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Anomalous shape of small premolars in long-tailed myotis, *Myotis frater* G.M. Allen, 1923

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Long-tailed myotis, *Myotis frater*, is known for its shortened facial part (in comparison to other mouse-eared bats) and as result – partial or full displacement of posterior small premolars. Cases of full absence of posterior small premolars and presence of bicuspidate small premolars, found in the Japanese long-tailed myotis, are describing and discussing.

Key words: teeth, premolars, *Myotis frater*, anomalous development

Common feature for mouse-eared bats, *Myotis*, is presence of two so-called small premolars – single-root teeth of simple shape, situated between canine and the first molariform tooth (P4 and p4) and not coming to occlusion with teeth on the opposite jaw when the mouth is closed. Shortened facial part of skull and, as result, compression of small premolars within the tooth row represent well-known diagnostic features of the long-tailed myotis, *Myotis frater* (Громов и др. 1963; Кривошеев 1984). This species represents rare case among *Myotis* genus, in which gap between canine and posterior premolar ("pseudodiasteme") is visibly smaller than length of the canine crown base. Usually, due to that compression, posterior small premolars (especially upper, P3) in this species are more or less displaced lingually from the tooth row midline. However, this bat, despite large distribution range, is highly sporadic within this range and not numerous in scientific collections. So, variability in this species is not well-studied.

We studied collection materials of the Japanese long-tailed myotis, *M. f. kaguyae*, housed in the National Museum of Science and Nature (NMSN, Tokyo / Tsukuba), Aomori Prefectural Museum (AOPM, Aomori), and three specimens came from private collections on Hokkaido. In total, 43 specimens where studied. All the specimens in AOPM came from the privet collection of Mitsuru Mukohyama. Specimens from private collections were provided by Dr. K. Kawai. Within the studied series, which is actually not too large, various stages of the posterior small premolar displacement where observed, from only slightly displaced (though P3 is highly compressed between neighboring teeth) to fully displaced and almost invisible in lateral view. We also found individuals in which P2 was totally lost (in one side of the upper jaw – in two cases, or in both sides – in three cases). In one case (adult female from

Aomori prefecture No MC88028 of Mukohyama collection) posterior small premolars were absent on both upper and lower jaws, which makes the tooth formula of this specimen similar to that of pipistrelles. Occasional absence of P3 in *M. frater* was already mentioned in scientific literature (Yoshiyuki 1989). It is predictable for species with tendency for displacement of this tooth; similar fluctuating absence of small premolars is known for *Hypsugo*, *Arielulus* (see e.g. Kruskop 2013) and also for *M. annectens* (another *Myotis* species with shortened tooth row; Görföl et al. 2013). More peculiar that in two cases the rest small premolar was bicuspidate. It looks like two teeth are strongly compressed to each other, but both cusps are surrounded by common cingulum. In one case (adult female from Iwate prefecture No MC86012 of Mukohyama collection) such bicuspidate P2 was represented on the left side (Fig. 1, a). In the already mentioned MC88028, both P2 and p2 on the left side where bicuspidate (Fig. 1, b). It was not seen in doth specimens are upper premolars double-rooted, but the lower premolar of MC88028 most probably have two roots. Previously we have not read about such development of the small premolar in *M. frater* and any of other Asian *Myotis* species.

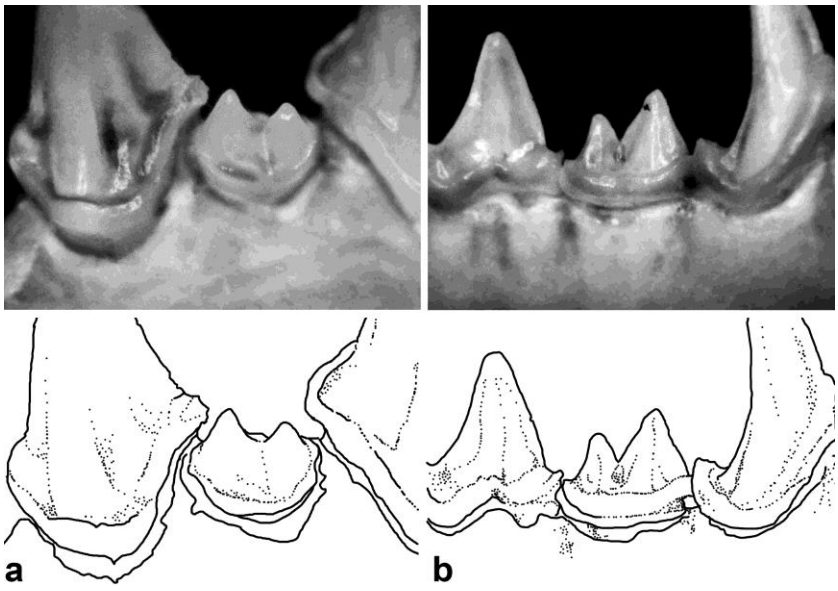

Fig. 1. Bicuspidated small premolars of *Myotis frater kaguyae*: a – left upper small premolar of the specimen AOPM MC86012, left lower small premolar of specimen AOPM MC88028.

Рис. 1. Двувершинные малые предкоренные у длиннохвостой ночницы, *Myotis frater kaguyae*: a – левый верхний малый премоляр у экземпляра AOPM MC86012, b – левый нижний малый премоляр у экземпляра AOPM MC88028.

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SUMMARY

Крускоп С.В., Каваи К. 2018. Аномальная форма малых предкоренных зубов у длиннохвостой ночницы, *Myotis frater* G.M. Allen, 1923. – Plecotus et al. **21:** 19–21.

Наличие в зубном ряду двух малых предкоренных зубов – характерный признак рода ночниц (*Myotis*). Однако, при укорочении лицевого отдела черепа происходит сокращение промежутка между клыком и большим предкоренным, и второй малый предкоренной может быть вытеснен из зубного ряда и в разной степени редуцирован. Эту тенденцию можно наблюдать у сравнительно слабо изученной длиннохвостой ночницы, *M. frater*. Мы изучили 43 экземпляра японских длиннохвостых ночниц, *M. f. kaguyae*, и в пяти случаях обнаружили полную утрату второго малого предкоренного с одной или с обеих сторон челюсти. Кроме того, нами найдены два экземпляра, у которых единственный оставшийся в ряду малый предкоренной имел две вершины. В одном случае таким был только верхний зуб, в другом – колатеральные верхний и нижний. Ранее мы не встречали у ночниц такой аномалии, как и описания подобных случаев в литературе.

Ключевые слова: зубы, предкоренные, длиннохвостая ночница, аномальное развитие