*Zoodiversity*, **56**(6): 447–462, 2022
DOI 10.15407/zoo2022.06.447

UDC 595.773.4

# IDENTITY OF SPECIES ASSIGNED TO THE GENUS *CEPHALIA* (DIPTERA, TEPHRITOIDEA)

**E. P. Kameneva[1,2,*] & V. A. Korneyev[1,2]**

[1]*Schmalhausen Institute of Zoology NAS of Ukraine, vul. B. Khmelnytskogo, 15, Kyiv, 01054 Ukraine*
[2]*Museum für Naturkunde Leibnitz, Invalidenstr. 43, 10115 Berlin, Germany*
[*]*Corresponding author*
*E-mail: kameneva.elena@gmail.com*

E. P. Kameneva https://orcid.org/0000-0002-1568-5183
V. A. Korneyev https://orcid.org/0000-0001-9631-1038

urn:lsid:zoobank.org:pub:DBEC9AA4-4B25-4036-8269-7C41F6873394

**Identity of Species Assigned to the Genus *Cephalia* (Diptera, Tephritoidea). Kameneva, E. P., Korneyev, V. A.** — The taxonomy of the genus *Cephalia* Meigen, 1826 has hitherto been confused. This paper comprises a review of the 13 nominal species assigned to the genus *Cephalia* to date. Of these, *C. nigripes* Meigen, 1826 has previously been considered a junior synonym of *C. rufipes* Meigen, 1826, which is here found to be apparently the only species which actually belongs in the genus *Cephalia*. Regarding the position of the other species: *Cephalia fascipennis* Wiedemann, 1830, *C. femoralis* Wiedemann, 1830 and *C. marginata* Wiedemann, 1830 was already transferred to *Setellia* (Richardiidae) and *C. caloptera* Bigot, 1886 synonymized with *Euphranta connexa* (Tephritidae); *C. bicolor* Bigot, 1886 synonymized with *Elassogaster linearis* (Walker, 1849) (Platystomatidae); and *C. quadripunctata* Gimmerthal, 1842 tentatively placed in the genus *Sapromyza* (Lauxaniidae). *Cephalia myrmecoides* Loew, 1860 and *C. fenestrata* Coquillett, 1900 have been transferred to the monotypic genera *Myrmecothea* Hendel and *Myiomyrmica* Steyskal respectively, forming a clearly monophyletic lineage together with *C. rufipes* within the tribe Cephaliini (Ulidiidae). The following synonymies are also established here for the remaining species: *Acrosticta fulvicornis* (Bigot, 1886) **comb**. **n**., = *Cephalia fulvicornis* Bigot, 1886 (*Acrosticta fulvipes* Coqullett, 1900 is possibly a junior synonym) (Ulidiidae); *Herina flavoscutellata* (Becker, 1900), **comb**. **n**. (Ulidiidae), = *Cephalia flavoscutellata* Becker, 1900; *Rivellia maculipennis* (Bigot, 1886) **comb**. **n**., = *Cephalia maculipennis* Bigot, 1886 = *Rivellia brevifasciata* Johnson, 1900 **syn**. **n**. (Platystomatidae). The taxonomic position of *Cephalia* within the subfamily Otitinae is discussed.
Key words: Diptera, Ulidiidae, Richardiidae, Platystomatidae, Otitinae, Cephaliini, taxonomy, nomenclature.

## Introduction

The family-group taxon Cephaliinae was originally established by Schiner (1864: 63) for the single genus *Cephalia* Meigen, 1826 as a part of a larger family-group taxon, the Sepsinae. It originally included four nominal species from Europe: *C. nigripes* Meigen, 1826, *C. rufipes* Meigen, 1826, *C. formicaria* Robineau-Desvoidy, 1830 (as a synonym of *C. rufipes*) and *C. quadripunctata* Gimmerthal, 1842. Subsequently, due to its aberrant, elongated body and wing shape, *Cephalia* was associated with various superficially similar genera such as *Tanypeza* Fallén, 1820 (Tanypezidae) or placed in the family/subfamily groups "Ortalidae" (Becker, 1905) or "Platystominae" (Hendel, 1914) within the separate tribes Cephalina or Myrmecomyiina. As the differences in the ground plan of male genitalia of Platystomatidae and Otitidae were demonstrated by Hennig (1939, 1945), the genus *Cephalia* was transferred into the family Otitidae or subfamily Otitinae (Steyskal, 1965; Soós, 1984) on the basis of having a long, spinulose phallus and the inner surstyli with more than two prensisetae, as in most other Otitinae.

Becker (1905) suggested that the name *Cephalia* was possibly preoccupied by Panzer (1805) in the Hymenoptera. Coquillett (1910) and Hendel (1914) accepted this statement and used the junior synonym *Myrmecomyia* Robineau-Desvoidy, 1830 as a replacement name instead, along with the tribal name Myrmecomyiini and subfamilial name Myrmecomyiinae, a point of view which was subsequently followed by Séguy (1934). Hennig (1939), however, established that *Cephaleia* Panzer, 1805 is **not** a senior homonym of *Cephalia* Meigen, 1826 and considered *Myrmecomyia* to be the invalid junior synonym of the latter name once again.

Under *Myrmecomyia*, Hendel (1914) listed all the nominal species previously placed in combination with *Cephalia*, as follows:

*Cephalia bicolor* Bigot, 1886 (Ceylon), a junior synonym of *Elassogaster sepsoides* Walker [now Platystomatidae];

*Cephalia caloptera* Bigot, 1886, a junior synonym of *Euphranta connexa* Fabricius [now Tephritidae];

*Cephalia fascipennis* Wiedemann, 1830, a species of *Setellia* [now Richardiidae];

*Cephalia femoralis* Wiedemann, 1830, a species of *Setellia* [now Richardiidae];

*Cephalia*? *fenestrata*, Coquillett, 1900 (N. America);

*Cephalia flavoscutellata* Becker, 1900 (Siberia);

*Cephalia*? *fulvicornis* Bigot, 1886 (California) ("not a *Myrmecomyia* species!");

*Cephalia*? *maculipennis* Bigot, 1886 (N. America.) ("not a *Myrmecomyia* species!");

*Cephalia marginata* Wiedemann, 1830, a species of *Setellia* [now Richardiidae];

*Cephalia myrmecoides* Loew, 1860, a species of *Myrmecothea* [now Ulidiidae: Otitinae: Cephaliini];

*Cephalia quadripunctata* Gimmerthal, 1842, a species of *Sapromyza* [now Lauxaniidae];

*Cephalia rufipes* Meigen, 1826 ("Mittel- und Süd Europa? Nord-Amerika") (with junior synonyms *Cephalia nigripes* Meigen, 1826 and *Myrmecomyia myrmecoides* Robineau-Desvoidy, 1830).

As a result, at the beginning of our study the genus *Cephalia* included only two nominal species in the Palaearctic Region: *Cephalia flavoscutellata* and *C. ruficeps* (Soos, 1984), and four nominal species — *Cephalia flavoscutellata, C. fulvicornis, C. maculipennis, C. rufipes* — in North America (Steyskal, 1965). Prior to this, Steyskal (1961) had established a monotypic genus *Myiomyrmica* and transferred *Cephalia fenestrata* into it. All records of the above, except for *C. ruficeps* in Europe, were based on only a few or single finds and, quite probably, on dubious identifications needing verification of their taxonomic positions and statuses.

Recently, Wallace (2021: 54) wrote: "Steyskal (1987) indicates four species [from the Nearctic Region]; two were synonymized into other genera since the publication of The Manual of Nearctic Diptera". He provided no sources for the second statement concerning synonymy, however, and we are unable to find any.

In 2005, while visiting the University Museum Oxford, VAK examined and took pictures of the species described by J. M. F. Bigot as *Cephalia* and considered to lie under that name until now; later, in 2005 and 2008, he also examined species described by Wiedemann in the collection of the Zoological Museum, University of Copenhagen. While preparing a review of the New World Otitinae, EPK examined these photos and identified their taxonomic position. Surprisingly, these names were found to be senior synonyms of already known species. At our request, the holotype of *Cephalia flavoscutellata* was photographed at the collection of the Museum of Natural History, Helsinki, and published on the collection website; its taxonomic position and status is also clarified in this paper.

