

A revision of and key to the Holarctic and Oriental *Platycheirus manicatus* group species (Diptera, Syrphidae)

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The paper deals with the *Platycheirus manicatus* group species and species names known from the Nearctic, Palaearctic and Oriental regions. It reviews 29 species names and suggests 24 valid names and 5 synonyms. We suggest the following three as new synonyms: *Platycheirus arat* Violovitsh, 1975 = *P. subordinatus* Becker, 1915; *Platycheirus fumosus* Violovitsh, 1982 = *P. discimanus* Loew, 1871 and *Platycheirus katunicus* Skufjin, 1987 = *P. complicatus* Becker, 1889. The females of the little known *Platycheirus fasciculatus* Loew, 1856 and *Platycheirus kashkarovi* Violovitsh, 1978 are described and figured. The similar morphological characters of the Nearctic *P. flabella* Hull, 1944 and the Palaearctic *P. complicatus* and *P. kittilaensis* Dušek & Láska, 1982 indicates the need of a genetic analysis to illuminate their relationship. A key to males and females of the group is presented.

Key words: Syrphidae, revision, *Platycheirus manicatus* group, new synonyms, Holarctic and Oriental regions, key.

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Introduction

The hoverfly genus *Platycheirus* Le Peletier & Serville, 1828 belongs to tribus Melanostomatini of the subfamily Syrphinae. The tribus includes all species of Syrphinae with an unsegmented, mainly tubular aedeagus. The genus differs from the similar *Melanostoma* Schiner, 1860 in complex of characters some of which (broadened fore tarsi or/and tibiae, produced face) vary within genus but only one is presented always: metasternum with median part broadly joined to lateral arms.

Platycheirus comprises about 170 species and is one of the biggest genera among Holarctic Syrphinae, including 73 Nearctic (Young *et al.* 2016) and about 90 Palaearctic species.

Vockeroth (1990) revised the North American

species and arranged them in five groups and a number of subgroups. In his thesis on Nearctic *Platycheirus* Young (2012) elevates the *manicatus* species to a group status, which we follow here.

The *manicatus* group is characterized in the male by fore femur unmodified, often with many posterior black hairs; a slender fore tibia unmodified but with the two basal segments of fore tarsus broadened. Mid tibia usually with either tufts of dense, wavy pile or several long, stiff setae. First two tarsomeres of mid leg are laterally compressed in *discimanus* (Loew, 1871).

Both sexes have the face slightly to strongly protruding below. Female with pollinosity of frons very sparse, not forming two lateral triangles. Abdomen with either dull yellow or silver pollinose spots, sometime confluent medially.

Females of this group are not distinguishable from those of the *stegnus* group, *chilosia* subgroup at the subgroup level, and must be keyed out directly to species level.

Bagatshanova described a new species, *Platycheirus peckae*, from Russia in 1980. In 1982 Dušek and Láska published a well-illustrated survey of the European *manicatus* group species, with a description of two new species, *P. kittilaensis* and *P. tatricus*, and with an illustrated key to the species. Additional new species were published from Russia (Barkalov & Nielsen 2007, 2012 and Barkalov 2013). In his revision of the Nearctic *Platycheirus*, Young (2012) presented also genetic data on the species.

19 *Platycheirus* species of the *manicatus* group have so far been found in the Palaearctic region: *P. bartschi* Barkalov & Nielsen, 2012, *P. cejensis* Kuznetsov, 1987, *P. cintoensis* van der Goot, 1961, *P. complicatus* Becker, 1889, *P. discimanus* (Loew, 1871), *P. fasciculatus* Loew, 1856, *P. groenlandicus* Curran, 1927, *P. kashkarovi* Violovitsh, 1978, *P. kittilaensis* Dušek & Láska, 1982, *P. latimanus* (Wahlberg, 1844), *P. manicatus* (Meigen, 1822), *P. melanopsis* Loew, 1856, *P. migriaulii* Stuke & Nielsen, 2002, *P. peckae* Bagatshanova, 1980, *P. similis* Barkalov & Nielsen, 2007, *P. subordinatus* Becker, 1915, *P. tarsalis* (Schummel, 1837), *P. tatricus* Dušek & Láska, 1982, and *P. torei* Barkalov, 2013.

Seven species are known from the Nearctic region; *P. discimanus*, *P. flabella* Hull, 1944, *P. groenlandicus*, *P. manicatus*, *P. oreadis* Vockeroth, 1990, *P. subordinatus* and *P. thylax* Hull, 1944.

Two species, *P. himalayensis* Brunetti, 1915 and *P. rubrolateralis* Nielsen & Romig, 2010 are known from the Oriental region.

Material and methods

We have studied material from the following collections: **AMNH** = American Museum of Natural History, New York; **BMNH** = British Museum Natural History, London; **CNC** = The Canadian National Collection, Ottawa; **MNHN** = Muséum National d'Histoire Naturelle, Paris; **MNB** = Museum für Naturkunde, Berlin; **NRS** =

Naturhistoriska Riksmuseet Stockholm; **SMNS** = Stuttgart Museum for Natural History; **SZM** = Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals Siberian Branch of the Russian Academy of Sciences, Novosibirsk; **TRN** = collection of the first author; **ZIN** = Zoological Institute of the Russian Academy of Sciences, St. Petersburg; **ZMA** = Zoölogisch Museum Amsterdam; **ZMH** = Zoological Museum Helsinki; **ZSI** = Zoological Survey of India, Kolkata.

The species

Platycheirus arat Violovitsh, 1975

Violovitsh 1975: 73 (*Platycheirus*)

Material studied. The description was based on a single male from Tuva, Russia and is kept in ZIN, St. Petersburg. It has been examined by both of us. It is conspecific with and a junior synonym of *P. subordinatus* Becker, 1889, **syn. nov.**

Platycheirus bartschi Barkalov & Nielsen, 2012

Barkalov & Nielsen 2012: 165 (*Platycheirus*)

(Figures 1A–C)

Material examined. Described from a single male from Taimyr in the arctic Siberia. The type is kept in SZM, Novosibirsk.

Diagnosis. A small species. Male abdomen with obscure bluish grey spots on tergites 2–4. Basitarsus of fore leg broad, laterally angulate on apical third. Fore tibia postero–laterally with straight scattered setae. Female unknown.

Distribution. Taimyr in Siberia.

Platycheirus cejensis Kuznetsov, 1987

Kuznetsov 1987: 419 (*Platycheirus*)

(Figures 2A–B)

Material examined. Described from a male specimen from Russia: Severnaya Osetia (Alaniya), Caucasus. The type (in ZIN) is missing.

Diagnosis. According to the original description, the male front tarsus is very similar to that of *cintoensis* van der Goot, 1961, but differs slightly in the shape of the two basal joints, see key.

The author's description: "The described

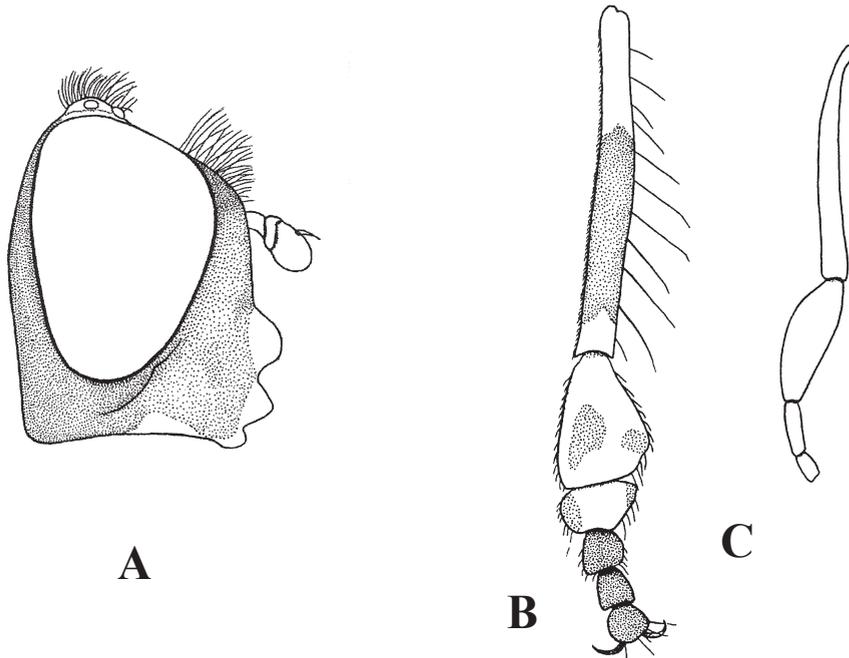


FIGURE 1 A–C. *Platycheirus bartschi* Barkalov & Nielsen, 2012. **A.** Male holotype, head in lateral view. **B.** Fore tibia and tarsus. **C.** Hind tibia and tarsus.

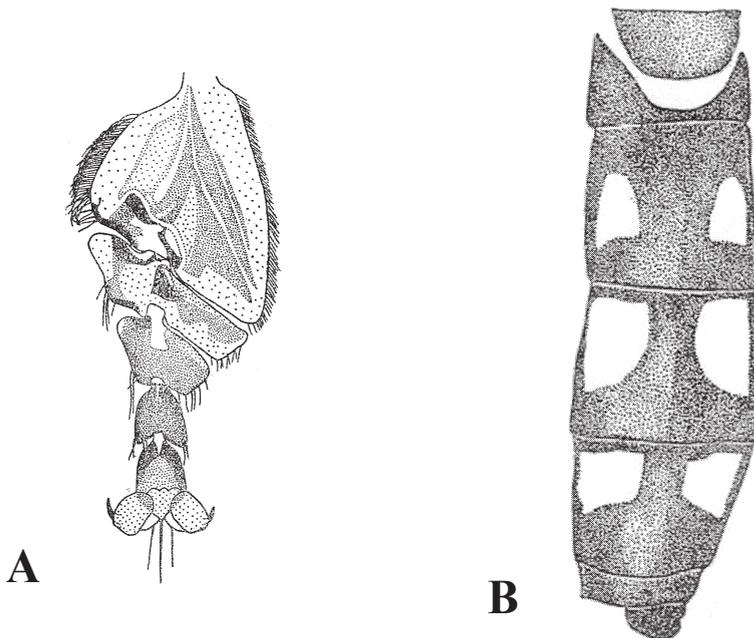


FIGURE 2 A–B. *Platycheirus cejensis* Kuznetsov, 1987. **A.** Male holotype, fore tarsus in ventral view. **B.** Abdomen dorsal view (copies from orig. description).

species belongs to the *P. manicatus* species group, having broadened fore tarsi and tibiae. From known Palaearctic species of this group the described species is closer to *P. cintoensis*, described by van der Goot, 1961 from Corsica, which also has broadened 3rd segment of fore tarsus and from which *P. cejensis* sp. n. differs by form of segments of male fore tarsus (Fig. 3), by color of ventral side of this tarsus, by broader and shorter 2nd segment of fore tarsus (Figs. 3, 6) and smaller spots on tergum II of male abdomen in comparison with spots on tergites III and IV.”

Female unknown.

Distribution. Caucasus.

***Platycheirus cintoensis* van der Goot, 1961**

Goot, van der 1961: 211 (*Platycheirus*)

(Figures 3A–C)

Material examined. The male holotype, kept in ZMA, has been examined.

Diagnosis. Male: lower part of face much

protruding. The three basal segments of fore tarsus broad, basitarsus with distal margin slightly roof-shaped (—). The hind margin of the abdominal spots oblique. The female is unknown.

Distribution. Corsica.

***Platycheirus complicatus* Becker, 1889**

Becker 1889: 172 (*Platycheirus*):

(Figures 4A–F)

Material examined: The species was described from St. Moritz, Switzerland in coll. of MNB (Berlin). Material examined: lectotype, male dated “St. Moritz, 30 June 10124, Sammlung Dr. Th. Becker, *complicatus* Beck., det. Becker.” (Nielsen 1981). Two males from Czech Republic (det. P. Láska) and one male from Japan (det. K. Ôhara).

