Palaeobiological significance of chitinozoan clusters with parallel vesicles

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Abstract

Chitinozoans are most commonly known to occur as isolated vesicles, and less commonly (but still regularly) in chains i.e. linear catenary structures. Chitinozoan clusters have been little studied, but are critical to the question of the biological affinity of chitinozoans. Bedding-plane assemblages and acid-digestion residues from Ordovician rocks of the Welsh Basin (Llanfawr, UK) and the Prague Basin (Beroun, Czech Republic) have yielded exceptionally preserved chitinozoan clusters of the family Conochitinidae arranged as parallel vesicles, with apertures either facing in the same direction or in opposite directions. Three genera (*Belonechitina*, *Eremochitina*?, and *Conochitina*) occur in the clusters, with each cluster being monospecific. This remarkable cluster arrangement is herein termed the P-cluster, in new terminology. Figured clusters available in the literature were analysed, and P-clusters are confirmed to occur in all three chitinozoan families. Modelling simulations of the relative abundances of different cluster morphologies suggest that P-clusters originated from a hypothetical, large cluster, functionally comparable with the already well-known *Desmochitina* clusters and interpreted as an egg mass. Our findings support the interpretation of all chitinozoans as metazoan eggs.

Keywords: Chitinozoa, Ordovician, Clusters, Chitinozoophoran, Egg Mass

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