

# New synonyms and overlooked species-group names in Palearctic Chloropidae (Diptera, Cyclorrhapha)

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New synonyms are established based on investigation of types of species described by C.F. Fallén, J.W. Zetterstedt, O. Duda, E.S. Smirnov, and E.P. Nartshuk: *Rhopalopteron atricorne* (Zetterstedt, 1838) = *Rh. platythorax* (Nartshuk, 1958), *Pseudopachychaeta oscinina* (Fallén, 1823) = *P. heleocharis* (Nartshuk, 1964), *Chlorops nigripalpis* (Duda, 1933) = *Ch. crassipalpis* E. Smirnov, 1955, *Ch. rufinus* (Zetterstedt, 1848) = *Ch. citrinellus* (Zetterstedt, 1848), *Ch. limbatus* Meigen, 1830 = *Ch. discicornis* Zetterstedt, 1848. The synonymy of *Ch. taeniopus gotlandica* Holmgren, 1887 with *Ch. pumilionis* (Bjerkander, 1778) is confirmed. The names *Ch. discicornis* Zetterstedt, 1848 and *Ch. taeniopus gotlandica* Holmgren, 1887 were overlooked by all or nearly all authors dealing with Chloropidae.

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Examination of type specimens of species described by C.F. Fallén and J.W. Zetterstedt (Zoological Museum, Lund University, Sweden), O. Duda (Natural History Museum, Helsinki), E.S. Smirnov (Zoological Museum, Moscow State University), and E.P. Nartshuk (Zoological Institute, St.Petersburg) allows us to establish some new synonyms in the Palearctic Chloropidae. The work was carried out in process of a revision of Chloropidae of Fennoscandia and Denmark, and two species-group names, overlooked in all monographs and catalogues of Palearctic Chloropidae, were found in old Scandinavian literature. Establishing of new synonyms in the genus *Chlorops* was accompanied with a study of colour variation of species.

## **Rhopalopteron atricorne** (Zetterstedt, 1838)

= *Rh. platythorax* (Nartshuk, 1958), **syn. n.**

*Lioscinella platythorax* was described by Nartshuk (1958) from the European part of Russia. The species was well distinguished by the characteristically sculptured depression on the hind part of scutum before scutellum, structure of the male genitalia and entirely yellow legs. Two species of the genus with entirely yellow legs are known in the

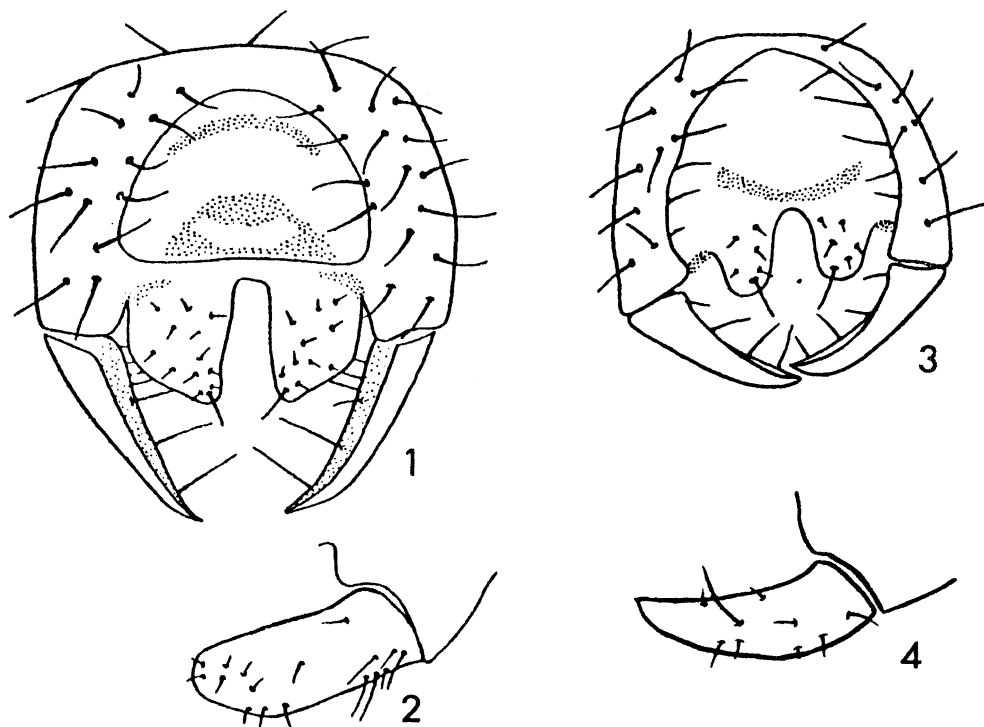
Palearctic fauna: *Rh. anthracinum* (Meigen, 1830) and *Rh. atricorne* (Zetterstedt, 1838), both described from Western Europe. No sculptured depression was mentioned in the descriptions of both species. Andersson (1966) examined the type specimen of *Oscinis atricornis* Zetterstedt, a female from Sweden in the Insecta Lapponica collection of Zetterstedt, and designated this specimen as lectotype. Unfortunately, the hind part of scutum of the lectotype of *O. atricornis* was destroyed by pin, and the sculptured depression is not seen. However, Andersson (1966) supposed that *Rh. platythorax* (Nartshuk) may be a synonym of *Rh. atricorne* (Zetterstedt) based on other characters, as the width of the gena, lustre of the abdomen, etc.

