

New faunistic records of non-biting moth flies (Diptera: Psychodidae) from the Czech Republic and Slovakia

Nové faunistické nálezy koutulí (Diptera: Psychodidae) z České republiky a Slovenska

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Abstract. We give new records of four species of moth flies from the subfamily Psychodinae. One species is recorded for the first time from the Czech Republic – the invasive *Clogmia albipunctata* (Williston, 1893) from Moravia. *Yomormia furva* (Tonnoir, 1940), *Peripsychoda fusca* (Macquart, 1826), *Pneumia gracilis gracilis* (Eaton, 1893) and *C. albipunctata* are first recorded from Slovakia. The Slovakian *C. albipunctata* was reared from a water filled tree-hole in *Quercus* sp., representing the first Central European breeding record of the species from a non-anthropogenic habitat. The species-richness of the psychodid fauna reaches 172 species in the Czech Republic (141 in Bohemia, 151 in Moravia) and 101 species in Slovakia.

INTRODUCTION

The recent check-list of non-biting moth flies from the Czech Republic and Slovakia (Ježek 2009a) includes 166 species from the Czech Republic (139 in Bohemia, 145 in Moravia) and 97 species in Slovakia. Ježek & Omelková (2012) published two new records for Moravia: *Psychomormia vaillanti* (Wagner, 1977) and *Apsycha pusilla* (Tonnoir, 1922); in addition, the same authors described *Pneumia kabelaki* Omelková et Ježek, 2012 from the Moravian part of the White Carpathians (Omelková & Ježek 2012a). *Philosepedon (Philosepedon) dumosum* Omelková et Ježek, 2012 and *P. (P.) perdecorum* Omelková et Ježek, 2012 (Omelková & Ježek 2012b) were described from both Bohemia and Moravia. Together with *Clogmia albipunctata* (Williston, 1893) from Moravia (see below) the psychodid fauna in the Czech Republic increases to 172 species (Bohemia 141, Moravia 151); whereas the Slovak fauna now comprises 101 recorded species including the present paper's records of *Yomormia furva* (Tonnoir, 1940), *Clogmia albipunctata*, *Peripsychoda fusca* (Macquart, 1826) and *Pneumia gracilis gracilis* (Eaton, 1893).

MATERIAL AND METHODS

The invasive species of *Clogmia albipunctata* (Williston, 1893) in the Czech Republic was collected individually (by hand, aspirator), or by mass rearing of larvae from the sewer reservoir system of a prefabricated building (eight localities in Brno, five collectors). Some localities from western Slovakia (Devínska Kobyla National Nature Reserve) are indexed 1–3 (Fialkový potok brook – F_{1,2,3}, Mokrý potok brook – M_{1,2,3}, Vefkolúcky potok brook – V_{1,3}): 1 = spring area, 2 = a middle of the flow, 3 = lower reach of the brook to a cut-off meander of the Dunaj river. The material was collected by sweep netting on the spring areas and bank vegetation of brooks. The specimen from Central Slovakia was collected in samples from water filled tree-holes in an oak (*Quercus* sp.) forest, situated in the southeastern part of Rudnianská kotlina valley near the village Diviacka Nová Ves. The captured moth flies were preserved in 70% ethanol in the laboratory, and selected specimens mounted on slides in Prague (Canada balsam) and Bergen (Euparal).

The voucher specimens are deposited in the Department of Entomology, National Museum, Prague, Czech Republic (NMPC), where the slides (Canada balsam) were numbered with Inv. No. = Inventory Slide Number of the family Psychodidae included in the Diptera collection, or in the entomology slide collection at the University Museum of Bergen. Identification and nomenclature follow Pellerano (1967), Vaillant (1971–1983), Ibañez-Bernal (2008), Ježek (1994, 2009a) and Ježek & van Harten (2009). Faunistic grid mapping system of Central Europe (Ehrendorfer & Hamann 1965) (in Slovakia called as codes of the Databank of the Slovak fauna) follows Zelený (1972) and Pruner & Míka (1996) for the Czech Republic and Lučivjanská (1989) for Slovakia; geomorphological units of Slovakia are cited following Lučivjanská (1989).

RESULTS

Mormiini

Yomormia furva (Tonnoir, 1940)

Material examined. Slovakia occ.: Devínska Kobyla National Nature Reserve, Mokrý potok brook (7868), M₁, 48°10.54'N, 17°01.40'E, 309 m a.s.l., 25.viii.2011, 1 ♂, sweeping, J. Lukáš leg., J. Ježek det. (NMPC: slide Inv. No. 19732).

Distribution. Recorded from Austria, Belgium, Czech Republic, France, Germany, Great Britain, Greece, the Netherlands, Slovenia and West Caucasus (Abkhazia) (Ježek 1987b, 2002, 2006; Ježek & Goutner 1995; Wagner 2011). Biotopes: xerotherm rocky habitats or erosive furrows of beech forests with small torrents, slope spring areas with cushions of Hepaticae and Musci. New species for Slovakia.

