

# M.A.P.S *Digest*

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

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**“A LOVE OF FOSSILS BRINGS US TOGETHER”**

## Calendar

**NOTE 1: Both the MAPS EXPO and CVRMS Show dates are tentative and dependant on the status of COVID-19.**

**NOTE 2: Until further notice, all MAPS monthly meetings will be held virtually via ZOOM, NOT in-person in Trowbridge Hall. Check the website and watch for e-mails for further information.**

### 2021

**October 22-24 (REVISED DATE)**

**MAPS EXPO XLII**

**(EXPO XLIII to return to April date in 2022)**

**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

[www.midamericapaleo.org](http://www.midamericapaleo.org)

**November 6-7 (REVISED DATE)**

**CVRMS Show**

**(To return to March date in 2022)**

**Location:** Hawkeye Downs, Cedar Rapids

**Theme:** Meteorites

[www.cedarvalleyrockclub.org](http://www.cedarvalleyrockclub.org)

### 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](mailto:Fossilnautiloid@aol.com)

**Chris:** [CDCozart@aol.com](mailto: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 June 2021**. Diagrams/Photos can be sent separately or imbedded in text. **We have room for 1-2 additional papers.**

**John:** [Fossilnautiloid@aol.com](mailto:Fossilnautiloid@aol.com)

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### DUES INFO

Please send your \$20 2021 MAPS dues to:

**Dale Stout**

**2237 Meadowbrook Drive S.E.**

**Cedar Rapids, Iowa 52403**

### About the Cover

The cover photo for this issue features a specimen of the trilobite *Bristolia bristolia*. The 3.5 inch specimen was collected from the lower Pioche Formation of the lower Cambrian near Caliente, Nevada.

**Mid-America Paleontology Society****Board Meeting Minutes****Virtual Zoom Meeting, Monday July 27, 2020**

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

Marv called the meeting to order at 7.23pm and thanked Sharon for organizing the Zoom.

2021 Expo: Tentatively going ahead with April 2021 Expo plans. Sharpless Auctions venue is booked. Covid-19 health and safety protocols will be developed by Tom and Marv for publication in December newsletter, and followed up with venue owners. Venue for the motel trade show needs to be confirmed. Discussion about how many Expo ad cards to print due to lack of venues to distribute them as other shows are cancelled due to pandemic. Decided to print 5,000 cards (half the usual number) to mail to scheduled shows, and use more social media and club newsletter announcements. Marv will get access to MAPS Facebook page. Checks for table fees will not be cashed until the end of March 2021, after Expo is confirmed to go ahead.

Membership dues: some renewals were included in table fee checks that were destroyed when Expo 2020 was cancelled. Jim will update the membership list and send reminders to members who have not yet renewed. A renewal reminder will be added to the next Digest newsletter. Renewals should be sent to Dale Stout.

Digest newsletter: Articles welcome now for a newsletter before November. Tiffany will send templates and instructions for collection catalogues, labels, etc. in preparation for her November presentation. Late September for a December newsletter. Some Digest newsletters are returned to sender. Jim will try to track down new contact details for these members.

Next meeting: On Zoom, Monday November 9, 2020, at 7pm. Tiffany will organize the Zoom meeting and give a presentation "Caring for your Collection." Jim will send the Zoom link to MAPS members two weeks prior.

Treasurer: Jim will send financial report to Board before next meeting. Awards made by MAPS will be reviewed at the next meeting, considering there was no Silent Auction this year due to Expo 2020 cancellation.

501(c)(3) status: Marv thanked Bob Rondinelli for working so hard to get this charitable status for MAPS. Bob will apply for the \$275 fee for the earlier, unsuccessful, application to be refunded, and will circulate annual reporting requirements for maintaining status. Bob will write an explanation of the new status for the Newsletter, with information about tax deductible donations.

Fall Field trip - Marv will find out about quarry access and Covid-related protocols.

Marv adjourned the meeting at 8.43pm.

