

M.A.P.S *Digest*

Official Publication of
Mid-America Paleontology Society
<http://www.midamericapaleo.org>

Volume 43, Number 2
Summer 2020



“A LOVE OF FOSSILS BRINGS US TOGETHER”

Calendar

2021

March 27-28

CVRMS Show

Location: Hawkeye Downs, Cedar Rapids

Theme: Meteorites

April 16-18

MAPS EXPO XLII

Location: Sharpless Auctions

Exit 249 I-80

Iowa City, Iowa

Theme: Ordovician II

Keynote Speaker: Dr. Dennis R. Kolata

Topic: The Platteville Formation Fauna of the Upper Midwest U.S. - A Snapshot of the Great Ordovician Biodiversification Event

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Contributions to Digest Needed

The Digest editors encourage the members to submit articles for publication in the Digest issues. The Digest is for the members and should reflect their interests. If you have specimens that you collected and would like to share with other members or would like to describe a favorite collecting site, please write an article in Word, Times New Roman size 12 font, single spaced with one inch margins, and send to the editors. Photos and diagrams can be e-mailed separately or incorporated in the article.

John: Fossilnautiloid@aol.com

Chris: CDCozart@aol.com

Call for Papers

The theme for the **2021 EXPO** is the **Ordovician II**. Any paper dealing with fossils, stratigraphy, or site-specific paleontology of the Ordovician Period would be appreciated. The papers should be in Word, Times New Roman, size 12 Font, single spaced with one inch margins, and e-mailed to one of the Digest Editors by the **last week of February 2021**. Diagrams/Photos can be sent separately or imbedded in text. **We have room for 1-2 additional papers.**

John: Fossilnautiloid@aol.com

Chris: CDCozart@aol.com

DUES INFO

Please send your \$20 2020 MAPS dues to:

Dale Stout

2237 Meadowbrook Drive S.E.

Cedar Rapids, Iowa 52403

About the Cover

The cover photo for this issue features the US 421 road cut north of Madison, Indiana. This cut features most of the Upper Ordovician Richmond Stage, the "Madison Reef", and the Ordovician-Silurian contact. See article on the "Madison Reef" by Tom Williams p. 5 this issue. (Cover photo by John Catalani.)

Mid-America Paleontology Society Board Meeting Minutes Saturday November 9th, 2019. Trowbridge Hall, Iowa City

Board members present: Marv Houg, Jim Preslicka, Karl Stuekerjuergen, Gil Norris, Doug DeRosear, Dale Stout, Tiffany Adrain (scribe).

Jim Preslicka gave a presentation: "Imaging and Digitization for Amateurs" based on his summer trip to The FOSSIL Project and iDigBio workshop of the same name.

Marv called the meeting to order at 2.15pm. Marv read the minutes of the March 29 meeting. Jim motioned to accept them, Karl seconded, minutes accepted.

Jim read the Treasurer's report. Karl motioned to accept, Gil seconded. Report accepted.

Expo updates (Marv):

- Marv has a copy of the next Digest from John with show info and called for Digest articles on the Ordovician. Dennis Kolata is the Keynote Speaker.
- Discussed adjustment of table fees, which were determined to be ok. Tom Williams has communicated that new dealers are attending.
- Tiffany and Jim will do a photo workshop every day of Expo.
- Advertising – Tiffany will contact her local media contacts with news release.
- Amy Preslicka will contact local radio stations that provide free ads for 501 c 3 organizations, if we have that status by then, and investigate possibility of a remote broadcast from Expo.
- Tiffany will provide a display of Ordovician fossils and a display of selected material from the recently donated Wolf Collection.
- Jim will give Expo cards to Doug and Tiffany for distribution.
- Marv will contact Sharon about show flyer.
- Awards: please send nominations to Marv.
- Show security – Bill Desmarais

MAPS Officers: Slate of nominees presented with no nominations from the floor. Gil motioned to accept the slate of nominees to office, Karl seconded. Officers accepted.

