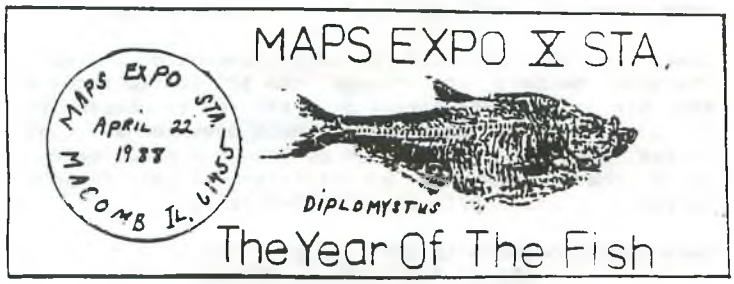
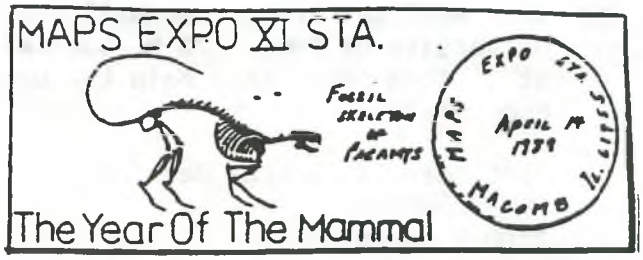
# M·A·P·S Digest

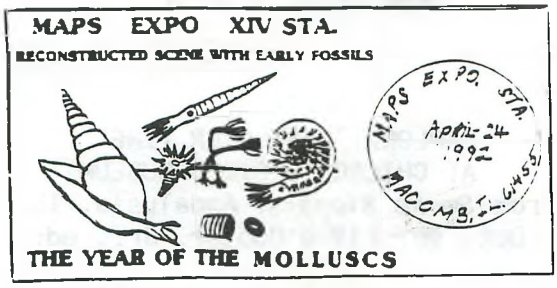
Official Publication of
Mid-America Paleontology Society

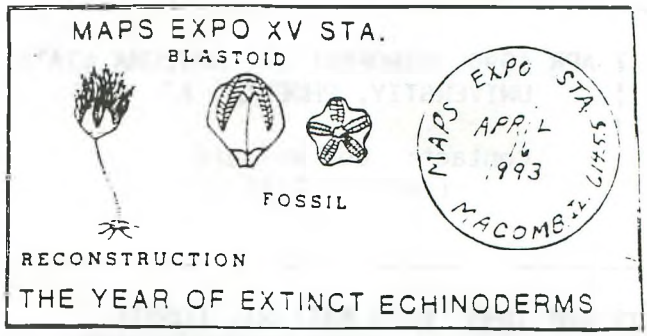
Volume 18 Number 8
November, 1995


## EIGHT YEARS OF MAPS CANCELS

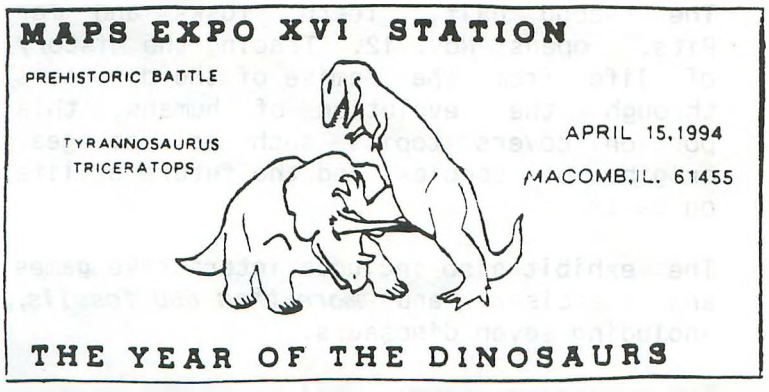






A LOVE OF FOSSILS BRINGS US TOGETHER

# MARK YOUR CALENDARS

**11 NOV MAPS MEETING. Trowbridge Hall, University of Iowa, 123 N. Capital St., Iowa City, IA. Main Lecture Room, #125.**

1:00 Board & General Meeting combined.
2:00 Program:

**13 JAN MAPS MEETING. Trowbridge Hall, University of Iowa, 123 N. Capital St., Iowa City, IA. Main Lecture Room, #125.**

1:00 Board & General Meeting combined.
2:00 Program:

