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The first record of *Behningia tshemovae* Edmunds, Traver, 1959 from China (Ephemeroptera: Behningiidae)

Первая находка *Behningia tshemovae* Edmunds, Traver, 1959 (Ephemeroptera: Behningiidae) в Китае

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Abstract. The mayfly *Behningia tshermovae* Edmunds, Traver, 1959, previously found in Far East Russia and South Korea, has been collected for the first time in northeastern China in July 2024. Two Chinese males of this species have a morphology that perfectly matches the previous descriptions, and the collection site is between those previously reported from Russia and South Korea.

Резюме. Подёнка *Behningia tshermovae* Edmunds, Traver, 1959, ранее отмеченная на Дальнем Востоке России и в Южной Корее, впервые собрана на северо-востоке Китая в июле 2024 года. Два китайских самца этого вида имеют морфологию, полностью соответствующую предыдущим описаниям, а место сбора находится между ранее указанными местонахождениями.

Currently, the mayfly family Behningiidae contains only four genera nine species: *Behningia* Lestage, 1929 (five species, from Europe to China and Thailand), *Dolania* Edmunds and Traver, 1959 (one Nearctic species), *Paradolania* Zhou, 2024 (one Oriental species) and *Protobehningia* Tshernova, 1960 (two Asian species) [Zheng et al., 2024]. In recent years, more species and more distribution of some known species have been reported [Tiunova, 1997, 2012; Park et al., 2019; Zhou et al., 2019; Zheng et al., 2024], providing more information to its origin and phylogeny.

China plays a key role to the family Behningiidae because the plesiomorphic genus *Protobehningia* of the family distributes in Russia and Thailand, north and south neighbours of China respectively [McCafferty, Jacobus, 2006]. So more contribution to this family of China will provide more useful clues to our understandings.

The species *Behningia tshernovae* Edmunds, Traver, 1959 was found originally in Amur river by Tshernova in 1938, the border river between Russia and China. It was also caught in some other places in Russia [Tiunova, 1997, 2012] and South Korea [Park et al., 2019]. So this species has long been expected to find in China too but its specimen was never gathered in this country.

In latest years, we collected specifically in and around sand habitat across China to look for behningiid materials. In July 2024, two males of *Behningia* specimens were obtained in Northeastern China. They represent the first record of *Behningia tshernovae* in China and somehow bridge the distribution gap of previous known areas.

The present work is registered in ZooBank (www.zoobank.org) under LSID urn:lsid:zoobank.org:pub:8EC6287E-29B5-4D9A-9E94-BC8E761296C4

Behningia tshernovae Edmunds, Traver, 1959

Figs 1–6.

Behningia tshernovae Edmunds, Traver, 1959: 47, Figs 23–32 (male, nymph), Type: male imago from Tshernovae, 1938, lower Amur river of Russia; Peters, Peters, 1977: 409; Tshernova et al., 1986: 111 (Plt. 48, Figs 1–4, male); Hubbard, 1994: 162; Kluge, 1995: 38; Tiunova, 1997: 20 (Primorskii Krai of Russia); Kluge, 2004: 246 (Figs 73A–C, nymph); Tiunova, 2012: 29; Bauernfeind, Soldán, 2012: 434; Park et al., 2019: 879 (South Korea, photos of nymph, male and habitat); Zhou et al., 2019: 425 (nymph); Zheng et al., 2024: 1 (nymph);

Behningia ulmeri Lestage, 1930: Tshernova, 1938: 133 (two males, Figs 1–4); Tshernova, 1952: 248 (nymph, Figs 20–24); Kluge, 1989: 65 (Plt. 5, Figs 3–4, nymph); Landa, 1969: 295 (Plt. 28, Figs 1–9, nymph);

Material. **China,** ***Rao-he County:*** 2♂♂ imago, Ussuri river, 46.844312° N, 134.027855° E, 19–21.VII.2024, leg. Xuhongyi Zheng, Dewen Gong.

Distribution. Eastern Russia, South Korea, Northeastern China.

