

OCEANOGRAPHIC AND PALEOECOLOGICAL CAUSES OF AMMONITE MASS-OCCURRENCES

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Two monospecific Lower Cretaceous mass-occurrences of ammonites were discovered in the Northern Calcareous Alps (Austria).

Clearly, the causes of mass-occurrences depend on the geographic scale of the event: small, local mass-occurrences require only local causes, whilst largescale events require a model which is applicable to a wide range of geodynamic and paleogeographic settings.

The paleobiology of the studied sections, particularly of the rocks directly above and below the mass-occurrences, will reveal the changing regional paleoclimatic and paleoecological environment within which the mass events occurred.

Models describing the development of mass extinctions must clearly take a wide range of parameters into account. These include both regional and local paleogeographic features - such as the scale of mass-occurrences, sedimentation rate, anoxic levels in the water column, climatic variations, competition between species, as well as geodynamic factors such as varying subsidence rates. Additionally, detailed paleogeographic restorations of the Lower Cretaceous pelagic basins should yield important information about the migration habits of some Lower Cretaceous ammonite groups. Pre-Aptian European Lower Cretaceous ammonites occur in two distinct realms, Tethyan and Boreal. We will also investigate if there is any combination between sea level changes and anoxic events which in some cases led to extinction events of Lower Cretaceous ammonites all over the world.

The sum of these investigations should yield a more detailed picture of the genesis of ammonite mass-occurrences.