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The possible first record of *Rhynocoris punctiventris* (Herrich-Schäffer 1846) (Hemiptera, Heteroptera, Reduviidae) in Romania

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Abstract. Imagos and nymphs of the eastern Mediterranean Reduviid *Rhynocoris punctiventris* (Herrich-Schäffer 1846), apparently established, were observed and collected for the first time in Romania in June 2013 in two protected areas in the country's northwest.

Introduction

Rhynocoris (Rhynocoris) punctiventris (Herrich-Schäffer 1846) (Hemiptera, Heteroptera, Reduviidae, Harpactorinae) is one of the ten species of *Rhynocoris* in Europe. It is an eastern Mediterranean species and its previously known range includes the Balkan and Crimea Peninsulas, Russia, Cyprus, Syria, and Turkey, up to central Asia (Özsarak & Kiyak 2001, Yildirim et al. 2010). In Romania three *Rhynocoris* species are known, namely *R. annulatus* (Linnaeus 1758), the west-palaearctic *R. iracundus* (Poda 1761), and *R. niger* (Herrich-Schäffer 1842). There are no available records for the occurrence of *R. punctiventris* in Romania.

The other European species of the genus are *R. bipustulatus* (Fieber 1861) (in Greece), *R. cuspidatus* Ribaut 1921 (in France, Spain and Portugal), *R.*

erythropus (Linnaeus 1767) (in France, Spain, Portugal, Switzerland, Germany, Italy, and Croatia), *R. ibericus* Kolenati 1857 (in Greece), *R. lineaticornis* (Reuter 1895) (in Spain), and *R. rubricus* (Germar 1814) (in France, Switzerland, Italy, Austria, the Czech Republic, Slovakia, Slovenia, Croatia, Serbia, and Albania) (Aukema 2012).

The aim of the present paper was to document the possible first occurrence of *R. punctiventris* in Romania.

Material and methods

On June 5, 2013, while monitoring the fauna in the Pârâul Pețea natural reserve in Băile 1 Mai, northwestern Romania, dozens of imagos and nymphs of *R. punctiventris* were observed and photographed on *Urtica* and various shrubs on the stream shore, close to groups of Aphididae. A week later, on June 12, 2013, during the monitoring in the Natura 2000 site ROSCI0008 Betfia, 5 km southeast from the first reserve, four *R. punctiventris* imagos (two males and two females) were captured on grass at the foot of Șomleu Hill, then they were prepared and included in the museum's collection. The specimens were identified using the publications of Dioli (1990) and Putshkov (2002).

Results and discussion

Two forms of imagos were observed, both having red corium and white-and-black connexival spots. The blacker, mature and more abundant form has black dorsal side of head, black scutellum with whitish tip, red pronotum with lighter, almost whitish posterior lobes, red anterior part of pronotum with black border and median stripe, black membrane, and red femurs and tibiae (first two femurs with 1-2 black dots or small spots). The redder form (probably newly moulted individuals) is almost all red, except the white and black connexival spots, whitish membrane, black antennae and knees, brownish red scutellum, dorsal side of head and two dots on the anterior lobe of pronotum.

R. punctiventris differs from *R. iracundus* by its connexivum with black spots surrounded with a whitish halo and the lack of black stripes on the abdomen (Yildirim et al. 2010), it is distinguished from *R. iracundus* and *R. rubricus* by its lack of constant femoral black stripes, and it lacks the whitish longitudinal stripe on the scutellum which is characteristic for *R. erythropus* (Dioli 1990). *R. punctiventris* is also characterized by the whitish posterior border of pronotum, and by its reddish underside of the head, coxae, trochanters and considerable

parts of pectus and abdomen. The length with wings is usually 15.0—18.0 (males) and 17.0—20.0 (females) mm. (Putshkov 2002). The total lengths of the collected specimens are 9.5, 10 (males) and 11, 10.5 mm. (females), indicating suboptimal developmental conditions. *R. punctiventris* var. *dimidiatus* Dispons 1964 was described from Israel on morphological grounds (yellow anterior lobe with the exception of antennal tubercles, a small oval black mark on the clypeus) (Putshkov & Pluot-Sigwalt 2008). The observed imagos do not match the description of that variety, having almost entirely black heads, with red rostrums.



