

A publication of the **Rochester Academy of Science** FOSSIL SECTION

The FOSSILETTER

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April 2023

April Meeting

The April section meeting is on Tuesday, April 4th, at **7:00 PM** Eastern Time. Note the earlier than usual start time. We will meet at the Community Meeting Room at the NEQALS (North East Quadrant Advanced Life Support) building at 1030 Jackson Rd, Webster, 14580.

We will have two speakers following a brief business meeting. Our first guest is Dr. Jonathan Hendricks, Associate Director of Science Communication at the Paleontological Research Institution. He will make a short presentation on the “Year of the Devonian” at the Paleontological Research Institution. This is in conjunction with the upcoming publication revising Devonian stratigraphy in New York and the corresponding Subcommission on Devonian Stratigraphy (SDS) conference at SUNY Geneseo this coming summer with this publication as their theme.



Dr. Jonathan Hendricks, Paleontological Research Institution

(From Dr. Hendricks:) Few places on Earth reveal the ancient life and environments of the Devonian Period (419 to 359 Ma) better than New York State. American paleontology has its roots in the Devonian of New York and modern research in

the state continues to teach us more about life on Earth during this period of geologic time. The Paleontological Research Institution (located in Ithaca, New York) is celebrating 2023 as the “Year of the Devonian” with several major new outreach projects and research initiatives. This presentation will highlight these endeavors, which include:

- 1) a new temporary exhibit at the Museum of the Earth, opening March 13, called “NY Rocks! Ancient Life of the Empire State” (<https://www.museumoftheearth.org/nyrocks/>);
- 2) the publication of a massive revision of the Devonian stratigraphy of New York in the *Bulletins of American Paleontology*;
- 3) development of the Devonian Atlas of Ancient Life online fossil identification guide; and
- 4) curation and digitization of the Carl Brett and Gordon Baird stratigraphic collection at PRI.

Dr. Hendricks oversees PRI’s publications program and online outreach initiatives, including Earth@Home and the Digital Atlas of Ancient Life. Prior to coming to PRI, Jon was an Associate Professor of Geology at San Jose State University. He currently serves as the Chief Financial Officer of the Paleontological Society. His research is focused on the systematics and evolution of Neogene mollusks from the western Atlantic.

* * *

We are in for a treat as our featured speaker this month following Dr. Hendricks is our own Gerry Kloc, who will be speaking on “*Silurian trilobites from Southern Illinois and Missouri.*” Besides being a superb fossil preparator at the University of Rochester, Gerry is the author or co-author on several important papers on trilobites. He is also well-known as one of the authors of the magnificent book, *Trilobites of New York: An Illustrated Guide*. (More on that below.)



RAS Member Gerald Kloc with trilobite *Comura bultyncki*.

Gerry sends us the following notes. "Silurian trilobites are well known from the Rochester Shale of New York (Whiteley et al., 2002), Henryhouse Formation of Oklahoma (Cambell, 1967) and the Joliet Formation of Grafton, Illinois (Weller, S., 1907). Minor occurrences of Silurian trilobites are known from the Waldon Shale, Osgood Shale (now called the Massis Shale) of Indiana and the Brownsport of Tennessee. Very little is known about the Silurian trilobites from Missouri and southern Illinois. Some studies of this region usually mention the occurrence of *Dalmanites*. The only described trilobites are four species of *Dalmanites* from the Silurian of Missouri (Ball and Delo, 1940). They are only known from the pygidia. The specimens are of poor quality with the posterior end of the pygidia broken. The reports of *Dalmanites* and the described species got me interested in searching for more specimens and find the cephalons of these described trilobites. After many years of collecting, I have acquired a large collection of trilobites that have not been published from this area.

Here is some information on the geology of the Silurian trilobite exposures. *"In Missouri and southern Illinois there is a major unconformity between the Ordovician and Carboniferous. The Silurian and Devonian rocks are preserved in down-dropped blocks within the St. Genevieve Fault System in SE Missouri and southern Illinois. These outcrops are the westward most exposures of the Illinois Basin. The rocks are limestone, siltstones and shales. In this area there are two*

Silurian formations and part of the lower Bailey is most likely Silurian."



