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The first record of *Norellisoma spinimanum* (Fallén, 1819) (Diptera: Scathophagidae) for the fauna of Turkey

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Abstract: The genus *Norellisoma* Wahlgren with the species *N. spinimanum* (Fallén) is recorded from Turkey for the first time. Diagnosis for the genus *Norellisoma* and the description of *N. spinimanum* (Fallén) are given.

Keywords: Scathophagidae, *Norellisoma spinimanum*, Turkey, Sakarya, Description.

Introduction

The genus *Norellisoma* Wahlgren, 1917 is no large genus within the family Scathophagidae. The genus at the present time comprises 28 species (27 Palaearctic and 1 Holarctic) (Vockeroth, 1965; Ozerov, 2008, 2010, 2013; Šifner, 2008).

Adults of *Norellisoma* species are sizes, 4-10 mm, dark to yellow in ground color, femur and tibia of forelegs of both sexes with anteroventral and posteroventral rows of strong setae. Larvae of *Norellisoma* species develop in stems or leaves of plants, particularly in species of *Rumex* (Ferrari, 1987; Jong, 2000; Ozerov, 2009). Description of immature stages of *Norellisoma spinimanum* (Fallén) was given by Disney (1976).

The present study contains the diagnosis of the genus *Norellisoma* and the description of *N. spinimanum* (Fallén), which is recorded for the first time for Turkey here in from male and female specimens caught in the Sakarya Province (Adapazarı and Karasu env.).

Materials and Methods

The specimens of *N. spinimanum* given on photos of the first author (Figs. 1, 2) not collected and studied on photos only. Photos were prepared with camera (Nikon COOLPIX P610).

Additionally, 1 ♂ and 2 ♀♀ of *N. spinimanum* from the Zoological Museum, Moscow State University, Russia (ZMUM) were examined for this study.

The terminology used in description follows

McAlpine (1981).

Results

Diagnosis: Proepisternum covered with setulae at middle. Anepisternum covered with setulae usually along dorsal margin and in posterior part only, without setulae posterior to anterior spiracle. Katepisternum with 1 strong seta in upper posterior corner. Frons with 2 pairs of orbital setae; postocellar setae present. Fore tibiae of both sexes with rows of long posteroventral and anteroventral setae. Scutellum with two pairs of strong scutellar setae (discal and apical) or with a pair of strong discal setae only, apical scutellar setae absent or hair-like. Vein A_1+CuA_2 reaching wing margin at least as a fold. Female abdominal sternite 8 with numerous short spines.

Genus *Norellisoma* is close to *Norellia* Robineau-Desvoidy, 1830 but species of the latter genus have frons with one orbital seta only; postocellar setae absent; scutellum with one pair of strong apical setae, discal setae absent; fore tibiae of both sexes with a row of strong posteroventral setae only, anteroventral setae absent; vein A_1+CuA_2 not reaching wing margin significantly; female abdominal sternite 8 without spines.

Norellisoma spinimanum (Fallén, 1819)

(Figs. 1-8)

Material examined: Turkey: Sakarya (41.0749°N, 30.6493°E) (photos of ♀) (Figs. 1, 2); Karasu env. (ca. 41.0797°N, 30.6934°E), 9.V.2009, N. Vikhrev (1 ♂, 2 ♀♀,



Figures 1, 2. *Norellisoma spinimanum* (Fallén), ♀ adult (Photo by Gökhan Eren in Flickr).

ZMUM).

Description: Female and male. Medium-sized flies (5.0-7.6 mm long).

Head: Frontal vitta yellow, matt; fronto-orbital plate and ocellar triangle black, greyish dusted. Ocellar triangle usually black. Face, parafacial and gena yellow. Postcranium yellow completely or blackish in upper half, greyish dusted, covered with black setae in upper third and pale hairs in lower part. Setae: orbitals 2, frontals 3-4, ocellar 1, postocellar 1 (small, divergent), inner vertical 1, outer vertical 1; 1 pair of black vibrissae present. Antenna yellow. Postpedicel rounded apically, approximately 2 times as long as wide. Arista blackish, basally thickened, pubescent. Clypeus and proboscis yellow. Palpus elongate and slender, yellow.

