

A new record of potential pest of elms, *Tautoneura polymitusa* Oh et Jung, 2016 (Hemiptera: Auchenorrhyncha: Cicadellidae: Typhlocybinae), from the North-Western Caucasus of Russia

Новая находка потенциального вредителя вязов *Tautoneura polymitusa* Oh et Jung, 2016 (Hemiptera: Auchenorrhyncha: Cicadellidae: Typhlocybinae) на Северо-Западном Кавказе России

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Ключевые слова: Erythroneurini, Краснодарский край, цикадовые, новая находка, вредитель вязов, инвазия.

Abstract. *Tautoneura polymitusa* Oh et Jung, 2016, an East-Asian leafhopper of the tribe Erythroneurini feeding on elms and recently recorded as alien species in Europe, is documented for the first time in the North-West Caucasus (Krasnodar) of Russia. The specimens were collected in urban green spaces of Krasnodar city in 2024 and 2025 years. The high number of specimens and significant damage to elm leaves indicate the presence of a resident population and potential phytosanitary risk of this species.

Резюме. *Tautoneura polymitusa* Oh et Jung, 2016, питающаяся на вязе, восточно-азиатская цикадка из трибы Erythroneurini, недавно зарегистрированная как чужеродный вид в Европе, впервые обнаружена на Северо-Западном Кавказе (г. Краснодар) в России. Насекомые были собраны в городской зелёной зоне Краснодара в 2024 и 2025 годах. Высокая численность собранных особей, а также существенное повреждение листьев деревьев указывает на сформированную локальную популяцию, а также потенциальную фитосанитарную значимость этого вида.

Introduction

Tautoneura polymitusa Oh et Jung, 2016 was recently described from East Asia [Oh et al., 2016]. However, the specimens of this species were already observed in Central Europe (Budapest and neighbourhoods) as early as 2012, indicating that its populations were established there prior to the species' formal description.

From its initial discovery, *T. polymitusa* was presumed to be alien to the European fauna. Although the species was recorded in Europe before its formal description from East Asia, its Asian origin is certain, as no other species of the genus *Tautoneura* are native to Europe [Anufriev, Emeljanov 1988; Tóth et al., 2017]. Since 2018, the invader has been detected in new regions in all directions from the location of its first detection except for the north: the western and central Balkans, the Donbas and Lower Don regions, [Seljak, 2018; Gubin et al., 2020; Kosovac et al., 2020]. By 2021, it became clear that the insect had already established a secondary range in the eastern Carpathian region [Gargalik, 2022]. At the same time, observations using online databases revealed this species also in North America (Missouri Valley), a finding that requires additional verification by taxonomists and, if confirmed, would indicate the high invasive potential of *T. polymitusa* and its ability to spread rapidly under the influence of human activities [Kittelberger et al., 2021].

Here we document a further expansion of the species' range with the first record of *T. polymitusa* from the North-West Caucasus (Krasnodarskii Krai of Russia), where it was collected from an urban experimental vineyard during the monitoring program [Orlov et al., 2025].

Material and methods

The specimens were collected using yellow sticky traps placed under elm trees (*Ulmus* sp.) in urban green spaces of Krasnodar city, in 2024 and 2025 years.

The material listed below is from the collection of the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia — ZIN, and O.V. Orlov's collection, Krasnodar, Russia — OVO.

The present work is registered in ZooBank (www.zoobank.org) under urn:lsid:zoobank.org:pub:83F59FA4-2A7D-49B5-BE7B-6DAB841BB8FA.

Results and discussion

Cicadellidae Latreille, 1825

Thyrocyclyinae Kirschbaum, 1868

Erythroneurini Young, 1952

Tautoneura polymitusa Oh et Jung, 2016

Figs 1, 2–3.