"The St. Genevieve Fault Zone crosses the northeast flank of the Ozark Dome in southeastern Missouri and extreme southern Illinois. The surface trace of faulting trends southeast and is approximately 120 miles ... long. Major displacements are as much as 3,000 feet ... downward, which is cut by one or more high-angle reverse faults." (this and above section from Illinois State Geological Survey, Contract/Grant Report 1985-3, 94 p.)

President's Report by Dan Krisher

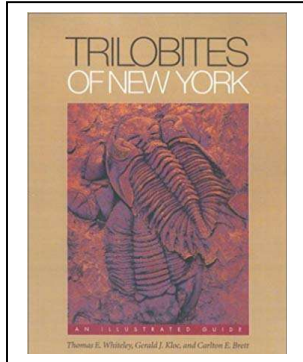
The Section's March meeting was on 3/7 via ZOOM. The meeting opened with a brief business portion in which members were updated on the slate of candidates for the Section election, the fieldtrip season as well as upcoming events such as the Central New York Earth Science Student Symposium at Syracuse University in April and the Subcommittee on Devonian Stratigraphy at SUNY Geneseo in mid-summer. The second portion of the meeting featured the first Annual Samuel J. Ciurca Jr. Memorial Lecture. Dr. Derek Briggs, Professor of Earth and Planetary Sciences at Yale University and Curator in charge of Invertebrate Fossils at the Yale Peabody Museum, gave an overview of the materials Sam donated to the museum as well as a brief review of some of the research which has been facilitated by Sam's specimens.

Fossil Section Election – Need Volunteers

It is once again time for the Fossil Section to nominate its slate of officers for the 2023-2024 year. PLEASE consider helping and nominate yourself to be President, Secretary, or Board member. We promise that it is not much work! If you might be interested in running for any of these positions but would like additional information as to the duties and time involved, please contact one of the current Officers or Board members. The finalized ballot will appear in the June

newsletter. Current RAS Fossil Section Officers are listed on last page.

Trilobites of New York



Trilobites of New York: An Illustrated Guide by Thomas E. Whiteley, Gerald Kloc, and Carlton E. Brett was reviewed in our February 2019 issue. I have put this issue up in our website for those who wish to see it--

<https://rasny.org/fossil-letter-pdfs>. You might also want to read the review by Nigel Hughes (Research Associate, Department of Paleobiology, Smithsonian Institution) at https://www.google.com/url?sa=t&rct=j&q=&esc=s&source=web&cd=&ved=2ahUKEwin8Y-WkI7-AhUpJDQIHUGTDkiQFnoECBUQAQ&url=https%3A%2F%2Fpalaeo-electronica.org%2F2002_2%2Fbooks%2Fny.pdf&usg=AOvVaw3hl_j-1LHJoxgRxbB6rgZF.

RAS Annual Meeting & Spring Lecture

Hear Dr. Paul D. Curtis on "Living with Black Bears in New York State." The Rochester Academy of Science Annual Meeting & Spring Lecture is Wednesday, April 26, 7:15 p.m.

This live meeting (with Zoom broadcast) will be at Rochester Institute of Technology's Golisano Hall, room 1400. Directions are at <https://rasny.org/ras-annual-spring-lecture>. After a short introduction, the Board of Directors election will be conducted at the business meeting. A ballot and Zoom link is at <https://rasny.org/ras-annual-meeting>. Please show us your support by printing and mailing your completed ballot to RAS, P.O. Box 92642, Rochester NY 14692-0642. You will also be able to vote at the meeting through the Zoom Chat function. Note that you must have renewed your membership by March 31st.

The Spring Lecture will begin at 7:30 p.m. following the business portion of the meeting. We

are delighted to have Dr. Paul D. Curtis as our guest speaker. He is Professor of Wildlife Science in the Department of Natural Resources and Environment at Cornell University.

