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Ephemeral lake, Northeastern Brazil

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1 WESTERN GONDWANA NON-MARINE OSTRACODS FROM EARLY CRETACEOUS
2 LOW-LATITUDE EPHEMERAL LAKE, NORTHEASTERN BRAZIL

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9 ABSTRACT

10 In the beginning of Gondwana's break up, small rift lakes were formed in the area that is
11 nowadays located in northeastern Brazil. These lakes captured the drainage systems and
12 were subjected to hot and arid climatic conditions in a low-latitude area. These conditions
13 are evidenced by the Lower Cretaceous fluvio-lacustrine deposits that filled the Sousa
14 Basin, which integrates a complex of basins along the Rio do Peixe (State of Paraíba).
15 The Sousa Formation is the most representative unit in the Sousa Basin, being
16 predominantly composed of siltstones and shales deposited in shallow lacustrine
17 environments with fluvial influence. The sedimentation occurred under a semi-arid climate
18 with alternating rainy and dry seasons, indicating the presence of ephemeral lakes. This is
19 also supported by the lithology, the sedimentary structures (mud cracks) and the
20 evaporites (gypsum). The lacustrine environment is favorable to the proliferation of non-
21 marine ostracods, which are microcrustaceans of great importance for the study of current
22 and paleolake deposits. Non-marine ostracod assemblages recovered from the Sousa
23 Formation, sampled from core 2-FC-1-PB, revealed undescribed species. In this work,
24 these ostracods were studied taxonomically, with the new species *Cypridea paraibensis*
25 sp. nov., *Cypridea vianai* sp. nov. and *Alicenula sousaensis* sp. nov., as well as the
26 already described *Alicenula leguminella* (Forbes, 1855) Martens, Rossetti and Horne
27 2003, *Brasacypris ovum* Krömmelbein 1965, *Cypridea ambigua* Krömmelbein 1962, and
28 *Reconcavona swaini* Krömmelbein 1962 being identified. Another set of taxa remained in
29 open nomenclature, since the morphological descriptions did not fit existing species. Thus,
30 the descriptions referring to the eight described groups take into consideration criteria such
31 as similarity and variability of morphological factors (*Alicenula* ex gr. *leguminella* and
32 *Alicenula* sp. RP1), degree of preservation, and quantity of recovered carapaces.

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