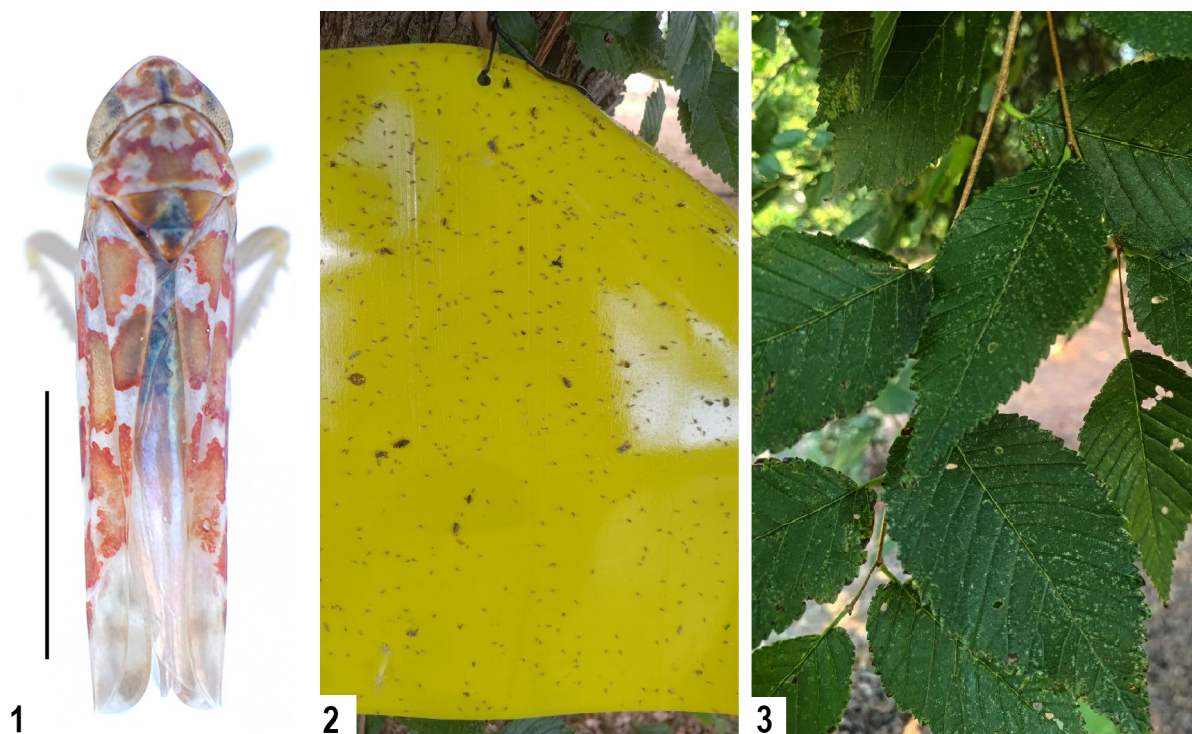
Material. Russia, *Krasnodarskii Krai*, *Krasnodar*: 2♂♂, 1♀ — 45.06079° N, 39.01315° E, 25 × 30 cm yellow sticky trap in experimental vineyard, VIII.2024, O.V. Orlov leg. (1♂ ZIN), (1♂, 1♀ OVO), 1♂ — X.2024, O.V. Orlov leg. (OVO); 4♀♀, 8♂♂ — 45.05971° N, 39.01430° E, sweeping by the entomological net on an *Ulmus* sp., 5.VIII.2025, O.V. Orlov leg. (OVO), 20♀♀, 16♂♂ — 11.IX.2025, O.V. Orlov leg. (OVO); 1♀, 1♂ — 45.07434° N, 38.91803° E, sweeping by the entomological net on an *Ulmus* sp., 10.IX.2025, O.V. Orlov leg. (OVO); 1♀, 2♂♂ — 45.07223° N, 38.96536° E, sweeping by the entomological net on an *Ulmus* sp., 9.IX.2025, O. V. Orlov leg. (OVO).

We detected the infestation source after conducting a targeted search in nearby green spaces and then across

the city of Krasnodar. The successful establishment of abundant populations of *Tautoneura polymitusa* Oh et Jung, 2016 (Fig. 1) on host trees (*Ulmus* sp.) demonstrates the invader's rapid adaptation and highlights its significant phytosanitary threat to the region. The high infestation pressure was confirmed by yellow sticky traps, with up to several hundred individuals (616 specimens, Fig. 2) caught per trap within a 24-hour period. The warm microclimate of southern exposures is suspected to facilitate the development of these dense populations. We also document, for the first time, the presence of severe and visible symptoms of leaf damage (Fig. 3). These symptoms were not observed in previous studies where the insect populations were found sporadically. Severe stippled chlorosis associated with leaf punctures may also increase the host's susceptibility to various diseases. This finding, along with the presence and spread of other new invasive pests [Gubin et al., 2020], is of significant importance for the health and appearance of these forest and park plant species. Our observations also confirm the development and spread of *T. polymitusa* in urban and suburban green spaces, as previously suggested by other authors.

