

BIOSTRATIGRAPHY AND BIOGEOGRAPHY OF THE OLDEST AMMONITES IN NORTHEASTERN BRAZIL, THE UPPER APTIAN–LOWER ALBIAN FAUNA OF THE SERGIPE BASIN

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On account of their rapid evolutionary turnover and extensive diversity in shell form and ornamentation, ammonites serve as useful chronostratigraphic instruments in the study of sedimentary basins and their development. In the marginal basins of northeastern Brazil ammonites occur throughout the marine Cretaceous succession; however, these rocks are extensively exposed only in the Sergipe Basin, where they form the Aptian–Albian Riachuelo Formation, the Cenomanian–Coniacian Cotinguiba Formation and the Campanian Calumbi Formation. The objectives of the present study are to date the first transgression of the South Atlantic in Sergipe through study of the ammonites and to propose a palaeobiogeographic reconstruction for the initial opening stage of the South Atlantic. For this purpose, ammonites were collected from 93 outcrops of the basal beds of the Riachuelo Formation and 17 species identified were identified, distributed in five families: Gaudryceratidae, Desmoceratidae, Cleoniceratidae, Douvilleiceratidae and Parahoplitidae. The upper Aptian of Sergipe is characterized by species of *Chelonicer*, *Diadochoceras*, *Vectisites*, *Eodouvilleiceras* and *Hypacanthoplites* and the lower Albian by species of *Eogaudryceras* (*Eotetragonites*), *Aioloceras*, *Puzosia*, *Paracleoniceras*? and *Douvilleiceras*. A *Diadochoceras*–*Eodouvilleiceras* Zone for the upper Aptian and a *Douvilleiceras mammillatum* Zone for the lower Albian are proposed. The ammonite succession across the Aptian–Albian boundary in Sergipe is compared with that of nearby basins, mainly in West Africa and Colombia–Venezuela. The oldest ammonite faunas in the northern South Atlantic marginal basins show a predominantly Tethyan influence; their palaeobiogeographic development is related directly to the progressive opening of the South Atlantic through the separation of South America from Africa.