and tent sites on location at Oakdale Park or the local motel in Glen Rose or the facilities at Dinosaur Valley State Park also in Glen Rose [P.O. Box 396, Glen Rose, TX 76043, ph. (817) 897-4588.]

Any and all fossils and fossil-related materials are welcome and may be displayed for the weekend on six-foot tables costing $10 each. Reduced prices are available on tables for partial days. Reservations for tables and/or cabins should be made ASAP to insure your accommodations since past experience has proven that they disappear rapidly. Make your plans early and join us in 1988.

## STRIMPLE AWARD FUND

Gary Lane, President of the Paleontological Society, has suggested that MAPS members may be interested in contributing to the Paleontological Society fund that supports the Strimple Award. The present interest from the fund is sufficient to buy the plaque(s) for the awards each year. But last year it was necessary to help support travel expenses for one of the awardees, and it seems likely that it may be necessary again in the future. So the Society would like to increase the fund so that it could support some travel expenses. If you would like to contribute, send a check made out to the Paleontological Society--Strimple Fund and send to:

DR. June R. P. Ross, Treasurer
Paleontological Society
Dept. of Biology
Western Washington Univ.
Bellingham, WA 98225

# EXTINCTIONS

by Alan S. Horowitz
Geology Department
Indiana University
1005 East 10th Street
Bloomington, IN 47405

To geologists, especially paleontologists, extinctions are everyday events although they usually escape notice until brought to public attention by newspapers, magazines, or television programs or commentaries. In one sense, extinctions represent the natural course of evolution as forms contunually change in order to adapt to changing environmental conditions. However, paleontologists conduct endless debates about the quality and quantity of the fossil record with respect to gradual versus catastrophic changes as documented in the geologic record. Discussions on these matters have been with us since the beginning of modern geology in the late 18th and early 19th centuries--that is, for the past 200 years--and much ink continues to be spilled over such matters. In this short essay, I will present an overview of some of the current thinking about mass extinctions, the most spectacular of extinction events.

The problem of extinctions is intimately related to questions concerning the general geological history of fossils, such as the rate of change of the diversity of life through time. For example, how many different kinds of animals and plants are there today? How does this compare with the number of different kinds that lived in the past? How rapidly does life diversify (evolve)? How rapidly does diversity decline; that is, how rapidly do animals and plants become extinct?

In recent years these questions have been asked in conjunction with the question of whether a maximum value exists for the diversity of life. A theoretical diversity maximum is commonly discussed in terms of ecologic space. Does the present diversity of life use all available ecological space? Is there room (ecologic niches) for more species to successfully live and interact with other species?

More than 125 years ago the British geologist John Phillips published the diagram given below (Figure 1, redrawn from Phillips), which I have turned on its side and reversed so that it corresponds to the current presentation of such data. Phillips' diagram represents a generalized picture of the changes of fossil diversity through geologic time. Note that geologic time is not calculated in years but in terms of relative time based on the changes in fossil faunas and floras.

