

Plant bugs (Hemiptera: Heteroptera: Miridae) new in Albania and Kosovo

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Abstract. This paper discusses five species of the family Miridae, recorded from Albania and Kosovo. *Closterotomus trivialis* (A. Costa, 1853), *Phytocoris (Phytocoris) tiliae tiliae* (Fabricius, 1777) and *Campyloneura virgula* (Herrich-Schaeffer, 1835) are new in Albania. *Closterotomus reuteri* (Horváth, 1882) and *Excentricus planicornis* (Herrich-Schaeffer, 1836) are new in Kosovo. Data on distribution and ecology are also provided about the mentioned species.

Key words: Hemiptera, Heteroptera, Miridae, Balkan Peninsula, Albania, Kosovo.

Introduction

The faunistic studies of Heteroptera from Albania began with a paper by Horváth (1916) in which 226 species were listed on material collected by Apfelbeck. A subsequent work (Csiki 1940) added another 30 species. After the Second World War, Mancini (1953) published a newly updated list after studying the Albanian material of the Vienna Museum and that collected by the Italian entomologists Felice Capra and Livio Tamanini in 1941. Mancini (op. cit.) added 131 species not yet known. In 1961, a scientific expedition was carried out by the "Deutsches Entomologisches Institut" (Josifov 1970), which added 64 species new for this country, bringing to a total of 505 taxa. Misja (1973) wrote a new checklist with many misidentifications.

In July 1993, the staff and collaborators of the Museum of Natural History of Morbegno (Italy) participated in a scientific and mountaineering expedition in the territory of the Republic of Albania (Dioli 1993). The collected specimens, over 500, were gradually studied as species new for that region. New photographic images on naturalistic and social forums were also recently reported by van der Heyden's several papers (Lupoli et al. 2020, 2021; van der Heyden 2017a, 2017b, 2017c, 2017d, 2017e, 2017f, 2018a, 2018b, 2018c, 2019; van der Heyden & Dioli 2019). Also, some ecological notes were presented (Halimi et al. 2010).

The history of studies of the Heteroptera from Kosovo is quite different due to the recent separation from Yugoslavia. The checklist of the former State was provided in two books (Protić 1998, 2001). Finally, a recent paper lists six species new for Kosovo (Baymak & Kiyak 2019).

The present contribution continues the study of the hemipterological fauna of this region, adding five species of Miridae; three are new for Albania and two for Kosovo.

Material and methods

The specimens were caught by sweep-netting the herbaceous vegetation by the first author or photographed by A. Golemaj (Albania) and B. Fetiu (Kosovo). They were identified by the first author with Wagner's books (1970/71) and compared with his collection and the collections of the Natural History Museum of Milan (Italy). Bibliographical research and assembling paper were made by the second author. The taxonomic status of the family follows Aukema & Rieger (1999). When not otherwise specified, general distribution follows the Catalogue of the Palaearctic Region (Aukema & Rieger 1999) and its supplement (Aukema et al. 2013).

Results and discussion

Campyloneura virgula (Herrich-Schaeffer, 1835)

Material examined. ALBANIA: Vuno env., Jala beach, VII.1993, 1 spec., leg. P.Dioli (Coll. Dioli) (Fig. 1).

Distribution. Europe: Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine. North Africa: Algeria, Azores, Tunisia. Asia: Armenia, Azerbaijan, Georgia, Israel (doubtful), Asian Turkey. Extralimital: North America (introduced) (Aukema & Rieger 1999; Aukema et al. 2013).

Remarks: This zoophytophagous and parthenogenetic species is new in Albania. Locally widespread, but uncommon; generally found on ash, linden, oak, alder, and beech. Nymphs are observed in June and July, adults from July onwards and in winter (Wagner 1970/71).



Fig. 1. *Campyloneura virgula* (photo: P. Dioli).

Closterotomus reuteri (Horváth, 1882)

Material examined. KOSOVO: Pristina, 2.V.2019, 1 spec., foto B. Fetiu (Fig. 2).

Distribution. Europe: Bulgaria, North Macedonia, Serbia. Asia: Asian Turkey (Aukema & Rieger 1999; Aukema et al. 2013).

Remarks: The species is new in the region of Kosovo and the second record in former Yugoslavia: Belgrade (Protić 1998). *Ligustrum vulgare* L. is the only known host plant (Wagner 1970/71).



Fig. 2. *Closterotomus reuteri* (photo: B. Fetiu).

Closterotomus trivialis (A. Costa, 1853)

Material examined. ALBANIA: Valona, Rruga David Selonica, (Lat: 40.459878 Lon: 19.486258), 9.V.2017, 1 f., foto A. Golemaj; ibidem, Rruga Beqir, (Lat: 40.456872 Lon: 19.502312), 8.VI.2017, 1 f., foto A. Golemaj; ibidem, Rruga Petro Marko, (Lat: 40.428317 Long: 19.493222), 27.IV.2019, 1 f., foto A. Golemaj.