**7 APR 1996 DINOFEST II, ARIZONA STATE**
**21 UNIVERSTIY, PHOENIX, AZ.**

Contact: Don Wolberg
(202)720-7178

**12 APR 1996 MAPS NATIONAL FOSSIL**
**13 EXPOSITION XVIII--BRACHIOPODS**
**14**

Fri., Apr. 12: 8am - 6pm
Sat., Apr. 13: 8am - 5pm
Sun., Apr. 14: 8am - 3pm

## ABOUT THE COVER

This month's cover, sent by Tony Verdi, features the postal cancels for each of the last eight EXPOs. Tony had been instrumental in designing the cancels and working with the post office in Macomb each year to have a special cancel available at the show. The cancel reflects the theme of the show and the subject of the special issue of the *Digest* for the year. The subject for 1996 is brachiopods.

***** 95/11 DUES ARE DUE *****

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--95/11 means 1995/Nov. 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:**
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**4800 Sunset Dr. SW**
**Cedar Rapids, IA 52404**

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## EXPLORE "LIFE OVER TIME" AT CHICAGO'S FIELD MUSEUM

**from *Smoke Signals*. Andalusia, IL. Oct. 95. Floyd Dopler, Jr., ed.**

Experience the beginnings of life on Earth at The Field Museum's new two-part exhibit, "Life Over Time." "DNA to Dinosaurs" opened June 11. It exploresevolution from the appearance of the earliest single-celled DNA based life through the age of dinosaurs. Themes include the beginning and diversification of life, and connections between ancient and modern life.

The second half, "Teeth, Tusks and Tar Pits," opens Nov. 12. Tracing the history of life from the demise of the dinosaurs through the evolution of humans, this portion covers topics such as ice ages, origins of species and the future of life on Earth.

The exhibit also includes interactive games and exercises, and ***more than 650 fossils***, including seven dinosaurs.

For admission prices, call (312) 922-9410.

## WANTED: YOUR ARTICLES AND ARTWORK/PHOTOS

This is an appeal for your contributions of articles and artwork/photos for the Digest. We accept articles on any phase of paleontology and encourage you to write on anything that interests you. We are also in need of artwork or photos for the covers of the monthly Digests. We rely on members for contributions to keep the Digest interesting, so please consider sending an article and/or a cover photo or artwork.

## CHANGE IN DUTIES OF 2ND V.P.

At the October 14th meeting of MAPS a motion was carried to shift the duty of Show Chairman from the President to the 2nd Vice President. Currently the President is the show chairman for the EXPO following the expiration of his term. The new proposal would place that responsibility with the 2nd Vice President instead. The change was made to divide the work load more evenly and to enable a member to accept either the job of Show Chair or the job of President without having to accept both.

## DR. BAKKER TO SPEAK IN DAVENPORT, IOWA

**source: *Smoke Signals*. Andalusia, IL. Oct. 95. Floyd Dopler, Jr., ed.**

Noted dinosaur expert, Dr. Robert T. Bakker, will present his family program "Tyrannosaurus Rex--the 10,00-Pound Roadrunner From Hell" at 7:30 p.m. November 9 at Putnam Museum's Adler Theatre in Davenport, Iowa. Tickets for the lecture are on sale at the Adler Theatre and Ticketmaster locations. Tickets for museum non-members are $15 for adults and $10 for students under 18. Tickets for members are $10 for adults and $5 for students under 18.

A reception for Dr. Bakker will be held from 5 to 7 p.m. Nov. 9 at the Putnam Museum. Only 200 patron tickets, including admission to the lecture and the reception, are available. Prices for non-members are $30 for adults and $25 for students under 18. Member prices are $20 for adults and $15 for students under 18.

## MAPS SLATE OF OFFICERS

Election of MAPS officers will take place at the upcoming November MAPS meeting on November 11. The following is the slate of officers recommended by the nominating committee:

President: Marvin Houg
1st Vice President: Dale Stout
2nd Vice President: Karl Stuekerjuergen
Secretary: Alberta Cray
Treasurer: Sharon Sonnleitner
1 year Director: Tom Walsh
(To fill vacated position)
3 year Director: Allyn Adams

Blane Phillips has 2 years remaining in his term as Director.

