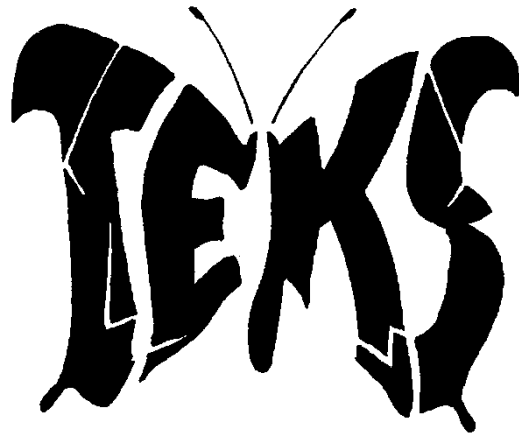


w-album 28

2023



**Turun Eläin- ja Kasvitieteellinen Seura ry
Hyönteiskerho**

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magadanensis* Mutin (Diptera, Syrphidae)**

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w-album

28 (2023)

ISSN 1795-665X

ISSN 1795-6668

ISBN 978-952-5793-44-4 (nid.)

ISBN 978-952-5793-45-1 (PDF)

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Julkaisija: Turun Eläin- ja Kasvitieteellinen Seura, Hyönteiskerho
Publisher: Entomological Club of the Zoological and Botanical Society of Turku, Finland

Toimitus/Editors: Veli-Matti Mukkala
Veli-Matti.Mukkala@outlook.com

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The description of the female of *Platycheirus magadanensis* Mutin (Diptera, Syrphidae)

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Haarto, A. 2023: The description of the female of *Platycheirus magadanensis* Mutin (Diptera, Syrphidae). – w-album (28) 2023, 3-9.

Received 1.6.2023, accepted 30.7.2023

Abstract. A female specimen of the rare Palearctic *Platycheirus* species, *Platycheirus magadanensis* Mutin, 1999 (Diptera, Syrphidae), was found from northern Finland. The hitherto unknown female of *P. magadanensis* is described for the first time. The diagnostic characters to separate it from the other females of *Platycheirus clypeatus* group are discussed.

Lajin *Platycheirus magadanensis* Mutin (Diptera, Syrphidae) naaraan kuvaus

Lyhennelmä. Harvinaisen palearktisen *Platycheirus*-lajin, *Platycheirus magadanensis* Mutin, 1999 (Diptera, Syrphidae), naaras löytyi Pohjois-Suomesta. Lajin aikaisemmin tuntematon naaras kuvataan ensimmäisen kerran. Diagnostisista tuntomerkeistä, jotka erottavat sen muista *Platycheirus clypeatus* -ryhmän naaraista, esitetään pohdintaa.

1. Introduction

The genus *Platycheirus* Lepelletier & Serville is one of the largest genera of Syrphidae in the temperate zone of the Palaearctic. The male *Platycheirus* specimens are rather easy to identify because of the very characteristically shaped prolegs of various species. However, *Platycheirus* females rarely have distinct morphological characters. Therefore, the determination of the *Platycheirus* females tends to be challenging. The identification keys to the females of northern European *Platycheirus* were published by Haarto & Kerppola (2007) and Bartsch *et al.* (2009) and for the northwest Europe by van Veen (2004). In addition to these publications there are some identification keys to some *Platycheirus* groups and subgroups like the European species of the *P. peltatus* subgroup (van Steenis & Goeldlin de Tiefenau 1998), to the species of the *ambiguus* group (Nielsen 2014), to the northern Palearctic species of the *clypeatus* group (Haarto 2015) and

to the Holarctic and Oriental species of the *manicatus* group (Nielsen & Barkalov 2017). But there are still *Platycheirus* species the females of which remain unknown.

2. Material and methods

Iiro Kakko, who is the field specialist of the Finnish Expert Group for Diptera, collected a *Platycheirus* female unknown to the author from Inari, Finland in 2019. The specimen belongs to the *clypeatus* group and it is pinned. The specimen has a label with Finnish grid coordinates (ykJ) (Ollikainen & Ollikainen 2004). Those Finnish grid coordinates are converted to the corresponding geographical coordinates and are given below in square brackets.

