

M.A.P.S. *Digest*

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Mid-America Paleontology Society
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“A LOVE OF FOSSILS BRINGS US TOGETHER”

Calendar

2018

November 10

The November MAPS meeting will be held in Room 125 of Trowbridge Hall, Univ. of Iowa. Professor Matthew Hill of Iowa State University will present a program on the stag moose at 1:00 p.m. (See post page 14.)
The regular MAPS meeting will be at 2:00 p.m.

2019

March 23-24

CVRMS Gem, Mineral, and Fossil Show combined with MWF and AFMS Shows

Theme: Geodes

Location: Hawkeye Downs, Cedar Rapids

March 29-30

MAPS EXPO XLI

Location: Sharpless Auctions

Exit 249 I-80

Iowa City, Iowa

Theme: Trilobites

Keynote Speaker: Dr. Jonathan Adrain

Topic: TBD

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 **2019 EXPO** is **Trilobites**. Any paper dealing with trilobite evolution, morphology, Geologic Age specific faunas, or site specific faunas 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 **first week of February 2019**. Diagrams/Photos can be sent separately or imbedded in text.

John: Fossilnautiloid@aol.com

Chris: CDCozart@aol.com

DUES INFO

Please send your \$20 2018 MAPS dues to:

Dale Stout

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About the Cover

The cover for this issue features a trepostome bryozoan from a hardground in the Brainard Formation (Maquoketa) exposed in a railroad cut in Carroll County, IL. Collected, prepared, reassembled, and photographed by John Catalani.

**Mid-America Paleontology Society Board Meeting November 5th, 2017,
Klein Quarry, Iowa City.**

Board Members present: Marv Houg, Dale Stout, John Catalani, Tom Williams, Karl Stuekerjuergen, Tiffany Adrain (scribe).

Marv called the meeting to order at 12.30pm.

Minutes from the April 1st board meeting were circulated. John motioned to approve the Minutes, Tom seconded. Minutes approved.

2018 EXPO:

- Tom said tables are selling already, but down 20 tables because of regular major dealers who can't come. May need a bigger display or attract more dealers.
- Andrielle Swaby is unable to attend on behalf of PRI. We should contact Warren Allmon.
- The Expo Keynote Speaker is Dr. Margaret Fraiser, University of Wisconsin, Milwaukee. Tom has been in contact with her.
- Jim will pay the down-payment to Sharpless, and Marv will send out information to potential dealers.
- We need better signage and advertising. John suggested we rent an electronic billboard.
- Tom is using his cellphone number for Expo cards (815 228 5083) and this can go on any ads.

Topic for 2019 Expo: Cambrian/Precambrian? Or Ordovician if Kolata has published book? Or Silurian?

John said the next Digest issue will be out soon. Marv will contribute a letter for the Digest asking for articles.

Election of officers: nominating committee is Dale, Tom and John. Elected positions will take effect after Expo. Marv will talk to Bob Rondinelli about 501c status.

John motioned to adjourn meeting. Karl seconded. Meeting adjourned 12.49pm.

**Mid-America Paleontology Society Board Meeting
January 13, 2018, 125 Trowbridge Hall, Iowa City, Iowa.**

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

Marv called the meeting to order at 2.15pm.

Minutes from the November 2017 board meeting were circulated. Corrections were made. Karl motioned to approve the amended Minutes, Doug seconded. Minutes approved.

Jim read the Treasurer's Report. Marv commented that a member's check sent in April was not cashed until November and recommended that all checks be deposited within one month of receipt. The Digest and website have been updated with instructions to send membership checks to Dale. Doug moved to approve the Treasurer's Report. John seconded. Report approved.

