ACTA PALAEONTOLOGICA POLONICA

Stromatoporoids from a Middle Devonian reef in South China and their palaeoecological implication

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Acta Palaeontologica Polonica 67 (3), 2022: 711-736 doi:https://doi.org/10.4202/app.00954.2021

Stromatoporoids are the major constructors of a Givetian (Middle Devonian) fossil reef in shallow marine facies, in the Jiwozhai Member of the Dushan Formation, at Dahekou, near Dushan, Guizhou Province, South China. Stromatoporoids, together with other reef building and dwelling components (rugose corals, tabulates, chaetetids and others), form a high diversity community, making the Jiwozhai reef a palaeobiodiversity hotspot. In this study 11 species belonging to nine genera and four orders are identified, including *Gerronostromaria grossum* (Clathrodictyida), *Pseudotrupetostroma porosum,* and *Salairella buecheliensis* (Stromatoporida), *Clathrocoilona spissa, Stictostroma saginatum,* and *Synthetostroma actinostromoides* (Stromatoporellida) and ?*Habrostroma laminosum, Parallelopora* sp., *Stachyodes costulata, Stachyodes fasciculata* and *Stachyodes* sp. (Syringostromatida). Among them, *Clathrocoilona spissa* and *Gerronostromaria grossum* are the most abundant stromatoporoid taxa. Stromatoporoid growth form, size, substrate and growth interruption are considered to be key autecological parameters to evaluate their growth behaviour and contribution in reef formation. Skeletons of laminar *Clathrocoilona spissa* are commonly smaller (up to 40 mm in basal dimension and less than 2 mm in thickness) than other stromatoporoid taxa and frequently encrusted on other organisms. In contrast, *Gerronostromaria grossum* dominates the assemblage, with its larger laminar growth form (up to 500 mm in basal dimension and 40 mm in thickness) expanding both on bioclastic and clay-rich micritic substrate and shows repeated growth interruptions, altogether evidence that this taxon was resilient to environmental pressure and may have pioneered the reef development. The variation of growth preference among stromatoporoid taxa therefore indicates a different growth strategy of each stromatoporoid in this reef environment.

Key words: Stromatoporoidea, reef, morphology, palaeoecology, Givetian, Guizhou, South China Block.

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