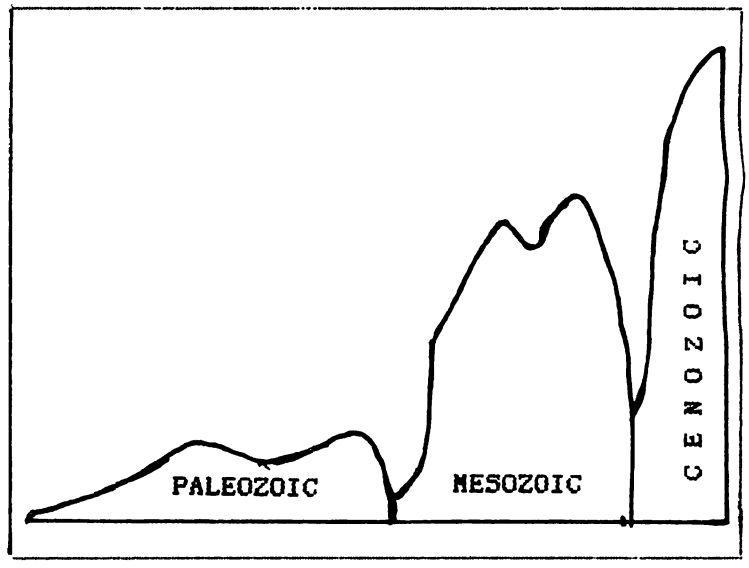



Fig. 1

Twenty years earlier, Phillips had proposed two of the three relative time terms used in his diagram. A radioactive timescale calibrated in years was not devised until early in this century after the discovery of radioactivity in 1896. Note also that only a relative scale is used to indicate changes in the diversity of life through time. Nevertheless, Phillips diagram was probably based on compilations of fossils by Bronn in 1851 or d'Orbigny in 1850 together with the knowledge that the number of fossil species

that cross the Paleozoic-Mesozoic (Permian-Triassic) and Mesozoic-Cenozoic (Cretaceous-Tertiary) boundaries is greatly reduced.

Today we refer to the summaries such as those of D. M. Raup (1976) and J. J. Sepkoski (1982) for the most current compilations of diversity. These compilations in turn are based largely on the data in the Zoological Record, which contains a yearly listing of newly named species of animals, or the Treatise on Invertebrate Paleontology, a long-running series of volumes on fossil animals that is still not complete although some earlier volumes have been revised. The publications of Raup and Sepkoski have spurred an explosion of papers on paleontological diversity patterns.

Note that Phillips' diagram shows an overall increase in diversity through geologic time, which is consistent with recent compilations. Compare, for example, Phillips'diagramwith the bar graph (Figure 2) published by Raup (1976). Even when adjusted for the effects of the volume of rocks in each geologic period, for the area of rocks now exposed at the surface of the earth for each geologic period, or for the uneven distribution of paleontological work (most paleontological studies have been based on rocks in North America and Europe), the same pattern emerges (illustrated in Signor, 1985).

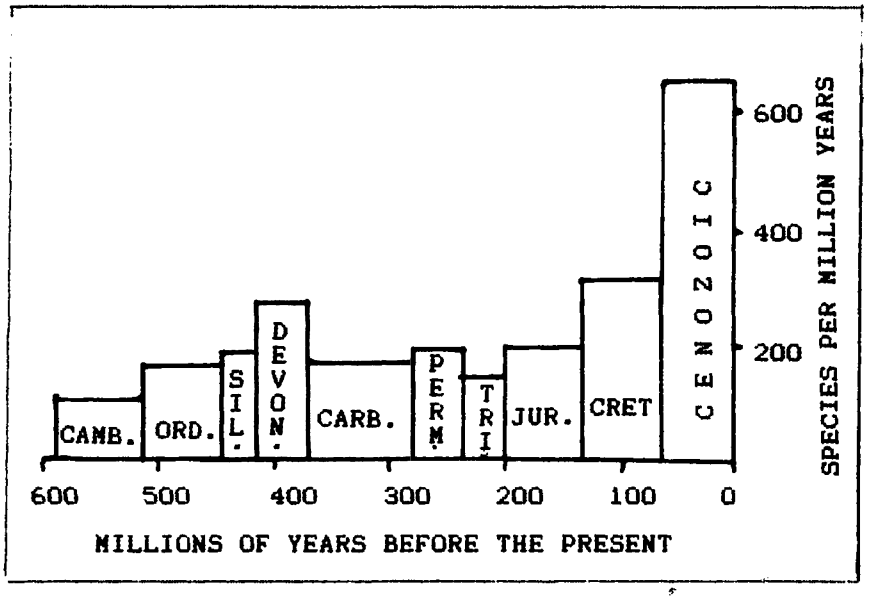



Fig. 2

A reasonable conclusion is that the number of paints and animals living at any instant has shown a general increase (interrupted by mass extinctions) through geologic time. This further suggests that ecologic or environmental space has either become more and more finely divided through geologic time (and the end of this subdivision of ecologic space does not appear to have been reached) or that life has increasingly adapted to previously unutilized or poorly untilized parts of the environment.