Dr. Curtis specializes in human-wildlife conflicts in suburban, forested, and agricultural landscapes, wildlife fertility control, and resolving community-based wildlife issues. He is an author on 135 research papers, including several specifically on black bears. Dr. Curtis is a co-author of the National Wildlife Control Training Program, and a Certified Wildlife Biologist® with The Wildlife Society.

Dr. Curtis states that "management of black bears in New York State is a success story. During the past decade, populations in the southern part of the state have grown, and bears have expanded their range northward. Abundance of bears in the Adirondacks and northern NYS has remained relatively stable. Bears can now be seen in almost any NYS county, and they are becoming more abundant near suburban communities. Consequently, conflicts between bears and people sometimes occur. The most frequent concerns are



damage to bird feeders, and bears rummaging through trash." Dr. Curtis will discuss bear biology, behavior, and ways to reduce potential human-bear conflicts.

Left: Black bear raiding a backyard bird feeder. (photo credit Dr. Curtis)

Fossil Section Summer Field Trips

by Dan Krisher

Welcome to the 2023 field trip season for the FOSSIL Section. Below is a list of the field trips currently scheduled for this season. Please note that the date for one of the trips are still tentative as I am in the process of getting approval for our visit.

5/6 The Gulf at Lockport: This trip will visit several sites in the Lockport area. The first and primary

stop for the trip is located on the west side of the town of Lockport. The site is a railroad cut a few yards off the road and it exposes the Silurian Rochester Shale Formation. The fossils are relatively small but can be found lying loose on the hillside. The material consists primarily of brachiopods and bryozoan with some trilobites, corals, and cystoids as well as other rarer material. The 2 to 3 other stops for the trip are somewhat exploratory and while the fossils may not be as plentiful the geology exposed will be quite interesting. We will meet at the first site and attendees can continue with the trip or peel off at their discretion.



The Gulf at Lockport is a family-friendly site with no hazards, plenty of room to spread out, and many fossils.

5/27 Road Cuts Near Waverly, NY. A series of large road cuts near Waverly, NY exposes Upper Devonian strata of the Frasnian West Falls Group. The rock is primarily siltstone and sandstone and contains a fauna of brachiopods, bivalves, and rare Upper Devonian rugose corals.

6/17 Little Beard's Creek:



The highly productive Little Beard's Creek trip in June 2019.

This is a large shale exposure along Little Beard's Creek in a stream near Geneseo. The site exposes the Windom Member of the Moscow

Formation and aside from many brachiopods and a few trilobites, the site is most well-known for the size and quantities of horn corals it produces.

7/8 Pompey Center and Other Various Road Cuts: The primary and first stop is a family friendly large road cut east of Syracuse which primarily exposes the Delphi Station member of the Skaneateles formation. Bivalves are common as well as gastropods, trilobite parts and nautiloids. Following this we will visit 1 or 2 other road cuts which expose portions of the Onondaga Formation. Due to the nature of the rock the collecting can be challenging but whatever we find will be relatively new to most collectors.

7/15 or 7/22 (Still being arranged) Jaycox Run: The trip will visit the Jaycox Run site between Avon and Geneseo and the collecting will be in the Middle Devonian Ludlowville and Moscow Formations. This is a Genesee Valley Nature Conservancy site that requires permission to visit. Heavy rains over the past few years have seriously eroded the Green's Landing bed so collecting in that area of the outcrop will be limited. No large-scale removal of bedrock will be allowed. Collecting will be limited to surface collecting, only the removal of exposed fossils. There may also be an opportunity to visit the adjacent Wheeler's Gully which would be a first for the Section.



Jaycox Run trip in July 2019. (photo by Fred Haynes)

The schedule for the month of August is still being worked out and will be shared via email when it is finalized. One possible candidate is a guided visit to the Penn Dixie site just south of Buffalo. This is a fee site with the current cost being \$14 for adults and \$12 for children. This is a well-known site famous for its trilobites and produces a wealth of other Hamilton Group fauna.

