

**Three new species of the family Scathophagidae (Diptera)
from the Palearctic region with a redescription
of the male of *Amaurosoma longicorne***

František ŠIFNER

V štihlách 1311, CZ-142 00 Praha 4 – Krč, Czech Republic

Abstract. *Amaurosoma bernasconii* sp. nov., *Norellisoma vonickai* sp. nov. from the Czech Republic and *Microprosopa ozerovi* sp. nov. from Slovakia are described. The male of *Amaurosoma longicorne* (von Roser, 1840) from the Czech Republic is redescribed. Differential diagnoses of all mentioned species are given and important diagnostic characters are figured.

Key words. Diptera, Scathophagidae, *Amaurosoma*, *Microprosopa*, *Norellisoma*, taxonomy, new species, redescription, Palearctic region, Czech Republic, Poland, Slovakia

Introduction

The Palearctic genera *Amaurosoma* Becker, 1894, *Microprosopa* Becker, 1894, and *Norellisoma* Wahlgren, 1917, of the family Scathophagidae (Diptera) are represented by many valid species: *Amaurosoma* by 16, including the formerly dubious *A. longicorne* (von Roser, 1840) (ŠIFNER 2008), *Microprosopa* by eight (ŠIFNER 2008), and *Norellisoma* by 21 (HIRONAGA & SUWA 2005; ŠIFNER 2006, 2008).

Three additional species are described in this paper: *Amaurosoma bernasconii* sp. nov. (Czech Republic), *Microprosopa ozerovi* sp. nov. (Slovakia), and *Norellisoma vonickai* sp. nov. (Czech Republic). Moreover, I had the possibility to study the male of *Amaurosoma longicorne* (von Roser, 1840). The original description is very brief but the redescription by BECKER (1894) is adequate. The male of *A. longicorne* is redescribed here, based on the characters of the genitalia that are quite different from all hitherto described species of the genus, and regarded as a valid species.

Material and methods

The specimens were collected by several collectors (see below), mainly by sweeping and in one case by yellow pan traps. All Czech and Slovak localities are accompanied by the grid

mapping codes (EHRENDORFER & HAMANN 1965) according to ZELENÝ (1972) and PRUNER & MÍKA (1996). The type material is currently deposited in the author's private collection, which is to be deposited in the National Museum in Prague, Czech Republic. Double slashes (//) separate data on different labels.

Taxonomy

Amaurosoma longicorne (von Roser, 1840)

(Figs. 1-3)

Cordylura longicornis von Roser, 1840: 59

Material examined. CZECH REPUBLIC: BOHEMIA mer., Malšice (6653), 4.v.1976, 1 ♂, Jan Máca leg., F. Šifner 1982 det. (coll. Šifner).

Redescription. Male. Body length 5 mm, primary colour black.

Head. Dark, orbits, parafacialia, frontal vitta and hind portion of head black, face, genae and narrow strip in front of frontal vittae yellow, three pairs of frontal setae, two pairs of orbital setae, scape, pedicel and entire antennae including bare arista black, aristomere 3 long, three times as long as basally wide, second aristomere only slightly prolonged. Palpi yellow with yellow hairs, vibrissal callus with one vibrissa, and genae in hind portion with yellow hairs.

Thorax. Acrostichal bristles sparse, three distinct katepisternal bristles, two scutellar bristles, other chaetotaxy standard, wings hyaline, all veins distinct, vein $Cu_1 + 1A$ ends at wing margin. All legs yellow, meso- and metafemora slightly darkened dorsoapically, procoxae distinctly and conspicuously yellow.