## Material and methods

The specimens examined in this work are deposited in the following collections:

LNHM — Latvian National Natural History Museum, Riga (Latvia);

MNHNP — Museum national d'Histoire naturelle, Paris (France);

MNKB — Museum für Naturkunde, Berlin (Germany);

MCZ — Museum of Comparative Zoology at Harvard University, Cambridge (U.S.A.);

MZH — Finnish Museum of Natural History, Helsinki (Finland);

NHMW — Naturhistorishes Museum Wien (Austria);

SIZK — I. I. Schmalhausen Institute of Zoology, Kyiv (Ukraine);

SMNF — Senckenberg Museum für Naturkunde Frankfurt-am-Main (Germany);
TAUI — Steinhardt Museum of Natural History, Tel Aviv University (Israel);
UMO — Oxford University Museum of Natural History (United Kingdom);
USNM — U.S. National Museum of Natural History, Washington, D.C. (U.S.A.);
ZMUK — Natural History Museum of Denmark, Copenhagen (Denmark).

## Results

Identification of the types of nominal species originally described by Bigot (1886) and Becker (1900) as *Cephalia* resulted in the conclusion that none of them belong to this genus in its current concept, and are synonyms, either junior (as was previously known for *Cephalia caloptera*, which was already known to be a synonym in Tephritidae, or *C. bicolor*, which is a synonym in Platystomatidae — see below) or senior, having priority over some names in Ulidiidae and Platystomatidae. Analysis of information on the other species assigned to *Cephalia* shows that this genus is apparently monotypic and restricted to Europe, whilst all other species assigned to the tribe Cephaliini by Kameneva & Korneyev (2006) occur in Americas from the U.S.A. to Argentina and Chile.

### ***Cephalia fascipennis*** Wiedemann, 1830 (fig. 1)

Valid name. ***Setellia fascipennis*** (Wiedemann, 1830) (Richardiidae).

*Cephalia fascipennis* Wiedemann, 1830: 469.

*Setellia fascipennis*; Hendel, 1911 a: 196, 1911 b: 17; Steyskal, 1968: 53.12.

Material. Holotype ♂: "*C. fascipennis* / Wied / Brazils /Lund", "Type" [red paper], "Mus. Westerm." (ZMUK).

Remarks: This species was transferred to Setellia by Hendel (1911 a, b).

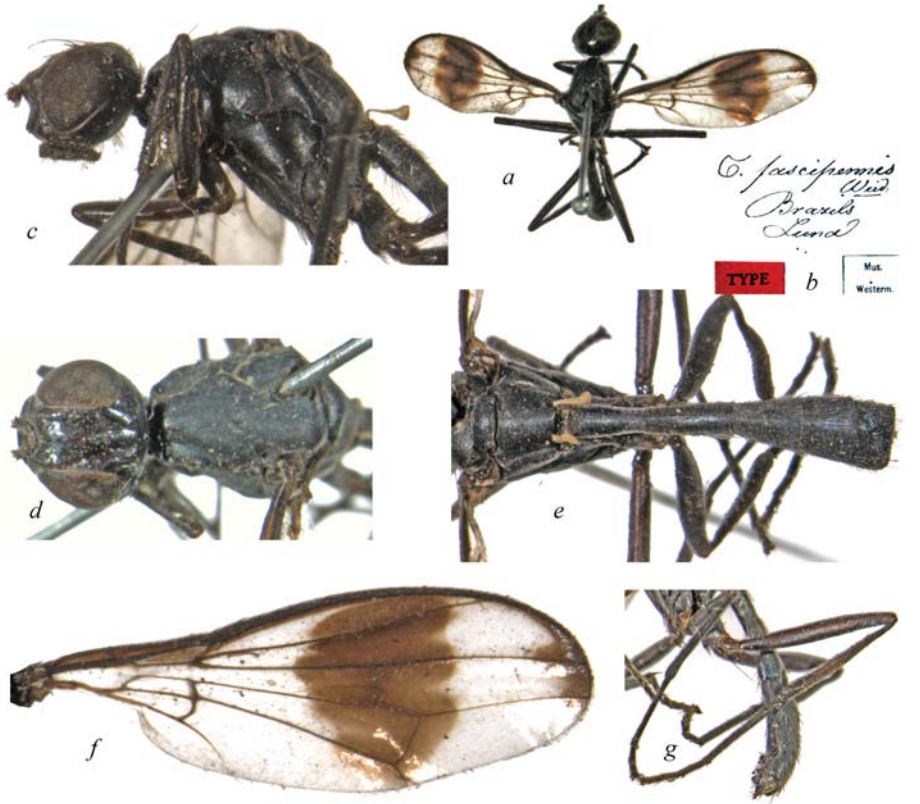


Fig. 1. *Setellia fascipennis* (holotype ♂ of *Cephalia fascipennis* Wiedemann, 1830) (Richardiidae), ZMUK (photos by V. Korneyev, 2008): *a* — habitus dorsally; *b* — labels; *c* — head and thorax, left; *d* — same, dorsally; *e* — abdomen, dorsally; *f* — wing; *g* — abdomen, mid and hind legs, left.

***Cephalia femoralis*** Wiedemann, 1830 (fig. 2)

Valid name. ***Setellia femoralis*** (Wiedemann, 1830) (Richardiidae).

*Cephalia femoralis* Wiedemann, 1830: 469.

*Setellia femoralis*; Hendel, 1911 a: 195, 1911 b: 17; Steyskal, 1968: 53.12.

Material. Holotype ♂: "*C. femoralis* / Wied / Brazils /Lund", "Type" [red paper], "Mus. Westerm." (ZMUK).

Remarks: This species was transferred to *Setellia* by Hendel (1911 a, b).

***Cephalia marginata*** Wiedemann, 1830

Valid name. ***Setellia marginata*** (Wiedemann, 1830) (Richardiidae).

*Cephalia marginata* Wiedemann, 1830: 470.

*Setellia marginata*: 470; Hendel, 1911 a: 195, 377, 1911 b: 17; Steyskal, 1968: 53.13

Material. Holotype ♀: "aus Brasilien" [Freiress], "im Frankfurter Museum" (not located, not found in SMNF).

Remarks: This species was transferred to *Setellia* by Hendel (1911 a, b).

***Cephalia bicolor*** Bigot, 1886

Valid name. ***Elassogaster linearis*** (Walker, 1849) (Platystomatidae).

*Sepsis linearis* Walker, 1849: 998.

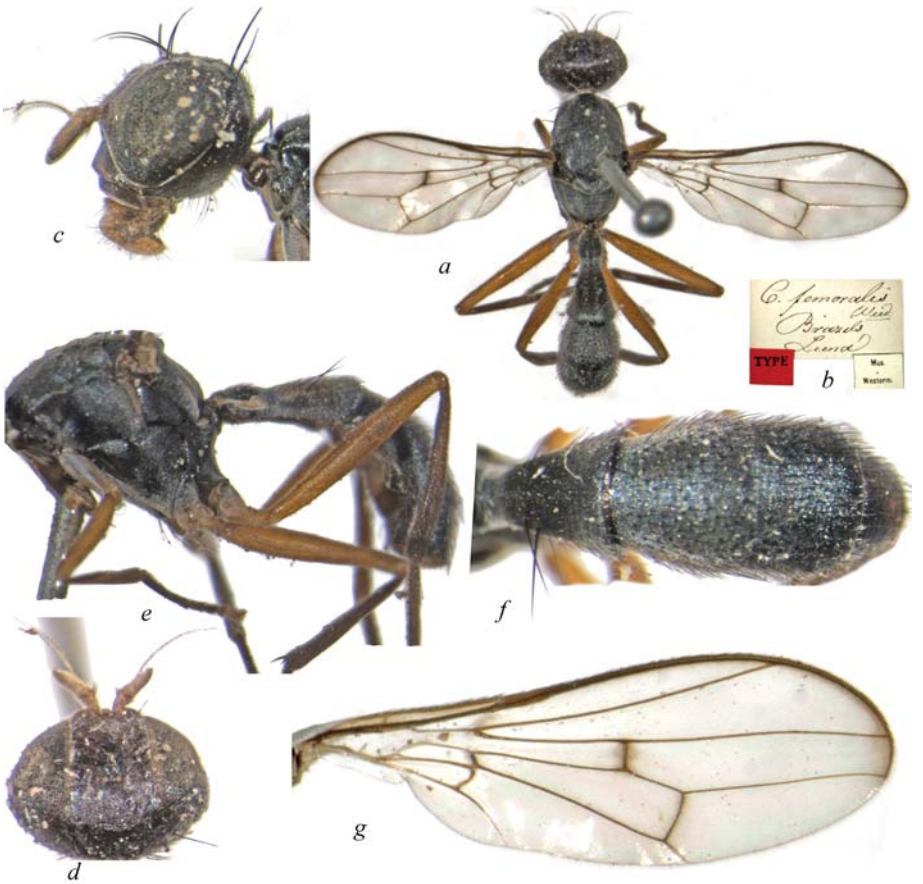


Fig. 2. *Setellia femoralis* (holotype ♂ of *Cephalia femoralis* Wiedemann, 1830) (Richardiidae), ZMUK (photos by V. Korneyev, 2008): *a* — habitus dorsally; *b* — labels; *c* — head, left; *d* — head, dorsally; *e* — thorax and abdomen, left; *f* — abdomen, dorsally; *g* — wing.

