

A review of Palaearctic species of the genera  
*Delina* Robineau-Desvoidy, 1830 and *Neochirosia* Malloch, 1917  
(Diptera: Scathophagidae)

Обзор палеарктических видов двукрылых родов  
*Delina* Robineau-Desvoidy, 1830 и *Neochirosia* Malloch, 1917  
(Diptera: Scathophagidae)

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KEY WORDS: Diptera, Scathophagidae, *Delina*, *Neochirosia*, review, Palaearctic

КЛЮЧЕВЫЕ СЛОВА: Diptera, Scathophagidae, *Delina*, *Neochirosia*, review, обзор, Палеарктика

**ABSTRACT.** The opinion of Vockeroth on the status of the genera *Delina* Robineau-Desvoidy, 1830 and *Neochirosia* Malloch, 1917 is discussed and accepted. The other differences between these genera are provided. A key to *Neochirosia* species, also descriptions and figures of male sternites 4–5 and terminalia are given for all species of the both genera. *N. veratri* (Hendel, 1925) should be treated as a good species. *D. cepelaki* (Teschner, 1978) is found to be a synonym of *N. veratri* (syn.n.). Description of a new species *Neochirosia pechorica* sp.n. from Arkhangelskaya Oblast', Russia is given.

**РЕЗЮМЕ.** Рассмотрена и принята точка зрения Vockeroth на статус родов *Delina* Robineau-Desvoidy, 1830 и *Neochirosia* Malloch, 1917. Даны другие различия между этими родами. Приведена определительная таблица видов рода *Neochirosia*, а также описания и рисунки стернитов 4–5 и гениталий самцов всех видов обоих родов. *N. veratri* (Hendel, 1925) должен рассматриваться как хороший вид. *D. cepelaki* (Teschner, 1978) есть новый младший синоним *N. veratri* (syn.n.). Дано описание нового вида *Neochirosia pechorica* sp.n. по самцу из Архангельской области России.

### Introduction

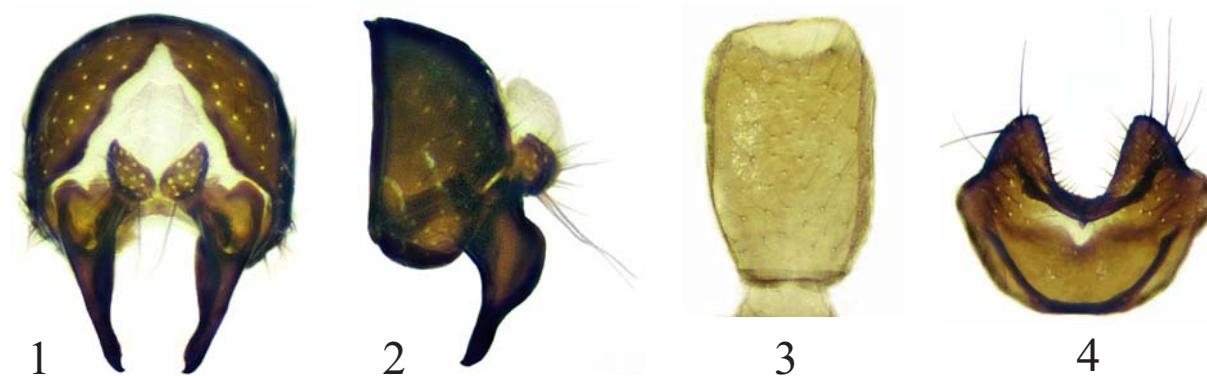
The genus *Delina* Robineau-Desvoidy, 1830 has a Holarctic distribution. European dipterists include 4–8 species in the Palaearctic Region [Gorodkov, 1986; Jong, 2000; Michelsen, 2007; Šifner, 2008]. Recently Michelsen [2007] included 4 valid species in *Delina*: *D. nigrita* (Fallén, 1819), *D. anthrax* (Schiner, 1864), *D. nigriceps* (Becker, 1894) and *D. cepelaki* (Teschner, 1978). Šifner

[2008], however, considered *D. cepelaki* to be a synonym of *D. nigrita* and placed an additional species, *D. sellata* (Hackman, 1959), in the genus *Delina*. The latter species was first described in the genus *Chylizosoma* Hendel, 1924 and was then transferred to *Delina* [Gorodkov, 1970: 444]. In my opinion *D. sellata* should be placed in the genus *Parallelomma* Becker in Strobl, 1894 (= *Americina* Malloch, 1923). I concur with Michelsen that *D. nigrita* and *D. cepelaki* are separate species.

According to Vockeroth's [1987] key to Nearctic genera of Scathophagidae, all European species of *Delina*, excluding *D. nigrita*, are in the genus *Neochirosia* Malloch, 1917. Vockeroth separated some genera of Scathophagidae according to the number of katapisternal setae: *Delina* has two setae, *Neochirosia* has three. Michelsen [2007] noted additional characters that distinguish *D. nigrita* from other Palaearctic species: *nigrita* «without spinules on the postpronotal lobes» and «male sex by lacking postero-ventral spinules on the distal parts of fore and mid femur».