## A Visit to Hawthorne Quarry

Andrew Ek

### History

The construction of the Illinois & Michigan canal was completed in 1848 and opened wide the doors for industry in the Chicago region. The ancient glacial Mud Lake, which stretched from Kedzie to Harlem Avenue, gradually drained into the canal and completely disappeared by 1900. Just east of Mud Lake, a small prairie town of mostly Polish and Czechoslovakian immigrants called Hawthorne (later incorporated in 1857 as Cicero) centered around the Dolese & Shepard, Hawthorne Quarry. The quarry opened in the 1850's (probably 1853) and operated on the Chicago, Burlington & Quincy Railway (CBQR construction was completed in 1853) and produced building and dimension stone, crushed stone for macadam (asphalt) and limestone for flux. After the Chicago Fire in 1871, there was a great surge in demand for stone and other building materials to rebuild the city and its emerging surrounding communities (Figure 1). The quarry closed in 1915 and was subsequently filled with garbage. Nearby structures still visible today featuring stone from the quarry include the neo-Gothic St. Mary of Czestochowa church and the Western Electric Hawthorne Works tower. According to a 1939 court filing transcript, approximately 75-100 squatters inhabited the property and a 14 year old girl drowned in a pool of deep water approximately 40 feet depth, in which floating planks, scum and other objects floated. The girl was playing with two other friends when suddenly the ground gave way and all three fell into water. Two friends luckily survived. It took two days to locate the girl's body. The premises were attractive to young neighborhood children who would often search for toys among the dumping grounds. Oddly, the landfill exists in a similar fashion today, although it is fenced and overgrown with vegetation. Homeless encampments still flourish just as they did last century. A "for sale" sign has been posted on the dreary property for many years.



Figure 1. Hawthorne Quarry in 1907 (left) and 2019 (right).

### Visit

My interest in Hawthorne was in investigating whether there was still the possibility of finding Silurian fossils at this classic and "forgotten" locality. There are a number of old paleontological texts and museum collections indicating Hawthorne was rich in fossils, trilobites in particular. Surely there must be some scattered fossiliferous rocks lying around left over from the old quarrying days? I decided to find out on an unseasonably warm New Year's Day in 2019. The landfill itself was posted, so I restricted myself to the outer periphery of the abandoned quarry. What I saw was an incredible accumulation of years and years of alcoholism; thousands of empty 40oz bottles of malt liquor littered everywhere, some of the bottles were

even fashioned into makeshift beds of glass. At one point, I lifted a large rock embedded in the mud on a slope and lying underneath was what appeared at first to be a dead garter snake. Upon closer examination I realized it was not a snake, but was actually two dead lizards. They were likely *Plestiodon fasciatus* commonly known as American five-lined skinks. I did not realize any lizards were native to the Chicago area. The section I was exploring was just steps away from a homeless encampment and a couple individuals approached to ask what I was doing. When I explained, they looked completely baffled, however they were friendly and I gave them a few bucks. Unfortunately, most of the rocks I was seeing were conglomerates, blocks of cement, and bricks. There were a couple muddy rocks hidden amongst the bottles, weeds and dead trees that appeared to show hints of reef material (Figure 2). Finally, after scanning the area, I grabbed a few of these rocks and lugged them back to my car to split open at home.



Figure 2. Rock containing trilobites hidden among garbage.

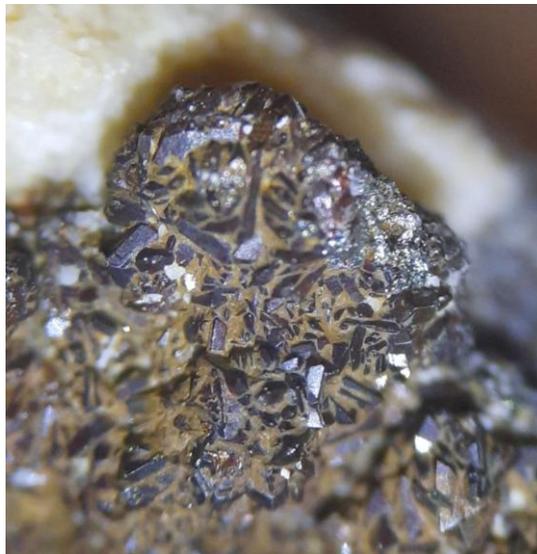


Figure 3. Oxidized marcasite and chalcopyrite (peacock ore).