*Elassogaster linearis:* Steyskal, 1977: 137.
*Dacus sepsoides* Walker, 1861: 163.
*Elassogaster sepsoides*: Hendel, 1914: 22; Steyskal, 1977: 137.
*Cephalia bicolor* Bigot, 1886: 385.

Remarks: This nominal species was transferred to the genus Elassogaster by Hendel (1914) and into synonymy with *E. linearis* and *E. sepsoides* by Steyskal (1977).

***Cephalia caloptera*** Bigot, 1886
Valid name. ***Euphranta connexa*** (Fabricius, 1794) (Tephritidae).
*Cephalia caloptera* Bigot, 1886; Mik, 1887: 159.
*Myrmecomyia coloptera*: Becker, 1905: 102 (misspelling).
*Euphranta connexa*: Hendel, 1927: 68; Foote, 1984: 89; Norrbom et al., 1999: 147.

Remarks: This nominal species described from the Eastern Pyrenees (France) was placed into syno-nymy with *Euphranta connexa* by Hendel (1927).

***Cephalia fenestrata*** Coquillett, 1900
Valid name. ***Myiomyrmica fenestrata*** (Coquillett, 1900) (Ulidiidae).
*Cephalia fenestrata* Coquillett, 1900: 24 (Kansas).
*Myiomyrmica fenestrata*: Steyskal, 1961: 404; 1965: 646; Wallace, 2021: 9, 14, 69.

Material. **Type**. Holotype ♀: U.S.A.: "Onaga // Kansas", [Baker leg.], "Cephalia // fenestrata // Coq.", "Type // No. 4474 // U.S.N.M." (USNM), (examined).

Remarks: Steyskal (1961) established a separate monotypic genus for this species in his key to the Nearctic genera of Platystomatidae and Otitidae, with a short diagnosis in a key couplet based on the frons being entirely shining and the wing narrow with a pale brownish disk and a whitish spot. Judging from Steyskal (1961: Fig. 5), it also differs by the male epandrium bearing trilobate surstyli lacking large prensisetae. It shares its long antenna, very wide, subtriangular palp, bulging upper part of the occiput and lack of proepisternal seta with *Cephalia*, *Myrmecothea* and *Tritoxa*, these synapomorphies apparently supporting monophyly of a lineage represented by these four genera.

***Cephalia flavoscutellata*** Becker, 1900 (fig. 3)
Valid name. ***Herina flavoscutellata*** (Becker, 1900), **comb**. **n**. (Ulidiidae).
*Cephalia flavoscutellata* Becker, 1900: 385; Steyskal, 1965: 643; Soós, 1984: 57; Wallace, 2021: 9, 13 (fig. 4C), 54.
*Myrmecomya flavoscutellata*: Becker, 1905: 105.

Original description: "Diese Gattung wird von Loew zu den Ortaliden gerechnet; s. Loew. North American Diptera I. 43. Die vorliegende Art ist weder mit *rufipes* Mg., *nigripes* Mg. noch mit *quadripunctata* Gimmerth. identisch. Auch *Cephalia myrmecoides* Lw. Wien. Ent. Monatschr. 1860. 8. 3. 9 aus Nord-Amerika ist eine andere Art, deren Schwinger und Schildchen schwarz sind, bei der auch die Flügel an der Wurzel eine schwarze Zeichnung haben. Verglichen sind auch noch folgende Arten: Wiedem. Aussereurop. Zweifl. II. 469. *Cephalia femoralis*, *fascipennis* u. *marginata* aus Brasilien. Bob. Desvoidy Myod. 721. 723. *Polystodes ichneumoneus*. *Myrmecomyia formicaria*, *micropezoidea*. Weibchen. Thorax glänzend schwarz, in der Gegend der Schulterbeulen dunkel rostroth. Schildchen gelb mit 2 Borsten. Kopf rostroth; Stirn verdunkelt, auf der Mitte eine etwas flache Längsrinne, die von dunkler Bestäubung etwas matt ist. Die Fühler haben ein braun bestäubtes drittes Fühlerglied, die beiden ersten Glieder sind gelb; Borste ziemlich lang, nackt. Das gewölbte Untergesicht glänzend rothbraun mit schmalen etwas weiss bereiften Wangen. Hinterrücken und Hinterleib glänzend schwarz, die zerstreute kurze schwarze Behaarung ist kaum zu erkennen; Legeröhre glänzend schwarz. Schwinger gelb. Beine schwarz mit rothen Hüftgelenken, auch die äusserste Wurzel und Spitze der Schenkel und die Kniee sind rostgelb. Die Flügel


Fig. 3. *Herina flavoscutellata* (holotype ♀ of *Cephalia flavoscutellata* Becker, 1900) (Ulidiidae), ZMH http://id.luomus.fi/GV.8191 (photos by P. Malinen, 2022, CC BY 4.0, partly modified): *a* — habitus dorsally; *b* — same, left; *c* — labels; *d* — head, left; *d* — arista; *f* — wing.

haben an der Spitze einen grossen schwarzbraunen Flecken; er beginnt an der Spitze der Randzelle, deren äusserste Ecke auch noch braungefärbt ist und verläuft allmälig verblassend hinter der Mündung der vierten Längsader; innere Begrenzung buchtig. 4½ mm. lang."

[English translation: This genus is assigned by Loew to the ortalids; *sensu* Loew, North American Diptera I: 43. The present species is not identical either to *rufipes* Mg., *nigripes* Mg. or to *quadripunctata* Gimmerth. Also *Cephalia myrmecoides* Lw. 1860 […] from North America is another species, haltere and scutellum of which are black, and wing also having black markings at the base. […]

Female. Thorax shiny black, dark rust-red in the area of humeral lobes. Scutellum yellow with 2 setae. Head rusty red. Frons darkened, in the middle with somewhat shallow longitudinal groove, which is somewhat dull from dark pollination. Antennae with brown microtrichose third segment, the first two segments yellow. Arista rather long, bare. The arched lower face is shiny red-brown with narrow cheeks that are dusted with white. Postnotum and abdomen shiny black, short black hairs scattered about barely visible; Oviscape shining black. Halter yellow. Legs black with red hip joints, also the extremities of the roots and tips of the thighs and the knees are rusty yellow. Wing with large black-brown spot at the tip; it begins at the tip of the marginal cell, the outermost corner of which is also coloured brown, and runs gradually fading behind the apex of the fourth longitudinal vein; inner boundary indented. 4.5 mm. long]

Remarks: This enigmatic species was previously known only from its original description, without any illustrations. Through the kindness of Jere Kahanpää and Pekka Malinen (ZMH) the type was photographed at our request, which made it possible to clarify its taxonomic position.

This species is much smaller than *Cephalia rufipes* (which has wing length about 7–8 mm, whereas in *H. flavoscutellata* it is about 4.5–4.7 mm) and does not possess any synapomorphies of the *Cephalia* + *Myrmecothea* + *Myiomyrmica* + *Tritoxa* lineage (see discussion above) such as long antennae, dorsally bulging occiput, absent proepisternal seta, or thorax low anteriorly and very high posteriorly, which are unique for *Cephalia* + *Myrmecothea* + *Myiomyrmica*. It therefore does not meet the diagnoses of those lineages and certainly does not belong to *Cephalia*. It shares its oval, densely microtrichose flagellomere 1, head shape, wing venation and pattern with the species of *Seioptera* Kirby

and *Pseudoseioptera* Hennig of the Seiopterini but has a single katepisternal seta instead of two (the synapomorphy of Seiopterini) and has a short pterostigma, and thus does not belong to that tribe. It also strongly resembles *Proteseia steyskali* Hernández & Kameneva, 1998 (provisionally assigned to Cephaliini) because of these characters but differs by the short pterostigma and vein $R_1$ setulose only at apical part (pterostigma long and vein $R_1$ entirely setulose in *Proteseia*), as well as in the shorter face and narrower palp having no subtriangular appearance.

