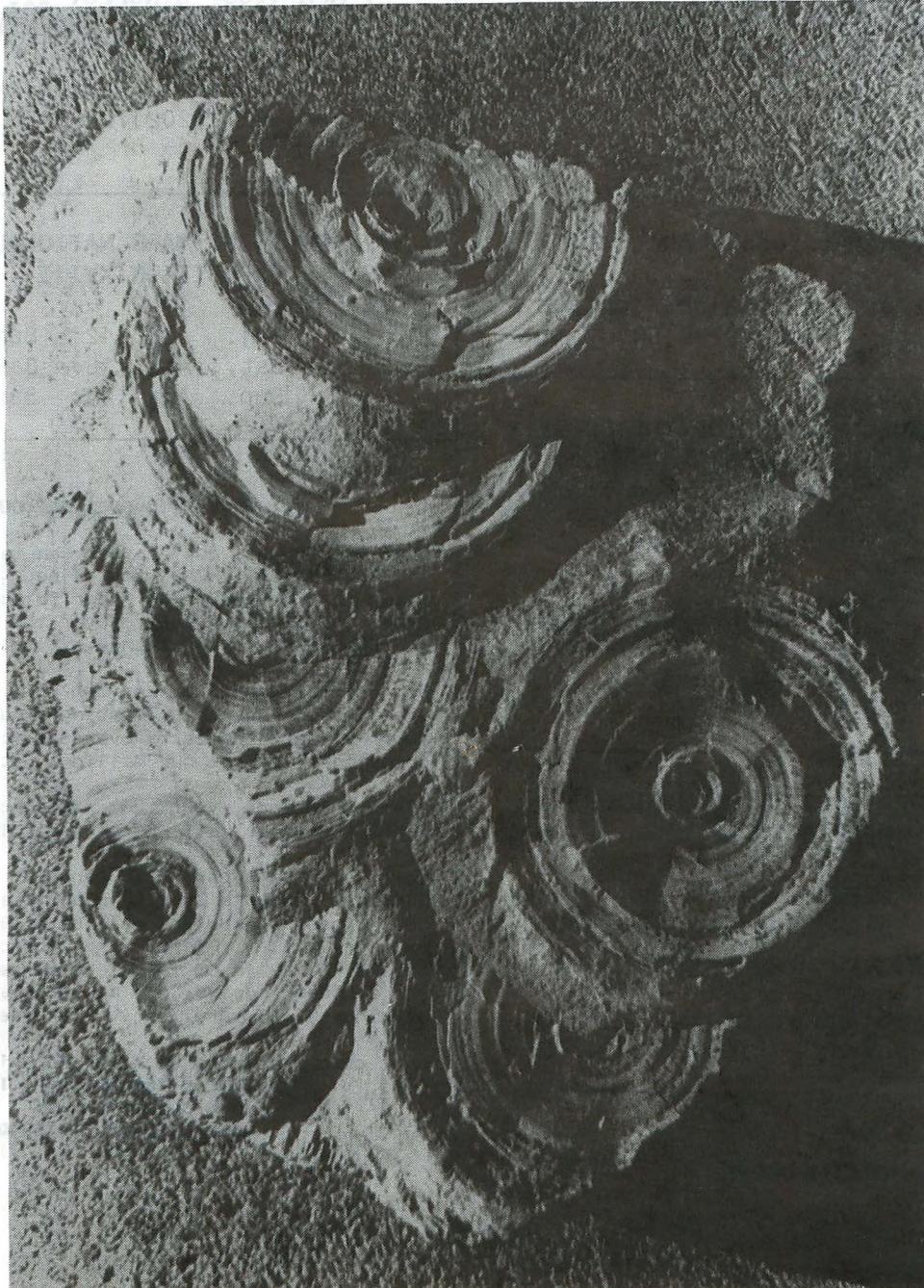


# M.A.P.S. *Digest*

Official Publication of  
Mid-America Paleontology Society

Volume 18 Number 7  
October, 1995



A LOVE OF FOSSILS BRINGS US TOGETHER

## MARK YOUR CALENDARS

<p>14 OCT MAPS MEETING. Trowbridge Hall, University of Iowa, 123 N. Capital St., Iowa City, IA. Main Lecture Room, #125.</p> <p>1:00 Board &amp; General Meeting combined. 2:00 Program:</p>	<p>11 NOV MAPS MEETING. Trowbridge Hall, University of Iowa, 123 N. Capital St., Iowa City, IA. Main Lecture Room, #125.</p> <p>1:00 Board &amp; General Meeting combined. 2:00 Program:</p>
<p>27 OCT FOSSILMANIA XIII, SOMERVELL COUNTY 28 EXPO CENTER, Highway 67 in Glen 29 Rose, TX</p> <p>Fri &amp; Sat: 9-6 Sun: 9-2</p> <p>Saturday Night Fossil Auction</p> <p>For further information, contact: Bill Morgan: 210-492-9163</p>	<p>7 APR 1996 DINOFEET II, ARIZONA STATE UNIVERSITY, PHOENIX, AZ. 21</p> <p>Contact: Don Wolberg (202)720-7178</p>
<p>1 NOV 55TH ANNUAL MEETING OF THE SOCIETY 2 OF VERTEBRATE PALEONTOLOGY. 3 Sheraton Station Square on the 4 South Side of Pittsburgh.</p> <p>For information, contact the Greater Pittsburgh Convention and Visitors Bureau at Four Gateway Center, Pittsburgh, PA 15222-1259. Phone: 800-366-0093</p>	<p>12 APR 1996 MAPS NATIONAL FOSSIL 13 EXPOSITION XVIII 14</p> <p>Fri., Apr. 12: 8am - 6pm Sat., Apr. 13: 8am - 5pm Sun., Apr. 14: 8am - 3pm</p>
<p>6 NOV GEOLOGICAL SOCIETY OF AMERICA, 7 NATIONAL MEETING. New Orleans, LA. 8</p> <p>Contact: GSA Meetings Dept., P.O. Box 9140, Boulder, CO 80301. Tel: (800) 472-1988. (Paleontological Society Symposium: "Radiations following extinctions").</p>	<p>*** 95/10 DUES ARE DUE ***</p> <p>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--95/10 means 1995/Oct. Dues cover the issue of the Digest for the month in which they expire.</p> <p>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.</p> <p>Please include your due date and name exactly as it appears on your mailing label--or include a label.</p> <p>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.</p> <p>Make checks payable to MAPS and mail to: Sharon Sonnenleitner, Treas. 4800 Sunset Dr. SW Cedar Rapids, IA 52404</p>