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Figs 1–3. *Tautoneura polymitusa* morphology and results of infestation. 1 — external appearance of adult female; 2 — yellow sticky trap with caught insects (tiny dots) after 24 h exposure beneath *Ulmus* sp.; 3 — stippled of *Ulmus* sp. leaves as a result of insect feeding. Scale bar 1 mm.

Рис. 1–3. Морфология *Tautoneura polymitusa* и степень инвазии. 1 — внешний вид взрослой самки; 2 — жёлтая клесящая ловушка с уловленными насекомыми (мельчайшие особи) после 24-часовой экспозиции под *Ulmus* sp.; 3 — точечный хлороз листьев *Ulmus* sp. как результат питания насекомых. Масштаб 1 мм.

References

- Anufriev G.A., Emeljanov A.F. 1988. [Suborder Cicadinea (Auchenorrhyncha): Lehr P.A. (Ed.) // *Opredelitel' nasekomykh Dal'nego Vostoka SSSR*. Leningrad: Nauka. Vol.2. P.12–495. [In Russian].
- Gargalik S. 2022. The cicada *Tautoneura polymitusa* Oh & Jung, 2016 (Hemiptera: Cicadellidae) — new adventive species for the fauna of the Republic of Moldova // *Bulletin of the Academy of Sciences of Moldova Life Sciences*. Vol.2. No.346. P.54–57. <https://doi.org/10.52388/1857-064X.2022.2.06>
- Gubin A., Martynov V., Nikulina T. 2020. *Tautoneura polymitusa* Oh & Jung, 2016 (Hemiptera: Auchenorrhyncha: Cicadellidae): a new alien leafhopper species in the fauna of Eastern Europe // *Russian Journal of Biological Invasions*. Vol.11. P.12–16. <https://doi.org/10.1134/S2075111720040037>
- Kittelberger K., Hendrix S., Sekercioglu C. 2021. The value of citizen science in increasing our knowledge of under-sampled biodiversity: an overview of public documentation of Auchenorrhyncha and the hoppers of North Carolina // *Frontiers in Environmental Science*. Vol.9. P.1–15. <https://doi.org/10.3389/fenvs.2021.710396>
- Kosovac A., Šćiban M., Pančić I., Tóth M., Ronkay L., Orosz A. 2020. Revealing the presence of the East Asian leafhopper *Tautoneura polymitusa* (Hemiptera: Auchenorrhyncha: Cicadellidae: Typhlocybinae) in Serbia through DNA barcoding // *Acta Entomologica Serbica*. Vol.25. No.1. P.83–86. <https://doi.org/10.5281/zenodo.3878684>
- Oh S., Pham T., Jung S. 2016. Taxonomic review of the genus *Tautoneura* Anufriev (Hemiptera: Auchenorrhyncha: Cicadellidae: Typhlocybinae) from Korea, with description of one new species // *Zootaxa*. Vol.4169. No.1. P.194. <https://doi.org/10.11646/zootaxa.4169.1.12>
- Orlov O.V., Yurchenko E.G., Ilnitskaya E.T., Kozina T.D., Makarkina M.V. 2025. Contribution to the knowledge of Auchenorrhyncha (Hemiptera) fauna in the vineyards of Krasnodarregion, Russian Federation // *Agrarian science*. Vol.5. P.95–105. [In Russian]. <https://doi.org/10.32634/0869-8155-2025-394-05-95-105>
- Seljak G. 2018. Notable new findings of Auchenorrhyncha (Hemiptera) in Slovenia // *Acta Entomologica Slovenica*. Vol.26. No.2. P.181–194.
- Tóth M., Oroz A., Rédei D. 2017. Another alien on the horizon? First European record of *Tautoneura polymitusa*, an East Asian leafhopper (Hemiptera: Auchenorrhyncha: Cicadellidae) // *Zootaxa*. Vol.4311. No.1. P.137. <https://doi.org/10.11646/zootaxa.4311.2.10>

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