It strongly resembles species of the genus *Herina* Robineau-Desvoidy (Otitini), to which it is here transferred, in its bulky thorax which is wide and subequally high in its anterior and posterior parts. It is similar to *Herina oscillans* (Meigen, 1826) in the oval flagellomere 1, rather high clypeus, widened palp and wing pattern restricted to the darkened basicostal and costal cells and pterostigma, as well as having a dark apical spot and crossveins without dark spots. *Herina oscillans* occurs from England, Morocco and southern Sweden to Hungary and Cyprus, mainly in mountain meadows, and differs in being a much smaller species (wing length 2.7–3.5 mm) with a reddish frons (dark brown in *H. flavoscutellata*), black scutellum (brownish yellow in *H. flavoscutellata*), and less expressed wing pattern.

*Herina* is a large and hyperdiverse, subcosmopolitan genus of the Otitini occurring throughout Asia (mostly in the mountains), Europe, and North America down to Mesoamerica (Morgulis et al., 2013). It includes all those species of the Otitini which do not possess the characters of *Dorycera*, *Hiatus*, *Otites*, *Melieria* and *Ceroxys*, and is apparently non-monophyletic but not readily separable into smaller genera. Kameneva (see: Morgulis et al. 2013) established several groups of species, however, and among these was the *oscillans* group which included *Herina oscillans*, *H. parva* (Loew, 1864), *H. pseudoluctuosa* Hennig, 1939, *H. merzi* Kameneva, 2007 and *H. lazi* Kameneva & Korneyev, 2012. Further study of the genital structures of *H. flavoscutellata*, including the structure of the male surstylus and female spermatheca, is necessary to decide whether it also belongs to this species group.

The records from North America (Canada: N.W.T.) as *C. flavoscutellata* (see: Steyskal, 1965; Wallace, 2021: USNM 1396546) are very probably misidentified; detailed comparison of the morphological characters and COI barcoding mtDNA sequences of specimens from North America and Siberia is needed to clarify if they belong to different taxa.

***Cephalia fulvicornis*** Bigot, 1886 (fig. 4)

Valid name. ***Acrosticta fulvicornis*** (Bigot, 1886) **comb**. **n**. (Ulidiidae)

*Cephalia? fulvicornis* Bigot, 1886: 385.

*Cephalia fulvicornis*: Steyskal, 1965: 643 (as "unrecognized"); Poole & Gentili, 1996: 203.

*Acrosticta fulvipes* Coquillett, 1900: 24; Steyskal, 1965: 650 (possible synonym).

Material. Holotype ♀ *Cephalia fulvicornis*: "C. Fulvicornis. ♀. / Californ. J. Bigot" [bottom label], "Type" [red-boarded circle].

Original description: "Castanea, obscure nitida. Capite et antennis, omnino, fulvis; palpis castaneis; halteribus albis; abdomine basi rufo; pedibus fulvis, tibiis pallide fuscanis, tarsis fuscis, præter posticos basi fulvo pictos; alis hyalinis, costa basi, late, usque ad partent trientem et macula magna apicali, nigris.

D'un châtain foncé et luisant. La tête et les antennes entièrement fauves; palpes châtains; abdomen à base roussâtre; balanciers blancs; pieds fauves, tibias un peu brunâtres, principalement les antérieurs, tarses plus foncés, les postérieurs largement fauves à la base; ailes hyalines, une assez grande macule à l'extrémité, le bord externe, à la base et jusqu'à l'extrémité de la deuxième nervure longitudinale, largement, noirâtres.

Californie. — 1 specim.

Les trois espèces marquées du point ? n'étant représentées dans ma collection que par un seul spécimen, il ne m'a pas été possible de les étudier suffisamment pour pouvoir affirmer leur identification avec le genre *Cephalia*."


Fig. 4. *Acrosticta fulvicornis* (holotype ♀ of *Cephalia fulvicornis* Bigot, 1886) (Ulidiidae), UMO (photos by V. Korneyev, 2006): *a* — specimen, with labels; *b* — habitus dorso-laterally; *c* — head, dorsally; *d* — same, left.

[English translation: (from Latin) Brown, darkly shiny. Head and antennae entirely yellow; palps brownish; halteres white; base of abdomen rufous; femora yellow, tibiae pale brown, tarsi brown, hind tarsi also basally yellow; wings hyaline, base of costa widely until third section, as well as large apical spot, black.

(From French) Dark and shiny brown. Head and antennae entirely rufous; palps chestnut; abdomen with a reddish base; halteres white; legs fawn, tibiae a little brownish, mainly the front ones, tarsi darker, the hind tarsi broadly fawn at the base; wings hyaline, a fairly large macula at the tip; costal edge from base to the end of the second longitudinal vein broadly blackish.

California. — 1 specimen.

The three species marked with the query mark are represented in my collection by only one specimen, and it was not possible for me to study them sufficiently to be able to affirm their identification with the genus *Cephalia*.]

R e m a r k s: The holotype of *Cephalia fulvicornis* is very similar to *Acrosticta fulvipes* Coquillett, 1900, another nominal species also described from California (Coquillett, 1900). We examined the holotype ♀ ("Los Angel[es Co.] / Cal[ifornia]", "Collection / Coquillett", "Acrosticta / fulvipes / Coq.", "Type / No. 4473 / U.S.N.M."), which looks to share all the characters of the latter including the number and position of frontal pits at bases of setulae, wing pattern and venation, coloration of legs, etc., except in the face and frons (raised ridges among shining pits at bases of setulae) being densely whitish microtrichose, which is the diagnostic character of *A. fulvipes*, whereas the holotype of *A. fulvicornis* has them partly shining. This could be due to partial damage of the fine vestiture by moisture or aging, or even due to individual variation. Additional material is therefore needed to confirm their synonymy.

***Cephalia maculipennis*** Bigot, 1886 (fig. 5)

Valid name. ***Rivellia maculipennis*** (Bigot, 1886), **comb. n.** (Platystomatidae)

*Cephalia? maculipennis* Bigot, 1886: 385.

*Cephalia maculipennis*: Steyskal, 1965: 643 (as "unrecognized"); Poole & Gentili, 1996: 203.

*Rivellia brevifasciata* Johnson, 1900: 326; Hendel, 1914a: 177; Cresson, 1924: 229; Namba, 1956: 54; Steyskal, 1965b: 643, **syn. n.**

Original description of ***Cephalia maculipennis***: "Antennis basi fulvis (segmentum tertium abest); capite palpis que nigris; thorace scutelloque nigro nitido, tergo ænescente; abdomine nigro nitido metallescente; halteribus nigris; pedibus fulvis; alis hyalinis, venis flavis, transversis, lineisque dudibus minimis, transversalibus et basi, extrinsecus, macula apicali, costa denique, anguste, fuscanis.

Les deux premiers segments des antennes fauves (troisième manque); tête et palpes noires, orbites finement bordés de grisâtre; thorax d'un noir luisant ainsi que l'écusson, tergum d'une nuance bronzée obscure; balanciers noirs; abdomen d'un noir luisant avec des reflets métalliques obscurs; pieds fauves; ailes hyalines, nervure costale, les deux transversaîes et doux petites lignes transverses situées extérieurement vers la base, enfin, une macule de médiocre dimension, s'anastomosant en arrière avec la nuance qui borde la nervure costale, noirâtres.

Amér. septentr. (Rockey-Mount.). — 1 spécim. — Long. 4 millim."

[English translation: (from Latin) Base of antennae yellowish brown (third segment is absent); head and palps black; thorax and scutellum glossy black, the back bronzed; abdomen black and shiny metallic; halteres black; legs yellowish brown; wings hyaline, veins yellow, extended, with few transverse veins, the transverse ones and their bases extrinsic; with apical blotch; costa narrow all the way, darkened.

(From French) The first two segments of the antennae fawn (third missing); head and palps black, orbits finely edged grayish; thorax shiny black as well as the scutellum, dorsum with dark bronze sheen; halteres black; abdomen shiny black with dark metallic sheen; legs fawn; wings hyaline, costal vein, the two transverse veins and the soft small transverse veins located externally towards the base, finally, a blotch of poor size, joining backwards with the shade bordering the costal vein, blackish.

