

The fauna of Opetiidae and Platypezidae (Diptera) in the Gemer region (Central Slovakia)

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The fauna of Opetiidae and Platypezidae (Diptera) in the Gemer region (Central Slovakia). – Čas. Slez. Muz. Opava (A), 60: 41-47, 2011.

Abstract: A review of the fauna of flat-footed flies (Diptera: Opetiidae and Platypezidae) in the Gemer region (Slovakia) is presented. Based on previously published records and material examined 1 species of Opetiidae and 17 species of Platypezidae are treated, each with comments on its general distribution, biology and faunistics, and/or nature conservation importance. Nine species of Platypezidae are considered particularly significant for the area because of comprising taxa that are endangered, stenotopic or generally rare. Of the five species newly recorded from the Gemer area, one, viz. *Agathomyia collini* Verrall, 1901, is a new addition to the Slovak fauna and three, viz. *Agathomyia falleni* (Zetterstedt, 1819), *Protoclythia rufa* (Meigen, 1830) and *Polyporivora picta* (Meigen, 1830) represent second records from Slovakia, the last species being re-discovered in Slovakia after more than 140 years.

Key words: Diptera, Opetiidae, Platypezidae, faunistics, nature conservation, Slovakia, Gemer

Introduction

The flat-footed flies are members of two families, Opetiidae and Platypezidae. While the Opetiidae are represented by a single species of largely unknown biology in Europe the Platypezidae are more diverse and the majority of its species are mycophagous as larvae. Both families were poorly known in Slovakia before the 1980's. Only Vaňhara (1981, 1986, 1995) studied these groups more thoroughly in Slovakia, listing a total of 27 species. Four species have recently been added to the Slovak fauna by Ševčík (2004) and Roháček & Ševčík (2007, 2009). First records from the Gemer area were also published by Vaňhara (1981); they were mainly based on the material collected by V. Straka in Muránska planina (in 1979), supplemented by several specimens obtained by J. Máca and M. Kozánek in Slovenský kras (in 1979) and R. Rozkošný in Slovenský raj (in 1967). These results were also repeated by Vaňhara (1986). J. Vaňhara later also examined the material collected by J. Roháček in Slovenský kras (in 1980) and in the Muráň vicinity (in 1981-1982, 1984) but the relevant results remained unpublished inasmuch as they did not contain additional taxa for the Slovak dipterous fauna. Consequently, these older records are presented here together with additional data obtained by examination of the material recently acquired in the Gemer area by J. Ševčík (from his Malaise traps and sweep samples, 2008-2010) and J. Roháček (in 2010). This treatment of flat-footed flies forms a part of series of papers devoted to Diptera of the Gemer area (cf. Ševčík & Kurina 2011).

Material and methods

The account of flat-footed flies recorded from the Gemer area is based on critical review of all published records supplemented by data obtained from the material collected recently in this territory, identified by the authors and now deposited in SMOC. The nomenclature used here follows the most recent Checklist of Diptera of the Czech Republic and Slovakia, electronic version 2 (see Vaňhara 2009a,b). Species significant from the biogeographical, ecological or nature conservation point of view are marked by “*” preceding the species' name, those with “**” are new additions to the fauna of Slovakia. Abbreviations used in text: MT = Malaise trap, SMOC = Slezské zemské muzeum, Opava, Czech Republic.

Study area

The Gemer area is here understood as the territory of three national parks in central Slovakia – Muránska planina (= Muráň Plateau) National Park (= NP), Slovenský raj NP (= Slovakian Paradise) and Slovenský kras NP (= Slovakian Karst). A part of the material presented in this study was collected within the framework of the All Taxa Biodiversity Inventories project (ATBI, see www.atbi.eu) organized by Workpackage 7 (WP7) of the “European Distributed Institute of Taxonomy” (EDIT, see www.e-taxonomy.eu). All three national parks represent well-preserved karst areas with both montane and thermophilous species included, including several endemics. The results of the species inventory within the Gemer ATBI project are available at <http://www.atbi.eu/gemer/>.

