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First records of *Ziczacella heptapotamica* (Kusnezov, 1928) and *Asymmetrasca decedens* (Paoli, 1932) from Hungary (Hemiptera: Clypeorrhyncha: Cicadellidae)

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Abstract – *Ziczacella heptapotamica* (Kusnezov, 1928) and *Asymmetrasca decedens* (Paoli, 1932) (Hemiptera: Clypeorrhyncha: Cicadellidae) are reported from Hungary for the first time.

Keywords – pests, distribution, faunistics, new records, polyphagous species

INTRODUCTION

The last checklist of the Hungarian Auchenorrhyncha fauna contained 540 species (Györffy *et al.* 2009). Several additional species were reported subsequently, partly as a result of targeted faunistical investigations and partly due to the spread of species that are non-native in Europe (e.g., Koczor *et al.* 2012, Korányi *et al.* 2018).

The genus *Ziczacella* Anufriev, 1970 (Cicadellidae: Typhlocybinae: Erythroneurini) includes six (Wang *et al.* 2023), while *Asymmetrasca* Dlabola, 1958 (Cicadellidae: Typhlocybinae: Empoascini) 16 valid species (Liu *et al.* 2014); both are distributed in the Palaearctic and the Oriental regions. No representatives of these two genera have been reported from Hungary so far.

Faunistic records and overwintering information for these two species are provided for the first time in this paper. Identifications were based on Vilbaste (1968), Dworakowska (1981) and Hossain & Kwon (2019) for *Ziczacella heptapotamica*, and Ribaut (1936), Al-Asady (2002), Coutinho *et al.* (2015) and Nabas & Bader (2020) for *Asymmetrasca decedens*. Specimens were examined using a Leica MZ 95 stereomicroscope. Photographs were taken using

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a Raynox Super Macro Conversion Lens DCR-250 adapter set attached to a Nikon D7200 digital camera. All voucher specimens are deposited in the Hemiptera Collection of the Hungarian Natural History Museum, Budapest (HNHM).

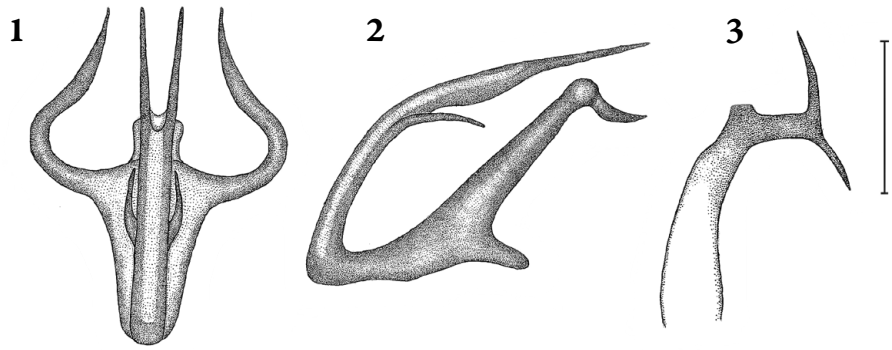
RESULTS

Ziczacella heptapotamica (Kusnezov, 1928) (Figs 1–5)

Material examined – Hungary: Budapest, Soroksár Botanical Garden, 9.II.2024, leg. B. Schlitt & Á. Székely (one male).

Remarks – First record for Hungary, representing the third record of the species in European countries. The single examined specimen was swept from evergreen foliages of *Thuja occidentalis* L. (Cupressaceae) and *Taxus baccata* L. (Taxaceae).

Distribution – It occurs mainly in Middle and East Asia; it has been reported from Kazakhstan (Mitjaev 1963), China (Shaanxi province) (Ross 1965, Liu *et al.* 2014), Russia (Vilbaste 1968), Japan (Mitjaev 1968), and Kyrgyzstan (Nast 1972). The European distribution of the species has been restricted to the European part of Russia (Vilbaste 1968) and to the Ukraine (Logvinenko 1984). The species has recently been reported from Slovenia (Seljak 2023). The current Hungarian record indicates that it may have a wider distribution in Europe.