## LETTER TO THE EDITOR

Dear Sharon,

I wish to commend both you for printing, and Jim Kostohrys for writing the excellent article "Fossil Scyphoza From Mid-Pennsylvanian Deposits of Illinois". Eight years ago I had the good fortune to collect in Braidwood, with permission obtained through MAPS, and got in a matter of a couple of hours, a boxful of concretions, as well as ticks and chiggers. I cracked most open and to my disappointment found no distinct fossils (ferns, fosh, or tullys) but instead rather shadowy impressions and stains in their cores. I kept them all after Dan Troiani told me that jellyfish were found at this site, hoping that someday I would be able to identify them. Now I have identified a bunch of them thanks to this article. I only wish the author had put a bibliography on the end of the article so I could investigate further.

Keep up the great work!

Sincerely,
Richard Hill
Tucson, AZ

# TRILOBITES OF THE SILURIAN RACINE FORMATION OF NORTHWESTERN ILLINOIS

by Donald G. Mikulic, Illinois State Geological Survey, Champaign, Illinois
and William Hickerson, Augustana College, Rock Island, Illinois

Printed with the permission of Donald Mikulic
from *Paleozoic Stratigraphy of the Quad-Cities Region*
*East-Central Iowa, Northwestern Illinois*
Guidebook 59, Geological Society of Iowa, Bill J. Bunker, ed., April 24, 1994

## INTRODUCTION

The trilobite fauna of the Silurian strata in northwestern Illinois is poorly known. Few taxa have been reported or described in the scientific literature, and museum collections from localities in the area contain few trilobite specimens. A preliminary examination of this fauna, however, suggests that a diverse assemblage of trilobites may exist within carbonate buildups of the Racine Formation in the region. These trilobites are allied closely with taxa found in carbonate buildups of the same age in both eastern Iowa and southeastern Wisconsin, but they exhibit little or no similarity to contemporaneous taxa found in similar environments in northeastern Illinois. This paper briefly describes the Racine Formation trilobite fauna from northwestern Illinois and its taphonomic and geographic relationships to similar faunas in the midwestern U.S.

## STRATIGRAPHIC SETTING

The lithostratigraphic section of Silurian rocks in northwestern Illinois has been described most recently by Willman (1973) and Willman and Atherton (1975). In summary, the lower 200 feet of the section, consisting of the Mosalem, Tete des Morts, Blanding, Sweeney and Marcus formations, is well exposed in natural outcrops north of the Plum River Fault Zone in Jo Daviess and northern Carroll counties. Based on lithologic and paleontologic characters, these same units can be recognized throughout eastern Iowa (Johnson, 1983; Witzke, 1985, 1992) and, to a limited extent, in the Silurian outliers of southwestern Wisconsin.

An additional 300 feet of younger Silurian strata overlie these units south of the Plum River Fault Zone in Whiteside, Rock Island and Henry counties. These younger strata are poorly exposed in this area, and can be seen only in a few quarries and small outcrops. Willman (1973) and Willman and Atherton (1975) assigned all of the strata overlying the Marcus Formation to the Racine Formation. This included the youngest Silurian rocks in the area, which had previously been named the Port Byron Formation by Savage (1926) in recognition of their distinctive macrofauna.

Unfortunately, the presence of carbonate buildups or buildup-influenced strata in the Racine Formation here led to erroneous correlations with buildup environments in other areas. For example, Worthen (1862) correlated the strata at Port Byron, Rock Island County, with the well-known Bridgeport carbonate buildup in Chicago based on biotic similarities. In reality, however, he was correlating only environmentally similar carbonate buildups, not biostratigraphically correlative fossils.

Buildups within the Racine Formation of northwestern Illinois exhibit important differences in general character and composition among themselves, which may be due, in part, to different stages of buildup development or local variation in environmental conditions. For example, the buildup at Cordova, Rock Island County, contains a highly divers and abundant echinoderm fauna, whereas the buildups around Port Byron contain the "Port Byron" biota, comprising a distinctive suite of bivalves, brachiopods, gastropods and other fossils. Witzke (1992) recognized several distinct period of buildup development in the Silurian of eastern Iowa, suggesting that buildups in the Racine Formation of the study area may also represent several different time intervals and not a single period of buildup development.

