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Cranial morphology, systematics and succession of beavers from the middle Miocene Valentine Formation of Nebraska, USA

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Previously, it was believed that there was a dramatic turn–over in the fauna of beavers (Rodentia, Castoridae) from the Barstovian to the Clarendonian from Nebraska. Stratigraphically controlled collections of fossil castorids from the Valentine Formation, which cross this boundary, now indicate that a complete change in the castorid fauna did not occur, but instead a more gradual change and replacement of earlier taxa with more advanced taxa occurred. The range of *Eucastor tortus* and *Monosaulax skinneri* is extended from late Barstovian into the latest Barstovian Devil's Gulch Member and the range of the otherwise Clarendonian species of *Prodipoides* is extended downward into the late Barstovian Crookston Bridge Member. The skulls of *Monosaulax skinneri* and *Eucastor valentinensis* are described in detail for the first time. The cranial morphology of *M. skinneri* is primitive for Castoroidini and that of *E. valentinensis* is specialized for tooth–digging behavior as in the Nothodipoidini. A new genus, *Temperocastor*, is proposed for *E. valentinensis* based on its primitive morphology of the cheek teeth and derived cranial morphology. *Temperocastor* represents the most primitive nothodipoidine.

Key words: Castoridae, faunal succession, Barstovian, Clarendonian, Valentine Formation

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