## Paleontology

The fossils at Hawthorne are from the Racine formation. This formation is Homeric age (427 - 430Ma), mid-late Wenlock Epoch, Silurian Period. Chemostratigraphy places the Racine formation as occurring after the Mulde event, a relatively minor extinction event coinciding with a global drop in sea levels and anoxic waters. The fossils are preserved as steinkerns, or internal molds. The dolostone is porous and vuggy, brown, gray and pink with large dolomite crystals, including small amounts of marcasite and chalcopyrite (Figure 3). According to records, it is similar in lithology and character to the Horlick quarry in Racine, Wisconsin. Upon splitting rocks, there appeared to be bituminous vugs in the rocks; however no hydrocarbons have ever been reported from Hawthorne, so this probably represents modern contamination. All the “oil” in Chicago reefs is post depositional and not related to the dolomite other than it is filling vugs and pores in the rock. The trilobite fauna differs from Horlick however, as the *Cybantyx (Bumastus) insignis* sub-association group of trilobites dominated here, as opposed to the *Cybantyx ioxus* group at Horlick. Reasons for this are not known but could be due to subtle environmental differences in water temperature, current pattern, salinity and available nutrients. There does not seem to be evidence of migratory barriers for larval transport between the two localities. Other Chicago area reefs sharing *C. insignis* trilobite groupings are Thornton and Bridgeport (Mikulic, 1979).

Found in association with *C. insignis* was an unusual coral measuring 6 x 4cm. Not showing the typical tabulate characteristics like parallel corallite stacking columns as seen in the common Silurian

coral *Favosites*, I decided to make some basement lab thin sections using a tile saw and succession of sandpapers to view the internal structure. After polishing, a thin slice was briefly etched with hydrochloric acid and then stained with Alizarin Red S to enhance features. The chemical stain turned the crystals a pale mauve indicating ferroan dolomite (Dickson, 1966). The specimen appeared to be an *Alveolitid*. No tabulae can be seen in the slices; however the corallites of *Alveolites* do not vertically stack in a linear fashion such as in genera like *Favosites*, which could explain the apparent absence of these structures (Figure 11a, b). It should be mentioned *Alveolites* from midwestern Silurian dolomite have not been studied in many decades. Since *Alveolites* are not confined to the Silurian and may have been originally named from another period, this would suggest that while they might be related to that genus, they are probably different and possibly are a new taxon. Unfortunately, in the modern world of paleontology, these fossils are unlikely to be restudied any time soon (Mikulic, personal communication).

Separate blocks of porous reef rock yielded a plethora of brachiopods, echinoderms, corals and a small cephalon of *Cybantyx chicagoensis*, a common trilobite within the *C. insignis* sub-association group. These accumulations of different taxa are common taphonomic features in Chicago area reefs known as sediment traps. These were formed by cavities, caves, or depressions along reef flanks in which sediments flowed along the sea floor depositing skeletal remains into these traps during burial (Mikulic and Kluessendorf, 1999).

A list of identifiable taxa found in 2019 (Scale bars = 1cm in fossil photographs):

#### Brachiopods:

*Gypidula* (Figure 4)

*Apopentamerus* (Figure 5)

*Antirhynchonella* (Figure 6)

*Atrypa* (Figure 7)



Figure 4. *Gypidula*, a juvenile pentamerid cleaved in half straight through the midline showing no growth marks.

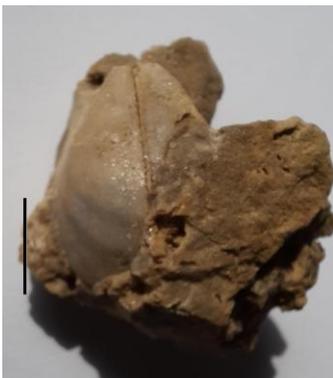


Figure 5. *Apopentamerus*



Figure 6. *Antirhynchonella*



Figure 7. *Atrypa*

**Echinoderms:**

*Eucalyptocrinites crassus* (Figure 8)

*Eucalyptocrinites ornatus* (Figure 9)



Figure 8. *Eucalyptocrinites crassus* partial calyx.



Figure 9. *Eucalyptocrinites ornatus*

**Corals:**

*Favosites* sp. and *Apopentamerus* (Figure 10)

*Alveolites* indet. (Figure 11a. and b.)