*Delina nigrita* and 3 species of *Neochirosia* are known from the Nearctic Region. Through the kindness of Dr. J. O'Hara I have been able to examine two Nearctic species of *Neochirosia*: *N. atrifrons* (Coquillett, 1910) and *N. nuda* (Malloch, 1922). Both species have (1) 3 katapisternal setae and (2) spinules on the postpronotal lobes, and males of these species have (3) posteroventral spinules on the fore and mid femora. Structures of the male sternite 5 and surstyli of these species are very similar to *D. cepelaki* sensu Michelsen.

Larva host plants of *D. nigrita* are various Orchidaceae (*Aceras*, *Dactylorhiza*, *Goodyera*, *Gymnadenia*, *Listera*, *Orchis*, *Platanthera*) though larvae of all other valid species currently assigned to *Delina* in Europe appear to feed on *Veratrum* spp. (Liliaceae) ex-



Figs 1–4. *Delina nigrita* (Fallén), ♂: 1 — epandrium, cercus and surstylus, dorsal view; 2 — epandrium, cercus and surstylus, lateral view; 3 — sternite 4; 4 — sternite 5.

Рис. 1–4. *Delina nigrita* (Fallén), ♂: 1 — эпандрий церки и сурстили сверху; 2 — эпандрий церки и сурстили, сбоку; 3 — стернит 4; 4 — стернит 5.

clusively [Michelsen, 2007]. Species of *Neochirosia* in North America are also leaf-miners of *Veratrum* spp. [Neff, 1970].

The above-mentioned morphological and biological differences between *D. nigrita* and other Palaearctic species of *Delina* s.str. accord with Vockeroth's generic concepts and divide Palaearctic species into two genera: *Delina* and *Neochirosia*.

Additional research, using mitochondrial DNA sequences, will hopefully further clarify questions about the status of *Neochirosia*.

### Material and methods

The pinned specimens used in this study are from the following collections: CNC — Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Canada; MHNG — Muséum d'Histoire Naturelle, Genève, Switzerland; NHMW — Naturhistorisches Museum, Wien, Austria; ZMUM — Zoological Museum of Moscow State University, Moscow, Russia (part of material was presented by Dr. M. Barták). I also used photographs of the holotype of *Delina cepelaki* (Teschner, 1978) from Zoologisches Museum, Hamburg, Germany (ZMH).

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.

### Taxonomy

Both *Delina* (type-species *Delina dejeani* Robineau-Desvoidy, 1830 [= *Cordylura nigrita* Fallén, 1819]) and *Neochirosia* (type-species *Neochirosia setiger*, Malloch, 1917) are distinguished from other Palaearctic genera by the following combination of characters: anterior and central parts of proepisternum bare, without setulae;

katapisternum with 2 (*Delina*) or 3 (*Neochirosia*) setae; length of fore basitarsus usually conspicuously shorter than length of fore coxa; postpedicel not elongate, length about twice its width, rounded apically.

### *Delina nigrita* (Fallén, 1819)

Figs 1–4.

*Cordylura nigrita* Fallén, 1819: 10.

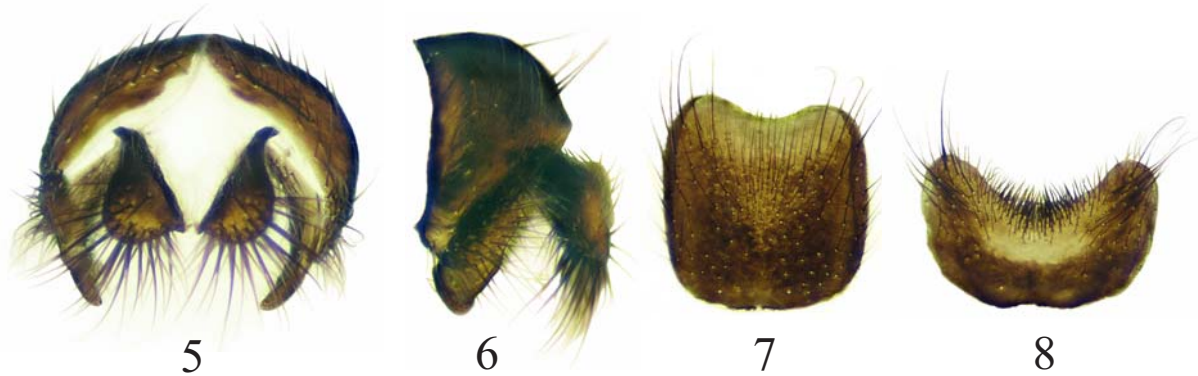
*Delina dejeani* Robineau-Desvoidy, 1830: 670.

MATERIAL EXAMINED. FINLAND: 1 ♂, Pallastunturi, R.Frey leg. (ZMUM); 1 ♀, Malla, R.Frey leg. (ZMUM); ROMANIA: 2 ♂♂, O.Karpat, Val. Putnei, 900 m, 30.V.1981 and 16.V.1983, I. Ceianu leg. (MHNG); SWITZERLAND: 1 ♂, GE, Cartigny, Moulin de Vert, 350 m, 29.IV.1999, B. Merz. (MHNG); 1 ♂, GE, Russin, Teppes de Blolay, 360 m, 10.IV.1999, Merz. (MHNG); 1 ♀, GR, Lenzerheide/See, 1490 m, 11.VII.1998, leg B. Merz. (MHNG); 2 ♂♂, 2 ♀♀, GR, Juf-Stallerberg, 2200–2550 m, 19.VI.1994, leg B.Merz. (MHNG); 1 ♀, GR, Lenzerheide Lavoz-Piz Danis, 2000–2200 m, 19.VI.1996, Merz. (MHNG); 1 ♀, GR, Lenzerheide Piz Danis, 24900 m, 19.VII.1996, B. Merz. (MHNG); 11 ♂♂, Dischmatal GR, 16–30.VI.1990 and 16–30.VI.91/Net, P.Brodmann leg. (MHNG); 1 ♂, Dischmatal GR, 30.V.–24.VII.1979, B.Wartmann leg. (MHNG).

