

On the Palaearctic fauna of *Norellisoma* Wahlgren, 1917 (Diptera: Scathophagidae)

К фауне палеарктических двукрылых рода *Norellisoma* Wahlgren, 1917 (Diptera, Scathophagidae)

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КЛЮЧЕВЫЕ СЛОВА: Diptera, Scathophagidae, *Norellisoma*, новый вид, Палеарктическая область

ABSTRACT. The type material of 3 species of *Norellisoma* (Diptera: Scathophagidae) is discussed. Lectotypes are designated for 2 species: *N. striolatum* (Meigen) and *N. lesgiae* (Becker). A note is given on the status of the species *N. armipes* (Meigen). *Norellisoma oreinum* sp.n. is described (Caucasus Montains; Abkhazia and Russia (Adygea)).

РЕЗЮМЕ. Обсуждаются результаты изучения типов 3 видов *Norellisoma* (Diptera, Scathophagidae). Обозначены лектотипы для 2 видов: *N. striolatum* (Meigen) и *N. lesgiae* (Becker). Даны замечания о статусе *N. armipes* (Meigen). *Norellisoma oreinum* sp.n. описан как новый вид для науки по материалам из Абхазии и России (Адыгея).

Introduction

In the Palaearctic Region, the genus *Norellisoma* Wahlgren, 1917 includes one widespread, Holarctic species, *N. spinimanum* (Fallén, 1819) and more than 30 additional species [Šifner, 2008; Ozerov, 2009].

Adults of *Norellisoma* species are small to medium sizes, 4–10 mm, brown to black in ground colour, femur and tibia of forelegs of both sexes with anteroventral and posteroventral rows of strong setae (Fig. 1). All adults are predacious on other insects, usually on soft-bodied Diptera, but their larvae develop in stems or leaves of plants, particularly in species of *Rumex*.

Norellisoma is often treated as a subgenus of *Norellia* Robineau-Desvoidy, 1830 [Gorodkov, 1986; Ozerov, 1993; Jong, 2000]. Recently and herein, *Norellia* and *Norellisoma* are treated as separate genera. I add the following differences between *Norellia* and *Norellisoma* besides those given by Jong [2000: 436]: scutellum of *Norellia* with a pair of strong apical setae,

discals are absent; scutellum of *Norellisoma* with a pair of strong discal setae, apicals are absent.

While making determinations of recently collected materials from ZMUM and other museums several questions arose that required study of the appropriate primary types. The purpose of this paper is to report the results of these studies.

Material and methods

The following abbreviations are used for depositories of specimens used or discussed in this paper: MNHNP — Museum National d'Histoire Naturelle, Paris, France; TAU — Tel-Aviv University, Tel-Aviv, Israel; ZMHU — Zoologisches Museum der Humboldt-Universität, Berlin, Germany; ZMUM — Zoological Museum, Moscow State University, Moscow, Russia.

Specimens were photographed using a Canon Power Short A640 camera attached to an Olympus SZX12 stereomicroscope. Breeze Systems PSRemote.v1.5.1 software was used to control resolution through microscope adjustments. Two to 4 photographs of the best quality were taken and stacked into one good image with Adobe Photoshop software.

Results

Norellisoma armipes (Meigen, 1826)
Figs 7–12.

Cordylura armipes Meigen, 1826: 234. Holotype ♂, locality not stated, in MNHNP.

Cordylura armipes was described from a single ♂. Holotype is pinned, with original labels as in Fig. 12 [Meigen's hand]. The right postpedicel, tarsomeres 3–5 of left foreleg are missing, thorax right side with



1



2



3



5



4



6

Figs 1–6. *Norellisoma spinimanum* (Fallén), ♂: 1 — adult (Photo by D.I. Gavryushin); 2 — epandrium, cercus and surstylus, lateral view; 3 — epandrium, cercus and surstylus, dorsal view; 4 — epandrium, cercus and surstylus, dorsolateral view; 5 — sternite 5; 6 — sternite 4.

Рис. 1–6. *Norellisoma spinimanum* (Fallén), ♂: 1 — имаго (фото Д.И. Гаврюшина); 2 — эпандрий церки и сурстили, сбоку; 3 — эпандрий церки и сурстили, сверху; 4 — эпандрий церки и сурстили, дорсолатерально; 5 — стернит 5; 6 — стернит 4.

white coating [?old glue], otherwise condition good; the abdomen was dissected and removed by me and stored in glycerine in a microvial on a separate pin.