Two Malaise traps were operated in the area – one at Fabova Hra Mt. in 2009 and the second in the Hrdzavá dolina valley in 2010. For more detail see Ševčík & Kurina (2011).

OPETHIDAE

This small and relict family forming a basal group of Muscomorpha and represented only by 3 species in the Palaearctic Region (Chandler 2001) and one in Europe that is also known from Slovakia (Vaňhara 2009a). The adults are small (3-5 mm) dark flies, with sexually dimorphic wing shape and venation, inhabiting woodland habitats. They (usually males) are seldom collected by the sweeping method. Females are more terrestrial and can be caught by means of pitfall traps. The only European species, *Opetia nigra* Meigen, 1830, was reared from rotting wood and other woodland detritus (Chandler 2001). The family has hitherto not been recorded from the Gemer area.

Opetia nigra Meigen, 1830

Material: Muráň-Hrdzavá dolina, sweeping undergrowth of deciduous forest, 9.vi.1984, 1♂, J. Roháček leg. (SMOC).

Remarks: A widespread European species, not rare in forests of Central Europe but infrequently collected due to its special habits. The larvae probably develop in rotting wood and in forest litter and other detritus.

PLATYPEZIDAE

A rather small family of lower Muscomorpha comprising some 70 species in the Palaearctic region and 43 in Europe and adjacent areas (Chandler 2001, 2007). The last Slovak checklist (Vaňhara 2009b) includes 31 species. The adults of Platypezidae are small flies (2-5 mm), mainly living in forested habitats. Most species develop in fruiting bodies of macrofungi. Some species are obviously monophagous or oligophagous but in many species the host fungi are poorly known. *Microsania* species are exceptional taxonomically and also biologically in having fumotrophic adults that can be collected when swarming in smoke of bonfires (Chandler 2001). A number of species are associated with undisturbed forest ecosystems with a high diversity of fungi and are thus important from the nature conservation point of view (Vaňhara & Ševčík 2005). Vaňhara (1995) recorded the occurrence of 9 species in the Muránska planina territory but did not list their names. The previous records of Platypezidae from the Gemer area were given by Vaňhara (1981, 1986) who mentioned 11 species and Roháček & Ševčík (2007) who recorded one more species. A total of 17 species have now been confirmed in the study area; thus 5 species were added on the basis of the material examined.

Agathomyia antennata (Zetterstedt, 1819)

Literature: Muránska planina-Káster reserve nr. Tisovec, Mašianske skalky reserve nr. Valkovňa, Muránska Lehota-Javorníková dolina (Vaňhara 1981, 1986).

Material: Muráň-Hrdzavá dolina, sweeping undergrowth of wood, 18.vi.1981, 1♀, 14.vi.1982, 3♀, 9.vi.1984, 1♀, J. Roháček leg. (SMOC).

Remarks: A Palaearctic species reaching to the Oriental Region (Taiwan). It is common in Central Europe and also in Slovakia. Its larvae develop in *Bjerkandera adusta* (see Ševčík 2010).

***Agathomyia collini* Verrall, 1901

Material: Muránska planina, Šarkanica reserve, sweeping, 30.iv.2010, 2♂, J. Ševčík leg. (SMOC).

Remarks: A rare species known from a few records from England, France, Czech Republic (Moravia only), Hungary, Romania (see Chandler 2001; Vaňhara 2009); consequently, the above record is the first from Slovakia. The biology of *A. collini* is largely unknown; according to Chandler (2001) some British records from orchards suggest association with fungi growing on apple or plum trees. In the Czech Republic it is considered a critically endangered (CR) species (Vaňhara & Ševčík 2005).

****Agathomyia elegantula* (Fallén, 1815)**

Material: Muráň-Hrdzavá dolina, sweeping undergrowth of wood, 18.vi.1981, 1♂, 14.vi.1982, 3♂4♀, 16.vi.1982, 2♀, J. Roháček leg. (SMOC).

Remarks: An uncommon species of unknown biology, distributed in North and temperate Europe. It preferentially lives in humid forests. In the Czech Republic it is considered a vulnerable (VU) species (Vaňhara & Ševčík 2005).

