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Field and Petrographic Insights of Ultramafic-Mafic Rocks of the Naga Hills Ophiolite Exposed in Choklangan Village, Noklak District, Nagaland, India

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Abstract

The Naga Hills Ophiolite is a highly tectonised and dismembered sequence of rocks that represents a crucial part of the Indo-Myanmar Range, formed during the eastward subduction of the Indian Plate beneath the Myanmar Plate. This study presents a detailed investigation of the geological relationships and petrography of the NHO ultramafic-mafic lithounits in and around Choklangan village, Noklak district, Nagaland. Field observations reveal that the ophiolite is composed of tectonic slices of serpentinised peridotite, serpentinite, basalt, schistose rocks, and chromitite, which are juxtaposed through intense thrusting. The presence of brecciated peridotite at the contact with the Disang sediments and the observation of a mélange-like zone of schistose rocks further support a history of complex tectonic emplacement. Petrographic analysis identifies key mineral assemblages and textures within each lithology. Lherzolite shows extensive serpentinisation with characteristic mesh textures and corroded orthopyroxene grains. Basalts exhibit a fine-grained groundmass of plagioclase microlites, while schistose rocks display a lepidoblastic texture with alternating quartz and mica layers. Chromitites exhibit both podiform and disseminated textures, with extensive fracturing and chlorite inclusions, suggesting hydrothermal alteration. The findings confirm the dismembered nature of the ophiolite and its complex tectonic history.

Keyword: Naga Hills Ophiolite, Petrography, Tectonic Slices, Chromitite, Serpentinisation, Choklangan

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