When examined in more detail there is a plateau of diversity reached during the Cambrian period, which is followed by a higher plateau of diversity from the Ordovician through the Permian, and finally a consistent increase from the early Triassic to the Recent. Bar graphs of the diversity for the different geologic periods do not show those significant drops in diversity that accompanied mass extinction events. Mass extinction events are more clearly indicated by showing diversity by smaller subdivisions, usually stages within periods.

The largest mass extinction apparently occurred in the late Permian. Actual species counts have not been made, but, on the basis of the numbers of families and orders of marine invertebrates that do not cross the Permian-Triassic boundary, approximately 95% of all species are believed to have become extinct during the late Permian event. A mass extinction near the end of the Devonian (at the Frasnian-Famennian series boundary) and the end Cretaceous event are believed to have caused a 50% drop in the number of species. Other proposed mass extinctions have apparently had lesser effects on the diversity of then existing life.

In North America during the Cambrian, individual evolutionary sequences, called biomeres, were terminated by extinction events that have been correlated with a withdrawal of shallow seas from the broad central continental

area. During the past century this is just one of a large number of examples for which the rise and fall of sea level relative to the continental crust of the earth has been proposed as a cause of marine extinctions. Hallam (1987), a distinguished British geologist and paleontologist, believes this is still the best explanation. The rise and fall of sea levels relative to the continental crust may be caused by periodic events in the earth's hot viscous layer (the mantle) lying below the earth's crust.

Climatic changes have been suggested by various geologists as a driving mechanism for extinctions. Glaciations are known to have occurred episodically throughout at least the last billion years of the earth's history. However, they are not sufficiently common to have coincided with all proposed mass extinction events. Less drastic climatic changes may have been a contributory cause of mass extinctions during the past 100 million years, but the evidence for climatic changes is not compelling beyond this time.

Some recent work suggests that analyses of trapped gases in contemporaneously formed minerals may provide a means of analyzing the chemical mix of gases in the atmospheres of the past, but this is still a controversial subject. Information on the abundance of atmospheric gases such as carbon dioxide would permit inferences about ancient greenhouse effects, and variations in oxygen concentrations might also be correlated with extinction events.

Two recent proposals concerning mass extinctions have received considerable publicity. The first is that mass extinctions are caused by meteorite (also called bolide) or comet impacts, and the second is that mass extinctions are periodic and occur with an interval of approximately 26 million years.

The meteorite hypothesis is not new, but the evidence for this hypothesis is new and comes from increasingly sophisticated electronic analysis of chemical elements and compounds. In particular, the abundance of the element iridium, a metal of the platinum group in the periodic table of chemical elements, is more abundant in some meteorites than it is in the sedimentary rocks of the earth's crust, but in either case the abundances are measured in parts per billion.

An iridium peak (or spike or anomaly) has now been found in a number of stratigraphic sections on several continents in both marine and nonmarine rocks at the Cretaceous-Tertiary boundary. The iridium apparently was deposited in sediments from a cloud of fine debris that formed as a result of the impact (presumably on land; the effect of an impact in the oceans is not clear). The debris cloud presumably circled the earth and may have had a short term but significant effect on animals and plants if it materially reduced the amount of light and other energy reaching the earth's surface from the sun.

In addition, structures produced in minerals by shock waves, such as would be expected from a meteoritic impact, have also been reported in the sediments at the Cretaceous-Tertiary boundary; and soot, identified in some boundary sediments, is interpreted as the result of fires caused by the impact event. Geologists have also found small glassy microspherulites that are regarded as having formed from cooled hot liquid formed by a meteorite impact.

Paleobotanists report a fern spike at the boundary, which can be interpreted as further evidence of a major disturbance of vegetation consistent with extensive fires, light-reducing dust clouds or both. Paleobotanists have also reported a significant decrease in the diversity and abundance of plants across the Cretaceous-Tertiary boundary in non-polar regions. Note that controversy still exists as to the extent of the dinosaur extinctions at this boundary. Some vertebrate paleontologists believe a few dinosaurs crossed the Cretaceous-Tertiary boundary.