Nartshuk, when had visited Lund, examined the lectotype of *Rh. atricorne* and also found that characters of *Rh. atricorne* and *Rh. platythorax* coincide well. Accordingly, the synonymy is established.

Figures of the male genitalia of both *Rhopalopteron* species with yellow legs are given (Figs 1-4) for better distinguishing of these species.

## **Pseudopachychaeta oscinina** (Fallén, 1823), **comb. n.**

= *P. heleocharis* (Nartshuk, 1964), **syn. n.**



**Figs 1-4.** Male genitalia of *Rhopalopterum*. 1, 2, *Rh. atricornis* (Zetterstedt); 3, 4, *Rh. anthracinum* (Meigen). 1, 3, epandrium; 2, 4, surstylus.

*Lasiosina heleocharis* was described by Nartshuk (1964) from Russia (vicinity of St. Petersburg) and Kazakhstan. Females of the species were well characterised by laterally depressed ovipositor with fairly sclerotised cerci lacking small hairs (Figs 5, 6). The surface of cerci looks shining brown in dry specimens. Females of the closely related species *P. approximatonervis* (Zetterstedt) have ovipositor with soft cerci not depressed laterally and covered with small hairs giving dull appearance to the surface (Figs 7, 8).

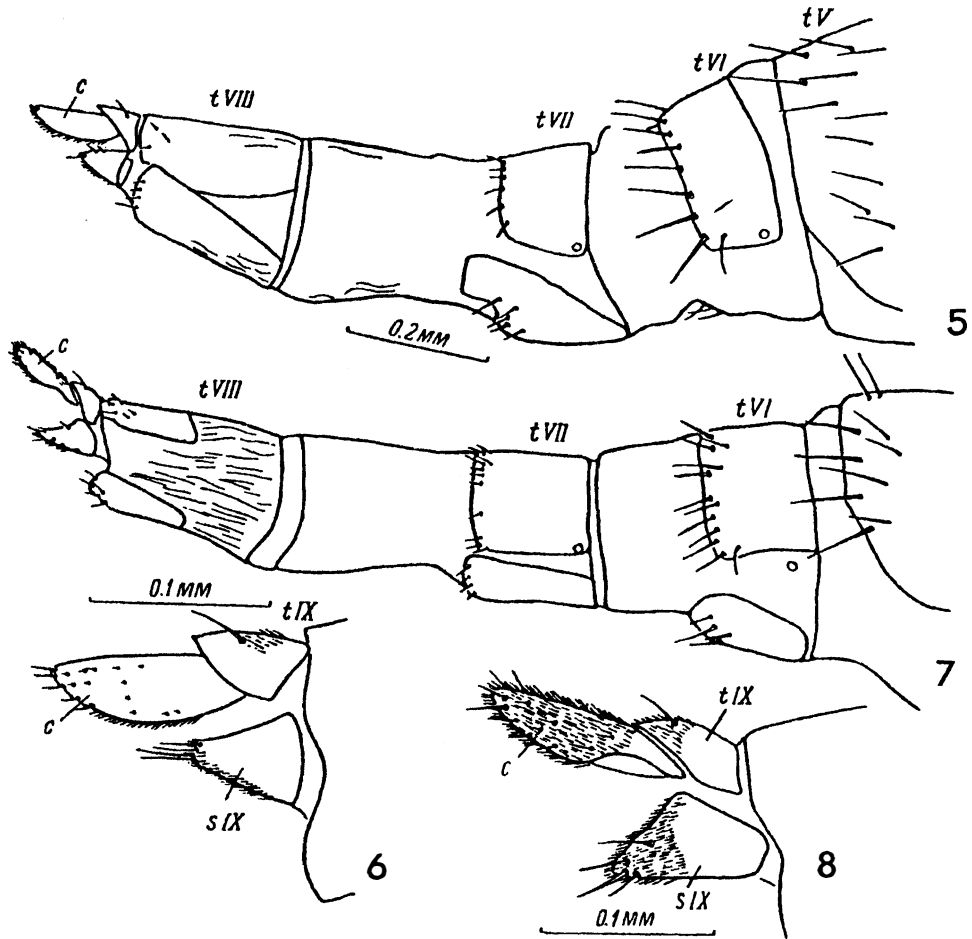
*Phytomyza oscinina* was described by Fallén in Phytomyzidae (now Agromyzidae) from Sweden (Fallén, 1823). The species has been listed under doubtful species of Agromyzidae in the last catalogue of Palaearctic Diptera, but with a note "Probably Chloropidae" (Papp, 1984). Andersson (1963) did not mention this species in his revision of Chloropidae described by C.F. Fallén. Fallén had only one specimen (female?) collected in Skåne, southern Sweden, this specimen must be considered holotype. Fallén hesitated to determine the sex of the specimen. The structure of the ovipositor was not mentioned in the description. One specimen from C.F. Fallén's collection is kept in J.W. Zetterstedt's collection

