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**REVIEW OF THE GENUS *CONOCEPHALUS* (ORTHOPTERA:
TETTIGONIIDAE) IN MONGOLIA**

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Summary. An annotated list of four Mongolian species of the genus *Conocephalus* Thunberg, 1815 is given and a key to species is provided. The macropterous form of *C. beybienkoi* Storozhenko, 1981 is found for the first time and described. The distribution map of the species in Mongolia is also given.

Key words: bush crickets, fauna, key, macroptera form, Asia.

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Резюме. Приведен аннотированный список четырех монгольских видов рода *Conocephalus* Thunberg, 1815 и составлена определительная таблица известных из Монголии видов. Впервые обнаружена и описана длиннокрылая форма *C. beybienkoi* Storozhenko, 1981. Также приведена карта распространения видов в Монголии.

INTRODUCTION

The genus *Conocephalus* Thunberg, 1815 consists of about 160 species and subdivided into 9 subgenera worldwide (Cigliano *et al.*, 2023). In Mongolia four species in two subgenera have been recorded (Günter, 1970; Chogsomzhav, 1989; Benediktov, 1997, 2006; Gantigmaa & Myagmar, 2022). Present paper is based on material collected by first author in provinces Khovd and Dornod from July to August 2015, 2017 and 2019. Specimens were identified in the laboratory of Entomology, Institute of Biology, Mongolian Academy of Science using keys to species by Storozhenko (2004) and Zhou *at al.* (2010). To show spatial distribution of the species in Mongolia, we used ArcGis 10.5. Photographs were taken with a Camera Canon 7D markII and stacked using Helicon Focus software. The final illustrations were post-processed for contrast and brightness using Adobe® Photoshop® software.

RESULTS

Subfamily Conocephalinae

Tribe Conocephalini

Genus *Conocephalus* Thunberg, 1815

Conocephalus (Amurocephalus) chinensis (Redtenbacher, 1891)

Figs 1, 2

Conocephalus chinensis: Benediktov, 1997: 118; Benediktov, 2006: 28.

Conocephalus (Amurocephalus) chinensis: Zhou *et al.*, 2010: 58; Storozhenko, 2004: 73; Storozhenko *et al.*, 2015: 45; Sergeev *et al.*, 2018: 15; Gantigmaa & Myagmar, 2022: 324.

MATERIAL. Mongolia: Dornod Province, western shore of Buir Lake, 47°38' N, 117°34' E, 583 m, 31.VII 2015, 4 ♂, 4 ♀, 2 nymphs (Myagmar); Khar ymaat Nature Reserve, near the Ymaat spring, 47°38'N, 112°05'E, 1136 m, 27.VII 2017, 5 nymphs (Myagmar).

REMARKS. Data about distribution of this species in Mongolia were recorded for the first time by Benediktov (1997) in southern coast of Uvs Lake based on oscillograms of acoustic signals produced by male. The southern coast of Uvs Lake is western limit of the current distribution for this species. The species typically found in wet meadows with dense vegetation.

DISTRIBUTION. Mongolia (Fig. 9), Russia (the southern parts of Transbaikalia and the Far East, including Sakhalin and S Kurile Islands), China (Hunan, Heilongjiang, Jilin, Shaanxi, Inner Mongolia, Hebei, Hubei, Anhui, Jiangsu, Shanghai, Jiangxi), Korea, Japan.

Conocephalus (Anisoptera) fuscus (Fabricius, 1793)

Fig. 3

Conocephalus fuscus: Günther, 1970: 317; Chogsomzhav, 1989: 86.

Conocephalus (Anisoptera) discolor: Storozhenko, 2004: 75; Zhou *et al.*, 2010: 58.

Conocephalus (Anisoptera) fuscus: Storozhenko *et al.*, 2015: 47; Gantigmaa & Myagmar, 2022: 326.

MATERIAL. Mongolia: Mongolian Altai Mts., Uench River, 46°06'N, 92°02'E, 1452 m, wet meadow, 31.VII 2019, 4 ♂, 2 ♀, 3 nymphs (Myagmar); the same locality, 02.VII 2017, 4 nymphs (Myagmar).

REMARKS. This species was firstly recorded from Bodonch and Bulgan rivers in Mongolian Altai (Günther, 1970). The species typically found in wet meadows with dense vegetation. Adults occur in Mongolia at the end of July.

DISTRIBUTION. Temperate zone of Europe and Asia from Atlantic to Pacific Ocean (Storozhenko, 2004). In Mongolia, this species is recorded only in the river basins of the Dzungaria Gobi (Fig. 9).

Conocephalus (Anisoptera) dorsalis (Latreille, 1804)

Figs 4–6

Conocephalus (Anisoptera) dorsalis: Storozhenko, 2004: 80; Gantigmaa & Myagmar, 2022: 326.

MATERIAL. Mongolia: Mongolian Altai Mts., Uench River, 46°06'N, 92°02'E, 1452 m, wet meadow, 31.VII 2019, 1 ♂, 1 ♀, 2 nymphs (Myagmar).

REMARKS. It is the southeastern point of the world current distribution of this species. The species typically found in wet meadows with dense vegetation. In meadow of Uench River this species habits together with *C. fuscus*.

DISTRIBUTION. Mongolia (Fig. 00), Europe (except the North), Turkey, Caucasus, Kazakhstan, Russia (European part, the southern parts of W Siberia including Altai, Krasnoyarsk Region and Khakassia).



