

***Megalochelys*: gigantic tortoise from the Neogene of Myanmar**

Ren Hirayama* (1), Teppei Sonoda (2), Masanaru Takai (3), Thaung Htike (4), Zin Maung Maung Thein (5), Akio Takahashi (6).

(1) Waseda University; (2) Fukui Prefectural Dinosaur Museum; (3) Primate Research Institute, Kyoto University; (4) Shwebo University; (5) Mandalay University; (6) Okayama University of Science.

* renhirayama@gmail.com

Background. The genus *Megalochelys* is the largest known testudinid (family Testudinidae) found from the upper Miocene to lower Pleistocene of India to Indonesian Islands. The maximum length of the shell in this genus has been estimated as up to about 2 m long based on a specimen from the lower Pleistocene of Java Island, Indonesia. Recently, joint paleontological expeditions of Japan and Myanmar led by M. Takai have unearthed abundant fossils of this genus from the Neogene since 2003. These materials shed new light on this unique gigantic tortoise.

Methods. All materials of *Megalochelys* were found from the Lower Irrawaddy Beds in poor preservation except for one nearly complete shell. The shell lengths from the fragmentary materials were estimated by using those of medium to large-sized testudinids.

Results. Postcranial materials, including twenty-five epiplastra, one cervical vertebra, appendicular skeletons, and one nearly complete shell (about 180 cm long) have been discovered from the Lower Irrawaddy Beds in narrow area near Pauk Township. They are associated with terrestrial mammals such as *Stegodon*, suggesting that the age of the fossil bearing beds are attributed to the late Miocene to the early Pliocene. Of these, the epiplastra in two morphological states appear to be derived from sexual dimorphism of this genus as seen in several testudinids and noted previously by second author on the relevant materials. A huge distal portion of the humerus (ca. 31 cm long) suggests that its original length was about 75 cm.

Discussion. A nearly complete shell is about 180 cm long, although this seems a rather young male individual of *Megalochelys* based on its rather slender epiplastral

morphology, which is nearly as large as given estimation of the maximum shell length from Java material. On the other hand, the largest humerus, estimated as 75 cm in original length, suggests its shell was about 270 cm long. This estimation seems to be supported by other isolated materials such as the nuchal plate, largest epiplastron, and the pectoral girdle. Hitherto, *Stupendemys geographica* (from the Pliocene of Venezuela) and *Archelon ischyros* (from the Lower Cretaceous of North America) were regarded as largest known turtles with about 220 cm long shell. However, *Megalocheilus* from Myanmar involves much larger specimens, suggesting this is a true largest known turtle.

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