

Phyletic evolution of the latest Ludlow spinose monograptids

Adam Urbanek

Acta Palaeontologica Polonica 40 (1), 1995: 1-17

The spinose latest Ludlow (Ludfordian) graptolite *Monograptus* (*Uncinagraptus*) *spineus* is not related to the lobate-spinose monograptids of the late Wenlock. It developed independently as a result of phyletic evolution from hooded *M. (U.) acer*, *M. (U.) protospineus* sp. n. being a transient link. Cumulative effects of gradual and directional changes within this lineage resulted probably in feeding specializations that enabled separation of niches. Previously described *M. (U.) acer* and *M. (U.) aculeatus* are defined as chronosubspecies, the latter representing a more advanced stage of evolution. A biostratigraphic subdivision of late Ludfordian in graptolite facies is suggested.

Key words: graptolites, monograptids, phyletic evolution, hypermorphosis, Ludlow, Late Silurian.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(1,017.1 kB\)](#)