

## **A Burma terrane related to India: Evidence from the U-Pb zircons in Late Cretaceous-Paleogene sediments from the Myanmar Central Basins**

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Recent paleomagnetic data from Myanmar demonstrate that the Burma Terrane (BT) underwent an impressive northward translation alongside India in the Cenozoic (Westerweel et al., 2019, 10.1038/s41561-019-0443-2).

Thick sedimentary basins, filled during the Cenozoic, characterize the geology of the BT and were first considered as the receptacle for the erosion products of the India-Asia collision (Métivier et al., 1999; 10.1046/j.1365-246X.1999.00802.x). More local sources have however been proposed for the infill of the Eocene Myanmar basins often presented as forearc and backarc basins of an Andean-type magmatic arc along the western margin of Sibumasu with uplifted parts of Eastern Myanmar e.g. Mogok Metamorphics and Shan Plateau as additional sediment sources (Licht et al., 2013, 10.1144/jgs2012-126, Licht et al. 2016, 10.1111/bre.12108; Cai et al., 2019, 10.1046/j.1365-246X.1999.00802.x; Najman et al., 2020, 10.1016/j.epsl.2019.115948). However, the Late Eocene equatorial position of the BT implies that the Myanmar sedimentary basins were far away from a potential source in eastern Myanmar and challenges all these previous interpretations. We review the numerous studies on detrital zircons (>5000 zircons) from the Late Cretaceous - Paleogene sediments of the Myanmar central basins. While the age spectrum is dominated by a mid-Cretaceous peak compatible with the main magmatic event along the Myanmar magmatic arc or the Gangdese arc, more than 40% of the zircons from sediments of the Central Basins have pre-Cretaceous ages. There is a clear correlation in the distribution of these ages with those from the Triassic turbidites of the Pane Chaung Fm. of the Indo-Burman ranges (Yao et al. 2017, 10.1016/j.tecto.2017.09.016) and the Triassic sediments from the Tethyan Himalaya. This observation clearly supports a paleogeography where the Burma terrane is on the India plate and linked to Greater India during the Paleogene.

The large northward motion of the BT likely also impeded active subduction below Myanmar during the Paleogene. Filling of the BT sedimentary basins is clearly controlled by Cenozoic tectonics north of the BT due to the collision of India first with the trans-Tethyan arc and then with Asia.

Paleoenvironments of Myanmar need to be reinterpreted using the new paleogeography.

**Mots-Clés :** Myanmar, Tectonics, sedimentation