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Articles

Asciodema obsoleta (Hemiptera: Miridae): new record for Uzbekistan

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European plant bug *Asciodema obsoleta* (Fieber, 1864) was the first to be reported; to date, no records have been published. In our recent fieldwork, we extended the recorded distribution of true bug species and provided the first Uzbekistan record: in the Fergana, Namangan, and Khorezm regions. For this species, collection data in the Khorezm, Namangan, and Fergana regions and information about distribution in Uzbekistan were compared with old literature and online base dates. These species were recorded in 2023 from different places in the territory of Uzbekistan. Until now, reliable information on the zoogeography of *A. obsoleta* species in Uzbekistan's south and north-western regions has not been published. The composition of species of true bugs, diversity, and the proportion of endemism vary greatly across the country's zoogeographic regions in these three regions.

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Keywords

Hemiptera, Miridae, *Asciodema obsoleta*, Uzbekistan, Khorezm, Namangan, Fergana, distribution, host plants

Introduction

The literature on the fauna of terrestrial true bugs (Bundy, McPherson 2018; Chandra, Kushwaha 2013) in different habitats of the world (Schuh, Weirauch 2020; Vinokurov et al. 2015; Vinokurov et al. 2010; Animal World of Uzbekistan 2023). In the territory of the north and south parts of Uzbekistan which belongs to 150 species in 89 genera and 2 infraorders, these species were found between 2003 and 2022 (Gandjaeva et al. 2021; Gandjaeva et al. 2022b; Gandjaeva et al. 2020; Iskandarov et al. 2022; Yusupova et al. 2022).

In the literature, the first information about this species was recorded in 1865 in British Hemiptera (10), and it has been reported that *Asciodema obsolete* is a native species in London. Further, this species has expanded its distribution dramatically to include the USA.

Biology. *Asciodema obsoleta* species winters with egg-laying sites almost incompatible. Release of eggs consecutively from March (sometimes to April). in mid-June; adults first appear from mid-May to mid-July, and although all species can found on the broom at the same time, their periods the highest abundance is different; and that's all omnivorous animals that feed on their host and Arthropods such as aphids and psyllids (Waloff and Southwood 1960, Dempster 1964, Waloff 1968).

All specie have been advanced, with more adults, few of which were teneral, and fewer late-instar nymphs. The presence of fifth instars and teneral adults on on the field on Fabaceae, another wildlife ecosystem with plant is legume, suggests that these plants can serve as a host plant. More field work is needed to determine whether the mirid can complete its development on Fabaceae and if this plant association persists (Weirauch, Schuh 2011).

This species was studied by Uhler (1893) and reported the new record in June 1965 in the United States of America and in May 1926 in Canada, but the researcher reported it with another synonym, *Brooksetta inconspicua* (Uhler, 1893) (https://www.gbif.org/species/2011438). The literature shows that this species was recorded in the 1950s and 1960s at Silwood Park, the rural campus of Imperial College London, England, by the researchers J.P. Dempster (1964), N. Waloff and T.R.E. Southwood (1960).

According to the literature, *A. obsoleta* is recorded in British Columbia and the USA (Wheeler, Henry 1992). However, as described by Waloff (1966), this species was shown to be *A. obsoleta*, the original North American species, and collected from British Columbia (Vancouver). In 2010–2011, A.G. Wheeler and E.R. Hoebeke collected *A. obsoleta* (Waloff 1966; Wheeler, Hoebeke 2011; Weirauch, Schuh 2011) during the work to refine the distribution of European Hemiptera in the Pacific Northwest (Wheeler, Lattin, 2008; Wheeler, Hoebeke 2012). In addition, *A. obsoleta* was found in France (Kerzhner, Matocq 1994; Poland (Gorczyca 2007); and Turkey (Matocq et al. 2014).

As we explored, all the dates about *A. obsoleta* were old information. Nowadays, Uzbekistan entomologists in the Khorezm and Fergana regions have recorded the European bug *A. obsoleta* for the first time, and until today, observation of this species has not been detected and reported (Gandjaeva et al. 2023; Gandjaeva et al. 2022a).

The collection of *A. obsoleta* has been compared with the old data on the geographic distribution of these species from the Catalogue "Heteroptera of the Palearctic," Volumes I–VI, published by the Netherlands Entomological Society, Amsterdam (NES) (1995–2013) (https://catpalhet.linnaeus.naturalis.nl) to describe the analysis of the zoogeographic areas of terrestrial true bugs (Aukema 2013). This online database contains all of the information available about heteropterans worldwide. Additional information about newly studied species is currently being added. Therefore, this research is the first to find this European plant bug species in the territory of the North-West and South-East parts of Uzbekistan.

Materials and methods

Study area: Field work was conducted between 1st decade and 3rd decade in July 2023 at several sites in agricultural lands and in the wildlife ecosystem in north and south part of Uzbekistan.