REDESCRIPTION. Length of body 4.3–4.5 mm. Length of wing 3.7–3.8 mm. Setulae and small setae on head, legs and abdomen both black and whitish.

Male. *Head*. Frons matt, with greyish reflection, black in upper part and yellow in lower part, with delicate greyish pollen along margin of eye. Face from yellow to blackish, greyish dusted. Parafacial and gena yellow, with silver reflection. Ocellar triangle shiny. Postcranium black, delicate greyish dusted. Gena approximately 1.5 times as long as width of postpedicel. Setae: 2 orbitals, 2–3 frontals, 1 ocellar, 1 postocellar (weak), 1 inner vertical, 1 outer vertical (approximately half length of inner one). 1 pair of strong vibrissae and 2 pairs of short subvibrissae. Scapus and postpedicel black. Pedicel from dark brown to black. Postpedicel approximately 1.5–2 times as long as broad, rounded apically. Arista short haired, except apex, the longest hairs not longer than greatest diameter of arista. Clypeus, proboscis and palpi black.

*Thorax* black, subshiny: thinly greyish pruinose (including mediotergite, scutellum and subscutellum), here and there with shiny spots. Setae: 2 postpronotals, 2 notopleurals, 1+2 supra-alars (posterior postsutural approximately 3



Figs 5–8. *Neochirosia anthrax* (Schiner), ♂: 5 — epandrium, cercus and surstylus, dorsal view; 6 — epandrium, cercus and surstylus, lateral view; 7 — sternite 4; 8 — sternite 5.

Рис. 5–8. *Neochirosia anthrax* (Schiner), ♂: 5 — эпандрий церки и сурстили сверху; 6 — эпандрий церки и сурстили, сбоку; 7 — стернит 4; 8 — стернит 5.

times as long as of anterior one), 2 postalars, 1+2 intra-alars (all setae hair-like, approximately equal), 2+3 dorsocentrals, *ac* hair-like, in two rows. Proepisternum without setulae, but with 2 setae near lower margin. Proepimeron with 1–2 setae under anterior thoracic spiracle. Anepisternum covered with rare short setulae in posterior half and with 2–3 setae along posterior margin. Katepisternum with 2 setae, both near upper margin. Scutellum with 2 strong and very long discal and 2 hair-like apical setae.

**Legs** subshiny. Coxae of all legs black. Trochanters of all legs from dark brown to black. Femora of all legs black, only fore femur yellowish apically. Tibia of all legs yellow. Tarsus of foreleg yellow, tarsi of mid and hind legs blackish. Fore femur with rows of thin *pd*, *p*, and long *pv*; row of short spine-like *pv* absent. Fore tibia with 1 *d* and 1 *p* around middle, with preapicals *pd*, *ad*, *d*, *a* and with apical *v*. Mid femur with rows of *a* and *pv* (setae light in basa and on middle, apical setae black), with 1 *p* apically, covered with whitish hairs on anterior and anteroventral surfaces. Mid tibia with 1 *ad*, 1 *pd*, 0–1 *p* and 1–2 *av* around middle, with preapicals *pd*, *p*, *a*, *ad*, and with apicals *v* and *av*. Hind femur with row of *ad*, with 0–1 *a* in apically, with row of rare and long *av*, and with numerous whitish setulae on posteroventral surface. Hind tibia with 2 *pd*, 2 *ad*, 1 *av*, with preapicals *pd*, *ad*, *d* and apicals *pv* and *av*.

**Wing** tinged with brownish; veins yellowish. R<sub>1</sub> bare. Calypters and their margins yellowish. Halter yellow.

**Abdomen** black, shiny, only tergites in middle thinly greyish pruinose, all covered with mainly whitish setulae. Syntergite 1–2 with 2–3 long setae at sides and 1–2 marginal setae. Tergites 3–5 each with 2 marginal setae. Sternites 4 and 5 as in Figs 3–4. Epandrium black. Cerci and surstyli as in Figs 1–2.

Female similar to male. Legs shiny, setulae shorter and rarer than in male. Tarsi of all legs blackish. Abdomen shiny, only syntergite 1+2 thinly greyish pruinose in middle.

**DISTRIBUTION.** Widespread in Europe; Asiatic part of Russia (East Siberia), Mongolia; North America.

*Neochirosia anthrax* (Schiner, 1864), **comb.n.**

Figs 5–8.

*Cleigastra anthrax* Schiner, 1864: 11.

*Cleigastra carbonaria* Pokorny, 1887: 411.

