

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

# The FOSSILETTER

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## December Meeting

The December section meeting is on Tuesday, December 5th at 7:30 PM. We will meet at the Community Meeting Room at the NEQALS (North East Quadrant Advanced Life Support) building at 1030 Jackson Rd, Webster, 14580. This meeting will not be broadcast on Zoom.

The meeting will feature our traditional "Show-n-Tell" with pizza and drinks being provided by the section. Members are asked to bring their interesting finds and any specimens in need of identification. This is a great opportunity to show off your finds from the past year, or a part of your collection. Don't worry if what you have is not flashy, fossils rarely are. Whatever you have will be interesting to the rest of us. Many specimens which appear, at first glance, to be bland may actually be something rare or unusual. If (like me) you have nothing to show, come anyway for the joy of being with friends and seeing what can be found. If you have specimens which are defying identification, bring them along. Between us all we usually have enough knowledge to put a name to something. Tables will be set up around the room and you can lay all your interesting specimens out for us to all enjoy and discuss.

If you have small fossils or fossils for which you would like a close-up view of details, bring them. Michael Grenier will again have a station set up with a 5MB digital microscope with 20X-200X magnification. Images of your fossil under magnification can be captured and transferred to your USB memory stick or SDHC card (SanDisk).

Bring a friend, visitors are welcome.

## Membership Renewal Time

Unless you are a Life Member, note that your membership will expire on December 31, 2023. Please renew your membership now. A membership form is sent with this and we will have

some at the meeting, or you can get one or even complete the renewal at [rasny.org/mbform.pdf](https://rasny.org/mbform.pdf). Remember, on the form, you have to add the Rochester Academy of Science membership (\$10 individual) and Fossil Section membership (\$10 individual or family, \$5 student).

## NO January Section Meeting

The Section will not hold a January meeting or issue a newsletter due to the holiday season. The next meeting will be Tuesday, February 6th, 2024. It will feature Dr. Kristina Curry Rogers, professor in Biology and Geology at Macalester College in Saint Paul, MN. Dr. Curry Rogers is an internationally known specialist in dinosaur evolution and paleobiology. Our March meeting will be our "Second Annual Samuel J. Ciorca, Jr Memorial Lecture." Both meetings will be only on Zoom to avoid winter weather travel issues.

## President's Report by Dan Krisher

On 11/3 the Section assisted on the Rochester Academy of Science Annual Paper Session and also set up and staffed a Fossil outreach table during the poster session portions of the meeting.

The Section held its November meeting on 11/14 due to voting on the first Tuesday. After a short business portion, the meeting featured a talk by Dr. D. Jeffrey Over, Distinguished Associate Professor of Geological Sciences in the Department of Geology at SUNY Geneseo. The subject of his talk was the new publication "Devonian of New York", a 3-volume set produced by the Paleontological Research Institution. Dr. Over served as both an author and editor of this publication which represents a modern synthesis of the Devonian stratigraphy of New York state which was last updated in 1975. Immediately following the meeting attendees were able to purchase the set at reduced cost while also avoiding shipping charges.

## Help Needed at RMSC Outreach Event

Every year over the holidays, the Rochester Museum & Science Center (RMSC) runs a special Holiday Science and Technology Days program for youth and families. Usually the RAS Fossil Section supports this by setting up two tables of fossils and displays. The dates for this year's RMSC program are Tuesday, December 26th through Sunday, December 31st. The Fossil Section will be there on **Friday 12/30 and Sunday 12/31**. The Astronomy Section will be there also. Dan Krisher will lead this venture, but he can use a lot of help. Each day is from 11am-3pm, and if you can come to help for an hour or two, you will find it to be very rewarding. You may also bring anything you have to add to the display. Contact him, please, at 585-698-3147 or by email at [dlkfossil@gmail.com](mailto:dlkfossil@gmail.com).

The theme will be "STEAM through the Ages." Fossils are an excellent way to show "design in nature" to kids. STEAM? This is STEM—Science, Technology, Engineering, Math—with the addition of "the Arts." You can learn more about the event at <https://rmsc.org/events/winter-break-23/>. The RMSC is at 657 East Avenue, Rochester, NY, 14607.



