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Penial bone morphology of the pond bat, *Myotis dasycneme* (Myotinae; Chiroptera)

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The structure of the penial bone (baculum) of the pond bat from the European part of Russia and Altai is described. In general, the baculum of this species is similar to that of *Myotis petax*, differing in larger average size and some proportions.

Ключевые слова: *Myotis*, baculum, morphology, taxonomy

Pond bat, *Myotis dasycneme* (Boie, 1825), despite a general similarity (probably convergent) with other trawling mouse-eared bats, occupies quite a separate position in the genus system. This opinion was expressed by A. Kuzyakin (1938), believing that the pond bat differs sharply morphologically from all other species of the genus in the fauna of northern Eurasia. Genetic data support the high isolation of *M. dasycneme* and the absence of closely related species (at least among those that have been genetically studied) (Ruedi et al. 2013; Morales et al. 2019).

The significance of the penial bone (baculum) morphology can vary widely in different bat taxa (e.g., Kruskop 2016), but this structure has become an important part of the morphological diagnoses of bat species. However, for *M. dasycneme*, we failed to find descriptions of the baculum in the literature, which obviously constitutes a certain gap in knowledge about this species.

In order to fulfill this gap, we dissected baculi of three fully grown males from the collection of the Zoological Museum of Moscow State University (ZMMU): two from the European part of Russia (Tver region) and one from the Altai Territory (close to the extreme east of the species range). Methods of soft tissue maceration and baculum cleaning were used, which are described in detail in the literature (e.g., see Smirnov, Tsytsulina 2003).

The studied baculi of *M. dasycneme* are 1.49–1.90 mm long and 0.84–0.88 mm wide. The baculum is somewhat elongated, with lateral sides slightly curved out; the greatest width falls on the front third. Anterior end is blunt, widely rounded; the tip of the bone is rounded, noticeably swollen. The greatest height of the bone (in the lateral projection) falls approximately at the middle of the length; a shallow saddle-shaped concavity of the upper side is displaced forward. The wide massive base of the bone has a medial notch. The latter is relatively narrow (less than 1/3 of the base width), and its depth and shape varies widely even within the studied specimens: from shallow to very deep, from semicircular to v-shaped (Fig. 1). The lateral margins of the bone are not

strongly, but noticeably thickened. The underside has a distinct longitudinal depression, forming a wide but usually shallow urethral groove.

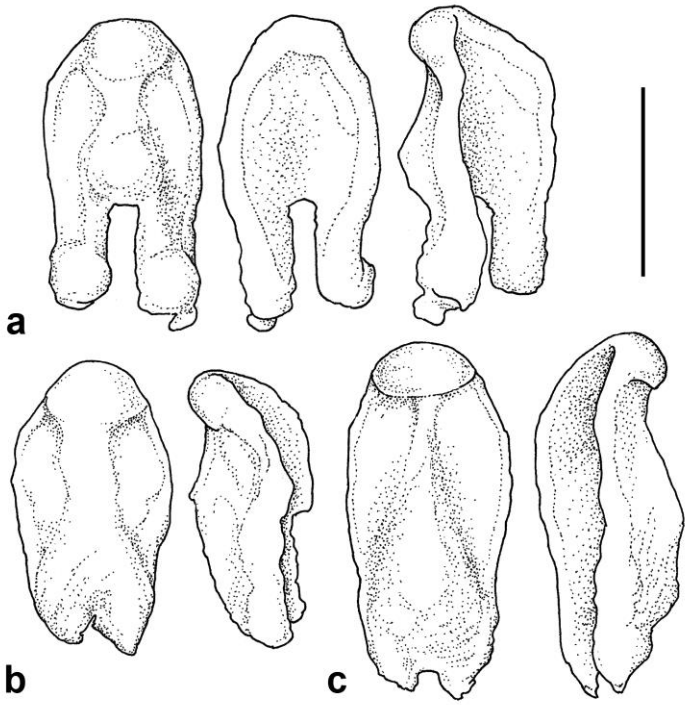

Fig. 1. Penial bones of *Myotis dasycneme*: a – ZMMU S-181377, Tver reg., upper, lower and lateral views; b – ZMMU S-171271, Tver reg., upper and lateral views; c – ZMMU S-195670, Altai, upper and lateral views. Scale bar 1 mm.

Рис. 1. Половые косточки *Myotis dasycneme*: a – ZMMU S-181377, Тверская обл., вид сверху, снизу и сбоку; b – ZMMU S-171271, Тверская обл., вид сверху и сбоку; c – ZMMU S-195670, Алтай, вид сверху и сбоку. Масштаб 1 мм.

On the whole, baculum of *M. dasycneme* corresponds to the general structural features of this bone in other representatives of *Myotis*: narrowing to a rounded tip, the presence of a saddle-shape concavity, a basal notch, a wide urethral groove, and thickened lateral margins. Of the species from the Russia fauna, it is most similar to the baculum of *M. petax* (Matveev et al. 2005), differing in large average size, a different degree of development of the basal notch (although in one specimen from the Tver region it is even more developed than in *M. petax*) and displacement the greatest width of the bone to the anterior third. The baculi of all other *Myotis* in the fauna of Europe and northern Asia are noticeably smaller.

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РЕЗЮМЕ

Крускоп С.В. Строение половой косточки прудовой ночницы, *Myotis dasycneme* (Myotinae; Chiroptera). – Plecotus et al. **24:** 70–72.

На основании экземпляров из Европейской части России и с Алтая, описано строение половой косточки (бакулюма) прудовой ночницы, *Myotis dasycneme* (Boie, 1825). Бакулюм прудовой ночницы имеет длину 1.48-1.9 мм и ширину 0.84-0.88 мм. Боковые стороны выгнуты наружу, наибольшая ширина приходится на переднюю треть. Базальная вырезка присутствует, может быть как небольшой, так и глубокой. Передний конец округлый, приподнятый кверху и отчетливо утолщенный. Боковые края имеют небольшое, но отчетливое утолщение. Седловидная вогнутость верхней стороны смещена вперёд. Нижняя сторона вогнута, образуя широкую уретральную борозду. Из других видов фауны Палеарктики он наиболее сходен с бакулюмом *M. petax*, несколько отличаясь размером и пропорциями.

Key words: Ночницы, половая косточка, морфология, систематика.