****Agathomyia falleni* (Zetterstedt, 1819)**

Material: Zádiel, sweeping, 31.x.2008, 1♂, J. Ševčík leg. (SMOC).

Remarks: A rather rare species of North and temperate Europe. In Slovakia, it was only once recorded from the Stuzica reserve in the Bukovské vrchy Hills (Vaňhara 1995; Vaňhara & Roháček 1995) so it is obviously rarer in this country than in the Czech Republic (cf. Vaňhara 1995) where it is classified as a vulnerable (VU) species (Vaňhara & Ševčík 2005).

****Agathomyia unicolor* Oldenberg, 1928**

Literature: Muránska planina-Kášter reserve nr. Tisovec, Mašianske skalky reserve nr. Valkovňa (Vaňhara 1981, 1986).

Remarks: An uncommon European species developing in the fungus *Bjerkandera adusta*. There are only few records from Slovakia (Vaňhara 1981, 1995; Vaňhara & Roháček 1995; Roháček & Ševčík 2009). The species is considered vulnerable (VU) in the Czech Republic (Vaňhara & Ševčík 2005).

***Agathomyia viduella* (Zetterstedt, 1838)**

Literature: Muránska planina-Mašianske skalky reserve nr. Valkovňa (Vaňhara 1981, 1986).

Material: Muráň-Hrdzavá dolina, sweeping undergrowth of wood, 14.vi.1982, 5♀, 16.vi.1982, 12♀, 9.vi.1984, 2♀, J. Roháček leg.; same locality, sweeping, 16.vi.2009, 1♂; Muráň-Poludnica res., Maretkiná, small brook, sweeping, 16.v.2009, 1♂; Muránska planina, Šarkanica reserve, sweeping, 30.iv.2010, 1♂, all J. Ševčík leg. (SMOC).

Remarks: A Palaearctic species, frequently encountered in North and Central Europe. Biology unknown. It is not rare along brooks in deciduous and mixed forests.

****Agathomyia wankowiczii* (Schnabl, 1884)**

Literature: Slovenský kras-Zádielska dolina (Vaňhara 1981, 1986).

Remarks: A Palaearctic species known from North and temperate Europe and from the Far East of Russia. Its larvae develop in *Ganoderma applanatum* forming peg-shaped galls on the underside of the brackets. It is treated as a vulnerable (VU) species in the Czech Republic (Vaňhara & Ševčík 2005).

****Bolopus furcatus* (Fallén, 1826)**

Literature: Slovenský kras-Zádielska dolina (Vaňhara 1981, as *Orthovena furcata*; Vaňhara 1986, as *Bolipus*).

Remarks: A North and temperate European species developing in *Polyporus squamosus*. It is uncommon in Central Europe and is considered a vulnerable (VU) species in the Czech Republic. There are only a few records from Slovakia (Vaňhara 1981, 1995; Vaňhara & Roháček 1995; Roháček & Ševčík 2009, Ševčík 2010).

***Callomyia amoena* Meigen, 1824**

Literature: Muránska planina-Mašianske skalky reserve nr. Valkovňa, Stratená (Vaňhara 1981, 1986).

Material: Muráň-Hrdzavá dolina, sweeping undergrowth of wood, 14.vi.1982, 1♂1♀, 16.vi.1982, 4♀, J. Roháček leg. (SMOC).

Remarks: A common European species, also frequently encountered in Slovakia. Its larvae are known to develop in fruiting bodies of *Corticium* on rotten wood (Chandler 2001) and in mycelia on bark in underside of aspen trunks lying on the ground (Krivosheina 2008).

****Callomyia elegans* Meigen, 1804**

Literature: Muránska planina-Suché doly reserve nr. Tisovec, Kášter reserve nr. Tisovec, Slovenský kras-Kečovo (Vaňhara 1981, 1986).