Diagnosis: male front tarsus with basitarsus widening evenly towards apex, about 1.5 times longer than broad. Hind basitarsus slender. Tergites with pruinose brown to orange-brown

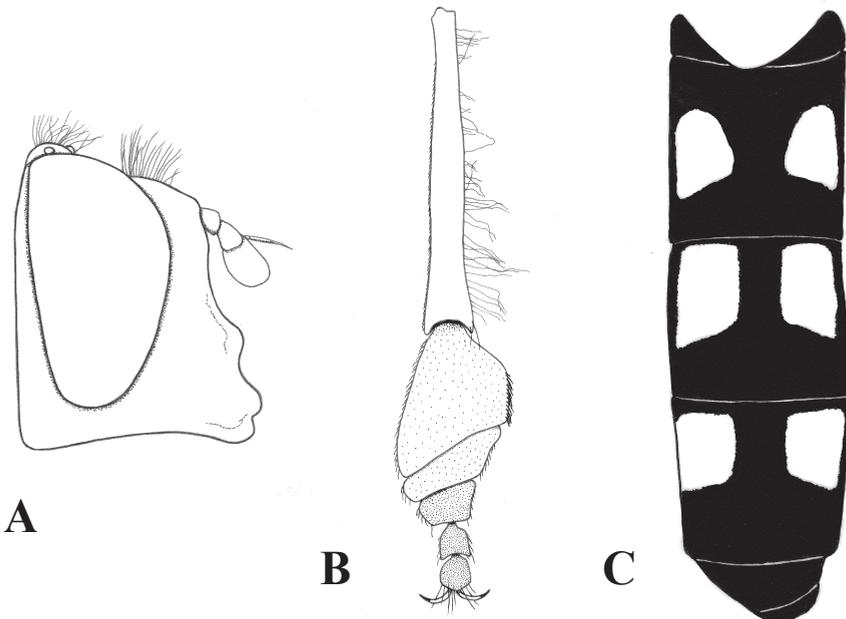


FIGURE 3 A–C. *Platycheirus cintoensis* van der Goot, 1961. **A.** Male holotype, head in lateral view. **B.** Left fore tibia and tarsus. **C.** Abdomen.

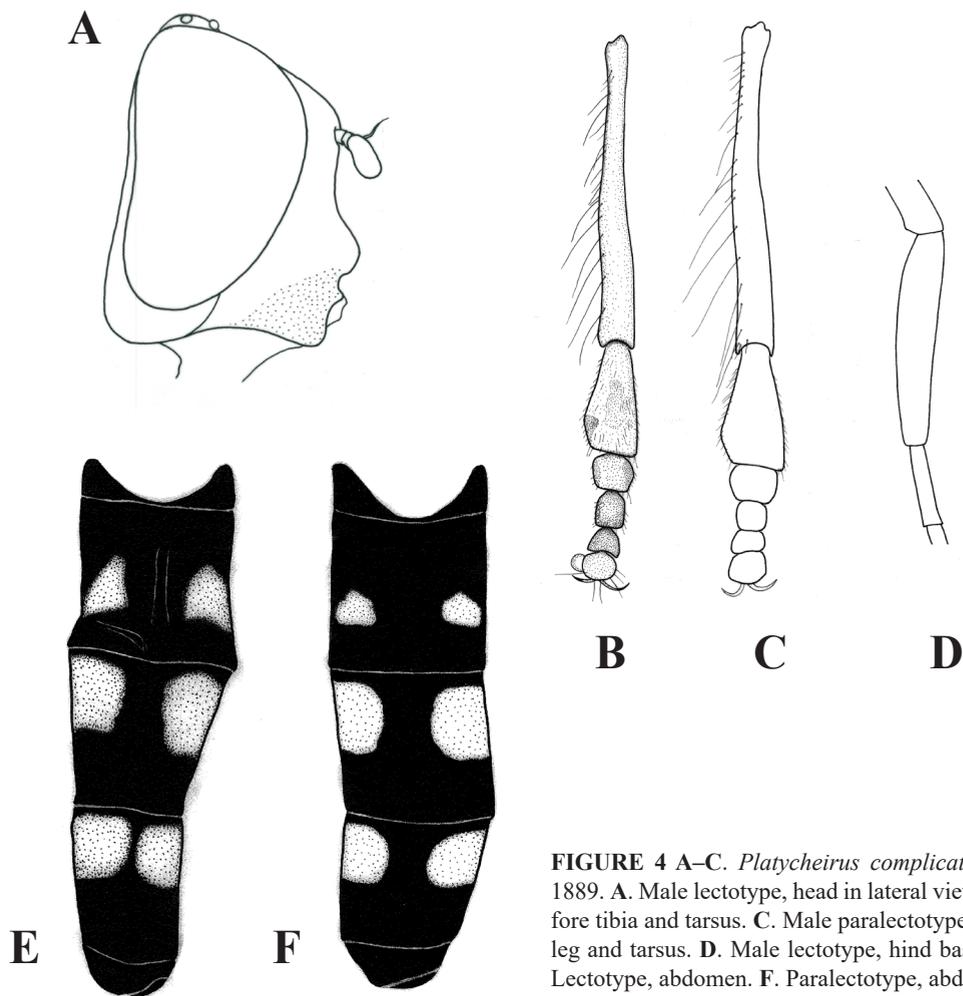


FIGURE 4 A–C. *Platycheirus complicatus* Becker, 1889. A. Male lectotype, head in lateral view. B. Right fore tibia and tarsus. C. Male paralectotype, right fore leg and tarsus. D. Male lectotype, hind basitarsus. E. Lectotype, abdomen. F. Paralectotype, abdomen.

spots. We have not seen any females from the type series.

Discussion. very similar to *flabella* and *kittilaensis*. See *P. kittilaensis* for more information.

Distribution. central Europe. Germany, the Czech Republic, France (Alps), Switzerland, northern Italy (Dolomites), western Siberia, Japan.

***Platycheirus discimanus* (Loew, 1871)**

Loew 1871: 227 (*Platycheirus*)

(Figures 5A–D)

Material examined. We have examined the male lectotype (the types in Museum für Naturkunde, Berlin (MNB)) and a number of

specimens from Europe and Russia.

Diagnosis. Similar to *P. groenlandicus* Curran but differs from that in middle legs of the male with the two basal tarsus segments yellow and laterally compressed. Abdominal tergites 2–4 of both sexes with bluish grey maculae.

Distribution. Europe, Siberia, Canada and eastern USA.

***Platycheirus fasciculatus* Loew, 1856**

Loew 1856: 45 (*Platycheirus*)

(Figures 6A–E)

Material examined: male type in ZMA and additional males and females from Italy.

Diagnosis. Face strongly produced below,

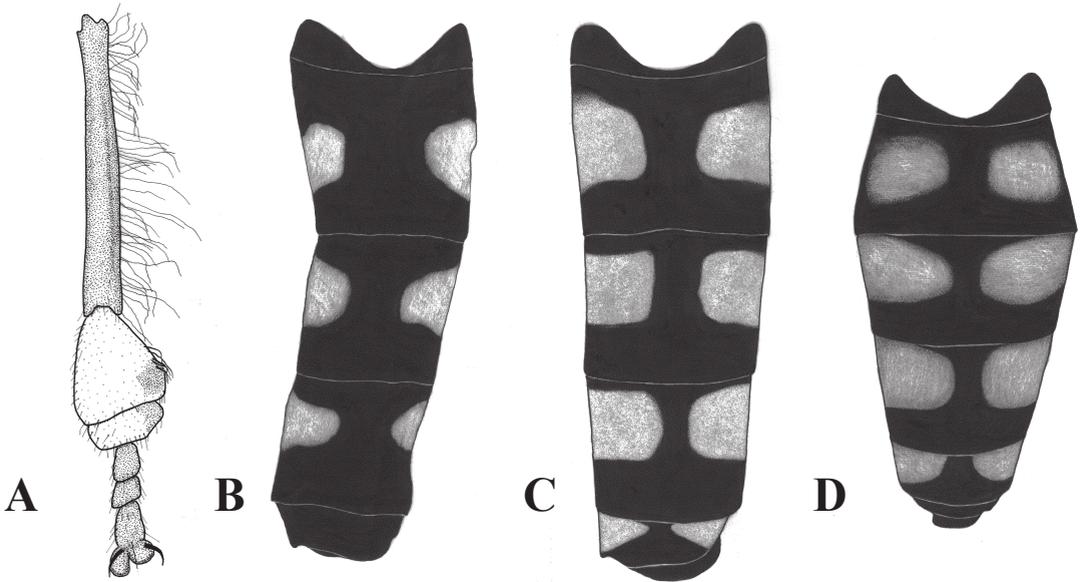


FIGURE 5 A–D. *Platycheirus discimanus* (Loew, 1871). A. Male lectotype, fore leg tibia and tarsus. B. Male lectotype abdomen. C–D. Male and female abdomen in dorsal view. Specimens from Bergen, Norway.

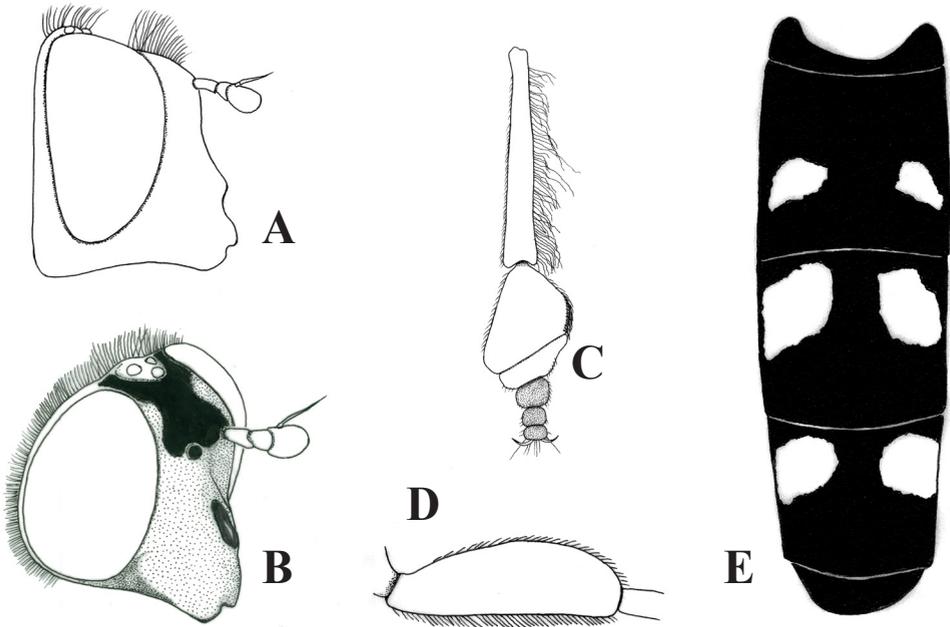


FIGURE 6 A–E. *Platycheirus fasciculatus* Loew, 1856. A. Male, head in lateral view. B. Female head in dorsolateral view. C. Male, left fore tibia and tarsi. D. Male hind basitarsus, lateral view. E. Male abdomen.

mouth edge more so than central prominence. Male fore tarsus with the two basal segments making a whitish disc, the following segments darkened.

Description of the female (based on two females, one dated labeled “ITALIA/N Veneto: Val Padola E Kreuzberg-Pass, oberh. C. radi Rinfreddo 1900–2000 m 28 July 1989” and one “ITALIA/N Veneto: Val Padola Cas. die Rinfreddo bis Col Quaterna 2000–2300 m 14 July 1990”, both leg. C. Claussen.

Head: frons shining black, black haired, grey dusted along the eyes. Face densely grey dusted except for central prominence black. Antennae black. Occiput densely grey dusted.

Thorax: steel blue, dorsally with three faint grey longitudinal dust stripes. Humerus, notopleuron and pleurae grey dusted, the hairs yellow white. Fore margin of scutellum faintly grey dusted. Legs: femorae greyish black, the tips yellow. Hind tibia greyish black (narrowly yellow at base and tip), fore and mid tibia yellow (broadly black in the middle). Wings: haltere yellow, squama whitish.

Abdomen: tergite 1 black with light grey dusting. Tergites 2–5 each with a pair of orange yellow spots, the spots with light grey dusting.

Distribution. European Alps (Austria, Switzerland), Dolomites (Italy).

