

## PALEOZOIC PALYNOMORPHS RECORDED IN THE SÃO LUÍS BASIN, BRAZIL

Santos, A.<sup>1</sup>; Trindade, V.S.F.<sup>2</sup>; Rubinstein, C.V.<sup>3</sup>; Lichs, T.K.<sup>1</sup>;  
Fauth, G.<sup>1</sup>; Krahl, G.<sup>1</sup>

<sup>1</sup>Universidade do Vale do Rio dos Sinos; <sup>2</sup>Museu Nacional, Universidade Federal do Rio de Janeiro, <sup>3</sup>CONICET

Palynological analyzes of 418 samples (cutting and core) of the well 02-ANP-05 (depth of 2859 m), São Luís Basin, were conducted. Strata of the Paleozoic (Silurian-Devonian) were recognized based on the occurrence of acritarchs, prasinophycean and chitinozoans between the depths of 2859 to 2844 m. This facies is composed primarily by quartzose sandstone and subordinately by shales, with a maximum thickness of 24 m of rock above the basement. Above these units, the Albian–Aptian (Early Cretaceous) was recognized based on Zones of miospores and an Ecozone of *Subtilisphaera* (dinoflagellate cyst). Acritarchs, prasinophycean and chitinozoans are very diversified marine palynomorphs in the Paleozoic, with great biostratigraphic and paleoenvironmental potential, especially during the Ordovician–Devonian. The association of chitinozoans identified in this study is similar to the Devonian one of the Parnaíba Basin, such as: *Angochitina avelinoi?*, *Angochitina* spp., *Fungochitina microspinosa* ?, *F. pilosa*, *Hoegisphaera glabra*, *Lagenochitina* sp. A?. The association is poorly preserved and most of the specimens are corroded and broken, which makes them difficult to identify taxonomically and, consequently, to delineate their chronostratigraphic identity. The paleomicroplankton (acritarchs and prasinophycean), whose taxonomic identification is still incipient for this well, have great diversity and abundance in the studied samples. So far, forms exhibiting simple morphology and large stratigraphic ranges (e.g. *Micrhystridium* and *Veryhachium*) and forms common or restricted to the Silurian to Devonian (such as: *Baiomeniscus* spp., *Dactylofusa* spp., *Diexallophasis remote*, *Diexallophasis simplex*, *Durvernaysphaera* spp., *Dorsennidium* spp., *Gorgonisphaeridium* spp., *Leiofusa granulacutis*, *Multiplicisphaeridium ramusculosum*, *Neoveryhachium carminae* and *Veryhachium europaeum*) were observed. Based on the distribution of the recovered microfossils, which show an abundance of acritarchs with simple morphotypes and a low incidence of chitinozoans, a coastal marine environment was interpreted for this interval of the São Luís Basin. This study is important due to the oil potential of the São Luís Basin, as it contributes to the debate regarding its evolution and correlation with the Parnaíba Basin. In addition, it allows for a better stratigraphic positioning of the Paleozoic strata in the studied basin based on a more complete and refined taxonomic study of its acritarchs and prasinophycean, which were found well preserved. [PETROBRAS/ANP]

**KEYWORD:** PALYNOMORPHS, SÃO LUÍS BASIN, PALEOZOIC.