

Remarkable stasis of a fossil ostracode with soft parts

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Ostracodes are clam-like arthropods sometimes known as ‘seed shrimps’. They are commonly quite small but vary in size from 0.3 mm to 300 mm and are found today living in a variety of environments and depths.¹ Ostracodes are by far the most abundant crustaceans in the fossil record,² and their shells occur from at least the basal Ordovician to the present, with over 50,000 living and extinct species.³ Because they are so abundant and show a diverse range of morphology, they are commonly used as index fossils in biostratigraphic dating of sediments, based on supposed evolutionary lineages.⁴

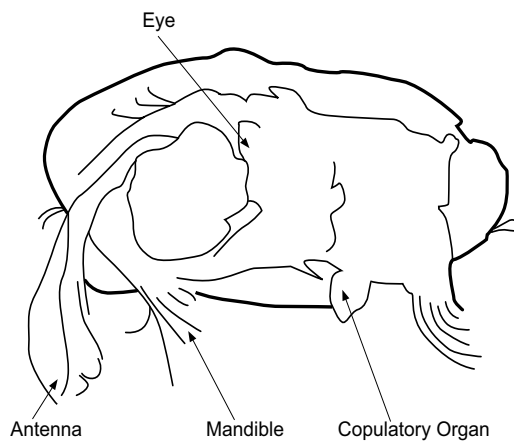
Researchers were recently surprised to discover that a 50-mm-long ostracode from the early Silurian in Herefordshire, UK, possessed well-preserved soft parts.² Using an ingenious analysis technique of slicing and scanning the fossil, the researchers put together a virtual fossil. They discovered gills and limbs used for sensing, feeding and swimming, and the ‘oldest’ male sexual organ. The exceptional preservation of the fossil found in a cemented nodule is probably due to its being buried in volcanic ash. With its high SiO₂ content, volcanic ash is an ideal environment for rapid mineralization.⁴

This fossil has supposedly shed light on the Paleozoic fossil record of ostracodes, which has been uncertain up to this time.

The most amazing discovery of all is that the fossil is almost identical to a living family of ostracodes, *Cylindroleberid*, demonstrating remarkable stasis for the supposed 425 million years of evolutionary time. Some researchers were

stunned, considering the find ‘... a demonstration of unbelievable stability’.³ How can such a creature, which supposedly evolves quickly (given the high diversity), not change for so long? One researcher outrightly disbelieved the stasis and preferred to assign the fossil ostracode to another extinct family.⁴ Furthermore, such stasis clashes with the molecular data, which indicates that the *cylindroleberid* family originated relatively recently in evolutionary time.⁴

From a creationist point of view, such stasis is not surprising and is



Cross-section of an ostracode

an indication that all the variety in ostracodes was built in at creation. It is also an indication that the construction of phylogenetic trees for such creatures is excessively subjective, and the use of ostracodes as index fossils is questionable.

References

1. Brasier, M.D., *Microfossils*, George Allen & Unwin, London, p. 122, 1980.
2. Siveter, D.J., Sutton, M.D. and Briggs, D.E.G., An ostracode crustacean with soft parts from the Lower Silurian, *Science* **302**:1749–1751, 2003; p. 1749.
3. See <www.uh.edu/~rmaddock/IRGO/ostracoda.html>, 24 March 2004.
4. Stokstad, E., Gutsy fossil sets record for staying the course, *Science* **302**:1645, 2003.