

New species of the side necked turtle *Bothremys* (Pleurodira: Podocnemidoidea: Bothremydidae) from the upper Cretaceous of Morocco

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Background. Moroccan phosphates bed includes fossils of Sauropterygia, Testudines and mosasaurs from the latest Cretaceous (Maastrichtian) to Eocene. Family Bothremydidae (Podocnemidoidea), an extinct side-necked turtle group, has broad diversity in cranial morphology as shown by the genus *Bothremys* (Bothremydini). This genus is known from the Cretaceous and Paleogene of North America, Europe, Africa and middle east Asia, uniquely characterized by a pair of pits on the triturating surface of upper and lower jaws. Hitherto, four species have been recognized in *Bothremys*; *B. cooki*, *B. kellyi*, *B. maghrebiana*, and *B. arabicus*. Compared to the diversity of cranial morphology, little difference is known in the shell morphology in bothremydids. Also little is known about the limb morphology of bothremydini turtles, because of poor association of skull and postcranial skeleton. A new excellently preserved specimen of *Bothremys* is reported from the Upper Cretaceous of Morocco.

Methods. The WSILS-RHg519 specimen stored in Waseda University is a large bothremydid skull associated with lower jaw and several postcranial elements including left humerus and peripherals.

Results. The pair of pits on the triturating surfaces of upper and lower jaws in WSILS-RHg519 specimen is a distinct autoapomorphic characters of the genus *Bothremys*. With the skull width 171mm, *Bothremys arabicus* from the Santonian age of Jordan had been the largest species of genus *Bothremys*. The WSILS-RHg519 reaches the skull width 220mm and would be the largest member of *Bothremys*. Also, comparing the bone composition of the ventral surface of skull of the WSILS-RHg519 specimen to all other known *Bothremys*, the palatine-pterygoid contacts and pterygoid-pterygoid contact are quite unique. The left humerus is associated with the skull, partly damaged. The distal end of humerus is wide and the shaft is nearly straight, showing the first morphological evidence of aquatic/marine adaptation different from that of *Chedighaii*, the sister taxon of *Bothremys*.

Discussion. The marine habitat of bothremydid turtles had been roughly discussed on the basis of the association of shallow marine animals such as shark teeth. Morphological evidence has not suggested yet partly because of the difficulty of bothremydid taxonomy which is just based on the cranial morphology. The WSILS-RHg519 specimen will hopefully shed light on the mysterious habitats of bothremydid turtles.