

***Platycheirus* species (Diptera, Syrphidae) from Yakutia, Eastern Siberia, with description of two new species**

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The paper reports on fourteen *Platycheirus* species from Yakutia, Eastern Siberia, with flight observations for the species. Two new species, *P. fuscitarsis* **spec. nov.** and *P. sibiricus* **spec. nov.** are described. The material also includes the first Palaearctic record of the little known species *P. woodi* Vockeroth, 1990.

Key words: *Platycheirus*, *P. fuscitarsis*, *P. sibiricus*, new species, *P. woodi* Vockeroth, new records, Yakutia, Syrphidae.

Zusammenfassung

Funddaten und Angaben zum Auftreten von 14 Arten der Gattung *Platycheirus* werden aus Jakutien (Ost-Sibirien) berichtet. *P. fuscitarsis* **spec. nov.** und *P. sibiricus* **spec. nov.** werden beschrieben. Das Material enthält den ersten Fund des kaum bekannten *P. woodi* Vockeroth, 1990 aus der Paläarktis.

Introduction

During an expedition of the Institute of Animal Systematics and Ecology, Siberian Branch of the Russian Academy of Sciences (Novosibirsk) to Yakutia, carried out in the summer 1985, a large quantity of hoverflies was collected. The material includes more than 300 *Platycheirus* specimens, which are treated here. This material was obtained from six localities (fig. 1) and is kept in the collections of Zoological Museum, Novosibirsk.

Observations, material and methods

The most comprehensive collecting was carried out at the field station of the Geographical faculty of the Yakutian State University. This field station is located 232 km east of Khandyga settlement on the road towards Magadan city (fig. 1, loc.1). The insects were caught mainly in a *Larix gmelinii* (Rupr.) Kuzen. taiga, on low mountain slopes (up to 1300 m above sea level). Some material was collected along the river

Khandyga (close to loc.1), in a *Chosenia arbutifolia* (Pall.) A. Skvorts.- *Larix gmelinii* (Rupr.) wood near the station buildings and on bogs with *Ranunculus* spec. and *Carex* spec. Here *Platycheirus* males were found hovering in the shade of houses and trees, while females were found feeding on flowering plants.

An essential part of the material was also collected on scree, from flowers of *Ribes fragrans* Pall., on *Betula nana* L. and *Pinus pumilla* (Pallas) Regel. and on low-growing herbs (*Potentilla inguinans* Turcz., *Dryas octopetala* L., etc.). At 1500-1600 m a.s.l. the insects were collected on mountain tundra. The greater part of the material was derived from the top of the mountain "Baran'ya" (1650 m a.s.l.), where there was a concentration of syrphids of the genera *Melangyna*, *Parasyrphus*, *Platycheirus* and *Syrphus*. Males of these genera hovered around the mountain top, covered in *Pinus pumilla*. They were not feeding, but constantly hovering at a height of 1-3 m above the ground, or sitting on dense *P. pumilla* bushes. It is noteworthy that the greatest concentration of flies was observed at the highest point of the mountain, where there was strong competition amongst thousands of males for room to hover. This quickly abated when the sun was obscured by cloud and the air temperature fell sharply. Below these high points males were almost absent. Females were observed feeding on flowers at the bottom of the mountain and on its slopes. In late afternoon, with flows of warm air, females flew up to the mountain tops, where copulation took place. A similar kind of behaviour ("hill topping") is known in some butterflies and in dipteran families such as Sarcophagidae, Tachinidae and Tabanidae.

Some other ecological features of the *Platycheirus* species were also observed. As with species of the genus *Melanostoma*, they seemed to be among the most cold resistant hoverflies, being active even at temperatures below 12 °C, when all other species of the family stopped flying.

In East Yakutia the low temperature is the basic limiting factor in mid summer. In the afternoon, if there is no sun, the temperatures fall below 12 °C and hoverflies, other than the two genera mentioned, stop flying. However, when there is sunshine flight starts again at once.

Judged from the observations in 1985, the spring-summer peak numbers of syrphids in Eastern Yakutia start declining at the end of June. At the beginning of July, numbers can be observed to decline sharply. In spite of the prolific flowering of *Potentilla inquinans*, *Spiraea* spec. and *Saxifraga* spec., the numbers of Syrphidae go down markedly, in comparison with those at the end of May and beginning of June. At this time, males concentrate in places where mating takes place (at the tops of mountain, in the half shadow of trees, around isolated trees, wooden houses etc.).

