

## **Porosity and test ultrastructure of costate and non-costate *Bulimina* species**

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SEM-based investigations of porosity and test wall ultrastructure of Recent costate and non-costate *Bulimina* species reveal significant differences in pore diameter, pore density and ultrastructural architecture between these two groups. Costate tests of *B. inflata* and *B. mexicana* display low pore density, a large pore diameter, and test walls built by a single type of columnar ultrastructural elements. In contrast, non-costate tests of *B. aculeata* and *B. marginata* are characterized by significantly higher pore density, smaller pore diameter, and an additional type of ultrastructural elements formed by oblique, tabular crystallite units which encase the pore channels.

We interpret the observed combination of traits in *B. aculeata* and *B. marginata* as a set of adaptations to poorly oxygenated, intermediate to deep infaunal microhabitats which they typically occupy today. The evolutionary trend towards increased pore density in this group seemingly involved a major modification of the biomineralisation process resulting in the lining of pore channels with a specific type of ultrastructural element to ensure stability of the densely perforated test.