

**ORGANIC WALLED MICROFOSSILS FROM VULCANOCLASTICS ROCKS,  
SERRA GERAL GROUP: Hints to track paleoenvironmental change during  
the Early Cretaceous**

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**RESUMO** – The Paraná-Etendeka (PELIP), one of the most known Large Igneous provinces, comprises the Early Cretaceous huge magmatism which covers parts of South American Continent and Western Africa. Over the last century, this LIP has been intensively studied, being its magmatism directly related to the South Atlantic Ocean opening and possible trigger for the Weissert oceanic anoxic event. In Brazil, the PELIP is recognized as the Serra Geral Group (SGG), emplaced over and intercalated with the Botucatu Formation (BF) aeolian sandstones. Recently, the investigation of sedimentary and volcanoclastic rocks (e.g. peperites; hyaloclastites) of the SGG provided key insights on the paleoenvironmental conditions during the Late Jurassic and the Early Cretaceous. Despite previously suggested, a prevailed arid condition during the onset of emplacement following the BF, petrographic paleoclimatic indicators as vesiculated sediment and fractures filled by sediment, have set a lacustrine environment (isolated small ponds) and revealed paleoenvironmental changes to more humid conditions as consequence of magmatic activity of the SGG. Thereby, considering these mid-to-fined grained rocks and aiming to detail the paleoenvironmental setting, we applied the palynofacies technique (using a non-standard sample preparation) on volcanoclastic rocks along Paraná, Santa Catarina and Rio Grande do Sul. Until now, seventeen outcrops and their palynofaciologic slides have been investigated, and we counted almost 30 organic walled microfossils (OWM) per slide, distributed among isolated spores, algae, fungi, amorphous organic matter and possible phytoclasts. Most of the OWM showed a pale yellow to dark orange color. Even with limited presence and low-grade of preservation potential, the recovered specimens show possible fragile ornamentations (e.g. ridges or spiny on spores). These findings suggested not only the presence of well-established ponds due to the conspicuous occurrence of organic amorphous matter, but they may also ratify the SO<sub>2</sub> degassing of Paraná-Etendeka as an agent of climate cooling and increasing local rainfall, since the conspicuous presence of fungi. The further steps of the research will be applied on paleometric analyses, as Raman.

**Palavras-chave:** Peperites; Palynofacies; Microfossils; Volcanic Rocks