



crinoids, trilobites, brachiopods and gastropods. The associated fauna provides insight to the lifestyle of the cystoids and the bio-facies they occupied.

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### **Palaeoecological distribution of Ediacaran fossils**

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A siliciclastic succession of the late Neoproterozoic Vendian complex, White Sea area, north-western Russia, demonstrates a wide range of sedimentary facies, some of them recurring in a vertical succession. Each lithofacies contains a distinct and separate assemblage of Ediacaran fossils preserved in life position. Facies-controlled distribution also characterizes other Ediacaran localities, so demonstrating for the first time that fossil assemblages occurring in similar facies are directly comparable at a global scale. Thus to a truly remarkable degree the Ediacaran biotas preserved in proximal prodelta settings in South Australia, in the White Sea area, and in Central Urals are closely parallel. The fossil assemblages found globally in fluviomarine facies are also directly comparable, as corroborated by a recent discovery of *Rangia* in a distributary-mouth bar lithofacies in the White Sea area. This in turn reveals a marked degree of environmental sensitivity and pronounced ecological specialization in these early communities. Based on the White Sea section, correspondence between depositional environment and taxonomic composition rules out hypotheses of biogeographic provinciality of the Ediacaran biotas, and also casts doubt on existence of evolutionary progression during Ediacaran times. What is evident is that Ediacaran organisms rapidly explored various environmental settings, ranging from shallow-water deltaic sandy shoals to deep-water aprons, and maintained this ecological disparity, with limited overall change, for more than 20 million years.

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### **Relating Sedimentological Context to Ecological Strategy: a method for examining disturbance in the fossil record**

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Too frequently, methods of analysis used by modern ecologists cannot be applied to ancient ecosystems because data of the right type or of sufficiently high quality are not obtainable from the fossil record. One such method is Grime's (1974) procedure for ordinating herbaceous plants in a ternary diagram in which the vertices represent three primary ecological strategies for sessile organisms (Competitor, Stress Tolerator, Ruderal). Here we suggest a method of plotting plant species on similar ternary diagrams based not on their morphology and physiology but on geographic or sedimentological contexts in which they are found. This will allow comparison of the ecological strategies employed by plants in modern and ancient terrestrial ecosystems and