This name has been synonymised with *Norellisoma spinimanum* (Fallén, 1819) by Šifner [1995: 115] without explanation of reasons. Comparison of sternite 5 and surstylus of holotype of *armipes* (Fig. 10) with the same of specimen of *spinimanum* (Fig. 5) shows their clear differ. *N. armipes* is a good species and formally the synonymy of this species mentioned by Gorodkov [1986]: *Cordylura flavicauda* Meigen, 1826: 235, *Cordylura flavicauda* von Roser, 1840: 59, and *Norellia roserii* Rondani, 1867: 101, will be restored. It is interesting that sternite 5 of *N. armipes* and *Norellisoma mireki* Šifner, 1977 [see Šifner, 1995: 119, Fig. 8] are very similar.

In ZMUM there are 9 specimens of *N. armipes* collected in the Moscow area, on a tributary of the Ruza river (55.950224°N, 35.592573°E and 55.939089°N, 35.621193°E) (new record). I collected all these specimens in a meadow with nettles (*Urtica dioica*) and large bellflowers (*Campanula latifolia*). Adults were found on the leaves of *C. latifolia* before the plants formed flower buds, in the second half of May until about the second half of June.

Additionally there is 1 ♂ from Ukraine, labelled [in Russian] «Carpathians, Polonina Rovna [-48.797130°N, 22.810400°E], 1250 m, 29.VII.1964, L.Zimina» [my translation], incorrectly determined by Gorodkov as *Norellisoma striolatum* (Meigen, 1826) in ZMUM.

Norellisoma striolatum (Meigen, 1826)
Figs 13–18.

Cordylura striolata Meigen, 1826: 235. Lectotype ♂, "im Thal von Tenda in Italien", by present designation, in MNHN.

Described from 1 ♂ and 1 ♀ syntypes, both are pinned. ♂ taken «im Thal von Tenda in Italien», with original labels as in Fig. 18 [Meigen's hand]. I have labelled it and designated it herewith as the lectotype. Tarsomeres 2–5 of both forelegs, tarsomeres 3–5 of right midleg, left midleg and tarsomeres 2–5 of left hindleg are missing; the abdomen was dissected and removed by me and is stored in glycerine in a microvial on a separate pin. The syntype ♀ from «aus England» is designated and labelled by me as a paralectotype.

In addition, 1 ♂ from Austria [Bad Gastein Bellevue Alm, 1300 m, 16.VII.2004, A. Freidberg (TAU)] and conspecific with lectotype of *N. striolatum* was studied; its genitalia are illustrated as in Figs 13–17.

Gorodkov [1970: 454; 1986: 13] listed this species from the Carpathians, but the specimen upon which his conclusion was based is actually *N. armipes* (Meigen) [see above].

Norellisoma lesgiae (Becker, 1894)
Figs 25–27.

Norellia lesgiae Becker, 1894: 129. Lectotype ♂, "vom Kaukasus aus Lesgia" [Dagestan, Russia], by present designation, in ZMHU.

Information given by Šifner [1998: 128] about type-specimens of *N. lesgiae* need correction. *Norellia lesgiae* described from 2 ♂♂ from «vom Kaukasus aus Lesgia» [Dagestan, Russia], both from Schnabl's collection. One of them was retained in Becker's collection and is now deposited in ZMHU. It is pinned, with label data «Caucas Lesgia» (Fig. 27) and incorrectly labelled as the holotype *Norellisoma lesgiae* by Vockeroth. I have labelled this specimen and designate it herewith as the lectotype. The right foreleg and left midleg are missing, otherwise its condition is very good. The second male was not found, probably it was returned to the Schnabl's collection (St.-Petersburg, Russia), which was destroyed during World War II.

Norellisoma oreinum sp.n.
Figs 19–24.

MATERIAL. Holotype ♂, RUSSIA: Adygea, N Lagonaki Mt., Arish cave env. (44.093°N, 40.019°E), ~1725 m asl, *Picea* forest, 26–28.VI.2009, coll. K. Tomkovich (ZMUM). The holotype is pinned, condition excellent.