After extensive periods of rain, which can last for 4-5 days, a sharp increase in activity of the Syrphidae was observed. Large numbers of hoverflies were observed feeding on plants such as *Epilobium* spec., which they had rarely visited previously. At the beginning of August the number of Syrphidae declines substantially. At this time it seemed that hoverflies only came together on the flowers of *Epilobium*.

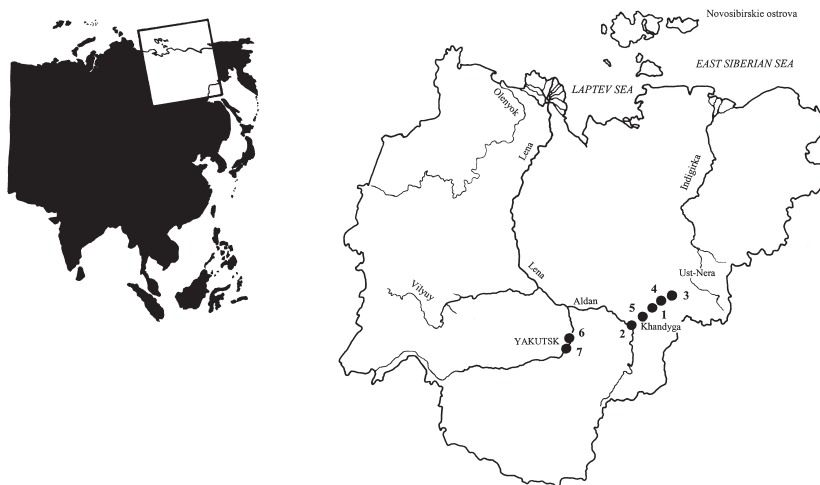


Fig. 1: Map with the collecting sites in Yakutia, East Siberia. – Localities: Loc. 1: 232 km east from Khandyga settlement to Magadan town; Loc. 2: environs of Khandyga settlement; Loc. 3: 364 km east from Khandyga settlement to Magadan town, Oimyakonskoe Nagor'e; Loc. 4: 249 km east from Khandyga settlement to Magadan town; Loc. 5: 180 km ENE of Khandyga settlement; Loc. 6: environs of Yakutsk town; Loc. 7: 44 km south of Yakutsk, Tyuktyur settlement.

Description of new species

Both of the new species belong to the *albimanus* subgroup, as defined by Vockeroth (1990: 663). The descriptions are largely restricted to the differences from the most similar species.

Platycheirus fuscitarsis spec. nov.

Type material: Holotype: ♂ dated "Якут., 232 от Хандыга ло трассе 23 вл. 1985 Сб. А. Баркалов". Paratypes: 6 ♂, 3 ♀ from same locality as holotype, 23 June - 29 July 1985 and female dated окр. Якутскаа о. Россолода 5. вл. 1985. 1 ♂ paratype also from the Khamardaban mountains south of the Baikal sea, dated "Байкальский зап. Хамардабан, 1400 m 19.viii. 1980". Holotype and all paratypes collected by A. Barkalov. Holotype and most paratypes in coll. ZMN, 2 males in coll. TRN.

Etymology: *fuscus* (latin) means dark or black. The species name refers to the dirty greyish tarsal joints of the male fore and mid legs.

Diagnosis and description:

Very similar to a small *P. albimanus* (Fabricius, 1781) and to *P. nigrofemoratus* Kanervo, 1934.

♂: *Platycheirus fuscitarsis* (figs 2A, B, C, D) differs from *P. albimanus* as follows: fore and mid legs with tarsal joints 2-5 grey, often also apex of basitarsus darkened (tarsal joints of fore and mid legs in *albimanus* yellow). Fore basitarsus in *P. fuscitarsis* a little curved outwards. Differences from *P. nigrofemoratus*: fore legs of *P. fuscitarsis* with the lateral margins of basitarsus parallel. Distal, transverse margin of basitarsus of fore and mid legs linear (in fore leg basitarsus of *nigrofemoratus* with the lateral margins widening downwards, and the distal, transverse margin of fore leg basitarsus widely Λ shaped). Mid legs of *P. fuscitarsis* with basitarsus clearly yellow, contrasting well with the dark following joints (in *nigrofemoratus* all tarsal joints are greyish brown). – Body length: 7.3-8.3 mm. Wing length: 6.2-7.4 mm.