Distribution. Europe: Bulgaria, Corsica, Crete, Croatia, France, Germany, Great Britain, Greece, Ireland, Italy, Malta, Montenegro, Netherlands, North Macedonia, Portugal, Serbia, Spain. North Africa: Algeria, Morocco, Tunisia. Asia: Cyprus, Turkey (Aukema & Rieger 1999; Aukema et al. 2013).

Remarks: The species is new in Albania. The coloring is highly variable (Figs. 3-4). The livery of *C. trivialis* partially differs in the two sexes and, above all, varies during the insect imaginal life; these variations consist in a progressive passage towards darker shades that become more accentuated in the male. This change is also

accompanied by a darker color of the corium which changes from yellowish to red (Wagner 1970/71).

It has been repeatedly reported on different plants (Barbagallo 1970): the olive tree (*Olea europea* L.), medical herb (*Medicago sativa* L.), peach tree (*Prunus persica* (L.), on citrus fruits (*Citrus* spp.) such as orange, mandarin, and clementine; only exceptionally on the lemon tree. Another arboreal fruit host plant is the apricot (*Prunus armeniaca* L.). This can also be found on *Pitosporum tobira* (Ait.) abundantly. According to this author, the herbaceous plant favored by the insect, especially during the preimaginal development, is nettle (*Urtica urens* L. and *U. membranacea* Poir. = *caudata* Vahl.); also, it has frequently been found on *Parietaria officinalis* L. and more rarely (although sometimes in a considerable number of adult specimens) on the following plants: *Calycotome spinosa* Lk., *Genista* sp., *Phaseolus vulgaris* L., *Ferula communis* L., *Brassica* spp., *Malva silvestris* L., *Chrysanthemum coronarium* L., *Hordeum murinum* L., *Bromus sterilis* L., *Papaver rhoas* L.



Fig. 3. *Closterotomus trivialis*, male (photo: A. Golemaj).



Fig. 4. *Closterotomus trivialis*, female (photo: A. Golemaj).

Excentricus planicornis (Herrich-Schaeffer, 1836)

Material examined. KOSOVO: Pristina, Rruga Fadil Hoxha, (Lat: 42.665523 Lon: 21.180704), 17.VI.2019, 1 spec., foto B. Fetiu (Figs. 5-6).

Distribution. Europe: Belarus, Bulgaria, Czech Republic, France, Germany, Italy, Russia (European part), Serbia, Slovakia, Spain, Switzerland, Ukraine. North Africa: Morocco. Asia: Armenia, Azerbaijan, China, Georgia, Iran, Kazakhstan, Mongolia, Russia (East and the Far East), Turkey (Aukema & Rieger 1999; Aukema et al. 2013).

Remarks: The species is new in the region of Kosovo. In Serbia, it was recorded only in two localities near Belgrade: Barajevo and Mala Mostanica (Protić 2004). The new record is the southernmost of its distribution area. The species lives on *Cytisus radiatus* Scop., but was also found on *Rosa* sp. The adults were found in July, wintering as eggs (Wagner 1970/1971).



Fig. 5. *Excentricus planicornis*, total habitus in dorsal view (photo: B. Fetiu).

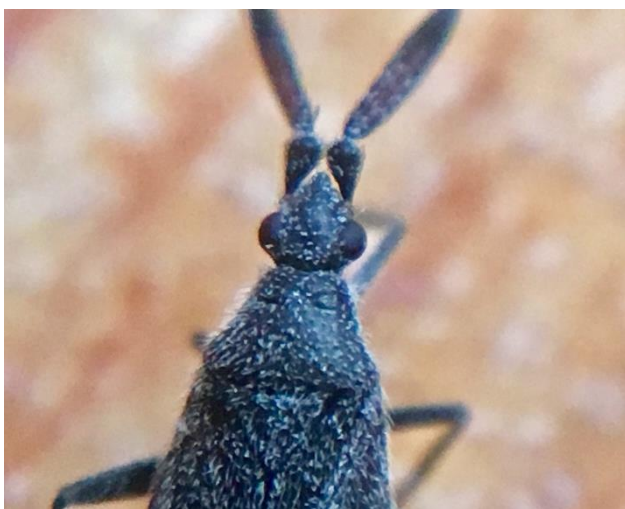


Fig. 6. *Excentricus planicornis*, anterior body part in dorsal view (photo: B. Fetiu).

Phytocoris (Phytocoris) tiliae tiliae (Fabricius, 1777)

Material examined. ALBANIA: Teth, m 900, VII.1993, 1 spec., leg. P.Dioli (Coll. Dioli) (Fig. 7).

Distribution. Europe: Andorra, Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Great Britain, Germany, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine. North Africa: Algeria, Morocco. Asia: Armenia, Azerbaijan, Georgia, Turkey. North America: introduced (Aukema & Rieger 1999; Aukema et al. 2013).

Remarks: This zoophytophagous species is new in Albania. It lives on several plants like *Tilia*, *Quercus*, *Sorbus*, and *Populus*. Adults are found from June to September, and the species overwinters as eggs (Wagner 1970/71).



Fig. 7. *Phytocoris (Phytocoris) tiliae tiliae* (photo: P. Dioli).

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