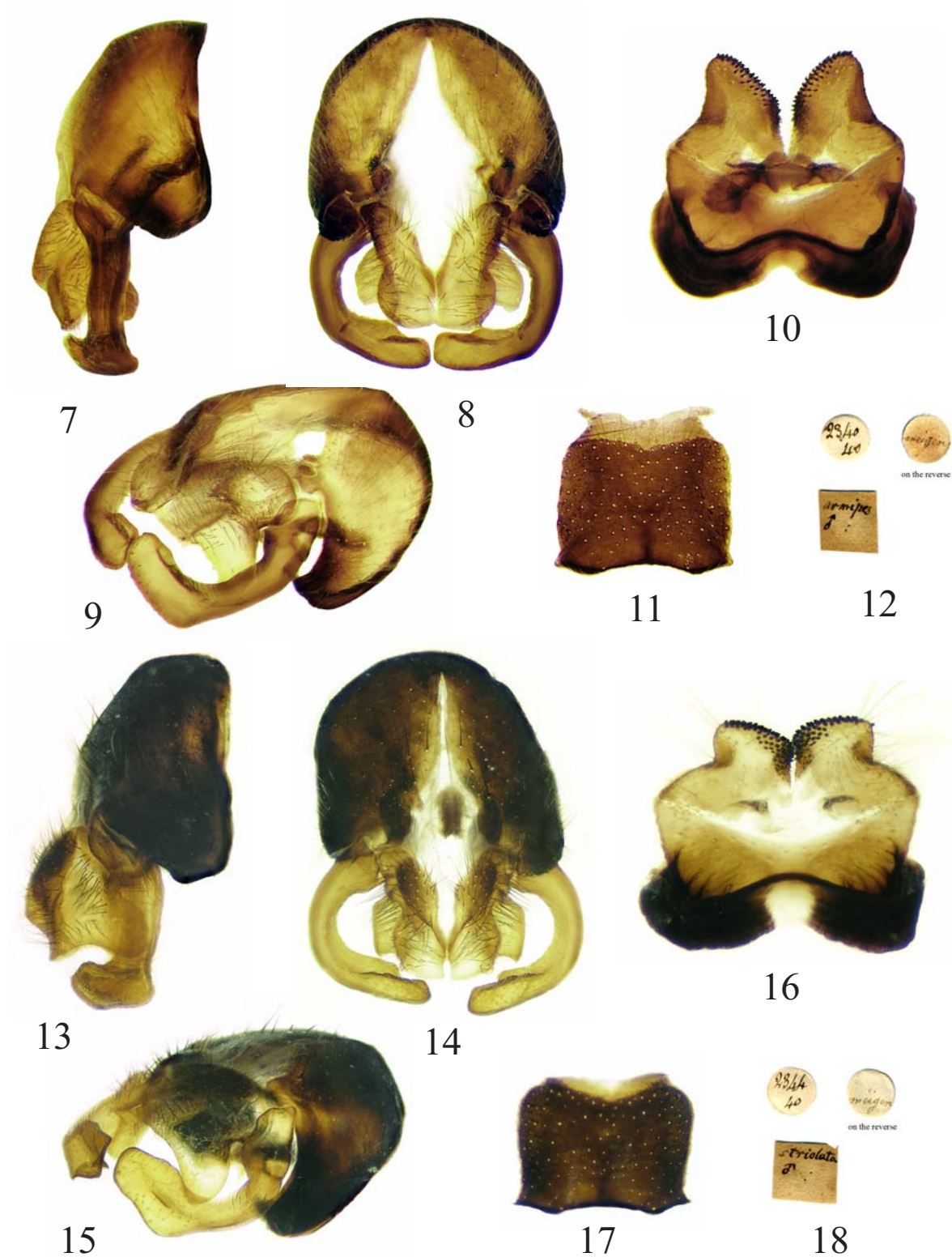
Paratypes: 3 ♂♂, 1 ♀, same label as holotype (ZMUM); 4 ♂♂, ABKHAZIA: Achibakh mountain ridge (43.419448°N, 40.626383°E), 1830 m, 24.VI.2009, A. Gusakov [label on Russian] (ZMUM); 1 ♂, 3 ♀♀, Bagri-Yashta mountain ridge (43.440280°N, 40.708332°E), 2000 m, 2.VII.2009, A. Gusakov [label in Russian] (ZMUM).

DESCRIPTION. Length of body 4.6–7.2 mm. Length of wing 4.2–5.8 mm.

