

REWORKED PALYNOMORPHS (ALLOCHTHONOUS) IN CRETACEOUS SECTION IN THE SÃO LUÍS BASIN, BRAZIL

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The São Luís Basin is a sedimentary basin of the Brazilian equatorial margin, of the type pull-apart, located in the states of Pará and in the northwest of Maranhão. The depositional sequence of the basin in this study includes Codó Formation composed of bituminous Cretaceous shales with limestone and anhydrite levels intercalated by sandstones, being interpreted as a transitional environmental connected to a shallow and eventually restricted epicontinental sea. The other studied unit is the Itapecuru Formation composed of medium and fine sandstone levels intercalated with siltstones and shales, deposited in a fluvial environment. A total of 404 samples (cutting and core) from well 02-ANP-05 for microfossils were analyzed, the studied section is restricted to the time interval of the Albian-Aptian (Early Cretaceous), based on palynomorphs and ostracods. The preparation methodology followed the standard procedure for each type of microfossil. The section here analyzed presents a palynological association of autochthonous (Early Cretaceous) forms associated with reworked palynomorphs (allochthonous) of the Paleozoic throughout the whole section, making a total of 90 samples. The recovered continental palynomorphs include: *Apiculatisporites* spp., *Dibolisporites* spp., *Epigrusporaregularis*, *Grandispora* spp., *Lophotriletes* spp. and *Verrucosisporites* spp. Among the marine palynomorphs recognized throughout the section the following acritarchs, prasinophycean and chlorophycean algae are identified: *Dorsennidium* spp., *Duvernaysphaera aranaides*, *Duvernaysphaera angelae*, *Estiastrarythidia*, *Excultibrachium* sp., *Gorgonisphaeridium* spp., *Leiofusagranulacutis*, *Maranhites mosesii*, *Micrhystridium* spp., *Multiplicisphaeridium* spp., *Navifusabacilla*, *Neoverhachium carminae*, *Onondagaella* sp., *Pseudolunulidialaevigata*, *Quadrisporites variabilis*, *Umbellasphaeridium saharicum*, *Verhachium trispinosum*, *Verhachium europaeum*, *Verhachium* spp. The reworked forms recognized in this study suggest the Parnaíba Basin as the source of origin, due to its proximity to the northwest with the studied basin, equivalent to a depositional sequence lithostratigraphically corresponding to the Silurian Serra Grande Group or Mesodevonian–eocarboniferous Canindé Group. The sedimentary record of these sequences is related to erosive discordances, caused mainly by the transgressive-regressive cycles of epicontinental seas in the Eopaleozoic of the Parnaíba Basin. The reworking of the palynomorphs recognized in the studied well is not continuous over the section rather it is restricted to certain stratigraphic levels, mainly of the Codó Formation in Aptian sequences, indicating different pulses of sedimentary competence in the basin. The ostracod fauna recognized in this section is found "in situ" where reworked palynomorphs (allochthonous) are absent. Interdisciplinary studies based on different groups of microfossils provide a potential approach in analyzes of sedimentary competence, as well as their source of origin since they behave dynamically as sedimentary particles. Studies of this scope are important in the aggregation of knowledge, considering the oil potential of the basin. [PETROBRAS/ANP]

KEYWORD: PALYNOMORPHS, SÃO LUÍS BASIN, CRETACEOUS.