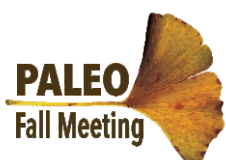


Livro de Resumos  
Paleo Fall Meeting 2019



Título: Livro de Resumos do Paleo Fall Meeting 2019  
Editores: Pedro Fialho, Roberto Silva  
Edição: 1ª Edição  
ISBN: 978-972-778-124-9





# DINOSAUR TRAMPLING FROM THE RIO DA BATATEIRA FORMATION – LOWER CRETACEOUS OF ARARIPE BASIN, BRAZIL

**Ismar de Souza Carvalho**, Aristóteles de Moraes Rios-Netto, Leonardo Borghi, Alexandre de Paula Freitas, Giuseppe Leonardi, José Artur Andrade, Francisco Idalécio de Freitas

ISC ([ismar@geologia.ufrj.br](mailto:ismar@geologia.ufrj.br)); AMRN; LB; APL: Universidade Federal do Rio de Janeiro.

GL: Instituto Cavanis.

JAA: Agência Nacional de Mineração.

FIF: Geopark Araripe.

During the Cretaceous, the tectonic events allowed wide changes in the configuration of the Brazilian territory, including the limits of the South Atlantic coast. Related to these episodes, especially during Aptian times, there are many economically important natural resources, such as oil and gas. The knowledge on the distribution of fossil biota and the environmental conditions, in which living organisms lived, associated with the data from regional geology and stratigraphy, allows their use as indicators for oil, gas and mineral prospecting and have relevance to educational activities and cultural industry. The study of all data in deposits of this time interval contributes to the understanding of the paleogeographical evolution, through an overview of the spatial and temporal changes in the paleoenvironments. Identification of regional correlation surfaces allows the comprehension of such paleogeographic evolution, especially through the analysis of the biota distribution and their paleoenvironments. Then, the analysis of the vertebrate tracks discovered in the Aptian interval of the Araripe Basin has a special importance to the correlation of subaerial exposition surfaces throughout the basin. In this study we describe the Aptian dinosaur tracks from the Araripe Basin located in the Rio da Batateira Formation (Member Fundão), Crato County, Ceará State, Brazil. They can be observed only in cross section, as three-dimensional natural structures in a siliciclastic and carbonate succession composed of fine grained conglomerates, coarse to fine sandstones, siltstones, mudstones, shales and carbonate levels. The Rio da Batateira Formation is usually classified as the first post-rift basin record. The stratigraphic data interpretation shows that the interval was subject to tectonic control. These deposits are interpreted as related to fluvial and clastic lake shore environments of Aptian age (local stage Alagoas). The dinosaur tracks from Rio da Batateira Formation can seem to be simple load casts, however they are herein interpreted as a level with dinosaur trampling, and more in detail an association of sauropod tracks, because of their large dimensions. In fact, they deeply affects the underlying layers as sub-cylindrical structures ranging in length from 35 to 100 cm and in depth from 30 to 50 cm. These tracks were produced in an exposed waterlogged substrate or in a flooded area, where was possible the liquefaction of the sediments. The evaluation of these tracks and its relationship with the substrate, allow the understanding of the deformation due to a foot impact, and the construction of a model to the cross-sections track formation. They also show behavioral insights into the trackmaker biology, substrate properties, interaction among the producer and environmental factors. They are an important tool to the reconstruction of the terrestrial Cretaceous ecosystem in the context of the Araripe Basin. It is noteworthy that no sauropod body fossils were so far found either in this formation or in the whole Araripe Basin. The authors gratefully acknowledge support from Shell Brasil Petroleo Ltda and the strategic importance of the support given by ANP (Brazil's National Oil, Natural Gas and Biofuels Agency) through the R&D levy regulation. Financial support also from CNPq (303596/2016-3) and Faperj (E-26/202.910/2017).

**Keywords:** Dinoturbation, Sauropod tracks, Araripe Basin, Aptian

## Apoios e Patrocínios

