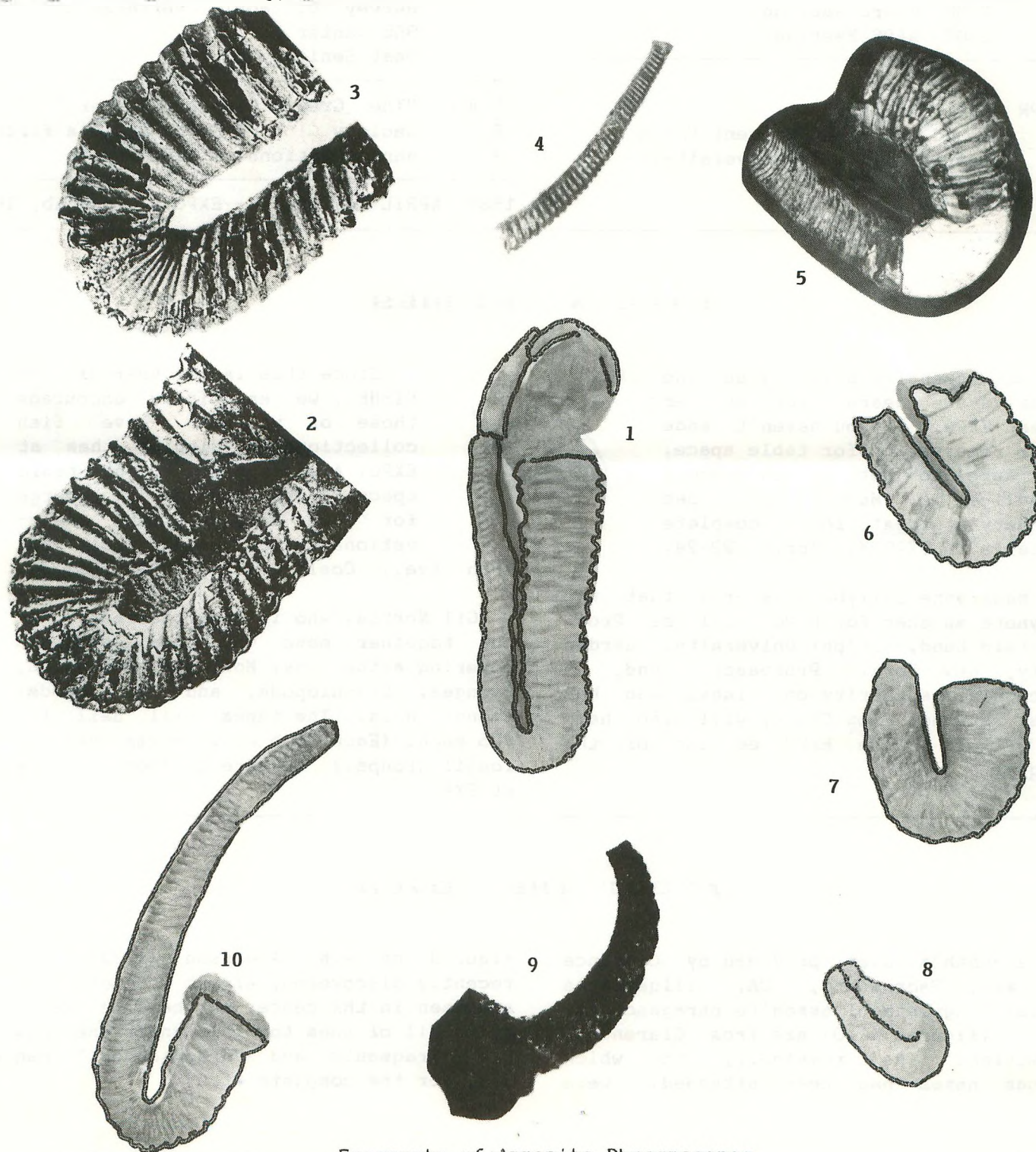


M.A.P.S. *Digest*

Official Publication of
Mid-America Paleontology Society

Volume 11 Number 3
March, 1988



Fragments of Ammonite Phragmacones

MARK YOUR CALENDARS

5 MAR MAPS MEETING--Fryxell Museum,
Augustana College, Rock Island, IL

1:00 Board Meeting.
2:00 MAPS Meeting.