Platycheirus flabella Hull, 1944

Hull 1944: 75 (*Platycheirus*)
(Figure 7)

Material examined: We have examined two males from Canada (det. J.R. Vockeroth). The species is very similar to the Palearctic *P. complicatus* Becker and *P. kittilaensis* Dušek & Láška, and we have not found characters separating them. The types are kept in CNC.

Diagnosis. (after Young (2012)) *Male:* Face moderately produced ventrally; dorsally with weak median keel or ridges between antennal bases; somewhat densely grey pollinose, with tubercle and gena shining. Anterior oral margin produced forward to the level of tubercle. Legs dark, with narrow apex of fore and mid femur, basal quarter of fore tibia, narrow base of mid tibia, and first 2 tarsomeres of foreleg pale. Fore femur

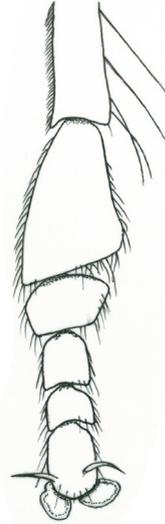


FIGURE 7. *Platycheirus flabella* Hull, 1944. Male fore tarsus.

with a ventral row of 4–6 stiff black setae on basal half. Fore tibia with a row of weak black posterior setae, setae on basal third of tibia approximately equal in length to tibial width, setae on apical two-thirds 2–3 times as long as tibial width. First fore tarsomere broadened evenly from base to apex, 1.5–2 times as long as broad. second fore tarsomere variable, rectangular, up to 1.5 times as wide as long, approximately one-quarter as long as first tarsomere. Remaining fore tarsomeres unmodified. Mid femur with a ventral row of 5–7 weak black or white setae on basal half, setae approximately as long as femoral diameter. Mid tibia with a posteroventral row of 5–6 weak black setae on apical half, setae approximately 3 times as long as tibial diameter. Hind tibia with an anterodorsal row of 5–6 weak black setae on apical half, setae approximately twice as long as tibial diameter. First tarsomere of hind leg slightly swollen, approximately 5 times as long as greatest depth. Legs otherwise unmodified. Wing completely microtrichose. Abdomen narrow, with spots of tergites dull orange and overlaid with strong silver pollinosity.

Description of the female (after Young (2012)) *Head:* Face strongly produced ventrally; dorsally with a strong keel between antennal

bases; densely yellowish grey pollinose, with tubercle shining. Tubercle somewhat raised. Anterior oral margin produced forward to or slightly beyond level of tubercle. Antennae dark, basal third of arista swollen. Frons with uniform pollinosity. Vertex approximately 2.5 as wide as ocellar triangle.

Thorax. Legs mostly dark, with narrow bases of femora, apices of femora, and bases of tibiae pale. Pale area on apices of femora and bases of tibia somewhat variable, but never more than apical/basal quarter. Legs unmodified. Thoracic pile white or yellow, longest scutellar pile subequal in length to arista, most other thoracic pile no more than one-third as long. Pleura sparsely grey pollinose. Scutum completely free of pollinosity. Halter yellow, sometimes very pale brown on knob. Wing completely microtrichose.

Abdomen. Abdomen oval, with small yellow spots on tergites 2–4 separated from anterior and lateral edges of tergites. Spots of tergite 2 semicircular, with posterior edge of spot straight and running parallel to posterior edge of tergite. Spots of tergites 3 and 4 approximately twice as wide as long, with anterior and posterior edges of

spots converging towards center of tergite. Tergite 5 entire entirely dark or with very obscure yellow spots at anterior edge of tergite.

Distribution. Alaska, Canada and northern USA.

***Platycheirus fumosus* Violovitsh, 1982**

Violovitsh 1982: 55 (*Platycheirus*)

Material examined. Described from four males and one female. We have examined the male holotype and one male paratype (in ZIN) and found it conspecific with *P. discimanus* (Loew).

Syn. nov.

***Platycheirus groenlandicus* Curran, 1927**

Curran 1927: 10 (*Platycheirus*)

(Figures 8A–D)

Platycheirus monticolus Nielsen, 1972, a junior homonym of *Melanostoma monticola* Jones, 1917

Platycheirus boreomontanus Nielsen, 1981

Material examined. Specimens from Canada (det. J.R. Vockeroth) and Greenland, and a large material from Fennoscandia and Russia. The types are kept in AMNH.

Diagnosis. Very similar to *discimanus*, but

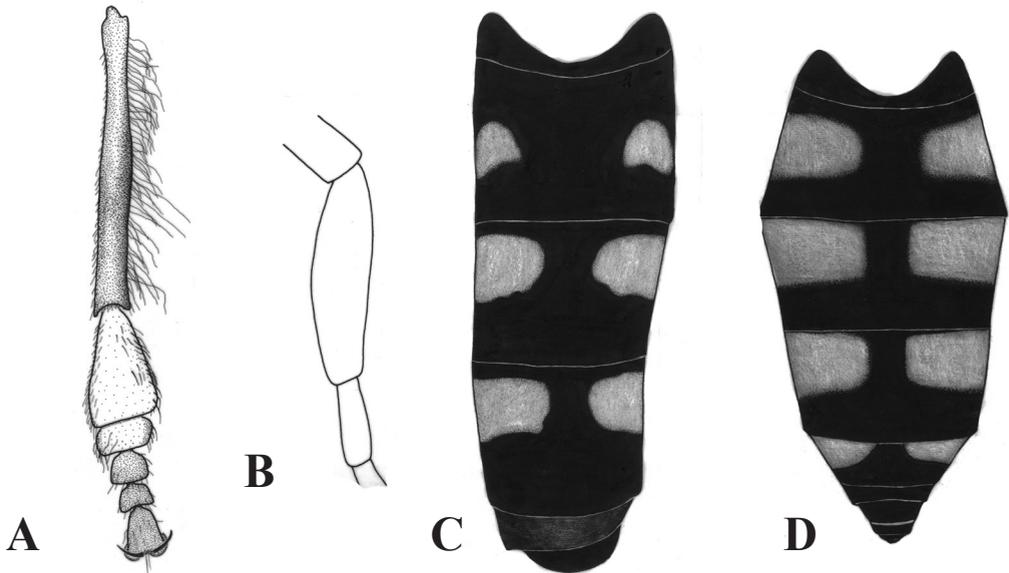


FIGURE 8 A–D. *Platycheirus groenlandicus* Curran, 1927. **A.** Left fore tibia and tarsus. **B.** Hind basitarsus, lateral view. **C.** Male abdomen in dorsal view. **D.** Female abdomen in dorsal view.

male basitarsus of mid leg darkened and of normal shape (not yellow and laterally compressed as in *discimanus*). Fore leg basitarsus triangular, longer than wide (in *discimanus* as broad as long), hind leg basitarsus slightly thicker than femur (twice the thickness in *discimanus*). Female face, frons and abdominal spots distinctly grey dusted, only faintly so in female *discimanus*.

Distribution. Circumpolar (Alaska, northern and western Canada, northern and western Canada, arctic, alpine Greenland, in mountains and in boreal parts of Fennoscandia, northern Russia (Siberia).

***Platycheirus himalayensis* Brunetti, 1915**

Brunetti 1915: 201 (*Platycheirus*)

Figures 9A–F)

Material examined. Males and females from Nepal and Tibet. The holotype is stored in ZSI (Kolkata).

Diagnosis. Similar to *manicatus*, but markedly larger. Male: eye angle in the male about 110°, facial pile black. Fore basitarsus subrectangular, about 1.5 times as long as broad and dorsolaterally with a low longitudinal keel. Female upper part of frons shining black, contrasting well from the lower, pollinose part of frons. Scutellum is mostly black pilose. – Female: upper part of frons shining black, contrasting well from the lower, pollinose

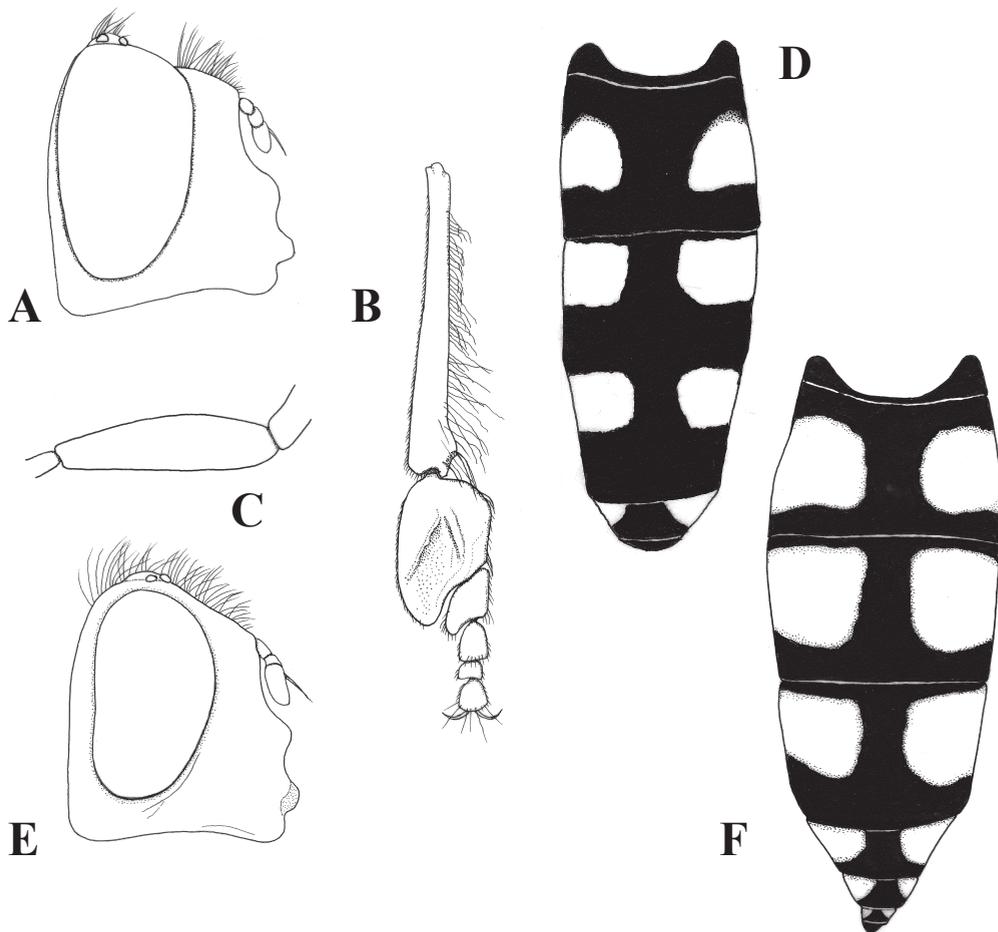


FIGURE 9 A–F. *Platycheirus himalayensis* Brunetti, 1915. **A.** Male, head in lateral view. **B.** Male, left fore tibia and tarsus. **C.** Male hind basitarsus in lateral view. **D.** Male abdomen in dorsal view. **E.** Female head in lateral view. **F.** Female abdomen, dorsal view.

part of frons. Scutum and scutellum shining, only lightly pollinose; scutellum mostly black pilose. Pleurae rather densely pollinose. Tergites 2–7 each with a pair of yellow spots. ♂♀ body length about 11 mm, wing length 10 mm. See also Nielsen 2016.

Distribution: Himalaya.

Platycheirus kashkarovi Violovitsh, 1978

Violovitsh 1978: 172 (*Platycheirus*)

(Figures 10A–K)

Material examined. Male holotype and paratype in ZIN (Barkalov & Nielsen 2007), both from Kirgizia. Male holotype dated: “Terske–jAlatau mountain ridge, S. Karakol, environs of Sovnarkoma glacier 17–22 July 1934 (Kashkarov)”; Paratype: 1 male Headwaters of Naryn river, Semirech’e 23 July 1934 (Kashkarov). - Additional material: KAZAKHSTAN: 1 male environs of Alma–Ata city, canyon of Malaya Alma–Atinka river 2700 m a.s.l. (Zhelokhovtsev). KIRGIZIA: 1 male Tyan–Shan, Sary–Dzhaz river, near mouth of Tyuz river, 3000 m a.s.l. 15 July 1986 (Peck); 1 female Tyan–Shan, Sary–Dzhaz River, near river flows Kenou, 2850 m a.s.l. 16 July 1986 (Peck); 1 female Tyan Shan, Molo settlement, Kojlyu river, 3200 m a.s.l. 16 July 1983 (Peck); 1 female Chon–Ashu pass, 3400 m a.s.l. 4 August 1966 (Peck). TADZHIKISTAN, 1 female Pamy, Khorgush pass, Yuzhno–Alichurskij range, 40 km N of Pachiva, 4200–4500 m a.s.l. 4 August 1964 (Zaitsev).