Paramormiini

Clogmia albipunctata (Williston, 1893)

Material examined. Czech Republic: Moravia centr.: Brno-Bystrc, Kuršova street (6765), prefabricated building, sewer reservoir system inside, iv. and 27.v.2011, mass occurrence of adults (males and females), larvae and pupae, F. Gregor leg. (NMPC: slides Inv. No. 19739–19740 and very rich alcohol material). Brno-Černá Pole, garages of the Mendel University (6765), 1.–5.ix.2011, 1 ♂, 10 ♀♀, Z. Laštůvka leg. (NMPC: slide Inv. No. 19743 and alcohol material). Brno-Královo Pole, Šumavská street (6765), in a subterranean shop, 7.vi.2011, 1 ♀, I. Malenovský leg. (NMPC: slide Inv. No. 19738). Brno-Lesná, Loosova street (6765), bathroom in a prefabricated building, floor 11, 1 ♂ (NMPC: pinned dry specimen), F. Gregor leg. Brno-Žabovřesky, Chládkova street (6765), in flat at light, 8.vi. and 17.ix.2011, 4 ♀♀, I. Malenovský leg. (NMPC: slides Inv. No. 19733–19734 and alcohol material); the same

locality, bathroom inside a house, 11.v., 11.vi. and ix.2011, 5 ♀♀, I. Malenovský leg. (NMPC: slides Inv. No. 19735–19737 and alcohol material). Brno-Nový Lískovec (6865), 5.vii.2011, 1 ♂, L. Dembický leg. (NMPC: slide Inv. No. 19744). Brno-Štýřice, Jilová street (6865), front of a building, 7.viii.2011, 1 ♀, P. Lauterer leg. (NMPC: slide Inv. No. 19742). Brno-Slatina, Hviezdoslavova street (6866), front of a building, 27.vi.2011, 1 ♀, P. Lauterer leg. (NMPC: slide Inv. No. 19741). All specimens J. Ježek det. Slovakia: Prievidza district, Vrbany env., Diviacka Nová Ves, Rudnianska kotlina valley (7276), 48°45.17'N, 18°30.70'E, 295 m a.s.l., 21.x.2011, tree-hole in oak tree, 1 ♂, J. Oboňa leg., G. Kwifite det. (coll. University Museum of Bergen: slide number B9204).

Distribution. A very widespread species that occurs in tropical and temperate regions all over the world. The oldest European records of *C. albipunctata* were from Barcelona, Spain (Tonnoir 1920). Later, Vaillant (1971–1983) listed the species' distribution as worldwide between 40°S and 42°N. Currently, however, the species can be found much farther north than this – it has recently been recorded from Belgium, France, Germany, Greece, Italy, the Netherlands, Sardinia, Slovenia and Spain (Boumans 2009, Boumans et al. 2009, Ježek 2002, Ježek & Goutner 1995, Wagner 2011, Werner 1997). Since the species tends to be very conspicuous and abundant wherever it occurs, it is very likely that these Central European records represent recent range expansions. New for the fauna of the Czech Republic and Slovakia.

Comments. Vaillant (1989) and later Boumans et al. (2009) reviewed the biology of *Clogmia albipunctata*. In Central Europe, all previous records have been from anthropogenic habitats such as bathrooms, kitchens and sewers (Boumans 2009, Boumans et al. 2009, Werner 1997). This is also true in the Czech Republic, where the species is known from eight localities in Brno. The present record from Slovakia is the first published evidence that this species also breeds in non-anthropogenic habitats in temperate Europe, using water filled tree-holes in an oak (*Quercus* sp.) as a larval habitat in temperate Europe. In the tropics, the subtropics and the USA it is very common in the same microhabitat (Vaillant 1989). Water filled tree-holes are quite common, but often overlooked habitats. It is therefore often difficult to determine whether newly recorded species from this environment represent previously overlooked elements of a poorly explored fauna, or whether they are genuinely new to the area. However, *C. albipunctata* is a very conspicuous, large species (3–4 mm) that also uses anthropogenic habitats wherever it occurs. Therefore it is certain it is a new immigrant to the fauna of the Czech Republic and Slovakia. We recommend that future faunistic and ecological studies are conducted to determine whether *C. albipunctata* poses a risk to native tree-hole biodiversity. *Clogmia albipunctata* was also recorded several times as an agent of myiasis, with records of both nasopharyngeal, intestinal and urinary myiasis in humans (Mohammed & Smith 1976, Smith 1979, Kamimura & Arakawa 1986, Leclercq 1990, Hovius et al. 2011). The risk for human *C. albipunctata* myiasis in our country is, however, lower due to the high standards of hygiene and levels of human housing.