## ABOUT THE COVER

This month's cover photo was sent by Bob Levin. The specimen of *Cretaoxyrhina* shark vertebrae, from his collection, is from the Cretaceous Period, Smith County, Kansas. The specimen is 3" across.

**MAPS MONTHLY MEETINGS MOVE TO IOWA CITY**

Beginning with the October meeting, MAPS is moving its "monthly" meetings from Rock Island to Iowa City. The change is taking place because of the number of members who come from the Cedar Rapids area and in an effort to draw other members to participate in the steering of MAPS. "Monthly" meetings have been cut to four: October, November, January and March. An additional meeting is held at EXPO in April and a summer picnic includes a business meeting. The University of Iowa will be our host for the meetings.

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**1996 EXPO THEME**

The theme for the 1996 MAPS EXPO is Brachiopods. Maggie Kahrs is the editor of the EXPO issue of the *Digest*. Please contact her if you can contribute an article to that issue.

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**MAPS NAME BADGES NOW AVAILABLE AGAIN**

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**DINOSAUR INTERNATIONAL**  
**from *Priscum*, the Paleo. Soc. Newsletter**  
**September 1995**  
**Wm. I. Ausich & Loren E. Babcock, Co-Eds.**

Dinofest International is scheduled to be held April 8-April 21, 1996, on the campus of Arizona State University. More than 150,000 ft. sq. of fossils and exhibits are planned and will include fossils from every continent. A three-day symposium, April 18-21, is planned with more than 60 invited speakers. In addition, a banquet will be held the evening of April 19. The event is intended to convey the enthusiasm for dinosaurs and paleontology to anyone interested. There will also be a public forum discussing science and science education policy. There will be an organized broadcast to all the regional public schools with interactive participation between students and a panel of paleontologists; this broadcast will be international in scope. An art and sculpture exhibit as a film festival will highlight the great and not so great "paleo oldies" and newer films. A series of regional field trips combining geology, paleontology, and culture history is also planned. **Contact Don Wolberg (202)720-7178 or Ed Stump (606)965-5081.**