22 APR EXPO X--FISHES
23 Grand Ballroom, Student Union
24 Western Illinois University,
Macomb, IL

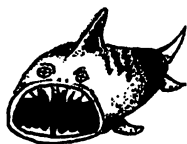
26 MAR Gem, Mineral, & Fossil Show
27 Sponsored by the Buffalo Geological
Society, Inc.
Harvey D. Morin Veteran's Post
965 Center Rd.
West Seneca, NY

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

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

EXPO X--FISHES

Excitement is building as the time draws nearer for another great EXPO. If you haven't made your reservation for table space, be sure to get it in soon. Deadline is March 31. See January's Digest for complete details on EXPO X, April 22-24.



Madelynne Lillybeck reports that the keynote speaker for EXPO will be Prof. Richard Lund, Adelphi University, Garden City, New York. Professor Lund, a recognized authority on fishes who has just returned from China, will also have an article in the EXPO edition of the Digest.

Since this is the year of the FISHES, we especially encourage those of you who have fish collections to display them at EXPO. A maximum of 8' of table space is provided at no charge for each display. Send reservations to Tom Walsh, 501 East 19th Ave., Coal Valley, IL 61240.

Gil Norria, who is Show Chairman, has put together some VHS tape programs covering Arthropods, Mollusks, Echinoids, Sponges, Brachiopods, and Cephalopods, among others. The tapes will sell for \$25 each. (Each tape will cover several fossil groups.) Be sure to look for them at EXPO.

ABOUT THE COVER

This month's cover, provided by Clarence Schuchman, Sacramento, CA, illustrates several fragments of ammonite phragmacones. Several (figures 6-10) are from Clarence's collection. The remainder, to which various names had been attached, were

figured by F.M. Anderson (1938). The recently discovered, almost complete specimen in the center may be the key to tying all of them together under one name. See "Fragments and Phragmacones," pages 3-4, for the complete story.

DUES ARE DUE

Just a reminder that dues are due. Lots have come in in the last month, and we really appreciate them prior to EXPO. Check the date on your Digest label to see if yours are current. If they're not, please drop a check made payable to MAPS in the mail to Treasurer:

Sharon Sonnleitner
4800 Sunset Dr.
Fairfax, IA 52228

FRANCE TRIP CANCELED

The MAPS-sponsored trip to France which was planned for the summer of 1988 has been canceled.

SEDIMENTARY NOTES

Rudi Johnson, Tampa, FL, writes that a new fossil club was started in Tampa 3 months ago. She says that they've had wonderful attendance and now have over 200 members. Meetings are held each month September through May on the 1st Wednesday of the month at the Museum of Science & Industry (MOSI), 4801 E. Fowler Ave., Tampa, at 7:15 PM. Dues for MOSI members are \$7/individual, \$12/family; for nonMOSI members, add \$3. A bulletin, The Fossil Enquirer is published monthly.

For more information write:

Tampa Bay Fossil Club
Fossil Club Treasurer
The Museum of Science & Industry
4801 E. Fowler Ave.
Tampa, FL 33617-2099

Guy Darrough, Arnold, MO, noted in a telephone conversation that ground is being broken in Old Mines, MO, for what will be the only Paleontological Museum in the Midwest. Guy is very enthused about the venture. We hope to hear more about the museum when it is completed.

MORE ON BABY TRILOBITES

by: Roger Pabian
from: Pick & Shovel, March, 1987

At the February meeting, LG&MC members and guests got a chance to see for the first time outside of a geology seminar, slides of scanning electron microscope photographs of larval trilobites of late Pennsylvanian age. These are quite rare little fossils. Most of the specimens were collected from Texas and Oklahoma by Royal Mapes of Ohio University, Athens, Ohio. I have collected a few such specimens from Kansas and Nebraska.

