



A new species of *Amphinemura* (Plecoptera: Nemouridae) from the South of the Russian Far East

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Abstract

A new species of Plecoptera, *Amphinemura zwicki* sp. n. from the Primorsky Region south of the Russian Far East, is described and illustrated. Relationships with its close relatives are discussed.

Key words: Plecoptera, *Amphinemura*, Primorsky Region, Russia

Introduction

Amphinemura is the largest genus of the subfamily Amphinemurinae with at least 179 species recognized from the Oriental and Holarctic regions (DeWalt *et al.* 2013, Li *et al.* 2013, Ji *et al.* 2014, Vinçon *et al.* 2014). *Amphinemura* is represented by eight species in the Russian Far East (RFE). Two species, *A. borealis* (Morton, 1894) and *A. standfussi* Ris, 1902 are Transpalearctic; *A. steinmanni* Zwick, 1973, *A. verrucosa* Zwick, 1973, and *A. coreana* Zwick, 1973 occur on the East Asian mainland, whereas *A. decemseta* Okamoto, 1922, *A. dentifera* Zhiltzova, 1979, and *A. flavostigma* Okamoto, 1922 are East Asian insular species, known from the southern Kuril Islands, Sakhalin Island, and Japan.

This paper provides descriptions and illustrations of the adult stage of a new species of *Amphinemura*, *A. zwicki* sp. n., collected from a small foothill stream, the Tamga River that flows from the West Sikhote-Alin Range into the Ussuri River of the Amur River Basin.

Material and methods

Specimens were examined with the aid of a MBS-10 binocular and Labor microscope, the color illustrations were produced using digital cameras Nikon Coolpix 995 and Toup View 3.7. Abdomens were removed and soaked in 10% NaOH overnight and rinsed with distilled water. The morphological terminology follows that of Baumann (1975) and Zwick (2010).

The Holotype and all paratypes are deposited in the Institute of Biology and Soil Science, Far Eastern Branch, Russian Academy of Sciences, Vladivostok, Russia.

Results and discussion

Amphinemura zwicki Teslenko sp. n.

(Figs. 1–9)

Description. Adult habitus. Body length from tip of the head to the apex of abdomen, males, 4.2–6.0 mm; females 5.3–7.1 mm. Forewing length, males, 5.5–6.2 mm; females, 6.8–7.0 mm; wingspan, males, 11.8–13.1 mm; females 11.5–15.5 mm.

lingulata. In the dorsal view, the epiproct of *A. zhoui* is quadrangular, with a truncate apex and very small bulbous anterolateral projections; ventral sclerite with gently angulated ridge fringed by a row of tiny spines and erect subapical bar (Li, Yang 2008). The slender epiproct of *A. lingulata* has small triangular tongue-shaped anterolateral projections. The bases of the ventral sclerites do not project beyond the general contour of the epiproct; there are many black spines on the ventral sclerite keel-shaped ridge (Ji *et al.* 2014). The females of Chinese *Amphinemura* are unknown. The pattern of *A. zwicki* female subgenital plate has some similarity to those of the European *A. palmeni* (Koponen, 1917), but the vaginal structures are undescribed for this species (Boumans & Baumann 2012).

Material examined. Holotype male. Russian Far East, Primorsky Region, the Tamga River, right tributary of the Ussuri River, near Tamga Settlement, 45.34.30'N 133.37.00'E, 27-29.05.2014, sweeping, coll. Lyubaretz V. Paratypes: 12 males, 16 females, the same locality and data as holotype, coll. Lyubaretz V.; 2 females the same locality, 07.06.2013, coll. Tiunov I.

Etymology. The species is named in honor of the outstanding plecopterologist Peter Zwick, who made significant contributions to the knowledge of the stonefly fauna of the Russian Far East.

Distribution. The new species is known from the small foothill stream, the Tamga River that flows from the West Sikhote-Alin Range into the Ussuri River near the border with China.

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References

- Baumann, R.W. (1975) Revision of the stonefly family Nemouridae (Plecoptera): A study of the world fauna at the generic level. *Smithsonian Contributions to Zoology*, 211, 1–74.
<http://dx.doi.org/10.5479/si.00810282.211>
- Boumans, L. & Baumann, R.W. (2012) *Amphinemura palmeni* is a valid Holarctic stonefly species (Plecoptera: Nemouridae). *Zootaxa*, 3537, 59–75.
- DeWalt, R.E., Maehr, M.D., Neu-Becker, U. & Stueber, G. (2013) *Plecoptera Species File Online*. Version 5.0/5.0. Available from: <http://plecoptera.speciesfile.org/> (accessed 1 November 2014)
- Ji, X.-Y., Du, Y.-Z. & Wang, Z.-J. (2014) Two new species of the stonefly genus *Amphinemura* (Insecta, Plecoptera, Nemouridae) from China. *Zookeys*, 404, 23–30.
<http://dx.doi.org/10.3897/zookeys.404.7067>
- Li, W.-H. & Yang, D. (2008b) New species of Nemouridae (Plecoptera) from China. *Aquatic Insects*, 30, 205–221.
<http://dx.doi.org/10.1080/01650420802334038>
- Li, W.-H., Muranyi, D., Pan, J. & Yang, D. (2013) New and little known species of Nemouridae (Plecoptera) from Inner Mongolia of China. *Zootaxa*, 3746 (3), 473–480.
<http://dx.doi.org/10.11646/zootaxa.3746.3.6>
- Vinçon, G., El Alami, M. & Errochdi, S. (2014) Contribution to the knowledge of the Moroccan High and Middle Atlas stoneflies (Plecoptera, Insecta). *Illiesia*, 10 (3), 17–31.
- Zwick, P. (2010) New species and new records of Plecoptera from Korea and the Russian Far East. *Illiesia*, 6 (09), 75–97.