**MATERIAL EXAMINED.** BULGARIA: 1 ♂, Pirin, Begovica basin, alpine meadow, 1900–2100 m, 11.VI.1976, lgt. Lauterer

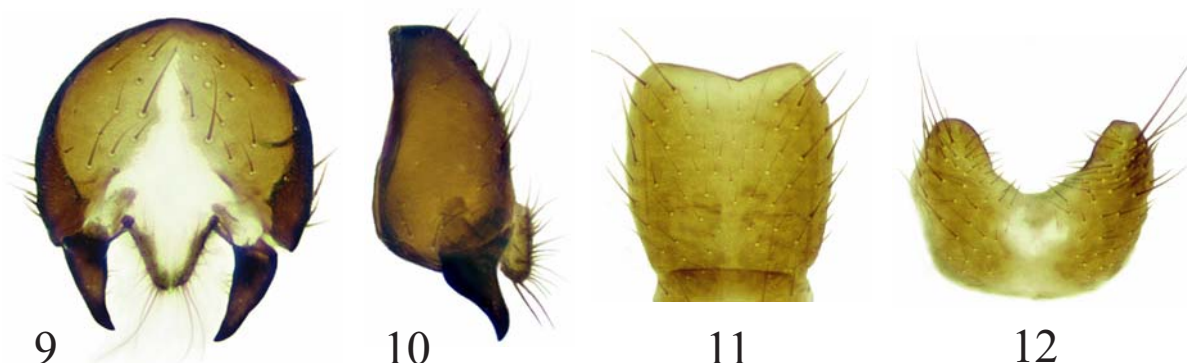
(MHNG); CZECH REPUBLIC: 1 ♂, Krkonoše, Labský cul. nr. Labe river, MT, 1040 m, 50°45'48"N, 15°33'05"E, 21–28.VI.2006, J.Vanik (ZMUM); 1 ♀, Krkonoše, Úpské, rešel - res., 20.VII.1975, Šifner (ZMUM); ROMANIA: 2 ♂♂, O.Karpat, Calimări, 1700 m, 25.V.1983, I. Ceianu leg. (MHNG); SLOVAK REPUBLIC: 1 ♀, 6784 Tatry Mts, Polská Tomanová, 3.VII.1997, leg. Materna (ZMUM); SWITZERLAND: 3 ♂♂, 1 ♀, Dischmatal GR, 16–30.VI.1992/Net, P.Brodmann leg. (MHNG); ITALIA: 1 ♂, Toscana, Abetone Res. Nat. Campolino, 1400–1500 m, 28.VI.2000, B.Merz & F.Mason (MHNG).

**REDESCRIPTION.** Length of body 5.6–6.2 mm. Length of wing 5.6–5.9 mm. All setae on body and legs black.

**Male. Head.** Frons matt, from yellow to black, with greyish reflection, with greyish pollen along margin of eye. Parafacial reddish-brown. Face and gena from yellow to black, greyish dusted. Postcranium black, grey pollinose. Gena approximately 1.5 times as long as width of postpedicel. Setae: 2–3 orbitals, 3–4 frontals, 1 ocellar, 1 postocellar (weak), 1 inner vertical, 1 outer vertical (approximately half length of inner one). 1 pair of strong vibrissae and 2 pairs of shorter subvibrissae. Antenna black. Postpedicel approximately 1.5 times as long as broad, rounded apically. Arista short haired, except apex, the longest setulae not longer than greatest diameter of arista. Clypeus, proboscis and palpi black.

**Thorax** black, greyish dusted (including mediotergite, scutellum and subscutellum). Setae: 2 postpronotals, 2 notopleurals, 1+2 supra-alars (posterior postsutural approximately 2.5 times length of anterior one), 2 postalars, 1+2 intra-alars (postsutural setae are equal), 2+3 dorsocentrals, *ac* hair-like, in two rows. Proepisternum without setulae, but with 2 setae near lower margin. Proepimeron with 2 setae under anterior thoracic spiracle. Anepisternum covered with rare short setulae in posterior half and with 4–5 setae along posterior margin. Katepisternum with 3 setae. Scutellum with 2 strong discal and 2 apical setae, the later about twice shorter than the discal one.

**Legs.** Coxae and trochanters of all legs black. Femora of all legs black, only fore femur yellowish apically. Fore tibia from almost black to yellow; fore tarsus yellow. Mid and hind tibiae black. Tarsi of mid and hind legs black, only last tarsomere yellowish. Fore femur with rows of *pd* and *p* (2 setae in basal third longer than other), row of short spine-like *pv*, in addition with row of long setae slightly above spine-like *pv*. Fore tibia with 1 *d* and 1 *p* around middle, with preapicals *pd*, *ad*, *d*, *a* and with apical *v*. Mid femur with rows of *a*, *av*, spine-like *pv*, with 1 thin and long *v* near base, with 1 *p* and 1



Figs 9–12. *Neochirosia nigriceps* (Becker), ♂: 9 — epandrium, cercus and surstylus, dorsal view; 10 — epandrium, cercus and surstylus, lateral view; 11 — sternite 4; 12 — sternite 5.

Рис. 9–12. *Neochirosia nigriceps* (Becker), ♂: 9 — эпандрий церки и сурстили сверху; 10 — эпандрий церки и сурстили, сбоку; 11 — стернит 4; 12 — стернит 5.

