



SMALL-SIZED AKINETES FROM THE MESOPROTEROZOIC SALKHAN LIMESTONE, SEMRI GROUP, BIHAR, INDIA

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ABSTRACT

Early Mesoproterozoic (~1600 Ma old) stromatolitic cherts of the Salkhan Limestone of the Semri Group, Vindhyan Supergroup exposed in Rohtas district, Bihar contain well-preserved, distinctive population of nostocalean akinetes belonging to different species of *Archaeoellipsoides*. These are smaller in size in comparison to other known assemblages of *Archaeoellipsoides* and are comparable to the akinetes of modern bloom forming *Anabaena*. Small-sized akinetes of heterocystous cyanobacteria display rod-shaped, ellipsoidal to spindle-shaped morphologies, with prominent intracellular mass in two species out of three. Their distribution indicates allochthonous, presumably planktic and possibly dormant resting nature. Their presence also helps in understanding the evolution of marked cell differentiation in cyanobacteria. The recognition and record of akinetes are important to trace the antiquity of Nostocales and understanding the concentration of oxygen in the atmosphere in the geological past, corroborating the geochemical evidence of atmospheric oxygen level about 15% PAL for Late Palaeoproterozoic to Early Mesoproterozoic.

Keywords: Akinetes, *Archaeoellipsoides*, Mesoproterozoic, Salkhan Limestone, India