Thorax: Yellow in ground color, grey microtrichose. Scutellum usually yellow with two blackish stripes along dorsocentral lines, rarely blackish between dorsocentral lines. Acrostical hairs in two rows, dorsocentrals 3+3, including short erect seta on anterior margin of scutum, intra-alars absent, supra-alars 1+2, postpronotals 1, notopleurals 2, postalar 2. Proepisternum with hairs in central part, with 1 black or pale seta near lower margin. Proepimeron with several pale hairs. Anepisternum covered with pale hairs in posterior half, with 2-3 black setae along posterior margin. Katepisternum covered with pale hairs in posterior half and with 1 strong seta in upper posterior corner. Anepimeron bare. Scutellum yellow or brown, grey microtrichose, with a pair of strong discal scutellar setae and a pair of small scutellar setulae.

Legs: entirely yellow, sometimes apex of mid and hind

femora blackish. Fore femur with a row of long 6-9 posteroventral and short 6-10 anteroventral setae. Fore tibia with 4 strong posteroventral and 3-5 strong anteroventral setae (Figure 3), with 1 anterodorsal and 1 posterodorsal setae in basal third, with 1 dorsal seta near middle, and with 1 preapical dorsal seta.

Mid femur with 3-5 setae anteriorly, with 1 preapical posterior setae and 2-3 anteroventral setae in apical third, also with pale hairs ventrally. Mid tibia with 1 anterodorsal and 0-1 posterodorsal setae near middle, 3 posteroventral thin setae, also with pale hairs ventrally and a ring of apical setae.

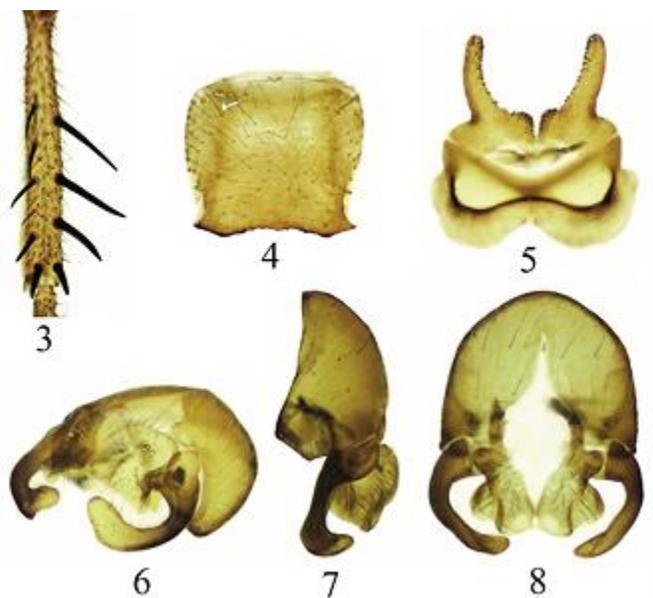
Hind femur with a row of black anterodorsal setae and with 2-3 anteroventral setae in apical third. Hind tibia with 2-3 anterodorsal, 2 posterodorsal, 1 preapical dorsal and 1 apical anteroventral setae.

Wing: Tinged with brownish, veins brownish; R_1 bare dorsally. Calypters, margins of calypters, and halteres yellowish.

Abdomen: Brown or blackish, greyish dusted. Female segments 7-8 shining, flattened laterally. Male sternite 4 rectangular, approximately as wide as long (Figure 4). Male sternite 5 symmetrical, with long lobes (Figure 5). Epandrium and surstyli as in Figures 6-8.

