



## **‘Orsten’ – Cambrian Meiofauna as a modern Ecotype questioning Speculations of a Transition of Pre-Cambrian Ecotypes and Life Strategies far within the Cambrian**

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In the mid 1970s late Cambrian limestone nodules collected in southern Sweden led to the discovery of an exceptionally three-dimensionally preserved assemblage of 0.1 to 2 mm long, phosphatized arthropod microfossils with preserved “soft parts”. Subsequently, the name ‘Orsten’ has been referred to such fossils and to the specific type of 3D fossil preservation, which is characterized by an impregnation of the surface of the animals and, sometimes, encrustation by calcium phosphate soon after death. Another effect of this was that the fossils were subsequently embedded in a limestone matrix preventing any compaction or diagenetic or tectonic deformation. ‘Orsten’ animals, during life, mainly inhabited the so-called flocculent zone above and below the sediment water interface of a soft marine bottom. This zone is characterized by dysoxic but nutrient-rich conditions, today the life zone of numerous minute, specialized animals feeding on detritus and other sources, including also predatory species. It is assumed that ‘Orsten’ animals played a similar role in the Upper Cambrian since ‘Orsten’-type fossils are very widespread spatially and temporally, the oldest finds being from the Lower Cambrian. The discovery of representatives of modern taxa and likewise modern life attitudes suggests that speculations about transitions of life types and environments from one to another geological era must be treated with caution.