The distinctive laminated dolomites seen in the Anamosa Member of the Gower Formation in Iowa are conspicuously absent from most of northwestern Illinois. A possible exception is the Anamosa-like strata locally associated with Brady Member-like buildups exposed north of Morrison, Whiteside County (H.A. Lowenstam, 1980, personal communication). This occurrence suggests that strata in at least the upper part of the Racine formation may be depositionally equivalent to the Gower Formation of eastern Iowa, and it is likely that the Racine is equivalent, or at least closely related to, the upper part of the Hopkinton, the Scotch Grove and the Gower formations of Iowa. Refinement of the Racine portion of the Silurian section in northwestern Illinois awaits the availability of more subsurface data.

## RACINE FORMATION TRILOBITES

Very few trilobites have been reported from the Racine Formation of northwestern Illinois. However, examination of the limited museum material available and recent collecting demonstrate that a fairly diverse trilobite fauna exists. Most, if not all, of these trilobites have been collected from carbonate buildups, but they are, in general, rare in these structures. Typically, trilobites are rare in all Silurian buildups, but many more specimens are available from those in northeastern Illinois and southeastern Wisconsin where large fossil collections were assembled over a 150-year period; such collections were not made from the buildups in northwestern Illinois.

Although the number of specimens currently available from the study area is small, there is enough material to establish relationships with trilobite faunas in other Silurian buildups of the midwestern U.S. The buildup trilobites from northwestern Illinois belong to the illaenid-scutelluid-lichid association typical of all normal-marine Ordovician-Devonian carbonate buildups worldwide (Mikulic, 1981). More specifically, they belong to the well-known *Bumastus (Bumastus) ioxus* subassociation (Mikulic, 1979, 1981, in press). This subassociation occurs in Wenlock-Ludlow buildups throughout southeastern Wisconsin, eastern Iowa, western New York and southern Ontario (Mikulic, 1979, 1987, in press) (Fig. 1). It is characterized by the numerical dominance of the bumastine *Bumastus (Bumastus) ioxus* and the scutelluid *Kosovopeltis acamus*. A diversity of other bumastines, cheirurids, lichids and odontopleurids are also present.

In northwestern Illinois, *Bumastus (Bumastus) ioxus* is the most common trilobite in the Racine Formation buildups, and has been found at nearly every locality sampled (Table 1). With the exception of a single proetid specimen, all other trilobite taxa from these buildups are identical to those found in the well-known buildups at Racine and Franklin, Wisconsin. In addition, *Bumastus (Bumastus) ioxus* and *Kosovopeltis acamus* are known from the buildups in the Palisades-Kepler Member of the Scotch Grove Formation at Palisades-Kepler State Park near Cedar Rapids, Linn County, Iowa, and the Wyoming quarry near Wyoming, Jones County Iowa (Mikulic, 1979).

The occurrence of the *Bumastus (Bumastus) ioxus* subassociation in northwestern Illinois contrasts sharply with the *Bumastus (Cybontyx) insignis* subassociation in the buildups in northeastern Illinois, Indiana and Ohio (Mikulic, 1976, 1979, in press) (Fig. 1). This latter subassociation is also dominated by bumastines, but large and diverse lichids occur with only rare, and generally small, scutelluids. On a species level, most of the trilobites are distinct between these two subassociations, even though they contemporaneously occupied the same environment and display nearly identical abundances, distribution and taphonomic features.

Trilobites from the Racine Formation buildups in northwestern Illinois exhibit taphonomic features typical of those in other Silurian buildups. With the exception of *Calymene* sp., which is commonly found articulated, all other trilobite taxa occur as disarticulated skeletal elements. In general, trilobites are rare in buildups, and most specimens are found in conspicuous localized