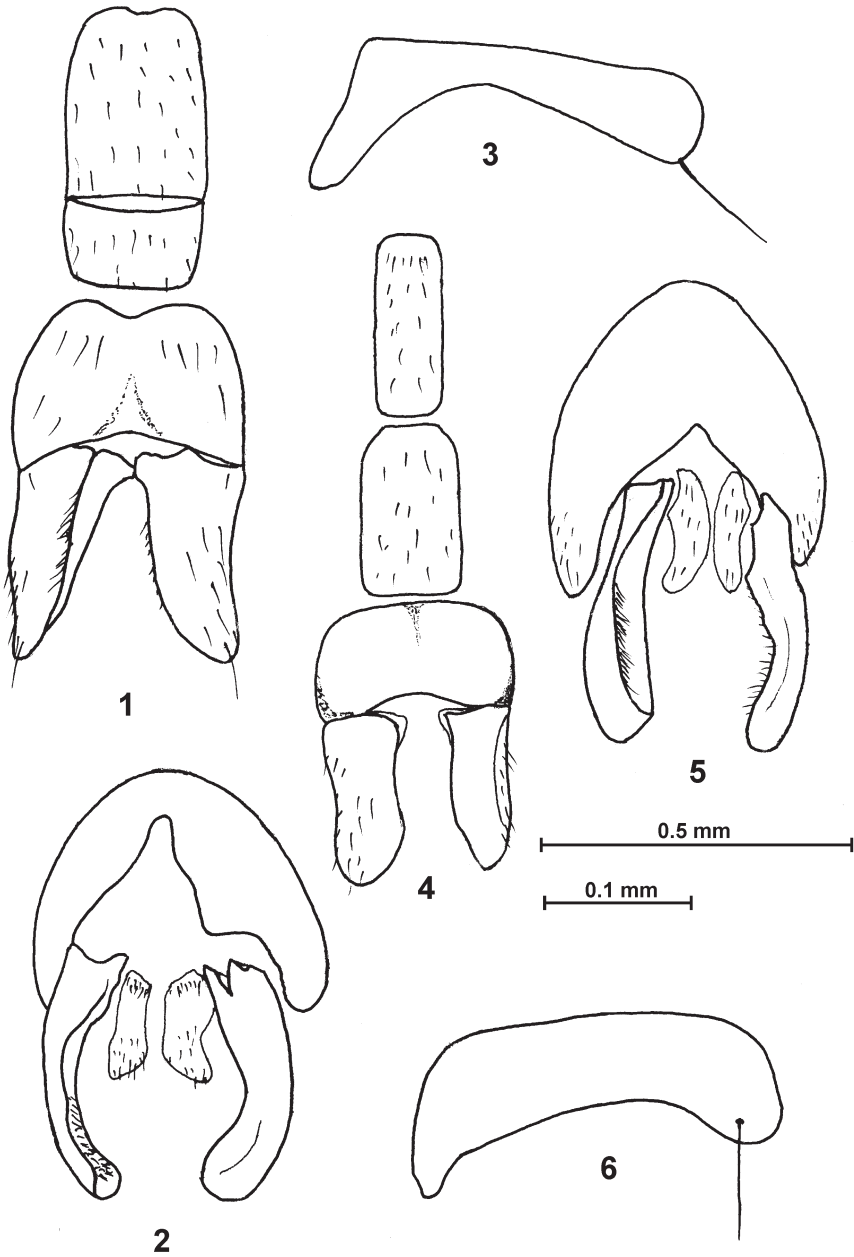
Abdomen. Sternite 4 very short and wider than long, sternite 3 rectangular and proximally with an incision, lobes of sternite 5 long, straight, only apically slightly narrowed, basal inner portion of lobes distinctly enlarged and with short bristles at its medial edges (Fig. 1). Surstyli slightly arched, with short and fine bristles on inner side, cerci short (Fig. 2), praegonite straight and narrow, slightly broadened apically with one subapical bristle (Fig. 3).

Female unknown.

Differential diagnosis. *Amaurosoma longicorne* differs from the nearest species, *A. inerne* Becker, 1894, by the following characters: aristomere distinctly long, praegonite apically broadened with one subapical bristle, abdominal sternite 4 very short, and abdominal sternite 3 long with a proximal incision.

Distribution. Czech Republic (this paper), Germany (VON ROSER 1840).

