**Organic-walled microfossil assemblage and Chemostratigraphy of the Mbuji-Mayi Supergroup (Democratic Republic of Congo): Evidence for a Late Mesoproterozoic-Early Neoproterozoic age.**

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Abstract

The Mbuji-Mayi Supergroup is a sedimentary sequence in DRC unaffected by regional metamorphism. It consists of two distinct successions: a lower, ~500 m thick siliciclastic sequence of the BI Group (dated at 1125 Ma or between *ca.* 1175 Ma and 882 Ma) and an upper, ~1000 m thick carbonate sequence with stromatolitic build-ups and black shales of the BII Group directly overlain by basaltic lavas dated at 948 ± 20 Ma. Five boreholes from Sankuru – Mbuji-Mayi region have been sampled in detail. A well preserved and diversified microfossil assemblage is reported including 54 taxa belonging to 32 genera. The typical late Mesoproterozoic - early Neoproterozoic acritarch, *Trachyhystricosphaera aimika,* is reported herein for the first time in central Africa, and co-occurs with other eukaryotes and prokaryotes. The available biostratigraphic data enable to suggest a minimum Tonian, pre-Sturtian age for the Mbuji-Mayi Supergroup. This age is consistent with the published and new geochronological data. Comparison with worldwide Proterozoic assemblages permits to define microfossil assemblages useful for biostratigraphy. Moreover, δ13 Ccarb positive and negative excursions in the BIe - BIIc interval are similar to variations in late Mesoproterozoic - early Neoproterozoic carbonate successions.

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