Periodic or cyclic extinctions have received considerable recent attention because Raup and Sepkoski made a specific proposal for a 26 million year periodicity and suggested that a forcing mechanism with

this period is not known for the earth. Consequently, if real, the periodicity probably is caused by some extraterrestrial factor, which is consistent with the meteorite hypothesis.

This proposal has led several scientists to suggest that the sun has a dark companion circling it in an elliptical (oval) orbit so that the companion (called Nemesis) perturbs the cometary (Oort) cloud that lies in a belt around the sun but beyond the orbits of the planets. The comets are pulled by gravity into orbits closer to the sun, and the earth could intercept a comet during a 2 million window in a 26 million year period. Nemesis has not been found.

An attractive feature of the Nemesis hypothesis is that each 26 million year period does not have to yield to a major impact. The severity of impacts could vary greatly from period to period just as mass extinctions vary greatly in the geologic record.

Unfortunately, very few of the extinction events have been studied from the standpoint of meteoritic evidence (iridium anomaly, soot, fern spore spikes, or shocked mineral grains). Only the last 250 million years of the fossil record was studied by Raup and Sepkoski because the radiometric dating of the additional time (approximately 300 million years) to the base of the Cambrian is poorer than the calibration since the Permian mass extinction event. Arguments are still raging as to the quality of the fossil data and the appropriate statistical methods to use in order to be assured that the cyclicity is real and not an artifact of poor resolution in the fossil data.

Virtually all the evidence for a specific cause of a mass extinction is controversial to the extent that one or more geologists have proposed an alternative interpretation for the same data. The cause or causes of mass extinctions has not been resolved to everyone's satisfaction, and this area of study will continue to be both exciting and controversial.

I have cited some references below for those who would like to examine some in the recent scientific literature that refer to mass extinctions and proposed causes. Raup (1986) has published an entertaining account (available in paperback) of the events leading up to the Nemesis hypothesis.

REFERENCES


1. Berggren, W.A. and J.A. Van Couvering, eds. 1984. Catastrophes and Earth History The New Uniformitarism. Princeton University Press, Princeton, NJ, 464 p.
2. Hallam, Anthony. 1987. "End-Cretaceous Mass Extinction Event: Argument for Terrestrial Causation." Science, v. 238, p. 1237-1242.
3. Jablonski, David. 1985. "Marine Regressions and Mass Extinctions: a Test Using the Modern Biota." In J.W. Valentine, ed. Phanerozoic Diversity Patterns. Princeton University Press, Princeton, NJ, p. 335-354.
4. Raup, D.M. 1976. "Species Diversity in the Phanerozoic: a Tabulation." Paleobiology, v. 2, p. 279-288.
5. Raup, D.M. 1986. The Nemesis Affair A Story of the Death of Dinosaurs and the Ways of Science. W.W. Norton & Company, NY, 220 p.
6. Sepkoski, J.J., Jr. 1982. "A Compendium of Fossil Marine Families." Milwaukee Public Museum Contributions Biology and Geology, v. 51, 125 p.
7. Sepkoski, J.J., Jr., R.K. Bambach, D.M. Raup and J.W. Valentine. 1981. "Phanerozoic Marine Diversity and the Fossil Record." Nature, v. 293, p. 435-437.
8. Signor, P.W. III. 1985. "Real and Apparent Trends in Species Richness Through Time." In J.W. Valentine, ed. Phanerozoic Diversity Patterns. Princeton University Press, Princeton, NJ, p. 129-150.

## ADVERTISING SECTION

Ads are $3.50 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 $3.50 size.

WANTED: Ideal Toy Corp. (ITC) model kits of dinosaur skeletons.
Tyrannosaurus and Brontosaurus.
Assembled or unassembled, even damaged.
Send description and asking price to:
David Peters
1208 DeBois Ct.
St. Louis, MO 63122

FOSSIL FORUM is The International Fossil Magazine. Published quarterly in Britain. 45 pages, fully type-set with full colour cover. Packed with news, techniques, sites, articles and letters. Now in its second year, it has received only good reviews. U.S. Subscription $25 for next four issues. Airmail.
Checks payable to: Palaeo-enterprises Publications, 39 Drake Ave, Torquay Devon, U.K. TQ2 6JU.

