

The Stem Placental Mammal *Prokennalestes* from the Early Cretaceous of Mongolia

A. V. Lopatin^{a, b, *} and A. O. Averianov^{c, d, **}

^a*Borissiak Paleontological Institute, Russian Academy of Sciences, Moscow, 117647 Russia*

^b*Lomonosov Moscow State University, Moscow, 119991 Russia*

^c*Zoological Institute, Russian Academy of Sciences, St. Petersburg, 199034 Russia*

^d*Institute of Geology and Petroleum Technology, Kazan Federal University, Kazan, 420008 Russia*

*e-mail: alopat@paleo.ru

**e-mail: dzharakuduk@mail.ru

Received September 18, 2017

Abstract—All materials, including upper and lower jaw fragments and isolated teeth, of two closely related species of the stem placental mammal *Prokennalestes*, *P. minor* Kielan-Jaworowska et Dashzeveg, 1989 (258 specimens) and *P. trofimovi* Kielan-Jaworowska et Dashzeveg, 1989 (251 specimens), from the type locality of Khovoor (Early Cretaceous of Mongolia) are described. These extensive materials allow for the first time the study of morphological and size variability in an Early Cretaceous mammal. *Prokennalestes* can be diagnosed by the dental formula I[?]/4, C1/1, P4–5/5, M3/3, presence of the Meckelian groove, the mandibular foramen positioned dorsally on a prominent longitudinal ridge, presence of the masseteric foramen, double-rooted and premolariform lower canine, submolariform P5 with a large protocone and minute metacone, presence of the preparastyle, cusplike postmetacrista, and cusplike conules with incipient conular cristae on the upper molars, premolariform p5, the protoconid distinctly higher than the metaconid, the paraconid and metaconid connate at the base, transverse protocristid, and presence of distal metacristid on the lower molars. Two *Prokennalestes* species are reliably distinguished by the tooth dimensions (*P. minor* is smaller by 20%), the position of the infraorbital foramen (under P4 in *P. minor* and between P4 and P5 or under P5 in *P. trofimovi*), the presence of protoconal swelling on P4 (usually absent in *P. minor* and usually present in *P. trofimovi*), the ectocingulum extension in M3 (longer in *P. minor*), position of the posterior end of the mandibular symphysis (under p2 in *P. minor*, under p2–p3 in *P. trofimovi*), and by the position of the posterior mental foramen (under p4 in *P. minor* and under p5 in *P. trofimovi*). Taking into account considerable morphological differences between the two samples, they are regarded as different species rather than sexual morphs of the same species. *Prokennalestes* is a basal eutherian mammal similar in phylogenetic position to other stem placentals (*Eomaia*, *Murtoilestes*, *Bobolestes*, *Aspanlestes*). A more exact phylogenetic position of *Prokennalestes* can be established based on rigorous phylogenetic analysis including a large set of known stem therian and stem placental taxa.

Keywords: Mammalia, Eutheria, Placentalia, *Prokennalestes*, Early Cretaceous, Mongolia, Khovoor

DOI: 10.1134/S0031030117120048

CONTENTS

INTRODUCTION	1295
CHAPTER 1. MATERIALS AND METHODS	1295
1.1. Geographical and Geological Position of the Khovoor Locality	1295
1.2. Materials	1297
1.3. Dental Terminology	1297
1.4. Measurements	1297
1.5. Photographs	1298
1.6. CT Scanning	1298
1.7. Statistics	1298
1.8. Institutional Abbreviations	1298
CHAPTER 2. SYSTEMATIC PALEONTOLOGY	1298