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Zavaljus brunneus (Gyllenhal, 1808) – a beetle species new to the Polish fauna (Coleoptera: Erotylidae)

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Abstract. *Zavaljus brunneus* (Gyllenhal, 1808) (Erotylidae) was found in the Browsk District, Białowieża Primeval Forest, NE Poland. Beetles were reared from a log of a sun-exposed dead Eurasian aspen (*Populus tremula*). The species is a kleptoparasite associated with prey stored in nests of crabronid wasps (Hymenoptera, Crabronidae). Nests of wasps were located in old galleries of *Leptura thoracica* (Creutzer) (Coleoptera, Cerambycidae). *Zavaljus brunneus* is a new species to the Polish fauna.

Key words: entomology, faunistics, Coleoptera, Erotylidae, *Zavaljus*, new record, Białowieża Primeval Forest, Poland.

INTRODUCTION

The genus *Zavaljus* Reitter, 1880, formerly belonging to the family Languriidae as *Eicolyctus* Sahlberg, 1919, is now placed in the family Erotylidae, subfamily Xenoscelinae, and is represented by one Palaearctic species (Węgrzynowicz 2007), *Zavaljus brunneus* (Gyllenhal, 1808). It is a very rare beetle throughout its range and so far has been reported from Finland (Hyvärinen et al. 2006), Latvia (Telnov 2004, Tamutis et al. 2011), Sweden (Lundberg & Gustafsson 1995), the European part of Russia, and Slovakia (Węgrzynowicz 2007).

MATERIALS AND METHODS

To investigate insects associated with decomposing wood of Eurasian aspen (*Populus tremula* L.) we collected a log broken off from apical part (about 20 meters above the ground) of a freshly felled sun-exposed *P. tremula*. The tree was located in a small clearing in fresh broadleaved forest on the edge of the vast area of Białowieża Primeval Forest, NE Poland. This area is a managed, 85 years old, stand with Scots pine *Pinus sylvestris* L. as the dominant species, and admixture of Norway spruce *Picea abies* (L.) H. Karst, silver birch *Betula pendula* Roth, pedunculate oak *Quercus robur* L. and Eurasian aspen *P. tremula* (fig. 1).

RESULTS

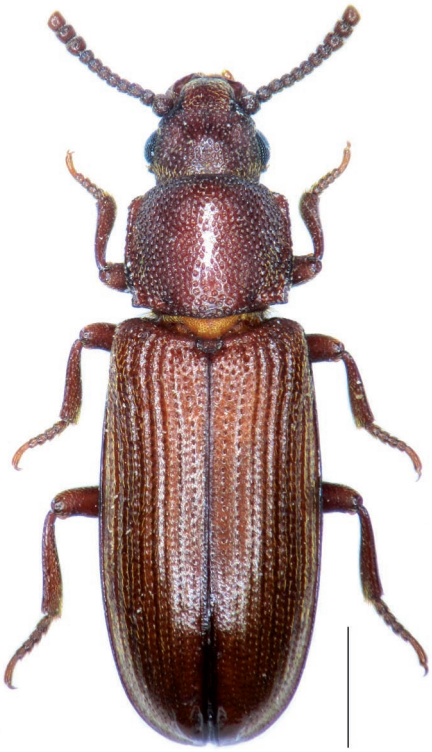
As a result of rearing efforts, 10 individuals of *Z. brunneus* were obtained (fig. 2). The label data are as follows: Białowieża Forest: Browsk District: Pasieki ad Narewka (UTM: FD96), larvae 23 XI 2012, imagines ex. cult. indoors 1 – 15 III 2013, leg. J. Hilszczański, T. Jaworski and R. Plewa.

1. Habitat of *Zavaljus brunneus*

It is worth mentioning that the same wood of aspen was also inhabited by other beetle species: *B. bipunctatus*, *Cerylon histeroides* (F.) (Cerylonidae), *Latridius assimilis* (Mannerheim) (Latridiidae), and *Rusticoclytus rusticus* (L.) (Cerambycidae). Adult of another rare beetle, *Neomida haemorrhoidalis* (F.) (Tenebrionidae), was also found in the substrate.

DISCUSSION

The biology of *Z. brunneus* is insufficiently known. The literature data and our observations suggest that the species prefers standing dead trees with dried yet dense wood. The preferred biotopes are strongly sun-exposed trees and trees damaged by fire (Lundberg 1966). *Zavaljus brunneus* develops in wood of deciduous trees: poplar *Populus* L. spp., birch *Betula* L. spp., alder *Alnus* L. spp. and maple *Acer* L. spp., inhabited by various species of the family Crabronidae (Hymenoptera) (Palm 1948, 1951, Lundberg 1966). Wasps often use galleries of beetles to build their nests – in our case those of *Leptura* (*Macroleptura*) *thoracica* (Creutzer) (Cerambycidae). Crabronid females care for the offspring by providing them with food, which mainly consists of insects or arachnids. The victims are not killed but paralyzed and die after some time



2. *Zavaljus brunneus* (Gyllenhal, 1808), habitus dorsal (scale = 1 mm)

(Skibińska 2004). For its development, *Z. brunneus* uses the food accumulated by wasps and is thus recognized as kleptoparasite (Palm 1951, Lundberg 1966). This form of feeding is a very rare phenomenon among European Coleoptera and few examples of such strategy were reviewed by Siitonen & Jonsson (2012), e.g.: *Dermestes palmi* Sjöberg (Dermestidae) associated with ants (Formicidae) and *Quedius dilatatus* (F.) (Staphylinidae) associated with true wasps (Vespidae).

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