♀: at present the female of *P. fuscitarsis* cannot be separated from that of *P. albimanus*. It differs from female *P. nigrofemoratus* in its yellow femora of fore and mid legs, often with a dark shadow in the middle of the femora. In *P. nigrofemoratus* the femora of all legs are black, except for being yellow at the tip and extreme base. – Body length: 5.9-7.0 mm. Wing length: 4.9-6.5 mm.

Platycheirus sibiricus spec. nov.

Type material: Holotype: ♂ dated "Якутия, 232 км от Хандыи по трассе 19.VI.1985 Сб. А. Баркалов", "1650 m". Paratypes: 12 ♂ from same locality as holotype, 28 May - 4 Aug. 1985 and 2 ♂ dated "10 км юж Якутска 28. V. 1985" and "окр. Якутска 1.VI. 1985" respectively. 1 ♂ also from Altai, labelled "Алтай, 19 км ЮВ Артыбаша, 1650 m". Holotype and most paratypes collected by A. Barkalov, one paratype by L.I. Popova. Holotype and most paratypes in coll. ZMN, 3 males in coll. TRN.

Etymology: the species name *sibiricus* refers to the part of Russia where the new species was found.

Diagnosis and description:

The new species belongs to the species complex *P. scutatus* (Meigen, 1822), *P. splendidus* Rotheray, 1998, *P. aurolateralis* Stubbs, 2002 and *P. speighti* Doczkal, Stuke & Goeldlin de Tiefenau, 2002. It is close to *P. aurolateralis*, but differs in the face and in the pile of tibia 2.

♂: *Platycheirus sibiricus* (figs 3A, B, C) differs from male *P. scutatus* in black facial pile, small or absent spots on tergite 2 and in oblique spots on tergites 3-4 (their margins not parallel to the front margin of the tergites). It separates from *P. speighti* in a less swollen and less bent tibia 2, and trochanter 1 is apicoventrally right-angled. *P. sibiricus* differs from *P. splendidus* in having tibia 2 less bent in apical half, slightly swollen in the middle (before the middle in *splendidus*) and in a long pile all along the dorsal side of tibia (base narrowly and tip broadly bare in *splendidus*). Tergite 2 is without or with small spots only. *P. sibiricus* has great similarity to *P. aurolateralis* but differs in a narrower, undusted median facial stripe, occupying at most 1/5 the width of the face. Tibia 2 almost straight (somewhat bent in apical part in *aurolateralis*), and