President: Marvin Houg

1st Vice President: Dale Stout

2nd Vice President: Tom Williams

Secretary: Tiffany Adrain

Treasurer: Jim Preslicka

Digest Editors: John Catalani & Chris Cozart

Webmaster: Jim Preslicka

Membership: Dale Stout

Immediate Past President: Gilbert Norris

Directors: Karl Stuekerjuergen (20), Doug DeRosear (21), Robert Rondinelli (22)

Marv gave an update on the 301 c 3 application.

Gil motioned to adjourn. Meeting adjourned 3.05pm.

Mid-America Paleontology Society Board Meeting Minutes Saturday February 22nd, 2020. Trowbridge Hall, Iowa City

Board members present: Marv Houg, Jim Preslicka, Karl Stuekerjuergen, John Catalani, Tom Williams, Doug DeRosear, Bob Rondinelli, Dale Stout, Tiffany Adrain (scribe).

Tom Williams gave a presentation: "Mosasaurs: Kings of the Late Cretaceous Seas."

Marv called the meeting to order at 2.40pm and read the minutes of the November 2019 meeting. Corrections: Dale Stout was *not* present, 501 c 3 should read 501(c)(3). Jim motioned to accept corrected minutes, Bob seconded, minutes accepted.

Jim read the Treasurer's report, circulated information for 501(c)(3) application.

Motion to approve \$600 donation to PRI. John seconded. Motion approved.

Motion to approve donations of \$500 to UI; \$750 to Paleontology Society General Scholarship Fund; \$250 Paleontology Society Strimple Award. Karl seconded. Motion approved.

Dale motioned to accept Treasurer's report, Doug seconded. Report accepted.

Bob reported that he met with the attorney regarding 501(c)(3) application that was declined due to Articles of Association having arcane language regarding fraternal organization. Bob is sending off for original update to Articles which are stamped. Will apply for refund of application fee separately.

Tom gave the Expo report:

- Clarion is now called Bohemian and will no longer allow motel show. Dan is exploring other venues for that.
- Doug asked about date of New Jersey show. Tom said it is difficult to avoid coinciding with other shows. Marv is collaborating with other clubs about show dates.
- 104 tables are reserved so far, expecting more. Tom will contact vendors who have not reserved yet. Marv looking into table hire with Sharpless to try to save costs.
- Bob Kurdelmeyer volunteered to do advertising on social media.
- Tiffany will do an Ordovician display, including "Scorpy."
- John reported he has 6 papers, 53 pages, 5 authors for the Expo Digest, with 3 more papers expected. Discussion about number of Digest copies required. John proposed a motion to print 350 copies of the 2020 Expo Digest and a smaller reprint run of the 2010 Expo Digest (also Ordovician theme, John and Marv to determine how many). Bob seconded. Motion approved.
- Tom proposed to accept the 2021 Expo theme: "Sea Monsters – Cambrian to Pleistocene." Karl seconded. Theme accepted.
- Dale listed Expo 2020 speakers and asked Jim to give a program on the MyFOSSIL photography course.
- 2020 awards discussed.
- Bill and AJ will do show security.
- Live auction will be held at Bohemian at 5.30pm on the Saturday; Keynote Speaker Friday at 5.00pm.

Old Business:

Dale has a new source for name badges.

Audit Committee is Dale and Tiffany.

Tom suggested inviting Phil Curry and Eva Koppelhus to future Expo with either as Keynote Speaker.

New business:

Expo 2021 dates: April 16-18.

Amy Preslicka has contact at Marriott and will check pricing for potential Expo rental.

John motioned to adjourn. Doug seconded. Meeting adjourned.

