

SHELL REPAIR AND FAILED PREDATION IN LOWER PALAEOZOIC GASTROPODS FROM SWEDEN

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Shell breakage and repair in marine gastropods commonly indicates failed predation and such shells provide the best evidence of predation of gastropods in the fossil record. Predation has been considered to be one of the strongest influences on the morphological evolution of the gastropod shell, as the interaction between predator and prey through time has stimulated the development of increasingly predator-resistant shell forms. Thus, Palaeozoic gastropods often show structurally weak morphological features, such as a wide umbilicus or loosely coiled whorls, which are rare in younger stocks. Likewise, Mesozoic and younger gastropods develop strengthened or constricted apertures rarely seen in their predecessors from the Palaeozoic seas.

Mesozoic to Recent gastropod faunas often show a high frequency of shell repair but comparative information from Palaeozoic faunas is scarce, although this undoubtedly reflects a lack of investigation. We report here on two preliminary investigations of shell breakage and repair from the Lower Palaeozoic of Sweden.

From the Silurian of Gotland, Sweden, we have studied the nature and frequency of shell repair in *Oriostoma*, a characteristic and widely distributed Silurian gastropod with a relatively thick shell but a wide, open umbilicus. About 10 % of examined specimens show breakage and repair of the aperture, often with several repaired injuries per shell. From the carbonate mounds of the late Ordovician Boda Limestone of Dalarna, Sweden, we describe examples of single and repeated shell repair from a variety of shell morphologies, ranging from an isostrophic bellerophontoid, through low spired euomphaloids, to turbinate pleurotomarioids and trochoids. In both faunas, the predatory attacks resulted in breakage across much of the apertural margin or of more concentrated V-shaped scars at or near the whorl periphery. In terms of shape, the latter injuries superficially resemble attacks from recent crabs such as *Calappa*, but evidence of "peeling" back of the aperture is lacking. The identity of the Palaeozoic aggressors remains obscure.