

First observation of *Hesperus rufipennis* (GRAVENHORST, 1802) (Coleoptera: Staphylinidae) in non-typical habitat in Poland

Pierwsza obserwacja *Hesperus rufipennis* (GRAVENHORST, 1802) (Coleoptera: Staphylinidae)
w nietypowym środowisku w Polsce

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The West Palaearctic members of the rove beetles genus *Hesperus* FAUVEL, 1874 belong to typical saproxylobiontic forms, living mainly in tree trunk hollows of deciduous trees with decaying woody matter where larvae and adults prey on small invertebrates (STANIEC, PIETRYKOWSKA 2005, SCHILLHAMMER & al. 2007). Also *H. rufipennis* (GRAV.), widely distributed although rarely observed in Europe, belong to this ecological group. Not yet recorded from Great Britain and Scandinavia, but also from some Eastern and Southern European countries (i.e. Albania, Belarus, Greece, Spain) where it probably occurs as it has been recently discovered in Bulgaria and Portugal (SCHILLHAMMER & al. 2007, SILVA & al. 2006). Taking into consideration strict relationship of the species with veteran trees bearing hollows, it was acknowledged a relic of primeval forests in Middle Europe, although it can occur in non-forest habitats as well if there are suitable trees to colonise (ECKELT & al. 2018). Its role for the protection of endangered ecosystems is emphasized by including it in the red lists of animals in some European countries (Czech Republic, Germany, Italy) (BINOT & al. 1998, CARPANETO & al. 2015, FARKAČ & al. 2005). It was not put on the Red List of Threatened Animals in Poland, what seems inappropriate as the species is rare and strictly connected with disappearing microhabitats (PAWŁOWSKI & al. 2002).

During exploration of decaying plant debris (mainly remnants of vegetables and fruits) thrown into household compost container, a number of beetles belonging to several families (Hydrophilidae, Staphylinidae, Nitidulidae, Erotylidae) was observed.

Among specimens captured in the debris the male of *Hesperus rufipennis* (GRAV.) occurred:

– DA24 Kraków (Downtown, Piasek), 26 VIII 2020, 1♂, leg. author, in compost in garden; along with the above mentioned another rove beetle species of the genus *Philonthus* STEPH., connected with decomposing organic matter, were found: *Ph. politus* (L.) and *Ph. rectangulus* SHARP.

All over its range *Hesperus rufipennis* occurs rather rarely regarding its specific life habitat – it is considered as obligatory stenotopic saproxylic species inhabiting hollows of broadleaved trees, filled with damp moldy wood, often with accompanying ants of the genus *Lasius* FABR. Adults and larval instars are carnivorous, they attack other co-occurring small invertebrates, preferably insect larvae: breeding specimens were successfully fed with ant larvae. *H. rufipennis* is found mainly in forest and park areas (also in urban territories), and even in other biotopes on solitary trees (KOCH 1989, STANIEC 2004). In the previous literature, there is no information on observations of the species outside the typical environment of its development or its vicinity. The presence of imago of this species in decomposing plant residues outside the proper environment of life was probably due to the abundance and easy availability of food, which may have been numerous saprophagic insects (e.g. fly larvae) and other invertebrates (e.g. isopodes). Based on the observations made so far, a full development cycle in this atypical environment is unlikely, while the appropriate site of development was presumably located in an old monastery garden directly adjacent to the site of the find, separated by a high wall.

At a distance of several tens of meters there grows a dozen individuals of old deciduous trees, in which there may also be hollows, where a full development of *H. rufipennis* takes place. These observations indicate the possibility of penetration of different environments in search of food by imagines, likely attracted by odour of fermenting fruits. Similar behaviour was observed in another rove beetle *Quedius cruentus* (OLIV.), which is, however, a eurytopic species that can undergo development in both rotten wood and the prisms of compost or manure (KOCH 1989, STANIEC & PIETRYKOWSKA 2005).

The place on which the observation was made is at the same time a new locality of *H. rufipennis* in Poland. It has so far been reported from 19 Polish localities (Fig.), seven of which have historical significance – the information on the occurrence date back to the 1920s and earlier, and have not been

confirmed by new material. Since the middle of the 20th century, this species has been found in a further 12 localities, with no precise data for the Kraków-Częstochowa Highland (BURAKOWSKI & al. 1980, KUBISZ & MELKE 1994, STANIEC 2003, 2006). The presence of the species in forest and park areas within the boundaries of large and medium-sized cities, where there are almost a third of Polish records (Kalisz, Katowice, Kraków, Lublin, Warszawa, Wrocław) draws attention, which corresponds to observations of other relict saproxylic species of beetles (e.g. *Lucanus cervus* L., *Osmoderma* spp., *Cucujus cinnaberinus* (SCOP.), *Cerambyx cerdo* L.) in urban areas (HORÁK 2018). Another observation of *H. rufipennis* in urban area confirms positive role of urban greenery, especially with growing veteran trees, for conservation of some relict saproxylic beetles.