Upper Ordovician Coral Reef Madison, Indiana

Thomas Williams

Upper Ordovician Katian Richmondian times represent very fossiliferous and impressive sea life in the amount and preservation of fossils. Fossil preservation is excellent at Madison, Indiana, and other nearby localities. The Cincinnati Arch (see Figure 1) is the primary structural feature which influences the Madison, Indiana, area as well as the Jessamine Dome. Surrounding this area during the Upper Ordovician are three deep water basins; to the east the Appalachian Basin, the Illinois Basin to the West, and the Michigan Basin north. Providing this structural high point geographically the Lexington Platform was surrounded by major deeper water but still basically on the Laurentian continental mass (see Figure 2). This provided some critical deeper water for corals to thrive something prevalent in today's coral reefs. The structural high area located in shallow tropical seas provided ideal conditions for organisms to build places to live. Madison, Indiana, is located on the western flank of the Lexington Platform far enough below the wave base but shallow enough as to allow sufficient light to penetrate, an important element. In modern oceans, corals tend to exist in shallower platform areas and on slopes where deeper water is fairly close. Therefore, the Lexington Platform was ideal locality for corals to thrive (Brett et al. 2012, Hartshorn et al. 2016, Davis and Meyer 2009).

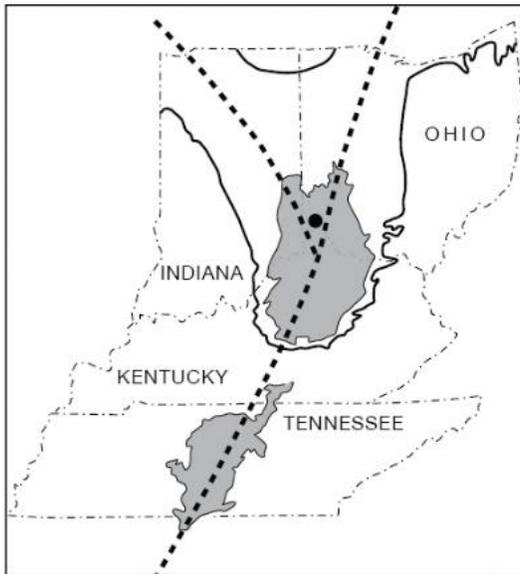
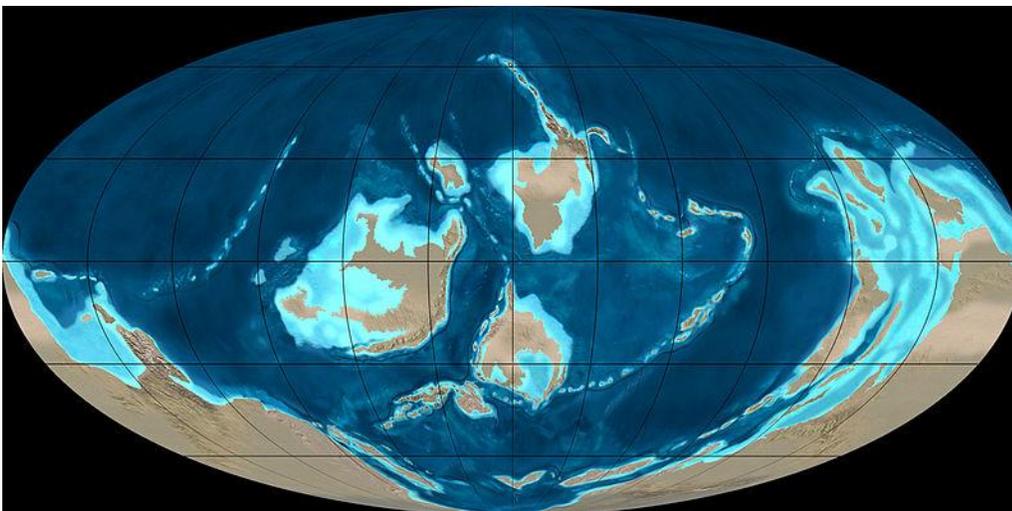


Figure 1. Cincinnati Arch and Ordovician outcrops in grey.

Figure 2. Late Ordovician paleogeography.