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**ADOPT-A-DRAWER**  
**from *American Paleontologist***  
**Paleontological Research Institute, NY, pub**

Have you ever wanted to help curate a major museum fossil collection? Now you can! The installation in early 1995 of nearly 2000 new compactorized drawers in the Paleontological Research Institute (PRI) collections ranges offers PRI members and friends a special opportunity to become personally involved with the ground-up renovation of one of the nation's largest collections of invertebrate fossils and shells. PRI collections staff are now engaged in the process of rehousing much of the Institution's collections in the new drawers, and they need your help, and involvement.

The **Adopt-a-Drawer** program allows you to sponsor one new drawer of fossils or Recent shells. For a contribution of \$100 a year, you will receive a photograph and full description of the drawer and its contents, and annual bulletins about the state of curation of your drawer and the entire collection. You can correspond with collections staff and learn as much as you want about your adopted specimens. It's a great educational gift for an aspiring biology or geology student. Your contribution will support the costs of staff and supplies as we continue to reorganize, conserve, and curate the PRI collections of more than 1.6 million specimens.

Drawers available: trilobites, eurypterids, brachiopods, corals, gastropods, bivalves, cephalopods, echinoderms, vertebrates, plants, trace fossils, Recent mollusks, other.

For more information contact:  
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 1259 Trumansburg Road  
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**FOSSIL SCYPHOZOA FROM MID-PENNSYLVANIAN DEPOSITS OF ILLINOIS**  
by Jim Kostohrys, Des Plaines, Illinois

There are few places in the entire world where soft-bodied creatures can be found as fossils. One of the most famous is the world renowned Mazon Creek area about 60 miles south of Chicago, Illinois.

Around 275 million years ago, conditions were just right for favorable preservation of soft-bodied marine creatures whose existence science would never have known except for this, and a few scattered smaller outcroppings in other states.

Fossils from the Mazon area are preserved in nodules or concretions of siderite and occur in the Francis Creek Shale layers directly overlying the #2 Colchester Coal. The area was extensively strip-mined from 1945 to sometime in the 1960's. Large spoil heaps dotted the landscape, and many of these mounds contain the concretions which are still sought after by professional and amateur fossil collectors.

The Mazon Creek biota is divisible into three different groups, which are:

- 1.) The Essex Fauna, consisting of near-shore salt water creatures, possibly a mud flat or deltaic condition.
- 2.) The Braidwood Fauna, which comprises non-marine fresh- to brackish-water animals that inhabited the shoreline coal swamps.
- 3.) The Braidwood Flora, whose plant fossils existed in a terrestrial lowland.

The fossils discussed in this article belong to the Marine Essex Fauna, which is mid-Pennsylvanian age.

The phylum Coelenterate (Cnidaria) includes aquatic animals whose bodies are composed of two layers of tissue enclosing a central cavity, the coelenteron, and are equipped with a mouth around which are tentacles which assist in capture, killing, and feeding of the organism. The phylum is divided into three classes: Scyphozoa (true jellyfish), Hydrozoa (sea anemones) and Anthozoa (corals).

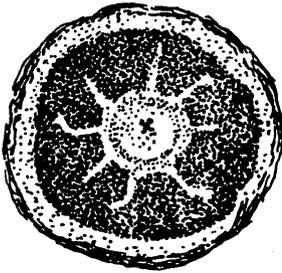
One of the most common fossils and, yet, one of the most amazing of the Essex fauna members is the Scyphozoa (true jellyfish) remains.

At one time, not even recognized as fossils, jellyfish remains were called "Blobs" or "Ghosts," which referred to their indistinct outlines and pale coloring compared to the surrounding rock. Jellyfish fossils compose about 50% of the population of the Essex fauna, with one species, *Essexella Asherae*, totaling 40% more itself.

