

EXCEPTIONALLY PRESERVED ARTHROPOD FROM THE OHIO SHALE (UPPER DEVONIAN) OF OHIO

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A single specimen of a bivalved arthropod from the Upper Devonian Ohio Shale of Columbus, Ohio, represents an undescribed species featuring nonmineralized preservation similar to that known from nonmineralized arthropods from various Phanerozoic lagerstätten. The specimen is preserved in hard, fissile, marine black shale and comes from approximately the lower middle part of the Ohio Shale. It superficially resembles phyllocarids, but a few key characters indicate it is not closely related.

The new arthropod is approximately 11 cm long, and the exoskeleton seems to be complete except for a tail that articulated at a notch at the posterior end of the abdomen. The entire cuticle has fine polygonal reticulation. The rostrum is pointed, robust, broad, and has lateral linear ridges. The valves of the carapace are semilunate, and each has a long anterolateral spine. Medially, the valves appear to be fused together, perhaps even fused with abdominal parts of the body. As preserved, a median dorsal plate is lacking. The abdomen is long, wide, and lacks obvious external segmentation. A medial ridge is present on the rostrum and the abdomen, but is absent over most of the bivalved carapace, possibly for taphonomic reasons. A narrow doublure is present along the entire preserved margin of the body.

Although morphologically reminiscent of phyllocarids, the new arthropod does not appear to be closely related phylogenetically, as it lacks any obvious abdominal segmentation and lacks a median dorsal plate. Its systematic position within the arthropods is uncertain.

This example of an exceptionally preserved, nonmineralized arthropod adds to the record of unusual preservation known from the Ohio Shale. Previously recorded examples of exceptional preservation in the formation include some phyllocarid arthropods, conulariid stalks, enigmatic "worms", and cartilaginous sharks.