*pd* apically. Mid tibia with 1 *ad*, 1 *pd* and 1 *p* around middle, with preapicals *pd*, *p*, *a*, *ad*, and with apicals *v* and *av*. Hind femur with row of *ad*, with 1–2 *a* in apical quarter, 1 preapical *pd*, with row of rare and long *av* and with numerous long curved apically setulae on posteroventral surface. Hind tibia with 2 *pd*, 2 *ad*, rows of thin *a* and *p*, row of long *av*, with preapicals *pd*, *ad*, *d*, and apicals *pv* and *av*.

*Wing* tinged with brownish; veins brownish.  $R_1$  bare. Calypters and their margins yellowish. Haltere yellow.

*Abdomen* black, greyish pruinose, covered with black setulae. Syntergite 1+2 with 3 long setae at sides and 4 marginal setae. Tergites 3–5 each with 4 marginal setae. Sternites 4 and 5 as in Figs 7–8. Epandrium black. Cerci and surstyli as in Figs 5–6.

*Female*. Fore femur without rows of spine-like *v*, instead has row of long setae. Mid femur without rows of spine-like *pv*, has row of setae instead: long and rare in basal half and short and thick in apical half. Hind femur with 3–4 long *pv*, without long curved setulae on posteroventral surface. Hind tibia with 2 *a* around middle only, without rows of thin *a* and *p*.

**DISTRIBUTION.** Austria, Bosnia-Herzegovina, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Italia, Montenegro, Poland, Romania, Slovak Republic, Spain, Switzerland.

*Neochirosia nigriceps* (Becker, 1894), **comb.n.**

Figs 9–12.

*Clidogastra nigriceps* Becker, 1894: 181.

**MATERIAL EXAMINED.** CZECH REPUBLIC: 1 ♂, Hrubí Jeseník Mts, Velká Kotlina, 1200 m, SW 50°03'24"N, 17°14'14"E, 7.VII.2004, Barták (ZMUM);

**REDESCRIPTION.** Length of body 4.5 mm. Length of wing 4.0 mm. All setae on body and legs black.

*Male. Head.* Frons matt, black, with greyish reflection, with whitish pollen along margin of eye. Parafacial and gena brownish, with greyish reflection. Face and postcranium black, grey dusted. Gena approximately 1.5 times as long as width of postpedicel. Setae: 3 orbitals, 3 frontals, 1 ocellar, 1 postocellar, 1 inner vertical, 1 outer vertical (approximately half length of inner one). 1 pair of strong vibrissae and 2 pairs of shorter subvibrissae. Antenna black. Postpedicel approximately 2 times as long as broad, rounded apically. Arista short haired, except apex, the longest hairs not longer than greatest diameter of arista. Clypeus, proboscis and palpi black.

*Thorax* black, grey dusted (including mediotergite, scutellum and subscutellum). Setae: 2 postpronotals, 2 notopleurals, 1+2 supra-alars (posterior postsutural approximately 3–4 times length of anterior one), 2 postalar, 1+2 intra-alars (postsutural setae are equal), 2+3 dorsocentrals, *ac* hair-like, in two rows. Proepisternum without setulae, but with 2 setae near lower margin. Proepimeron with 1–2 setae under anterior thoracic spiracle. Anepisternum covered with rare short setulae in posterior half and with 4 setae along posterior margin. Katepisternum with 3 setae. Scutellum with 2 strong and very long discal and 2 hair-like apical setae.

*Legs.* Coxae of all legs black. Trochanters of all legs blackish. Femora of all legs black, but yellowish at apex. Tibia of all legs yellow. Tarsi of all legs blackish, only last tarsomere of foreleg yellow. Fore femur with rows of *pd* (long), *p* (3–5 setae in basal third longer than other), with 3–4 long *pv* basally and row of short spine-like *pv* in apical half, in additionally with row of long setae slightly above spine-like *pv*. Fore tibia with 1 *d* and 1 *p* around middle, with preapicals *pd*, *ad*, *d*, *a* and with apical *v*. Mid femur with rows of *a* and *av*, with 1 *p* and 1 *pd* apically, with 3–4 long *pv* basally and row of short spine-like *pv* in apical 2/3. Mid tibia with 1 *ad*, 1 *pd* and 0–1 *p* around middle, with preapicals *pd*, *p*, *a*, *ad*, and with apicals *v* and *av*. Hind femur with row of *ad*, with 1–2 *a* in apical quarter, 1 preapical *pd*, with row of rare and long *av*, with 2 long *v* in basal half and with numerous long setulae on posteroventral surface. Hind tibia with 2 *pd*, 2 *ad*, 1–2 *av*, with preapicals *pd*, *ad*, *d* and apicals *pv* and *av*.

*Wing* tinged with brownish; veins brownish.  $R_1$  bare. Calypters and their margins yellowish. Halter yellow.

*Abdomen* black, greyish pruinose, covered with black setulae. Syntergite 1+2 with 3 long setae at sides and 4 marginal setae. Tergites 3–5 each with 4 marginal setae. Sternites 4 and 5 as in Figs 11–12. Epandrium black. Cerci and surstyli as in Figs 9–10.

