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MICROPALEONTOLOGY OF THE EDIACARAN-CAMBRIAN TRANSITION IN CORUMBÁ (BRAZIL) AND NAMA (NAMIBIA) GROUPS: BIOSTRATIGRAPHIC AND PALEOENVIRONMENTAL INSIGHTS

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The microfossil record, particularly acritarchs, is well preserved in the Proterozoic strata and serves as a key tool for reconstructing Neoproterozoic biodiversity. The terminal phase of this era, marked by the Ediacaran–Cambrian transition, witnessed the emergence of the first biomineralizing metazoans and the dominance of low-diversity spheromorphic acritarchs, collectively known as the Late Ediacaran Leiosphere Palynoflora (LELP). This study provides a systematic and biostratigraphic characterization of microfossils from the Corumbá Group (Brazil) and Nama Group (Namibia), exploring their paleoenvironmental implications. The newly obtained data were obtained through the International Continental Drilling Project – Geological Research through Integrated Neoproterozoic Drilling (ICDP-GRIND). Drill core samples from boreholes 5064-3A and 5064-3B (Brazil) and 5064-1A, 5064-1G, and 5064-1H (Namibia) underwent palynological processing, yielding a high microfossil recovery rate (N = 17.207). A total of 112 samples were analyzed, leading to the identification of eight acritarch species: *Leiosphaeridia jacutica*, *Leiosphaeridia crassa*, *Leiosphaeridia tenuissima*, *Leiosphaeridia minutissima*, *Germinosphaera* sp., *Asseserium fusulentum, Asseserium* cf. *pyramidalis* and *Lagoenaforma* sp. Of these species, *Asseserium fusulentum* was identified for the first time, along with vase-shaped microfossils from both the Tamengo and Dabis formations. Additionally, *Lagoenaforma* sp. and *Asseserium* cf. *pyramidalis* were recorded for the first time in the Tamengo Formation. Other palynomorphs, including macroalgal fragments of vendotaenids, and unidentified organic-walled microfossils, were also documented. Microfossil counts were conducted with precise stratigraphic control, revealing a pronounced dominance of sphaeromorphic acritarchs, particularly *Leiosphaeridia jacutica* and *Leiosphaeridia crassa*. These taxa likely represent the LELP assemblage and suggest a possible stratigraphic correlation with other microfossil assemblages, such as CAMBAP (Camaquã Basin Palynoflora) and the *Granomarginata-Lagoenaforma* association, both described in coeval Ediacaran basins of western Gondwana. The high microfossil recovery enabled the identification of distinct transitional palynofacies, characterized by an inverse relationship between acritarch dominance and species richness. The recognition of the genera *Asseserium* and *Lagoenaforma* within the Tamengo Formation establishes a direct correlation of that unit with Ediacaran units of the Nama Group, extending the biostratigraphic range of the *Granomarginata-Lagoenaforma* assemblage to older intervals.