

Snout and orbit of Cretaceous Asian multituberculates studied by serial sections

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The orbital wall in *Nemegtbaatar gobiensis* and *Chulsanbaatar vulgaris*, from the late Cretaceous of the Gobi Desert, Mongolia, comprises a small lacrimal anteriorly, large orbital process of the frontal dorsally, orbitosphenoid posteriorly and maxilla ventrally. *Nemegtbaatar* also possesses an orbital process of the palatine ventrally; not recognized in *Chulsanbaatar*. Large frontal sinuses of both taxa are interpreted as related to lack of the sagittal crest. Other anatomical characters found in this study, such as orbital process of the frontal, ossified turbinates, ossified ethmoid and vomer, frontal, sphenoidal and maxillary sinuses, and the presence of the orbital process of palatine in *Nemegtbaatar* suggest a close relationship of multituberculates to monotremes and therian mammals. By the new data obtained from the serial sections the diagnostic character: orbital process of the palatine absent in Multituberculata, is no longer valid. Ossified ethmoid and maxillary turbinates, characteristic for Monotremata, *Vincelestes*, Marsupialia and Placentalia, are also present in Multituberculata. The presence of a cribiform plate and the presence of an ossified plate of ethmoid in Multituberculata is shared with Monotremata, *Vincelestes*, Marsupialia and Placentalia.

Key words: Multituberculata, cranial morphology, sinuses, Cretaceous, Mesozoic mammals.

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