2018 EXPO:

- Tom said three major dealers will not be at Expo but are going to the New York show instead (dates clash). These dealers usually reserve multiple tables, so he is expecting 2018 table rentals to be down. Still waiting to hear from other major dealers, still a little early.
- New dealers must be made aware that Expo is fossils only.
- Tom had given several names to John and he has sent Digest copies.
- Tom said several table applications had not reached the P.O. Box due to mistakes by USPS. The issue has been resolved.
- John asked for articles related to the Permian and Triassic for the Expo Digest. He can format submissions for publication. Any submissions should be typed in Word, single spaced, maximum 20 pages.
- Tom has been trying to contact keynote speaker, Dr. Margaret Fraiser.
- Programs: Dale will contact Gerry Kloc, Tiffany will ask UI students, Bill Desmarais agreed to do a program, Tom and John will give programs, and maybe Dennis Burdick. Tiffany will bring kids' activities.
- Tables will be rented from the usual source (Keith's).
- The Silent Auction will take place at the back of the second room, same as last year.
- Advertising: Local papers. The Press Citizen is expensive but advertising for 5 days includes the free Wednesday paper.
- Displays: Gary Olsen. Tiffany will bring "Scorpy" – a life-size model of the 6ft long sea scorpion represented in fossils from Decorah.
- Security: Bill and Alan.
- Tax: Johnson County (and Sharpless Auction because it's not in Iowa City) is exempt from local tax. State sales tax only applies.
- Dan Cooper is organizing the motel show and room registration.
- PRI will be at Expo (Andrielle can make it after all).

2019 EXPO:

- ~~Karl motioned that the 2019 Expo dates of April 5-7 be accepted. Tom seconded. Motion carried.~~ AMENDMENT: Since these dates clash with the East Coast show, Marv selected new dates of March 29-31, 2019.
- 2019 cards: Jim will order bright green cards, same amount as this year.
- Keynote Speaker: Tom suggested Dennis Kolata if his book on the Platteville is published by then. There was discussion about the topic and it was decided to go with "Trilobites." Tiffany will invite Jonathan Adrain to be the 2019 keynote speaker.

Awards: please send nominations to Marv.

Badges: Dale is checking if the shop that makes badges is open again and will let Jim know so that he can add information about acquiring badges to the website, if so.

New Business:

- Jim discussed MAPS donations and recommended increasing the PRI donation by \$100. John motioned to accept, Gil seconded. Motion carried. Jim motioned to approve the other donations, Karl seconded. Motion carried.
- Ray Anderson announced a move to get the crinoid made Iowa's State Fossil. State Senator Joe Bolcom has drafted a bill. As soon as the bill is numbered it can be advertised and campaigned for. There will be teacher and K-12 engagement.

The next meeting will be at Trowbridge Hall, room 125, on Saturday February 10th 2018. Mary Kosloski, UI Faculty, Department of Earth and Environmental Sciences will present a program at 1pm.

Doug motioned to adjourn meeting. Jim seconded. Meeting adjourned 3.25pm.

**Mid-America Paleontology Society Annual Business Meeting April 7th, 2018,
Sharpless Auctions, Iowa City**

Board members present: Marv Houg, Jim Preslicka, John Catalani, Dale Stout, Doug DeRosear, Tom Williams.

Marv called the meeting to order at 5.10pm.

Tiffany read the minutes from the 2017 ABM. John motioned to approve the minutes, Jim seconded, minutes were approved.

Jim read the Treasurer's Report. Dale motioned to approve the report, Dennis seconded, report approved.

Marv introduced MAPS Board Members.

Tom and Jim thanked everyone who helped with Expo.

Old Business: Marv explained that Bob Rondinelli is working with an attorney to acquire 501(c)(3) status for MAPS, and that together with Tiffany and Dale has formed a subcommittee for compiling information required for filing. Bob donated the lawyer fees up to this point.

New Business:

- Dennis Whitney asked about the possibility of an Expo flyer at the Tucson show. He will find out more and get back to Marv.
- Marv said that advertising is everybody's responsibility, so please use social media.
- Dennis asked if MAPS has a Facebook page. Marv noted that we do but will follow up on who is or will be in charge of that.
- We did not advertise in the local paper this year. Dan Cooper and Marv determined it was not worth the cost. Social media is probably better.

John motioned to adjourn the meeting, Jim seconded. Meeting was adjourned at 5.23pm.

**Mid-America Paleontology Society Board Meeting April 7th,
2018, MAPS Expo, Sharpless Auctions, Iowa City**

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

Marv called the meeting to order at 1.35 pm.

Minutes from the January 2018 meeting were circulated. John moved to approve the minutes, Chris seconded. Minutes were approved.