Larval trilobites are not unique to Pennsylvanian age rocks. Many have been reported from much older rocks. If you see slabs of the middle Cambrian trilobite Elrathia kingi at gem and mineral shows or in shops, you will often observe small black specks on the slab of host rock. Magnification will often show that these are indeed baby trilobites.

Trilobites are a Subphylum in the Phylum Arthropoda, the joint-legged animals. Arthropods are characterized by moulting their exoskeletons (shells) as they grow. The arthropod simply sheds its outer body, grows some, and then secretes itself a new exoskeleton.

Most arthropods begin life by being hatched from an egg; modern marine arthropods often carry clutches of eggs on their undersides or lay clutches of eggs in sheltered places. There have been found little clumps of spherulitic bodies in the fossil record that have been hypothesized to be trilobite eggs. They may or may not be.

What is known, however, is that there are baby trilobites that appear to be newly hatched from an egg; they are very tiny and may require 30 or 40 magnifications to be seen.

In addition to having three lobes, the trilobite has three main structural elements which are, from anterior to

(Continued on page 6)

FRAGMENTS AND PHRAGMACONES

by Clarence Schuchman
4812 "F" Parkway
Sacramento, CA 95823

One could make a career out of listing all the molluscan fossil species known only from fragments or incomplete shells. In fact, it would be much the lesser task to turn it around and list only those known from shells complete in every detail, leaving the rest in the "all others are fragments" category.

This monstrous bulk of fragments casts a shadow filled with taxonomic ghosts and goblins. The more incomplete the fragment the more perplexing the problem of attaching a credible scientific moniker. There is, of course, that gray area where some say, "There isn't enough data," and other more venturesome workers sally forth to tag bits and pieces with a multiplicity of genera and species.

As a result it sometimes happens that, in time, some new and more complete discovery turns up that welds together a whole cluster of old identifications, some with names completely unrelated.

A recent discovery we made in the Lower Cretaceous of California is a case in point.

My own collecting, spanning over twenty years, has turned up numerous mysterious fragments of ammonite phragmacones. They sit there in my collection, dutifully cataloged, awaiting some Moses to come along and lead them out of the wilderness.

Mainly they are pieces of heteromorphs. Heteromorphs, looking at the more complete ones I have collected, seem wont to "do their own thing" anyway. It is as though once the ammonite abandoned its uniform planispiral, it felt it had a license to "create." And yet, as though to confound this idea, one sometimes finds specimens that match exact patterns.

Several of the aforementioned specimens

from my collection are figured on the cover along with some figured by F.M. Anderson (1938) to which he had attached various names. The almost complete specimen in the center (a bit reduced) is the one recently discovered.

We were working on a survey the California Department of Water Resources had been forced to fund before they could justify (or hopefully fail to justify) flooding the area with a dam. (This effort by the Corps of Engineers, was reported in MAPS Digest a few years ago.)

It was mid-winter (the only time the Bureau's deadline permitted), and our party was slogging about in miserable weather--cold, wet, and soggy. The geologist working the embankment was rolling down small concretions from a pocket he had found while I was catching them below and determining whether they contained fossils.

One end of an oblong nodule showed part of what we had been calling a "Hamitid." I was about to toss it into a bag when I noticed some very fine shell ribbing imprints on the opposite end. After taking a closer look, I thought there was a possibility that these marks could represent a part of this creature I had never seen before. We had it set aside for immediate preparation, and, sure enough, what you see on the cover emerged.

This ammonite has not yet been described by our paleontologists, but we are calling it a "Hamitid" of some sort." The early chambers are only present down to about 2mm in diameter, which means it is not entirely clear just how this creature started out, but it seems almost certain it did not begin with an initial whorl as do a large group of Cretaceous heteromorphs.

Sometime early in the century, the

researchers Popanoe and Scharf discovered in this same area a fragment which Anderson figured as Toxoceras cornucapri (see fig. 4 on cover). It seems a safe bet this will turn out to be identical to part of the shaft from our specimen.