The process for "signing up" for one of these trips is quite straight forward. About a week or so before a trip I will send an email out to all Section members concerning the upcoming trip. All interested members should get back to me via email at least 2 days before the trip and I'll respond back with additional information for that trip as soon as I receive your email. I will send out a final email to all attendees the night before the trip. If you have any questions or otherwise need to get a hold of me, you can contact me at 585.698.3147 or DLKFossil@gmail.com

Spring 2023 Central NY Earth Science Student Symposium

We have our invitation from the Syracuse University Department of Earth Sciences to join them for on **Saturday April 15th, 2023** at Heroy Geology Laboratory. Non-SU student registration is \$5.00 and includes breakfast, reception and lunch. Please register on their google form:

https://docs.google.com/forms/d/e/1FAIpQLSeoHNWzPGnQk9_fQSGy6jmntUiEkj_wHyn7QF0v1bBoB8w-Q/viewform.

We will car pool from the Park and Ride parking lot at the Bushnell's Basin exit off I-490, leaving at 7:45AM. If you would like to join us, **register for the event**, contact Michael Grenier at mgrenier@frontiernet.net, and meet us. (If you want to make your own way there, the address is Heroy Geology Laboratory, 900 S Crouse Ave, Syracuse, NY 13210.).

The symposium consists of two Poster Sessions and two Oral Presentation Sessions in which undergraduate and graduate students in Upstate and Central NY colleges and universities present their research.

Schedule

9:00-9:30 AM: Registration (coffee and light breakfast)

9:30-10:30 AM: Oral Presentation Session 1

10:30 AM - noon: Poster Session 1

Noon - 1 PM: Lunch/Career Fair

1:00 - 2:30 PM: Poster Session 2

2:30 - 3:30 PM: Student Talks Session 2

3:30 - 3:45 PM: Break

3:45 - 5:00 PM: Keynote Presentation

The keynote speaker this year is Dr. Jennifer McIntosh, University of Arizona Distinguished Scholar and Professor of Hydrology and Atmospheric Sciences. She researches elemental and isotopic chemistry of surface waters, groundwaters, saline fluids, and natural gas.



Dr. Jennifer McIntosh, University of Arizona

Willner Madge Gallery, Dawn of Life, the Precambrian section

The "Very Long Beginning" Precambrian section is at the entrance to the gallery, before you get to the Burgess Shale exhibits. This has many fossils from the Mistaken Point site at the southeastern tip of Newfoundland, in eastern Canada. That site consists of a narrow, 17 km-long strip of rugged coastal cliffs. Of deep marine origin, these cliffs date to the Ediacaran Period (580-560 million years ago), representing the oldest known assemblages of multicellular fossils of this age anywhere. These fossils capture the appearance of large, biologically complex organisms, with earlier fossils being almost entirely bacterial. More than 10,000 fossil impressions have been found here and they range from a few centimeters to nearly 2 meters in length. If you schedule a visit to the site, you can go with a guided tour to see these in site. <https://mistakenpoint.ca/>

The ROM exhibits 20 taxa of the 227 genera of Ediacaran organisms described to date. Very helpful for visitors are the 3D models showing

what the creatures that left the fossils looked like in life – as best we can tell.



#5 bottom right, fossil and model of *Fractofusus misrai*, a particularly common fossil at Mistaken Point, considered an animal, and likely a very successful creature. At #6 upper right, *Thectardis avalonensis* was an elongated cone with a central depression and anchored to the substrate by its apex. 205 of these have been found at the site. #7 upper left, *Bradgatia linfordensis* is bush-like consisting of six or more fronds radiating from a central anchor point at the base. It has also been found in Charnwood Forest in England and in British Columbia. #8 lower left, *Primocandabrum hiematoranum*, this genus is also found in Charnwood Forest.

In the second case, below, at #10 upper right is *Charniodiscus* which was probably a stationary filter feeder that lived anchored to a sandy sea bed. The organism had a holdfast, stalk and frond. #9 *Aspidella*, to left of #10, is a disk-shaped fossil of uncertain affinity. Some specimens have been shown to be the holdfast of some organism, the main body of which extended into the open water

but broke off before fossilization, perhaps like *Charniodiscus*. #11 center *Haootia quadriformis* with model at top is identified as a cnidarian polyp, and represents the earliest known evidence for muscle tissue in an animal. #12 top left is an indeterminate ring structure.

