Palynological characterization and dating of the Tianguá Formation, Serra Grande Group, Parnaíba Basin, northern Brazil.

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This study is based on the palynological investigation of core samples from wells penetrating the Tianguá Formation in Parnaíba Basin, *viz*.: 1-GI-1-PA core 3, 1-BJ-1-PA cores 49 and 52, 2-SL-1-MA core 77, and 1-MA-1-PI core 113. The Tianguá Formation contains a marine-dominated palynomorph assemblage comprising abundant acritarchs and chitinozoans, also chlorophytes, but fewer spores and cryptospores. This palynological study permits to date the formation and also to infer its paleoenvironmental settings.The chitinozoan assemblages range from late Aeronian to possibly early Telychian. They are characteristic of the *Conochitina elongata* Zone and upper part of the *Conochitina proboscifera* - *Desmochitina* cf. *densa* Subzone. Acritarchs are highly diversified pointing out to optimal conditions for their development, consistent with oligotrophic environments in a transgressive system tract (TST). Chlorophytes of possible fresh-water or nearshore origin suggest coastal erosion and transportation within TST during periods of increased fluvial discharge. The acritarch assemblage includes several species described from northern Gondwana, implying close West-East relationships across Brazil, Guinea, Western Sahara, Libya and Saudi Arabia. The Tianguá assemblage contains not only Telychian index species but also new species and variants which indicate some degree of acritarch endemism, consistent with coeval high-diversity trends recorded elsewhere. Eight new acritarch species are described in this study. The few spores and cryptospores recorded are only consistent with a wider age range (Rhuddanian - early Telychian) for the Tianguá Formation.