



Two new species of Scathophagidae (Insecta: Diptera) from the Czech Republic, with description of the males of *Scathophaga bohemiae* and *Norellisoma vonickai*

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Abstract. *Microprosopa pokornyi* sp. nov., *Scathophaga moraviensis* sp. nov., and the males of *Scathophaga bohemiae* Šifner, 2000 and *Norellisoma vonickai* Šifner, 2008b are described from the Czech Republic. Differential diagnoses of all mentioned species are given and important diagnostic characters are figured.

Key words. Diptera, Scathophagidae, *Microprosopa*, *Norellisoma*, *Scathophaga*, taxonomy, new species, faunistics, Palaearctic Region, Czech Republic

INTRODUCTION

The Palaearctic genera *Microprosopa* Becker, 1894, *Norellisoma* Wahlgren, 1917 and *Scathophaga* Meigen, 1803 of the family Scathophagidae (Diptera) are represented by many species: *Microprosopa* by 10 (Ozerov 2008, Šifner 2008a,b), *Norellisoma* by 26 (Ozerov 2008, 2009, 2010, Šifner 2008a,b, 2009, 2010) and *Scathophaga* by 39 including one fossil species (Vockeroth 1994, Šifner 2008a, 2010). Two additional species are described in this paper: *Microprosopa pokornyi* sp. nov. and *Scathophaga moraviensis* sp. nov. (both from Czech Republic), as well as the males of *Norellisoma vonickai* Šifner, 2008 and *Scathophaga bohemiae* Šifner, 2000, so far known only from females (Šifner 2000, 2008b). New faunistic data on these species from the Czech Republic are given.

MATERIAL AND METHODS

The specimens examined were collected by several collectors (see below) by sweeping, Malaise traps and yellow pan water traps. All localities are accompanied by the grid mapping codes (Ehrenberger & Hamann 1965) according to Zelený (1972) and Pruner & Míka (1996).

The abbreviations and terms in the text are as follow: NM – National Monument, NMPC = National Museum, Praha, Czech Republic; NNR – National Nature Reserve, NP – National Park, PLA – Protected Landscape Area. All material including the types is currently deposited in the author's private collection, which is to be deposited in NMPC.

TAXONOMY

Microprosopa pokornyi sp. nov.

(Figs. 1-3)

HOLOTYPE: ♂, Czech Republic: Bohemia: PLA Křivoklátsko, Chyňava (5950), 50.040°N, 14.037°E, bank of brook, yellow pan water traps, 420 m a.s.l., 11-14 June 2010, F. Šifner leg. (coll. Šifner).

DESCRIPTION OF MALE (female unknown). Body length 7 mm, ground colour black-brown.

HEAD. Posterior portion black-brown; orbita, parafacials and frontal vitta dark brown; face and genae yellowish brown; scape, pedicel and basal half of first flagellomere yellowish, apical half black; arista bare, two distinct vibrissae together with 2-3 short weak bristles; palpi white and distinctly enlarged, covered by fine short hairlike bristles only. THORAX. Acrostichal bristles distinct but sparse, 2 + 3 dorsocentral bristles, two pairs of long scutellar bristles of equal size, one katepisternal bristle, other chaetotaxy standard; all legs dark brown, wings darkened, all veins dark. ABDOMEN. Sternite 3 long, rectangular, proximally with large incision and distinct bristles caudally, sternite 4 more or less oval, both sternites covered by irregular fine short hairs; sternite 5 with short lobes, narrowed caudally and without distinct bristles, medially with short and sparse fine bristles (Fig. 1); pregonite straight, broad, but narrowed basally, acutely pointed, beak-shaped, without bristles (Fig. 2); cerci very short with fine and short hairs only; surstyli broad, straight, with long fine hairs caudally and laterally (Fig. 3).

DIFFERENTIAL DIAGNOSIS. *Microprosopa pokornyi* sp. nov. differs from related *M. ozerovi* Šifner, 2008, in the following characters: *M. pokornyi* sp. nov. has bristles between the lobes of the abdominal sternite 5 missing, abdominal sternite 4 oval, pregonite beak-shaped and narrowed basally (Figs. 1-3); while *M. ozerovi* has dense bristles between the lobes of the abdominal sternite 5, abdominal sternite 4 with distinct incision, pregonite beak-shaped but broad basally (cf. Šifner 2008b).

ETYMOLOGY. This species is dedicated to my friend, entomologist and eminent photographer of insects Vladimír Pokorný (Praha, Czech Republic).

DISTRIBUTION. Czech Republic (Central Bohemia).