GERMAN SHOW DEALER invites U.S. fossil collectors to make offers for their good-quality and reasonably priced specimens--Dieter Gebauer, Talstr. 18, D-7951 Kirchdorf/Iller, West Germany

## BOOK REVIEW

by N. Gary Lane
Department of Geology
Indiana University, Bloomington, IN 47405

1985. Atlas of Invertebrate Macrofossils. Ed. John W. Murray. John Wiley & Sons, NY. The Palaeontological Association, 241 p. Price: $26.95.

This large format (21x29.5 cm), soft-cover book is still in print and is a worthwhile addition to the library of any serious amateur collector. There is an introductory chapter of 2 pages followed by 8 chapters, each of which is on a separate phylum of invertebrate animals. The chapters are: "Sponges" (including chaetitids and stromatoporoids), "Cnidaria" (translates into American as Coelenterata), "Bryozoa", "Brachiopoda", "Mollusca", "Echinodermata", "Graptolithina", and "Arthropoda". There is a list of references and a taxonomic index at the end of the book.

Each chapter is profusely illustrated with numerous small black-and-white photographs of fossils. In addition there are a few line drawings of morphologic features and range charts. The text is arranged in order of classification, with brief descriptions a few lines long of all higher categories from Class through Suborder levels. Families are listed but not defined.

Under each family is given the genus and photograph number of illustrated specimens. Each genus is described, and the range and habitat, environment, or rock type is given. The species, locality, age, and magnification is listed. Dichotomous keys have been prepared for some higher categories. The photographs are excellent; they are well-lighted and sharply in focus. Many of the illustrated specimens are from the British Isles, but certainly many are from North America and continental Europe. Thirteen experts on various groups prepared the chapter contributions.

In order to give a more specific idea of what the book is like, I will comment in more detail on those fossils that I know best--the crinoids. There are 84 individual pictures of fossil crinoids. Of these 12 are of camerate crinoids, 9 are of disparid inadunates, 1 of a hybocrinoid, 3 of dendrocrinoids, 11 of poteriocrinoids, 4 of cyathocrinoids, 6 of flexibles, and 14 of articulate crinoids. Many of the Paleozoic forms illustrated are based on north American specimens. The Mesozoic articulates are all European.

EDWARD HENNESSEY, Long Beach, CA, sent this little tidbit from a Los Angeles newspaper:

Skin of the coelacanth fish (famous Devonian living fossil) is pretty tough stuff. The Comoros Island natives near Madagascar use it to patch bicycle tires.