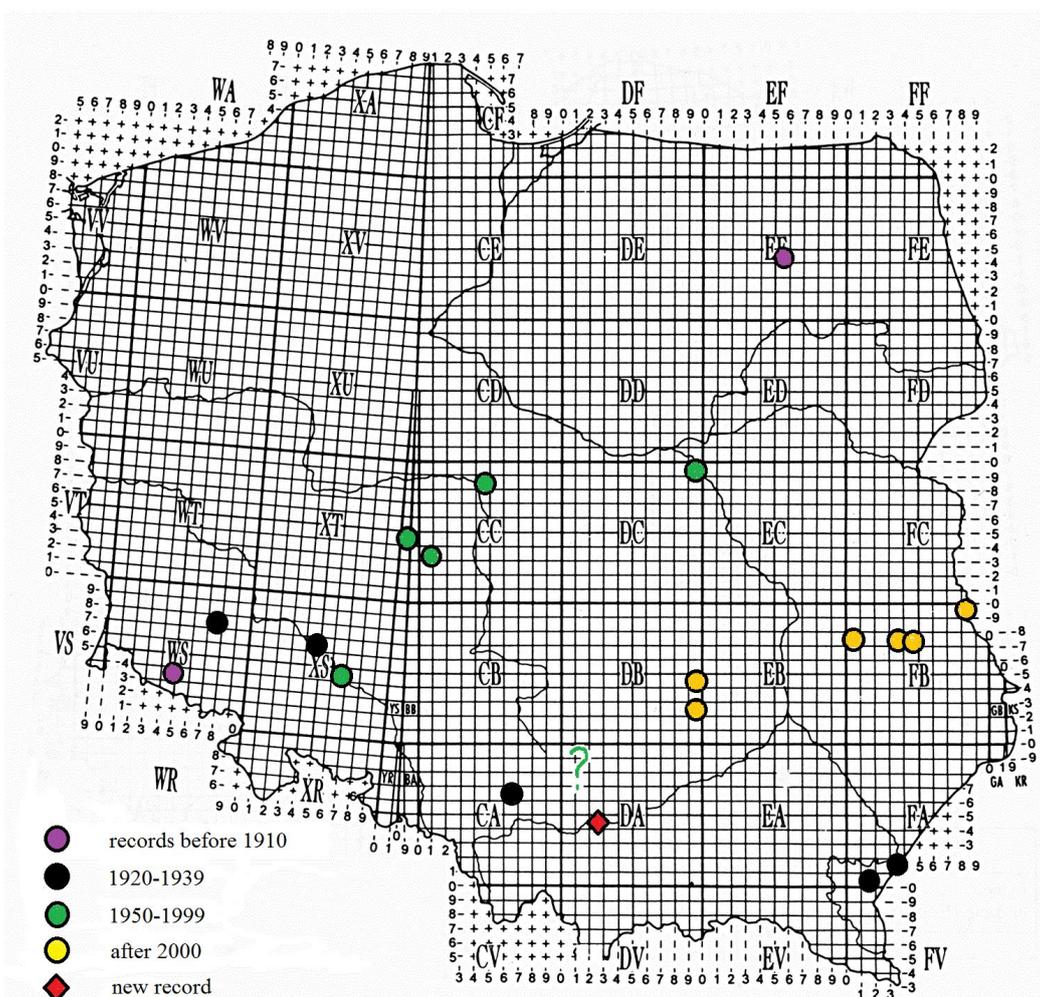


Fig. Distribution of *Hesperus rufipennis* (GRAV.) in Poland. New record is marked with red rhombus; record from Kraków-Wieluń Upland without precise locality is marked with question mark

Ryc. Stanowiska *Hesperus rufipennis* (GRAV.) w Polsce. Nowe stanowisko oznaczono czerwonym rombem; znakiem zapytania oznaczono stwierdzenie gatunku na Wyżynie Krakowsko-Wieluńskiej bez podania dokładnej lokalizacji

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