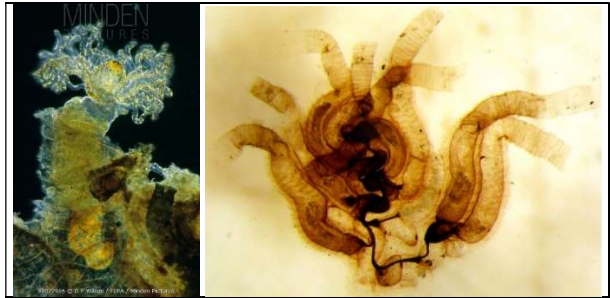
Fossil Section table with Dan Krisher & John Handley with visitors (at WinterFest 2020).

## Fossil News edited by Michael Grenier

### Passed Member Samuel Ciorca Memorialized in Name of Newly Described Silurian Fossil

But first, a word about *Cephalodiscus gracilis* and relatives. This is a fairly obscure extant creature and you are not expected to have ever heard of it. *Cephalodiscus gracilis* is a sessile benthic hemichordate. This needs unpacking—Hemichordata is a phylum of marine deuterostome animals, generally considered the evolutionary

sister group of the echinoderms, with chordates (including vertebrates) more distantly related.



Left, a *Cephalodiscus* zooid with tentacles extended to feed. Right, a group of connected coenecium tubes, each home to a *Cephalodiscus* zooid.

They are sessile in that they don't move from where they attach and they live on the seafloor (benthos). They live inside a collagenous sheath (coenecium) that they secrete, attached to a rock substrate. They have tentacled arms and are filter feeders. They reproduce sexually, but once attached, new zooids (individuals) are budded asexually from the original. Nineteen living species of *Cephalodiscus* have been described.

If you collect in local Silurian rock, you likely have hemichordates in your collection. These would be your graptolites, which are in the pterobranch class of hemichordates. The earliest fossil graptolites—from the Cambrian—were also sessile benthic creatures. In the early Ordovician, a very successful group—Graptoloidea—became free-floating planktonic creatures and these are found world-wide until their extinction in the mid-Devonian. The sessile graptolites are found as fossils until the mid-Carboniferous. Enteropneusta (acorn worms), are the other common class of hemichordates still alive.

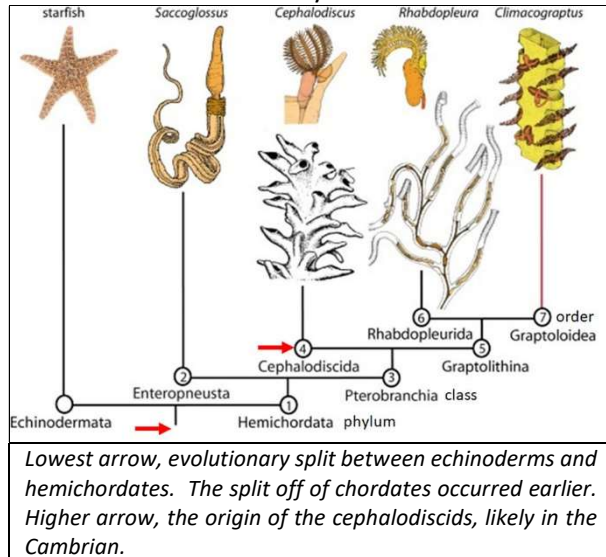


Graptolite *Stimulograptus clintonensis*, as frequently found in the Silurian Williamson Shale at Tryon Park in Rochester

Distinct, but sharing some features with *Cephalodiscus*, is *Rhabdopleura*, which has been found to be a surviving sessile graptolite. Though they likely go back to the Cambrian, only two cephalodiscid fossils are known—*Cephalodiscus nusplingensis*, an extinct species from the Upper

Jurassic of southwest Germany and *Cephalodiscus lutetianus* from the Eocene of France.

Here is the high-level family tree of Hemichordata as currently understood.