True jellyfish are described as translucent, umbrella-shaped, symmetrical, aquatic, non-colonial animals. The umbrella, or bell, can be disc-shaped or high-crowned and is usually divided into eight lobes by means of indentation. The jellylike tissue has an almost cartilagelike consistency. The mouths of Scyphozoans are quadripartite ("x" shaped), and the edges (manubrium) drawn down in a fringed or divided pattern termed as tentacles or oral lobes. They swim by gas bladders and by contracting the bell. Most species prefer warm water close to shore. Percentages vary, but the water content ranges around 94%. These free-swimming jellyfish are the mature stage beyond the immature sessile polyp (Schypopolyup). Jellyfish are hermaphroditic, and reproduction depends on water temperature and many other factors.

The following gives a description of four scyphozoans found in the Essex concretions. Restorations are based on fossil specimens and comparisons to similar extant species.

## FOSSIL SCYPHOZOA FOSSIL EVIDENCE FOUND IN SIDERITE NODULES



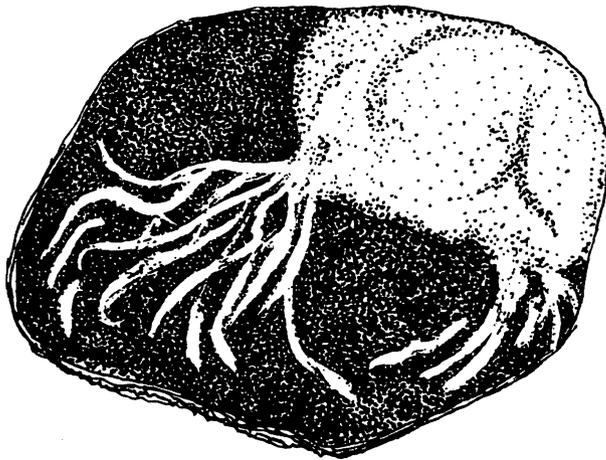
**fig 1.** OCTOMEDUSA PIECKORUM  
 PHYLUM COELENTRATA  
 CLASS SCYPHOZOA, ORDER CORONATA

A very small jellyfish that has a maximum size of 3/4 inch, but most are 1/4 inch to 1/2 inch with a round bell, with some specimens exhibiting a marginal groove. Beyond the groove are located the lobes from which eight tentacles emerge. In some specimens the mouth, which is quadripartite, can be seen in the center of the bell. Often seen as a light-colored stain on the surface of the concretion, Octomedusa is often found in multiples.

**fig 2.** ANTHRACOMEDUSA TURNBULLI  
 PHYLUM COELENTRATA  
 CLASS SCYPHOZOA, ORDER CUBOMEDUSAE

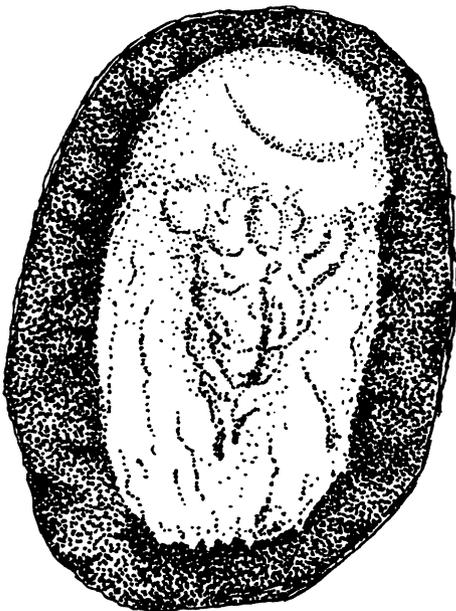
Unlike most jellyfish, the ones belonging to the order Cubomedusa tend to be strong swimmers. Modern day descendants of Anthracomedusa such as the feared "Sea Wasp" (*Chiropsalmus Quadrigatus*) have built-in protection in the form of stinging nematocysts. Human contact with the stinging cells can cause blisters and swelling which can leave permanent scars and even cause death. (My father was nearly killed by one of these jellyfish while swimming off the beach of Australia.) It is interesting to note that all members of this order are tropical and prefer dirty water environments, such as harbors and river mouths. This may shed some light on conditions of the Essex environment. Their favorite foods are bottom dwelling shrimps, and there are many fossil shrimp found in the Essex deposits.

