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Three new robberfly species (Diptera: Asilidae) for the Czech Republic

Tři nové druhy roupců (Diptera: Asilidae) pro faunu České republiky

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Abstract. Three species of robberflies (Diptera: Asilidae), *Neomochtherus schineri* (Egger, 1855), *Stichopogon elegantulus* (Wiedemann, 1820), and *Tolmerus calceatus* (Meigen, 1820), are reported from the Czech Republic for the first time.

INTRODUCTION

In recent years, the list of the Czech Republic's robberflies, comprising 85 species (Bosák 2009), has been expanded to include three additional species: *Antiphrisson trifarius* (Loew, 1849), *Cerdistus graminicola* Lehr, 1967 (Marhoul 2019), and *Choerades castellanii* (Hradský, 1962) (Kadlec & Marhoul 2022). Continuing faunistic surveys, and changes made as part of taxonomic revisions (van den Broek et al. 2018), have shown the occurrence of three more species in the genera *Neomochtherus* Osten-Sacken, 1878, *Stichopogon* Loew, 1847, and *Tolmerus* Loew, 1849 in the Czech Republic, which is the subject of this paper.

MATERIAL AND METHODS

The specimens discussed were obtained either by sweeping of vegetation or collected individually during faunistic surveys of selected localities in the Czech Republic carried out by the authors or other colleagues. Abbreviations used through the text: NM – Nature Monument, NNM – National Nature Monument.

RESULTS AND DISCUSSION

Neomochtherus schineri (Egger, 1855)
(Figs 1–2, 7)

Material examined. Czech Republic, Moravia mer.: Mutěnice, Bílý kopec u Čejče NM (7067), 48°55′8″N 16°59′35″E, 11.vii.2019, 1 ♂, 17.vii.2019, 1 ♀, both P. Marhoul leg., det. et coll.; Drnholec (7164), 48°51′37″N 16°29′05″E, 19.vi.2019, 1 ♂, R. Vlk leg., P. Marhoul det. et coll., all J. Bosák revid.; Bulhary, Bulhary game preserve (7166), 12.viii.2002, 1 ♂, I. Jeniš leg, J. Bosák det. et coll.; Valtice (7266), 1.viii.1977, 1 ♀, J. Olejníček leg., J. Bosák det. et coll. (Bosák 1998 as *N. pallipes*), J. Bosák rev. iv.2020.



Fig. 1. *Neomochtherus schineri* (Egger, 1855), male in lateral view. Body length 14 mm. Photograph by P. Marhoul.
Obr. 1. *Neomochtherus schineri* (Egger, 1855), samec v laterálním pohledu. Délka těla 14 mm. Fotografie P. Marhoul.

Collecting circumstances. The list of records shows the long-term presence and overlooked occurrence of this species in southern Moravia. Specific circumstances of the record are only known from the localities of Bílý kopec u Čejče and Drnholec. At the first site, the male was caught on a very scrubby steppe slope (Fig. 2). The female was caught in the herbaceous undergrowth of an acacia forest. The record at the Drnholec locality came from a garden in the village.

Notes on identification. Among the representatives of the genus *Neomochtherus* occurring in the Czech Republic and neighbouring countries, *N. schineri* is most similar to *N. pallipes* (Meigen, 1820). They differ in colouration of antennae, mystax, and legs. In *N. pallipes* the entire antennae are black, in *N. schineri* the second segment is reddish-brown. The mystax is



Fig. 2. Habitat of *Neomochtherus schineri* (Egger, 1855) at Bílý kopec u Čejče NM. Photograph by P. Marhoul.
Obr. 2. Biotop druhu *Neomochtherus schineri* (Egger, 1855) v PP Bílý kopec u Čejče. Fotografie P. Marhoul.

black at the top and white at the bottom in *N. pallipes*, but completely white in *N. schineri*. Femora possess a brown longitudinal stripe on the dorsal side in *N. pallipes*, while femora of *N. schineri* are uniformly yellow.

Distribution. *Neomochtherus schineri* is widespread in southern and central Europe. There are records from Romania (Weinberg 1969), Spain, France, Italy, Greece, Serbia, Croatia, Bosnia and Herzegovina, Austria, and Slovakia (Geller-Grimm 2022), and more recently also from Iran (Mohammadi et al. 2021) and Portugal (Pires et al. 2022). New species for the Czech Republic.

Stichopogon elegantulus (Wiedemann, 1820)
(Figs 3–4, 7)

Material examined. Czech Republic, Moravia mer., Mutěnice (7067), 48°55′25″N 16°58′52″E, 5.vii.2020, 7 ♂♂, 3 ♀♀, 18.vi.2021, 1 ♂, 16.viii.2021, 1 ♀, 3.vii.2022, 1 ♀, all P. Marhoul leg., det. et coll.