North of Madison, Indiana, along US Route 421, the road cut still shows impressive sized coral heads of *Cyathophylloides* in situ which existed through the Late Ordovician (see Figures 3 and 4). *Cyathophylloides* occur in the dolomitic silt and shale layers and appear as large lumps. Overall, the road cut consists of limestone with coral biostromes with black strap like layers that are considered to be algal layers preserved in some of the limestones (see Figure 4). Shale and limestones interbedded with siltstones and shales which are dolomitic in nature are present with some layers showing preferential weathering (see Figure 4). Fossils weather out from the shale units as well as being preserved on layers of limestones including brachiopods, rugose corals, bryozoans, trilobites, and cephalopods. Upper Ordovician Richmondian strata Madison reefs would be considered part of the western flank of the Cincinnati Arch which would support a suitable environmental setting in depth with flanking deeper water. Figure 4 shows several layers of *Cyathophylloides* corals in situ showing that this is not a single occurrence but a repeating sequence. What is visible along US 421 heading north from Madison is the upper thirty-five meters of the Richmondian to the unconformity at the Ordovician Silurian boundary Brassfield Formation clearly visible along the grey Ordovician limestone and the orange colored Brassfield Formation (see Figure 5). Exposed along US 421 geologic units visible include the upper part of the Waynesville Formation, Liberty Formation, Lower Whitewater Formation, the upper part of the Saluda Formation, and the Silurian Brassfield Formation (Brett et al. 2012, Hartshorn et al. 2016, Davis and Meyer 2009).



Figure 3. *Cyathophylloides* in situ.



Figure 4. Whitewater Formation showing the “Madison Reef” and multiple layers of *Cyathophylloides*.



Figure 5. Ordovician-Silurian Unconformity.



Figure 6. *Grewingkia* solitary rugose coral.



Figure 7. *Cyathophylloides* colonial rugose coral.



Figure 8. *Hiscobeccus capax* brachiopods.



Figure 9. Cephalopod.

Waynesville Formation, seven meters plus thick, is a rubbly mudstone consisting of shale as well as limestone areas which can act as hardgrounds. Fossils include: brachiopods, bryozoans, the rugose horn coral *Grewingkia canadensis* (see Figure 6). *Grewingkia canadensis* is a solitary rugose coral that is common in certain layers and road cuts around Madison. Comparing *Grewingkia* to *Cyathophylloides* (see Figures 6 and 7), the similarity at a glance isn't apparent; however both are rugose corals, one solitary and one colonial. These corals don't appear, however, to occur with each other or at least in great abundance with each other. Brachiopods found include *Vinlandostrophia*, *Leptaena*, *Hebertella*, *Strophomena*, *Hiscobeccus* and the much less common *Eochonetes*. *Hiscobeccus* can be found on limestone hardground limestones with masses of them concentrated on layers (see Figure 8). Occasional trilobites and mollusks including cephalopods (see Figure 9) are also found with gastropods being common in certain units. The Liberty Formation also has diverse fossils, many of the same fossils as found in the Waynesville; however the Liberty transitions into a much less fossiliferous dolomite which trends into silt which represent the end of this part of the sequence. Compact limestones deposited on these silts and are fossiliferous being dominated by bryozoans with some brachiopods mixed in. Bryozoan beds found here at Madison conform

and correlate stratigraphically to other such bryozoan beds found in northern Kentucky (Hartshorn et al. 2012, Davis and Meyer 2009).

Lower Whitewater Formation, sometimes called the basal Saluda Member, is an on-going discussion as to proper stratigraphy terminology as to which formation is actually present. Lower parts consist of layers of shell beds in a mudstone. A grey layer of ramose bryozoans, shell layers and brachiopods *Rafinesquina* and *Strophomena* with interbedded dolomitic mudstones occur in this lower part of the Whitewater. Above this the dolomitic coral biostrome, which is referred to as the Madison Reef, defines the lowest part of the Saluda Member. The reef (see Figure 4) displays three very distinct layers of the coral *Cyathophylloides* that locally can be very large (Hartshorn et al. 2016, Davis and Meyer 2009).