Diagnosis. Relatively large and broad species with pairs of yellow spots on the abdomen. Male: Eye angle more than 100°. Face rather protruded forward, covered with grey dusting except central knob and lateral sides of face. Fore femur without short ventral setae near the middle. Posterior side of fore tibia with numerous long fine hairs directed to tip of tibia, shorter, dark hairs in basal 1/3 and longer yellow hairs in apical 2/3.

Description of the female. *Head:* face distinctly protruded forward, broad, on level of central knob broader than ½ of head width. Face seen from in front with the eye margins parallel, and except for central knob and lateral shiny stripe covered with dense grey dusting. Frons very broad (Figure 10H), in anterior half covered with dense

grey dusting, posterior half shiny; the hairs long, erect yellow in anterior half and black in posterior half. Antennae black. Distance between anterior and posterior ocelli shorter than between the posterior ocelli. Vertex about as broad as eye.

Thorax: scutum and scutellum shiny, covered with long, erect yellow hairs, scutum with three narrow longitudinal pollinose stripes on anterior third. Pleurae with fine grey dusting and long wavy yellow hairs. Legs: femora mostly black with yellow apical 1/5; fore and mid tibiae yellow with yellow hairs, hind tibia yellow in basal ¼ and black in apical ¾, covered with yellow hairs, sometimes a few black hairs in basal half; anterior tarsus a little broadened in comparison with mid tarsus (Figure 10J), fore and mid basitarsus brownish, segments 2–5 from brown to black, hind basitarsus black, slightly broadened, almost same width as hind tibia (Figure 10K).

Abdomen: broad with three pairs of orange yellow spots, rectangular on tergites 3–4 and irregular on tergite 2 (sometimes these spots very small or invisible), spots on tergites 3–4 not reaching anterior and lateral sides of tergites, covered with grey dusting; tergite 5 with small, brownish sometimes invisible spots. Sternite 2 with long white hairs.

Distribution. Kazakhstan, Kirgizia, Tadzhikistan.

Platycheirus katunicus Skufjin, 1987

Skufjin 1987: 35 (*Platycheirus*)

Material examined. The holotype and paratypes in ZIN (St. Petersburg) were studied. The male holotype is conspecific with *P. complicatus* Becker, 1889. The male paratypes belong to *P. varipes* Curran, 1923. It was wrongly synonymised by Mutin in 1999 (Mutin & Barkalov, 1999). In accordance with the International Code of Zoological Nomenclature (1999) the holotype has precedence over paratypes, and we therefore consider *P. katunicus* Skufjin, 1987 as a junior synonym (**syn. nov.**) of *P. complicatus* Becker, 1889.

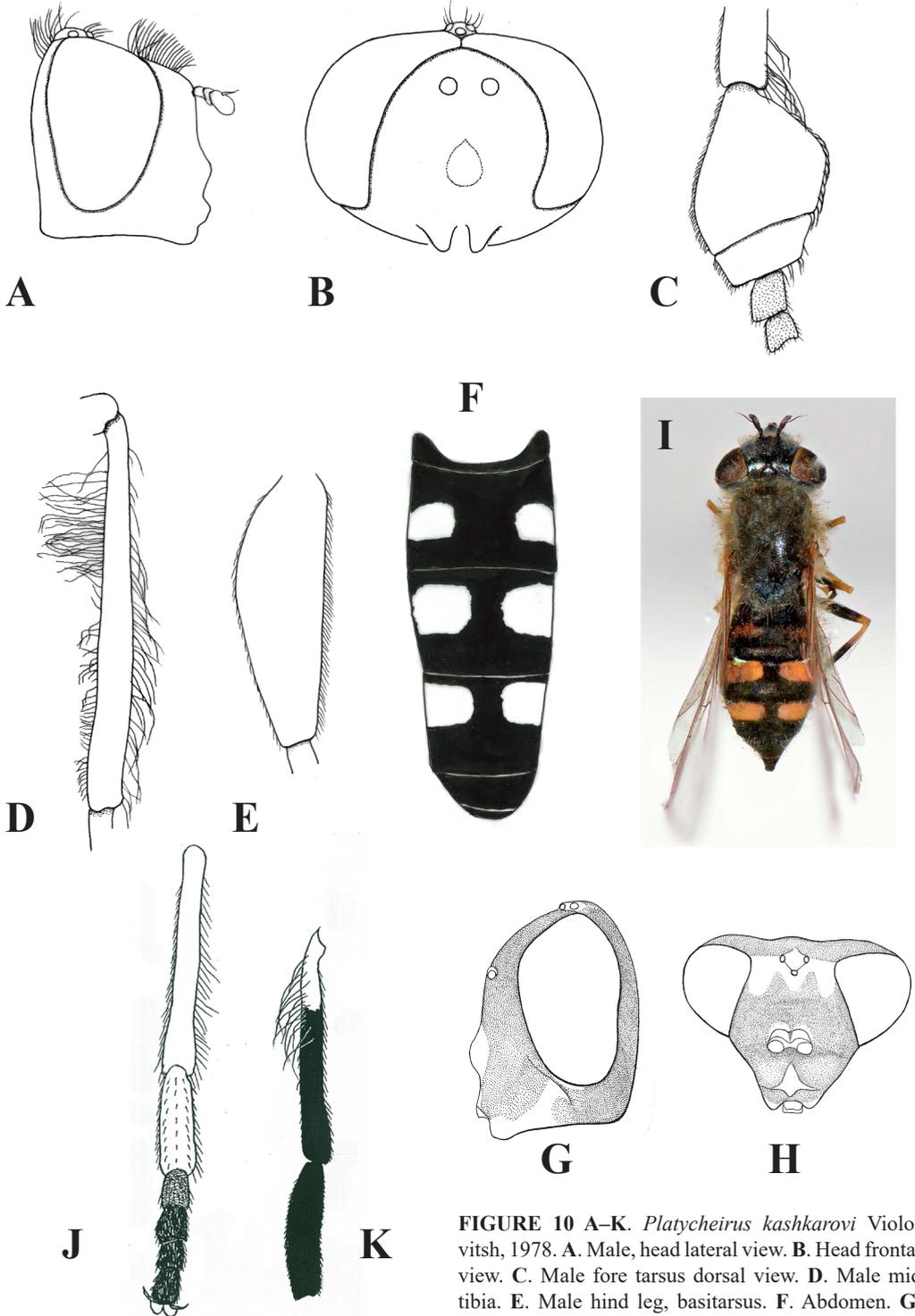


FIGURE 10 A–K. *Platycheirus kashkarovi* Violtsh, 1978. **A.** Male, head lateral view. **B.** Head frontal view. **C.** Male fore tarsus dorsal view. **D.** Male mid tibia. **E.** Male hind leg, basitarsus. **F.** Abdomen. **G.** Female head lateral view. **H.** Dorsal view. **I.** Female dorsal view. **J.** Female fore leg. **K.** Female hind leg.

***Platycheirus kittilaensis* Dušek & Láska, 1982**

Dušek & Láska, 1982: 384 (*Platycheirus*)

(Figure 11)

Material examined. Male holotype, male and female paratypes (Nielsen 1981) and a large material from Norway and Russia. The types are kept in the collections of Zoological Museum Helsinki (ZMH).

Diagnosis. Very similar to *complicatus* and *flabella*.

Discussion. *P. kittilaensis* was described on basis of three males. According to the original description the species could be separated from *complicatus* in a wider basitarsus of the fore leg and in a rather wide 2nd segment. Our rich material of *kittilaensis* shows some variation of such marks, covering also the characters of *complicatus*. Also the *complicatus* types show some variation, a slightly wider basitarsus and 2nd segment in the male paralectotype than in the male lectotype (Figure 4B–C).

Because of this variation we would suggest a genetic study to lighten the relationship between the two, and also to the related *latimanus* and the Nearctic *flabella*.

Distribution. In the mountains and northern parts of Fennoscandia, Russia.

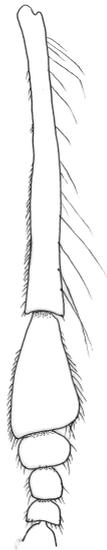


FIGURE 11. *Platycheirus kittilaensis* Dušek & Láska, 1982. Holotype, male left fore tibia and tarsus.

***Platycheirus latimanus* (Wahlberg, 1844)**

Wahlberg 1844: 66 (*Scaeva*)

(Figures 12A–C)

Material examined. Male lectotype and paralectotypes in NRS, and a numbers of specimens from Norway, Sweden and Russia.

Diagnosis. Very close to *complicatus*, but male front basitarsus narrower, not much broader than tibia at apex, the sides nearly parallel. Fore femur with 3–5 short, ventral setae near middle, fore tibia with a row of evenly spaced, erect bristle-like hairs; eye angle 90–95°.

Distribution. In the mountains and the northern parts of Fennoscandia, Russia: Altai Mountains, West Saiyan Mountains.

***Platycheirus manicatus* (Meigen, 1822)**

Meigen 1822: 336 (*Syrphus*)

(Figures 13A–D)

Material examined. A large material from Fennoscandia and Russia.

Diagnosis. Face strongly produced forward below, moderately grey dusted except for the tubercle shining. Scutum and scutellum

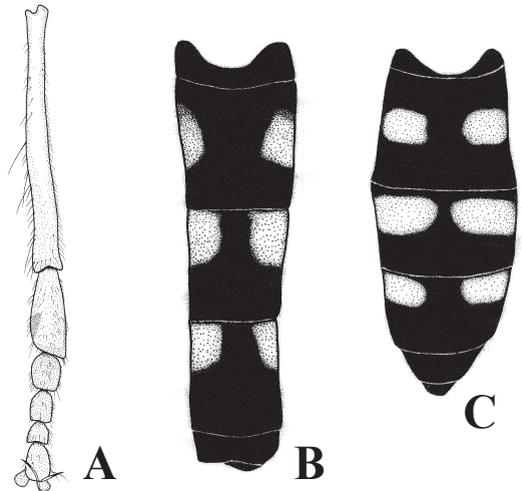


FIGURE 12 A–C. *Platycheirus latimanus* (Wahlberg). A. Lectotype, male fore tibia and tarsus. B. Male lectotype, abdomen. C. paralectotype, female abdomen.

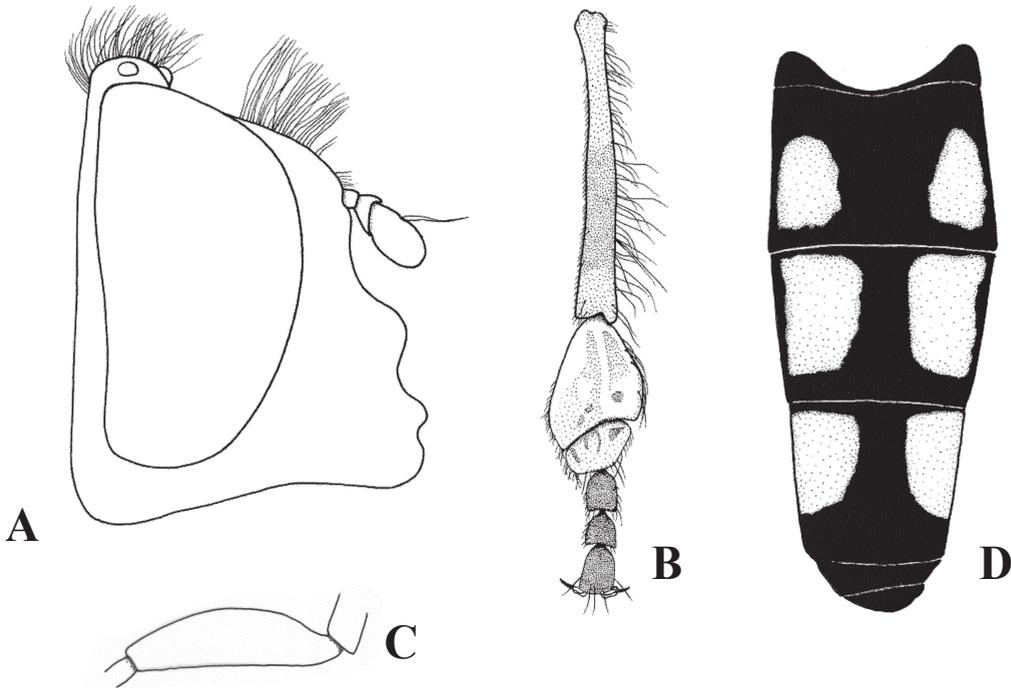


FIGURE 13 A–D. *Platycheirus manicatus* (Meigen, 1822), male. A. Head in lateral view. B. Left fore leg tibia and tarsus, dorsal view. C. Hind leg, basitarsus. D. Abdomen.

subshining, olivaceous dusted. Segment 3 of male fore tarsus abruptly narrower than segment 2.