Anderson also figured a number of other fragments that show interesting resemblances. One of them he called Acrioceras starrkingi (our fig. 5). The likeness is not obvious until you examine the plaster-filled section which seems to cause a totally unwarranted separation of the two limbs. If they were returned to their original position we just might have part of our new fossil.

Another specimen from this approximate locality (now in the Academy of Sciences, Philadelphia) Anderson called Hamiticeras pilsbryi and, again, H. philidelphium (our fig. 2). This species is also figured in the "Treatise" with a note that the holotype is too fragmentary to establish. Now it might very well turn out to be established by our present specimen.

ON DRAWING OF CORALS ON PHOTOGRAPHIC SURFACES

by Jim Cocke & Terry Berkland
Central Missouri State University
Warrensburg, Missouri 64093

In the December issue of the Mid America Paleontology Society Digest, we published two inked drawings of the Amandophyllum brucei from the Pennsylvanian Dewey Formation of Northeastern Oklahoma. Subsequently we have received several comments from MAPS members complimenting us on these illustrations. The purpose of this note is to give a brief explanation of the methodology of making such drawings. We must point out that the technique did not originate with us, but with Russell Jeffords and R.C. Moore in the early forties.

First a photomicrograph was made on high contrast paper and enlarged. Then for many hours the morphological parts are

Still another possible synonym (see fig. 3) Anderson called H. aequicostatum.

The cover figures 6-10 are fragments from my collection all from this same approximate horizon. 9. was collected in 1972, 8. in '73, 6. in '75, 7. in '79, and 10. (which, for want of a better name, I have been calling Saxaphoneoceras) in '85. They probably all represent this same species.

Just look at all the different species and even generic names that might possibly find themselves rolled up in that little lump that came bounding down the embankment! To be conclusive we must await the work of the descriptors. But, in the meantime, amateurs, keep on collecting those fragments!

*Others involved in this project included, among others, Dr. Peter Rodda, head of Geology, California Academy of Sciences, and Dr. Mike Murphy, U.C. Riverside.

laboriously traced with a very fine point Rapidograph pen. The thin section of the particular specimen was carefully and frequently examined while the drawing was made. Upon finishing the drawing, the photograph was placed in a photographic bleach-cyanide bath (we believe) and agitated very gently so that when the emulsion was removed, the India ink would not fleck off. When the sheet was entirely clear of the original photograph it was rinsed gently and dried. Finally, the inked drawing was compared to the thin section to determine if some lines had disappeared. so there was nothing magical in making the published drawings--just a lot of work.

We are planning to teach the techniques for making coral thin sections and projecting the thin sections as 35mm slides in a workshop on May 21 & 22 if sufficient folks enroll. The second technique makes possible the simultaneous viewing of a thin section by a multitude of interested people. (Ed. note: Write to Jim or Terry for further information on the workshop.)

ULTRASAUROUS GENUS TO BE ESTABLISHED?

source: Science News, August 29, 1987
sent by: Lloyd Gunthera
Brigham City, Utah

The key to establishing the genus of Ultrasaurus, a giant dinosaur, may lie in a 4-foot-long neck vertebra recently discovered by Brigham Young scientists.

In 1979 Brigham Young paleontologists initially discovered bones that suggested a dinosaur that was taller than a five story

building and weighed more than eighty tons. At that time they coined the genus Ultrasaurus to reflect the animal's immense size. But they are still unsure whether the dinosaur belongs in a separate genus or was just a large Brachiosaurus--the genus with long, slender tails and a front set of legs that was longer than their hind set.

Study of the vertebra, which was found in August, 1987, may enable them to determine if Ultrasaurus has a bifurcated (branched) spine, which would settle the issue.

CODE OF ETHICS

Perhaps those of you who live in warm climates collect in all seasons of the year, but those of us who live in the northern climates are looking forward to the coming of Spring with a touch of fossil fever. We're eager to get out and pursue our hobby in the field once again.