Remarks: A rare species known from North and Central Europe but also recorded from the Far East of Russia (Chandler 2001). It seems to be scarce everywhere in Europe, particularly after the 1980's. Interestingly, most of its records from Slovakia originate from the Gemer area (see above) based on specimens collected in the vicinity of Tisovec in 1979 (Vaňhara 1981). There is no recent record of this species from Slovakia.

***Callomyia speciosa* Meigen, 1824**

Literature: Muránska planina-Kášter reserve nr. Tisovec (Vaňhara 1981, 1986).

Material: Muráň-Hrdzavá dolina, sweeping undergrowth of alder forest, 8.vi.1984, 1♂, sweeping undergrowth of deciduous forest, 9.vi.1984, 2♂, J. Roháček leg.; same locality, MT, 28.vi.-26.vii.2010, 3♂1♀; Muráň-castle, sweeping, 4.ix.2008, 1♀, J. Ševčík leg. (SMOC).

Remarks: A West Palaearctic species, common (although less so than *C. amoena*) in Slovakia. Larvae were found in mouldy areas on the surface of hazel trunks lying on the ground (Krivosheina 2008); adults occur in undergrowth of various types of forest.

***Lindneromyia dorsalis* (Meigen, 1804) (Fig. 2)**

Literature: Muránska planina-Tisovec, Hradová reserve nr. Tisovec, Kášter reserve nr. Tisovec (Vaňhara 1981, 1986, both as *Plesioclythia*).

Material: Muráň-Hrdzavá dolina, on decayed fungi, 7.x.2010, 1♀, J. Roháček leg. (SMOC).

Remarks: A common European species (records from the Caucasus and E. Palaearctic may be based on misidentifications – see Chandler 2001) preferentially developing in *Agaricus* species, exceptionally in *Macrolepiota* species and *Omphalotus olearius* (see Chandler 2001).

****Lindneromyia hungarica* Chandler, 2001**

Literature: Slovenský kras-Drienovec (Roháček & Ševčík 2007).

Remarks: This species was only recently separated from *L. dorsalis* (Meigen, 1804) and recorded from Spain, France, Germany, Switzerland, Austria (Chandler 2001), Czech Republic (Tkoč & Vaňhara 2006) and Slovakia (Roháček & Ševčík 2007, 2009). It is a thermophilous species developing in various species of *Agaricus* (see Chandler 2001). Because it was not formerly separated from *L. dorsalis*, it is possible that some of the records of the latter species from the Gemer area (Vaňhara 1981, 1986) might in fact also belong to *L. hungarica*.

***Paraplatypeza atra* (Meigen, 1804)**

Literature: Muránska planina-Mašianske skalky reserve nr. Valkovňa (Vaňhara 1981, 1986).

Remarks: A widespread Palaearctic species recorded in Europe and the Far East of Russia. It is common in most of Europe. Its larvae develop in *Pluteus cervinus* and other *Pluteus* species.

***Platypeza consobrina* Zetterstedt, 1844**

Literature: Muránska planina-Mašianske skalky reserve nr. Valkovňa, Drnava nr. Rožňava (Vaňhara 1981, 1986).

Material: Muráň-Hrdzavá dolina, MT, 26.vii.-7.x.2010, 1♂, J. Ševčík leg. (SMOC).

Remarks: A common species, known from Europe and the Far East of Russia. Its larvae develop in sporocarps of species of *Armillaria* (Chandler 2001; Ševčík 2010).

****Polyporivora picta* (Meigen, 1830) (Fig. 1)**

Material: Muránska Huta-Šiance reserve, sweeping undergrowth of beech forest, 7.x.2010, 1♀, J. Roháček leg. (SMOC).

Remarks: A European species common in Great Britain and Fennoscandia but rare in Central Europe. Its larvae develop in the bracket fungus *Trametes versicolor*. There was only a very old record from Slovakia published by Kowarz (1867, under the synonym *Platypeza superba* Kowarz) from Losoncz = Lučenec. The species has not yet been found in the Czech Republic (cf. Vaňhara 2009b). Thus, the above record from the vicinity of Muráň (for its habitat see Fig. 3) confirmed the occurrence of *P. picta* in Slovakia after more than 140 years.