Distribution. Widely distributed in Europe and Siberia, especially in montane and boreal parts. Alaska.

***Platycheirus melanopsis* Loew, 1856**

Loew 1856: 45 (*Platycheirus*)
(Figures 14A–C)

Material examined. Male and females from Switzerland, Austria, Montenegro and Serbia.

Diagnosis. Upper mouth edge more produced than the facial knob. Male front tarsus with the three whitish basal segments broadened. Abdomen rather short in both sexes, the tergite maculae orange yellow.

Distribution. Britain (northern Scotland, northern England), the Alps and the Pyrenees; European parts of Russia and on into eastern Siberia.

***Platycheirus migriaulii* Stuke & Nielsen, 2002**

Stuke & Nielsen 2002: 109 (*Platycheirus*)
(Figures 15A–C)

Material examined. Male holotype (in the collections of ZMA) and a long series of paratypes from mountain Kazbegi in Georgia.

Diagnosis. Similar to *P. discimanus* and *groenlandicus*, but face much produced and “nosy”, and with distinct triangular dust spots on frons. Facial hairs white. Scutum long haired, the longest hairs 2x longer than depth of 3rd antennal joint. Basal segments 1–2 of male fore leg tarsus with black marks and dots on underside.

Distribution. Georgia (Caucasus).

***Platycheirus oreadis* Vockeroth, 1990**

Vockeroth 1990: 659 (*Platycheirus*)
(Figures 16A–E)

Material examined. Photo of male holotype and female paratype. The types in CNC.

Diagnosis (after Young 2012). *Male*: face moderately produced ventrally; dorsally with a very weak median keel between antennal bases;

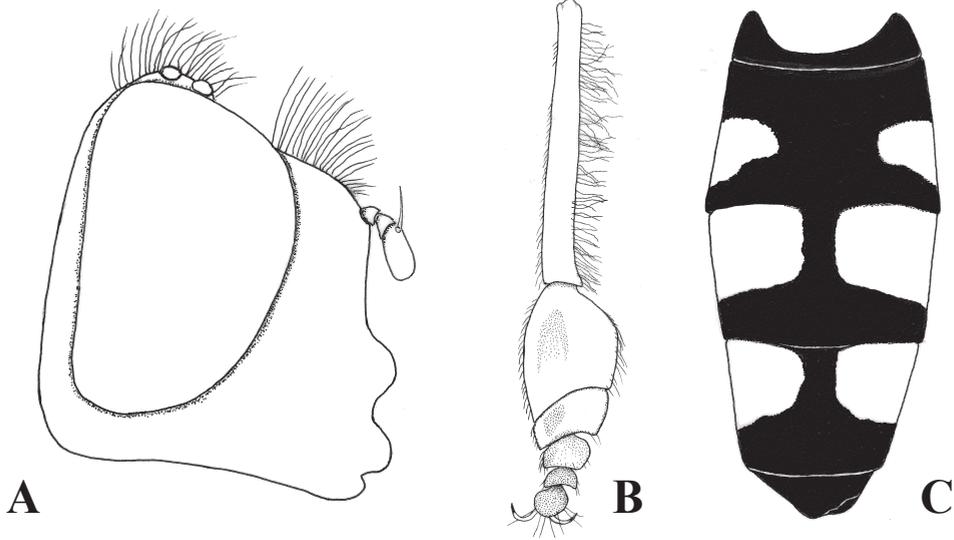


FIGURE 14 A–C. *Platycheirus melanopsis* Loew, 1856. **A.** Male, head in lateral view. **B.** Male left fore tibia and tarsus. **C.** Male abdomen, dorsal view.

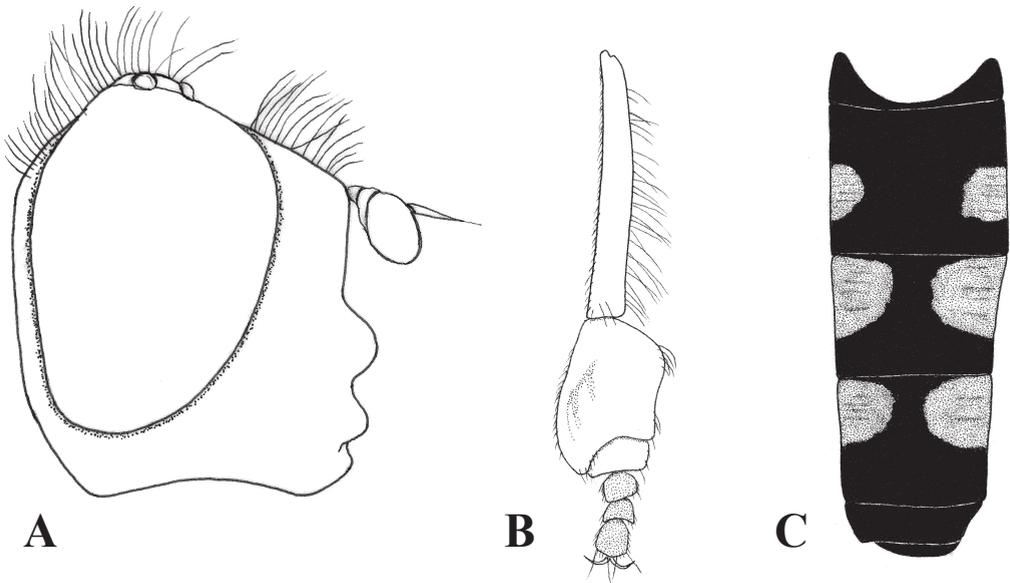


FIGURE 15 A–C. *Platycheirus migriaii* Stuke & Nielsen, 2002. **A.** Male head (paratype), lateral view. **B.** Male left fore tibia and tarsus (paratype), dorsal view. **C.** Male abdomen (paratype), dorsal view.

densely grey pollinose, only tubercle shining. Legs mostly dark, with narrow apices of femora, fore and mid tibia, and first 2 tarsomeres of fore and mid leg pale. Fore trochanter with many short ventral black setulae. Fore tibia with fine, wavy pile on posterior surface, at

longest approximately 3 times tibial width. First fore tarsomere subtriangular, strongly oblique apically, approximately 2.5 times as wide as apex of tibia, and slightly longer than wide. Second fore tarsomere subrectangular, three-quarters as wide as first tarsomere and one-quarter as long.

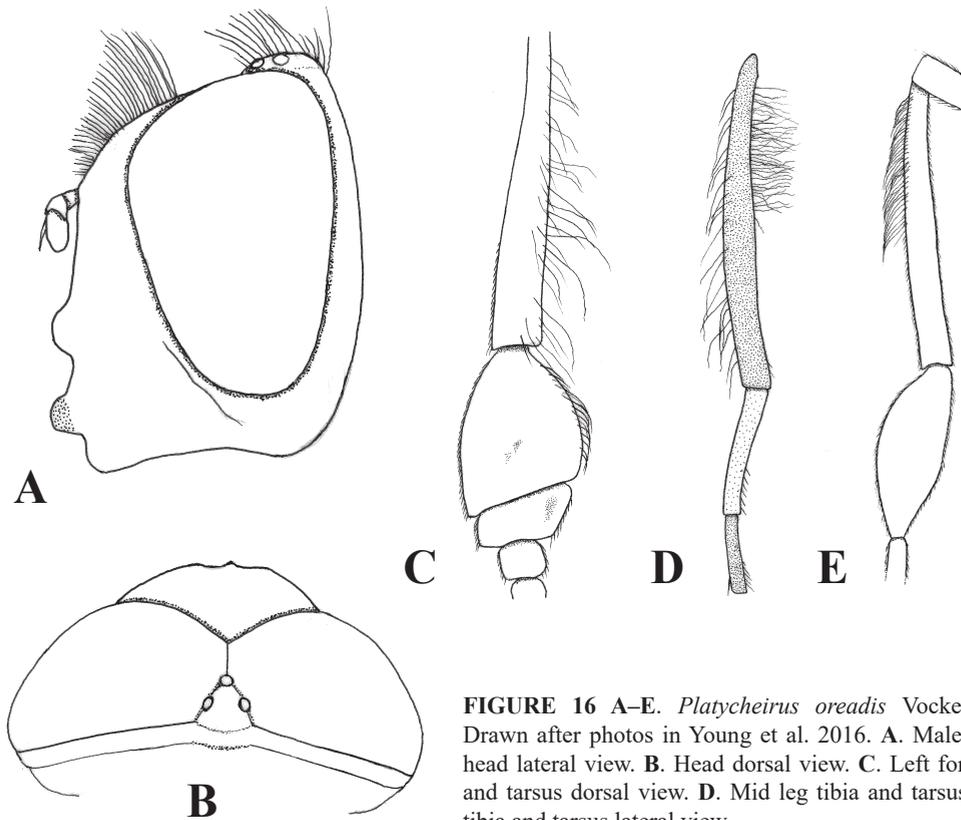


FIGURE 16 A–E. *Platycheirus oreadis* Vockeroth, 1990. Drawn after photos in Young et al. 2016. **A.** Male holotype, head lateral view. **B.** Head dorsal view. **C.** Left fore tibia tip and tarsus dorsal view. **D.** Mid leg tibia and tarsus. **E.** Hind tibia and tarsus lateral view.

Remaining fore tarsomeres unmodified. Mid tibia with many wavy, posterior pile approximately 2–3 times as long as tibial diameter. Hind tibia with most of basal half of anterodorsal surface with dense, fine, black pile, at longest approximately 2.5 times the tibial diameter. First tarsomere of hind leg strongly swollen, approximately 3 times as long as its greatest depth. Legs otherwise unmodified. Thorax very thinly grey pollinose. Thoracic pile dense, and as long as arista, pile colour mostly white-yellow with a few dark pile on scutum and scutellum. Halter brown. Wing with a bare area at the base of cell *bm*. Abdomen broadly oval, with spots of tergites 2–4 separate from anterior and lateral margins of tergites, yellow, and overlaid with strong silver pollinosity. *Female.* Head: Face moderately produced ventrally; dorsally with a very weak median keel between antennal bases; densely grey pollinose, with only tubercle shining. Anterior oral margin produced forward to level

of tubercle. Antennae dark. Frons with uniform pollinosity. Vertex approximately 3 times as wide as ocellar triangle. Gena very wide, approximately 3 times as wide as basoflagellomere. Thorax: Legs mostly dark, with apices of femora and bases of tibiae pale. First fore tarsomere weakly flattened with lateral margins divergent, apex oblique and approximately 1.2 times as wide as apex of tibia. First hind tarsomere somewhat swollen, approximately 3.5 times as long as its greatest depth. Legs otherwise unmodified. Thoracic pile dense, wavy, yellow, and as long as arista. Thorax sparsely grey pollinose. Halter yellow. Basal quarter of cell *c* and basal three-quarters of cell *bm* bare. Abdomen: Abdomen broadly oval, with obscurely orange spots on tergites 2–5 reaching anterior edge of tergites, and overlaid with dense silvery pollinosity.

Distribution. Colorado (USA).