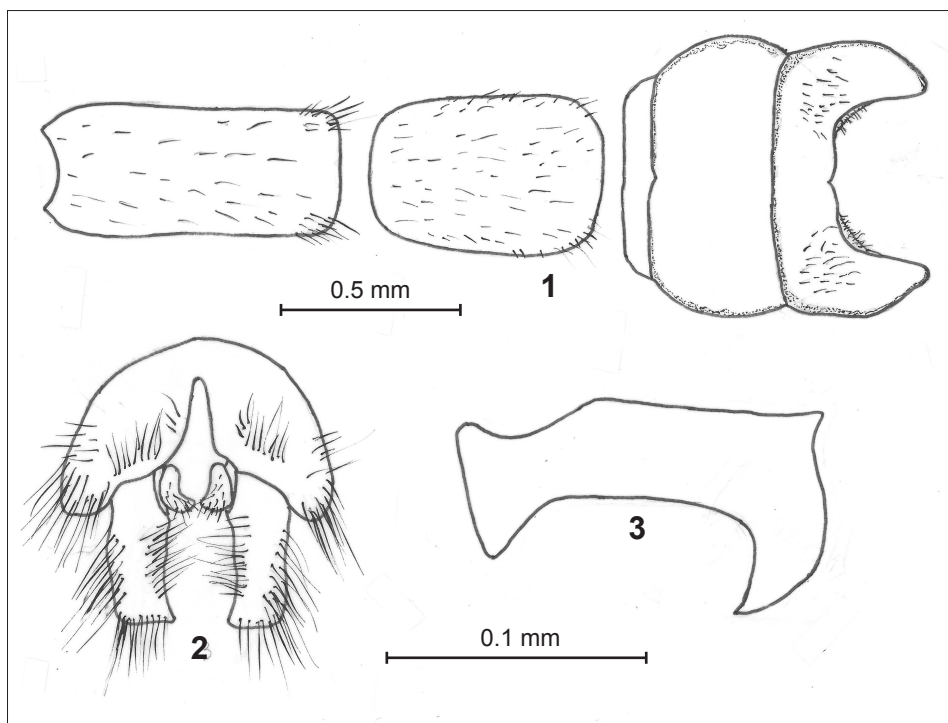
Scathophaga moraviensis sp. nov.

(Figs. 4-7)

HOLOTYPE: ♂, Czech Republic: Moravia: PLA Bílé Karpaty, Hrubá Vrbka (7170), NNR Čertoryje, 48.859°N, 17.431°E, 360 m a.s.l., Malaise trap, 25 May-15 June 2010, Macek & Chvojka leg. (NMPC).

ALLOTYPE: ♀, the same data as holotype (coll. Šifner).

