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A new subspecies of *Myotis mystacinus* (Vespertilionidae, Chiroptera) from East Asia

Sergey V. KRUSKOP and Alex V. BORISSENKO

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A new subspecies of the Whiskered bat, *Myotis mystacinus mongolicus*, is described from eastern Mongolia and Transbaikalia. Compared to other north-east Asian members of the subgenus *Selysius* Bonaparte, 1841 it most closely resembles the central Asian *M. mystacinus przewalskii* Bobrinskoy, 1926 but differs from the latter by higher braincase and enlarged hind foot. In skull proportions, dentition and coloration patterns it occupies a somewhat intermediate position between *M. mystacinus przewalskii* and *M. brandtii* (Eversmann, 1845).

Zoological Museum, Moscow State University, Bolshaya Nikitskaya, 6, 103009 Moscow, Russia

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The whiskered bat *Myotis mystacinus* (Kuhl, 1817) is widely distributed throughout Mongolia (Allen 1938, Sokolov and Orlov 1980, Sokolov *et al.* 1985). The majority of authors refer *M. mystacinus* from this region to either *M. mystacinus przewalskii* Bobrinskoy, 1926 (eg Sokolov and Orlov 1980) or to *M. m. mystacinus* sensu Kuzyakin (1950), ie including *M. brandtii gracilis* Ognev, 1927 (Bannikov 1954), which is also represented in the Mongolian bat fauna. While the central Asian whiskered bats have been divided into three subspecies (Kuzyakin 1965), the question of treating the east Mongolian specimens as a different taxon has never actually been raised. Discussing the relationships of *M. mystacinus* and *M. brandtii*, Strelkov (1983) considers all whiskered bats from Kazakhstan, central Asia, China and Mongolia to be one geographic form, *M. mystacinus przewalskii* Bobrinskoy, 1926. He notes that in the eastern part of the distribution range of *M. mystacinus* the specimens slightly differ from typical *M. m. przewalskii*, particularly by larger size, whereas the west Mongolian bats are quite similar to the central Asian ones. However, Strelkov (1983) does not treat them as a separate subspecies.

An analysis of external and cranial morphology of *Myotis mystacinus* specimens from eastern Mongolia and eastern Transbaikalia (mainly Chitinskaya region) has shown them to possess certain morphological peculiarities that set them apart

from other Asian representatives of the species. In our opinion, *M. mystacinus* from eastern parts of Mongolia and Transbaikalia represents a distinct group, which deserves being given subspecific rank. The description of this form is presented herewith. The geographic names used in this paper follow "The Times Atlas of the World" (1986).

Myotis mystacinus mongolicus ssp. nov.

Type material

Type: S-148474, adult male, Telhi, Lake Barun-Torey, Borzinskiĭ District (Borzya), Chitinskaya Region (oblast'), Russia. 18 July 1989, skin & skull, coll. M. I. Golovushkin. Paratype: S-148475, adult female, Ust'-Imsuu, Ononskiĭ District (Onon), Chitinskaya Region, 25 July 1989, alcohol-preserved specimen, skull not extracted; coll. M. I. Golovushkin.

Other specimens studied

Eleven skulls, 3 dry and 17 alcohol-preserved skins from Dornod (Mongolia), 6 alcohol-preserved specimens from Suhbaatar, Mongolia, 6 skins with skulls and 2 alcohol-preserved specimens from eastern Transbaikalia, Chitinskaya Region (oblast'). Comparative material: 6 skulls of *M. ikonnikovi*, 8 specimens of *M. brandtii gracilis* (Mongolia, Altai, eastern Siberia), 30 specimens (various forms of preservation) of *M. mystacinus przewalskii* from different regions of northern Asia, including 1 skin + skull specimen from Bajan-Hongor, Mongolia, and 4 alcohol-preserved specimens from Hovd, Mongolia. All the materials examined are in the collection of Zoological Museum of Moscow State University.

Diagnosis

Myotis mystacinus mongolicus differs from typical *M. m. przewalskii* primarily by generally larger and higher skull (Fig. 1), slightly broader rostrum, absence of the cingulum cusp on P^4, larger hind foot (Fig. 2), and more brownish and darker pelage. Upper molars usually with distinct protoconules. Third upper premolar not completely consealed by the base of P^4 and noticeable at the lateral view of the skull.