Figs 1–3. Male genitalia of *Ziczacella heptapotamica* (Kusnezov, 1928), 1 = aedeagus (dorsal view), 2 = aedeagus (lateral view), 3 = style, scale bar = 300 μm (line drawings by András Orosz)

Life cycle – The main host plants of the species are *Humulus lupulus* L. and *Humulus japonicus* Siebold & Zucc. (both Cannabaceae), but it can also be found on *Rubus* sp. (Rosaceae), *Ulmus* sp. (Ulmaceae) and *Urtica* sp. (Urticaceae) (Mitjaev 1968, Anufriev 1970). According to Anufriev & Emeljanov (1988) it occurs on the undergrowth of forests. Investigations in Hungary revealed that the species overwinters as an adult and can use evergreens as shelter plants.

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Figs 4–5. Adult male of *Ziczacella heptapotamica* (Kusnezov, 1928), 4 = dorsal view, 5 = lateral view (photos by Bence Péter Schlitt)

Asymmetrasca decedens (Paoli, 1932)
(Fig. 6)

Material examined – Hungary: Budapest, Soroksár Botanical Garden, 9.II.2024, leg. B. Schlitt & Á. Székely (one male).

Remarks – First record for Hungary. Swept from evergreen foliages of *Thuja occidentalis* L. (Cupressaceae) and *Taxus baccata* L. (Taxaceae).

Distribution – *Asymmetrasca decedens* is supposed to be native to the Mediterranean region, however, it is now widely distributed across the Palaeartic region, including several Middle Eastern and Eastern Asian countries (Freitas & Augin-Pombo 2006). It has been reported from France (Ribaut 1936) North Korea (Dworakowska 1970), Italy (Servadei 1971), Pakistan (Dlabola 1971), Greece (Drosopoulos 1980), China (Chou & Ma 1981), India (Khan & Nighat 1990), Spain (Alvarado *et al.* 1994), Turkey (Baspinar 1994), Israel (Nestel & Klein 1997), Slovenia (Holzinger & Seljak 2001), Iran (Haghighian & Sadeghi 2001), Switzerland (Guenthart & Muehlethaler 2002), Portugal (mainland and Madeira Island) (Freitas & Aguin-Pombo 2004, Coutinho 2015), Lebanon (Dakhil *et al.* 2011), and Tunisia (Chaieb *et al.* 2011). Liu *et al.* (2014) listed it from Russia, Egypt, Cyprus, Iraq and Palestine. Freitas & Augin-Pombo (2006) claimed that the most likely distribution seems to be between the parallels 40° and 50° from the Iberian Peninsula to China.

Fig 6. Adult male of *Asymmetrasca decedens* (Paoli, 1932) (photo by Anna Ágnes Somogyi)

Life cycle – This species is polyphagous, feeding on various herbaceous plants, trees and shrubs. Plant preference of the species was examined by Pombo & Freitas (2006). In case of favourable conditions it may migrate to agricultural plantations and orchards (Coutinho *et al.* 2015). The trophic activity of adults and nymphs might injure the leaves, affecting the development of the plants. The species was reported as a vector of the *Candidatus* "Phytoplasma phoenicium", associated with the lethal disease of several agriculturally important stone-fruits, e.g. peach, nectarine, and almond, named Almond Witches'-Broom Disease (AlmWB) (Abou-Jawdah *et al.* 2014, Coutinho 2015). Investigations of Pastore e*t al.* (2004) showed that it is a potential vector of the 16SrX-B phytoplasma subgroup, associated with the disease called European Stone Fruit Yellows (ESFY) on peach. Therefore, Hungarian farmers and researchers should be aware of the species and further investigations are needed about the distribution and possible phytosanitary risks. Investigations in Hungary revealed that the species overwinters as an adult and can use evergreens as shelter plants.

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