

A new species of *Incertella* Sabrosky (Diptera: Chloropidae) from the White Sea coast, Russian Karelia

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A new chloropid species, *Incertella karteshensis* sp. n. with darkened wings, is described from the White Sea coast (northern Karelia, Russia). The diagnostic characters of the new species are discussed.

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1. Introduction

The genus *Incertella* Sabrosky includes five species known from Europe (Nartshuk 1984). All these species except for *I. antennata* (Collin) were recorded from European Russia. Sometimes *Conioscinella nigrifrons* Duda is also considered in *Incertella*, but the generic position of this species remains unclear.

Many species of the subfamily Oscinellinae (Chloropidae), mostly from the genera *Elachiptera* Macquart, *Rhopalopterum* Duda, *Eribolus* Becker, *Incertella* Sabrosky and *Microcercis* Beschovski, inhabit wetlands, such as wet meadows, marshes, bogs, fens, and shores of different-type water bodies. The known European species of the genus *Incertella* Sabrosky are mesophilous (*I. albipalpis* Meigen, *I. kerteszi* Becker) or hygrophilous (*I. antennata* (Collin), *I. scotica* (Collin), *I. zuercheri* Duda).

The new species which is described here was collected in northern Karelia at the White Sea shore, from coastal meadows in the bounds of the upper intertidal zone. The new species has a peculiar combination of characters and an uncommon feature for the Chloropidae, the strongly darkened wings.

2. Methods

All specimens of the new species were collected using orange plates filled with water. The plates were installed on the ground and used during the period of time when the high tide level did not reach them (see *Habitat*). No specimens of the new species were collected by other techniques (net-sweeping, sticky traps, sampling with aspirator) that were extensively used at the same locality during several seasons.

All specimens were stored in 70% ethanol and slide-mounted in Canada balsam, partly dissected. Measurements were made from slide-mounted specimens using ocular micrometers. The wing length is measured from the wing base. The photographs were taken from the slides, layer by layer, using a Leica DF C320 digital camera and a Leica DM 5000 B microscope. The final images were created from series of layer-by-layer photos using Helicon Focus 4.10 Pro and cleared using Helicon Filter 4.50 and Adobe Photoshop CS software packages.

The material was collected, mounted and illustrated by A. Przhiboro.

The morphological terminology follows McAlpine (1981).

3. Description of the new species, *Incertella karteshensis* sp. n. (Figs 1–2)

Type material. Holotype: ♂, Russia, Karelia, Loukhi Distr., 66°20'N 33°38'E, sea shore, upper intertidal zone, 5.VII.2000. Paratypes: 1♂, 1♀, same locality, 3.VII.2000.

The holotype and the paratypes are deposited in the collection of Zoological Institute, Russian Academy of Sciences, St. Petersburg. All type specimens are on slides in Canada balsam.

Diagnosis. The new species is distinguished from *I. albipalpis* Meigen, *I. antennata* Collin and *I. kerteszi* Becker by the entirely dark body; from *I. zuercheri* Duda and *I. scotica* Collin, by

the densely dusted ocellar triangle and scutum, like in *I. albipalpis*, *I. antennata* and *I. kerteszi*; from *I. scotica*, also by a higher number of orbital bristles (6–8 in the new species, 4–5 in *I. scotica*); and from all Palaearctic species of the genus, by the comparatively strongly darkened wings. Short triangular cerci of the new species are similar to the cerci of *I. albipalpis* and *I. kerteszi*, but the surstyli are narrower.

Description. Body entirely dark, black to dark brown. Head (Fig. 1a): Frons nearly square, slightly narrowing anteriorly, with anterior margin straight. Ocellar triangle densely dusted, reaching anterior one-third of frons, with 5 setulae on lateral margin. Orbital setae 6–8 (7 and 8,