With that in mind MAPS Board of Directors would like to call your attention to the following Code of Ethics, which the Board endorses:

1. Stay informed of and comply with all Federal, State and Local regulations pertaining to collecting activities and general business practice.
2. Obtain permission from land owners or governmental authorities to gain access to collecting sites.
3. Obtain approval of Tribal as well as Federal authorities for access to lands within Indian reservation boundaries.
4. Assure that all lands, properties, flora and fauna are left without damage to property or ecology as a result of collecting activities.
5. Take every precaution to guard against fire and remove all litter from study or collecting areas.
6. Encourage the use of safety procedures and protective equipment in potentially hazardous collecting areas.

7. Require that all fossil materials received from outside collectors are obtained in compliance with the above collecting guidelines.
8. Report to proper local authorities any significant discoveries of scientific or public interest.
9. Strive to place specimens of unique scientific interest into responsible hands for study, research, and preservation.
10. Make no misrepresentation as to identity, locality, age, formation, repairs or restorations of paleontological specimens.
11. Conform to professional business practices when obtaining and disposing of specimens.
12. Maintain a good credit standing among fellow suppliers of earth science materials.
13. Encourage good relations and cooperation with agencies, institutions, and organizations actively involved in paleontological pursuits.

The above Code of Ethics is taken from Paleontological Collecting, a 2-3 year study by the National Research Council. It is available from:

Committee on Guidelines for
Paleontological Collecting
Board on Earth Science
2101 Constitution Ave.
Washington, D.C. 20418

BOOK HALF-REVIEW

by Harold Tichenor
Chicago, IL

The Burgess Shale

Whittington, Harry B. Yale University
Press, 1985. 168 p., 126 illus., \$25.00

Anyone who has read Whittington's descriptions is familiar with the precision and thoroughness of his work. If you've read more than his technical descriptions, you know him better for his enthusiasm. This comes through various times in the book as he describes *Anomalocaris* up to half a meter long, the monster of Cambrian life, or some other things new to Paleontology--trilobites without mineralized shells or other soft-bodied creatures which couldn't have been preserved elsewhere.

I was fortunate in making his literary acquaintance in the August-September 1961 issue of Natural History magazine: his article "A Natural History of Trilobites" was my introduction to the Burgess Shale, but it sent me scurrying in the other direction for the trilobite quartz replacements in Virginia. Later I sent him a problem *Odontopleurid* *cranidium* from the Upper Ordovician Maquoketa formation at Graf, Iowa. This was supplemented by additional specimens on the one occasion I met him, at the North American Paleontology Convention 1969 at Chicago's Field Museum. It was announced at this Convention that Professor Whittington had been selected to restudy the Burgess Shale with the Geological Survey of Canada; an ovation followed the announcement.

The book's photographs (for which the notes are lessons in fossil photography), reconstructive drawings, descriptions, and above all, the explanation of the unique preservation of soft bodies: you are left with a hunger for more. An extensive LIST OF PUBLICATIONS ON THE BURGESS SHALE is included to sate the need. Additionally, an Appendix lists all species from Walcott's Phyllopod bed, including:

| | |
|----------|-----------|
| Algae | 11 genera |
| Porifera | 17 genera |

| | |
|--|-----------|
| Brachiopoda | 6 genera |
| Lophophorata | 1 genus |
| (proposed super-phylum for animals having lophophores, e.g. brachiopods and bryozoans) | |
| Coelenterata | 2 genera |
| Mollusca | 2 genera |
| Priapulida | 7 genera |
| Echinodermata | 4 genera |
| Hemichordata | 2 genera |
| Chordata | 1 genus |
| Miscellaneous animals | 16 genera |
| Annelida | 6 genera |
| Arthropoda | |
| Trilobites | 14 genera |
| Trilobites/unmineralized exoskeletons | 2 genera |
| Crustacea | |
| Phyllocarida | 8 genera |
| Ostracoda | 1 genus |
| Cirripedia | 1 genus |
| Not placed in any phylum or class of Arthropoda | 20 genera |

"Half-Review?" Yes, because I haven't provided the explanation of this incomparable fossil preservation, and will not. A whodunit doesn't give you the solution on the dust jacket, does it? You'll want to read it yourself. Happy reading!