Distribution: Widespread in Europe (Šifner, 2008); Asian part of Russia (Ozerov, 2008; Ozerov and Krivosheina, 2014; Bagachanova et al., 2016), Iran (Khaghaninia and Gharajedaghi, 2014), Turkey (Sakarya) and North America (Vockeroth, 1965).

Comments: *Norellisoma spinimanum* (Fallén) is widespread in Palearctic, including the countries



Figures 3-8. *Norellisoma spinimanum* (Fallén), ♂: (3) fore tibia, ventral view; (4) sternite 4; (5) sternite 5; (6) epandrium, cercus and surstylus, dorsolateral view; (7) same, lateral view; (8) same, dorsal view (Fig. 3: Ozerov and Krivosheina, 2011 (figure 2); Figs. 4-8: Ozerov, 2009 (figures 2-6)).

surrounding Turkey (Romania, Ukraine, Russia (shore of the Black Sea and Caucasus), Georgia and Iran). Thus the finding this species in Turkey is expected.

References

- Bagachanova A.K., Ovchinnikov A.N., Ozerov A.L. 2016. On the fauna of Scathophagidae (Diptera) of Yakutia. *Entomological Review*, 96(6): 775-785.
- Disney R.H.L. 1976. The pre-adult stages of *Norellisoma spinimanum* (Fallén) (Dipt., Cordyluridae) and a parasitoid (Hym., Pteromalidae) of the same. *Entomologist's Gazette*, 27: 263-267.
- Ferrar P. 1987. A guide to the breeding habits and immature stages of Diptera Cyclorrhapha. *Entomograph*. Vol.8. Part.1-2. 907 p.
- Jong H, de. 2000. Family Scathophagidae. L. Papp, B. Darvas (Eds.). *Contributions to a Manual of Palaearctic Diptera*. Appendix. Budapest: Science Herald. pp: 431-445.
- Khaghaninia S., Gharajedaghi Y. 2014. Dung flies fauna (Diptera: Scathophagidae) in East Azerbaijan province of Iran, with eight new records. *Journal of Crop Protection*, 3(3): 389-396.
- McAlpine J.F. 1981. Morphology and terminology-adults. In: J.F. McAlpine, B.V. Peterson, G.E. Shewell, H.J. Teskey, J.R. Vokeroth, D.M. Wood (Eds.). *Manual of Nearctic Diptera*. Volume 2. Research Branch. Agriculture Canada. Monograph 27, Ottawa. pp: 9-63.
- Ozerov A.L. 2008. Two new species of the genus *Norellia*

- Robineau-Desvoidy, 1830 (Diptera, Scathophagidae) from Altay. *Far Eastern Entomologist*, 184: 1-4.
- Ozerov A.L. 2009. On the Palaearctic fauna of *Norellisoma* Wahlgren, 1917 (Diptera: Scathophagidae). *Russian Entomological Journal*, 18(3): 229-234.
- Ozerov A.L. 2010. Five new species of Scathophagidae (Diptera) from Russia. *Russian Entomological Journal*, 19: 157-166.
- Ozerov A.L. 2013. Description of five new species and notes on taxonomy of Scathophagidae (Diptera). *Russian Entomological Journal*, 22(1): 81-89.
- Ozerov A.L., Krivosheina M.G. 2011. The first record of *Norellia tipularia* (Fabricius, 1794) (Diptera, Scathophagidae) for the fauna of Russia. *Russian Entomological Journal*, 20(1): 101-103.
- Ozerov A.L., Krivosheina M.G. 2014. To the fauna of dung flies (Diptera: Scathophagidae) of Russian Far East. *Russian Entomological Journal*, 23(3): 203-222.
- 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(1): 111-196.
- Vockeroth J.R. 1965. Subfamily Scatophaginae. Stone A. (Ed.). *A catalog of the Diptera of America north of Mexico*. Unated States Department of Agriculture. Agriculture Handbook. No.276. pp: 826-842.