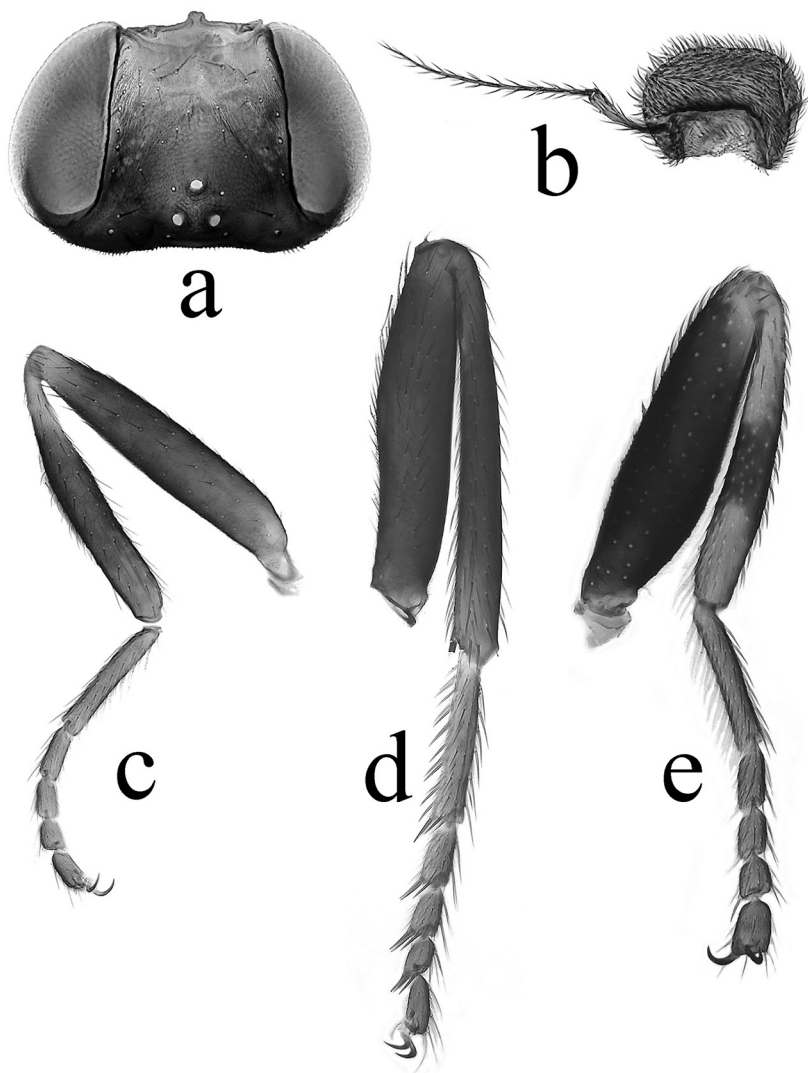


Fig. 1. *Incertella karteshensis* sp. n. (head and legs). – a. Head, dorsally. – b. Antenna, 3rd segment and arista, laterally. – c. Fore leg. – d. Middle leg. – e. Hind leg. a, c, d, e: male, holotype; b: female, paratype.