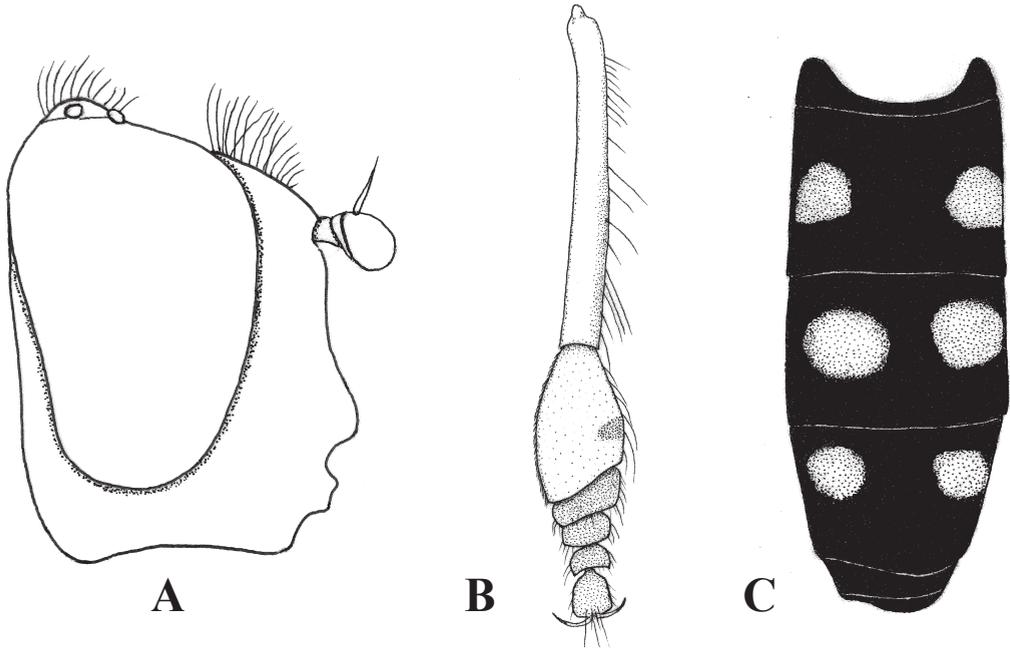


FIGURE 17 A–C. *Platycheirus peckae* Bagatshanova, 1980. A. Male head, lateral view. B. Male left fore tibia and tarsus. C. Male abdomen, dorsal view.

***Platycheirus peckae* Bagatshanova, 1980**

Bagatshanova 1980: 423 (*Platycheirus*)

(Figures 17A–C)

Material examined. Male holotype in ZIN. Other materials: two males (Russia): 1 male Yakutia, Khaptagaj settlement, 35 km from Yakutsk town 22 May 1975 (Bagatshanova); 1 male Yakutia, environs Tyukyur settlement 29 May 1985; 3 males Tyva, Ulug–Khemskij district, floodplain of Tazarlyk river 9 May 1990 (Zinchenko). 1 male dated Komsomolsk-on-Amur, Silinskly park 20 May 1985 (Mutin) and 1 male Altai 10 June 2005 (Barkalov).

Diagnosis. *Male*: fore femur without short ventral setae. Hind tibia without patch of long black hairs anteriorly. All tarsomeres of mid tarsus black or dark brown, fore basitarsus longer than wide. Mid femur without patch of long antero-apical hairs, curved toward femur base. Postpedicel yellow red basally; fore basitarsus with long curly hairs posteriorly; abdomen usually with yellow, greyish dusted spots. *Female*: unknown.

Distribution. Russia: Yakutia, Tuva and Altai.

***Platycheirus rarus* Violovitsh, 1978**

Violovitsh 1978: 175 (*Platycheirus*)

Material examined: The species was described on a female specimen from Altai. We have examined the type (in the ZIN collections) and found it conspecific with *manicatus* (see Nielsen & Svendsen 2014).

***Platycheirus rubrolateralis* Nielsen & Romig, 2010**

Nielsen & Romig 2010: 5 (*Platycheirus*)

(Figures 18A–B)

Material examined. Female holotype examined, from Sichuan, China. The type is kept in SMNS.

Diagnosis (female). A medium sized species. Face much produced. Face laterally, scutum and scutellum subshining, dulled by greenish grey dusting. Abdomen rather broad. The tergites laterally orange red, in the middle with a broad, black marking. Femora and tibiae orange red, the tarsi black.

Distribution. The internal parts of China.

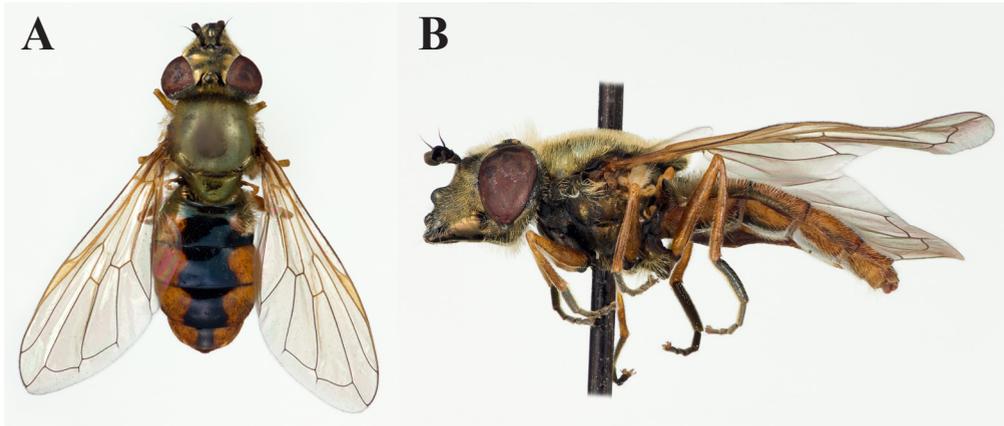


FIGURE 18 A–B. *Platycheirus rubrolateralis* Nielsen & Romig, 2010. **A.** Holotype, female dorsal view. **B.** Lateral view. Photo: Karsten Sund, NHMO.

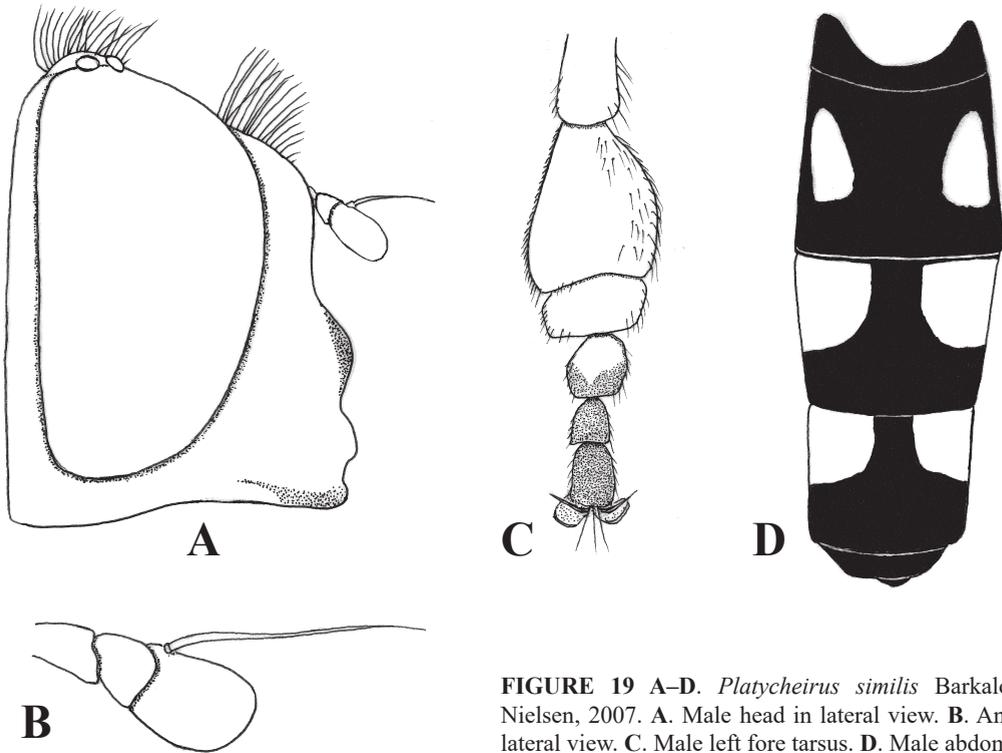


FIGURE 19 A–D. *Platycheirus similis* Barkalov & Nielsen, 2007. **A.** Male head in lateral view. **B.** Antenna lateral view. **C.** Male left fore tarsus. **D.** Male abdomen.

***Platycheirus similis* Barkalov & Nielsen, 2007**

Barkalov & Nielsen 2007: 129 (*Platycheirus*)

(Figures 19A–D)

Material examined. Male holotype from Kabardino–Balkaria (Caucasus). The type is kept in SZM.

Diagnosis. The male is similar to male

tarsalis, but with a wider face, a heavily dirty yellow dusted frons and a longer fore basitarsus. Fore femur without distinctive vestiture. The female is unknown.

Distribution. Kabardino–Balkaria (Caucasus).

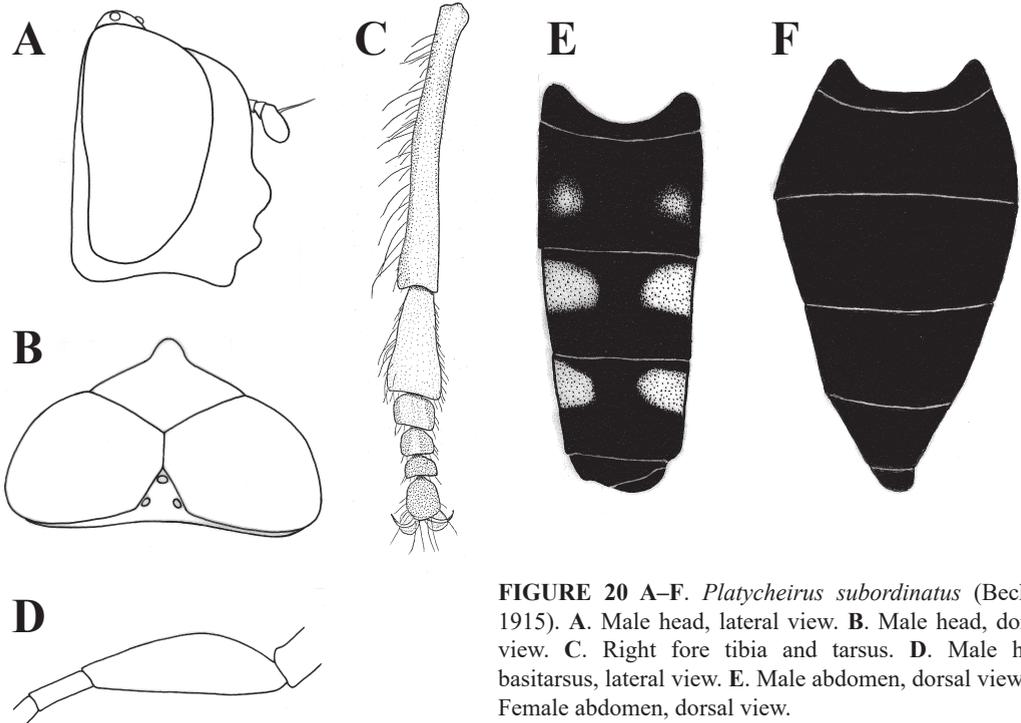


FIGURE 20 A–F. *Platycheirus subordinatus* (Becker, 1915). **A.** Male head, lateral view. **B.** Male head, dorsal view. **C.** Right fore tibia and tarsus. **D.** Male hind basitarsus, lateral view. **E.** Male abdomen, dorsal view. **F.** Female abdomen, dorsal view.

***Platycheirus subcomplicatus* Ôhara, 1980**

Ôhara, 1980: 120 (*Platycheirus*)

The species was described from a single male. We have not seen the type, but the author found it synonymous with *P. latimanus* (Wahlberg) (Ôhara 1984: 100).

Distribution. Mt. Tairoku, Furano, Japan.

***Platycheirus subordinatus* (Becker, 1915)**

Becker 1915: 60 (*Platycheirus*)

(Figures 20A–F)

Material examined. A large material from Fennoscandia, Russia and Canada.