Collecting circumstances. A population of the species was found on a sandy field path (Fig. 4). The occurrence was restricted to a small area with bare substrate and dead vegetation. Individuals were perched on bare sandy soil and low dead vegetation. The habitat is different in character from the typical habitat of the species at the northern boundary of its range. In Germany, *S. elegantulus* is found on sand dunes and sandhills with open grassland vegetation



Fig. 3. *Stichopogon elegantulus* (Wiedemann, 1820), male in lateral view. Body length 4 mm. Photograph by P. Jakubec.
Obr. 3. *Stichopogon elegantulus* (Wiedemann, 1820), samec v laterálním pohledu. Délka těla 4 mm. Fotografie P. Jakubec.

(Wolff et al. 2018). From Slovakia, the occurrence of the species is reported from the localities of Chotín and Somotor (Straka 1984), which are known as localities for psammophilous and xerothermic insects. However, targeted surveys on the best quality sand habitats of southern Moravia (Vojenské cvičiště Bzenec NM, Váté písky NNM, Pánov NM) were unsuccessful (our own observations).

Notes on determination. Three other species of *Stichopogon* occur in the surrounding countries. *Stichopogon schineri* Koch, 1872, which is found in Germany, and *S. albofasciatus* (Meigen, 1820), which occurs in Germany and Austria, are distinguished from *S. elegantulus* by their black legs. In Slovakia, *S. scaliger* Loew, 1847, which, like *S. elegantulus*, has red



Fig. 4. Habitat of *Stichopogon elegantulus* (Wiedemann, 1820) at the Mutěnice locality. Photograph by P. Marhoul.
Obr. 4. Biotop druhu *Stichopogon elegantulus* (Wiedemann, 1820) na lokalitě Mutěnice. Fotografie P. Marhoul.

parts of the tibiae, differs in the colour of the antennae, which are dark in *S. elegantulus* and red in *S. scaliger*.

Distribution. The species is widespread in the whole of central and southern Europe, northern Africa, southern Russia, the Caucasus, central Asia, and the Middle East (Geller-Grimm 2022). In neighbouring countries, it occurs in Slovakia (Straka 1984), Germany (Wolff et al. 2018), and Austria (Geller-Grimm 2022). New species for the Czech Republic.

Tolmerus calceatus (Meigen, 1820)
(Figs 5–7)

Material examined. Czech Republic, Bohemia bor.: Žalhostice, Radobýl NM (5450), 50°31′50″N 14°05′31″E, 350 m a.s.l., 31.vii.2019, 1 ♂; Nepomyšl (5745), 50°13′40″N 13°16′15″E, 475 m a.s.l., 6.viii.2021, 3 ♂♂, 1 ♀, all P. Marhoul leg., det. et coll.; Bohemia centr., Srbsko (6050), 49°56′59″N 14°08′16″E, 330 m a.s.l., 15.viii.2019, 3 ♂♂, 1 ♀, P. Marhoul leg., det. et coll.;
Moravia occ., Městečko Trnávka (6266), 6.ix.2016, 1 ♂, 1 ♀, S. Rada leg., P. Marhoul det. et coll.; Moravia mer., Jamolice (6963), 1.ix.2009, 1 ♀, P. Marhoul leg., det. et coll.

Collecting circumstances. More detailed information is available for specimens collected in localities Radobýl, Nepomyšl, and Srbsko. In the first locality, the individual was caught in a sparse xerothermic grassland, at the bottom of an abandoned basalt quarry. At the Nepomyšl



Fig. 5. *Tolmerus calceatus* (Meigen, 1820), male in lateral view. Body length 13 mm. Photograph by P. Marhoul.
Obr. 5. *Tolmerus calceatus* (Meigen, 1820), samec v laterálním pohledu. Délka těla 13 mm. Fotografie P. Marhoul.

locality, all specimens were found on flowery short-stemmed islands of a large mown dry meadow (Fig. 6). At the Srbsko site, they were found on a fragment of dry narrow-leaved grassland overgrown with emergent trees. Habitat requirements suggest that *T. calceatus* seeks dry to xerothermic open habitats of lowland and mid-altitudes. In contrast, the closely related *T. atricapillus* (Fallén, 1814), which is widely distributed in the Czech Republic and is the most commonly found species of robberfly in late summer and autumn, is woodland-preferring, tending to inhabit forest edges and ascending to mountains and cooler sites (our own observations).