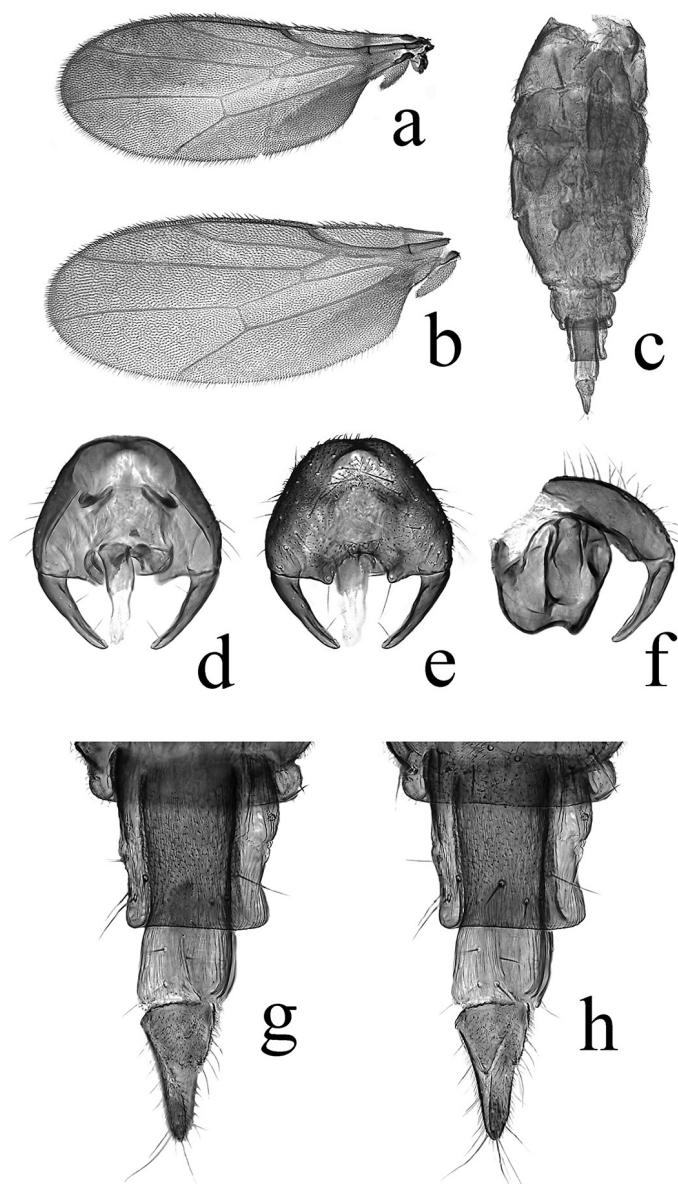


Fig. 2. *Incertella karteshensis* sp. n. (wings, female abdomen and male genitalia). – a. Wing of male. – b. Wing of female. – c. Abdomen of female. – d. Male genitalia: anterior view. – e. Male genitalia: outer parts, posterior view. – f. Male genitalia: hypandrium, right surstylus and part of epandrium. – g. Abdominal apex of female, ventrally. – h. Abdominal apex of female, dorsally. a, d, e: male, holotype; f: male, paratype; b, c, g, h: female, paratype.

in holotype), small, not distinguished from frontal setulae. Postocellar setae rather short, separated wider than hind ocelli. Ocellar setae situated lateral to fore ocellus. Gena narrow. Eyes with sparse fine hairs (visible only at high magnification and not displayed on Fig. 1a). Antenna (Fig. 1b): First flagellomere small, wider than long, its length : width as 5 : 8. Arista rather long, shortly pubescent, its second segment slightly thickened. Lengths of second and third segments of arista as 3 : 10.

Scutum slightly convex, densely dusted and

covered with irregular rows of tiny setae. Scutellum small, semicircular. Notopleural setae 1 + 1. Legs (Fig. 1c–e): All femora dark brown to black, hind femur narrowly pale at apex, wider than middle and fore ones. Femoral organ on middle femur not developed. Fore and middle tibiae brownish black with paler ends. Middle tibia with a spur (broken on Fig. 1d). Hind tibia yellow with brownish black band in the middle occupying one-fourth of tibia length (in holotype), or brownish black with paler base (in paratypes). Tarsi pale. Basitarsi of middle legs with setae ventrally;

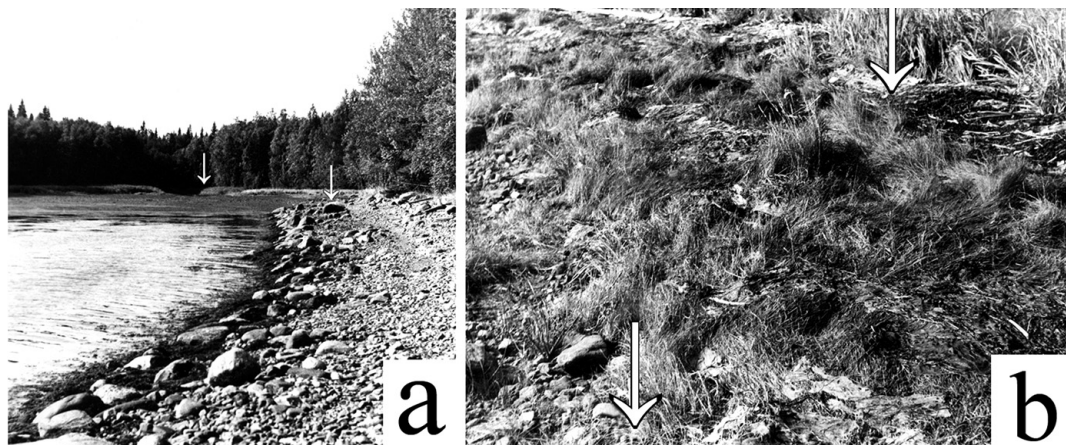


Fig. 3. The habitat of *Incertella karteshensis* sp. n. at the White Sea shore. – a. Seldyanaya Inlet, view from the mouth at neap tide (arrows indicate sites 2 and 4, where the new species was collected). – b. The upper intertidal zone at site 2 (arrows indicate the lower and upper boundaries of the zone).

apices of all segments of middle tarsi with thick setae; hind basitarsi without peculiar setae. Wings (Fig. 2a–b) longer than abdomen, rather narrow; wing length : width as 11 : 4. Wing surface intensely darkened except for a lighter area between veins *M* and *CuA*₁; in male, wing coloration more contrasting. Costal sectors 1 : 2 : 3 : 4 as 11 : 9 : 8 : 6. Fore basal cell not widened. Veins *R*₄₊₅ and *M* divergent. Halteres pale.

Abdomen dark brown. Female abdomen (Fig. 2c,g,h) tapering, with telescopic oviscapt and soft unsclerotized cerci. Subanal plate triangular; subgenital plate wider and rounded.

