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EVIDENCE FOR SYNONYMY AND ONTOGENETIC NICHE SHIFTS AMONG HIBBERTOPTERID EURYPTERIDS

HUGHES, Emily S. and LAMSDELL, James C., Department of Geology and Geography, West Virginia University, 98 Beechurst Avenue, Brooks Hall, Morgantown, WV 26506

The frequent absence of co-occurring juvenile and adult eurypterids in the fossil record has made the study of eurypterid ontogeny particularly challenging. Because of these difficulties and the lack of complete specimens for most taxa, the systematic relationships among the Carboniferous-Permian Hibbertopteridae are not entirely clear, and there may be several cases of synonymy among genera. Hibbertopterids appear to have been sweep-feeders, capable of capturing prey with their appendage armature, which consisted of movable blades equipped with sensory setae (in *Hibbertopterus*) or of comb-like structures (in *Cyrtoctenus*). It has been proposed that *Hibbertopterus* may be a juvenile form of *Cyrtoctenus* in which case comb-like armature capable of capturing small prey items out of suspension did not develop until the late stages of ontogeny, and juveniles retained broad blades suited to probing for larger prey in soft sediment. In order to evaluate the likelihood of synonymy, the cuticle ornamentation of several hibbertopterid genera was compared and found to be largely consistent in *Hibbertopterus*, *Dunsopterus*, and *Cyrtoctenus*. The strong morphological similarities between *Hibbertopterus* and *Dunsopterus* warrant their synonymization, and because *Dunsopterus* is paraphyletic with respect to *Cyrtoctenus*, all three genera are synonymized. This ontogenetic niche shift would have resulted in distinct prey sizes between juveniles and adults which would have increased survival rates by reducing intraspecific competition.

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