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V. M. CKHIKVADZE, V. F. SHUVALOV

The first find of Cretaceous chelonians in the Ekhingol Basin (Mongolia)

[With plate XIX]

Pierwsze znalezisko kredowych żółwi w basenie Ekhingol (Mongolia)

Abstract. The morphology and taxonomic status of a newly described turtle, *Mlynarskiella mariani* (*Adocidae*), from the Ekhingol Basin (Mongolia), is discussed in detail. Remains of other turtles, molluscs and ostracods from this locality provide evidence for dating the deposit as Turonian-Santonian.

I. INTRODUCTION

The Ekhingol Basin, located in the Transaltai Gobi, and spreading from the spurs of the Tsagan Bogdo mountain range in the south of the Ongon-Ulan-Ula ridge in the north, is one of least studied regions in Mongolia. Until recently, the composition and age of its deposits have practically been unknown.

In 1983, remains of fossil turtles and ostracods, and an ichthyodorulith fragment were found by V. F. SHUVALOV in interlayers of grey clay within 10 km south-west of the peak of the Ongon-Ulan-Ula. According to the senior author, turtles are represented by *Trionyx* sp., *Lindholmemys martinsoni*, and *Mlynarskiella mariani*. Among ostracods, *Cypridea* aff. *profusa*, *Eucypris hermitsa-vica*, *Cypria* cf. *elata* were identified by I. J. NEUSTROEVA. A similar complex of turtles was found earlier in the upper part of the Bainshire suite, the Shiregin Gashun Basin, accompanied by the molluscs *Pseudohyria cardiiformis*, *Plicatotrigonoides gobiensis*, and other forms. Complexes of ostracods, similar to those mentioned above, were described by E. S. STANKEVITCH from deposits of analogous composition in the upper part of the same suite, in the south of the Ingeni Khobur Basin, and Khermin Tsav. Until now, fragments of ichthyodoruliths have only been known in Mongolia from the Bainshire suite. In Bayshin Tsav, they have been found together with teeth of sharks in its upper part, dated to the Turonian-Santonian.

Thus, the facts mentioned above allow to compare the upper part of the Ekkingol rock mass with that of the Bainshire suite, whereas its lower part may with certainty be compared with that of the same suite, dated to the Senomanian-Turonian.

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II. DESCRIPTION OF *MLYNARSKIELLA*

Family *Adocidae* COPE, 1870

Genus *Mlynarskiella* CKHIKVADZE, 1986 (in SHUVALOV & CKHIKVADZE)

Mlynarskiella mariani CKHIKVADZE, 1986 (in SHUVALOV & CKHIKVADZE)

This turtle was described on the basis of the left epiplastron (pl. XIX). The holotype (No. 11—16—1) belongs to the collection of the Institute of Paleobiology in Tbilisi.

Description

The shell presumably 15—18 cm in length. The external surface of the shell marked with small, shallow pits, arranged in a complicated pattern on the epiplastron, forming weakly developed rows on the costals, parallel with the longitudinal axis of the shell and producing an effect of rugosity. The epiplastron also has small point-like openings on its surface; their number per unit of area largely exceeds that on the costals. This irregular pattern of the openings resembles that of members of the genera *Ferganemys* and *Adocus* (NARMANDAKH, 1985). The epiplastron flat, with rounded loose edge, and thin (maximum thickness 4.5 mm). Sutures with the adjacent plates well-developed, precluding any agility. The intergular scute unpaired. The gular scute large, covering almost one half of the epiplastron surface. The humero-intergular sulcus short, placed before the entoplastron. The interepiplastral suture is almost as long as epihyoplastral suture. The loose edge of the epiplastron thin, with its intergular part slightly bent up; gular part is almost straight, but bent down posteriorly. The sulcus dermo-scuti slightly noticeable, located in the immediate vicinity of the loose edge.

Discussion

Mlynarskiella mariani from Ongon-Ulan-Ula shows close similarity to the representatives of the family *Adocidae*, particularly to *Peltochelys duchasteli* from the early Cretaceous of Belgium (MLYNARSKI, 1976) as well as to those of the genus *Adocus*. It differs from the latter (MLYNARSKI, 1976; NARMANDAKH, 1985; WHITE, 1972) in fused intergulars, larger gulars, anterior position of humero-intergular sulcus, and a peculiar outline of shields. *Mlynarskiella mariani* differs from *Peltochelys duchasteli* in small size, smaller loose edge of

epiplastron as well as in the proportional length of sutures of the epiplastron with adjacent plates. Other characters, including unpaired intergular, large-sized gulars, rounded anterior edge of the epiplastrons, may be regarded as unique among adocids and provide possibility to consider *Mlynarskiella* and *Peltochelys* as closely related genera.

Thus, as far back as the early Cretaceous, Asia was inhabited by two groups (*Ferganemys* and *Mlynarskiella*) of typical adocids. The most ancient representatives of this family, i. e. turtles of the genus "*Basilemys*", were also found in Asia (the lower Turonian of the Kyzyl Kum; NESOV, 1981b). "*Plesiochelys*" *tatsuensis* from the late Jurassic of China is also related to adocids (NESOV, 1977b). All these facts suggest an early origin of the *Adocidae*.

Most probably, adocids are descendants of the family *Pleurosternidae* (CKHIKVADZE, 1975; NESOV, 1977b; SUKHANOV, 1978). The *Adocidae* are ancestors of the superfamily *Trionychoidea* (*Trionychidae*, *Sinaspideretidae*, *Cyclanorbidae*) and probably of the superfamily *Carettochelyoidea* (see NESOV, 1977a, 1977b; CKHIKVADZE, 1975; CKHIKVADZE & SHUVALOV, 1980; GAFFNEY, 1975, 1979, 1984). It should be specially noted that in the early Cretaceous besides the *Adocidae* Asia was inhabited by archaic soft-shelled turtles, the *Sinaspideretidae*, true *Trionychidae*, as well as specialized and advanced *Carettochelyidae*. The facts mentioned above suggest that the divergence of the *Trionychidae* and *Carettochelyidae* took place in the Jurassic and it is probable that these lineages originated independently from different groups of the *Adocidae*. Presumably, a further study of the turtles of the above mentioned families will elucidate the problem of the early radiation in *Cryptodira*.

Institute of Paleobiology
Academy of Sciences of Georgian SSR
Potochnaja 4, Tbilisi 380004
Georgian SSR, USSR

Institute of Lake Study of USSR
Academy of Sciences of USSR
Sevastjanova 9, Leningrad 196199
USSR

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STRESZCZENIE

Praca niniejsza szczegółowo przedstawia morfologię oraz pozycję systematyczną nowo opisanego żółwia z basenu Ekkingol w Mongolii, *Mlynarskiella mariani* z rodziny *Adocidae*. Szczątki innych żółwi, mięczaków i małżoraczków z tego stanowiska pozwalają ocenić wiek znaleziska jako turon-santon.

Edited by Dr. Z. Szyndlar

Plate XIX

Mlynarskiella mariani CHKIKVADZE, 1986, holotype, left epiplastron; Ongon-Ulan-Ula (Mongolia), Turonian-Santonian. A — external side, B — internal side