Discussion. The type locality of this species is Germany, probably the environs of Württemberg (VON ROSER 1840). The holotype designation is unclear and its depository is unknown. The original Latin description of *C. longicornis* is very brief: 'thorace cinereo, abdomine nigro, palpi albis; antennis longitudine capitis; pedibus flavis, posticis apice femorum et tibiaram fuscis' [= thorax grey, abdomen black, palpi pale; antennae as long as head; legs yellow, tips of hind femora and tibiae darkened] (VON ROSER 1840). BECKER (1894) somewhat extended the original description, e.g. by stating: 'femoribus anticis intus setis nullis' [= fore femora without short bristles on its interior side], fronte prominente antice flava, antennis nigris longis angustis, vibrissa unica [= frons prominent and anteriorly yellow, antennae black,



Figs. 1-6. 1-3: *Amaurosoma longicorne* (von Roser, 1840); 4-6: *A. bernasconii* sp. nov., male, holotype. 1, 4 – abdominal sternites 4 and 5; 2, 5 – surstyli and cerci; 3, 6 – praegonite. Scale bars: 0.5 mm (Figs. 1-2, 4-5); 0.1 mm (Figs. 3, 6).

long and narrow, only one vibrissa]. An important fact mentioned in the German part of the redescription is: ‘...das zweite Borstenglied bei Männchen verlängert’ [= second article of arista in male prolonged...]. It is evident from Becker’s text that he had both sexes at hand (cf. BECKER 1894: 115).

I was able to examine the following four specimens, previously incorrectly identified as *A. longicorne*, from the Becker collection deposited in the Museum für Naturkunde, Berlin:

Two females of *Spathephilus breviventris* (Loew, 1973) labelled ‘Panten [= Prochowice near Legnica, Poland], 16.5.[19]09 // *Nanna longicornis* v. Ros., det. 1962 J.R.Vockeroth // Zool. Mus. Berlin’. I attached a label: ‘*Spathephilus breviventris* (Loew, 1973), ♀, det. F.Šifner, 2007’.

One female of *Amaurosoma brevivrons* (Zetterstedt, 1838) labelled ‘Panten [= Prochowice near Legnica, Poland], 16.5.[19]09 // *Nanna longicornis* v. Ros., det. 1962 J.R.Vockeroth // Zool. Mus. Berlin’. I attached a label: ‘*Amaurosoma brevivrons* (Zett., 1838), ♀, det. F.Šifner, 2007’.

One male of *Amaurosoma articulatum* Becker, 1894, labelled ‘Dohnan [= Dohňany (6875) in the Biele Karpaty Mts., Slovakia], 23.4. [?]30449 // *Nanna longicornis* v. Ros., det. 1962 J.R.Vockeroth, ♂ // Zool. Mus. Berlin’. I attached a label: ‘*Amaurosoma articulatum* Becker, 1894, det. F.Šifner, 2007’. This specimen is atypically coloured: the basic colouration is brown and the bristles on the interior side of fore femora are very short and hardly distinct.

Only the male from Malšice (Czech Republic) corresponds to the Becker’s redescription and differs from all species of the genus *Amaurosoma* by the following characters: first aristomere long, praegonite broadened apically, and the shape of abdominal sternites 3-5 including lobes. I regard this species as valid.

Amaurosoma bernasconii sp. nov.

(Figs. 4-7)

Type material. HOLOTYPE: ♂, CZECH REPUBLIC: MORAVIA mer., Rokytná near Moravský Krumlov (6963), deciduous forest, 20.v.1986, F. Šifner leg. ALLOTYPE: ♀, same data as holotype (coll. Šifner).

Description. Body length 4-5 mm, primary colour black.

Head. Posterior portion of head dark and slightly grey dusted, orbits, upper part of parafacialia, and frontal vitta black, a strip in front of frontal vitta yellowish brown, entire antennae black, arista bare, second aristomere slightly prolonged, arista thickened to half of its length, face, lower part of parafacialia and genae yellowish white, palpi yellow without distinct hair bristles. Vibrissal callus with two bristles and one short bristle between them.

Thorax. Acrostichal bristles very sparse or almost absent, two scutellar bristles very long at their midlength arched outside, other chaetotaxy standard. All legs yellow, fore femora without short bristles at inner side, wings hyaline, all veins distinct and dark.