**DISTRIBUTION.** Czech Republic, Switzerland.

**NOTE.** *Clidogastra nigriceps* Becker, 1894 was described from a single male collected at «St. Moritz» [Kowarz collection]. According to Šifner [2008], the holotype of this species is preserved in Berlin Zoological Museum (ZMB). Dr. J. Ziegler informed me that this exemplar is missing from the ZMB. Specimens from the Kowarz collection were to be deposited in the Zoological Museum, Oxford and in the Zoological Institute, St.-Peterburg. The holotype of *C. nigriceps* is missing from both of these places.



Figs 13–16. *Neochirosia veratri* (Hendel), ♂: 13 — epandrium, cercus and surstylus, dorsal view; 14 — epandrium, cercus and surstylus, lateral view; 15 — sternite 4; 16 — sternite 5.

Рис. 13–16. *Neochirosia veratri* (Hendel), ♂: 13 — эпандрий церки и сурстили сверху; 14 — эпандрий церки и сурстили, сбоку; 15 — стернит 4; 16 — стернит 5.

*Neochirosia veratri* (Hendel, 1925), **comb.n.**

Figs 13–16, 17–20.

*Clidogastra veratri* Hendel, 1925: 301.

*Chirosia cepelaki* Teschner, 1978: 911 — **Syn.n.**

**MATERIAL EXAMINED. Type-material:** syntype ♀ of *Clidogastra veratri* Hendel, [AUSTRIA:] «weißen Germer Ötschergebiet Juni 24» and on side «♀ *Clidogastra veratri* det. Hendel», «Coll. Hendel», «♀ *Delina veratri* (Hendel) Det. F.Šifner 1974» (NHMW). **Additional material:** AUSTRIA: 2 ♂♂, «Anninger, 15/6 [19]27, Marz [19]28 ex *Veratrum nigr.*», «Mus. Caes. Vindobon.», «*Clidogastra veratri* H[endel]», «*Clidogastra nigriceps* Beck., det. J. R. Vockeroth 1954», «♂ *Delina veratri* (Hendel) Det. F.Šifner 1974» (NHMW); RUSSIA: 22 ♂♂, 2 ♀♀, Arkhangelskaya Oblast', Nenetskiy Reserve, «Bil'shoy Gusinets» cordon (68.175957°N, 53.645394°E), 9–10.VII.2008, A.L. Ozerov, N.E.Vichrev [labels on Russian] (ZMMU); 1 ♂, Chitinskaya oblast', near Darasun (51.200523°N, 113.702454°E), 26.VI.–7.VIII.1949, N.Filippov [label on Russian] (ZMUM); 1 ♂, Altay, Ust'-Koksa distr., Kuzuyak pass. ~50°06'N, 86°26'E, 1000–1400 a.s.l., 26.VI.2007, O.Kosterin leg. (ZMUM); SLOVAK REPUBLIC: 1 ♂, Nizké Tatry Mts [7083], Alpine zone btw. Dëreše Mt - Dumbier Mt, 1700–2000 m [2], 5.VIII.2002, leg. J.Farkač, K.Farkačová & V.Zedek (ZMUM);

**REDESCRIPTION.** Length of body 4.5–5.6 mm. Length of wing 4.0–4.8 mm. All setae on body and legs black.

**Male. Head.** Frons from reddish-yellow to black, matt, with greyish reflection, with greyish pollen along margin of eye. Face blackish, greyish dusted. Parafacial and gena from reddish-yellow to dark brown, with grey reflection. Postcranium black, greyish dusted. Gena approximately 1.5 times as long as width of postpedicel. Setae: 2–3 orbitals, 3 frontals, 1 ocellar, 1 postocellar (weak), 1 inner vertical, 1 outer vertical (approximately half length of inner one). 1 pair of strong vibrissae and 2 pairs of shorter subvibrissae. Antenna black. Postpedicel approximately 1.5–2 times as long as broad, rounded apically. Arista short haired, except apex, the longest hairs not longer than greatest diameter of arista. Clypeus, proboscis and palpi black.

**Thorax** black, grey dusted (including mediotergite, scutellum and subscutellum). Setae: 2 postpronotals, 2 notopleurals, 1+2 supra-alars (posterior postsutural approximately 3–4 times length of anterior one), 2 postalars, 1+(1–2) intralalars (anterior postsutural usually hair-like, sometimes ab-

sent), 2+3 dorsocentrals, *ac* hair-like, in two rows. Proepisternum without setulae, but with 2 setae near lower margin. Proepimeron with 1–2 setae under anterior thoracic spiracle. Anepisternum covered with rare short setulae in posterior half and with 3–4 setae along posterior margin. Katepisternum with 3 setae. Scutellum with 2 strong and very long discal and 2 small, usually hair-like apical setae.