Treasurer's Report. Jim has paid Sharpless and Bill Desmarais (security), and still needs to pay AJ for security. Digest and Expo cards are paid for, table fees have been deposited. As the written report was not available at the time, Chris moved to incorporate it into the meeting records later. Marv seconded. Motion carried.

MAPS Charitable Status: Bob reported on his research into 501(c)(3) status. MAPS used to be 501(c)(4), but 501(c)(3) is better because charitable donations to MAPS are then tax-deductible. Bob has talked to an attorney (at personal cost) to determine the necessary procedure (file for 501(c)(3) status with online form 1013-EZ. Bob suggested a subcommittee compile information. Tiffany, Dale and Bob agreed to form the subcommittee. Marv moved to accept, Tom seconded. Approved. Karl noted that annual reports must be submitted and someone should be appointed to be responsible for that. Chris noted that annual reporting should be minimal.

Old Business: none

New Business:

Doug commented that there were no MAPS Expo signs outside Sharpless. Dale explained it was too windy but he attached the sign to his car

Karl reported that the motel vendors had asked if Expo could be at the Clarion. Marv replied that we have discussed this before and there are many potential problems: conflation of the motel show and Expo, smaller room size (vendors would have to be distributed through several rooms) and dim lighting. Karl requested that these issues be explored and a quote obtained.

Marv asked if there were any items for the AGM: none.

Marv motioned to adjourn the meeting, Karl seconded. Meeting adjourned 1.53pm.

2018 M.A.P.S. PRESENTATION OF PRI'S KATHERINE PALMER AWARD TO BARBARA K. TOOMEY

Citation presented by Andrielle Swaby



Andrielle Swaby reading citation for the 2018 Katherine Palmer Award presented to Barbara K. Toomey.

Each year, the Paleontological Research Institution recognizes an individual who is not a professional paleontologist for the excellence of their contributions to the field. This award is named for PRI's second Director, Katherine Palmer, who was an avid supporter of avocational paleontology. On behalf of PRI, I am pleased to announce that Mrs. Barbara K. Toomey of Gainesville, Florida has been selected as the 2018 recipient of the Katherine Palmer Award in recognition of her significant contributions to the science of paleontology.

Mrs. Toomey was nominated for this award by Mr. Roger Portell, Director of Invertebrate Paleontology at the Florida Museum of Natural History. I would like to share portions of Mr. Portell's nomination letter with you.

"The Invertebrate Paleontology Division at the Florida Museum of Natural History in Gainesville is very fortunate to be associated with many exceptional avocational paleontologists, but in a class all by herself is Barbara K. Toomey. Barbara has been a "fixture" in our program for decades. She along with her late husband Reed made

substantial investments of their time, collections, money, and support to not only the Florida Museum, but other museums as well. Barbara's contributions to Invertebrate Paleontology at the Florida Museum are very many:

- She conducted numerous collecting trips to Jamaica (enduring a bull sharpening its horns on her rental car while collecting fossils at Seven Rivers, riots in Montego Bay, detention by customs for transporting sealed plaster jackets containing vertebrate fossils, and high tides and Manchineel trees while collecting along the sea cliffs at Falmouth).
- Barbara and son Jim donated to the Florida Museum their exceptional Cenozoic collections of Florida and North Carolina fossils, including many rare taxa and several new species.
- Barbara helped organize and pack several hundred thousand fossils (two semi-truck loads) donated by Dr. Emily Vokes of Tulane University. Barbara's work ethic was instrumental in helping to motivate staff and students. She has helped pack and ship several other major fossil collections as well.
- Barbara has worked in cramped, filthy, moldy, and stinky sheds, basements, and building all for the benefit of Invertebrate Paleontology at the Florida Museum of Natural History and she has NEVER once complained.
- Barbara has worked tirelessly to feed hordes of people during professional research and avocational collecting field trips to numerous fossil sites.
- Barbara helped completely reorganize the Invertebrate Paleontology reprints in the G. G. Simpson Library at the Florida Museum.

Now no longer able to go in the field, Barbara currently works (4-5 days a week) at a new offsite office complex unpacking, sorting, and organizing large donated research collections, which was instrumental in helping obtain a National Science Foundation curation grant.