Abdomen. Male – sternite 3 narrow and long, sternite 4 rectangular and slightly narrowed proximally, lobes of sternite 5 straight, with short bristles medially (Fig. 4), surstyli only slightly arched, at inner side with bristles, cerci short and narrow (Fig. 5), praegonite narrow, slightly arched apically with one long, almost perpendicular, lateral bristle (Fig. 6). Female – sternites 4-6 long and rectangular, without distinct bristles, sternite 7 oval, wide, with an incision and four bristles caudally, sternites 8 small and pointed caudally (Fig. 7).

Differential diagnosis. *Amaurosoma bernasconii* sp. nov. differs from the related *A. brevivrons* in the following characters: *A. bernasconii* sp. nov. – male: abdominal sternite 4 rectangular, praegonite with one long, almost perpendicular, lateral bristle; female: abdominal sternite 7 oval with caudal incision (Figs. 4-7). *Amaurosoma brevivrons* – male: abdominal

sternite 4 oval, praegonite with two short bristles; female: abdominal sternite 7 oval, without incision.

Etymology. The species is dedicated to my colleague, Swiss entomologist and molecular biologist Marco V. Bernasconi (Zoologisches Museum, Universität Zürich, Switzerland).

Distribution. Czech Republic (southern Moravia).

***Microprosopa ozerovi* sp. nov.**

(Figs. 8-9)

Type material. HOLOTYPE: ♂, SLOVAKIA: Pribylina (68-6984), 13.vii.1975, 900 m a.s.l., R. Rozkošný leg. PARATYPE: ♂, SLOVAKIA: Vysoké Tatry Mts., Bielowodská dolina valley (67-6886), 16.vii.1975, 1000 m a.s.l., R. Rozkošný leg. (all coll. Šifner).

Description. Male. Body length 10 mm, primary colour dark brown.

Head. Posterior portion dark brown, rest yellowish brown and whitish dusted, antennae including scape and pedicel yellow to yellowish red, arista bare, black and basally thickened. Vibrissal callus distinct, with 3-4 vibrissae together with 3-5 very short bristles, palpi yellow and slightly enlarged. Genae and lower part of head 'bearded' with long and very fine hairs.

Thorax. Acrostichal bristles indistinct, two pairs of scutellar bristles of equal size, katepi-sternum bare, other chaetotaxy standard, wings darkened, all veins dark.

Abdomen. Sternite 3 rectangular, slightly broadened caudally with small projection, sternite 4 more or less square with distinct incision proximally, both without distinct bristles. Sternite 5 with short lobes arcuately curved inwards, with dense very short bristles medially (Fig. 8), praegonite straight, broad and acutely pointed, beak-shaped, without bristles (Fig. 9).

Female unknown.

Differential diagnosis. *Microprosopa ozerovi* sp. nov. differs from the related *M. hoberlandti* Šifner, 1981, in the following characters: *M. ozerovi* sp. nov. – bristles between lobes of abdominal sternite 5 present, incision of abdominal sternite 4 distinct, praegonite beak-shaped (Figs. 8-9); *M. hoberlandti* – bristles between lobes of abdominal sternite 5 missing, abdominal sternite 4 oval, praegonite with two apical bristles (ŠIFNER 1981).

Etymology. This species is dedicated to my colleague and eminent Russian dipterologist Andrey L. Ozerov (Zoological Museum of the Lomonosov State University, Moscow, Russia).

Distribution. Northern Slovakia.