Cyathophylloides is a hemi-spheroidal shaped colonial rugosan coral which occurs throughout Cincinnati rocks in Indiana and Northern Kentucky. These coral heads reach large size at Madison and have been measured up to 0.5 meters in diameter with relief up to 0.6 meters. These corals do not form the mounds as we typically think of in coral reefs of today but none the less were massive foundations of biomass in warm shallow tropical seas. Cincinnati seas located in the tropics were subject to major storms, some of these storms were strong enough to dislodge some of the coral heads. Despite coral heads being disoriented, inverted, and even overturned, *Cyathophylloides* continued to survive these storm disasters recorded in these units. This reveals the outright power of storms and the impact of strong waves on the bottom of the sea. However, the size of these corals shows that there were periods of minimal disturbance which allowed proliferation and widespread dispersal of these corals in the Upper Ordovician. Massive laminated dolostones represents an end of the reef building at Madison, Indiana. Other fossiliferous beds exist in higher units in the Hitz Member of the Whitewater with an abundant gastropod *Murchisonia hammelli*. The Hitz Member contains other locally abundant fossils layers including stromatoporoids, bivalves, cephalopods, and ostracodes. Above this is the Silurian Brassfield Formation of Middle Wenlock where a very visible unconformity exists. Almost 80 feet of the Silurian units overlay the Ordovician sediment along US 421 (Brett et al. 2012, Hartshorn et al. 2016, Davis and Meyer 2009).

In conclusion, the Madison Reef is an impressive structure along the western flank of the Cincinnati Arch of the Upper Ordovician. This is an ancient Ordovician environment that can be shown to be similar in at least some ways to modern environments in which corals are present. Corals like *Cyathophylloides*, which are not like modern corals, still occupied the same basic environmental niche that today's corals do. Both are capable of forming large structures on the ocean floor helping other organisms take hold and stabilizing the substrate. This Ordovician coral was also storm resistant as shown geologically as being significantly disturbed by a storm and surviving. This creates stability on the ocean floor allowing successful recolonization of the surrounding areas. *Cyathophylloides* coral heads present in place at Madison, Indiana, are well worth your time for a visit if you are in the area.

References

- Brett, C. E., McLaughlin, P. I., Cramer, B. D., Dattilo, B. F., Schramm, T. J., and Thomka, J. R. 2012. Middle Paleozoic Sequence Stratigraphy and Paleontology of the Western Flank of the Cincinnati Arch and Illinois Basin. Department of Geology, University of Cincinnati, Cincinnati, Ohio, 103 p.
- Hartshorn K., Kallmeyer J., Brett C. 2016. Dry Dredging the Cincinnati Arch Field Trip Guidebook 2016 Fossil Mini Conference Cincinnati Ohio, 40 p.
- Davis, R. A. and Meyer, D. L. 2009. A Sea without Fish. Indiana University Press, 368 p.

Collecting isn't what it used to be--The State of Paleontology

John A. Catalani

Fossil collecting is a tough business. One does not just jump in the car and drive to a collecting site. There is work to do in the form of research and planning to locate potential collecting sites. Assuming the site you researched is still there (a big assumption nowadays), productive collecting can begin. There really is, of course, no guarantee that any site will be still be available for future generations. The problems I have encountered attempting to re-collect sites I had previously collected provided the incentive I needed to once again evaluate, from the perspective of an amateur, the State of Paleontology (kind of like the State of the Union but from a much more scientific perspective). Let me explain.

Some years ago, my wife, Kathy, and her sister, Pam, had planned a trip to Seattle to visit their uncle. He is one of the few remaining relatives of their parents' generation and had to be placed in a nursing home a few years ago. Kathy had planned to fly from Chicago to Minneapolis (Pam lives in Farmington, Minnesota), meet up with Pam, and fly to Seattle together. Being the opportunist that I am, I suggested that I drive her to Farmington and, for the five days they would be in Seattle, stay in Pam's townhouse and collect in southern Minnesota and northern Iowa. I had collected the Ordovician in that area as a participant of a GSA field trip about 20 years previously. Field trip stops included quarries, both active and abandoned, as well as road cuts. I subsequently collected these sites several times. On one spring-break trip, Kathy and our daughter, Kristan, collected with me--memorable because it was Kristan's first major collecting-only trip (happily, she had a great time). On each occasion, all off the sites were available and productive fossil collecting ensued. However, the lack of success I experienced on this most recent encounter with those original sites proved to me, once again, that all collecting sites are ephemeral and cannot be taken for granted.

