Late Jurassic to Early Cretaceous and Late Paleocene Radiolarian from the Yarlung-Tsangpo suture zone, near Zhongba county, Southern Tibet

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The Yarlung-Tsangpo suture zone stands for the tectonic boundary between Eurasia and India plates. Remnants of the Neo-Tethys crop out along the Yarlung-Tsangpo suture zone. Although many hypotheses have been proposed, the precise history is still controversial among researchers (e.g., Beck et al., 1995; Yin and Harrison, 2000).

From north to south, there are 4 tectonic units: the Gangdese Batholith, Gangdese forearc basin, Yarlung-Tsangpo suture zone and Indian passive continental margin. The Cangdese Batholith is composed mainly of a calc-alkaline intrusive suit related to the northward subduction of Neo-Tethyan oceanic lithosphere under the southern margin of the Lhasa block. The Gangdese forearc basin is made up of sedimentary rocks. The Yarlung-Tsangpo suture zone consists of ophiolitic mélange and sedimentary mélange. The Indian passive continental margin sediments are distributed along the southern side of the Yarlung-Tsangpo suture zone. They are composed mainly of rhythmic cherts and siliceous shales. The four tectonic units are in fault contact with each other. The tectonic units which yield radiolarian fossils in our research area are ophiolitic mélange, sedimentary mélange and the north Tethys Himalaya from north to south.

The previous 1:250,000 geological-mapping investigations defined the strata belong to the Yarlung-Tsangpo suture zone and north Tethys Himalaya as the Sangdanlin Formation, Zheba Formation and Dengang Formation, and gave a Paleocene to Eocene age for the formations. Precise investigations on the radiolarian biostratigraphy near our research area are scarce. Late Jurassic radiolarians from the Zhongba mélange were reported (Li et al., 2013) near Zhongba County.

Based on the radiolarian assemblages, we can know that the ophilitic mélanges are Kimmeridgian to Hautervian. The sedimentary mélanges are Tithonian to Aptian. The deep water sediments in the north Tethys Himalaya are from Oxfordian to Kimmeridgian and Valangian to Hauterivian. In addition we found radiolarians

indicating of the *Buryella tetradica* (RP5) Zone and *Bekoma campechensis* (RP6) Zone, Late Paleocene in the siltstone from north Tethys Himalaya. Judging from the fossil evidence, the strata were deposited in a deep ocean from Late Jurassic to Early Cretaceous. The ocean was retreated at least after Late Paleocene.

References

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