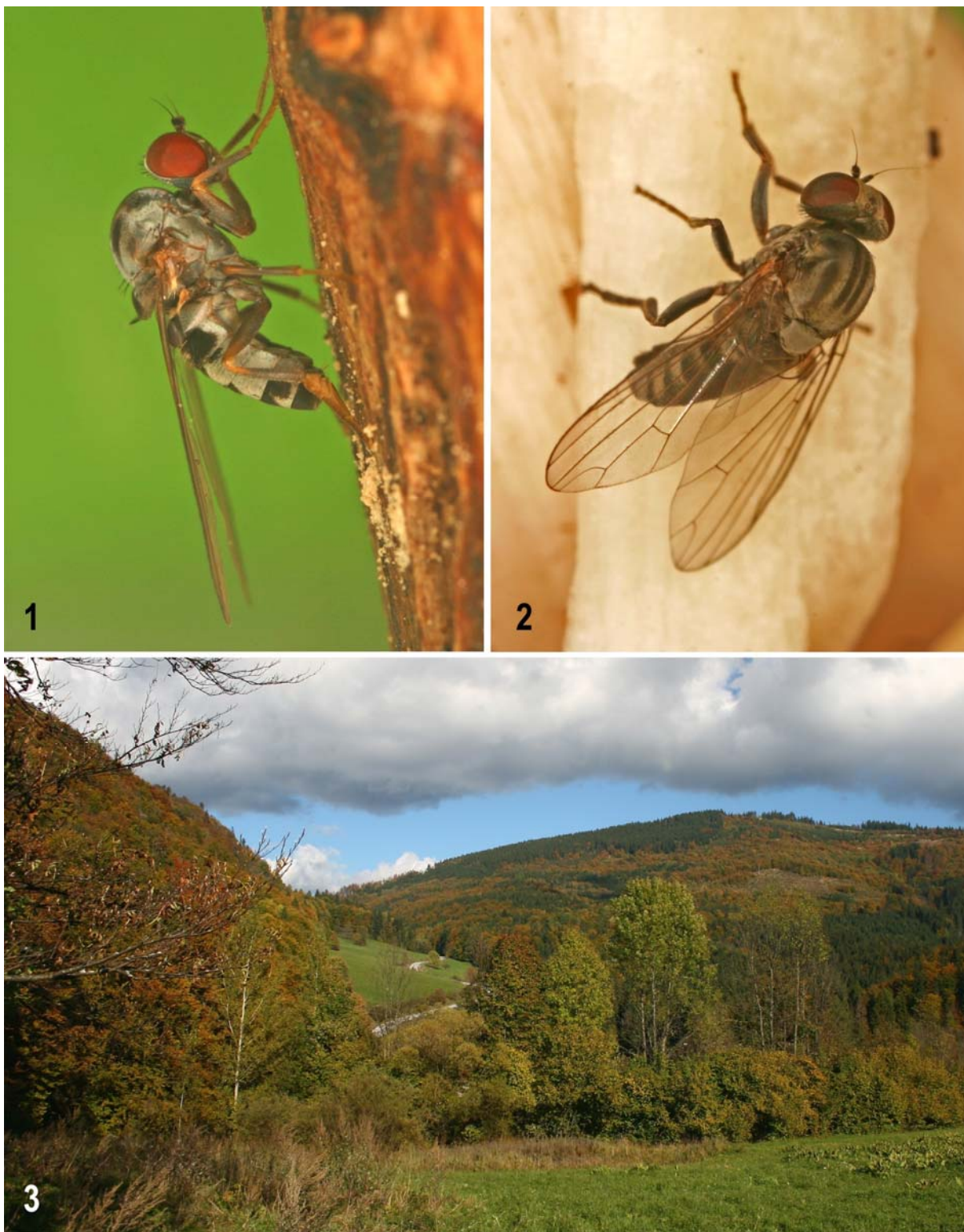
****Protoclythia rufa* (Meigen, 1830)**

Material: Muráň-Hrdzavá dolina, MT, 26.vii.-7.x.2010, 1♀, J. Ševčík leg. (SMOC).