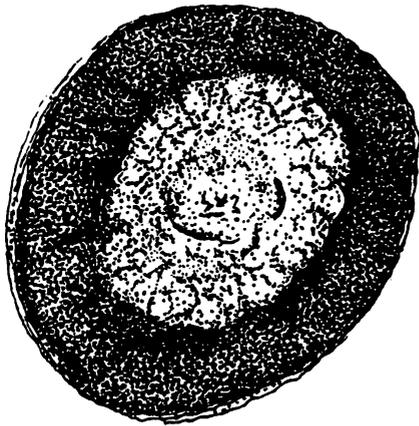
The bell of Anthracomedusa is cube-shaped with a bundle of tentacles at the four bottom corners. The underside would have been very concave, and the bell was capable of rapid contraction, giving it speed and agility in the water. There is very little difference between the fossil Cubomedusa and its living relatives.



**fig 3.** ESSEXELLA ASHERAE  
 PHYLUM COELENTRATA  
 CLASS SCYPHOZOA, ORDER RHIZOSTOMAE

The modern members of the order Rhizostomae are characterized by an absence of fringing tentacles as well as a high-arched bell. It is into this order that the most common of the fossil jellyfish, *Essexella Asherae*, fits. Known as "Blobs" to collectors, specimens represent the jellyfish lying on its side and can represent degrees of preservation from a light-colored stain on the surface of the split nodule to a very three-dimensional individual. A typical *Essexella* is oval in outline with a small roundish bell at the top, termed the accessory lobe. Usually this portion is more outstanding and raised from the surface of the rock. A membranous skirt extends from the bell or lobe and covers the oral lobes, most of the tentacles, and the manubrium. Because of the covering of the skirt, it is difficult to determine the structure of the organism beneath. Only in well-preserved individuals do we see a hint of the inner structure.



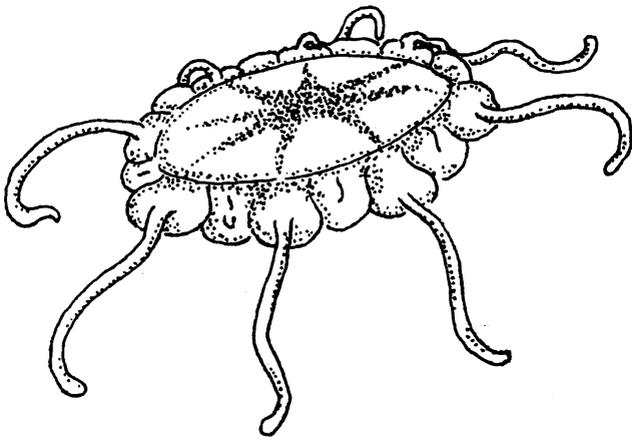


**fig 4. RETICULOMEDUSA GREENEI**  
 PHYLUM COELENTRATA  
 CLASS SCYPHOZOA, ORDER RHIZOSTOMAE

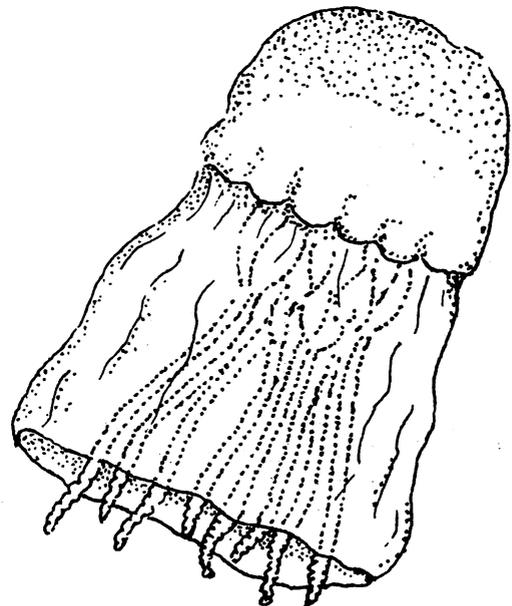
This small jellyfish is not common; however, there are some characteristics shown from the existing specimens. It is round with a visible absence of tentacles. A raised inner circular structure most likely represents gastrovascular system since this area, on some specimens, exhibits a quadripartite mouth. A network pattern gives the genus its name while the outer bell appears divided into lobes at the edges. Fossil specimens can appear quite circular without much definition or have pronounced lobes and a raised central area.

