

# **Uncovering the Origin of the Mesozoic Ophiolitic Rocks in the Southwestern Pacific Region: Clues from the Northern Luzon Ophiolitic Rocks**

Karlo L. Queaño  
Mines and Geosciences Bureau, North Avenue  
Diliman, Quezon City

## **Abstract**

Radiolarian biostratigraphic results from the ophiolitic units in northwestern (Ilocos region) and in eastern Luzon (Casiguran Ophiolite) provide evidence for the existence of a Mesozoic oceanic substratum upon which Luzon and neighboring regions within the Philippine archipelago were likely built. The Chico River pillow basalts that make up the basement of Central Cordillera, a N-S trending range in western Luzon, may also be considered as another Cretaceous ophiolitic unit based on correlation with outcrops in the southern part of this region.

Tectonic reconstruction for the region prior to the Cenozoic has always been problematical, with much of the pre-Cenozoic tectonic elements in the region destroyed. However, the similarity in both the age and geochemistry (i.e. SSZ signature) of the ophiolite rocks in northern Luzon and adjacent regions suggests that these rocks might have a common provenance or basin origin. Paleomagnetic data from the Cretaceous? Chico River pillow basalts, the first reliable paleomagnetic data from the basement rocks of northern Luzon, suggest formation at subequatorial region ( $6.3^{\circ}\text{N} \pm 3.1^{\circ}$ ). Interestingly, such result is similar to that obtained by previous authors from a Mesozoic ophiolite on Obi Island in eastern Indonesia.