

Early and Middle Frasnian brachiopod faunas and turnover on the South China shelf


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The first appearance of the brachiopod *Cyrtospirifer* and related forms in the Late Devonian of South China significantly postdates the beginning of the Frasnian and the entry of the group in other parts of the world. Scattered data from different sections suggest that its first entry, associated with the emergence of other plicate spiriferids, such as theodossid and conispiriferid brachiopods, was late in the Middle Frasnian. At the same time, many rhynchonellids disappeared or became extinct locally in South China. This brachiopod faunal overturn near the *Palmatolepis punctata*-Early *Pa. hassi* zonal boundary is the most significant event in the Early-Middle Frasnian of South China, characterized by about a 35% loss of existing species and the flourishing of the plicate spiriferids, which was coeval with the end of a major biogeochemical perturbation recently recognized in the *Pa. punctata* Zone. By contrast, atrypid brachiopods do not seem to show any significant diversity change. The brachiopod faunal change was probably related to a (local?) transgressive event in South China, which also brought new pelagic faunas northwards into some intra-shelf deeper water areas, such as the Shetianqiao area in central Hunan Province. Fifteen brachiopod species are described and illustrated, which include some taxa that are first recorded or recognized in South China, e.g., the spiriferid *Pyramidaspirifer*, which is now known from both North America and South China. One new species, *Desquamatia qiziqiaoensis*, is described.

Key words: Brachiopoda, *Cyrtospirifer*, faunal turnover, Frasnian, Devonian, South China.

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