

Taphonomy of ediacaran acritarchs from Australia:

Significance for taxonomy and biostratigraphy

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Keywords: degradation series, correlation, biostratigraphy, late Neoproterozoic, microfossil

ABSTRACT

A diverse assemblage of Australian Ediacaran (late Neoproterozoic) acritarchs from the Centralian Superbasin and Adelaide Rift Complex demonstrates a range of taphonomic degradation. Recognition of taphonomic variants is critical for taxonomic studies and biostratigraphic interpretation. Taphonomic features observed include compression features, folding and tearing of vesicle walls, pitting, perforation, abrasion, exfoliation, shrinking, twisting, splitting, curling, shredding, pyritization, particle entrapment, and thermal maturation effects. The physical and chemical structure of the vesicle wall is instrumental in determining the degree of taphonomic damage. Consistent associations allow identification of degradation series that incorporate previously described individual species and provide a framework for taxonomic revision. Taphonomic associations may also characterize taphofacies, providing an additional tool for basin analysis.