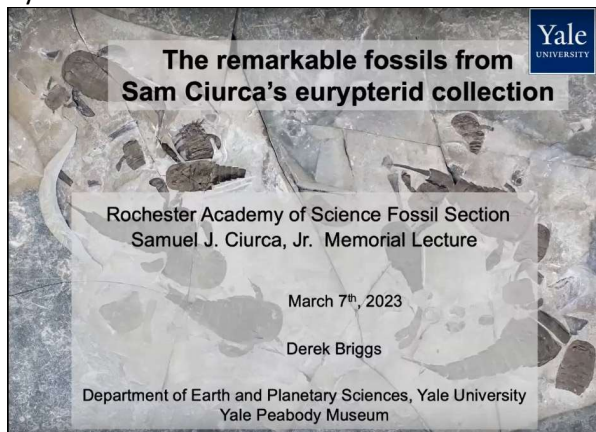


The first Ediacaran case, with fossils of *Kimberella* (center right, #16) — “a small slug-like creature that moved along the seafloor.” The #17 upper right ichnofossil “shows marks that were probably made by *Kimberella* as it grazed on bacteria.” #18 top left is *Parvacorina minchami*, a shield-shaped bilaterally symmetrical fossil animal that has some superficial similarities with the Cambrian trilobite-like arthropods. #19 center left is *Spriggina floundersi*, an early bilaterian animal whose relationship to living animals is unclear. #20 lower left is *Dickinsonia costata* whose affinities are presently unknown though its mode of growth is consistent with a stem-group bilaterian affinity. The discovery of cholesterol molecules in fossils of *Dickinsonia* lends support to the idea that *Dickinsonia* was an animal.

Make plans to visit. You will not be disappointed. Besides the Ediacaran and Cambrian exhibits, you will enjoy “The Bustling Seas” (Ordovician/Silurian/Devonian), “The Green Earth” (Devonian/Carboniferous), “Before the Great Dying” (Permian) and “Dawn of a New Era” (Triassic). The exceptional quality of this gallery is only possible because of the fossils of great scientific value found within Canada, so much so that four locations are recognized as UNESCO World Heritage Sites. Each of these fossil sites provides astonishing evidence of major intervals in life history, from oldest to youngest, they are: Mistaken Point (Newfoundland and Labrador), the Burgess Shale from Yoho and Kootenay National Parks (British Columbia), Miguasha National Park (Québec) and Joggins Fossil Cliffs (Nova Scotia). Then you reach their hall of dinosaurs and marine reptiles which is awe-inspiring.

Videos of Past Meeting Lectures

By Michael Grenier



I thought to expand on Dan’s President’s Report March meeting summary on Dr. Derek Briggs’ lecture, but decided instead just to have you watch it if you weren’t on the broadcast Zoom session. This has just been put up on our website at <https://rasny.org/fossil-section-calendar>. Scroll down to past meetings and you will find it at the top left. The last line, in italics and underlined, is a link to the YouTube video of Dr. Briggs’ talk at our private library. The recorded talks from other past meetings are there also. These include:

February 2023 Dr. Matt Friedman on “*The Ages of Fishes.*”

November 2022 Dr. Robert Minckley on “*Rochester and the birth of natural history museums; Ward’s Natural Science Establishment before 1900.*”

October 2022 Dr. Lisa Amati on “*New York’s Finest Fossils.*”

May 2022 Michael Grenier on “*Dinosaur Research in 2020 & 2021: Eggs, Babies, Feathers, Other Amazing Finds, & the Really, Really Bad Day.*”

April 2022 Dr. Pennilyn Higgins on “*Paleontology at the End of the Rope.*”

March 2022 Dr. Sara H. Burch on “*Forelimb Function in Predatory Dinosaurs.*”

February 2022 Dr. Christopher Berry on “*The Devonian Fossil Forests of Gilboa and Cairo in New York and Others.*”

