

Two new creatures discovered from dawn of animal life

June 18 2018, by Sarah Nightingale



Two new Ediacaran-era fossils discovered by UCR researchers: *Obamus coronatus* (left) and *Attenborites janeae*. Credit: University of California - Riverside

Earth's first complex animals were an eclectic bunch that lived in the shallow oceans between 580-540 million years ago.

The iconic Dickinsonia—large flat [animals](#) with a quilt-like appearance—were joined by tube-shaped organisms, frond-like creatures that looked more like plants, and several dozen other varieties already characterized by scientists.

Add to that list two new animals discovered by a UC Riverside-led team of researchers:

- *Obamus coronatus*, a name that honors President Barack Obama's passion for science. This disc-shaped creature was between 0.5-2 cm across with raised spiral grooves on its surface. *Obamus coronatus* did not seem to move around, rather it was embedded to the ocean mat, a thick layer of organic matter that covered the early ocean floor.
- *Attenborites janeae*, named after the English naturalist and broadcaster Sir David Attenborough for his science advocacy and support of paleontology. This tiny ovoid, less than a centimeter across, was adorned with internal grooves and ridges giving it a raisin-like appearance.

The discovery of *Obamus coronatus* was published online June 14 in the *Australian Journal of Earth Sciences*, or *AJES*, and the *Attenborites janeae* paper is forthcoming in the same journal. The studies were led by Mary Droser, a professor of paleontology in UCR's Department of Earth Sciences. Both papers will be included in print in a 2019 thematic *AJES* issue focusing on South Australia's Flinders Ranges region, where the discoveries were made.



An extremely well-preserved example of the fossil animal *Dickinsonia costata* found in a bed that was recently excavated by UCR researchers. Credit: University of California - Riverside

Part of the Ediacara Biota, the soft-bodied animals are visible as fossils cast in fine-grained sandstone that have been preserved for hundreds of millions of years. These Precambrian lifeforms represent the dawn of animal life and are named after the Ediacara Hills in the Flinders Ranges, the first of several areas in the world where they have been found.

In the hierarchical taxonomic classification system, the Ediacara Biota are not yet organized into families, and little is known about how they relate to modern animals. About 50 genera have been described, which often have only one species.

"The two genera that we identified are a new body plan, unlike anything else that has been described," Droser said. "We have been seeing evidence for these animals for quite a long time, but it took us a while to verify that they are animals within their own rights and not part of another animal."

The animals were glimpsed in a particularly well-preserved fossil bed described in another paper published by Droser's group that will be included in the Flinders Ranges issue of *AJES*. The researchers dubbed this fossil bed "Alice's Restaurant Bed," a tribute to the Arlo Guthrie song and its lyric, "You can get anything you want at Alice's Restaurant."

"I've been working in this region for 30 years, and I've never seen such a beautifully preserved bed with so many high quality and rare specimens,

including Obamus and Attenborites," Droser said. "The AJES issue on the Flinders Ranges will support South Australia's effort to obtain World Heritage Site status for this area, and this new bed demonstrates the importance of protecting it."

More information: P. W. Dzaugis et al. Stuck in the mat: Obamus coronatus, a new benthic organism from the Ediacara Member, Rawnsley Quartzite, South Australia, *Australian Journal of Earth Sciences* (2018). [DOI: 10.1080/08120099.2018.1479306](https://doi.org/10.1080/08120099.2018.1479306)

S. D. Evans et al. You can get anything you want from Alice's Restaurant Bed: exceptional preservation and an unusual fossil assemblage from a newly excavated bed (Ediacara Member, Nilpena, South Australia), *Australian Journal of Earth Sciences* (2018). [DOI: 10.1080/08120099.2018.1470110](https://doi.org/10.1080/08120099.2018.1470110)

Provided by University of California - Riverside

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