So, here's the tally of sites revisited on this latest trip. None of the quarries remained viable collecting sites: one was inactive and probably abandoned, one had a paved road through it leading to a private house, another was used for storage, and two were so overgrown that it took a great deal of imagination to realize they actually were once quarries. The road cuts faired only a little better. The one in the Decorah Shale was still available and produced some material but is getting very overgrown--not unusual with shale cuts. Several others were still there but slump and vegetation had taken their toll. Another was no longer there. I don't mean it was completely overgrown; I mean it was simply missing. It appears that the cut was excavated and re-graded and assimilated into a farmer's field.

Fortunately, thanks to my obsessive research, I have two file-cabinet drawers full of professional papers, field trip guidebooks, and maps containing localities organized by state and system. It is, therefore, easy to assemble a set of contingency sites for any trip I contemplate. Most, but not all (illustrating the advantage of having an abundance of sites on file), of my contingency sites for this trip were available providing me with days of enjoyable and relaxing fossil collecting. The most productive site was one Kathy and I had "discovered" near Rochester during our first visit with Pam the previous year--no time to collect then but it really looked good. My assessment proved to be correct and I spent an entire day at the site. It was, apparently, an unsuccessful housing development project that went as far as clearing away a sizeable chunk of real estate exposing rocks of the Galena Group (specifically, the "Lower Receptaculites Zone" for those fellow Ordovician Geeks out there). Fossils were weathering out everywhere and were enthusiastically collected including six types of brachiopods (both articulate and inarticulate), sponges (*Hindia sp.*), *Prasopora* and other bryozoans, rugose corals, mollusks, and a complete enrolled trilobite (*Iliaenus sp.*).

Quarries are particularly susceptible to human intervention. For my collecting, the best situation, aside from permission to collect active quarries, is the small abandoned quarry that is just simply ignored. More often than not the owners allow access to these quarries and, given the right circumstances, hand excavation is both safe and productive. The most common use of abandoned quarries is for storage of various materials such as farm or construction equipment and supplies. I have also seen abandoned quarries used by farmers for their livestock--makes sense since a drift quarry can be utilized safely and easily and needs a fence only at the entrance. The kiss of death for abandoned quarries is their use as landfills since they are destined to be filled and then covered never to be seen, let alone collected, again. Hard to believe, but the off-limits attitude of many quarry owners is actually one of the least fatal scenarios--the quarry is still in operation and there is always the possibility of a change in ownership or a relaxed attitude of the present owners (I have encountered both) making the site once again available. Road cuts are also subject to the vagaries of time--they can slump or become overgrown (naturally or artificially). Also, natural exposures can become overgrown or real estate for various construction projects. Regardless of the causes, the decline in available collecting sites results in fewer fossils available for taxonomic and other paleontological research.

Another concern is the poor attention paid to fossil specimens (other than type specimens) that occupy the "stacks" of museums and universities. This includes the unthinkable: instances of collections actually being discarded. Personally, I have heard stories of collections housed in supposedly "safe" repositories that were discarded.

More commonly, the poor attention involves cramped storage space and specimen data that is not readily available to researchers. Granted, older collections are often not documented as completely as those made more recently. Lack of precise documentation is understandable given the rudimentary state of stratigraphic knowledge at the time most of these collections were made making them less valuable to today's researchers who require the high-resolution stratigraphic information available nowadays. This does not mean, however, that these collections are not useful. There are several ways in which older collections can make contributions to the science of paleontology: documenting inaccessible and often lost localities (been there, done that), filling in stratigraphic and geographic gaps, sources of new taxon, sources of new taxon interpretation (the *Archaeopteryx* specimen labeled as a pterosaur that the late John Ostrom found in a museum drawer is legendary), and use in the training of new systematists.

This last use illustrates the recognition by scientists of the rapidly declining number of paleontologists involved in systematics. The situation is so dire that many taxa-types have only a single or even no living systematic expert. This will obviously impact future systematic studies by limiting the acquisition of new data (specimens) and adversely affect the attempt to establish global databases used by researchers as reference. Worst case scenario is that our science of paleontology will simply stop dead in our tracks. With limited or no new taxonomic data being generated, paleontologists would be forced to analyze and reanalyze the same data *ad infinitum*. No matter how many different statistical techniques are applied to this data, a point will quickly be reached when no new insights are forthcoming resulting in stagnation--something none of us wants.