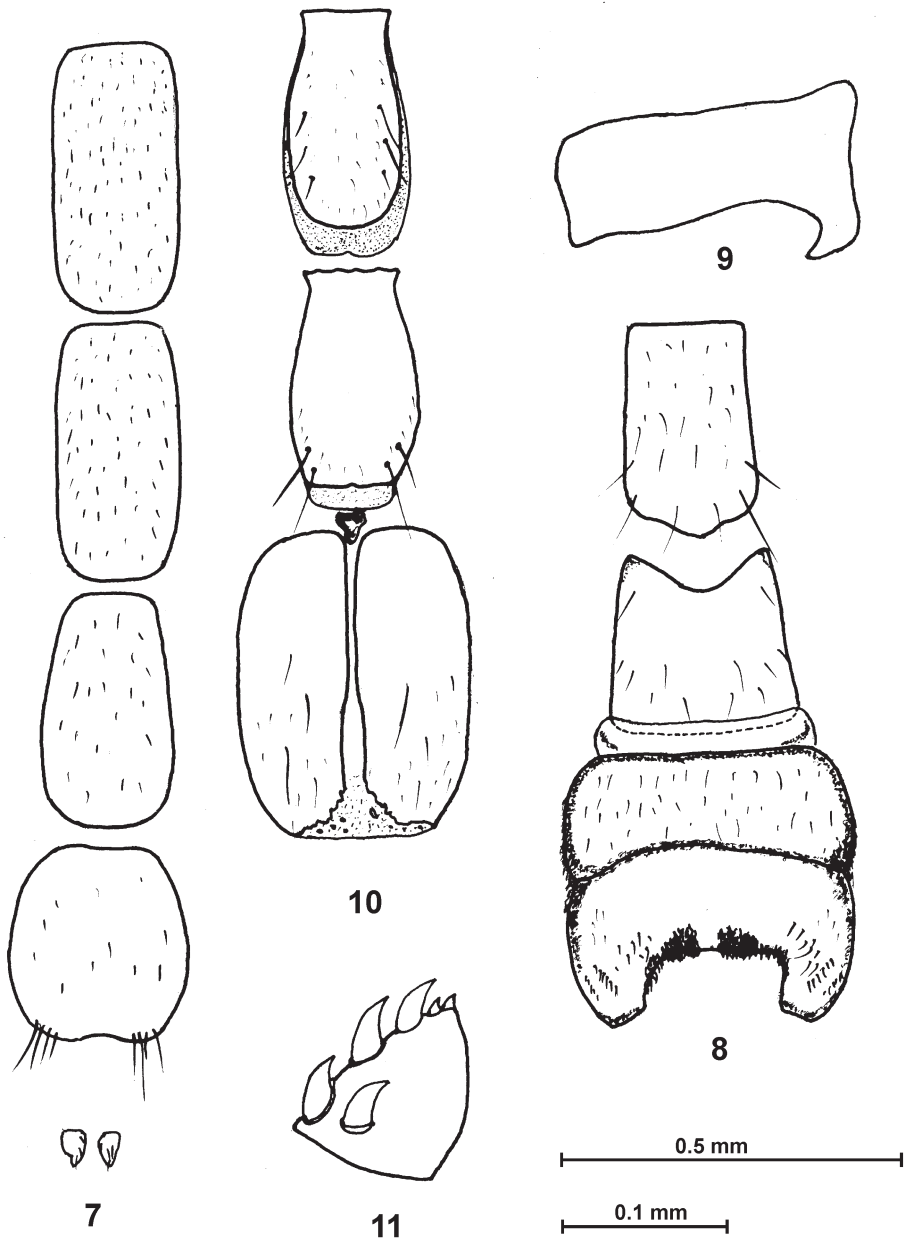
***Norellisoma vonickai* sp. nov.**

(Fig. 10-11)

Type material. HOLOTYPE: ♀, CZECH REPUBLIC: BOHEMIA bor., Jizerské hory Mts., Bukovec Mt. (5158) near the Jizerka settlement, 18.-20.vi.2007, wet meadow and forest edge, 950 m a.s.l., yellow pan traps, F. Šifner leg. (coll. Šifner).

Description. Female. Body length 6 mm, primary colour black.

Head. Two orbital setae, three frontal setae, frontal vitta, parafacials, face and genae entirely yellowish red, antennae completely yellow, arista black and bare, only one vibrissal seta, palpi yellow, ocellar triangle and posterior portion of head black.