in the Zoological Museum of the Lund University. The specimen has a label written by Zetterstedt. By chance, the tip of the ovipositor is projected and well seen. Cerci are laterally depressed, fairly sclerotised and their surface is brown shining. Other characters coincide with the original description. It is the same species as was described later as *P. heleocharis* by Nartshuk. Zetterstedt (1848, p. 2622) in a footnote to his *Oscinis* (now *Pseudopachychaeta*) *approximatonervis* mentioned the similarity of the wing venation of his species and *Phytomyza oscinina* Fallén.

#### **Chlorops nigripalpis** (Duda, 1933)

= *Ch. crassipalpis* E. Smirnov, 1955, *syn. n.*

*Oscinis nigripalpis* was described by Duda (1933) based on one female from Karelia (Russia) without recording more detailed locality and data. The holotype is kept in the Natural History Museum in Helsinki (currently, on loan in the Zoological Museum of the Lund University in Sweden) and we have an opportunity to examine this specimen. *Chlorops crassipalpis* was



Figs 5-8. Ovipositor of *Pseudopachychaeta*, lateral view. 5, 6, *P. oscinina* (Fallén); 7, 8, *P. approximatonevris* (Zetterstedt). c, cerci; s, sternite; t, tergite.

described by Smirnov (1955) based on one male from vicinity of Moscow (Russia). The holotype is kept in the collection of the Zoological Museum of the Moscow State University. Smirnov compared his new species with *Ch. zernyi* Duda, *Ch. planifrons* Loew and *Ch. nigripalpis* Duda. He did not examine the holotype of *Ch. nigripalpis*, but mentioned two characters distinguishing his new species from *Ch. nigripalpis*: shorter arista and lighter triangular spot on katepisternum (yellow with darker fore upper corner in *Ch. crassipalpis* and entirely black in *Ch. nigripalpis*).