**Please ADD the Following NEW MEMBERS to Your Directory:**

| | |
|---|---|
| Phyllis Bobeck<br>102 N. Glendale<br>Barrington, IL 60010<br>312-381-7144 | Accountant. Will not trade. Interested in various fossils. |
| Susan J. Bucher<br>5133 Main #4<br>Downers Grove, Il 60515<br>312-968-0987 | Business owner. Will trade. Interested in all fossils. Has for trade Mazon Creek fossils. |
| Desmond Collins<br>Dept. Invertebrate Palaeo.<br>Royal Ontario Museum<br>100 Queen's Park<br>TORONTO, ONTARIO M5S 2C6<br>CANADA<br>416-586-5593 | Museum Curator. Trade is difficult. Major interest Extraordinary Fossil Faunas. Wants to keep in touch with collectors, discoveries, and North American paleontology. |
| Donald W. Crum<br>1136 Blackman Street<br>Clinton, IN 47842<br>317-832-8401 | Earth science teacher. Will trade. Major interest Mississippian trilobites. Lifetime fossil collector. |
| Creation Fossils<br>Dick & Barb Kirchhevel<br>729 Goulding Cr.<br>Roundup, MT 59072<br>406-323-3381 | Fossil restorer. Will trade. Major interest Ammonites. Has for trade Marine Fossils. |
| Richard B. Hoover<br>ALDL 2696101<br>7706 Teal Dr.<br>Huntsville, AL 35802<br>205-881-5633 | |
| Richard & Kim Knue<br>5133 S. Main St. #2<br>Downers Grove, IL 60515<br>312-852-7141 | Shipping and receiving plastic lined piping. Will trade. Major interest Mazon Creek, Pit 11 concretions, Silurian Dolomitic limestone trilobites, cephalopods, crinoids. Have for trade all of above. Will trade for fish, other trilobites, etc. Have been collecting 5 years and need to expand interests. |
| Richard Lund<br>Biology Dept.<br>Adelphi University<br>Garden City, NY 11530<br>516-294-8700, ext. 7504 | University Professor. Major interest Mississippian fish. |
| Jerry Medaris<br>Box 631<br>Orefield, PA 18069<br>215-797-1541 | Quality Control. Will trade. Major interest vertebrate paleo. Member Delaware Valley Paleo. Soc. Former member. Wants to share knowledge. |
| Patti A. Morris<br>930 S. 6th<br>Terre Haute, IN 47807<br>812-234-7739 | In sales. |
| Nancy L. Nowak<br>P.O. Box 477<br>Carthage, IL 62321<br>217-357-6799 | Health professional, dilettante. Major interest collect specimens. Member Worthen Earth Seerchers, Carthage, IL; L.O.E.S.S., Springfield, IL. Wants to learn more about fossils & their preparation and meet others who share her interest. |
| Robert Routzahn<br>518 Superior | Self-employed. Will Trade. Interested in all fossils. |

| | |
|---|---|
| Mark Shurilla<br>1012 E. Wright #4<br>Milwaukee, WI 53212<br>414-372-6884 | Newspaper editor. Will trade. Major interest arthropods & vertebrates. Was an original member. |
| Birmingham Paleo. Society<br>1425 South 22nd St.<br>Birmingham, AL 35205<br>205-933-4127 | Paleo. Lab, Red Mountain Museum |
| David Swan<br>10035 Boston Place<br>Dallas, TX 75217 | Collects mainly in the Upper and Lower Cretaceous and enjoys finding shark teeth as well as Mesosaur vertebrae from the North Sulphur River. |
| Buried Treasures<br>US Highway 9<br>Smithville, NJ 08201<br>609-652-6613 | Rock, Mineral, Fossil, etc.,Store. Will trade. Major interest all kinds of fossils. Has for trade trilobites. Came to EXPO X and was very pleased with what he found and the prices. |
| Stacy M. Williams<br>1520 Sugargrove<br>St. Louis, MO 63146<br>314-434-5421 | College student. Will trade. Major interest trilobites, reptiles including pteresaurs. Has for trade some trilobites and blastoids. Wants to share with others |

Please Note the Following CHANGES OF ADDRESS and CORRECTIONS:

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6440 State Road 234W
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Edward Books
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Hanover, PA 17331

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5170 Dee Alva
Fairfield, OH 45014
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Robert Fendrich, PhD
100 Belmont Place
Staten Island, NY 10301

John Fischner
Dreamstar Productions
18111 FM 762
Needville, TX 77461

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7070 Houdeng-goegnies
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Oklahoma City, OK 73149

Chicago Area Paleo. Society
Add Contact:
Roger E. Bohn 312-858-2956
25644 Devonshire Lane
Glen Ellyn, IL 60137

From "THE USBORNE BOOK OF PREHISTORIC FACTS"
by A. Craig, via The Tampa Bay Fossil Enquirer, Rudi Johnson, Editor

Today there are 365 days in a year, but 570 million years ago, there were 428. Scientists know that coral grows a band of skeleton each day, and that it grows more at night than in the daylight. Counting these bands on fossil coral gives the number of days in a year, millions of years ago.

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 or Library fee is $25.00. Overseas fee is $10.00 with Surface Mailing of DIGESTS OR $25.00 with Air Mailing of DIGESTS.

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.


| | |
|---|---|
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