Male genitalia (Fig. 2d–f): Epandrium small, cerci short-triangular, each with a long seta at apex, widely separated by a semicircular hollow. Surstyli narrow in hind view, lamelliform with rounded apex in lateral view. Hypandrium (observed only in paratype, Fig. 2f) probably open or partly damaged. Gonites not divided, with rounded tip. Base of phallus rounded.

Measurements. Body length 1.6 mm (male, paratype), 2.2 mm (female, paratype). Wing length 1.25 mm (male, holotype), 1.3 mm (male, paratype), 1.4 mm (female, paratype).

Habitat (Fig. 3). The type locality is the narrow Seldyanaya Inlet, Kandalaksha Bay of the White Sea, near the Biological Station of the Zoological Institute (Fig. 3a). All specimens were collected near the end of the inlet within the upper intertidal zone of the sea. This zone extends from the average high tide level of neap tide and that of

the average high tide level of spring tide (ca. 1.7 m and 2.1 m in height, respectively). It borders the middle intertidal zone from below and the supralittoral zone from above.

The holotype and the female paratype were collected from site 2 (not far from the inlet end), the male paratype, from site 4 (at the inlet end). At both the sites, the zone is about 3 m wide and occupied by the tidal meadow. Site 2 (Fig. 3b) is characterized by sandy-muddy soil with a dense turf; *Juncus gerardii* Loisel., *Agrostis stolonifera* L. and *Poa palustris* L. predominate. Site 4 is occupied by the stands of *Phragmites australis* (Cav.) Trin. ex Steud. on moist muddy soil.

Etymology. The species is named after Cape Kartesh, the place near the type locality, where the Biological Station of the Zoological Institute is situated.

4. Discussion

The generic position of the new species requires some comments as the scopes of the genera *Incertella* Sabrosky, *Microcercis* Beschovski, *Cyclocercula* Beschovski and some related genera are not exactly clear. The new species is provisionally placed to *Incertella*. The genus was described by Sabrosky (1980) in the revision of Nearctic genera of Chloropidae. Included species were characterized as “Small slender species with heavily gray tomentose frontal triangle and meso-

notum, and 1 anterior and 1 posterior notopleural bristles" (p. 420), "a femoral organ of 2 rows of closely placed warts bearing short, stout spines. [...]. Male genitalia as described and figured by Andersson (1977) for "*Tropidoscinis albipalpis* (Meigen), the cerci distinct and the surstyli flat and simple" (p. 421). The original description notes the presence of setulae on the lateral margin of the ocellar triangle as well.

Ismay (1993) in the discussion about the generic position of *Incertella scotica* (Collin) noted that the anterior margin of the frons is convex (actually, straight?) in all British species of *Incertella*, except *I. scotica* with concave margin. The new species has dusted ocellar triangle and scutum, setae on the lateral margin of the ocellar triangle, and small triangular male cerci as in *I. albipalpis*, *I. kerteszi* and *Microcercis trigonella* (Duda). Three last species are characterized by the closed hypandrium, notopleural setae usually 1+1, and convex anterior margin of the frons. Some specimens of *I. albipalpis* have two hind notopleural setae (according to the personal communication by M. von Tschirnhaus). Unfortunately, the shape of hypandrium in the new species is unclear. The surstyli in *I. albipalpis*, *I. kerteszi* and *M. trigonella* are wide, not tapering, and with rounded apex in lateral view. If the epandrium is viewed from behind, the surstyli look concave at apex as their inner surfaces are concave. *I. scotica* has concave margin of the frons, the second small hind notopleural seta, semicircular cerci, short tapering surstyli and open hypandrium. All these characters are shared with *Cyclocercula*. Considering all these data, the generic status of species recently included in the genera *Incertella*, *Microcercis*, *Cyclocercula* and *Conioscinella* needs to be revised with re-examination of type species, some of them being not Palaearctic. This research is beyond the scope of our paper.

The colour of wings in the new species is uncommon in Chloropidae, and very rare among Palaearctic species. Only males of some species of *Gampsocera* Schiner and of *Conioscinella maculipennis* Sabrosky have black spots on the wing. Males of *Gaurax maculipennis* Zetterstedt have slightly darkened tip of wing, but this darkening nearly disappears in the specimens which have been kept in collections for a long time.

Newly collected specimens of *I. kerteszi* and *I. scotica* have slightly evenly darkened wings (according to the personal communication by M. von Tschirnhaus), and this coloration can disappear with time. Both sexes of *Chlorops meigenii* Loew and *C. rossicus* Smirnov have the entire surface of wings slightly darkened as well. Black wing spots are more common among chloropid species distributed in the Oriental and Afrotropical regions.

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