Figure 10. *Favosites* sp. and *Apopentamerus*

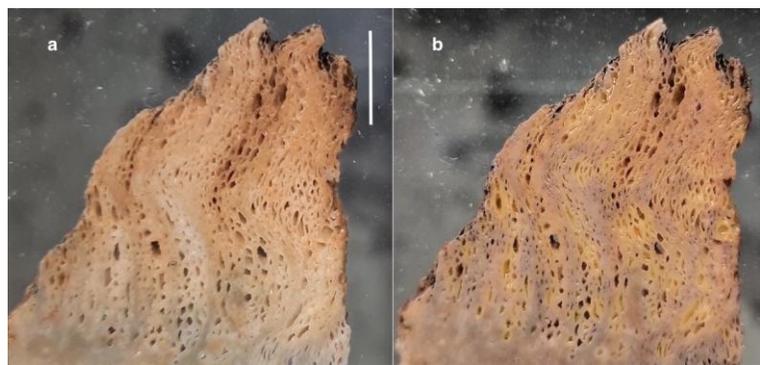


Figure 11. a. *Alveolites* sp. Oblique thin slice  
b. stained with Alizarin Red S

**Trilobites:**

*Cybantyx* (*Bumastus*) *insignis* (Figure 12a, b, c)

*C. chicagoensis* (Figure 13)

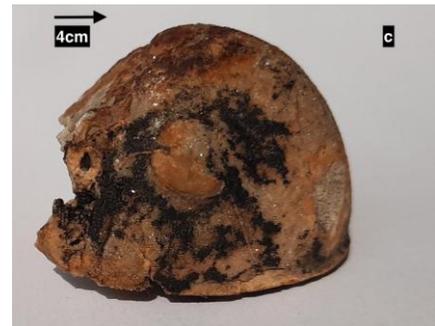
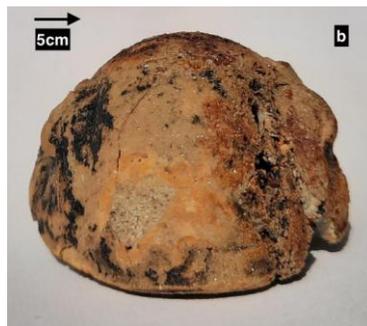


Figure 12. a, b, c. *Cybantyx* (*Bumastus*) *insignis*. Cephalon measures 5 cm.



Figure 13. *Cybantyx chicagoensis*

### Conclusion

What remains of the quarry today is a barren, garbage strewn landfill. The old and weathered rocks that I managed to find left over from the old quarrying days contained a variety of taxa, a small sample of the much larger Wenlockian coral reef community that can now only be seen in museum collections. Given the dismal state of the locality, I was surprised to find anything left at all. I'd like to thank Dr. Donald G. Mikulic for sharing his extensive knowledge of trilobites and the local geology. Also, many thanks to Scott Schaefer at the Thomas Greene Museum in Milwaukee for taking the time to identify some of the material via email, as I was unable to view the old Hawthorne collections myself due to COVID-19 pandemic restrictions.

### References

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- Weller, S. 1907. The Paleontology of the Niagaran Limestone in the Chicago Area, The Trilobita.

## Reconstructing a Unique Canine Fossil: *Osbornodon renjiei*

Daniel Glossenger

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Canines have a long fossil history in North America. Starting with the very first animal recognized as a true canid, *Hesperocyon* from approximately 40-29 ma, the lineage continues to the present with extant native species such as the fox, coyote, and wolf. An early genus of this group is *Osbornodon*. It belongs to the primitive subfamily Hesperocyoninae and was named in honor of the paleontologist Henry Fairfield Osborne. *Osbornodon* has the distinction of having the longest stratigraphic range of all the canids. It occurred from the Oligocene (approximately 33 ma) to the Early Miocene (approximately 16 ma) with fossil remains having been recovered in Florida, Texas, Wyoming, Nebraska, and North Dakota. However, a recent fossil discovery extends the range to the Orellan North American Land Mammal Age of South Dakota. Found in the Badlands National Park, the fossil remains include the incomplete skull and dentary of *Osbornodon renjiei* (BADL 63382). The material comes from the upper Scenic Member of the Brule formation and is approximately 32 million years old. Measuring approximately 9 cm in length, the skull is blunt in shape and is noteworthy for having nearly complete dentition.

Figure 1 is a photo of the fossil material, by the author, showing the right lateral view of the skull.



Figure 1.

I had a chance to observe the fossil last fall during a visit to the park. As a paleoartist, I was inspired to attempt a drawing to depict what *O. renjiei* may have looked like in life. As I researched the information in this article, I could not find a single depiction of *O. renjiei* in the literature. Therefore, I was further motivated by the thought that I may be the first to attempt a paleontological reconstruction of one of the earliest members of the canine family.