BABY TRILOBITES (cont. from page 1)

posterior, the cephalon (head) made up of several fused segments; a movable thorax made up of one or more moveable segments; and a pygidium (tail) made up of a few to 40 or more fused segments.

The newly hatched trilobite is called a protaspis. This form simply has a cephalon and protopygidium that make up a fused single shield. The trilobite may moult one or more times during the protaspis stage. What is important is that although the shield may change size and shape, the cephalon and protopygidium remain fused.

After one or more protaspis stages, the
(continued on page 7)

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: Microfossils (Vertebrate or Invertebrate). Washed or unsorted soil containing the microfossils. NO MARL! Must include geologic information and state where found. I request a very small sample for perusal, and your price per pound.

Bertie M. O'Connor, Box 102,
San Gabriel, CA 91778.

HARDWOOD STANDS-BRASS LABELS

The Finest in Specimen Display

WRITE: Eagle Engraving, P.O. Box 3322
Billings, MT 59103 (406) 256-6124

WANTED: Articulated sections of Dinosaurs.

Gerald Becker (312) 623-5444
5075 Darlene Ct.
Gurnee, IL 60031

Each species of trilobite is characterized by having a fixed number of segments in the movable thorax. When this number is reached, the trilobite is said to have reached its holaspid stage. The trilobite may moult during its holaspid stage; it may grow, and it may make some minor changes in its form, but it will never add any more thoracic segments. The highest degree of meraspid of any species of trilobite will have one fewer thoracic segments than does the holaspid.

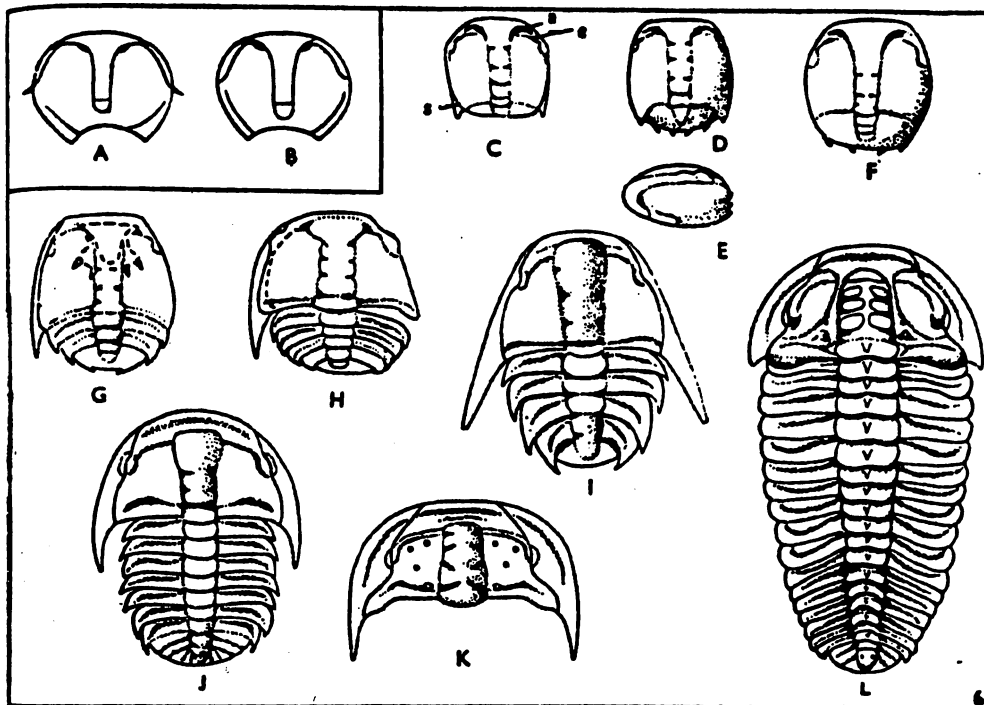
A classic paper on the ontogeny (growth stages) of trilobites is "The Ontogeny of Trilobites" by H.B. Whittington. It appeared in Biological Reviews, v. 32, pp. 421-469... One of Whittington's figures is reproduced here; it shows protaspis, meraspis, and holaspis forms. I will leave it to the reader to decide which are the protaspis, meraspis, and holaspis forms.

