

Late monograptid faunas and the problem of graptolite extinction

Tatjana N. Koren'

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Main trends and dynamics of evolution in the late graptoloids are traced on the basis of their morphology, geographical and stratigraphic distribution. Frequency distribution curve of Ludlovian-Pragian graptoloid species shows gradual but not uniform extinction. The periods of crises are followed by short intervals of increased diversification combined with a wider distribution of graptolite facies. Peaks of diversity show a regular downward trend by the end of the Pragian time. Lack of essential morphological novelties and decrease of taxonomic diversity are indicative of a biological regression of the group. Facies analysis of Late Silurian-Early Devonian deposits shows a substantial reduction of areas with typical graptolite shales and a simultaneous increase of carbonate and terrigenous sediments with mixed shelly-graptolite taphocoenoses. Decrease in carbonaceous organic matter may be evidence of an environmental change and reduction of microplankton biomass, the latter being the food resource for graptolites. Simplification of morphology to a single adaptive type, a great numerical abundance of Late Pragian populations may be indicative of the loss of ecological flexibility. Probable causes of extinction of graptoloids are discussed namely: internal organization of the colony, biocoenotic changes due to evolutionary improvements in other planktotrophic organisms, changes in biotopes as a result of palaeogeographic reconstruction.

Key words: Extinction, graptolites.

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