Peripsychoda fusca (Macquart, 1826)

Material examined. Slovakia occ.: Devínska Kobyla National Nature Reserve, Fialkový potok brook (7868), F₁, 48°10.31'N, 17°00.57'E, 247 m a.s.l., 21.v.2011, 2 ♂♂; the same, Veľkolúcky potok brook (7868), V₃, 48°11.95'N, 17°01.19'E, 179 m a.s.l., 18.viii.2011, 1 ♂; all sweeping, J. Lukáš leg., J. Ježek det. (NMPC: slides Inv. No. 19745–19746, one specimen deposited in alcohol).

Distribution. Albania, Austria, Belgium, Bosnia, Corsica, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Macedonia, the Netherlands, Poland, Romania and Serbia (Ježek 1987a, 2003, 2004). The species occurs in habitats with moss cushions and leaf packs (ponds, swamps, spring areas). New species for Slovakia.

Pericomaini

Pneumia gracilis gracilis (Eaton, 1893)

Material examined. Slovakia occ.: Devínska Kobyla National Nature Reserve, Fialkový potok brook (7868), F₂, 48°10.18'N, 17°00.48'E, 241 m a.s.l., 4.ix.2011, 1 ♂; the same, Fialkový potok brook near quarry, rocky walls and platforms with seepage places, small waterfalls (7868), F₃, 48°10.04'N, 17°00.26'E, 224 m a.s.l., 4.ix.2011, 3 ♂♂; the same, Mokrý potok brook (7868), M₁, 48°10.54'N, 17°01.40'E, 309 m a.s.l., 25.viii.2011, 2 ♂♂; the same, Mokrý potok brook (7868), M₂, 48°10.14'N, 17°00.97'E, 282 m a.s.l., 25.viii.2011, 3 ♂♂; same, Mokrý potok brook (7868), M₃, 48°09.53'N, 17°01.11'E, 210 m a.s.l., 25.viii.2011, 5 ♂♂; the same, Veľkolúčky potok brook (7868), V₁, 48°11.62'N, 17°00.98'E, 233 m a.s.l., 18.viii.2011, 2 ♂♂; all sweeping, J. Lukáš leg., J. Ježek det. (NMPC: 6 slides Inv. No. 19747–19752, ten specimens deposited in alcohol).

Distribution. The nominate subspecies was ascertained in eleven European countries (Albania, Belgium, Bosnia and Herzegovina, Czech Republic, France, Germany, Great Britain, Greece, Italy, Serbia and Slovenia) and the Caucasus (Abkhazia) (Ježek 1996, 2002, 2004), the other subspecies *Pneumia gracilis kandavanica* (Ježek, 1990) was described from Iran. Biotopes: inundation areas of rivers, springs and swamps. *Pneumia gracilis* is new species for Slovakia.

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SOUHRN

V práci jsou uvedeny prvně nalezeny 4 druhy koutulí z podčeledi Psychodinae. Jeden druh je nový pro Českou republiku: *Clogmia albipunctata* (Williston, 1893) z Moravy, a čtyři druhy jsou nové pro Slovensko: *Yomormia furva* (Tonnoir, 1940), *Peripsychoda fusca* (Macquart, 1826), *Pneumia gracilis gracilis* (Eaton, 1893), a *Clogmia albipunctata*. Obširnější diskuse je věnována šíření cirkumtropického a cirkumsubtropického invazního druhu *Clogmia albipunctata* odchyceného nejen z mnoha lokalit v městské aglomeraci Brna (včetně jednoho zjištěného masového výskytu), ale i z volné přírody (zatím ojedinělý nález z vodou zaplněné dutiny stromu v okolí Prievidze). Vezmeme-li v úvahu rovněž nedávno publikované práce Ježek & Omelková (2012) a Omelková & Ježek (2012a,b), celkový počet druhů čeledi Psychodidae se výše uvedenými prvně nalezeny v České republice zvyšuje ze 166 na 172 (*Philosepedon (P.) dumosum* Omelková et Ježek, 2012 a *P. (P.) perdecorum* Omelková et Ježek, 2012 z Čech, *Pneumia kabelaki* Omelková et Ježek, 2012, *P. (P.) dumosum*, *P. (P.) perdecorum* a *C. albipunctata* z Moravy); v Čechách ze 139 na 141 (*P. (P.) dumosum*, *P. (P.) perdecorum*); na Moravě ze 145 na 151 (*Psychomormia vaillanti* (Wagner, 1977), *Apsycha pusilla* (Tonnoir, 1922) – viz Ježek & Omelková (2012); *P. kabelaki*, *P. (P.) dumosum*, *P. (P.) perdecorum* a *C. albipunctata*); na Slovensku z 97 na 101 druhů (*Y. furva*, *C. albipunctata*, *P. fusca* a *P. g. gracilis*).