Because of Barbara's long-term dedication helping Invertebrate Paleontology thrive at the Florida Museum, her desire to contribute to science and education, and her financial support for funding fieldwork, collection needs, and exhibits, I most enthusiastically nominate her for the PRI Katherine Palmer Award."

In the view of the Paleontological Research Institution, all of these—and other—efforts make Mrs. Toomey an ideal nominee for the Palmer Award.

The efforts of Mrs. Toomey—especially in association with the Division of Invertebrate Paleontology at the Florida Museum—have broadly served to advance the science of paleontology, in particular by helping to make specimens available for scientific study.

In this age of databases and digitization, the "nuts-and-bolts" work of sorting and organizing fossil specimens is often underappreciated, but is fundamentally critical to providing the data that will fuel the next generation of paleontological research.

We hereby recognize the paleontological contributions of Barbara K. Toomey by presenting her with the 2018 Katherine Palmer Award.

Mrs. Toomey is unable to be here today, but we will be pleased to send her this award in the near future.

An Extinct Camel, *Poebrotherium wilsoni*, from the Oligocene

William W. Morgan

I recently completed the preparation of a specimen of *Poebrotherium wilsoni* (Leidy, 1847), an extinct camel found in the Oligocene of the western United States. The species name commemorates Dr. Thomas B. Wilson, whom Leidy described as a “distinguished patron of natural history”. Members of the genus *Poebrotherium* were roughly the size of a goat; and because they are even toed, are assigned to the Order Artiodactyla (Prothero and Schoch, 2002). Scott (1940) described the structure of the *Poebrotherium wilsoni* skeleton as “gazelle-like”.

The available fossil evidence suggests that camels arose in the Eocene and that their phylogeny was restricted to North America until the Pliocene at which time they expanded to other regions of the globe (Carroll, 1988). Members of the genus *Poebrotherium* are reported to be the third most abundant fossil artiodactyl found in the Oligocene beds of the North American Great Plains (Prothero and Emry, 1996; Prothero and Schoch, 2002). Only the numbers of the primitive deer-like leptomerycids, e.g., *Leptomeryx* and the oreodons exceed them.

The specimen described here was collected sometime in the mid-1990s by my good friend Kenneth Smith, but I purchased it unprepared from his estate following his untimely death in 1998. When I obtained it, the fossil was encased in a series of unusually hard, partially eroded nodules with only a portion of the skull and the ends of a few of the ribs exposed. With one exception, the nodules were so tightly adherent to one another that a plaster cast had not been applied. Unlike the others, the nodule containing the hip and the associated sacral vertebra was not attached and was collected separately.

The specific locality where the specimen was found was not recorded by Ken Smith. However, it was almost certainly collected in the Brule Formation of the Oligocene and probably in the Orella member at one of the privately owned ranches in the Pine Ridge region of northwestern Nebraska. The articulated nature of the specimen (Figure 1) suggests that the camel had been not moved far from the site of its death before burial.

The prepared specimen is a partial skeleton which is rolled back on itself (Figure 1). The exceptional preservation may be explained in part by the unusual hardness and adherence of the bones to the matrix in which they are affixed. The left side of the skull and the remaining skeleton were exposed and cleaned to partially elevate the bones away from the matrix. Otherwise, the fossil was left firmly attached in the matrix to preserve the articulations between the bones. With the exception of the hip and the associated sacral bones which were preserved in a separate nodule, the position of the bones are as they were at the time of burial and fossilization. The prepared specimen is approximately 14 inches (35.6 centimeters) at its greatest width and roughly 10 inches (25.4 centimeters) at its greatest height.