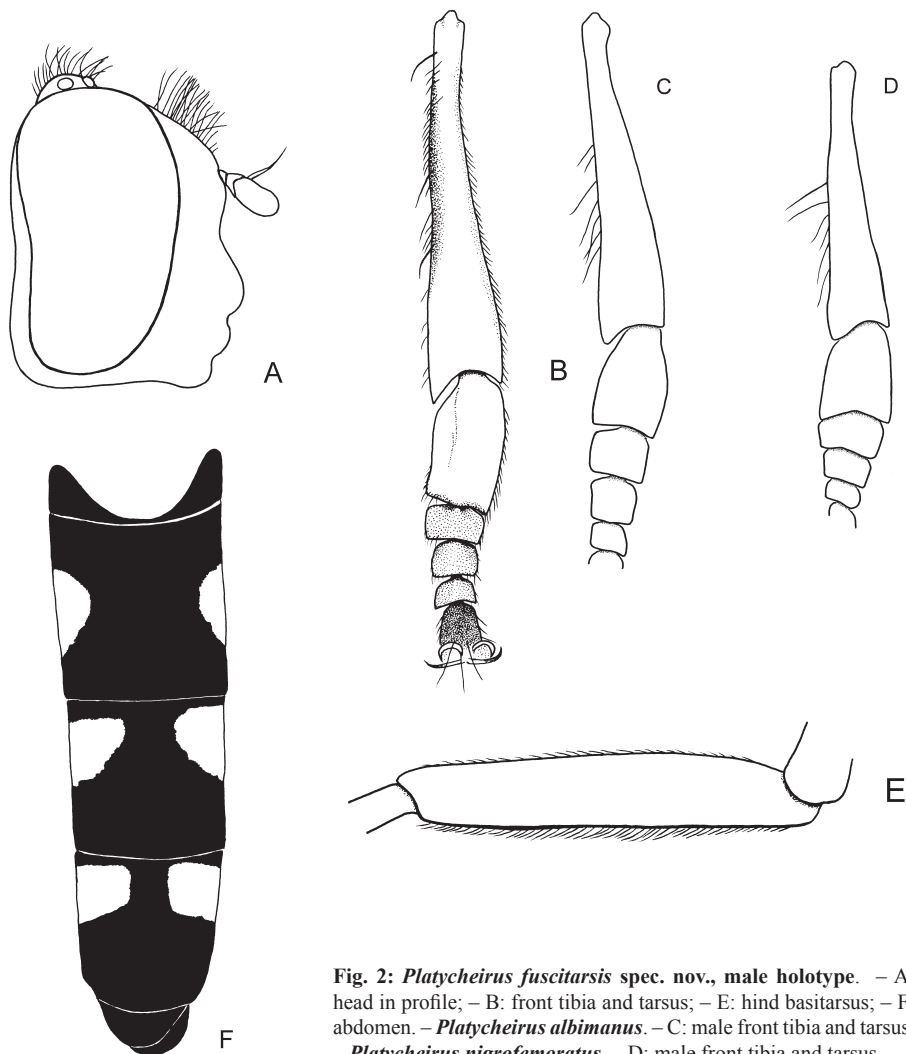


Fig. 2: *Platycheirus fuscitarsis* spec. nov., male holotype. – A: head in profile; – B: front tibia and tarsus; – E: hind basitarsus; – F: abdomen. – *Platycheirus albimanus*. – C: male front tibia and tarsus. – *Platycheirus nigrofemoratus*. – D: male front tibia and tarsus.

tibia ventrally with mainly short hairs. The hairs are not longer than thickness of tibia (longer than thickness of tibia in *aurolateralis*). – Body length: 6.8-7.9 mm. Wing length: 5.9-6.8 mm.

♀: unknown.

Platycheirus species: records and remarks*Platycheirus aeratus* Coquillett, 1900

Loc. 1: 1♂ 25 June 1985 and loc. 2: 1♂ 12 June 1985, on bogs on blooming *Carex* spec.

Platycheirus amplus Curran, 1927

Loc. 1: 11♂ 14 June-24 July 1985 and loc. 3: 2♂ 5 and 18 July 1985. The species hovered in *Chosenia arbutifolia* - *Larix gmelinii* forest near buildings of the field station and also hovered over a bog, where they visited the inflorescence of *Carex* spec. and

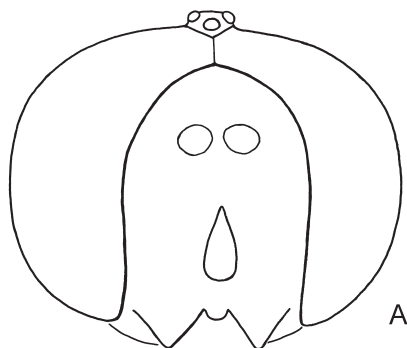
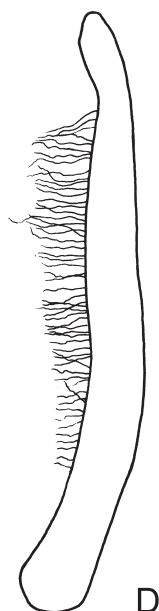
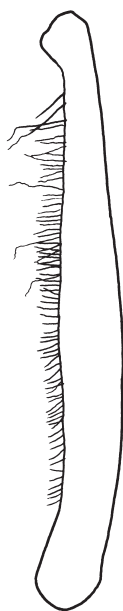
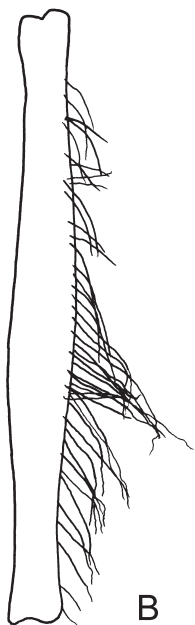


Fig. 3: *Platycheirus sibiricus* spec. nov. – A: Head in frontal view; – B: Mid tibia and pile in dorsal view; – C: Mid tibia and short whitish pile in lateral view; – *Platycheirus aurolateralis*. – D: mid tibia and long whitish pile in lateral view. The pile is as long as, or longer than, thickness of tibia.



flowers of *Vaccinium uliginosum* L. In June males were collected on flowers of *Potentilla inquinans* and *Dryas octopetala* and when hovering near *Pinus pumilla* on a mountain top. At the beginning of July the species was collected on and near the inflorescence of *Carex* spec. on bogs. At this time males were hovering in the shadow of trees and at the top of mountains. On 17 July, after five days of rain, specimens of *P. amplus* were collected from the flowers of *Epilobium* spec., and later all specimens were collected only on this plant.