Trilobites are a fascinating area of study. What the collector needs to keep in mind is that a complete representation of a single species calls for all of its protaspis moults, all of its meraspis, and all of its holaspis moults. That could be a big order.

After Whittington (1957)

BABY TRILOBITES (cont. from page 6)

trilobite will develop a movable joint between the cephalon and pygidium. At this stage the trilobite is referred to as a zero degree meraspis. During this stage, the trilobite can moult and add one new, movable segment in the thorax each time it moults. A meraspis with one thoracic segment is called a first degree meraspis; two, a second degree meraspis,...six, a sixth degree meraspis, and so on. The size and shape of the trilobite can change considerably during its meraspis stage



Please ADD the Following NEW MEMBERS to Your Directory:

PAUL ADAMS
126 S. Helberta Ave. #2
Redondo Beach, CA 90277

Specializes in trilobites, but collects other fossils and minerals as well.

STEWART ASHBY
Rt 3, Box 212
Floyda Knobs, IN 47119
812-949-1215

Will trade in the future. Major interest cephalopods.

MARK B. DuBOIS
208 Oakwood Circle
Washington, IL 61571
309-444-2999

Manager. Will trade. Major interest fossil insects. Has for trade fossil insects. Wants to learn and develop additional contacts in the Midwest.

MARVIN GUETTNER
P.O. Box 372
Agua Dulce, TX 78330
512-998-2555

Interested in all fossils. Member of Austin and Dallas Paleontology, Corpus Christi Gem & Mineral. Wants to learn more about fossils.

RAY HINTLIAN
7613 West Surrey Ave.
Peoria, AZ 85345
602-979-2734

Science teacher/geology instructor. Will trade. Interested in all areas of paleontology--specializing in vertebrate paleontology. Also specimens for use in teaching. Has for trade leaf fossils from Oregon and Pennsylvania, some petrified wood (Oregon), limited small reptile footprints (Arizona). Wants to learn about good places to collect & meet fellow paleo persons as they travel. Also wants to trade for items to use in his teaching.

JASON MORRALL
Route 1
Mareilles, IL 61341
815-795-5356

CARLTON T. NASH
1418 E. Lowden
Wheaton, IL 60187
312-665-7571

Environmental engineer.

JEFF NELSON
1472 Matador Dr.
Winter Garden, FL 32787

Major interests shark teeth and vertebrate fossils.

DAVID PETERS
1208 DuBois Ct.
St. Louis, MO 63122
314-821-8701

Commercial artist/author. Will trade. Major interest vertebrates, trilobites, chelic. Has two dinosaur calendars coming out for 1989, one book presently out. Collection is too small to trade at present. V.P. of East Missouri Paleontological Club. Wants to be informed of shows and conventions, build up contacts in the field, buy fossils.

ED PHILBIN
36 E. Cole St.
Pittston, PA 18640

13 yr. old eighth grader. Will trade. Major interests are trilobites, insects, & vertebrates. Has for trade unidentified brachiopods, Pennsylvanian ferns and trunk specimens plus some minerals.

LARRY RASMUSSEN
Rt. 1, Box 43
Leland, IA 50453

Tool and die maker. Will trade, but of limited resources. Wants information about fossils.

DAVE SANDERS
2519 McMullen Booth Rd.
Suite 510-264
Clearwater, FL 34621
813-837-8023

Property Manager. Will trade. Major interest shark teeth, Florida fossil shells. Will trade any type fossils for shark teeth or fossil shells. Member Bone Valley Fossil Club, Lakeland, FL. Wants to trade & swap fossils & minerals.

