

## Large cryptodiran turtles from the Late Jurassic-basal Cretaceous of Phu Kradung Formation, Khorat Plateau, NE Thailand: a preliminary report

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The non-marine Mesozoic beds of Khorat Plateau, NE Thailand have yielded the most important mesozoic turtle fauna of SE Asia, ranging in age from the Late Triassic to the late Early Cretaceous. Several taxa have been described from the Early Cretaceous Sao Khua and Khok Kruat formations, but turtles from the Phu Kradung Formation (Late Jurassic or basal Cretaceous in age) are still poorly known. Although turtle fossils were abundant in some localities, they consisted mostly of plate fragments, usually poorly preserved, precluding any accurate determination.

However the situation changed recently: in 2005, two complete shells and a braincase have been collected in layers of the Phu Kradung formation near Ban Kham Phok, Mukdahan Province, NE Thailand. The skull is robust, with a large and deep oval-shaped foramen caroticum basisphenoidale on the pterygoid/basisphenoid suture, a cleft-like foramen caroticum laterale, the foramen posterius canalis carotici interni placed on the posterior end of the pterygoid. The shells are very large and low, reaching up to 90 cm in length and 79 cm in width. Although

most sutures and sulci on the carapace are not easily visible, the anterior marginals are included in the peripheral plates; the 11<sup>th</sup> and 12<sup>th</sup> marginal scutes are very long and extending onto the suprapygal plates. The plastron is sutured to the carapace. It is wide, with a long and narrow bridge, and a wide posterior lobe with rounded end without anal notch. The mesoplastron is absent. These turtle remains belong to trionychoids *sensu lato*, although they present some primitive skull features. More precisely they appear to be closely related to the Nanhsiungchelyidae-Adocidae clade.

Southeast Asia seems to have played an important biogeographical role in the origination and diversification of trionychoid turtles for two reasons: 1) The turtle assemblages from the Late Jurassic and Early Cretaceous are largely dominated by trionychoid species. 2) Several of these trionychoids appear to be early representatives of groups that diversified later in the Cretaceous and occur in Late Cretaceous formations elsewhere in Asia (Central and Eastern Asia, including Japan).