North America (Rockey-Mount.). — 1 specim. — Length 4 mm.]

Original description of ***Rivellia brevifasciata***: "♂ ♀. Lower half of the face shining black, upper half opaque, front brown, opaque, vertex with three shining black spots, the central one surrounding the ocelli, frontal and facial orbits silvery; occiput black, antennae reddish, tip of third antennal segment dark brown. Thorax and abdomen with uniform dark green [sheen]. Legs entirely light yellow. The four crossbands on the wings are obsolete or greatly abbreviated, the first and second costal cells are hyaline; the first band consists only of a spot in the marginal cell: the second and third bands do not extend beyond the fourth

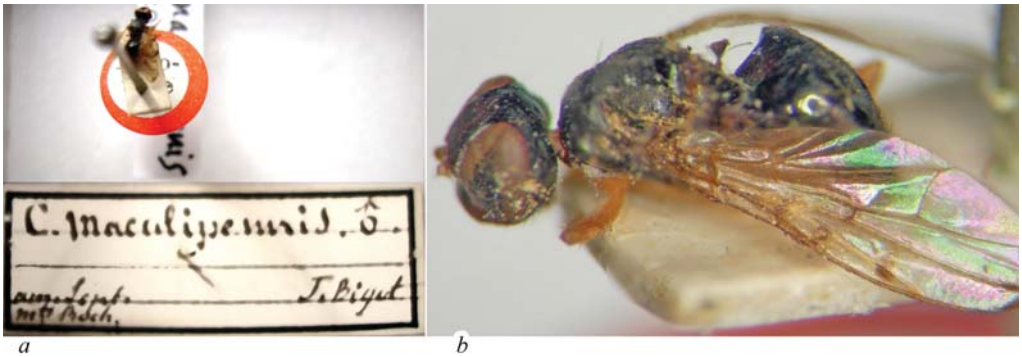


Fig. 5. *Rivellia maculipennis* (holotype ♂ of *Cephalia maculipennis* Bigot, 1886) (Platystomatidae), UMO (photos by V. Korneyev, 2006): *a* — specimen, with labels; *b* — habitus dorso-laterally.

longitudinal vein; the fourth, or apical band, about the same as in *R. flavimana*, but not connected with the third along the costal margin. Length 4 mm.

This species is nearest related to *R. flavimana* Loew, from which it is at once separated by the obsolete bands and hyaline costal cells.

Atco, June 18, 1893. I have also two specimens from Dr. Garry deN. Hough, collected by Mr. G. R. Pilate at Tifton, Ga., June 6th."

Distribution. USA: Colorado (Bigot, 1886); Georgia, Illinois, Kansas, Maryland, Michigan, Mississipi, New Jersey, New York, North Carolina (Namba, 1956).

Remarks: The holotype of *Cephalia maculipennis* Bigot is clearly conspecific with the other specimens described by Johnson and redescribed by Namba. We therefore consider *Cephalia maculipennis* Bigot, 1886 and *Rivellia brevifasciata* Johnson, 1900 to be synonyms.

### ***Cephalia myrmecoides*** Loew, 1860 (fig. 6)

Valid name. ***Myrmecothea myrmecoides*** (Loew, 1860) (Ulidiidae).

*Cephalia myrmecoides* Loew, 1860: 24 (Washington, D.C.).

*Myrmecothea myrmecoides*: Hendel, 1910: 310, 1914: 16; Steyskal, 1961: 404; 1965: 646; Wallace, 2021: 9, 14, 69.

Material. **Type**. Holotype ♂: "Type /13244", "Loew. / coll." (MCZ). Non-type. USA: Maryland, Chevy Chase, 30.05.1964 2 ♂ (P. P. Babiy leg.) (MCZ); Virginia: "DixieLndg //5.30 Va.", coll. Hendel", 2 ♀ (NHMW).

Remarks: Hendel (1910) established a separate genus based on a single autapomorphy which differentiates it from *Cephalia*: i. e. anal lobe and alula absent; most other characters are similar to *Cephalia rufipes*. Should *Cephalia* be found to contain more than one species, *Myrmecothea* should be considered a derived terminal taxon rather than its sister taxon.

### ***Cephalia quadripunctata*** Gimmerthal, 1842

Valid name. ***Sapromyza quadripunctata*** (Gimmerthal, 1842): Hendel, 1914: 22; Hennig, 1939: 68 (Lauxaniidae).

*Cephalia quadripunctata* Gimmerthal, 1843: 684.

*Myrmecomya quadripunctata*: Becker, 1905: 102.

Material. Holotype ♀; not located; possibly LNNHM; not examined.

Original description: "Thoracæ griseo, abdomine testacea, punctis quatuor; pedibus testaceæ.

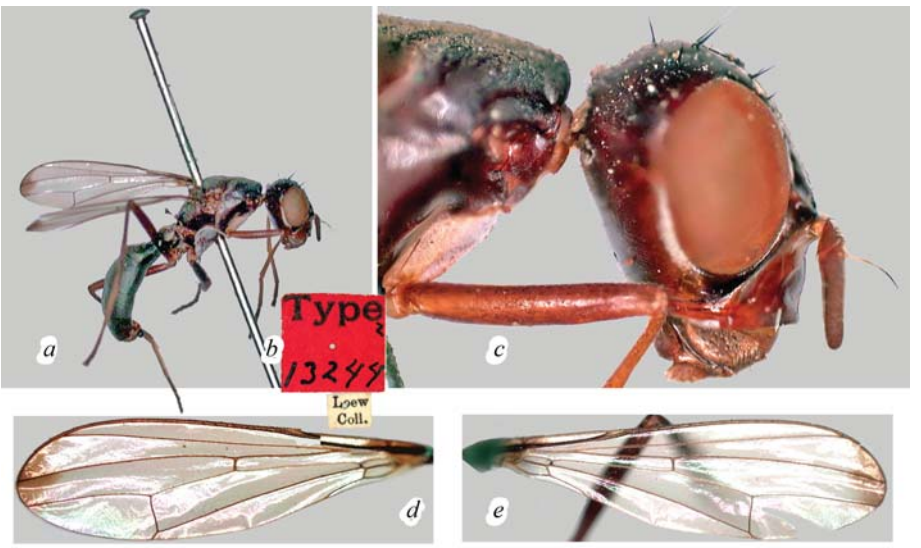


Fig. 6. *Myrmecothea myrmecoides* (holotype ♂ of *Cephalia myrmecoides* Loew, 1860) (Ulidiidae), MCZ (photos by V. Korneyev, 2001): *a* — habitus right view; *b* — labels; *c* — head; *d, e* — left and right wing, respectively.

Kopf, Fühler und Mundtheile rothgelb; Augen mit einer feinen weissen Linie umzogen. Mittelleib aschgrau. Schildchen und Hinterleib rostgelb, auf dem 3ten und 4ten Leibringe je zwei kleine erhabene schwarze Puncte oder Wärzchen. Beine rostgelb, Schenkel aussen grau schillernd. Flügel etwas gelblich getrübt, besonders am Vorderrande. Stark 2‴ Ein ♀".

[English translation: (from Latin) Thorax grey, abdomen reddish yellow, four dots, legs reddish yellow]

(From German) Head, antennae and mouthparts reddish yellow; eyes outlined with a fine white line. Thorax ash grey. Scutellum and abdomen rusty yellow, on the 3rd and 4th abdominal segments two small raised black spots or tubercles. Legs rusty yellow, legs iridescent gray on the outside. Wings somewhat yellowish clouded, especially at the anterior margin. Size 2 lines [4.23 mm]. One ♀].

### ***Cephalia rufipes*** Meigen**,** 1826 (figs 7–9)

Valid name. ***Cephalia rufipes*** Meigen, 1826 (Ulidiidae).

*Cephalia rufipes* Meigen, 1826: 294; Becker, 1902: 230, remarks on the absence of the types in boththe Paris and Vienna collections; Schiner, 1864: Austria (Prater, the park on Danube islands in Vienna); Hennig, 1939: France, Germany, Italy, Spain; Soós, 1957: Hungary; Rohaček, 2006: Czech Republic (Bohemia), Slovakia; van Aartsen & Beuk, 2002: The Netherlands; Kameneva, 2007: review of European material.
*Myrmecomyia rufipes*: Séguy, 1934
*Cephalia nigripes* Meigen, 1826: 294; Becker, 1902: 230; Séguy 1934: as "variation" of *rufipes*. After Williston also in North America, Virginia, to be confirmed.