CRAIG D. TIPTON
3595 Call Road
Perry, OH 44081
216-259-5092

Chemist-Product Development Mgr. Will trade. Major interest trilobites & other paleozoic invertebrates. Member of Fossil Society, The Cleveland Museum of Natural History, Cleveland, OH. Wants to trade information on collecting sites in the Great Lakes area and expand contacts and knowledge of hobby.

STANLEY E. VOTRUBA
615 E. 12th, Apt. 105
Mitchell, SD 57301
996-1232

Will trade. Major collecting done in S. Dak. Badlands & shores of Missouri River looking for fish and marine reptiles. Has published articles on earth science and fossils.

KEITH W. WHEELER, PhD
1814 Crescent Drive
Alamogordo, New Mexico

Retired. Has been collecting for 35 years.

DON WOLFE
Rt.4, Box 4999
Bertlesville, OK 74003
918-333-1786

Wildlife Biologist. Will trade. Major interest vertebrates, Cret. ammonites. Has for trade ammonites. Wants to meet other paleontologists and learn.

Canadian and Overseas NEW MEMBERS:

ALAN HALL
NATURAL HISTORY MUSEUM
Box 2039-112
BANFF, ALBERTA
CANADA TOL OCO

Owens the Natural History Museum. Will trade. Has for trade Canadian ammonites.

PATRICK BONNEL BREUX
15, Rue de la Montgolfiere
F-93160 NOISY-LE-GRAND
FRANCE
Tel: -I-43-05-44-08-

Professor. Civil Engineering. Will trade or purchase. Only interested in rare and excellent trilobites. Has for trade many fine European and Moroccan trilobites. Wants to contact Australian collectors, too. "If you can offer rare and fine trilobites, write me!"

KURT HENNE
Moenchhaldenstr. 11
STUTTGART, WEST GERMANY
Ph. 255585 Stgt.

Retired. Will trade. Interested in all fossils/Precambrian-Tertiary/especially fishes (mainly Paleozoic)/, echinoderms, arthropods. Has for trade German fossils: Bundenbach, Holzmaden, Soluhosien all kinds, best quality. Wants to exchange/trade with other collectors, visit American collectors, invite American friends to visit him.

Please Note the Following CHANGES OF ADDRESS:

GUY & DORIS DARROUGH
47 Pomme Manor
Arnold, MO 63010
314-282-0970

JOHN & JUDITH WASHBURN
107 Deer Creek Road
Rochester, IL 62563

PIERRE GONIN
40 Boucher
HULL, QUEBEC
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Fairfield, OH 45014-3939

MAYSIE J. HUGHES
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Flat River, MO 63601

EASTERN MISSOURI SOCIETY OF PALEONTOLOGY
1727 Parkway Acres
Maryland Heights, MO 63043

DR. CARL W. STOCK
Dept. of Geology
University of Alabama Box 1945
Tuscaloosa, AL 35487

Doug Corley, President, address above
David Peter, V.P., 1208 Du Bois Ct.,
Kirkwood, MO 63122

RICHARD S. TODD
RR 2, Box 166
Princeton, IL 61346

MEET: 3rd Friday of each month, 7:30 PM,
St. Louis Science Center, 5050 Oakland Ave.,
St. Louis, MO.

PUBLICATION: "Timescale"; Editor, Earlie Bledsoe.

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.

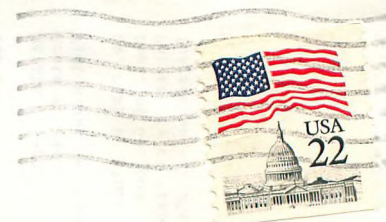
Membership in MAPS is open to anyone, anywhere who is sincerely interested in fossils and the aims of the Society.

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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FIRST CLASS MAIL

MID-AMERICA PALEONTOLOGY SOCIETY

Mrs. Sharon Sonnleitner
MAPS DIGEST Editor
4800 Sunset Dr.
Fairfax, IA 52228

Allyn & Dorris Adams
612 W. 51st Street
Davenport, IA 52806
12/88

Dated Material - Meeting Notice