Figure 1

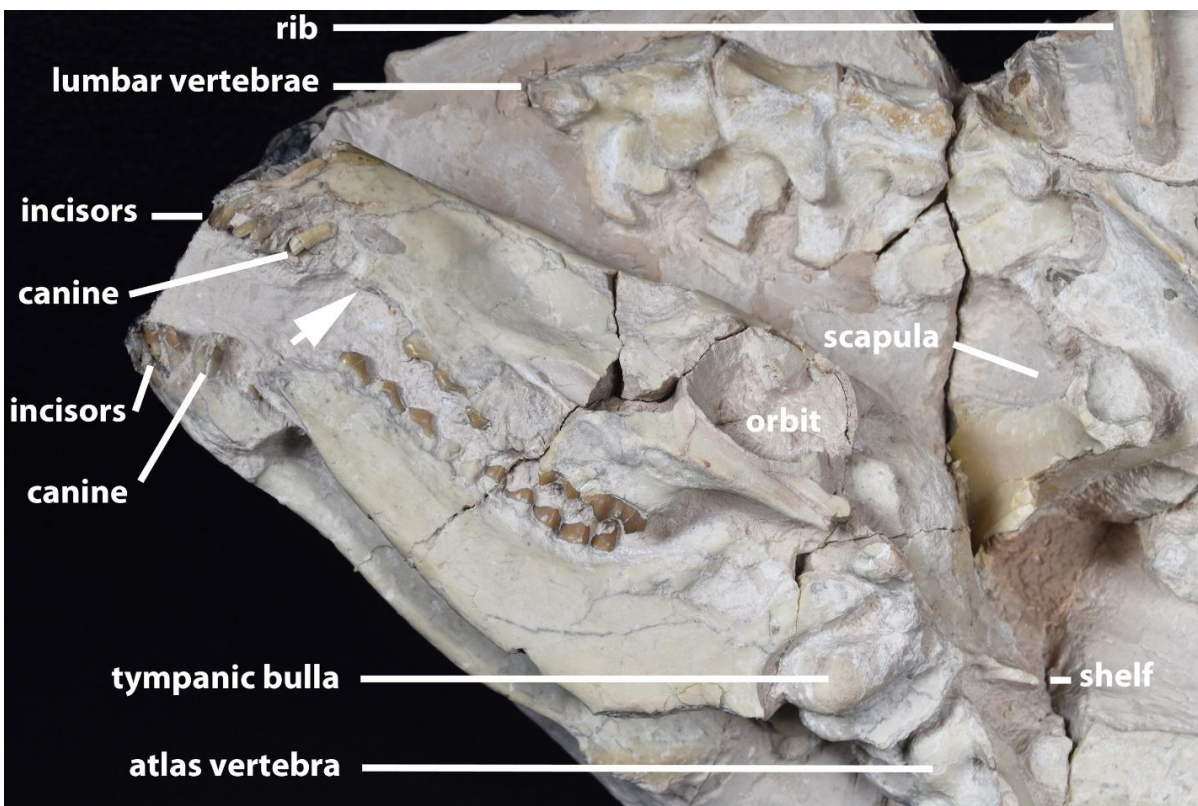


Figure 2

In a lateral view (Figure 2), the skull is long and becomes quite narrow immediately anterior to the orbits (Leidy, 1869). Unlike extant camels and llamas, *Poebrotherium wilsoni* had incisors in the maxilla as well as the mandible. The incisors of both upper and lower jaws are preserved but damaged (Figure 2). During the fossilization process the front of the mandible was broken immediately behind the canine. However, it is preserved and visible in the matrix just anterior to the rest of the mandible. The maxillary canine is quite small as is characteristic of this species (Prothero and Emry, page 620, 1996). The first premolar is broken off, but the edge of the root can be seen (white arrow). This tooth is separated from the teeth both immediately anterior and posterior to it by a space (diastema), a feature considered a defining characteristic of the species (Leidy, 1869). There are a total of four premolars and three molars on each maxilla and mandible.

There is a vertical crack and a hole just in front of the orbit; this injury, which presumably occurred postmortem, resulted in damage to the first molar in both the maxilla and the mandible. The orbit is comparatively large and intact; the zygomatic arch is also intact except for the posterior which is missing. There is a distinct occipital shelf which extends posteriorly from the skull. The large tear drop-shaped tympanic bulla is also characteristic of the species (Leidy, 1852; 1869).

Three lumbar vertebrae, the first of which is articulated to a thoracic vertebra (Figure 1; Figure 2) are also preserved just above the skull in the upper left hand corner of the specimen.