Male, Female. *Head* spherical. Frons matt, yellow, but sometimes blackish in upper part, with greyish pollen along margin of eye. Face, parafacial and gena yellow, with delicate whitish reflection. Ocellar triangle black. Postcranium black in upper part and yellow in lower 1/3, greyish dusted. Setae: 2–3 orbitals, 2 frontals, 1 ocellar, 1 postocellar (short and thin, divergent), 1 inner vertical, 1 outer vertical; 1 pair of vibrissae. Antenna yellow, but postpedicel in some specimens blackish on outside surface. Postpedicel rounded apically, approximately 2 times as long as wide. Arista black, short haired on whole length. Palpus filiform, yellow.

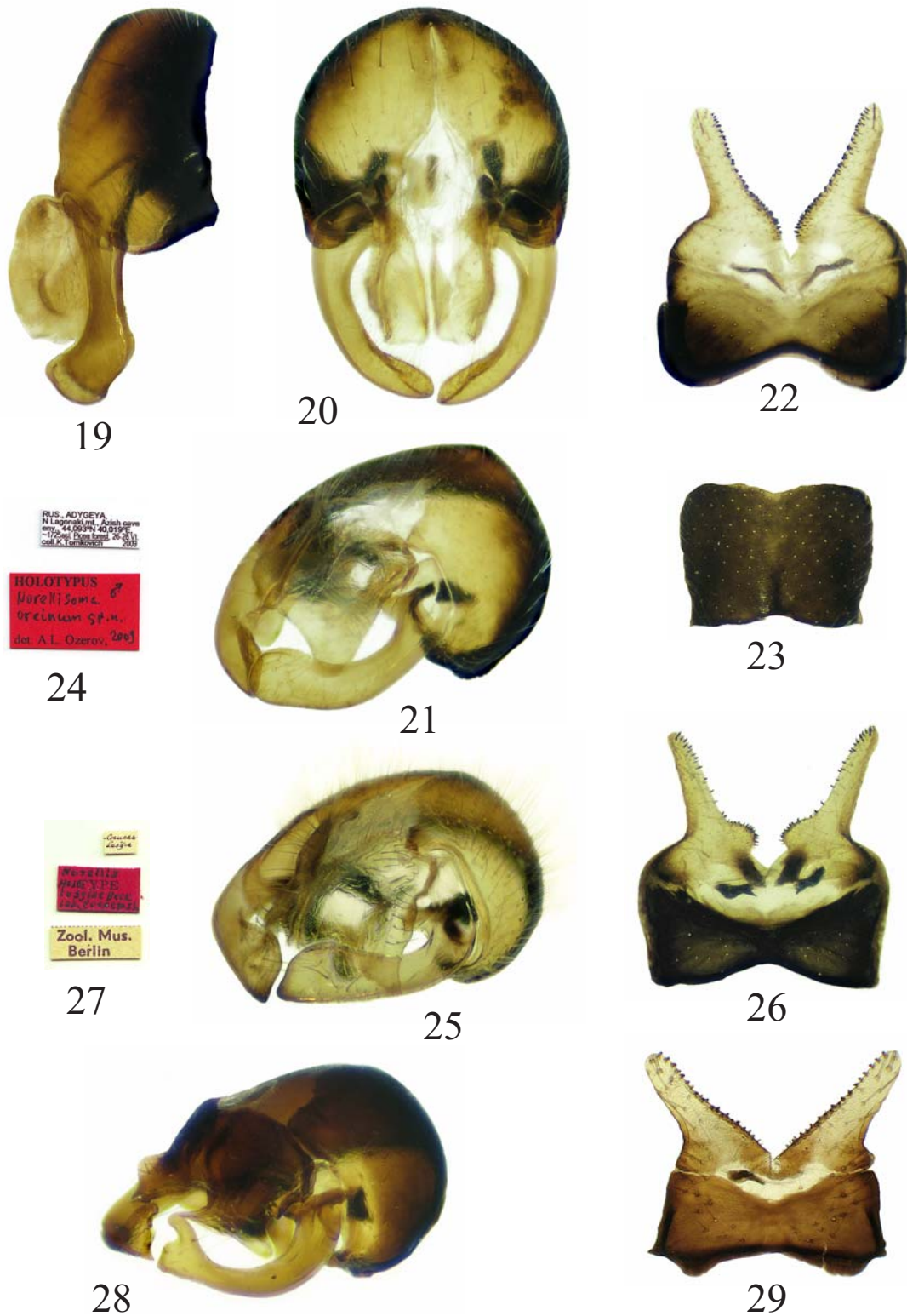
Thorax and scutellum black, greyish pruinose, scutum along dorsocentral setae with blackish stripe. Setae: 1 postpronotal, 2 notopleurals, 1+2 intra-alars, 2 postalars, 2+3 dorsocentrals; 1 proepisternal (yellow or black), 1 anepisternal (black, near posterior margin) and 1 long katepisternal (black, in upper posterior corner). Proepisternum with hairs. Anepisternum and katepisternum with pale hairs in posterior half. Anepimeron without hairs. Scutellum with 1 pair of strong discal setae.