Notes on identification. *Tolmerus calceatus* was described by Meigen in 1820 as *Asilus calceatus*. Since its description, the species has been the subject of taxonomic debate and



Fig. 6. Habitat of *Tolmerus calceatus* (Meigen, 1820) at the Nepomyšl locality. Photograph by P. Marhoul.
Obr. 6. Habitat of *Tolmerus calceatus* (Meigen, 1820) na lokalitě Nepomyšl. Fotografie P. Marhoul.

has been considered a paler form or subspecies of *Tolmerus atricapillus* in key publications, including the iconic work on the Palearctic robberflies (Engel 1930). It was elevated to species level in 2018 based on morphological, ecological, as well as genetic characteristics (van der Broek et al. 2018). This publication provides a list of diagnostic characters, including the shape of the gonostylus that distinguishes these two species. Overall, *T. calceatus* is a brown to golden-brown species, while *T. atricapillus* is a dark, brown-grey coloured species. For field identification of these species, the most important characters are the colour of the hairs on the forehead and the colour of the hairs on the scutum in between the postsutural bristles. In both cases they are white in *T. calceatus* and black in *T. atricapillus*.

Distribution. *Tolmerus calceatus* was confirmed as valid species based on material from the Netherlands, France, and Belgium (van den Broek et al. 2018). Based on this work, part of the material originally identified as *T. atricapillus* from Germany was re-evaluated and the species' occurrence in that country was confirmed (Wolff & Malec 2020). Following revisions of collection material, confirmation of the species' occurrence from other European countries can be expected. New species for the Czech Republic.

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SOUHRN

Příspěvek přináší informace o nálezech a potvrzení tří druhů roupců (Diptera: Asilidae) nových pro faunu České republiky. *Neomochtherus schineri* (Egger, 1855) byl nalezen na několika lokalitách jižní Moravy: v přírodní památce Bílý kopec u Čejče, v obci Drnholec, v oboře Bulhary a revizí staršího materiálu zpětně i v obci Valtice. Dle dostupných informací vyhledává křovinaté biotopy, podrost lesů a jeden nález pochází z intravilánu obce. *Stichopogon elegantulus* (Wiedemann, 1820) byl nalezen na jižní Moravě u obce Mutěnice. Biotopem byl nezarostlý úsek písčité polní cesty. *Tolmerus calceatus* (Meigen, 1820) byl v roce 2018 na základě morfologických, ekologických a genetických informací oddělen od všeobecně rozšířeného druhu *Tolmerus atricapillus* (Fallén, 1814). Materiál pocházel z Belgie, Francie a Nizozemska. Později byl na základě revise starších materiálů doložen i z Německa. Z České republiky jsou k dispozici doklady o výskytu druhu na několika lokalitách Čech (přírodní památka Radobýl, okolí obce Nepomyšl, okolí obce Srbsko), západní Moravy (okolí obce Trnávka) a jižní Moravy (okolí obce Jamolice). Biotopem druhu jsou otevřené teplomilné trávníky nížin a pahorkatin. Ke všem druhům jsou uvedeny poznámky k determinaci a odlišení od podobných blízce příbuzných druhů.

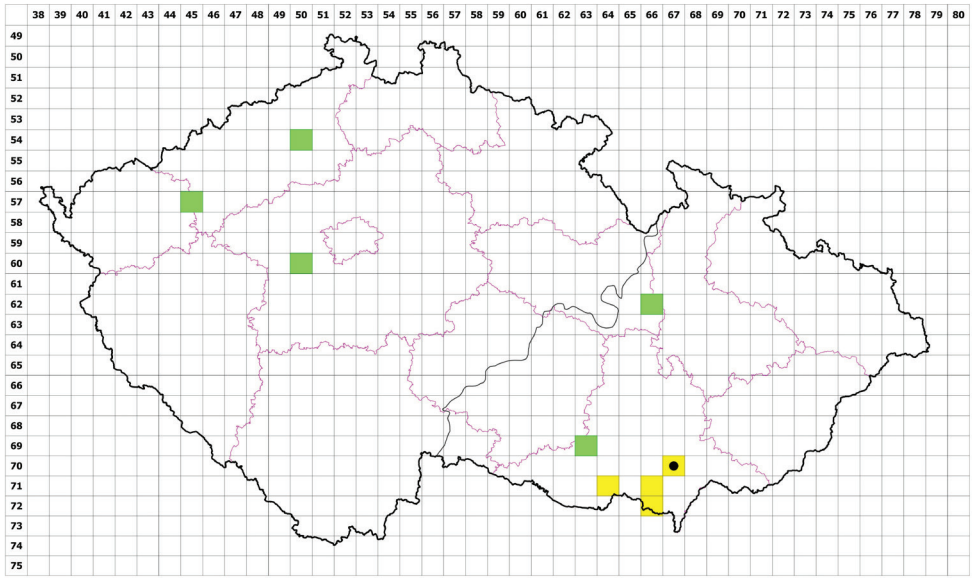


Fig. 7. Distribution map of *Neomochtherus schineri* (yellow squares), *Stichopogon elegantulus* (black dot), and *Tolmerus calceatus* (green squares) in the Czech Republic.
Obr. 7. Mapa rozšíření *Neomochtherus schineri* (žluté čtverce), *Stichopogon elegantulus* (černý bod) a *Tolmerus calceatus* (zelené čtverce) v České republice.


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