Although most collectors do not consider them the most exciting find, I, nevertheless, always find myself a bit in awe that such delicate creatures, millions of years old, should have left any sort of trace whatever.

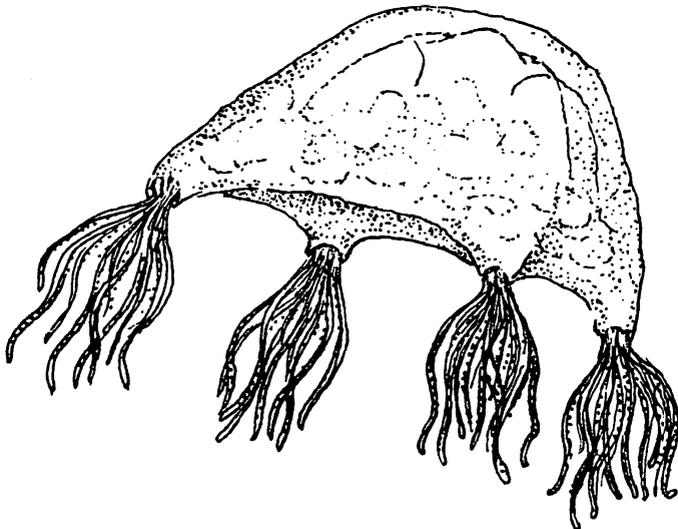
### FOSSIL SCYPHOZOA DIAGRAMMATIC RESTORATIONS



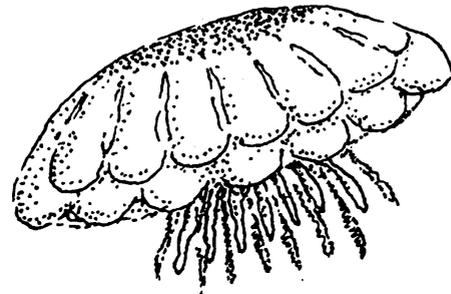
**fig 1a. OCTOMEDUSA PIECKORUM**  
 Greatly enlarged, normally 1/4 to 1/2 inch. Note dome-shaped bell and marginal lobes from which appear eight tentacles.



**fig 3a. ESSEXELLA ASHERAE**  
 About natural size. Note membranous skirt extending from bell and covering oral lobes and tentacles.



**fig 2a. ANTHRACOMEDUSA TURNBULLI**  
 About 1/2 natural size. Note four groups of tentacles and cube-like shape.



**fig 4a. RETICULOMEDUSA GREENEI**  
 Slightly larger than actual size. May have been divided into distinct lobes. No evidence of tentacles found on fossil specimens.

