

## INJURIES – A KEY TO UNDERSTANDING LIFE MODES OF AMMONOIDS

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Comparative studies of the different types of regenerated injuries, which had been resulted from predatory interactivities, and their positions along the aperture of Mesozoic ammonoids (Early to Middle Triassic, Jurassic) allow to distinguish taxa with demersal modes of life and taxa which lived predominantly within the free water column, respectively. The main predators at the bottom were pincers-bearing crustaceans and in some cases also pycnodontid fishes, while predominantly different kind of fishes attacked free swimming ammonoids. A bimodal distribution (Fig.1) of same types of injuries caused by crustaceans along the aperture exhibits information about attacks during active as well as resting phases of these ammonoid animals, proving their demersal life style (KEUPP, 1997). From analogous types of injuries and their similar distribution patterns on the shell, a more or less bottom related life mode of Middle Triassic ptychitids is postulated as well as for the longidome Jurassic morphotypes with simple bifurcating ribs [e.g. *Dactylioceras* (Lower Toarcian) and several perisphinctids (Upper Jurassic)]. In contrast, the normal distribution of injury positions at the aperture, for example of Liassic harpoceratids, presumably mostly caused by fish-attacks, indicates epipelagic life style. The often observed cases of multiple attacks on the same ammonoid specimen always with the same configuration of shell breakage and same position of injuries on the shell can be interpreted to hint at a stable habitat stationarity of both the predator and the ammonite.

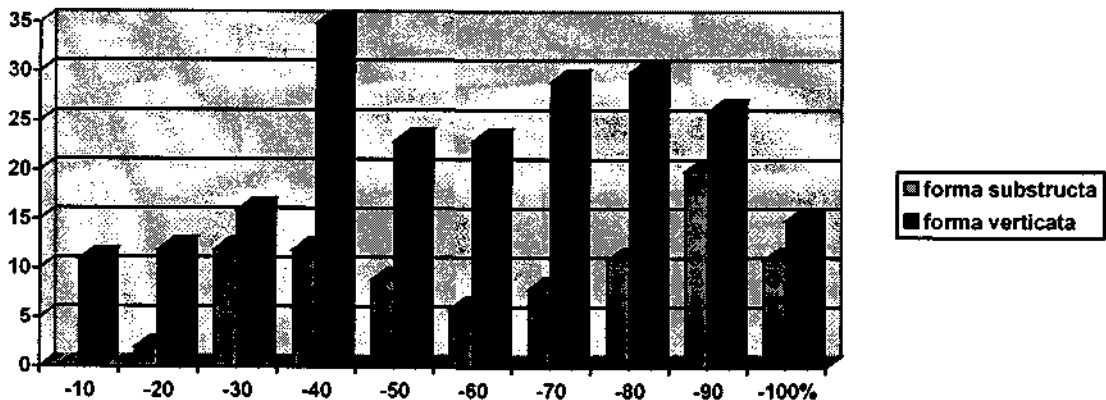


Fig.1: The localisation of injuries along the aperture (0% = edge of the umbilicus, 50% = middle of the whorl, 100 % = ventral median line) mostly caused by crustacean-ammonite interactivities of 315 injured specimens of *Orthosphinctes* from Late Jurassic (Lower Kimmeridgian) of Hartmannshof/Southern Germany exhibit a bimodal distribution pattern.

### References:

Keupp,H. (1997): Paläopathologische Analyse einer Population“ von *Dactylioceras athleticum* (SIMPSON) aus dem Unter-Toarcium von Schlaifhausen/Oberfranken.- Berliner Geowiss. Abh., E 25: 243-267