Fig. 1 - A newly moulted *Rhynocoris punctiventris* imago in the Pârâul Pețea natural reserve (photo O. Pascu).

The observed nymphs were fifth instars, since they have developed alary tubercles, but no sclerified plates on tergites are apparent, to allow a possible analogy with the description of *R. albopilosus* nymphs, although those plates were characteristic to each species (Kwadjo et al. 2012, Villiers 1948). The presence of many nymphs indicates reproduction of the species in the reserve.

Although the whitish posterior margin of the pronotum is a diagnostic character for *R. punctiventris*, its discontinuity (being present only on the posterior lobes of the pronotum) and the reddish underside of abdomen (a less reliable character) might make the identification of specimens doubtful, taking into account

the high intraspecific variability of *R. iracundus* and *R. punctiventris* (Putshkov, pers. comm.). Thus, further investigation is needed in the field to confirm the presence of the species.

As for historical data on the distribution of *R. punctiventris*, in the A. L. Montandon collection of Palearctic Heteroptera preserved in the „Grigore Antipa” National Museum of Natural History in Bucharest there are only five specimens, collected from Syria, „Amasia (Asie Mineure)”, Tokat (northern central Turkey), Istanbul, and „Sarepta (Asie Mineure)” (Sarafand, Lebanon) (Sienkiewicz 1964). More recently, *R. punctiventris* was collected in northwestern and central Greece (Günther 1990), and it is a frequent and widely distributed species in all regions of Turkey (Dursun 2011, Özşaraç & Kiyak 2001, Şerban 2010). In Iran it occurs in the northeast, center and southwest (provinces Razavi Khorasan, Esfahan and Fars) (Ghahari et al. 2012, Rahimi et al. 2010). Its occurrence in Ukraine seems restricted to the Crimea peninsula (see also the Hemiptera collection of the Siberian Zoological Museum in Novosibirsk, Russia, curators G. S. Zolotarenko and S. E. Tshenyshev).

Little is known on the biology of the species, while many aspects may be inferred by analogy with other *Rhynocoris* species, which are generalist predators. In Turkey, *R. punctiventris* occurs often on the ground, under low vegetation, on grasses, trees or shrubs, similar to the two present occurrences, and it preys on various insects (Hymenoptera, Hemiptera, Coleoptera) (Yildirim et al. 2010). Regarding a comparison with a hypothetical „phitophilia” (plant preference) of Reduviids (Bérenger 2005), on the account of the few data on the biology of *R. punctiventris* available by now it may be inferred that it stayed associated primarily and mainly with its preys. Furthermore, while usually the inflorescences of *Verbascum*, *Asphodelus*, *Diuriscia*, and others are used by *Rhynocoris* species as hunting grounds to prey on the insects visiting the flowers, a curious behavior of phytophagy was reported in Spain for *R. erythropus*, which pierced the closed flowers of *Verbascum* sp. searching for nectar in a way similar to other Harpactorinae (*Zelus*, *Repipita*, *Ricollia*) in tropical countries (Baena 2011), although that behavior may be an occasional way to get water during hot and dry summers.

Further studies on the biology of *R. punctiventris* are needed to assess whether such a behavior occurred in this species, too, or about its overwintering strategy, voltinism, possible impact on local insects, and other aspects (*R. erythropus* overwinters as nymphs in Spain) (Baena 2011). Its establishment in the Pârâul Pețea natural reserve and in its surroundings seems likely, while it is still unclear if these occurrences represented a northward range expansion of an oriental-mediterranean species due to climate warming or just a case of incomplete distribution data in central and eastern Europe.

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