Sampling: We collected *A. obsoleta* in July 2023 during efforts to update the distributions of Heteroptera of agrocenoses of crop plants, exactly the family Fabaceae. The heteropteran was collected into small plastic dishes. The plant's branches were beaten over a shallow net to collect the species. In June, *A. obsoleta* dominated the plant bug fauna of *Cytisus scoparius* (L.) Link in Khorezm and Namangan regions. In addition, in Fergana regions, it has also been recorded, but it was collected on a light net at night.

The species identified in the laboratory is *A. obsoleta*. All collections presented below were made by the authors, and the host plant for this species was *C. scoparius*. The species were at the stage of Nymphs when they were recorded at the observation time. Nowadays, all collection materials for *A. obsoleta* are deposited in the Entomological Collection of the Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan.

Result

***Asciodema obsoleta* (Fieber, 1864)**

Material examined. Uzbekistan: Namangan, Fergana and Khorezm in the south and north parts of Uzbekistan.

In our opinion, crop fields and parks needed additional fieldwork because it would probably show that the true bugs are established farther north and south of Uzbekistan. Collections of *A. obsoleta* were made in these three areas for the first time, and this species is the first record in Uzbekistan.

The species was found in Chadak village, which is located in the Pop district of Namangan region (41°05'04"N 70°32'27"E); in Urgench city, Khorezm region (41°22'0"N 61°0'0"E) and in Fergana city (40°28'38.6"N 70°45'50.1"E). The collection of insects were found in July (2nd and 3rd decades) (Fig. 1).

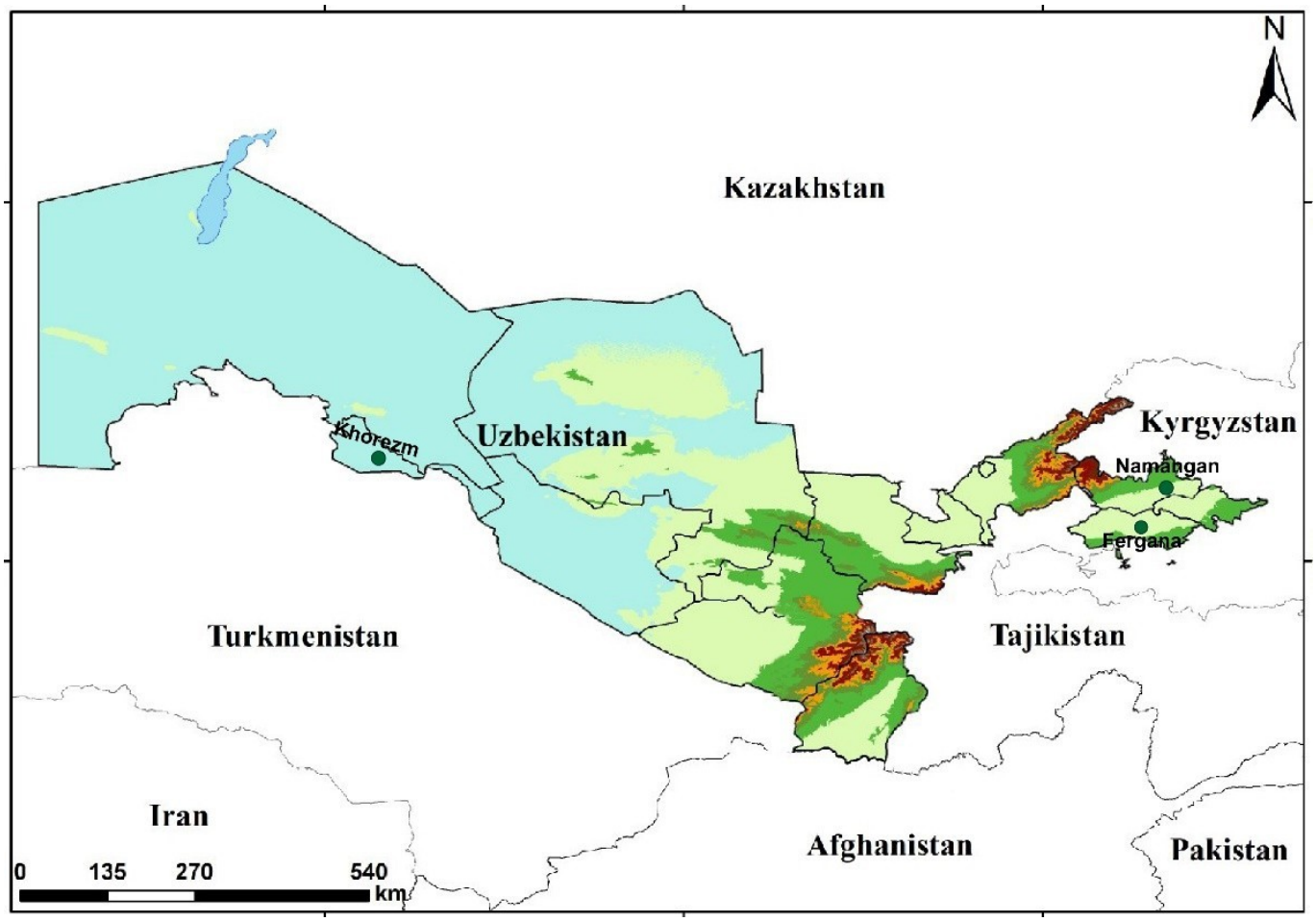

Figure 1. *Areas where Asciodema obsolete (Fieber, 1864) species have been collected.*

