

PALEOBIOGEOGRAPHY OF THE UPPER CRETACEOUS TO LOWER TERTIARY MARINE OSTRACODS FROM THE ATLANTIC OCEAN

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ABSTRACT: The paleobiogeographic affinities of the marine ostracod species described from the Upper Cretaceous to Lower Tertiary of northeastern Brazil are established. Two assemblages are observed: A1 and A2. The first assemblage (A1) shows faunistic affinities with North, Central and southern of South America, Caribbean, and West, North and Central Africa from the Upper Cretaceous to Paleocene. Assemblage A2 has affinities only with North and Central America and Caribbean region from the Eocene. The possible dispersion directions of marine ostracods related in this paper are also discussed.

Key Words: Ostracod, micropaleontology, paleobiogeography, Cretaceous, Tertiary, Brazil.

RESUMO: Afinidades paleobiogeográficas são estabelecidas usando como parâmetro o registro de espécies de ostracodes marinhos do Cretáceo Superior ao Terciário em bacias marginais do nordeste brasileiro. Duas assembléias são observadas: A1 e A2. A primeira assembléia (A1) apresenta afinidades com a fauna do Caribe, América do Norte, Central, e sul da América do Sul, bem como na região norte, oeste e central da África, desde o Cretáceo Superior até o Paleoceno. A Assembléia 2 caracteriza-se por possuir afinidades faunísticas apenas com a América do Norte e o Caribe, a partir do Eoceno. Também são discutidas possíveis direções de dispersão dos ostracodes marinhos no Oceano Atlântico.

Palavras-chave: Ostracode, micropaleontologia, paleobiogeografia, Cretáceo, Terciário, Brasil.

INTRODUCTION

Correlation between South America and Africa has demonstrated that some marine ostracods genera and species were able to cross the Atlantic Ocean at the Upper Cretaceous and Tertiary. A good example is the genus *Brachycythere* Alexander, 1933 in the Late Cretaceous. It occurs in the U.S.A. (from the Gulf of Mexico to the Canadian shelf), Caribbean, Africa, northwestern India, Brazil and Ecuador (Babinot & Colin, 1988). The well-known *Brachycythere sapucariensis* Krömmelbein, 1964, originally described from the lower Turonian of the Sergipe–Alagoas basin, northeastern Brazil, has a wide distribution in West, North, Central, and East Africa. Evidence of faunal

affinities between the ostracod assemblages of Argentina and West and South Africa in the Late Cretaceous and Lower Tertiary were observed by several authors (e.g. Krömmelbein, 1966; Bertels, 1975a, 1995; Bold, 1977; Dingle 1981; Tambareau, 1982; Majoran & Widmark, 1998; Wood *et al.*, 1999; Viviers *et al.*, 2000; Fauth & Coimbra, 2002). The paleobiogeographic results of this paper are based on the distribution of the Upper Cretaceous and Lower Tertiary marine ostracods species in the northeastern Brazilian marginal basins. Some of these species are illustrated in the present paper. The species present herein are described and illustrated by Neufville (1973, 1979), Delicio *et al.* (2000), Viviers *et al.* (2000) and Fauth *et al.* (in press) from Sergipe–Alagoas, Potiguar and Pernambuco-Paraíba