Material. **Type**. Syntypes: *Cephalia rufiipes*: 1 ♀, [Klug, Berlin], 1 ♀: [Austria, Megerle von Mühlfeld] (not located; not examined). Holotype (?) ♀ *Cephalia nigripes* [Germany:] "Aachen", "Alte Sammlung", "Cephalia / nigripes / M. / v. 29 / 7 A" [paper square, ink handwriting] [Baumhauer] (NHMW); holotype (?) ♀ *Cephalia nigripes* [Country unknown]: "meigen \ 2442 / 40" [paper circle], "Cephalia / nigripes", "MNNH, Paris / ED2996", [bottom labels:] "2247", "Cephalia / rufipes" [old paper rectangle, ink handwriting], "Muséum national d'Histoire naturelle, Paris (France), Collection: Insects - Diptera (ED) Specimen MNHN-ED-ED2966" (MNHNP).

**Non-type**. Austria: "Austria / coll. Egger", 1 ♂, 1 ♀ "rufipes // det. Schiner"; "Schin. 1869" ♀; "Alte Sammlung", 19 specimens (C. rufipes det. Schiner and Hendel); "Coll. Hendel", "ruficeps Mg. det. F. Hendel \ Myrmecomyia", 1 ♂ [dissected]; "Coll. Hendel", "ruficeps Mg. det. Hendel \ Neusiedler See, Juni", 1 ♂, 1 ♀ [dissected]; "Bgst", "ruficeps / det. Bergenst[amm].", 1 ♀ (NHMW); Wien, 08.1861, "coll. H. Loew", 1 ♀; "Austria, Brauer", "coll. H. Loew", 1 ♀ [specimen heavily damaged by dermestids] (MNKB); France: Rambuiett, 4.07.1900, 1 ♂, 2.07.1946, 1 ♀ (RBINH); "Cephalia // rufipes // Lyon", "rufipes // coll. Winthem", 1 ♀ (NHMW); Pyrenées-Orientales, 610 m, Can Baills, 10km SW Thuir, 42.34N/02.39E, 8.06.2007, 1 ♀ (Merz) (MHNG). France/Spain (?): "Pyrenaei Keitel", "6626", 1 ♀ ("rufipes / Meig.") [head missing] (ZMHB); Germany: Karlsruhe, 30.07.1972, 1 ♀ (Stritt) (SMNK); Spain: Pr. Cadiz, Hozgarganta-Tal bei Jimena 200m, 17.07.1979, 1 ♀ (Schacht) (ZSSM); Pr. Salamanca, Villar de Ciervo, Las Coronas, 18.06–8.07.1995, 1 ♀ (Tschorsnig) (SMNS); Switzerland: "Basel Imhot / v. Roser Coll.", 2 ♂, 1 ♀ "Myrmecomyia rufipes Mg. [det. Roser] (SMNS); Israel: Har Hermon: Birket Hakar, 22.06.1971, 1 ♂, 3 ♀ (Freidberg) (TAUI; SIZK).


Fig. 7. *Cephalia rufipes* (possible holotype ♀ of *Cephalia nigripes* Meigen, 1826) (Ulidiidae), MNHNP (photos by V. Korneyev, 2005): *a* — habitus dorsally and labels; *b* — same, postero-dorsally.

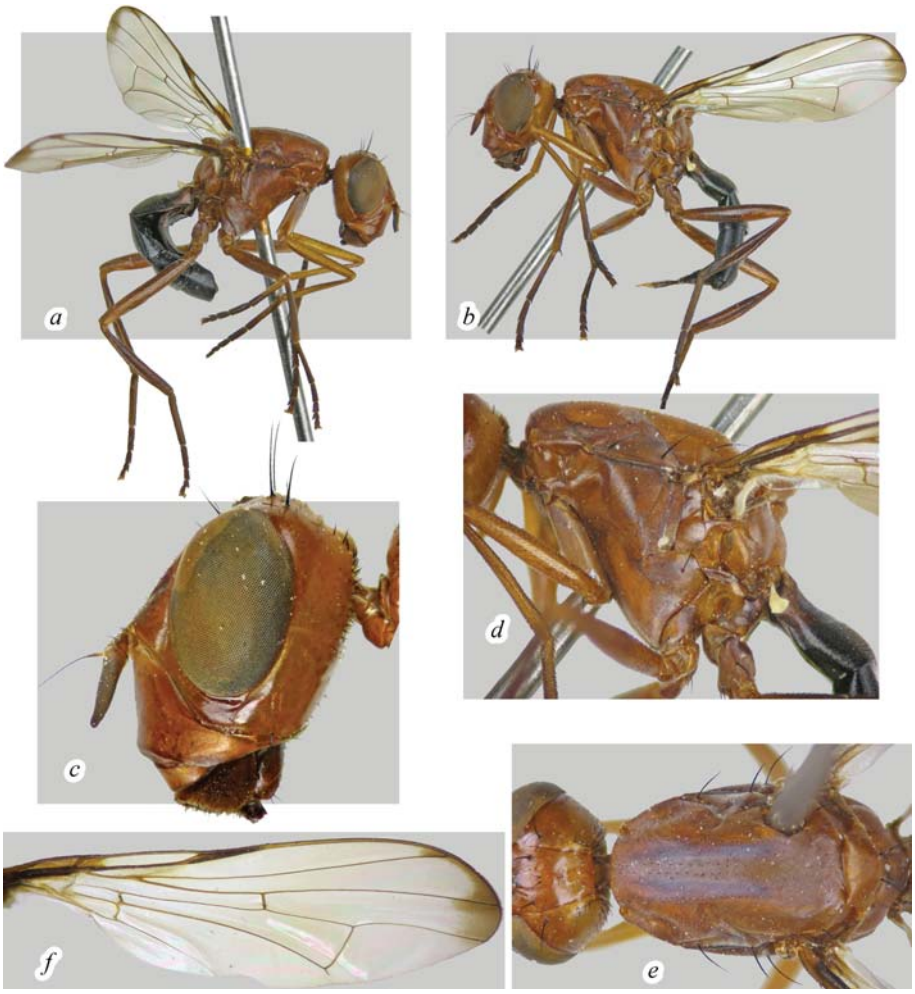


Fig. 8. *Cephalia*, non-type ♂ (*a*) and ♀ (*b–f*) from Har Hermon (photos by V. Korneyev, 2012): *a* — habitus right; *b* — same, left; *c* — head, left; *d* — thorax, left; *e* — same, dorsally; *f* — wing.

Description: Head (fig. 8, *c*) including appendages, and thorax, scutellum and legs, all rusty red to reddish brown, widely shiny, except the frontal vitta dull in the middle of its length and orbits with narrow silvery microtrichose eye margins. Face straight in profile and conspicuously produced anteriorly, its upper and lower part (epistome) not separated by any depression or suture; subgenae (paired lateral extensions of face ventral of genae and separated from them by a suture from vibrissal angle to anterior tentorial pit) wide triangular, as high as gena itself. Clypeus moderately high. Antennal groove moderately shallow.

Anterior orbital seta hair-like, short; posterior orbital seta moderately long. Inner vertical seta strong, outer vertical seta 0.66× as long as inner vertical. Ocellar seta vestigial. Postocellar seta conspicuous, but short. Postocular setulae short, forming no regular row. Occipital setulae lateral of foramen spinulose, 3–4× as long as postocular setae; genal seta strong.

Antenna with short scape and pedicel, usually reddish or brownish yellow, flagellomere 1 about 4–5 times as long as wide, narrowed apically, brown to black, microtrichose; arista 3-segmented, yellow at base, apically dark brown, very short pubescent.

Palp enlarged, crescentric or subtriangular, brown to black, short black setulose and grey microtrichose, twice as high as clypeus. Prementum high, subshining, setulose. Labellum moderately short.

Thorax (figs 8, *d–e*), including scutellum, mostly shiny. Scutum medially shagreened, matt, finely silvery microtrichose between two rows of short dorsocentral setulae; two short brown to black submedian vittae separated by yellow or brown vitta between two rows of short acrostichal setulae almost reaching posteriorly the level of supra-alar setae. Prescutellar area widely matt and shagreened; acrostichal seta indistinct, hair-like; posterior dorsocentral and intra-alar setae weak and short, almost indistinct; 0 postpronotal, 0 anterior supra-alar, 1 posterior supra-alar and 1 postalar seta. Scutellum with 2 pairs of setae (basal shorter than half of apical scutellar seta). Pleura subshining, notopleural triangle and katepisternum faintly silvery microtrichose. Proepisternal seta absent; 1 anepisternal and 1 katepisternal setae moderately strong.