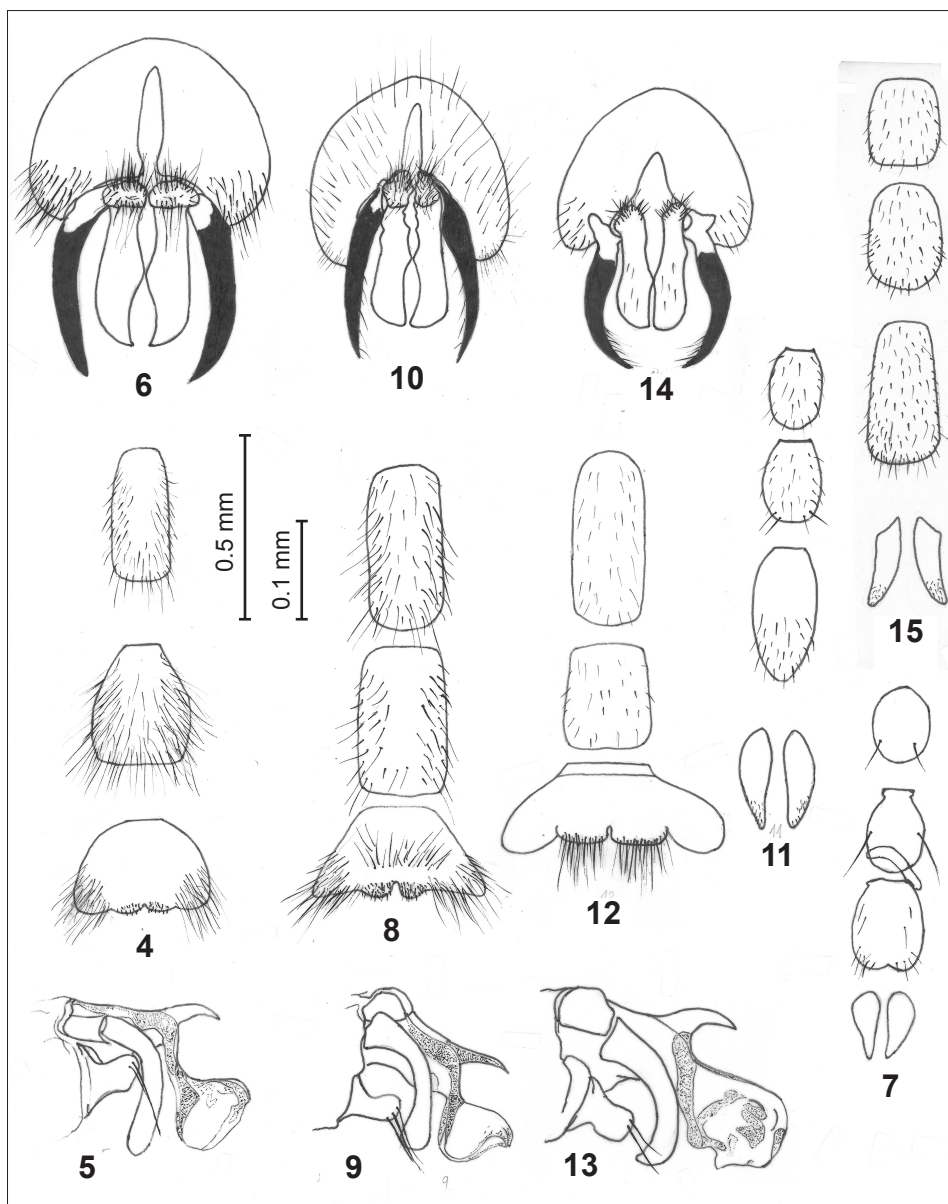
DESCRIPTION OF MALE AND FEMALE. Body length 7 mm, ground colour black but yellowish to grey dusted. HEAD. Orbital setae 3, frontal setae 4, orbits brown, grey dusted; parafacials, frontal vitta, face and genae brown, antennae dark brown, arista sparsely and shortly plumose, vibrissal callus with three distinct vibrissae besides two short bristles, palpi yellow. THORAX. Acrostichal bristles sparse, 2 + 3 dorsocentral bristles, intraalar



Figs. 1-3. *Microprosopa pokornyí* sp. nov., male, holotype. 1 – abdominal sternites 3-5; 2 – pregonite; 3 – cerci and surstyli. Scale bars: 0.5 mm (Figs. 1, 3); 0.1 mm (Fig. 2). Scale bars: 0.5 mm (Figs. 1, 3); 0.1 mm (Fig. 2).

setae 2, supraalar setae 3, humeral seta 1, posthumeral seta 1, praesutural seta 1, notopleural setae 2, katepisternal seta 1, two pairs of long scutellar setae of equal size. ABDOMEN (♂). Sternite 3 rectangular and long, sternite 4 narrowed apically, sternite 5 more or less semicircular without lateral lobes, medial lobes only weakly developed, black setulae on them sparse and very short (Fig. 4); postgonite long and curved basally, pregonite with two bristles apically; lower bristle short and reaching midlength of upper bristle (Fig. 5); distyli narrow, black, moderately curved apically; cerci long without bristles, with hairlike bristles only in upper areas (Fig. 6). ABDOMEN (♀). Sternite 5 oval with two caudal bristles, sternite 6 with wide a protuberance proximally and two distinct bristles laterally, sternite 7 wide with distinct caudal incision (Fig. 7).

DIFFERENTIAL DIAGNOSIS. *Scathophaga moraviensis* sp. nov. differs from related *S. inquinata* (Meigen, 1826) (including *S. analis* Meigen, 1826, considered now its junior synonym – cf. Šifner 2008a) in the following characters: *S. moraviensis* sp. nov. has ground colour black, yellowish to grey dusted, the lobes of the sternite 5 in male without lateral lobes, pregonite of male with two bristles of unequal size, sternite 7 of female wide, with caudal incision (Figs. 4-7); *S. inquinata* has ground colour brown



Figs. 4-16. 4-7 – *Scathophaga moraviensis* sp. nov., male, holotype: 1 – abdominal sternites 3-5; 2 – penis apparatus with pregonite and postgonite; 6 – cerci and surstyli; 7 – female, allotype, abdominal sternites 5-8 with spermatheca. 8-11 – *S. inquinata* (Meigen, 1826): 8 – abdominal sternites 3-5; 9 – penis apparatus with pregonite and postgonite; 10 – cerci and surstyli; 11 – female, abdominal sternites 5-8. 12-15 – *S. bohemiae* Šifner, 2000: 12 – male, abdominal sternites 3-5; 13 – penis apparatus with pregonite and postgonite; 14 – cerci and surstyli; 15 – female, abdominal sternites 6-8. Scale bars: 0.5 mm (Figs. 4, 6, 7, 8, 10, 11, 12, 14, 15); 0.1 mm (Figs. 5, 9, 13).

to yellow-brown, the lateral lobes of the abdominal sternite 5 in male distinct (Fig. 8), pregonite of male with three bristles of equal length (Fig. 9), abdominal sternite 7 of female long and narrowed apically (Fig. 11).