References: A European species but uncommon in Central Europe. It was reared from fungi of the genus *Armillaria* on which females can often be observed (Chandler 2001). In Slovakia it seems to be a rare species – its only Slovak record from Malé Karpaty Mts-Kukla Mt. was published by Vaňhara (1995). It is also rare in the Czech Republic where it is treated as a critically endangered (CR) species (Vaňhara & Ševčík 2005).

Discussion and conclusions

With the records of 18 species the Gemer fauna of flat-footed flies is one of the richest in Slovakia. It can almost rival those in the Bukovské vrchy Mts (Vaňhara & Roháček 1995 - 19 species) and the Poľana Mts (Roháček & Ševčík 2009 – 23 species), which are the best studied areas for Opetiidae and Platypezidae in Slovakia. Rather surprisingly, one species, viz. *Agathomyia collini*, found during the survey of Gemer fauna of these families, proved to be a new addition to the list of Slovak flat-footed flies. Moreover, the composition of the regional fauna is highly interesting as it also embraces several other species considered very rare in Slovakia and important from the nature conservation point of view.



Figs 1-3: 1 – *Polyporivora picta* (Meigen, 1830), female from Šiance reserve nr. Muránska Huta; 2 – *Lindneromyia dorsalis* (Meigen, 1804), female from Hrdzavá dolina nr. Muráň; 3 – habitat of *P. picta*, margin of beech forest (Šiance reserve). All photos by J. Roháček.

The discovery of *Polyporivora picta*, a distinctive and easily recognizable species, after more than 140 years in Slovakia should be particularly mentioned. Similarly, *Agathomyia falleni* and *Protophythia rufa* are found in the Gemer territory for the second time in Slovakia, demonstrating the survival in this area of undisturbed woodland habitats indispensable for the occurrence of these species. Also *Callomyia elegans* should be noted in this connection, although not recently confirmed in the study area, because its records by Vaňhara (1981) from the vicinity of Tisovec (Muránska planina Mts) are the only evidence of its occurrence in Slovakia apart from an old record by Szilády (1941) from the Árvaváralja (= Oravský Podzámok) in NW Slovakia. All the above species are (or should be) considered as jeopardized in Slovakia and/or the whole of Central Europe. In addition, four more species, treated as vulnerable in the neighbouring Czech Republic by Vaňhara & Ševčík (2005) were recorded from the Gemer area, viz. *Agathomyia elegantula*, *A. unicolor*, *A. wankowiczii* and *Bolopus furcatus*. Another interesting species, *Lindneromyia hungarica*, has only recently been added to the Slovak fauna, also including a record from the Gemer area (Roháček & Ševčík 2007). It seems to represent a thermophilous element in the local fly fauna.

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Fauna čeledí Opetiidae a Platypezidae (Diptera) v Gemerské oblasti (střední Slovensko)

Je podán přehled druhů čeledí Opetiidae a Platypezidae zjištěných v Gemerské oblasti (Slovensko), která zahrnuje Národní parky Muránska planina, Slovenský raj a Slovenský kras. Na základě již dříve publikovaných údajů a nově studovaného materiálu byl v této oblasti zaznamenán 1 druh čeledi Opetiidae a 17 druhů čeledi Platypezidae, které jsou pojednány s informacemi o jejich celkovém rozšíření, faunistice na Slovensku, bionomii a případném významu pro ochranu přírody. Devět druhů čeledi Platypezidae je považováno za zvláště významné pro studované území, protože jde o taxony ohrožené, stenotopní nebo vzácné. Z pěti druhů nově uváděných z Gemerské oblasti je jeden, *Agathomyia collini* Verrall, 1901, novým druhem pro faunu Slovenska a tři další, *Agathomyia falleni* (Zetterstedt, 1819), *Proctoclythia rufa* (Meigen, 1830) a *Polyporivora picta* (Meigen, 1830) představují druhé nálezy na Slovensku, přičemž posledně jmenovaný byl znovuobjeven na Slovensku po více než 140 letech.

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