

## GSA Connects 2024 Meeting in Anaheim, California

Paper No. 29-2

Presentation Time: 8:00 AM-5:30 PM

### EARLY EVOLUTION OF SEA SCORPIONS: EURYPTERIDS (CHELICERATA: EURYPTERIDA) OF THE BIG HILL LAGERSTÄTTE

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Eurypterids are a group of diverse chelicerates that first appeared during the Middle Ordovician and went extinct at the end of the Permian. Despite there being over 250 species of eurypterids known, the fossil record of eurypterids during the Ordovician is relatively sparse, comprising only 12 species representing the Megalograptidae, a 'waeringopterid' clade, Rhenopteridae, Onychopterellidae, Adelophthalmidae, and Eurypteroidea. As such, any new discoveries that elucidate on the early evolutionary history of the clade is noteworthy. Here, we report on early eurypterids from the Late Ordovician Big Hill Lagerstätte of Michigan's Stonington Peninsula with preserved organic cuticle. Preliminary study of the available specimens indicates they may comprise two new species, each assignable to new genera within the Carcinosomatidae and Dolichopteridae, which would represent the oldest known occurrence of both clades. The new species may help elucidate on the morphological ground pattern of these clades and will be incorporated into existing phylogenetic frameworks. The eurypterids at Big Hill represent the oldest known eurypterid community for which more than a single species is known to co-occur. The Big Hill Lagerstätte is unique in preserving eurypterids, chasmataspidids, and xiphosurans all in association and as such affords an important window into the early evolution of euchelicerates.

Session No. 29--Booth# 59

[D16. Recent Advances in Phylogenetic/Morphological Patterns \(Posters\)](#)

Sunday, 22 September 2024: 8:00 AM-5:30 PM

Hall D (Anaheim Convention Center)

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