Diagnosis. A rather small and stout species. Male resembling *groenlandicus*, but with light brown spots on tergites 2–4 and hind basitarsus swollen. Female abdomen black with brassy lustre.

Distribution. Northern Fennoscandia and high alpine areas in southern Norway; in northern Russia and at high altitudes in Altai. Alaska and northern Canada (Yukon Territory).

***Platycheirus tarsalis* (Schummel, 1837)**

Schummel 1837: 84 (*Syrphus*)

(Figures 21A–D)

Material examined. A rich material from northern Europe. RUSSIA: 12 females Kabardino–Balkariya, Khulamo–Bezengiiskoe canyon 8 August 2000 (Goguzokov); 1 male Ural mountains, Bashkiriya, Avalyakh mountains 16 June 1984 (Barkalov). KAZAKHSTAN: 1 male Dzhungar Alatau 3–10 km NE Tekeli 13 June 1993 (Zinchenko).

Diagnosis. Scutum and scutellum shining. Male: underside of fore tarsal segments 1–2 only with light brown marks (in *manicatus* with two distinct black marks on first segment, segment 2 with three black marks). Female frons of *tarsalis* with triangular dust spots, but no dust on either side of ocellar triangle. The yellow spots on tergite 2 are far removed from tergite hind margin (close to hind margin in *manicatus*).

Distribution. From Britain eastwards through Europe, in Russia to the Ural mountains, East Kazakhstan.

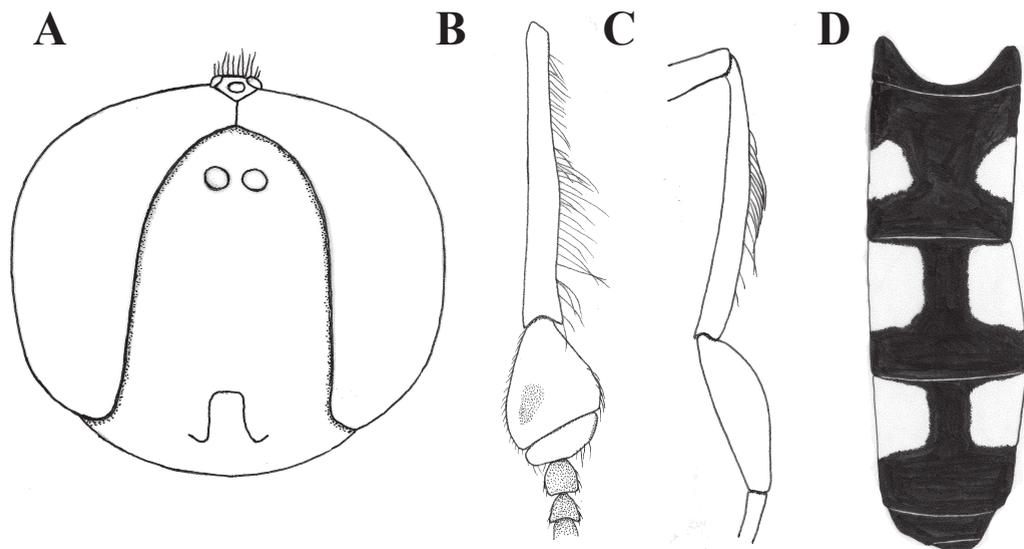


FIGURE 21 A–D. *Platycheirus tarsalis* (Schummel, 1837). A. Male head, frontal view. B. Male left fore tibia and tarsus. C. Male left hind tibia and basitarsus. D. Male abdomen, dorsal view.

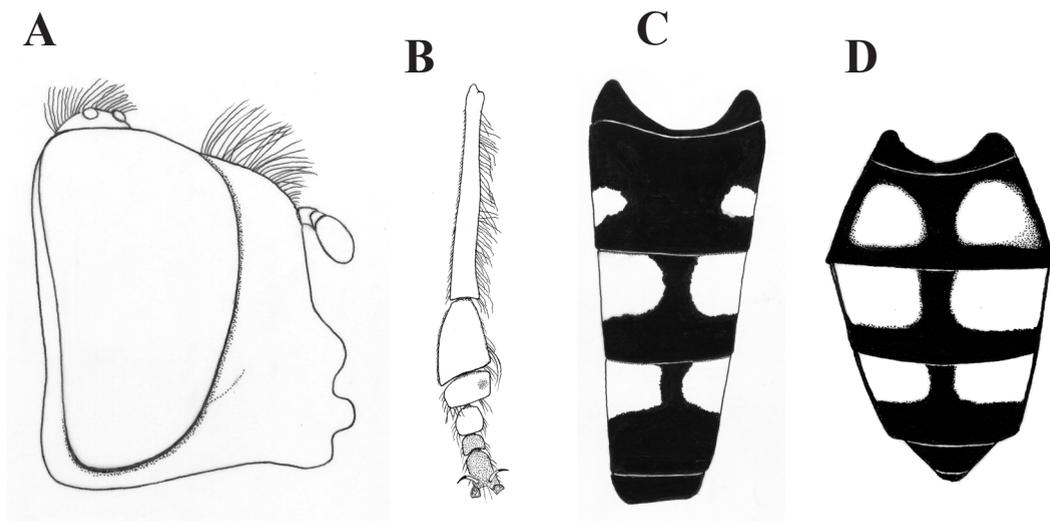


FIGURE 22 A–D. *Platycheirus tatricus* Dušek & Láska, 1982. A. Male head (paratype), lateral view. B. Male left fore tibia and tarsus (paratype), dorsal view. C. Male abdomen (paratype), dorsal view. D. Female abdomen, dorsal view.

***Platycheirus tatricus* Dušek & Láska, 1982**

Dušek & Láska 1982: 380 (*Platycheirus*)

(Figures 22A–D)

Material examined. Male and female paratype (leg. P. Láska), and males and females from Montenegro and Serbia. The holotype is

kept in BMNH, London.

Diagnosis. Similar to *melanopsis*. The male differs from *melanopsis* in a thinner and darker dusting of face, a more triangular fore basitarsus and in a less swollen hind basitarsus. Female: the hairs on frons black or with only a few yellow

hairs (the hairs yellow in *melanopsis*), the hairs on scutum and scutellum shorter, about as long as thickness of hind tibia at base (about 2 times longer in female *melanopsis*).

Distribution. Tatra mountains (Czech Republic/Slovakia), mountains in France, Switzerland, Liechtenstein, Austria, northern Italy, Montenegro and Serbia.

***Platycheirus thylax* Hull, 1944**

Hull 1944: 78 (*Platycheirus*)
(Figures 23A–D)

Material examined. 4 males from Canada and Alaska (det. J.R. Vockeroth). The types are kept in CNC.

Diagnosis (after Young 2012). *Male*: Similar to *discimanus*, differing as follows: Face dorsally with weak medial keel sometimes absent; weakly grey pollinose, only tubercle shining. Legs dark, with narrow apex of fore and mid femora, dorsal surface of fore tibia, basal quarter of mid tibia, and first two tarsomeres of fore leg pale. Mid tibia with anteroventral pile on basal third short, the longest of which are approximately equal in length to the tibial diameter. First mid tarsomere

slightly laterally compressed, slightly deeper than wide, second tarsomere similarly compressed. Remaining mid tarsomeres unmodified. Katepisternum without bare shining patch. Thoracic pile almost entirely dark. Halter brown. Abdomen with spots pollinose, spots sometimes also with an obscure orange background. *Female*: Similar to *discimanus*, differs as follows: Thorax: Fore and mid legs mainly pale, with only basal quarter of femora darkened. Abdomen: Spots of abdomen variable: may be completely absent, or obscurely orange with or without silvery pollinosity overlaid.

Distribution. Canada and northern USA.

***Platycheirus torei* Barkalov, 2013**

Barkalov 2013: 175 (*Platycheirus*)
(Figures 24A–C)

Material examined. Male holotype and 4 male paratypes in coll. SZM, 1 male paratype in coll. TRN. 1 male Medvezhij settlement, neighborhood of Norilsk town 6 July 1967.

Diagnosis. Male similar to *P. groenlandicus*, but smaller and differing in a narrower frons (eye angle 90°, about 120° in male *groenlandicus*), in

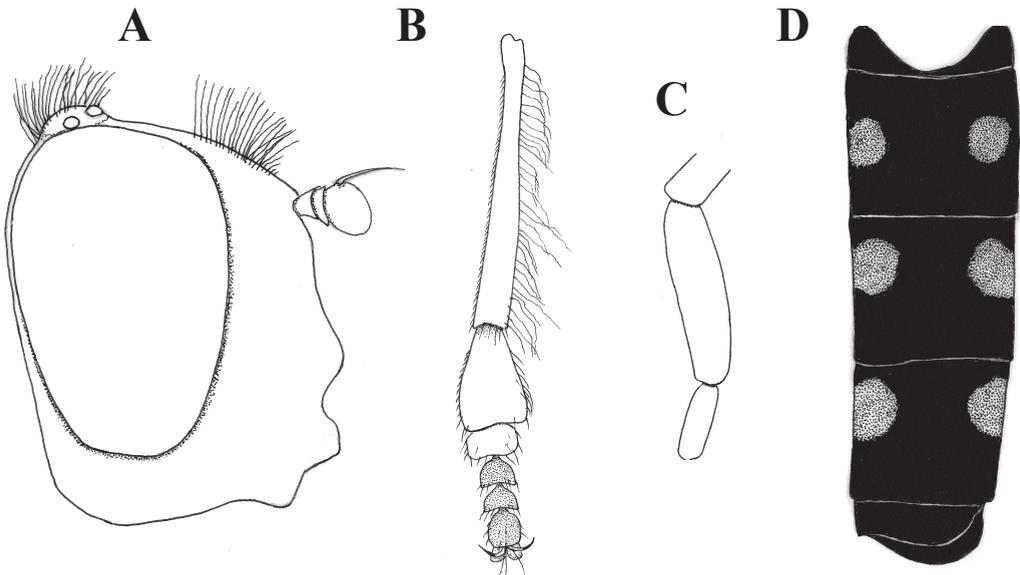


FIGURE 23 A–D. *Platycheirus thylax* Hull, 1944. **A.** Male head, lateral view. **B.** Male left tibia and tarsus. **C.** Male hind basitarsus, lateral view. **D.** Male abdomen, dorsal view.

black bristle like short hairs on mid basitarsus (yellow bristle like hairs in *groenlandicus*).

The male separates from male *bartschi* and *thylax* in the front leg tarsus and in a more slender hind basitarsus, in mid leg femur at tip with a

patch of black hairs directed to base of femur, and in tibia with some long and curly hairs in basal half. Female unknown.

Distribution. Siberian arctic tundra: Taimyr peninsula, Norilsk.

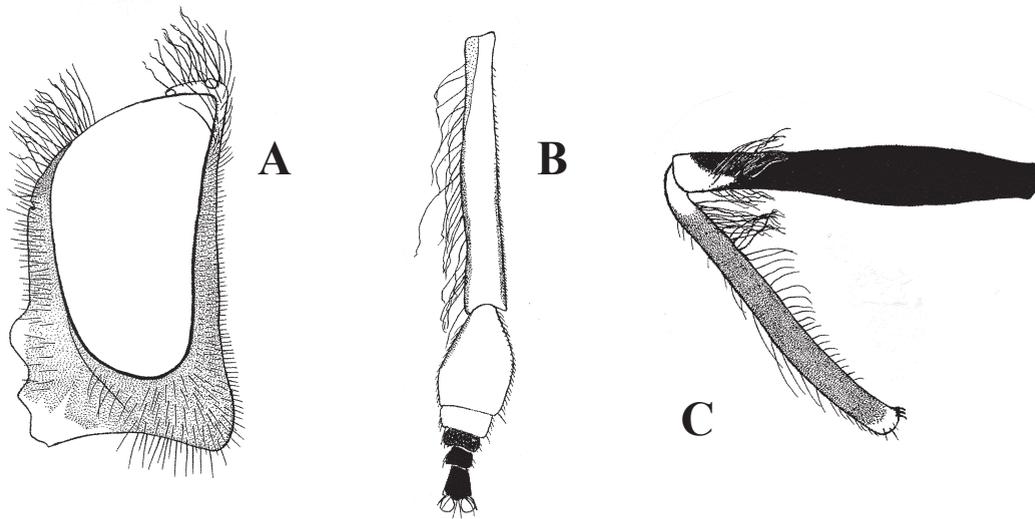


FIGURE 24 A–C. *Platycheirus torei* Barkalov, 2013. **A.** Male head, lateral view. **B.** Fore tibia and tarsus, dorsal view. **C.** Mid femur and tibia, posterior view.