So, how do we solve these dilemmas? Probably the easiest is the situation of repository collections. Virtually everyone involved in paleontology agrees that the specimens held in these collections must be cataloged, placed on some type of on-line database such as *The Paleobiology Database*, and made available to all researchers. Remember, fossil specimens are the data on which the Science of Paleontology depends.

With the decline in systematists and field workers, amateurs should be encouraged to contribute, as many do already, their specimens and their expertise thus supplying paleontology with new data. We amateurs are a dedicated group and tend to collect our favorite sites often. Such dedication is what is required to make systematic collections that include not only the common material but also the rare taxa that often do not make an appearance until years after the discovery of a collecting site. A case in point concerns the two species of a new nautiloid genus that I had found. One species is found in the lower of three stratigraphic units under study but not in the upper two. The other species is found in the upper unit but not the lower two. After decades of collecting and extensive by-hand excavation at one quarry, I found both species in the middle rock unit thus extending the stratigraphic range of both and documenting the co-occurrence of the two species. Additionally, continuous collecting often results in comprehensive collections that can be used for population studies. Even if there was no shortage of systematists, it would be difficult for any scientist to match such collecting frequency since academicians often have many time-consuming non-research responsibilities that put constraints on their field work.

Any collection, professional or amateur, must be properly documented for the specimens to be used as data in any study, systematic or population. It is in the interest of paleontology that all collectors be schooled in proper documentation of both sites and specimens. I say again that we must promote an atmosphere of cooperation and mutual respect between all members of our community so that private collectors will feel comfortable sharing specimens and information. Furthermore, the dedicated amateur often possess a familiarity with the field stratigraphy of their collecting area(s). Well-documented amateur collections contain the data needed to help maintain paleontology as a viable and relevant science.

Declining availability of collecting localities, particularly quarries and public lands, probably impacts amateurs more than professionals who, due to their academic credentials, can often gain access to these restricted sites. However, there is a glimmer of light at the end of this long and dark tunnel. Many sites deemed geologically significant have been accorded protected status by various governmental agencies. Examples include Caesar Creek State Park in Ohio (restricted collecting permitted), Devonian Fossil Gorge in Iowa (no collecting permitted), Floyd County Fossil and Prairie Park also in Iowa (collecting permitted), and Mazonia-Braidwood State Fish and Wildlife Area in Illinois (restricted collecting permitted). Recently, there has appeared a concerted effort to place one of the northern Illinois quarries that expose Pennsylvanian Period rocks under protection with the aim to allow collecting once again.

I have offered few solutions to these problems. Certainly, members of the paleontological community can work together to change government policies that directly or indirectly affect our ability to collect fossils on public lands. Insuring that museum collections are preserved, catalogued, and made available to all researchers has been made easier with new technologies and websites such as *The Paleobiology Database*. The stakes are high because if we do not solve these problems, reverse the trends, and promote the field collecting and systematic research that were the very foundations of paleontology, our science is in danger of becoming stagnant and nonproductive, and I hope that such a possibility is as unacceptable to you as it is to me.

The **M**id-**A**merica **P**aleontology **S**ociety (MAPS) was formed to promote popular interest in the subject of paleontology; to encourage the proper collecting, study, preparation, and display of fossil material; and to assist other individuals, groups, and institutions interested in the various aspects of paleontology. It is a non-profit society incorporated under the laws of the State of Iowa.

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

Membership fee: \$20.00 per household covers one year's issues of DIGESTS. All Canadian and Overseas members receive the DIGEST by air letter post. For new members and those who renew more than 3 issues past their due date, the year begins with the first available issue. Institution or Library fee is \$25.00.

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

The MAPS official publication, MAPS DIGEST, is published 5 times per year – Jan-Mar, EXPO EDITION, May-August, Sept-Nov, Dec. (EXPO Materials). View MAPS web page at: <http://www.midamericapaleo.org>

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