**"SILICA NOT"**

by Scott Vergiels, South Branch, Michigan

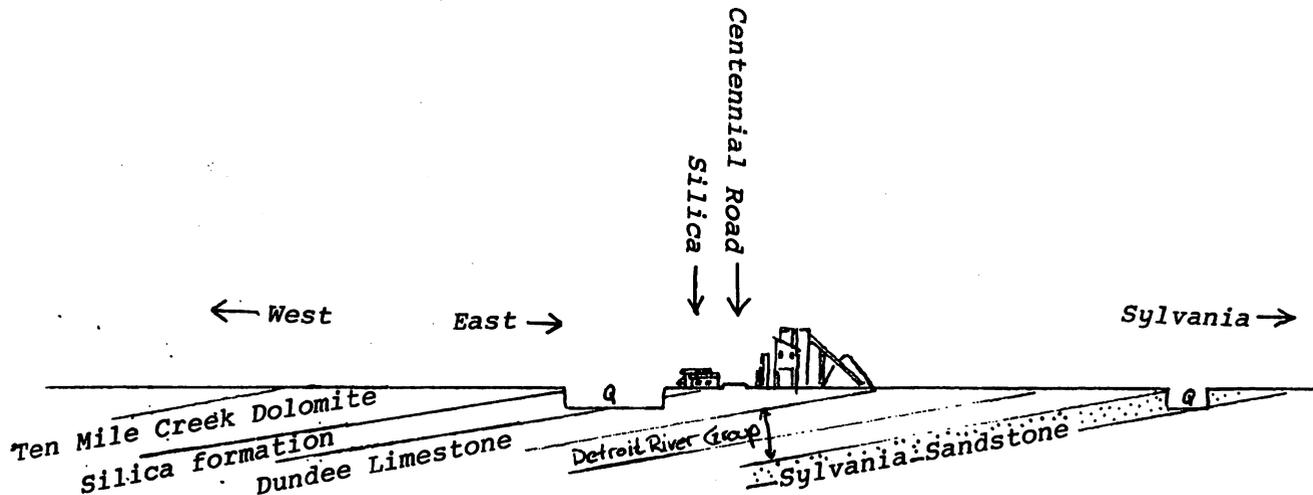
I have noted many references to fossils from the Silica formation (middle Devonian, S.E. side of the Michigan basin) being silicified. Without checking all the back issues, I can't say whether this has occurred in any MAPS Digest articles, but to set the record straight, at least for Digest readers, here's the story.

Early in the century small quarries were operated southwest of the town of Sylvania, Ohio, for glassmaking-sand. These pits were in the Sylvania Sandstone, a relatively pure formation ideal for this purpose. The small village that grew up half a mile west of these quarries was

called Silica for the local glass-sand industry.

When quarries for cement-making material were begun in the 1920's just northwest of this village, a new sequence of rocks was exposed, and in 1927 Grace Stewart described the initial fauna and named part of the new section the "Silica shale" after the nearby village. Despite its misleading name, the Silica is composed of normal claystones and carbonates, and its fossils are mostly preserved in calcite and pyrite in various forms and combinations.

The overlying Ten Mile Creek Dolomite does contain abundant silicified fossils, but few visitors to the old Medusa quarries paid much attention to the T.M.C.



The village of Silica is now an almost unnoticeable group of small buildings along Centennial Rd., among the light industries and quarry plants that now clutter the neighborhood, and the old sandstone quarries are long since filled in and built over. Note: the Silica formation lies nearly 200 feet up-section from the formation (the Sylvania Sandstone) ultimately responsible for its name.

**CONODONTS AS VERTEBRATES**  
 from Paleo Research Institute's  
*American Paleontologist*, 8/95

Conodonts are tiny tooth-or comb-shaped fossils found in rocks of Cambrian to Triassic age. They are among the most useful fossils for dating rocks during this long time interval, but their biological affinities have remained obscure. In 1932 a fossil bearing articulated conodonts was described, but what exactly this "conodont animal" was has been controversial. Two new studies describe exceptionally well-

preserved conodont material and report features that would appear to solidify claims that conodonts were actually vertebrates, closely related to primitive Paleozoic fishes. S.E. Gabbott, of Leicester University in England, and colleagues present evidence (*Nature* 374:800, 1995) from Ordovician fossils from South Africa that conodonts had a pair of large eyeballs, associated with eye muscles. Mark Purnell, also from Leicester, demonstrates (*Nature* 374:798, 1995) the presence of wear facets on the tips of conodont cusps, and argues that this is evidence for a biting function.

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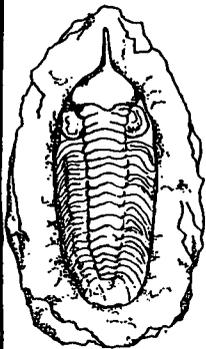
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- Taphonomic Approaches to Time Resolution in Fossil Assemblages (S.M. Kidwell and A.D. Behrensmeyer), 1993, 302 p., \$15.00
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- Paleocommunity temporal dynamics: The long-term development of multispecies assemblages (William Miller, III, ed.), v. 5, 1990, 421 p., \$20.00.
- Dino Fest (G.D. Rosenberg & D.L. Wolberg, eds.), v. 7, 1994, 504 p., \$30.00.

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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: One year from month of payment is \$20 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.

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