The author had earlier studied the *clypeatus* group (Haarto 2015) and this knowledge enabled him to identify the specimen. After that study the author

had seen a female specimen of *Platycheirus sigiktae* Mutin (Mutin & Barkalov 1999) which before that was familiar to him only by literature. The *clypeatus* group is here used as established by Bartsch et al. (2009). The characters forming the group are based solely on the morphology of the males: the face is vertical, not produced anteriorly in the ventral part, the protibia is distinctly broadened from the base to or nearly to the apex and the basotarsomere of protarsus is widened. The differentiation of females in the *clypeatus* group is based mostly on pleural pollinosity and the coloration of meso- and metalegs, which proved to be particularly valuable.

The terminology used in the identification key, description and figures follows Thompson (1999) where there are also the explanations of the terminology.

The photos of the specimens were taken with the Euromex Novex RZ trinocular microscope and AmScope MU1803, Microscope Digital Camera, and composed with the own software of the AmScope camera.

3. *Platycheirus magadanensis* Mutin, 1999

Diagnostics of the male:

Face rather flat with a small frontal prominence, a small round facial tubercle and a hardly visible, rounded mouth edge. Face with grey pollinosity and black erect pile. Pleura black with thick grey pollinosity, only anterior part of katapisternum with thin grey pollinosity. Protibia distinctly broadened from base to apex and basotarsomere of protarsus widened, ventral side of these have characteristic patterns helping to determine the species (Fig.1). Profemur with erect pile posteriorly. Basal part of profemur with tuft of white pile posteriorly. Pro- and mesotarsus with brown tarsomeres 3-5. Metaleg black, only knee and apex of tibia yellow. Metatarsus with dorsally swollen basotarsomere. Abdomen blackish brown and terga 2-4 with small indistinctly reddish maculae covered by grey pollinosity.



Fig. 1. Right protibia of *Platycheirus magadanensis* male, ventral view.

Description of the female:

General appearance as in Fig. 2. Body length 7.8 mm. Wing length 7.1 mm.

Head. Colour black. Eyes bare. Ocellar triangle a little wider than long and with thin grey pollinosity (Fig. 3). Ocellar triangle with dark erect pile. Vertex without pollinosity and with pale erect pile. Occiput dorsally over twice as broad as the diameter of an ocellus and laterally about as broad as the diameter of an ocellus. Occiput with grey pollinosity and with pale erect pile. Face (Fig. 4) rather flat with a small frontal prominence, a small round facial tubercle and a hardly visible, rounded mouth edge. Face with grey pollinosity and pale erect pile. Facial tubercle narrowly shiny with indistinct grey pollinosity. Gena about as wide as pedicel, with grey pollinosity and pale erect pile. Border of face and gena narrowly shiny without pile. Frons (Fig. 3) at level of front ocellus as wide as one-quarter of the width of head. Posterior third of frons shining black. Anterior part of frons laterally only narrowly thick grey pollinose and medially broadly shiny black without pollinosity. Frons mainly with pale erect pile but anteriorly with some dark erect pile and posterior third with dark erect pile. Lunule shining black. Antennae separated by a narrow keel with grey pollinosity. Antenna brownish black. Basoflagellomere about 1.4 times as long as wide. Arista with very short pile, brownish black and about as long as antenna.



Fig. 2. Female habitus of *Platycheirus magadanensis*, dorsal view.

Thorax. Scutum and scutellum shining black with pale erect pile. Scutellum with short pale pile ventrally. Postpronotum and notopleuron covered by grey pollinosity, notopleuron only thinly. Pleura black with thick grey pollinosity. Posterior part of anepisternum, anterior part of anepimeron, dorsal part and ventral corner of katepisternum with pale erect pile. Anterior part of katepisternum only with thin grey pollinosity and without pile. Calypter whitish with pale pile on margin. Halter pale reddish yellow with slightly darkened base of stem.

Wing. Completely microtrichose. Membrane with a slightly brownish tinge. Stigma light yellowish brown.