Legs (figs 8, *a–b*), long, reddish yellow to dark brown; tarsi, mid tibia and hind leg conspicuously darker; short black setulose; fore coxa whitish microtrichose; femora narrow; midtibia with 1 apicoventral seta.

Wing (figs 8, *a–b*, f) glossy with faint brownish-yellow tinge. Basicostal cell and base of costal cell brown; pterostigma dark brown to black. Vein $R_1$ setulose only in apical part. Veins $R_{4+5}$ and $M_1$ slightly divergent apically. Brown apical spot aligned to costa from apex of cell $r_{2+3}$ to $m_1$. Crossvein r-m at level of $R_1$ apex. Vein CuA slightly sinuate, posteroapical lobe of cell cua along vein CuA+CuP very short but conspicuous. Alula narrow, but present. Upper calypter narrow, white ciliate.

Abdomen subshining or shining black. Syntergite 1+2 with conspicuous constriction.

Male postabdomen. Epandrium (fig. 9, *a*) subglobose, with ventro-mesally directed surstylus bearing one moderately acute subapical prensiseta and group of 3–4 mesally directed prensisetae ("subcercal prensisetae") at base of each surstylus. Hypandrium (fig. 9, *b*) as in most Otitini: almost symmetrical, with wide and moderately deep phallus guide dorsally forming moderately developed phallapodeme and anteriorly attached to large pregonites; each of the latter bearing 7–9 trichoid sensilla ("setulae"); postgonites (gonostyli) developed as two button-like sclerites at each side of basiphallus and bearing 5 trichoid sensilla. Phallus (fig. 9, *d*) directed to left side and coiled at rest in a membranous pouch at left side of postabdomen; basally with thicker and denser, and apically with longer, sparser and thinner spines ("acanths"); no glans: apex with gonopore, membranous and bare. Ejaculatory apodeme with moderately narrow "fan"sz, well expressed "shaft" and relatively small "foot" (fig. 9, *c*).

Female with shortened but exposed abdominal tergite 6, moderately long oviscape as long as tergite 5, and non-modified, rather wide aculeus with oval cercal unit bearing numerous trichoid sensilla. Three subspherical spermathecae with sparsely papillose surface.

Body 8–9 mm, wings 7–8 mm long.

Distribution. Middle and Southern Europe: from France and Spain to Slovakia and Austria; Israel (**first record**).

Remarks. Kameneva (2007) has already noted that Meigen (1826) described this species based on females, one of which he received from Mr Klug from Berlin and the other from Dr Megerle von Mühlfeld as collected in Austria; these specimens have not been located in the MNHNP, MNKB or NHMW collections. The female in Meigen's collection (MNHNP) placed under *C. rufipes* (No. 2247) does not meet the original description of that species; it has the mesonotum uniformly black. Becker (1902) also noted that it has entirely black legs (as in "*nigripes*"), but nevertheless marked it as a *C. nigripes* type specimen and considered it to be a male (sic!), which is obviously an error. The holotype female of *C. nigripes* "caught by Mr Baumhauer in August at Lustberge near Aachen" (Meigen, 1826) is believed to be in the NHMW collection, but its label differs from the original data in the month of collecting; the ♀ of "*Cephalia nigripes*" in MNHNP instead has no obvious geographic label indicating that it is from Aachen and can hardly be its


Fig. 9. *Cephalia*, non-type ♂, NHMW (photos by V. Korneyev, 2017): *a* — epandrium, postero-ventrally; *b* — hypandrium, ventrally; *c* — ejaculatory apodeme; *d* — phallus, detached.

holotype. The specimen from Lyon (Winthem's coll., NHMW) is certainly a non-type specimen.

The records from North America (U.S.A.: Arizona, New Mexico) as *C. rufipes* (see: Steyskal, 1965; Wallace, 2021: USNM 1396541) are very probably misidentified; detailed comparison of morphological characters and COI barcoding mtDNA sequences of specimens from North America and Siberia is needed in order to clarify whether they belong to different taxa.

## Discussion

The genus *Cephalia* appears to be either monotypic or containing at most two or three poorly recognized species; most species previously assigned belong elsewhere in the superfamily Tephritoidea. Its taxonomy was confused, and records in the literature and specimens in collections are rare, despite *C. rufipes* being one of the most peculiar of European flies, with a large 7–8 mm long ant-like body and *Sepsis*-like appearance (as in the family Sepsidae).

Kameneva & Korneyev (2006) included *Cephalia* as a type genus in the tribe Cephaliini Schiner, 1864, which they extended to include the genera *Acrostictella* Hendel, 1914; *Cephalia* Meigen, 1826; *Delphinia* Robineau-Desvoidy, 1830; *Myiomyrmica* Steyskal, 1961; *Myrmecothea* Hendel, 1910; *Proterpnomyia* Blanchard, 1967; *Proteseia* Korneyev and Hernández, 1999; *Pterotaenia* Rondani, 1868; *Tritoxa* Loew, 1873, and more recently, also *Xycores* Kameneva & Korneyev, 2017 (Kameneva et al., 2017).

The phylogenetic position of the Cephaliini within the subfamily Otitinae needs additional study: despite numerous autapomorphies, these genera are believed to form an in-group within the wider and very possibly non-monophyletic Otitini (and possibly

within the large, probably also non-monophyletic genus *Herina* within the Otitini), or alternatively they may lie within hitherto unclassified "genera *incertae sedis*, possibly related to Cephaliini" (Kameneva & Korneyev, 2006). All of these groups appear to be represented exclusively by species whose larvae, as far as is known, infest rotting or living underground parts of perennial herbaceous plants, possibly only monocots, and occur mainly in the spring or early summer in meadows, prairies or steppes, often in mountain areas. *Delphinia picta* and some species of *Tritoxa* are documented as pests of bulbs of various Amaryllidaceae (onions, etc.) and other related families; and *Myrmecothea* was recorded in association of rotting vegetation (Ferrar, 1987), which is believed to be also the mode of larval feeding of the closely related *Cephalia.* These issues are to be further considered in detail elsewhere (Kameneva & Korneyev, in prep.).

This work was initially started in 2021 as a part of the current monographic project "Fauna of Ukraine. The higher tephritoid dipterans (Diptera: Ulidiidae, Platystomatidae, Pyrgotidae, Tephritidae)" (SIZK: III-50-21) and finalized a part of studies conducted by EPK in 2022 at MNKB funded by the Philip Schwartz Initiative and Museum für Naturkunde Berlin, with the support of Christoph Häuser, Rudolph Meier, Anja Blessing, Jenny Pohl and Sven Marotzke (MNKB). We appreciate the kindness of Jere Kahanpää and Pekka Malinen for photographing a type specimen from the collection of ZMH and Andrea Hastenpflug-Vesmanis for detailed information on the Wiedemann type specimens deposited in the collection of SMNF. We thank David Clements for improving English text. James C. Trager kindly advised on Latin translations. We thank two anonymous referees for their constructive criticism and important comments and corrections in the manuscript.

**References**

Aartsen, B. van, Beuk, P. 2002. Family Ulidiidae. *In*: Beuk, P. L. Th., ed. *Checklist of the Diptera of the Netherlands.* KNNV Uitgeverij Utrecht, 238–239.

Becker, Th. 1900. Beiträge zur Dipteren-Faunaa Sibiriens. Nordwest-Sibirische Dipteren gesammelt vom Prof. John Sahlberg aus Helsingfors im Jahre 1876, und vom Dr. E. Betroth aus Tammerfors im Jahre 1877 Bearbeitet von Th. Becker in Liegnitz. *Acta Societatis Scientiarum Fennicae*, **26** (9), 1–66 + 2 pls.

Becker, Th. 1902. Die Meigen'schen Typen der sogen. Muscidae acalypterae (Muscaria holometopa) in Paris und Wien. *Zeitschrift für Systematische Hymenopterologie und Dipterologie*, **2**, 209–256, 289–320, 337–355.

Becker, Th. 1905. Ortalidae *In*: Becker, Th. et al., eds. *Katalog der paläarktischen Dipteren*. Budapest, **4**, 92–107.

Bigot, J. M. F. 1886. Diptères nouveaux ou peu connus. 29$^{e}$ partie (suite), XXXVII: 2$^{e}$ Essai d'une classification synoptique du groupe des Tanypezidi (mihi) et description de genres et d'espèces inédits. *Annales de la Société Entomologique de France, ser. 6*, **6**, 369–392.