Remarks. This species is registered for China for the first time. The males of this species *Behningia*

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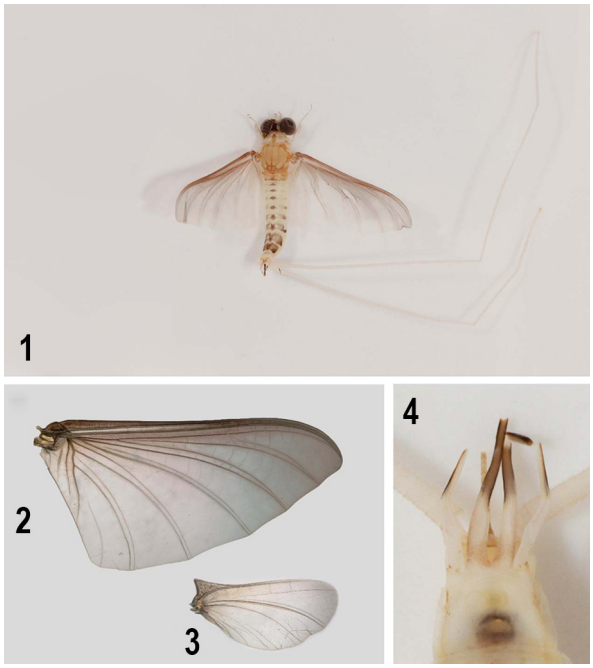
tshernovae can be recognized by having deep gray to dark midline of abdominal tergum, forming somewhat triangular-shaped markings (Fig. 1), only one intercalary between two branches of CuA but it with less or without reticulations (Fig. 2), hindwings with distinct costal projection (Fig. 3), the penes are much longer than forceps, and terminal filament is further longer than penes (Fig. 4).

The collecting site of the river consists of sand beds but because of heavy rain and flood, we did not collect nymphs there (Fig. 5).

Most Behningiid species have very restrict distribution except two Palearctic species *Behningia ulmeri* Lestage, 1929 and *Behningia tshernovae*. The former one has been found in several countries [Bauernfeind, Soldán, 2012] and the latter has been found in different locations of several thousand kilometers away (Fig. 6).



Figs 1–4. Details of morphology of *Behningia tshernovae* male adult. 1 — habitus, dorsal view; 2 — forewing; 3 — hindwing; 4 — genitalia, ventral view.

Рис. 1–4. Детали морфологии самца *Behningia tshernovae*. 1 — габитус, вид сверху; 2 — переднее крыло; 3 — заднее крыло; 4 — гениталии, вид снизу.

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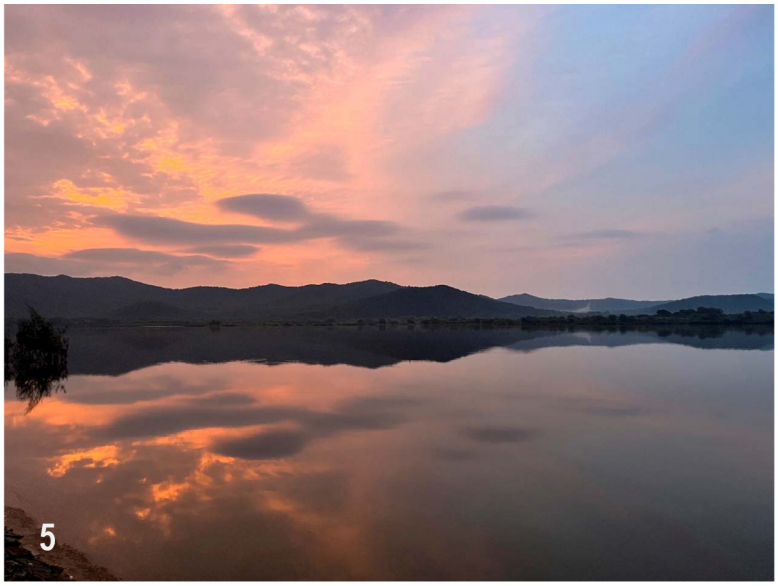

Figs 5–6. Distribution details of *Behningia tshernovae*. 5 — habitat of male in China; 6 — localities of species, yellow dots — previous information [after Tiunova, 1997 and Park et al., 2019], red dot — locality of Chinese materials.

Рис. 5–6. Детали распространения *Behningia tshernovae*. 5 — местообитание самца в Китае; 6 — местонахождения вида, жёлтые точки — предыдущая информация [по Tiunova, 1997 и Park et al., 2019], красная точка — местонахождение в Китае.

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