Figs. 7-11. 7: *Amaurosoma bernasconii* sp. nov., female, allotype, abdominal sternites 4 to 7. 8-9: *Microprosopa ozerovi* sp. nov., male, paratype; 10-11: *Norellisoma vonickai* sp. nov., female. 8 – abdominal sternites 3 to 5; 9 – praegonite; 10 – abdominal sternites 5 to 7; 11 – abdominal sternite 8. Scale bars: 0.5 mm (Figs. 8, 10); 0.1 mm (Figs. 7, 9, 11).

Thorax. Acrostichal setae almost invisible, fine dorsocentral setae (2 + 3), one humeral seta, one pair of discal scutellar setae, apical discal setae reduced to hairs. All femora and tibiae including all tarsomeres yellow, wings distinctly darkened but veins without longitudinal darkened coloration.

Abdomen. Sternite 7 divided into two separate sclerites which are irregularly sclerotized caudally and connected by membrane with minute sclerites, proximally with a separate small triangular sclerite, sternite 6 narrow, caudally straight and extended by narrow membrane and with distinct bristles laterally, sternite 5 with three pairs of fine bristles (Fig. 10), sternite 8 very short with six thorns, two apical ones small (Fig. 11).

Male unknown.

Differential diagnosis. The female of *Norellisoma vonickai* sp. nov. differs from all known species of the genus by the bare arista, very short abdominal sternite 8, and characteristic arrangement of the thorns.

Etymology. This species is dedicated to the Czech coleopterologist and my friend Pavel Vonička (Regional Museum of Northern Bohemia, Liberec, Czech Republic).

Distribution. Czech Republic (northern Bohemia).

Acknowledgements

I wish to express my sincere thanks to Joachim Ziegler (Museum für Naturkunde, Berlin, Germany) for the loan of specimens under his care. I am also obliged to Josef Jelínek and Jan Ježek (both National Museum, Praha, Czech Republic) for their critical comments on the manuscript.

References

- BECKER T. 1894: Dipterologische Studien. I. Scatomyzidae. *Berliner Entomologische Zeitschrift* **39**: 77-196.
- EHRENDORFER F. & HAMANN U. 1965: Vorschläge zu einer floristischen Kartierung von Mitteleuropa. *Berichte der Deutschen Botanischen Gesellschaft* **78**: 35-50.
- HIRONAGA T. & SUWA M. 2005: Notes on the genus *Norellisoma* in Japan, with description of a new species (Diptera, Scathophagidae). *Studia Dipterologica* **12**: 199-208.
- PRUNER L. & MÍKA P. 1996: Seznam obcí a jejich částí v České republice s čísly mapových polí pro síťové mapování fauny. (List of settlements in the Czech Republic with associated map field codes for faunistic grid mapping system). *Klapalekiana* **32 (Supplementum)**: 1-175 (in Czech, English summary).
- ROSER C. VON 1840: III. Beitrag zur Vaterlandkunde. Erster Nachtrag zu dem in Jahre 1834 bekannt gemachten Verzeichnisse in Württemberg vorkommenden zweiflügligen Insecten. *Correspondenzblatt der Königlich Württembergischen Landwirtschaftlichen Vereins* (Stuttgart, Tübingen) **1(1)**: 49-64.
- ŠIFNER F. 1981: Les résultats de l'expédition entomologique Tchécoslovaque-iranienne a l'Iran en 1973. *Acta Entomologica Musei Nationalis Pragae* **40**: 95-104.
- ŠIFNER F. 2006: *Norellisoma jelineki* sp. nov. – a new species from the Czech Republic (Diptera: Scathophagidae). *Acta Entomologica Musei Nationalis Pragae* **46**: 193-196.
- ŠIFNER F. 2008: A catalogue of the Scathophagidae (Diptera) of the Palaearctic region with notes on their taxonomy and faunistics. *Acta Entomologica Musei Nationalis Pragae* **48**: 111-196.
- ZELENÝ J. 1972: Návrh členění Československa pro faunistický výzkum. (Entwurf einer Gliederung der Tschechoslowakei für der faunistischen Forschung). *Zprávy Československé Společnosti Entomologické při ČSAV* **8**: 3-16 (in Czech, German summary).