This brings us to a mysterious and problematic fossil found by Sam Ciurca in the Silurian Bertie Waterlime (~420 MYA), where he found many of his eurypterids. He nicknamed it “Ezekiel’s Wheel” because of its extraordinary shape. He collected ten specimens of this creature, but never had an idea of what it was. Nor did the many people to whom he showed it. All the specimens became part of the collection shipped to Yale University after Sam’s death by his will.



Figure 1H, the holotype specimen. Credit (both specimens): Briggs and Koch (2023).

The identity has been solved in a paper published just last month (Briggs, D.E. and Koch, N.M., 2023. A Silurian pseudocolonial pterobranch. *Current Biology*). You will remember Derek Briggs of the Yale Peabody Museum as our speaker last March for our first Sam Ciurca memorial lecture. He and Dr. Koch identified the structure of this fossil to be composed of tubes, leading to its identification as a pterobranch. Phylogenetic analysis groups it with the cephalodiscids. They believe from the fossil that this animal floated, which would make it a second subclass of Pterobranchia (with Graptoloidea in Subclass Graptolithina) to adopt a planktonic lifestyle.

From the paper—“The name of the new genus and species, *Rotaciurca superbus*, is derived from rota (Latin for wheel), combined with Ciurca (masculine) in honor of Samuel J. Ciurca, Jr., who donated the specimens together with thousands of eurypterids to the Yale Peabody Museum (YPM). Ciurca’s name for the fossil, Ezekiel’s Wheel, alludes to the prophet’s vision of the divine warrior riding in a wheeled chariot, as described in the Book of Ezekiel in the Bible. The species name *superbus* (Latin for excellent, superior, and splendid) acknowledges that Ciurca labeled the holotype “the most beautiful fossil ever found.” We assign *R. superbus* to a new family Ezekielidae (a further reference to Ciurca’s name for the fossil) of the order Cephalodiscida.”



Above, figure 2B, Sam’s “Ezekiel’s Wheel.” Below, figure 1H, the holotype specimen.

You may contact the editor for a copy of this paper.



## CALENDAR OF EVENTS

### December

**Tuesday December 5, FOSSIL MEETING 7:30 PM NEQALS Community Meeting Room**, 1030 Jackson Rd, Webster, 14580. Our traditional Show-and-Tell with pizza and drinks provided by the section. This is a great opportunity to show off your finds from the past year. Visitors welcome.

### February

**Tuesday February 6, FOSSIL MEETING 7:30 PM. LOCATION: On ZOOM only. Speaker is Dr. Kristina Curry Rogers on dinosaur evolution and paleobiology.**

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

President: Dan Krisher  
Vice President/Program Chair: Michael Grenier  
Secretary: Dan Krisher  
Treasurer: John Handley  
Director (three-year term): Melanie Martin  
Director (two-year term): Fred Haynes  
Director (one-year term): **Open**

#### PHONE

585 698 3147  
585 671 8738  
585 698 3147  
585 802 8567  
585 413 8264  
585 203 1733

#### E MAIL

DLKFossil@gmail.com  
paleo@frontier.com  
DLKFossil@gmail.com  
jhandley@rochester.rr.com  
martin@nanoparticles.org  
fred.patty.haynes@gmail.com

#### APPOINTED POSITIONS

Field Trip Coordinator: Dan Krisher  
FossilLetter Editor: Michael Grenier

585 293 9033  
585 671 8738

DLKFossil@gmail.com  
[mgrenier@paleo.com](mailto:mgrenier@paleo.com)

The FossilLetter is published before each meeting month of the year. Please send submissions to [mgrenier@frontiernet.net](mailto: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 15<sup>th</sup> of the month.

For scheduling changes and the latest updates please check the RAS Website ([www.rasny.org](http://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.



*A vision of Ezekiel's Wheel from M. Merian, Iconum Biblicarum, Frankfurt, 1627. The relevant text in the Book of Ezekiel (King James Version, 1:15-16) is — “Now as I beheld the living creatures, behold one wheel upon the earth by the living creatures, with his four faces. The appearance of the wheels and their work was like unto the colour of a beryl: and they four had one likeness: and their appearance and their work was as it were a wheel in the middle of a wheel.”*