TABLE 1. Key to Holarctic and Oriental species of the *Platycheirus manicatus* group.

Males (the eyes meeting on top of the head)	
1.	Scutum, scutellum and pleurae dulled by greyish yellow pollinosity 2
-	Scutum, scutellum and pleurae shining 3
2.	Ocellar triangle equilateral. Eyes meeting for a distance about equal to the distance between the ocelli of the ocellar triangle. Eye angle 90–95°. Facial pile yellow. Fore tibia only very little dilated at apex, apex laterally short haired (Figure 13B); fore and mid tibiae are orange on basal 1/3 and are mostly yellow pilose. Fore basitarsus with curved lateral margins, about as long as broad, dorsal surface without a lateral longitudinal keel. Mid tibia with long rather sparse posterodorsal and posterior hairs on apical half. Hind basitarsus strongly swollen, with its maximum thickness in the middle of the segment (Figure 13C). ♂♀ body length about 9 mm, wing length 8 mm <i>P. manicatus</i> (Meigen, 1822)
-	Ocellar triangle anteroposteriorly elongate. Eyes meeting for a distance which is longer than the distance between the ocelli of the ocellar triangle. Eye angle 110°. Facial pile black. Fore tibia somewhat broadened at apex, laterally at apex with some long black hairs (Figure 9B); fore and mid tibiae are orange on basal 1/2 and apical 1/6 and are almost black pilose. Fore basitarsus subrectangular, about 1.5 times as long as broad and dorsolaterally with a low longitudinal keel (Figure 9B). Mid tibia ventrally and on posterior surface with dense soft crinkly black hairs. Hind basitarsus less swollen with its maximum thickness on basal half of the segment (Figure 9C). Tergites 2–5 each with a pair of subsquare yellow spots. ♂♀ body length about 11 mm, wing length 10 mm <i>P. himalayensis</i> Brunetti, 1915
3	Tergites with greyish blue spots 4
-	Tergites with yellowish spots, sometimes covered with fine silvery dust 9
4.	Basal segments 1–2 of middle legs yellow and laterally compressed <i>P. discimanus</i> (Loew, 1871)
-	Basal segments 1–2 of middle legs greyish black, laterally not compressed 5
5.	Eye angle 120°. Facial pile black. Haltere blackish. Fore basitarsus subtriangular, broadest at tip (Figure 8A) <i>P. groenlandicus</i> Curran, 1927
-	Eye angle smaller 6

6. Mid legs: femur at tip with a patch of black hairs directed to base of femur, and tibia with some long and curly hairs in basal half (Figure 24B) *P. torei* Barkalov, 2013
 - Mid legs with femur and tibia different 7
7. Fore basitarsus squarish, broadest on basal third (Figure 15B). Facial pile white. Eye angle about 95°
P. migriaulii Stuke & Nielsen, 2002
 - Fore basitarsus triangular and narrower. Facial pile black. Eye angle wider 8
8. Fore basitarsus rather broad, laterally angulate on apical third (Figure 1B). Mid basitarsus blackish. Hind basitarsus swollen, 2x thicker than hind tibia at apex (Figure 1C) *P. bartschi* Barkalov & Nielsen, 2012
 - Fore basitarsus widening evenly from base to tip (Figure 23B). Mid basitarsus yellow white. Hind basitarsus slender, only slightly thickened *P. thylax* Hull, 1944
9. The two basal segments of fore leg tarsus narrow, not much wider than 2x the width of tibia at tip (Figure 11A, 12A, 20C) 10
 - The two basal segments of fore leg tarsus distinctly broader than fore tibia at tip (Figure 2A, 3B) 13
10. Hind basitarsus thickened, about 1.8 x the thickness of tibia at tip (Figure 20D) *P. subordinatus* (Becker, 1915)
 - Hind basitarsus slender, about as thick as tibia at tip (Figure 4D) 11
11. Basitarsus of fore leg slender, almost not widening towards the tip (Figure 12A) *P. latimanus* (Wahlberg, 1845)
 - Basitarsus of fore leg widening towards the tip (Figure 4B, 4C, 7A, 11A)
P. complicatus Becker, 1889; *P. flabella* Hull, 1944; *P. kittilaensis* Dušek & Láška, 1982
12. Segment 3 of fore tarsus obviously broader than following segments (Figure 3B) 13
 - Segments 3-5 of fore tarsus of about same width (Figure 10C) 14
13. Fore basitarsus with distal margin linear (Figure 2A). The following joint with basal and distal margins parallel
P. cejensis Kuznetsov, 1987
 - Fore basitarsus with distal margin slightly roof shaped (Figure 3B). The following joint with basal and distal margins uneven *P. cintoensis* v.d. Goot, 1961
14. Basal half of mid tibia ventrally with short hairs, the longest not much longer than tibial diameter 15
 - Basal half of mid tibia ventrally with a row of long wavy hairs, the longest hairs are twice as long as tibial diameter (Figure 10D) 17
15. Tergite 2 wider than long (measured along side margin and distal margin respectively). Tarsi of mid legs darkened greyish black. Hind tibia dorsolaterally without a row of bristly black hairs *P. melanopsis* Loew, 1856
 - Tergite 2 longer than wide (measured along side margin and distal margin respectively) 16
16. Tarsi of mid legs yellow, only slightly darkened. Hind tibia dorsolaterally on basal half with a row of longish, black bristly hairs (Figure 21C). Hind basitarsus about 1.5 thicker than tip of tibia *P. tarsalis* (Schummel, 1836)
 - Tarsi of mid legs blackish brown, the joints narrowly yellow. Hind tibia dorsolaterally on basal half without a row of longish black bristly hairs. Hind basitarsus only slightly thicker than tip of tibia *P. similis* Barkalov & Nielsen, 2007
17. Face much produced, upper mouth–edge more so than facial tubercle (Figure 6A). Fore basitarsus broader than long, nearly triangular in shape (Figure 6B). Tarsal segment 2 trapezoid with distal margin distinctly shorter than basal margin. Fore tibia behind in the middle with a dense row of erect wavy black hairs, the hairs about as long as tibia diameter. Hind tibia dorsolaterally on basal half with a longish tuft of tilted bristly hairs. Hind basitarsus swollen, widest just after the mid point. Abdominal spots oval and tilted (Figure 6D) *P. fasciculatus* (Loew, 1856)
 - Face less produced. Fore basitarsus longer than broad, tarsal segment 2 rectangular. Abdominal spots different 18
18. Basitarsus of fore leg triangular; broadest at tip and laterally with a tuft of black, curled setae. The spots on tergites 3–4 squarish (Figure 22C), orange red without greyish dusting *P. tatricus* Dusek & Láška, 1982
 - Basitarsus of fore leg oval, broadest at the middle and without a lateral tuft of black, curled setae. The spots on tergites 3–4 more or less obscurely yellow, dusted (Figure 17C) 19
19. Fore basitarsus very broad, as broad as long, laterally angular (Figure 10C). Fore tibia posteriorly in the middle with yellow hairs, the longest are 2–3 times as long as tibia diameter. Hind tibia dorsolaterally in the middle with a small tuft of black bristly hairs. Hind basitarsus swollen, widest just before mid point (Figure 10E)
P. kashkarovi Violovitsh, 1978
 - Fore basitarsus oval, longer than broad 20

20. Fore basitarsus subtriangular, approximately 2.5 times as wide as tip of tibia (Figure 16C). Mid leg basitarsus yellow white (Figure 16D). Hind tibia with most of basal half of anterodorsal surface with dense, fine, black pile, at longest approximately 2.5 times the tibial diameter. Hind leg basitarsus strongly swollen, ellipsoid (Figure 16E) *P. oreadis* Vockeroth, 1990
- Fore basitarsus oval, about 2 times as wide as tip of tibia (Figure 17B). Mid leg basitarsus greyish black. Hind tibia anterodorsally short haired, the basitarsus only slightly swollen *P. peckae* Bagatshanova, 1980

Females (the eyes separated on top of the head)

1. Scutum, scutellum and pleurae dulled by greyish yellow pollinosity 2
- Scutum, scutellum and pleurae shining 4
2. Femora and tibiae red, tarsi contrasting black (Figure 18A,B) *P. rubrolateralis* Nielsen & Romig, 2010
- Femora and tibiae more or less darkened, not much contrasting with tarsi 3
3. Frons, scutum, scutellum and pleurae densely greyish yellow pollinose; scutellum entirely tawny pilose. Tergites 2–4 each with a pair of large elongate subrectangular spots *P. manicatus* (Meigen, 1822)
- Upper part of frons shining black, contrasting well from the lower, pollinose part of frons. Scutum and scutellum shining, only lightly pollinose; scutellum is mostly black pilose. Tergites 2–7 with yellow spots. Pleurae rather densely pollinose *P. himalayensis* Brunetti, 1915
4. Tergites shining black with brassy reflections, or with shades of vague dust spots 5
- Tergites with distinct spots 6
5. Face seen from in front with the eye margins parallel. The hairs on scutum short, as long as the thickness of fore tibia ...
..... *P. subordinatus* (Becker, 1915)
- Face seen from in front widening downwards. The hairs on frons and scutum rather long, about 2 times as long as thickness of fore tibia . Tergites 2–4 with a couple of indistinct greyish dust spots
..... *P. migriaulii* Stuke & Nielsen, 2002
6. Tergites with greyish blue spots (sometimes with obscurely orange ground colour overlaid with silvery dusting) 7
- Tergites with yellowish spots 8
7. Vertex about as broad as an eye. Frons shining black. Haltere yellow. Abdominal spots with metallic lustre, the medial part of tergites 3–4 are a little removed from the margin in front (best seen in lateral view). Hind basitarsus 2x thicker than hind tibia at tip *P. discimanus* (Loew, 1871)
- Vertex broader than an eye. Frons depression covered by greyish white dusting. Haltere greyish light brown. Abdominal spots with light greyish white dusting, the spots on tergites 3–4 are lying close to the tergite margin in front (best seen in lateral view) (Figure 8D). Hind basitarsus about 1.3x thicker than hind tibia at tip *P. groenlandicus* Curran, 1927
8. The spots on tergite 2 large, reaching anterior margin of the tergites at lateral corners *P. tarsalis* (Schummel, 1836)
- The spots on tergite 2 are not reaching the anterior margin of the tergites at lateral corners 9
9. The spots on tergites 3–4 are reaching the anterior margin of the tergites 10
- The spots on tergites 3–4 do not reach the anterior margin of the tergites 11
10. Frons all shining black, undusted. Scutal hairs short, shorter than the thickness of fore basitarsus
..... *P. tetricus* Dušek & Láška, 1982
- Frons with lateral dust spots. Scutal hairs longer, slightly longer than thickness of fore leg basitarsus
..... *P. melanopsis* Loew, 1856
11. Face strongly projecting and upper mouth edge more so than central prominence (Figure 6B). Scutum with three longitudinal silver grey dust stripes *P. fasciculatus* (Loew, 1856)
- Face moderately projected, upper mouth edge only slightly more than central prominence 12
12. Fore basitarsus not flattened 13
- Fore basitarsus slightly flattened, approximately 1.2 x times as wide as tip of tibia. Hind basitarsus somewhat thickened. Abdominal spots dulled by dense silvery dusting *P. oreadis* Vockeroth, 1990
13. Face and occiput with light grey dusting. Scutum of thorax shining, only the sides in front (humerus and notopleuron) greyish dusted. Abdominal spots on tergites 2–4 squarish, light brownish yellow with faint grey dusting
..... *P. kittilaensis* Dušek & Láška, 1982; *P. complicatus* (Becker, 1889); *P. flabella* Hull, 1944
- Face and occiput heavily dulled by dusting (Figures 10G–H). Scutum of thorax with three longitudinal grey dust stripes. Abdominal spots rectangular, shining yellow, not dulled by silvery dusting *P. kashkarovi* Violovitsh, 1978

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