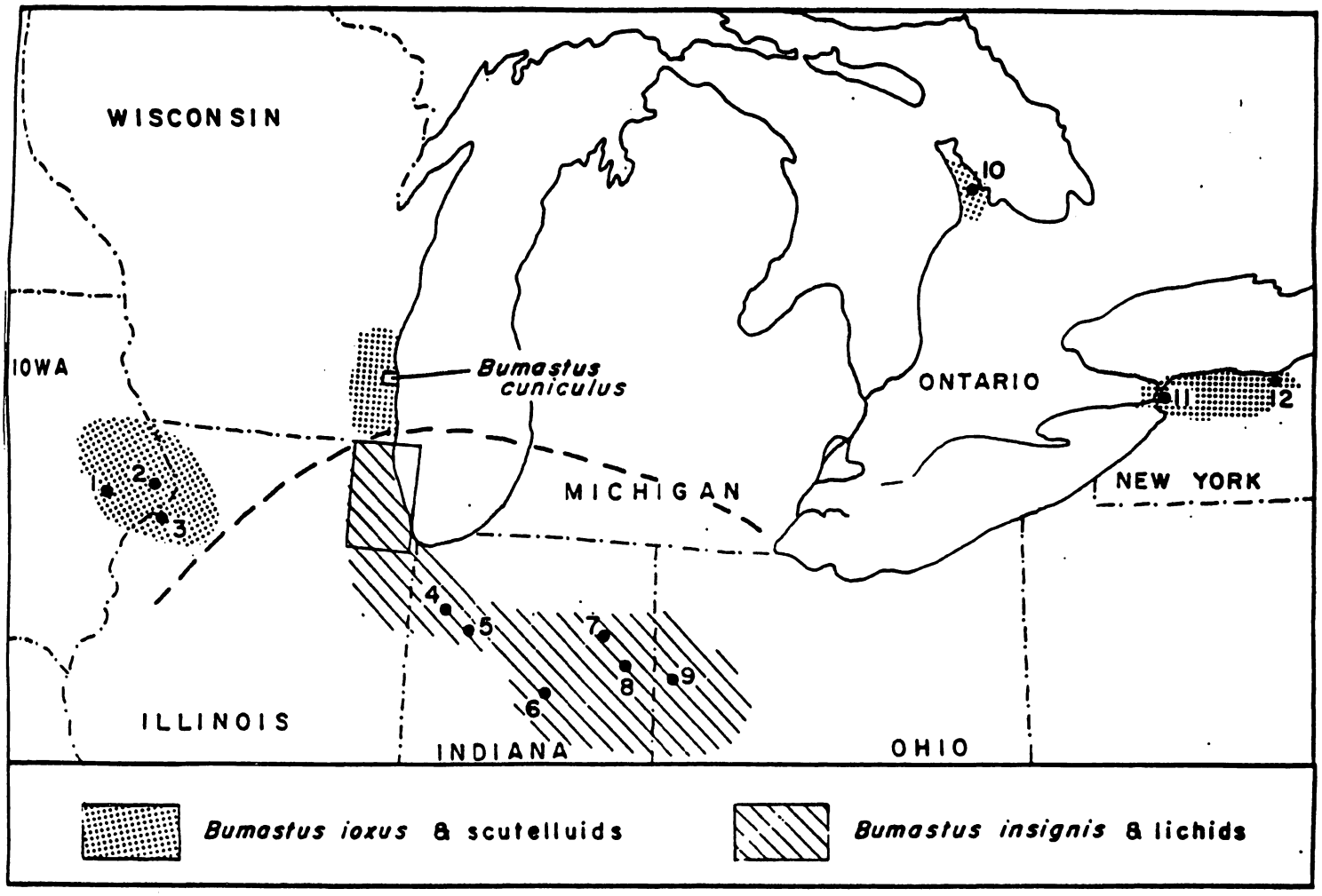


**Figure 1.** Map showing distribution of carbonate buildups containing the *Bumastus (Bumastus) ioxus* subassociation (stippled) and the *Bumastus (Cybantyx) insignis* subassociation (lined) (from Mikulic, 1979).

accumulations where disarticulated trilobite molts and dead cephalopods were concentrated in sediment traps (Mikulic, 1976, 1979, 1983; Mikulic and Kluessendorf, 1985). Components of these accumulations usually have a similar size and shape, reflecting hydrodynamic transport and sorting of available skeletal elements. In many cases, these accumulations superficially appear to be monospecific, but some are highly diverse. Hundreds and even thousands of trilobite parts can occur in these accumulations. Most are dominated by nearly equal numbers of *Bumastus (Bumastus) ioxus* cranidia and pygidia, which display a preferred convex-down orientation; free cheeks and other parts are usually underrepresented as a result of the hydrodynamic sorting. The dominance of bumastines in these accumulations probably reflects their true abundance in these buildups. Accumulations dominated by other trilobite taxa or cephalopods are also known. For example, M. Philcox (1972, personal communication) found accumulations of *Kosovopeltis acamus* pygidia in the quarry at Cordova and accumulations of the cephalopod *Phragmoceras* are known from the quarry at Wyoming, Iowa. In addition, Foerste (1930) described a diverse and abundant cephalopod fauna from Port Byron based on specimens collected by T.E. Savage from"pockets" in what are now known to be carbonate buildups, suggesting similar accumulations.

