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Silurian retiolitid graptolites: Morphology and evolution

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Developmental mode and proximal structures are commonly accepted as the best for the recognition of high-level taxonomic categories within the Graptoloidea. The petalolithids and retiolitids are unique in possessing a virgellar ancora and in the latter, distal ancora development. The ancora structures are considered homologous, and the ancorate petalolithids are considered to be the direct ancestors to the retiolitids. The Retiolitidae are unique among the diplograptoids in possessing (1) outer, lateral, ancora sleeve walls (derived from distal extension of the ancora), and (2) a skeletal framework of bandaged lists between which are a succession of very thin and rarely preserved fusellar layers. Retiolitids possess different kinds of thecal profiles and two types of micro-ornamentation on the lists, and these have served to distinguish between the subfamilies Retiolitinae and Plectograptinae. Complete retiolitid morphological terminology is clarified and explained. Cladistic analysis of the retiolitids provides some measure of a better understanding of retiolitid evolution, but adds only modest support for the retention of the two subfamily categories.

Key words: Graptoloidea, Retiolitidae, Petalolithidae, ancora, cladistic analysis, Silurian.

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