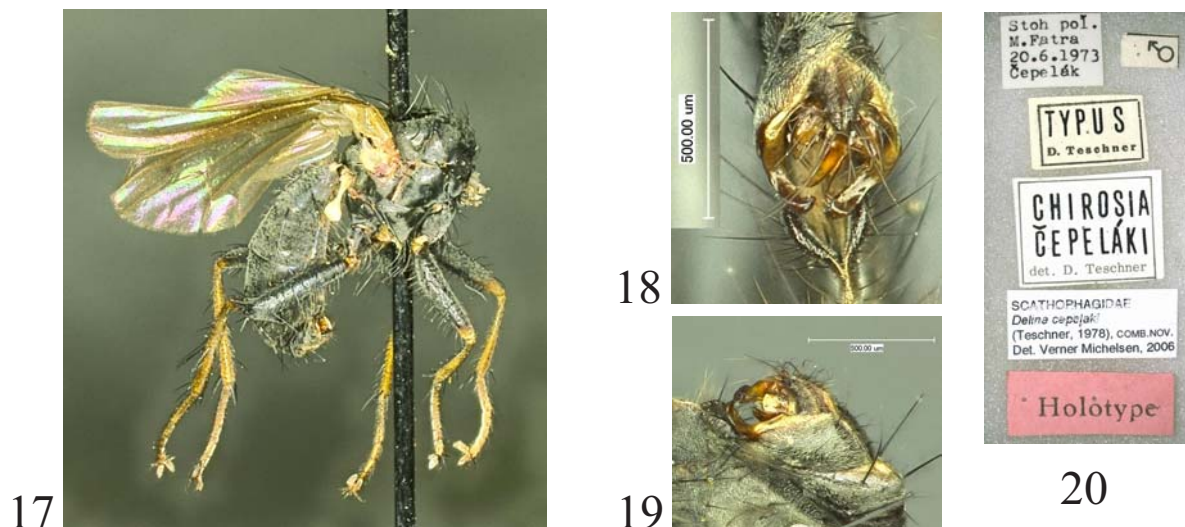
**Legs.** Coxae of all legs black. Trochanters and tibiae of all legs yellow. Femora of all legs black, but yellowish at apex. Tarsi of all legs yellow, but usually last tarsomere of mid and hind legs darkened dorsally. Fore femur with rows of *pd* (long), *p* (3–5 setae in basal third longer than other), with 2–4 very long *pv* basally and row of short spine-like *pv* in apical 2/3, additionally with row of hair-like setae slightly above spine-like *pv*. Fore tibia with 1 *d* and 1 *p* around middle, with preapicals *pd*, *ad*, *d*, *a* and with apical *v*. Mid femur with rows of *a* and *av*, with 1 *p* and 1 *pd* apically, with 3–4 long *pv* basally and row of short spine-like *pv* in apical 2/3. Mid tibia with 1 *ad*, 1 *pd* and 0–1 *p* around middle, with preapicals *pd*, *p*, *a*, *ad*, and with apicals *v* and *av*. Hind femur with row of *ad*, with 1–2 *a* in apical quarter, 1 preapical *pd*, with row of rare and long *av*, with 1–2 long *v* in basal half and with numerous setulae on posteroventral surface. Hind tibia with row of small *a* (1 seta near middle usually very strong), with 2 *pd*, 2 *ad*, 1–2 *av*, with preapicals *pd*, *ad*, *d* and apicals *pv* and *av*.

**Wing** tinged with brownish; veins brownish. R<sub>1</sub> bare. Calypters, their margins and haltere yellowish.

**Abdomen** black, greyish pruinose, covered with black setulae. Syntergite 1+2 with 3 long setae at sides and 6 marginal setae. Tergites 3–5 each with 6 marginal setae. Sternites 4 and 5 as in Figs 15–16. Epandrium black. Cerci and surstyli as in Figs 13–14.

**Female.** Similar to male. Setae and small setae on legs shorter than in male. Fore femur without rows of spine-like *v*, has row of long setae instead. Mid femur without rows of spine-like *pv*, has row of setae instead: long and rare in basal half and short and thick in apical half. Hind tibia without row of thin *a*.

**NOTE.** Hendel [1925] described *veratri* in 1925 from an unspecified number of both sexes taken at Ötschergebiet



Figs 17–20. *Chirosia cepelaki* Teschner, holotype ♂: 17 — general view of pinned specimen; 18, 19 — epandrium, cerci and surstyli; 20 — labels.

Рис. 17–20. *Chirosia cepelaki* Teschner, голотип ♂: 17 — общий вид наколотого экземпляра; 18, 19 — эпандрий, церки и сурстили; 20 — этикетки.

[Austria]. According to Šifner [2008: 175], there are 2 syntypes (1 ♂, 1 ♀) in NHMW. The ♀ is the only syntype; the ♂ cannot be a type as this specimen was collected in 1927. *C. veratri* was synonymized by Šifner [2003] to *Delina nigripes* (Meigen), but it is a good species. Both sexes of *veratri* easily differs from *nigripes* by yellow (not black) trochanters, and male also by structure of surstylus (Figs 13–14).

*Chirosia cepelaki* was described in Antomyiidae by Teschner [1978: 911] from a male taken at Slovakia, Mala Fatra Mts., Stoh Mt., Stohove poľany mountain meadows, 20.vi.1973. Michelsen [2007] correctly transferred this species to Scathophagidae in the genus *Delina*. I did not study the pinned holotype specimen of this species. However, photographs of holotype of *cepelaki* were sent me by Dr. Ralph Peters from ZMH (see Figs 17–20). There is little doubt that the holotype of this species is identical to *veratri* Hentzel, not to *nigripes* Becker, as Šifner supposed [2008: 175].

DISTRIBUTION. Austria, Slovak Republic, Russia (Arkhangelskaya Oblast', Altay, Chitinskaya oblast').

#### *Neochirosia pechorica* sp.n.

Figs 21–24.

