

The Rare Species *Vilpianus galii* (Wolff, 1802) in Türkiye (Hemiptera: Pentatomidae) and Its New Associated Plant: *Hypericum triquetrifolium* Turra. (Hypericaceae)

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ABSTRACT: *Vilpianus galii* (Wolff, 1802) is a rare species of Pentatomidae with a fragmented distribution extending across the Mediterranean–Asian belt, including several regions of Türkiye. While reported as polyphagous, its confirmed host plants have been primarily limited to *Galium verum* (Rubiaceae). In this study, *Hypericum triquetrifolium* (Hypericaceae) is recorded for the first time as a plant associated with *V. galii*, based on specimens collected from Elazığ Province, Türkiye. This record also constitutes the second faunistic report of the species from Elazığ. No other Pentatomidae species have been previously documented feeding on or using *H. triquetrifolium*, and the only known phytophagous insect associated with this plant is the leaf-mining moth *Ectoedemia deschkai* (Nepticulidae). The observation of *V. galii* on this plant expands the list of known plant associations and provides new insights into the species' feeding ecology. Given the rarity of the species in Türkiye and the limited documentation of insect–plant associations involving *H. triquetrifolium*, this finding underscores the importance of continued faunistic surveys and studies of insect–plant relationships in the Mediterranean region.

KEYWORDS: *Vilpianus galii*, Pentatomidae, *Hypericum triquetrifolium*, new associated plant, Türkiye, distribution, faunistics.

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INTRODUCTION

Vilpianus galii (Wolff, 1802) is a rare species within the family Pentatomidae, exhibiting a fragmented but wide distribution across the Mediterranean Asian belt. Verified records exist from Syria, Ukraine, Cyprus, Armenia, southern Russia, Türkiye, Azerbaijan, Iran, and several Central Asian countries, including Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan, and Uzbekistan, as well as Algeria in North Africa. In Europe, the species has been reported from Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, European Türkiye, France, Greece, Hungary, Italy, North Macedonia, Moldova, Portugal, Romania, Serbia, Slovakia, Slovenia, and Spain (Pericart, 2010; Iskenderov et al., 2022; Aukema, 2018).

Despite this broad geographic range, the species is rarely encountered in field collections, suggesting that it may occupy specialized ecological niches or maintain specific plant associations. In contrast, it is locally common in xerothermic habitats in the Pannonian lowlands of Slovakia and the Czech Republic, where it appears to be expanding its range northward and westward (Stehlík & Vavřínová, 1998).

Although *V. galii* has been reported as polyphagous, confirmed plant associations remain limited. Most notably, both nymphs and adults have been observed feeding on *Galium verum* (Rubiaceae), where the species is believed to spend a significant portion of its life cycle (Kıyak & Ün, 1999; Limonta et al., 2004; Wachmann et al., 2004; Hemala, 2021). This suggests that *G. verum* may serve as a primary or preferred plant, supporting development and reproduction. Other, less verified associations have been reported with species of *Salsola* (Chenopodiaceae), *Asperula* (Rubiaceae), and *Mentha* (Lamiaceae), although these require further validation through field studies or rearing experiments (Kerzhner & Jaczewski, 1964; Kis, 1984; Gözüaçık et al., 2011).

In the present study, a new plant association is reported based on specimens collected in Elazığ Province, Türkiye: *H. triquetrifolium* (Hypericaceae), a Mediterranean plant known for its medicinal and phytochemical properties. This species has not previously been associated with any Pentatomidae, and its insect associations remain poorly documented. To date, the only phytophagous insect reported on *H. triquetrifolium* is the leaf-mining moth *Ectoedemia deschkai* (Nepticulidae) (Nieukerken, 1985). This new record thus contributes to the ecological understanding of *V. galii* and highlights the understudied nature of insect-plant interactions involving *H. triquetrifolium*.

MATERIAL AND METHODS

The studied material was collected by sweeping net and a hand aspirator over the *Hypericum triquetrifolium* Turra. plants at July 2025 from Elazığ/Sivrice/Hazar province. The collected samples were taken in insect killing jars and labelled (Figure 1).

***Vilpianus galii* (Wolff, 1802)** (Figure 2)

Material examined: Elazığ, Sivrice, Hazar village, Başkaynak village, 1♀, 1♂, 2 exc (Figure 1).

Distribution in Türkiye: Ankara (Kıyak & Ün, 1999; Kıyak & Akar, 2010), Diyarbakır (Ergani) (Gözüaçık et al., 2011), Edirne (Hoberlandt, 1955), Elazığ (Özgen & Dioli, 2018), Gaziantep, Kahramanmaraş (Lodos et al., 1987; Önder et al., 2006).

Remarks: New host record in Elazığ. Second faunistic record for Elazığ Province.



Figure 1. The Collection areas and *Hypericum triquetrifolium* Turra. Plants



Figure 2. Habitus of *Vilpianus galii* (Wolff, 1802)

DISCUSSION

This study presents the second faunistic record of *Vilpianus galii* from Elazığ Province, Türkiye, and documents a new plant association with *Hypericum triquetrifolium*. Previous records from Türkiye indicate the species' presence in Ankara, Diyarbakır (Ergani), Edirne, Elazığ, Gaziantep, and Kahramanmaraş, suggesting a scattered but wide distribution across diverse climatic and ecological regions.

The association with *H. triquetrifolium* is particularly noteworthy, as no Pentatomidae species have previously been reported from this plant. The only known phytophagous insect associated with *H. triquetrifolium* is the leaf-mining moth *Ectoedemia deschkai* (Nepticulidae), whose larvae develop within the leaf tissues (Nieukerken,

1985). Although Lodos et al. (1978) mentioned the presence of two Pentatomidae species *Bagrada stolidus* and *Eurydema rugulosa* on unspecified *Hypericum* species, no confirmed records exist for these insects feeding specifically on *H. triquetrifolium*. This highlights the novelty of the present observation.

While the specimens of *V. galii* were observed feeding on *H. triquetrifolium*, there is no evidence confirming successful larval development on this plant. Therefore, it should be classified as an associated plant rather than a host plant, in line with current best practices in Heteroptera ecology, where such terminological distinctions are crucial to avoid misinterpretation.

H. triquetrifolium, a Mediterranean native belonging to the family Hypericaceae, is well-known for its medicinal and phytochemical properties, including bioactive compounds with antimicrobial and anti-inflammatory effects. Despite its wide distribution and ecological significance, it remains largely undocumented in terms of insect associations.

From an ecological perspective, the presence of *V. galii* on *H. triquetrifolium* may reflect opportunistic feeding behavior, local plant availability, or a broader adaptive capacity in host selection. This finding suggests that the species may utilize plant taxa beyond those previously reported, particularly under suitable environmental conditions.

Overall, this observation expands our understanding of the feeding ecology and plant associations of *V. galii* and emphasizes the importance of continued field surveys and systematic documentation. Such efforts are essential for clarifying the biology, distribution, and potential specialization of rare Pentatomidae species in Mediterranean and adjacent ecosystems.

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