Poebrotherium wilsoni had a long neck as evidenced by the long, large cervical vertebrae (Figure 3) (Carroll, 1988; Prothero and Schoch, 2002). All mammals, both extinct and extant have seven cervical vertebrae, and in this specimen all seven, including the atlas, are present, remarkably intact, and articulated as in life. The atlas, retains its wings or alar processes. In this specimen the second cervical vertebra is the longest and largest of the cervicals. The left lateral surface of the first thoracic vertebra is also articulated with the seventh cervical vertebra (Figure 3).

Because of they are relatively fragile, it is unusual to find scapulae (shoulder blades) preserved in Oligocene age mammalian fossils. However, both the right and the left scapulae are preserved, though somewhat damaged in this specimen (Figure 3). The complete lateral profile of the left scapula is exposed, and the right scapula is seen on edge as it projects outward from the upper left corner of Figure 3. Both scapulae are also shown and labeled in Figure 2.

The humerus, the upper bone of the left anterior limb, is also preserved (Figure 3). The head of the humerus, which in life articulates with the shoulder blade is missing, but the bone is otherwise intact. In addition, the articulation of the humerus with the head of the ulna is also intact. The left ulna and the radius are intact and closely adherent; their lateral profiles are exposed (Figure 3). The radius articulates with the carpal bones which are shown in a lateral view (Figure 4).

A short length of the right ulna and its articulation with the right humerus is present in the lower right hand corner of the specimen (Figure 1). Otherwise, no bones of the other limbs were exposed during the preparation of the specimen. Given the depth of the excavation of the matrix during the preparation, it is unlikely that any additional bones of any size remain completely unexposed. Although the absence of limb bones could be due to predation, this seems unlikely due to the articulated state of much of the rest of skeleton specimen. It seems probable rather that they were separated from the camel either before burial or were lost during the subsequent partial exposure and erosion of the fossil.

