

Silicified Mississippian brachiopods from Muhua, southern China: Rhynchonellides, athyridides, spiriferides, spiriferinides, and terebratulides

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The second part of the monograph of the silicified brachiopod fauna from the Muhua Formation concludes with the descriptions of 36 species belonging to 32 genera and 22 families. Eighteen species are reported in open nomenclature. Two new rhynchonellide species are described: *Coledium bruntoni* sp. nov. and *Pleuropugnoides calcaris* sp. nov. The described brachiopod fauna is dominated by spiriferides (16 species), rhynchonellides (9 species), and athyridides (7 species), while spiriferinides and terebratulides are represented by 1 and 3 species, respectively. The brachiopod fauna from the Muhua Formation is characterised by remarkably high species diversity. Together with those species described in the first part of the monograph the fauna includes 69 species. The study of the brachiopod faunal dynamics during the late Famennian–late Tournaisian in southern China reveals that after a decline in the generic diversity at the Devonian–Carboniferous boundary (D–C boundary event), the Early Tournaisian brachiopod fauna shows slight impoverishment. In the middle Tournaisian the brachiopod fauna from South China shows an explosive increase in diversity on generic level which is well exemplified by the material from Muhua. The brachiopod fauna from the Muhua Formation represents a fully recovered high diversity fauna consisting of forms representing a wide spectrum of attachment strategies as well as highly specialised forms (e.g., micromorphs) adapted to special kinds of ecological niches. Numerous evidence of the biotic interaction between brachiopods and other co–occurring fauna have been revealed in the material from Muhua. These are drill holes of predatory origin, borings made on dead shells as post–mortem infestation, shell damages and malformations, and parasitic infestations.

Key words: Brachiopoda, biotic interaction, faunal dynamics, silicification, Carboniferous, Mississippian, Tournaisian, China.

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