ETYMOLOGY. *Moraviensis*, adjective derived from Moravia, the Latin name of the historic eastern part of the Czech Republic.

DISTRIBUTION. Czech Republic (South-eastern Moravia).

***Scathophaga bohemiae* Šifner, 2000**

(Figs. 12–15)

MATERIAL EXAMINED. Czech Republic: Bohemia: PLA Jizerské hory Mts., Rejdice (5258), brook Ješkrabec, wetland, 650 m a.s.l., yellow pan water traps, 10–22 September 2005, 1 ♂, Preisler & Vonička leg.; Vřesová (5742), open-cast coal mines and dump, brook, Malaise trap 1, 12 April–10 May 2010, 1 ♂ 5 ♀♀; Vintířov (5742), open-cast coal mines and dump, alder carr, Malaise trap 6, 14 April–10 May 2010, 1 ♂ 7 ♀♀, all Kabelák leg.; PLA Podblanicko, Smršťov (6355), Malaise trap, 10–30 April 2009, 1 ♀, Macek leg. PLA Labské pískovce, Děčinský Sněžník Mt. (5250), Malaise trap, 1–27 July 2010, 1 ♂, Macek leg.; PLA Orlické hory Mts, NNR Černý důl (5864), 15 May–10 June 2010, 2 ♂♂ 1 ♀, Hájek leg. Moravia: PLA Bílé Karpaty, Strání (7072), NM Záhumenice, Malaise trap, 7 April–5 May 2010, 5 ♀♀, Chvojka leg., Hrubá Vrbka, (7170), NNR Čertoryje, Malaise trap, 16 June–9 July 2010, 1 ♂, Macek & Chvojka leg., Brumov (6974), NM Chladný vrch, Malaise trap, 16 June–9 July 2010, 1 ♀ (all det. et coll. Šifner).

DESCRIPTION OF MALE. Chaetotaxy and body colour identical with female, colouration dark brown, dorsal part of thorax including the scutellum dark brown. Abdomen: sternite 3 rectangular, long, three times longer than wide, sternite 4 short, only weakly longer than wide, both covered with fine hairs; lateral lobes of sternite 5 wide, medial lobes short, with long hairlike bristles, medially with distinct incision (Fig. 12); pregonite weakly arcuate with two long bristles apically (Fig. 13), cerci wide, surstyli arcuately curved inwards (Fig. 14).

DIFFERENTIAL DIAGNOSIS. *Scathophaga bohemiae* differs from related *S. inquinata* in the following characters: *S. bohemiae* has abdominal sternite 5 with lateral lobes wide without distinct bristles, medial lobes short with long hairlike bristles (Fig. 12), pregonite with two long bristles apically (Fig. 13), surstyli arcuately curved inwards (Fig. 14), abdominal sternite 7 of female enlarged caudally (Fig. 15); *S. inquinata* has abdominal sternite 5 without lateral lobes, medial lobes with short, black bristles only, surstyli curved inwards apically only, pregonite with three bristles apically (Figs. 8, 9, 10), abdominal sternite 7 of female narrowed caudally (Fig. 11).

DISTRIBUTION. So far known only from Bohemia. Recently *S. bohemiae* was discovered in the Bílé Karpaty PLA, which is the first record from Moravia.

***Scathophaga bohemiae*, *S. inquinata* and *S. moraviensis* sp. nov.: key to species**

- 1 Wings pellucid, crossveins R–M and M–Cu not shadowed, coxae with black bristles, lateral lobes of abdominal sternite 5 in male wide (Fig. 12), male pregonite with two bristles apically (Fig. 13), abdominal sternite 7 in female enlarged caudally (Fig. 15).
..... ***S. bohemiae*** Šifner, 2000
- Wings turned yellow-brown to dark-brown, crossveins R–M and M–Cu shadowed in different intensity. 2
- 2 Lateral lobes of abdominal sternite 5 in male distinct (Fig. 8), male pregonite with three apical bristles of equal size, male postgonite enlarged apically (Fig. 9), surstyli and cerci narrow (Fig. 10), abdominal sternite 7 in female narrowed apically (Fig. 11). . .
..... ***S. inquinata*** (Meigen, 1826)
- Lateral lobes of abdominal sternite 5 in male missing (Fig. 4), male pregonite with two apical bristles of unequal size (Fig. 5), surstyli long, narrow, and weakly curved inwards apically (Fig. 6), abdominal sternite 7 in female wide and with distinct caudal incision (Fig. 7). ***S. moraviensis* sp. nov.**