Measurements of the holotype (in mm). Skull: condylobasal length 13.4; height of braincase 6.2; rostral length 4.6; rostral width 5.2; lower jaw length 9.7; lower jaw height (with coronoid process) 3.5. Maxillary tooth row: distance between upper canine and P^4 0.7; molariform tooth row length 3.65; crown width of M^2 1.4; crown height of P^2/P^3 index 2; index of molariform tooth row length to condylobasal length 0.27. External measurements: foot length without claws 7.2; forearm length 32.7; third metacarpal length 30.6; fourth metacarpal length 30.1; fifth metacarpal length 30.1.

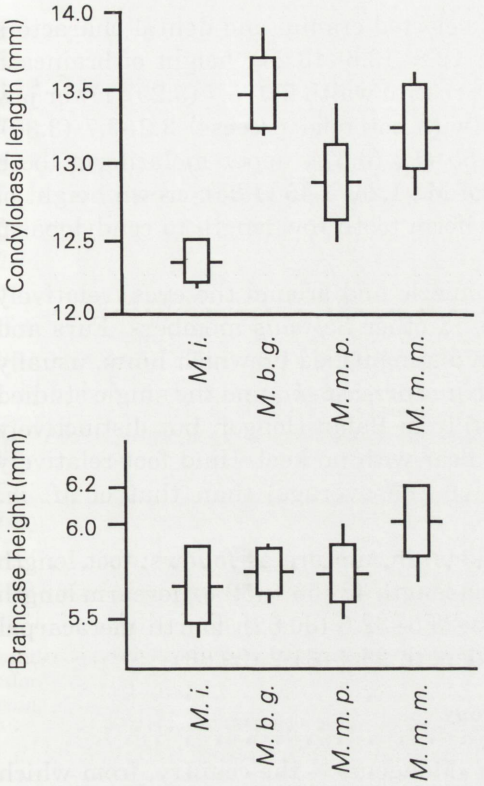

Fig. 1. Variation in condylobasal length and braincase height of *Myotis ikonnikovi* (*M. i.*, n = 6), *M. brandtii gracilis* (*M. b. g.*, n = 8), *M. mystacinus przewalskii* (*M. m. p.*, n = 12), and *M. m. mongolicus* (*M. m. m.*, n = 17). Horizontal lines – mean values, vertical lines – overall ranges of variation, boxes – standard deviation.

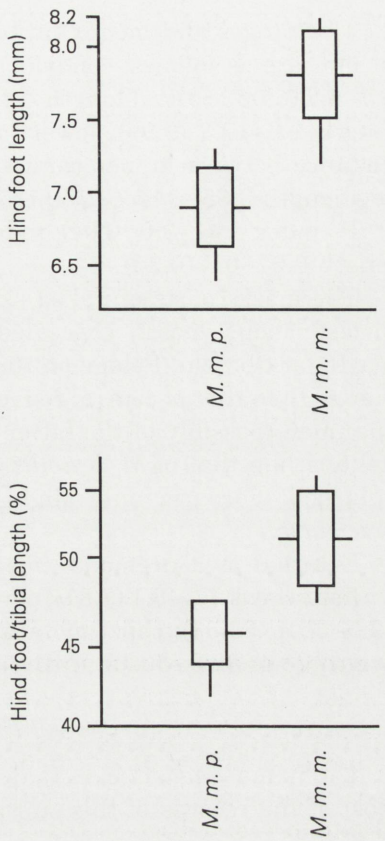

Fig. 2. Hind foot length without claws and its intex to the length of tibia in *Myotis mystacinus przewalskii* (n = 11) and *M. m. mongolicus* (n = 14). Explanations as in Fig. 1.

Description

A small bat, generally similar to *M. mystacinus przewalskii*. Skull relatively large and high. Occipital part of braincase roof higher than frontal, as in other *Selysius* members. All of the eastern Mongolian and most of the Chita specimens studied lack the cingulum cusp on P^4, which is usually noticeable in *M. m. przewalskii* and always well developed in *M. brandtii gracilis*. Upper molars of the majority of specimens studied have protoconules, sometimes well developed. Small upper premolars are tightly adjusted to one another and to neighbouring teeth, the second one being about half the size of the first and considerably intruded from the tooth row.

