

The braincase of two Late Cretaceous Asian multituberculates studied by serial sections

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The braincase structure of two Late Cretaceous Mongolian djadochtatherian multituberculates *Nemegtbaatar gobiensis* and *Chulsanbaatar vulgaris* from the ?late Campanian of Mongolia is presented based on the two serially sectioned skulls and additional specimens. Reconstructions of the floor of the braincase in both taxa are given. The complete intracranial sphenoid region is reconstructed for the first time in multituberculates. Cavum epiptericum is a separate space with the taenia clino-orbitalis (ossified pila antotica) as the medial wall, anterior lamina of the petrosal and possibly the alisphenoid as the lateral wall, and the basisphenoid, petrosal and possibly alisphenoid ventrally. The fovea hypochiasmatica is shallow, tuberculum sellae is wide and more raised from the skull base than it is in the genus *Pseudobolodon*. The dorsal opening of the carotid canal is situated in the fossa hypophyseos. The taenia clino-orbitalis differs from the one described in *Pseudobolodon* and *Lambdopsalis* in possessing just one foramen (metoptic foramen). Compared to all extant mammals the braincase in *Nemegtbaatar* and *Chulsanbaatar* is primitive in that both the pila antotica and pila metoptica are retained. In both genera the anterior lamina of the petrosal is large with a long anterodorsal process while the alisphenoid is small. A review is given of the cranial anatomy in *Nemegtbaatar* and *Chulsanbaatar*.

Key words: Braincase structure, sphenoid complex, cavum epiptericum, Mammalia, Multituberculata, Djadochtatheria, Cretaceous, Mongolia.

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