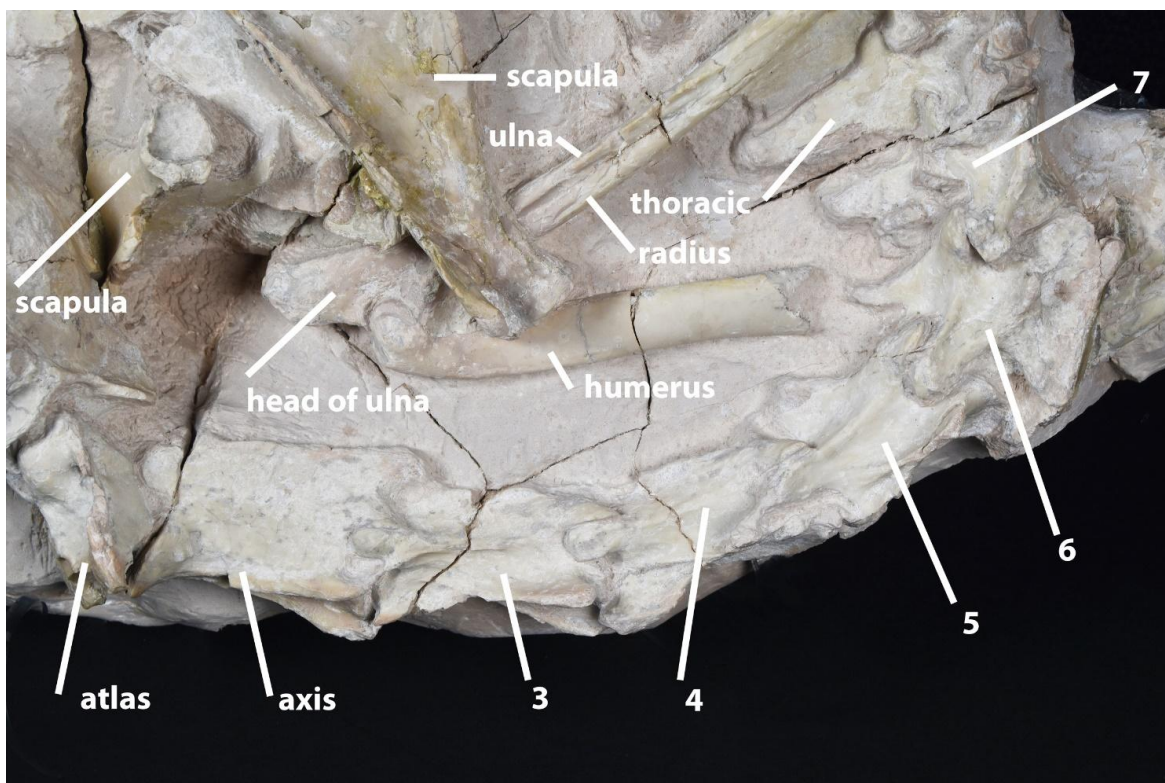


Figure 3

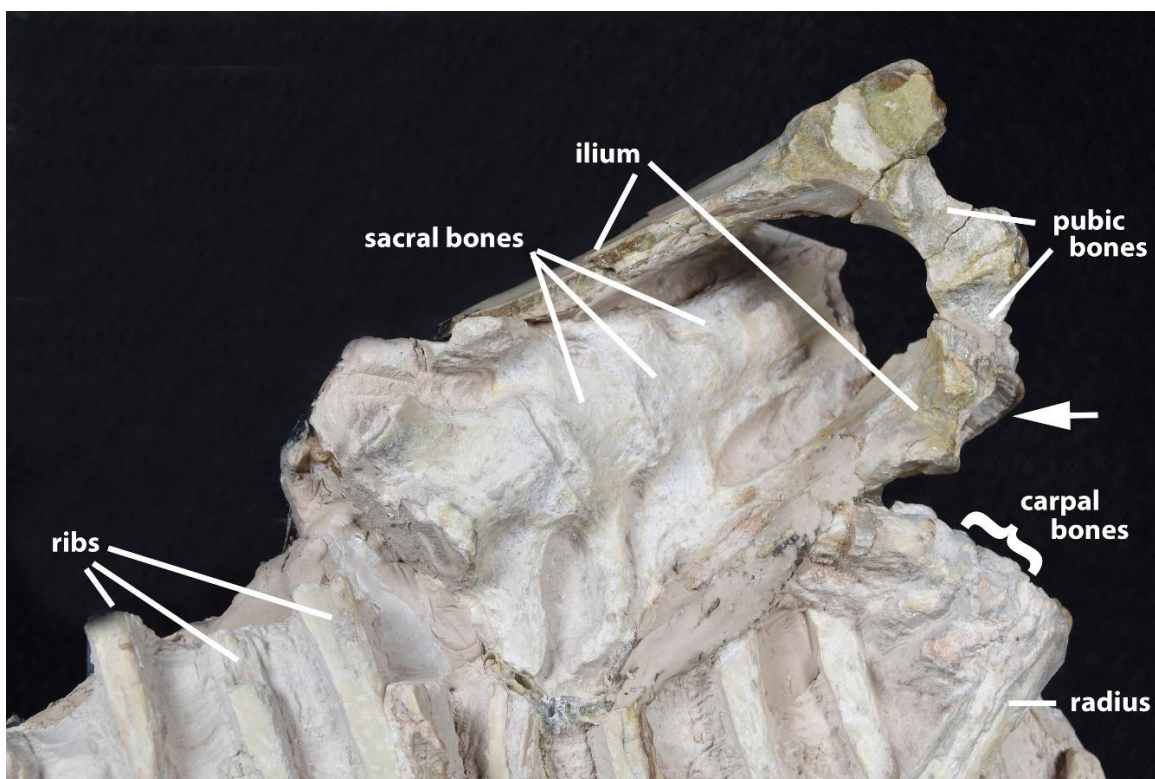


Figure 4

The ventral surface of the bones associated with the hip can be seen in the upper right region of the preparation (Figure 1). In closer examination of the hip (Figure 4), the right ilium (innominate) is less well preserved. However, the acetabulum, which in life would articulate with the right head of the femur is intact and its location marked by the arrow (Figure 4). The left ilium is better preserved, but the acetabulum on this side is not intact. Both pubic bones are preserved *in situ*, and their articulation at the public symphysis is evident. The ischial bones were not present in the nodule with the rest of the hip bones. Three of the sacral vertebrae are labeled in Figure 4 as are the tips of some of the ribs.

