

Skull structure in *Catopsbaatar* and the zygomatic ridges in multituberculate mammals

Zofia Kielan-Jaworowska, Jørn H. Hurum, and Alexey V. Lopatin


Acta Palaeontologica Polonica 50 (3), 2005: 487-512

The late Campanian djadochtatherioid multituberculate *Catopsbaatar catopsaloides* was originally known from three skulls from Hermin Tsav in the Gobi Desert (Mongolia). Three more skulls from Hermin Tsav are now available, associated with parts of the previously unknown postcranial skeleton, which will be described separately. We describe herein the skull and dentition of *C. catopsaloides*, based on all available material, housed in PIN, PM, and ZPAL collections. The genera *Catopsbaatar*, *Djadochtatherium*, and *Kryptobaatar* share several characters, unknown in *Tombaatar*, such as very long postorbital processes directed postero-laterally and downwards, parietal ridges extending from the posterior margins of the postorbital processes postero-medially, and nuchal crests with prominent lateral wings, incurved anteriorly in the middle, so that the skull in dorsal view is shorter in the middle than laterally. *Catopsbaatar* shares with *Djadochtatherium* a very high and prominent anterior zygomatic ridge, and presence of the masseteric protuberance, but differs from it and from other djadochtatherioid genera in having the orbit situated more posteriorly, the intermediate zygomatic ridge adhering to the anterior ridge, and a smaller trapezoidal (rather than crescent-shaped) p4 without ridges; it differs from *Kryptobaatar* and *Djadochtatherium* in having three upper premolars (P2 being lost) and shares this last character with *Tombaatar*. *Catopsbaatar* is known not only from Hermin Tsav, but also from Baruungoyot Formation of Khulsan, represented there by a single m2. We demonstrate that the separation of the masseter superficialis into two parts, the origins of which leave scars on the lateral wall of the zygomatic arch surrounded by zygomatic ridges, occurs in all the multituberculates (beginning with Paulchoffatiidae), and is regarded as a multituberculate autapomorphy.

Key words: Mammalia, Multituberculata, Djadochtatheriidae, *Catopsbaatar*, *Djadochtatherium*, *Kryptobaatar*, zygo- matic ridges, Cretaceous, Gobi Desert.

Zofia Kielan-Jaworowska [zkielan@twarda.pan.pl], Instytut Paleobiologii, Polska Akademia Nauk, ul. Twarda 51/55, PL-00-818 Warszawa, Poland; Jørn H. Hurum [j.h.hurum@nhm.uio.no], Naturhistorisk Museum, Boks 1172 Blindern, N-0318 Oslo, Norway; Alexey V. Lopatin [alopat@paleo.ru], Paleontological Institute, Russian Academy of Sciences, Profsojuznaya 123, 117997 Moscow, Russia.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(1,030.3 kB\)](#)