Firstly, we collected five specimens of this species: Nymphs: 3♂♂, 2♀♀ in the Namangan region in the wildlife ecosystem of a fauna mountain hut in the daytime on 18 July 2023, and secondly, Nymphs: 2♀♀ on 24 July 2023 in Urgench city on the field on Fabaceae. On July 29, 2023, the researcher collected two specimens of this species: 1♂♂, 1♀♀ in Fergana city, when the researcher used a light net for collecting insects (Fig. 2). All collected specimens belong to adults (nymphs) in these places during the year.

Distribution. Europe: Belgium, Bulgaria, Denmark, France, Great Britain, Germany, Ireland, Italy, Luxembourg, Macedonia, Netherlands, Poland, Portugal, Romania, Serbia, Spain, Sweden!, Switzerland. North Africa: Morocco. Extralimital: North America, introduced (Canada, USA) (https://catpalhet.linnaeus.naturalis.nl) and Uzbekistan (new record) (Fig. 1).

Diagnosis. A very pale greenish bug covered densely in white hairs on the upper surface, with sparse dark hairs also present. There is the dark tibial spines, which do not arise from black spots, together with the pale antennae and unspotted femora (Fig. 2).

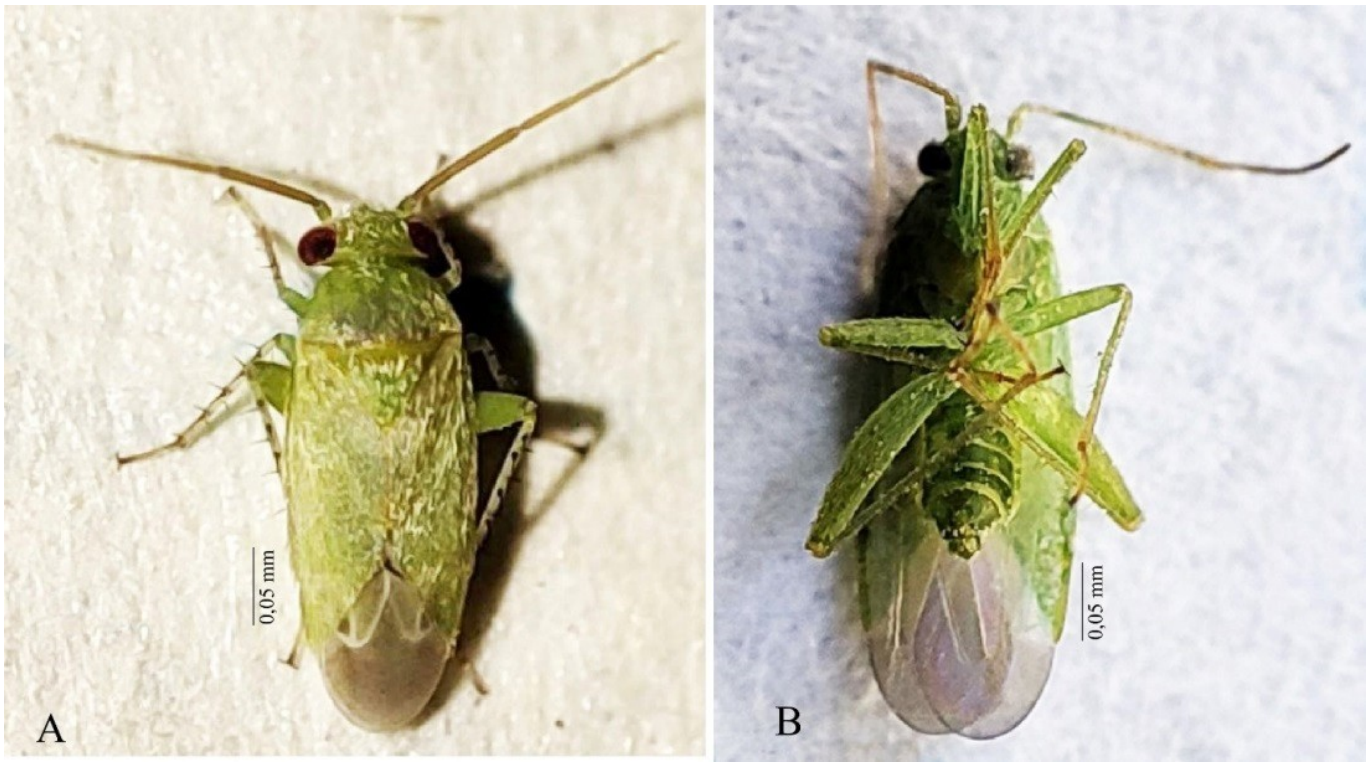

Figure 2. *Asciodema obsoleta (Fieber, 1864): A – dorsal view; B – ventral view.*

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