My first step in the reconstruction process was to complete a drawing of the skull which I could use as a framework for the finished profile. However, because the skull material was incomplete, I needed a reference for the back part of the cranium and lower back portion of the right mandible. Without access to a complete *Osbornodon* skull, I used a replica of *Hesperocyon gregarious*, which was contemporary with *O. renjiei*, to fill in the missing pieces. I relied heavily on photos I took of the specimen as well as a sketch, made on site, from the material on display. Figure 2 is a drawing showing the complete skull of the Badlands specimen.

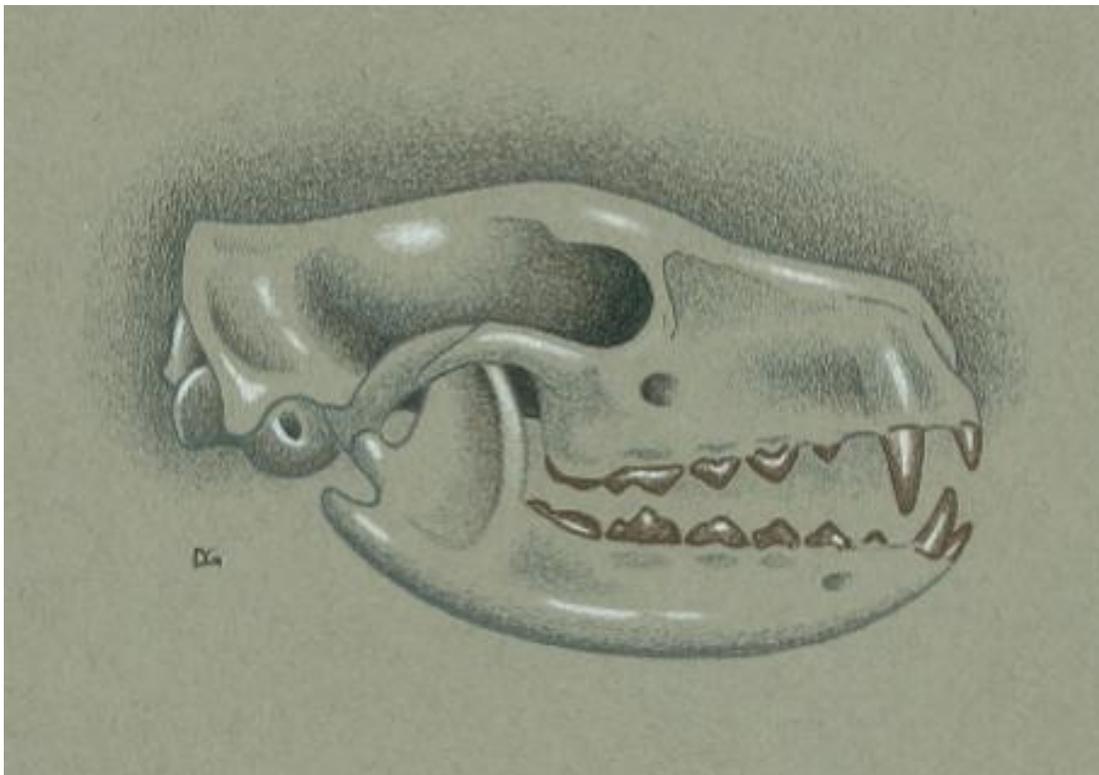


Figure 2.

Once the skull drawing was complete, I could flesh out the appearance using a living relative as a model. In life, *O. renjiei* was the size of a small fox and lived in a savannah type environment. Likewise, its' dentition suggests a similar fox like omnivorous diet (hypocarnivory). Thus, the life reconstruction of *O. renjiei* in Figure 3 hypothesizes an appearance similar to a modern day fox. I utilized field sketches of an aortic fox from the Columbus Zoo in Ohio to get the correct proportions and a taxidermy mount of a grey fox at the Indiana State Museum for fur color and texture. Artistic license was utilized when choosing the grey fox as a model for *O. renjiei*; however, as most modern fox species have either a brown or grey base coat color with patches of white, grey or black, the depiction in Figure 3, may not be too unreasonable. Both the skull and the final profile were done using colored pencil on colored paper.



Figure 3.

Badlands National Park is noted for a number of reasons, including spectacular scenery, unique geological features, and up-close wildlife encounters. However, just as impressive is the exhibit centering on *Osbornodon renjieii*. Located in the Ben Reiffel Visitor Center, the display features the original fossil material and is well worth the visit for those interested in seeing a unique canine fossil.

### References

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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: \$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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