If the accumulations are not viewed as the actual rare, localized features that they are, the concentrated nature and sorting of the trilobites and cephalopods may present a distorted impression of their true diversity and abundance within the

**Table 1.** Distribution of trilobites in Racine Formation carbonate buildups in northwestern Illinois.

| | LOCALITIES | | | | | | |
|---|---|---|---|---|---|---|---|
| | Midway | Cleveland | Allied | Cordova | Morrison | Port Byron | Albany |
| **TAXA** | | | | | | | |
| *Bumastus (Bumastus) ioxus* | X | X | X | X | X | | X |
| *Bumastus (Cybantyx)* sp. | X | | | | X | | X |
| *Kosovopeltis acamus* | X | | | X | X | | X |
| *Arctinurus?* sp. | X | | | X | | | |
| *Dicranopeltis decipiens* | X | X | | X | | | |
| *Calymene* sp. | X | | | X | | X | |
| *Cheirurus* sp. | X | X | X | X | | | |
| proetid | X | | | | | | |

buildup. Taxa within these accumulations are the same as those present elsewhere in the buildup. However, the accumulations do not represent living associations, but only artificial associations of bioclasts with similar hydrodynamic properties.

## ACKNOWLEDGMENTS

We thank Markes Johnson, the Heinz Lowenstam, Michael Philcox, Terry Frest and Brian Witzke for providing specimens and information; Joanne Kluessendorf for reviewing the manuscript and assisting in field work; and quarry operators and land owners for access to their property.

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## "THE EYE FOR THE IMPORTANT FOSSIL"

**by Johnathan M. Campbell**
**RMFMS Fossil Technical Chairman**
**from RMFMS February 1995,**
**via *PaleoDiscovery*, March 1995**

Anyone can collect beautiful, display quality fossils. What I am taking about are the fossils that seem to get left in the field because they are not beautiful or interesting looking. The scientifically important fossils that you may not care to have in your collection because they are not something great to look at and/or show off to other collectors.

Most of the time fossils of this nature are simply overlooked in the excitement to find a great ammonite, or that oreodont skull. One should look beyond these exciting fossils and look at the mundane fossils laying around the display specimen--the broken fossils and the tiny fossils. These are the really important ones, and new fossils that seem to be almost always overlooked by the general collecting populace.

I have been collecting and working with fossils since I could almost first walk and talk. I have come to the point where I can recognize an unusual fossil when another person would leave it behind as an uncollectable fossil. Here are a couple examples of times I have found important fossils left by others. They did not know what it was, or that it could even be important because it was too unassuming.

Linton, Emmons County, North Dakota. Late Cretaceous, Fox Hills Formation: It is a popular collecting area along the Missouri River. I was walking along the beach when I noticed a small concretion that had been cracked open in the recent past, probably just a few days earlier. At a glance I noticed that there was chitin in the concretion fragments. Chitin in the Fox Hills means one thing--crustaceans. They are very, very rare in the Fox Hills Fm. I bagged up all the pieces and took them home and glued them back together. The fossil turned out to be a small shrimp carapace, possibly an undescribed species. It did not look like anything much to whoever cracked open the concretion, but it was a very important specimen. It is now in the N. Dak. State Fossil Collection, preserved for future generations to study and look at.

Baker, Fallon County, Mont. Late Cretaceous, Pierre Shale: There is a popular collecting site in a road cut just east of Baker. I was looking through the broken concretions left by previous collectors when I spotted some small 1/4 inch, solitary cor-als in one broken concretion. They looked like nothing other than broken shells in the rock, to the untrained eye, that is. They turned out to be different from any other coral I know of from the Pierre. One collector's loss for not looking for the unassuming fossil is my gain for finding them.

These two examples are not all that unusual! It is fortunate, but many fossil collectors only look for flashy and/or fossils that are obviously good fossils. They do not look for the mundane, or just have not learned, or will not learn to develop the eye for finding the important fossils. Not the big pearly ammonites, or the perfect leaf, but the little black specks that are the Bryozoans, or the leaf fragment that is actually an insect wing. Open your eyes and look closely at every fossil and you may see a whole new world to collect in.

# ADVERTISING SECTION



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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.



**CYATHOCRINITES**

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