***Norellisoma vonickai* Šifner, 2008b**

(Figs. 16–19)

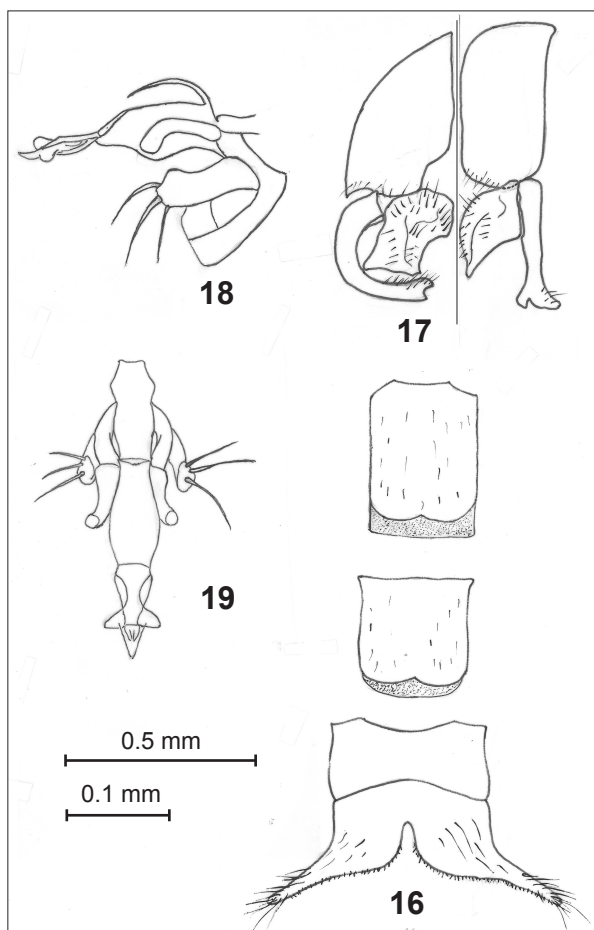
MATERIAL EXAMINED. Czech Republic: Bohemia: PLA Jizerské hory Mts., Jizerka (5158), sweeping, 21 June 2006, 1 ♂, J. Preisler leg.; Jizerka-Pralouka (5158), sweeping, 9 June 2004, 1 ♂, Šifner leg.; NP České Švýcarsko, Růžová (5151), NNR Růžák, Malaise trap, 16 May–6 June 2007, 1 ♀, Trýzna leg. (all det. et coll. Šifner).

DESCRIPTION OF MALE. The chaetotaxy identical with female. Abdomen: sternites 3 and 4 more or less square, both without distinct bristles, sternite 4 membraneously ended caudally; lobes of sternite 5 very divergent, weakly arched apically with sparse hairlike bristles, medially with very short black bristles (Fig. 16); cerci wide, surstyli arcuately curved inwards, with distinct apical incision (Fig. 17, caudal and lateral view); pregonite wide, enlarged apically with three distinct and long bristles, epiphallus long, narrow and weakly arched, distiphallus with lateral process apically (Fig. 18, 19; lateral and ventral view).

DIFFERENTIAL DIAGNOSIS. *Norellisoma vonickai* differs from related *Norellisoma lituratum* (Meigen, 1826) in the following characters: *N. vonickai* has lobes of abdominal sternite 5 divergent (Fig. 16), distiphallus with lateral process apically (Fig. 18, 19), abdominal sternites 8 of female with six thorns (Šifner 2008b); *N. lituratum* has lobes of abdominal sternite 5 curved inwards, abdominal sternites 8 of female with five thorns (Šifner 2003).

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Figs. 16-19. *Norellisoma vonickai* Šifner, 2008b. 16 – male, abdominal sternites 3-5; 17 – cerci and surstyli (caudal and lateral view); 18 – penis apparatus with pregonite and postgonite (lateral view); 19 – penis apparatus with pregonite and postgonite (ventral view). Scale bars: 0.5 mm (Figs. 16-17); 0.1 mm (Figs. 18-19).

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