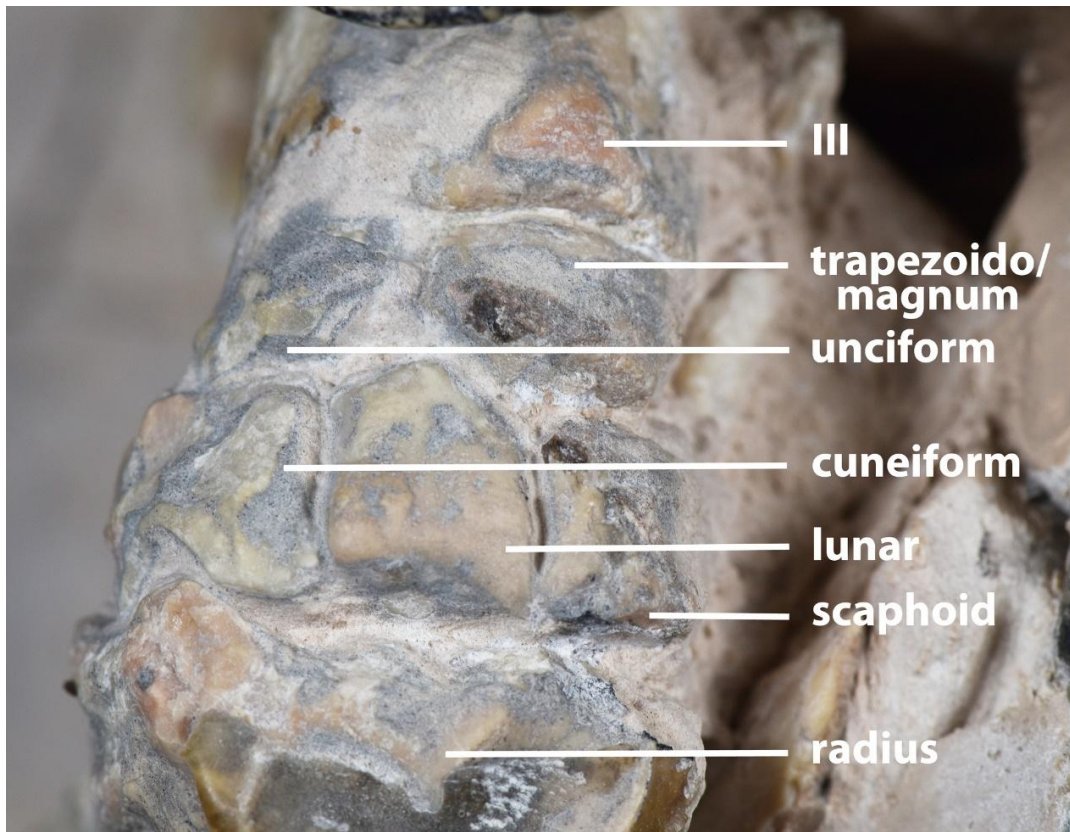


Figure 5

A lateral view of the left “wrist” is also shown and labeled (Figure 4). A closeup photograph (Figure 5) provides an anterior view of the radius and the carpal bones which collectively make up the wrist joint. Metacarpal III is also seen in cross section (Figure 5). Metacarpal IV is also present but is hidden in the matrix to the left of metacarpal III. Interestingly, *Poebrotherium* was among the first of the artiodactyls to evolve only two functional digits on both the fore- and hind limbs, i.e., the 3rd (III) and 4th (IV) metacarpals and metatarsals, respectively (Carroll, 1988).

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ISU professor identifies oldest and youngest stag-moose in North America

Posted Sep 19, 2013 9:00 am



Matthew Hill is often asked to identify animal bones found in rivers or fields, but this stag-moose antler found near Parkersburg is one of the more unusual. Photo by Bob Elbert (Larger photo)

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Quick look

Matthew Hill has identified countless bones found by farmers, fishermen, rock hounds and heavy equipment operators. Most of the remains turn out to be deer, bison, horse or cow bones, or simply odd looking rocks. But some discoveries turn out to be highly unusual, as was the case with an antler from an extinct Ice Age animal known as a stag-moose or elk-moose.



EXPO XL



Top and Right: Dr Margaret Fraiser delivering the keynote address at EXPO 2018.



Left: Dr Margaret Fraiser's keynote address was well attended.

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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