



Tectonic Evolution of Neotethys Ocean: Evidence of Ophiolites and Ocean Plate Stratigraphy from the Northern and Southern belts in the Western Yarlung Zangbo Suture Zone, Tibet

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Abstract: The Yarlung Zangbo suture zone (YZSZ) separates Indian plate and its northern passive margin units to the south from Eurasian plate and its active continental margin units of Xigaze forearc basin and Gangdese batholith to the north (Xu et al., 2015; Yang et al., 2015). The western YZSZ in southern Tibet is divided by the Zhongba terrane into the northern belt (NB) and southern belt (SB). Ophiolites in the NB are dismembered as ophiolitic mélanges. Peridotite, cumulated gabbro, ocean plate stratigraphy (OPS) of seamount remnants and pelagic-hemipelagic sequence as blocks in serpentinite matrix are mainly observed, from west to east, in Dajiweng, Baer, Kazhan, Cuobuzha, Zhalai, Gongzhu. Ophiolites in the SB are absent ophiolitic units of sheeted dikes and MORB-like pillow lavas, occur as much larger peridotite massifs (i.e., Dongbo, 400 km²; Purang, 650 km²; Xiugugabu, 700 km²; Dangqiong, 300 km²) which are intruded by mafic dike swarms and overlain by volcanic sedimentary OPS (Liu et al., 2018). We propose that the SB mafic-ultramafic rocks and volcanic sedimentary OPS represent fragments of an early Cretaceous continental margin ophiolite whose magmatic evolution was influenced by 140–137 Ma plume magmatism (Liu et al., 2015; Zheng et al., 2019). Relics of Late Paleocene to very Early Eocene deep-marine basin were developed in Saga and Gyirong (Ding, 2003; Li et al., 2018). In contrast, the NB ophiolitic mélanges report a travel log of an oceanic plate ranging from Middle Triassic to Early Cretaceous.

Key words: ophiolite, ocean plate stratigraphy, Yarlung Zangbo suture zone, Neotethys

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