Nartshuk (1998) mentioned that more material should be investigated to clarify relationships between *Ch. nigripalpis* and *Ch. crassipalpis*. We

examined the types of both species and 8 additional specimens of *Ch. nigripalpis* from Sweden (Nb: Pajala, Jupukka, 28.07.1955 and Nb: Raneb Hodson, 31.07.1978). Among 7 males and 1 female, one male and one female collected in Raneb have the spot on katepisternum yellow with darker fore upper corner, other specimens (males) have entirely black spot on katepisternum. The structure of the male genitalia of specimens with different colour of katepisternal spot is identical. The type specimen of *Ch. nigripalpis* and other investigated specimens of this species have a dark arista nearly as long as frons. Arista of *Ch. zernyi*, the species with which Smirnov compared the arista of *Ch. crassipalpis*, is white and longer.

**Chlorops rufinus** (Zetterstedt, 1848)

= *Ch. citrinellus* (Zetterstedt, 1848), **syn. n.**

*Oscinis rufinus* (N 23, p. 2628) and *O. citrinellus* (N 25, p. 2630) were described by Zetterstedt (1848) from Sweden: the first species based on both sexes from Og: "Ostrogothia ad Lärketorp et Wadstena" and the second on one female from Sk: "Scania ad Röstonga". Andersson (1966) revised J.W. Zetterstedt's types and found 8 specimens of *Ch. rufinus* in the collection of Zetterstedt in the Zoological Museum of the Lund University and 2 specimens in the collection of Zetterstedt in Goeteborg. A male labelled Sweden, Og: Mjölby Lärketorp was designated lectotype. Andersson concluded that the common interpretation of this species is correct. Only one specimen of *Oscinis citrinellus* labelled "*O. citrinella* ♀. Röstonga" with a lemon-yellow square in the collection of J.W. Zetterstedt in Lund was found. The specimen was designated holotype in spite of the specimen being a male (Andersson, 1966). Zetterstedt has often misinterpreted the sex in Chloropidae, because male and female in Chloropidae differ in most cases only in the genitalia. The lemon-yellow square is interpreted as Sweden, Skåne, localities east and south-east of Lund, according to Dahlbom (1850) (see Andersson, 1966).

*Chlorops rufinus* and *Ch. citrinellus* were distinguished by the colour of stripes on scutum, which are red in the former and black with thick grey pollinosity in the latter. Examination of the male genitalia of the lectotype of *Chlorops rufinus*, holotype of *Ch. citrinellus* and other specimens of *Ch. rufinus* with different colour of stripes on scutum leads us to the conclusion that all investigated specimens are conspecific.

Many species of the genus *Chlorops* are greatly variable in colour. *Ch. rufinus* is a widely distributed species, but everywhere rare. We have examined 46 specimens of this species (including all type specimens) from different parts of its range: from Sweden to the Far East of Russia, including Mongolia. The colour of stripes on scutum varies from entirely light red to entirely black. Specimens with black stripes are rather rare. Of the examined specimens, only 1 male and 4 females (about 10%) have entirely black stripes on scutum. In many examined specimens, the lateral stripes are entirely or partly brown or black, especially on the outer side, and the central stripe red, or partly brown, or black in anterior part only. Specimens with entirely red stripes on scutum are more common. Females have more often entirely or partly black stripes on scutum. Kanmiya (1983), who had only a female from Japan, mentioned that the specimen

had reddish yellow stripes, median one being in part narrowly blackened at anterior end. No geographical cline in colour of scutum has been found.

Both species were described in the same book. We choose the name *Ch. rufinus* as a senior synonym because of page priority and wider use in literature. *Ch. rufinus* is a widespread transpalaearctic species recorded from Europe, West Siberia, Kazakhstan, East Siberia (Yakutia), Far East of Russia, Mongolia, and Japan.