Platycheirus angustatus (Zetterstedt, 1843)

Loc. 1: 1♂, 1♀ 14 and 25 June 1985, on the inflorescence of *Carex* spec. on and near bog.

Platycheirus brunnifrons Nielsen, 2004.

Loc. 1: 4♂ (paratypes) 30 June - 4 Aug. 1985, and 2♂ from Якутска 24.V. 1985. A species superficially resembling *P. albimanus* (Fabricius, 1781) but with brownish abdominal spots, brownish pruinosity on frons and belonging to the *ambiguus* group (Nielsen 2004: 9-11).

Platycheirus carinatus (Curran, 1927)

Loc. 1: 56♂ 15 June - 1 July 1985; loc. 4: 4♂ 28 July 1985 and loc. 5: 1♂ 27 June 1985 (Dubatolov leg.). All males hovered at the very top of mountains at 1500-1650 m above sea level, at height 2-2.5 m near dense bushes of *Pinus pumilla*, some of them were sitting on flowers of *Dryas octopetala* and on branches of *P. pumilla*.

Platycheirus complicatus (Becker, 1889)

Loc. 1: 28♂, 2♀ 14 June-24 July 1985 and loc. 4: 1♂, 4♀ 18 June 1985. Flies hovered in *Chosenia arbutifolia* - *Larix gmelinii* forest near buildings of the station and hovered on bog, also on inflorescence of *Carex* spec. On the top of a mountain in the mountain tundra males were seen hovering at a height of 1-2 m or sitting on *Pinus pumilla* and on *Dryas octopetala* flowers. At the end of June specimens were observed visiting flowers of *Saxifraga spinulosa* Adams, *Potentilla inquinans*, *Rhodiola rosea* L. and *Euphorbia* spec. on a scree. From the beginning of July males were hovering in mountain tundra on a mountain top at 1650 m. When cloudy, the flies settled on branches of *P. pumilla* and on stones. Soon after the sun came out, the flies were observed hovering in the air, remaining until the sun disappeared. Other males hovered in the shadow of trees at the bottom of the mountain. Specimens were seen hovering on a scree near a *Sorbus* spec. bush at a level of 2-2.5 m. From 17 July the species visited mostly *Epilobium* spec.

Platycheirus manicatus (Meigen, 1822)

Loc. 1: several ♂ 15 June-12 July 1985.

Platycheirus peckae Bagatshanova, 1980

Loc. 7: 1♂ 29 May 1985, collected when hovering near a *Salix* bush.

Platycheirus peltatus (Meigen, 1822)

Loc. 1: 9♂, 5♀ 25 June - 4 August 1985. On loc. 1 the species was found hovering

in a *Chosenia arbutifolia* - *Larix gmelinii* forest near buildings and were flying on a bog visiting the inflorescence of *Carex* spec. and flowers of *Vaccinium uliginosum* L. Specimens were also observed on alpine tundra on the top of a mountain, at a height of 2-2.5 m near bushes of *P. pumilla*. At the end of June specimens of this species were assembled on flowers of *Rosa* spec. From 17 July to the beginning of August flies were observed on flowers of *Epilobium* spec.

Platycheirus podagratus (Zetterstedt, 1838)

Loc. 1: 3♂ 14 June and 25 June 1985, collected on inflorescence of *Carex* spec. on humid bogs.

Platycheirus setitarsis Vockeroth, 1990

Loc. 1: 30♂, 9♀ 15 June-12 July 1985; loc. 4: 4♂ 28 June 1985 and loc. 6: 1♂ 28 May 1985. At loc. 1 all males were collected at the very top of a mountain, at 1650 m a.s.l., where they were hovering together with *P. carinatus* and *P. manicatus* at 2-2.5 m close to *Pinus pumilla* bushes.

Platycheirus woodi Vockeroth, 1990

Loc. 1: 1♂ 19 June 1985 (L. Popova leg.). Vockeroth (1990) described this species from a single male collected in Yukon Territory, north-western Canada. This is the first record of *P. woodi* from the Palaearctic region.

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