MATERIAL. Holotype ♂, RUSSIA: Arkhangelskaya Oblast', Nenetskiy Reserve, «Bol'shoy Gusinets» cordon (68.175957°N, 53.645394°E), 10.VII.2008, A. L. Ozerov» [label on Russian] (ZMMU).

DESCRIPTION. Male. Length of body 5.1 mm. Length of wing 4.5 mm. All setae on body and legs black.

Male. *Head*. Frons black, brown near lower margin, matt, with greyish reflection, greyish pollinose along margin of eye. Parafacial brownish in upper half and black in lower half. Face and gena black, with greyish reflection. Postcranium black, grey dusted. Gena approximately 2 times as long as width of postpedicel. Setae: 2–3 orbitals, 3 frontals, 1 ocellar, 1 postocellar (weak), 1 inner vertical, 1 outer vertical (approximately half length of inner one). 1 pair of strong vibrissae and 2 pairs of shorter subvibrissae. Antenna black.

Postpedicel approximately 2 times as long as broad, rounded apically. Arista short haired, except apex, the longest hairs not longer than greatest diameter of arista. Clypeus, proboscis and palpi black.

*Thorax* black, grey dusted (including mediotergite, scutellum and subscutellum). Setae: 2 postpronotals, 2 notopleurals, 1+2 supra-alars (posterior postsutural approximately 5 times length of anterior one), 2 postalars, 1+2 intra-alars (posterior postsutural approximately 2–3 times length of anterior one), 2+3 dorsocentrals, *ac* hair-like, in two rows. Proepisternum without setulae, but with 2 setae near lower margin. Proepimeron with 1–2 setae under anterior thoracic spiracle. Anepisternum covered with rare short setulae in posterior half and with 3–4 setae along posterior margin. Katepisternum with 3 setae. Scutellum with 2 strong and very long discal and 2 hair-like apical setae.

*Legs*. Coxae of all legs black. Trochanters and tibiae of all legs yellow. Femora of all legs black, but yellowish at apex. Tarsi of all legs yellow, but last tarsomere of mid and hind legs darkened dorsally. Fore femur with rows of *pd* (long), *p* (3–5 setae in basal third longer than other), with 2–4 very long *pv* basally and row of short spine-like *pv* in apical 2/3, in additional with row of hair-like setae slightly above spine-like *pv*. Fore tibia with 1 *d* and 1 *p* around middle, with preapicals *pd*, *ad*, *d*, *a* and with apical *v*. Mid femur with rows of *a* and *av*, with 1 *p* and 1 *pd* apically, with 2–3 long *pv* basally and row of short spine-like *pv* in apical 2/3. Mid tibia with 1 *ad*, 1 *pd* and 1 *p* around middle, with preapicals *pd*, *p*, *a*, *ad*, and with apicals *v* and *av*. Hind femur with row of *ad*, with 1 *a* in apical quarter, preapicals 1 *pd* and 1 *d*, with row of rare and long *av*, with 1 long *v* in basal half and with long numerous setulae on posteroventral surface. Hind tibia with row of short *a*, with 2 *pd*, 2 *ad*, 1 *av*, with preapicals *pd*, *ad*, *d* and apicals *pv* and *av*.

*Wing* tinged with brownish; veins brownish. R<sub>1</sub> bare. Calypters, their margins and haltere yellowish.

*Abdomen* black, greyish pruinose, covered with black setulae. Syntergite 1+2 with 3 long setae at sides and 6 marginal setae. Tergites 3–5 each with 6 marginal setae.



Figs 21–24. *Neochirosia pechorica* sp.n., ♂: 21 — epandrium, cercus and surstylus, dorsal view; 22 — epandrium, cercus and surstylus, lateral view; 23 — sternite 4; 24 — sternite 5.

Рис. 21–24. *Neochirosia pechorica* sp.n., ♂: 21 — эпандрий церки и сурстили сверху; 22 — эпандрий церки и сурстили, сбоку; 23 — стернит 4; 24 — стернит 5.

Sternites 4 and 5 as in Figs 23–24. Epandrium black. Cerci and surstyli as in Figs 21–22.

Female unknown.

DISTRIBUTION. Russia (Arkhangelskaya Oblast’).

DIAGNOSIS. New species similar to *N. veratri*, but well differ by form of male sternite 4 and by structure of surstyli (Figs 13–15 and 21–23).

KEY TO PALAEARCTIC SPECIES OF *NEOCHIROSLIA* MALLOCH

1. Tibiae and tarsi of mid and hind legs black. Apical scutellar setae about twice length of discal scutellar. Male sternites 4 and 5, epandrium, cerci and surstyli as in Fig. 5 ..... *N. anthrax* (Schiner)
- Tibiae and tarsi of all legs yellow. Apical scutellar setae visible shorter and thinner than discal scutellar, usually hair-like ..... 2
2. Trochanters of all legs blackish. Male sternites 4 and 5, epandrium, cerci and surstyli as in Figs 9–12 ..... *N. nigriceps* (Becker)
- Trochanters of all legs yellow ..... 3
3. Length of male sternite 4 about twice width (Fig. 15); sternite 5 as in Fig. 16; surstyli slender dorsally (Figs 13–14) ..... *N. veratri* (Hendel)
- Length of male sternite 4 only slightly more than width (Fig. 23); sternite 5 as in Fig. 24; surstyli wider dorsally (Figs 21–22) ..... *N. pechorica* sp.n.

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