Legs yellow, but femora of all legs in some specimens blackish posterodorsally. Male femora and tibiae with longer hairs than in female. Fore femur with row of long *pv* and row of short *av*. Fore tibia with row of long *pv* and row of short *av*, 1–2 *d* and 1 *pd* in basal half, 1 preapical *d*. Mid femur with rows of thin *a*, *av* and *pv* in apical half, 2 preapical *pd*. Mid tibia with 2 *pd*, 1–2 *ad*, row of thin *p* and ring of apical setae. Hind femur with row of thin *ad*, 1–2 preapical *pd*, 3–5 *av* and 3–4 *pv* in apical quarter. Hind tibia with 2–3 *ad*, 2–3 *pd*, 1 preapical *d*, in female additional with 1 *av* in apical third.



Figs 7–18. *Norellisoma armipes* (Meigen), holotype ♂ (7–12) and *Norellisoma striolatum* (Meigen), ♂ (13–18): 7, 13 — epandrium, cercus and surstylus, lateral view; 8, 14 — epandrium, cercus and surstylus, dorsal view; 9, 15 — epandrium, cercus and surstylus, dorsolateral view; 10, 16 — sternite 5; 11, 17 — sternite 4; 12 — original holotype labels; 18 — original lectotype labels.

Рис. 7–18. *Norellisoma armipes* (Meigen), голотип ♂ (7–12) и *Norellisoma striolatum* (Meigen), ♂ (13–18): 7, 13 — эпандрий церки и сурстили, сбоку; 8, 14 — эпандрий церки и сурстили, сверху; 9, 15 — эпандрий церки и сурстили, дорсолатерально; 10, 16 — стернит 5; 11, 17 — стернит 4; 12 — оригинальные этикетки голотипа; 18 — оригинальные этикетки лектотипа.



Figs 19–29. *Norellisoma oreinum* sp.n., paratype ♂ (19–24), *Norellisoma lesgiae* (Becker), ♂ (25–27), *Norellisoma lituratum* (Meigen), ♂ (28–29): 19 — epandrium, cercus and surstylus, lateral view; 20 — epandrium, cercus and surstylus, dorsal view; 21, 25, 28 — epandrium, cercus and surstylus, dorsolateral view; 22, 26, 29 — sternite 5; 23 — sternite 4; 24 — holotype labels; 27 — lectotype labels.

Рис. 19–29. *Norellisoma oreinum* sp.n., паратип ♂ (19–24), *Norellisoma lesgiae* (Becker), ♂ (25–27), *Norellisoma lituratum* (Meigen), ♂ (28–29): 19 — эпандрий церки и сурстили, сбоку; 20 — эпандрий церки и сурстили, сверху; 21, 25, 28 — эпандрий церки и сурстили, дорсолатерально; 22, 26, 29 — стернит 5; 23 — стернит 4; 24 — этикетки голотипа; 27 — этикетки лектотипа.

Wing slightly darkened, with blackish veins. R_1 bare. Calypters and their margins greyish. Halter yellowish.

Abdomen black, greyish pruinose; in female tergites 7–9 subshiny. Male sternite 5 as in Fig. 19. Epandrium and surstyli as in Figs 20, 21.

COMPARISON. The new species is more similar to *Norellisoma lesgiae* (Becker) and *Norellisoma lituratum* (Meigen), but is readily distinguished from either species by 2+3 dorsocentral setae (2+2 in *lesgiae* and *lituratum*), structure of male sternite 5 and apex of surstylus (Figs 19–22, 25–26 and 28–29).

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