**Chlorops limbatus** Meigen, 1830

= *Ch. discicornis* Zetterstedt, 1848 (non Loew, 1866), **syn. n.**

The specific name *discicornis* in the genus *Chlorops* is known as given by Loew (1866) to a species later synonymised with *Ch. laetus* Meigen, 1830. However, the species name *discicornis* combined with the generic name *Chlorops* was published much earlier by Zetterstedt (1848) based on two specimens received from C. Staeger. All subsequent authors omitted Zetterstedt's note 4 to *Chlorops taeniopus* on p. 2625: "Obs. 4. exempla, quae sub indicio "*Chlor. discicornis* nov. sp." a Nobili Staeger mecum communicata, a nostra *Oscin. taeniopo* distingvere non valeo, praeter quod tarsi antichi basi flavidi, nec nigri videantur". It must be stressed that black fore tarsi and tip of fore tibia is one of the specific characters of *Ch. pumilionis* Bjerkander, the senior synonym of *Ch. taeniopus* Meigen. There are two specimens labelled *discicornis* in the Zetterstedt's Scandinavian collection kept in the Zoological Museum of Lund University: a male with number 268 and label "*C. discicornis* n. sp. ♂ Staeg. (*taeniopa* Z)" and a female with number 269 and label "*C. discicornis* n. sp. ♀ (*taeniopus* Z)". Both specimens are *Chlorops limbatus* Meigen, 1830 (= *Ch. brevismanus* Loew, 1866, see Nartshuk, 1997), as evidenced by the form of ocellar triangle, large first flagellomere, and also by the short basitarsus and asymmetrical claws of fore legs in male. The female has no abdomen, but the fore basitarsus and claws are of usual form. Fore tibia is often darkened in this species.

**Chlorops pumilionis** (Bjerkander, 1778)

= *Chlorops taeniopus gotlandica* Holmgren, 1887: 75.

In old Scandinavian literature, we found another species name overlooked by nearly all authors dealing with Chloropidae. Holmgren (1887) described *Chlorops taeniopus gotlandica* from the Island Gotland, Sweden. The description was

done in Swedish. Egg, larva, pupa and adult were described in details, drawings of all stages, damaged plants and a parasite (probably *Coelinus niger* Nees, Braconidae) were given. Holmgren (1887) mentioned that larvae of this fly damaged seriously the cultivated cereals on Gotland in 1883-1885. He believed that several species of Chloropidae damaged cereals and supposed that the fly from Gotland was a separate species, but described it merely as subspecies. He stressed that these flies developed only in stems of barley, in contrast to *Ch. pumilionis* Bjerckander (as *Ch. taeniopus* Meigen in his paper) which developed in stems of both barley and wheat. The following characters were mentioned to distinguish the new form from *Ch. pumilionis*: 1st and 2nd antennal segments black with small yellowish spot on inner side (without spot in *Ch. pumilionis*); puparium with distinct transverse striation (in *Ch. pumilionis*, smooth and shining). Holmgren supposed that the fly from Gotland may be the same as var. b of *Ch. taeniopus* (Zetterstedt, 1848, p. 2625). We had an opportunity to examine the two flies mentioned by Zetterstedt under var. b. The specimen from Lapponia Lulense is a female of *Ch. planifrons* Loew, and that from Norvegia alpina, Gamas is *Ch. speciosus* Meigen. Other specimens labelled *Ch. taeniopus* Meigen in Zetterstedt's collection are *Ch. pumilionis* Bjerckander. *Ch. pumilionis* Bjerckander, a well-known pest of cereals, is very variable in coloration. The basal segments of antennae are usually darkened but not entirely black. The first flagellomere is usually black, but sometimes with yellowish spot on inner side; ocellar triangle is from entirely black to yellow with only black line from fore ocellus to the apex of triangle. Pattern of plant damage on Holmgren's drawing looks like that caused by *Ch. pumilionis*. We found only one mention of the name *gotlandica* in subsequent entomological literature. Swedish applied entomologist Lampa (1892) listed *Ch. taeniopus gotlandica* as a synonym of *Ch. pumilionis* Bjerckander. The paper by Holmgren and the name *gotlandica* was not listed in "Zoological Record", at least for 1887-1896, the name was not mentioned by Wahlgren (1919) in a review of Swedish Chloropidae and by Becker (1910) and Duda (1932-1933) in monographs on Palaearctic Chloropidae and not cited in catalogues of Diptera.

A.E. Holmgren was a professor in Uppsala, but we found his material neither in Uppsala University nor in Riksmuseum in Stockholm. However, based on detailed description of the sub-

species given by Holmgren and examination of the specimens in Zetterstedt's collection mentioned by Holmgren, we agree with the synonymy established by Lampa.

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