Coquillett, D. W. 1900. Notes and descriptions of Ortalidae. *Journal of the New York Entomological Society,* **8**, 21–25.

Coquillett, D. W. 1910. The type-species of the North American genera of Diptera. *Proceedings of the United States National Museum*, **37**, 499–647.

Cresson, E. T., Jr. 1924. Studies in the dipterous family Ortalidae, with descriptions of new species, mostly from North America. *Transactions of the American Entomological Society*, **50**, 225–241.

Ferrar, P. 1987. *A guide to the breeding habits and immature stages of Diptera Cyclorrhapha. Entomonograph. Vol. 8.* E. J. Brill, Leiden & Scandinavian Science Press, Copenhagen, 1–907.

Foote, R. H. 1984. Family Tephritidae (Trypetidae). *In*: Soós, Á. & Papp, L., eds. *Catalogue of Palaearctic Diptera. Vol. 9. Micropezidae—Agromyzidae.* Akadémiai Kiadó & Elsevier Science Publishers, Budapest & Amsterdam, 66–149.

Gimmerthal, 1843. Uebersicht der Zweifluger (Diptera Ln.) Lief- und Kurlands. *Bulletin de la Societe Imperiale des Naturalistes de Moscou* (1842), **15**, 639–686.

Hendel, F. 1910. Ueber die Nomenklatur der Acalyptratengattungen nach Th. Beckers Katalog der paläarktischen Dipteren, Bd. 4. *Wiener Entomologische Zeitung*, **29**, 307–313.

Hendel, F. 1911 a. Die Arten der Dipteren-Subfamilie Richardiinae. *Deutsche Entomologische Zeitschrift*, **1911**, 181–212, 239–270, 367–396.

Hendel, F. 1911 b. Diptera. Fam. Muscaridae. Subfam. Richardiinae. *Genera insectorum*, 113, 1–56.

Hendel, F. 1914. Diptera. Fam. Muscaridae. Subfam. Platystominae. *Genera insectorum*, 157, 1–179.

Hendel, F. 1927. 48. Trypetidae. *In*: Lindner, E., ed. *Die Fliegen der palaearktisclien Region*. E. Schweizerbart, Stuttgart, **5** (Lfg.16–19), l–221.

Hennig, W. 1939. 46. / 47. Otitidae. *In*: Lindner, E., ed. *Die Fliegen der palaearktisclien Region*. E. Schweizerbart, Stuttgart, **5** (Lfg.126–128), l–79.

Hennig, W. 1945. 48. Platystomidae. *In*: Lindner, E., ed. *Die Fliegen der palaearktisclien Region*. E. Schweizerbart, Stuttgart, **5** (Lfg. 155), l–56.

Johnson, C. W. 1900. Some notes and descriptions of seven new species and one new genus of Diptera. *Entomological News*, 11, 323–328, 3 figs.

Kameneva, E. P. 2007. A new species of *Herina* (Diptera, Ulidiidae) from Switzerland, with a key to European species and notes on nomenclature and distribution. *Vestnik Zoologii*, **41** (5), 405–421.

Kameneva, E. P., Korneyev, V. A. 2006. Myennidini, a new tribe of the subfamily Otitinae (Diptera: Ulidiidae), with discussion of the suprageneric classification of the family. *Israel Journal of Entomology*, 35–36, 497–586.

Kameneva, E. P., Korneyev, V. A., Ramos-Pastrana, Y. 2017. A new genus, new species and new records of Ulidiidae (Diptera: Tephritoidea) from Colombia. *Vestnik Zoologii*, **51** (2), 125–136. https://doi.org/10.1515/vzoo-2017-0018

Meigen, J. W. 1826. *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten. Fünfter Theil.* Schulz-Wundermann, Hamm, i–xii + 1–412.

Mik, J. 1887. Diptera. *Wiener entomologische Zeitung,* **6**, 158–160.

Morgulis, E., Freidberg, A., Kameneva, E. P. 2013. Two new species of *Herina* (Diptera: Ulidiidae) from the Mediterranean region, with key to species groups. *Zootaxa*, **3686** (4), 461–470.

Namba, R. 1956. A revision of the flies of the genus *Rivellia* (Otitidae, Diptera) of America north of México. *Proceedings of the United States National Museum*, 106, 21–84.

Norrbom, A. L., Carroll, L. E., Thompson, F. C., White, I. M., Freidberg, A. 1999. Systematic database of names. *In*: Thompson, F. C., ed. *Fruit Fly Expert Identification System and Systematic Information Database. Myia* (1998), **9**, 65–251 & *Diptera Data Dissemination Disk (CD–ROM)* (1998) **1**.

Poole, R. W., Gentili, P. (comps.) 1996. *Nomina Insecta Nearctica. A checklist of the insects of North America. Volume 3: Diptera, Lepidoptera, Siphonaptera*. Entomological information Services, Rockville, Maryland. 1–1143.

Rohaček, J. 2009. Ulidiidae Macquart, 1835. *In*: Jedlička L., Kúdela M. & Stloukalová V., eds. *Checklist of Diptera of the Czech Republic and Slovakia. Electronic version 2.* (Accessed 15.11.2022 at http://zoology.fns.uniba.sk/diptera2009).

Schiner, R. I. 1864. *Catalogus systematicus dipterorum Europae.* Societatis zoologico-botanicae, Vindobonae [=Vienna]: i–xii + 1–115.

Séguy, E. 1934. Diptères Brachycères (Muscidae Acalypterae et Scatophagidae). *Faune de France Dipteres (Brachyceres: Acalypterae et Scatophagidae),* **28**. Lechevalier et Fils, Paris, 1–832.

Soós, Á. 1957. Neue Angaben die paläarktischen Otitiden (Diptera). *Annales Historico-Naturales Musei Nationalis Hungarici. Seria Nova*, **8**, 389–399.

Soós, Á. 1984. Family Otitidae (Ortalidae). *In*: Soós, Á., Papp, L., eds. *Catalogue of Palaearctic Diptera. Vol. 9. Micropezidae —Agromyzidae.* Akadémiai Kiadó & Elsevier Science Publishers, Budapest & Amsterdam, 45–59.

Steyskal, G. C. 1961. The genera of Platystomatidae and Otitidae known to occur in America north of Mexico (Diptera, Acalyptratae). *Annals of the Entomological Society of America*, **54**, 401–410.

Steyskal, G. C. 1965 a. Family Otitidae (Ortalidac, Ulidiidac, Ptcrocallidae). *In*: Stone, A. et al., eds. *A catalog of the Diptera of America north of Mexico*, 642–654 (U.S.D.A. Agricultural Handbook, 276).

Steyskal, G. C. 1965 b. Family Platystomatidae (Platystomidac). *In*: Stone, A. et al., eds. *A catalog of the Diptera of America north of Mexico*, 655–657 (U.S.D.A. Agricultural Handbook, 276).

Steyskal, G. C. 1968. 53. Family Richardiidae. *In*: Papavero, N., ed. *A Catalogue of the Diptera of the Americas South of the United States*. Departamento de Zoología, Secretaria da Agricultura, São Paulo, 53.1–53.25.

Steyskal, G. C. 1977. Family Platystomatidae. *In*: Delfinado, M. D., Hardy, D. E., eds. *A catalog of the Diptera of the Oriental Region. Vol. 3. Suborder Cyclorrhapha (excluding Division Aschiza)*. The University Press of Hawaii, Honolulu, 135–164.

Walker, F. 1849. *List of the specimens of dipterous insects in the collection of the British Museum. Part IV*. British Museum (Natural History), London, 1–489 [ (3) + 689–1172 + (2)].

Walker, F. 1861. Characters of undescribed Diptera in the collection of W. W. Saunders [concl.]. *The Transactions of the Entomological Society of London*. (*1858-1861) n. ser. [=ser. 2],* **5**, 297–334.

Wallace, C. 2021. An illustrated identification key to the genera of Ulidiidae (Diptera: Tephritoidea) of the United States and Canada. *Canadian Journal of Arthropod Identification*, 45, 1–94. doi:10.3752/cjai.2021.45

Wiedemann, C. R. W. 1830. *Aussereuropäische zweiflügelige Insekten. Vol. 2*, Hamm. xii +684 pp., 5 pls.

Received 20 November 2022
Accepted 24 November 2022