November 2021 Carl Fechko on “*The geology, history, and fossils of the Fossil Lake Sediments of the Green River Formation.*”

October 2021 Dr. Melanie J. Hopkins on “*How to Grow a Trilobite: Learning about trilobite growth and development through empirical and modeling studies.*”

June 2021 Dr. Scott MacLennan on “*An introduction to global glaciations, Earth’s most extreme climate change events.*”

May 2021 Dr. Ben Datillo on “*Mind the Gape: the hinge structure of Rafinesquina and its implications for strophomenid life strategies.*”

April 2021 Dr. William Ausich on “*Extreme Crinoids.*”

March 2021 Dr. Dale Hess on “*Drumlins of New York—What They Tell Us About Our Changing Climate.*”

February 2021 Dr. Emily Willoughby on “*The science and art of paleontological illustration.*”

December 2020 Dr. D. Jeffrey Over on “*Devonian Mass Extinctions in New York.*”

(Earlier lectures were not recorded.)

CALENDAR OF EVENTS

April

Tuesday April 4, FOSSIL MEETING 7:00 PM. NOTE EARLIER TIME. NEQALS Community Meeting Room, 1030 Jackson Rd, Webster, 14580. Speakers are member Gerry Kloc of the University of Rochester on *Silurian trilobites collected from Illinois and Missouri* and Jonathan Hendricks on the PRI's planned exhibits and activities in conjunction with publication of the *Devonian of New York*. Visitors welcome.

May

Tuesday, May 2, FOSSIL MEETING 7:30 PM. LOCATION: NEQALS Community Meeting Room, 1030 Jackson Rd, Webster, 14580. Speaker Dr. Jennifer Olori, SUNY Oswego on early tetrapods. Visitors welcome.

Visitors are welcome to all Fossil Section meetings! For more information and the latest updates check the RAS Website (www.RASNY.org). You can also contact Dan Krisher at DLKFossil@gmail.com or John Handley at jhandley@rochester.rr.com for further information.

ROCHESTER ACADEMY OF SCIENCE FOSSIL SECTION

Monthly meetings are now held as hybrid meetings, live but also broadcast on Zoom. Meetings are held the first Tuesday of each month from October to December and from February to May at 7:30 pm. In person meetings are now held at the NEQALS Community Meeting Room, 1030 Jackson Rd, Webster, NY 14580 unless otherwise listed.

OFFICERS

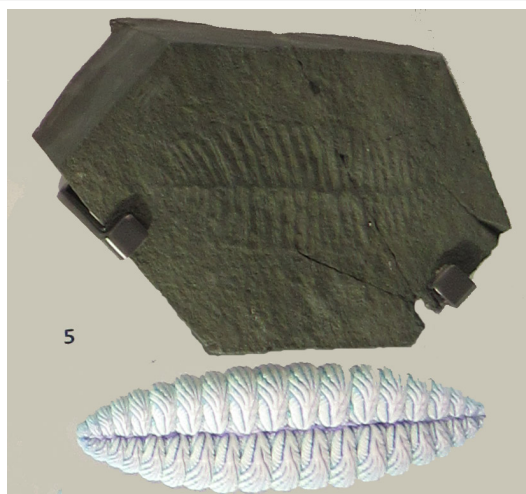
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APPOINTED POSITIONS

Field Trip Coordinator: Dan Krisher	585 293 9033	DLKFossil@gmail.com
FossilLetter Editor: Michael Grenier	585 671 8738	mgrenier@paleo.com

The FossilLetter is published before each meeting month of the year. Please send submissions to mgrenier@frontiernet.net or by U.S. Postal Service mail to 692 Maple Drive, Webster, NY 14580. Deadline for submissions to the FossilLetter is the 15th of the month.

For scheduling changes and the latest updates please check the RAS Website (www.rasny.org) and click on the Fossil Section link. Last minute updates can also be found on the *General Announcements* page of the Academy Website.



The holotype of *Fractofusus misrai*, an Ediacaran frondose rangeomorph animal in the ROM.