The ranges and means (in brackets) of selected cranial and dental characters in mm are as follows: condylobasal length 12.8–13.6 (13.24); height of braincase 5.7–6.2 (6.02); rostral length 4.4–4.9 (4.61); rostral width 5.0–5.7 (5.29); lower jaw length 9.6–10.3 (9.99); lower jaw height (with coronoid process) 3.2–3.7 (3.36); distance between upper canine and P^4 0.55–0.8 (0.67); upper molariform tooth row length 3.65–3.85 (3.75); crown width of M^2 1.25–1.45 (1.35); crown height of P^2/P^3 index 1.41–3.0 (2.04); index of molariform tooth row length to condylobasal length 0.27–0.3 (0.28).

The mask (parts of naked skin on the muzzle and around the eyes) relatively inconspicuous, mostly concealed by fur, as in other *Selysius* members. Ears and mask dark brown. Pelage on the back with distinguished brownish hints, usually darker than that of central Asian *M. mystacinus przewalskii* and the single studied specimen (possibly of the latter subspecies) from Bajan-Hongor, but distinctively lighter than that of *M. brandti gracilis*. Calcar with no keel. Hind foot relatively enlarged. Forearm only slightly longer (on the average) than that of *M. m. przewalskii*.

External measurements (mean in brackets) in mm are as follows: foot length without claws 7.2–8.1 (7.81); per cent of tibia length 48–56% (52%); forearm length 32.5–35.4 (33.83); third metacarpal length 28.6–32.5 (30.62); fourth metacarpal length 28.4–32.3 (30.12); fifth metacarpal length 28.4–31.2 (29.83).

Etymology

The name «*mongolicus*» is derived from «Mongolia» – the country, from which most of the records of this subspecies have been made.

Distribution and biology

The described form has been recorded from the territory of the eastern extremity of Mongolia: in Dornod (Bain-Tuman, Dashbalbar, Herlen Gol river valley, Choybalsan, lake Buyr Nuur) and in Suhbaatar, and also in Borsinskiĭ District, Chitinskaya Region (S. Transbaikalia). Four specimens from Har Nuur lake (Hovd, Mongolia) should also be referred to the same form, according to dental morphology and the proportions of the hind limb. In order to determine the exact border between the distribution ranges of this form and *M. m. przewalskii* it is necessary to investigate much more material from various parts of Mongolia and southern Siberia.

According to the observations of V. V. Kucheruk (pers. comm.) this bat was found roosting in rock crevices on the banks of the river Herlen Gol (eastern Mongolia) and captured hunting above the water. Otherwise nothing is known of its biology.

Taxonomical remarks

On the whole, regarding the proportions of the skull and colouration, the described form occupies a somewhat intermediate position between typical *M. m.*

przewalskii and *M. brandtii gracilis*. The presence of protoconules on the upper molars of the majority of specimens studied, makes the upper molars of this form similar to those of *M. brandtii* and *Leuconoe* members. The proportions of wing bones do not distinguish this subspecies from other members of the "*przewalskii*" complex.

Certain morphological similarity of *M. mystacinus* and *M. brandtii* may sometimes lead to misidentification. Therefore, despite the differences of *M. m. mongolicus* from either *M. m. przewalskii* or *M. b. gracilis* and its closer resemblance to the former, its systematic position assigned herein is somewhat provisional. In most of the external and dental traits the considered subspecies appears to agree with the diagnosis of *Myotis fujiensis* Imaizumi, 1954 (Yoshiyuki 1989), otherwise synonimized with *M. brandtii* (Koopman 1993). This fact we cannot explain, without analyzing comparative material. In our opinion, the observed peculiarities of taxonomically important characters (eg dentition and foot length) may reflect specific ecological adaptations of the newly described form and may even indicate its remoteness from both *M. mystacinus* and *M. brandtii*. Undoubtedly, examination of more material as well as detailed biochemical analyses and ecological observations are required to clarify the taxonomic status of this form.

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