

PHYLOGENY OF THE ANOPLIIDAE (BRACHIOPODA, CHONETACEA): EVIDENCE FROM STRATIGRAPHY?

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The Family Anopliidae (Brachiopoda, Chonetacea) consists of 24 genera, comprising more than one quarter of chonetacean diversity. This large group is cosmopolitan in distribution and has stratigraphic utility in rocks of Upper Silurian (Ludlovian) through Upper Permian (Changhsingian) age. Previous phylogenetic studies of the Anopliidae have emphasized the selection of phylogenetically significant features, such as presence of external radial ornament or internal radial ridges of the brachial valve. These features allowed the recognition of "lines of development" or "stocks" that were then coupled with stratigraphic ranges in producing the final hypothesis of Anopliid relationships. However, these approaches were essentially stratophenetic and lacked any input from parsimony-based cladistic methods.

A data matrix of over 50 internal and external shell characters was derived from both the global literature and examination of NMNH specimens. Preliminary results of cladistic analysis using HENNIG86 failed to support previously published phylogenies based on limited character evidence. Similarly, this analysis found no foundation for the use of stratigraphic data as a tool in establishing anopliid phylogenetic relationships. However, such methods have largely determined the current subfamilial classification and, therefore, the new results indicate the need for taxonomic revision within the Anopliidae.