Figs 1–7. *Conocephalus* spp. 1, 2 – *C. chinensis*: 1 – ovipositor, lateral view, 2 – head, dorsal view; 3 – *C. fuscus*, apex of male abdomen, dorsal view; 4–6 – *C. dorsalis*: 4 – head, dorsal view, 5 – ovipositor, lateral view, 6 – apex of male abdomen, dorsal view; 7 – *C. beybienkoi*, apex of male abdomen, dorsal view. Scale bars = 1 mm.

***Conocephalus (Anisoptera) beybienkoi* Storozhenko, 1981**

Figs 7, 8

Conocephalus (Anisoptera) beybienkoi: Storozhenko, 2004: 82; Zhou *et al.*, 2010: 51; Gantigmaa & Myagmar, 2022: 327.

MATERIAL. Mongolia: Dornod Province, western shore of the Buir Lake, 47°38' N, 117°34' E, 583m, 31.VII 2015, 1 ♂ (brachyptera form), 2 ♀ (macroptera form) (Myagmar).

REMARKS. This species was firstly recorded from Mongolia by Gantigmaa & Myagmar (2022). The species typically found in wet meadows with dense vegetation. On the western shore of Buir Lake the species habits together with *C. chinensis*. The long-winged form of *C. beybienkoi* is found for the first time and described below.

DISTRIBUTION. Mongolia (Fig. 9), Russia (south of the Chita and Amur regions, Khabarovsk and Primorsky Territory), NE China, Japan (Hokkaido).



Fig. 8. *Conocephalus beybienkoi*, long-winged female, lateral view.

DESCRIPTION OF MACROPTERA FORM. Long-winged female (Fig. 8) is similar to typical brachyptera form and characterized as follow: fastigium of vertex relatively broad, 1.5–2 times narrower than 1st segment of antennae; lateral lobes of pronotum with distinct humeral sinus; fore femora 1.1–1.2 times shorter than pronotum; hind femora ventrally with 1–2 outer rudimentary spines; subgenital plate trapezoidal; ovipositor weakly upcurved, 1.2–1.3 times shorter than hind femur, but differs by tegmina reaching the half of hind tibia and hind wings on 3mm longer than tegmina. Body in macropterous form green or greenish brown; dorsal surface of head and pronotum with a brown longitudinal strip; tegmina unicolors without spots and stripes; legs green or greenish brown; ovipositor pale brown.

MEASUREMENTS (in mm). Female, forma macroptera: length of body 16–18; pronotum 2.6–2.9; tegmen 17–18; hind femur 10.5–11; ovipositor 9–9.5.

Key to Mongolian species

- 1(2) Fastigium of vertex 2.4–3.3 times narrower than 1st antennal segment (Fig. 1). Ovipositor straight and short, 1.5–1.7 times shorter than hind femur (Fig. 2) *C. chinensis*
- 2(1) Fastigium of vertex 1.3–2.1 times narrower than 1st antennal segment (Fig. 4). Ovipositor longer or only 1.3 times shorter than hind femur 3
- 3(4) Posterior margin of male X tergite with short lophi directed downward (Fig. 3). Ovipositor 1.2–1.3 times longer than than hind femur *C. fuscus*

- 4(3) Posterior margin of male X tergite with elongated lophi directed horizontally (Figs 6, 7). Ovipositor 1.1–1.3 times shorter than hind femur 5
 5(6) Posterior margin of male X tergite with narrow lophi (Fig. 6). Ovipositor strongly upcurved (Fig. 5) *C. dorsalis*
 6(5) Posterior margin of male X tergite with broad lophi (Fig. 7). Ovipositor weakly upcurved (Fig. 8) *C. beybienkoi*

CONCLUSION

While only four species of *Conocephalus* are recorded in Mongolia, it is significant region for understanding of distribution of the genus in Asia. The Mongolian Altai is the most southeastern locality of *C. dorsalis* in Asia, while Dornod Province limit eastern boundary of *C. beybienkoi* distribution. Nowadays *C. chinensis* is widely distributed in north Mongolia (Fig. 9), but southern coast of Uvs Lake is western limit of the current distribution for this species.

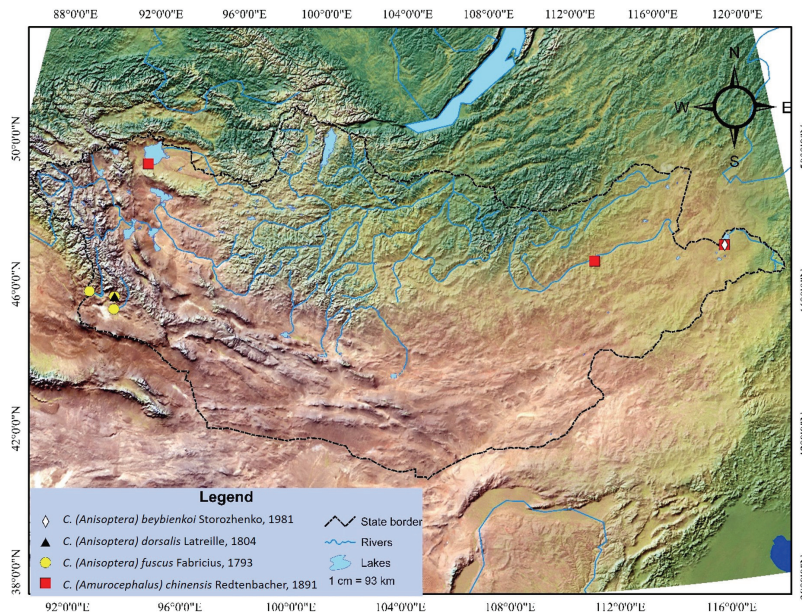


Fig. 9. Distribution map of *Conocephalus* spp. in Mongolia.

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