Legs. Coxa black with grey pollinosity. Pro- and mesocoxa with adpressed short pale pile. Metacoxa with erect pale pile. Trochanter black, protochanter with grey pollinosity, meso- and metatrochanter shiny. Profemur mainly yellow but posteriorly with a brown stripe. Profemur mainly with adpressed short pale pile but posteriorly with pale erect pile as long as half of diameter of femur. Basal part of profemur posteriorly with a short tuft of white pile. Mesofemur brown but base narrowly and apex broadly yellow. Mesofemur mainly with adpressed short pale pile but posteriorly with mainly pale erect pile almost as long as diameter of femur. Metafemur black, only apex narrowly yellow. Metafemur mainly with adpressed short pale pile but anteriorly and posteriorly with short pale erect pile. Protibia mainly yellow, only posteriorly indistinctly brown. Mesotibia yellow



Fig. 3. Frons of *Platycheirus magadanensis* female, dorsal view.



Fig. 4. Head of *Platycheirus magadanensis* female, lateral view.

with a light brownish medial ring. Metatibia black, only base narrowly yellow. All tibiae with adpressed pale pile. Pro- and mesotarsus with a brownish yellow basotarsomere, a brownish tarsomere 2 and other tarsomeres blackish. Metatarsus black with a dorsally swollen basotarsomere. All tarsi with adpressed pale pile. Metaleg posteriorly in Fig. 5.

Abdomen. Terga brownish black with indistinct greyish pollinosity and with grey pollinose maculae on terga 2-4. Pilosity pale adpressed and partly dark adpressed on terga 4-5. Terga 1-2 laterally with long pale pile. Terga 2-3 each about 0.8 times as long as their width at posterior margin. Tergum 4 about as long as its width at posterior margin. Sterna brownish black with indistinct greyish pollinosity, but sternum 1 with thick grey pollinosity and short pale adpressed pile. Other sterna with pale semi-erect pile. Sternum 2 about 1.3 times as long as its width at its posterior margin. Sterna 3-4 each about as long as their width at anterior margin.

Studied material. 1 ♀, FINLAND: *Li:* Inari, Palsinoja, 75985:34996 [68° 28.3' N; 26° 59.2' E], 7.7.2019, Iiro Kakko leg., ID: AHa23-000470. This female was found on a rich flooded meadow. The specimen is deposited in the personal collection of Iiro Kakko.

4. Discussions

In many *Platycheirus* species there is general resemblance in the characteristics of males and females, for example in the pollinosity of pleura and in the coloration of legs. When these characters are considered also the female of *P. magadanensis* has a great similarity with the male. Both sexes have similar pollinosity on pleura and in the coloration of all tarsi and the metaleg.

The female of *Platycheirus magadanensis* has a tuft of white pile at the base of the profemur. The profemur has posteriorly pale erect pile along the entire length. The pro- and mesofemur are mainly yellow and the pro- and mesotarsus have blackish tarsomeres 3-5. The posterior part of anepisternum



Fig. 5. Left metaleg of *Platycheirus magadanensis* female, posterior view.

has thick grey pollinosity. The sides of abdomen are nearly parallel and there are no yellow maculae on the abdomen. The frons is mainly shining black and without clear lateral pollinose triangles. In the preliminary key to the Palaearctic females of the *Platycheirus clypeatus* group (Haarto 2015) the species runs to the couplet 11. There the key needs additional information (Barkalov & Mutin 2014) and editing for *P. magadanensis* (Table 1).

It might be possible that some females of *P. magadanensis* have small indistinctly reddish

maculae covered by grey pollinosity on the terga 2-4. That kind of females will run to the couplet 12 that includes species with yellow maculae on the abdomen. On the other hand, there are melanistic females with strongly reduced maculae among these species that usually have yellow maculae on the abdomen. Especially *Platycheirus podagratus* (Zetterstedt) and *P. ramsarensis* Goeldlin, Maibach & Speight have these melanistic females. In that case the identification must be based on other characters than maculae.

Table 1. The edited part of the key (Haarto 2015) including *Platycheirus magadanensis* Mutin female with blackish abdomen.

11	Dark stripe of posterior profemur with 1–2 long bristle-like pile. Abdomen completely black, shiny with fine brownish tomentum. Tarsomeres 3–4 of protarsus dark dorsally and tarsomeres 2 and 5 yellow. ... <i>Platycheirus beringiensis</i> Barkalov & Mutin
-	Dark stripe of posterior profemur without long bristle-like pile. Abdomen black with grey pollinose maculae. ... 11A
11A	Tarsomeres 3–5 of pro- and mesotarsus blackish and other tarsomeres yellow. Metatarsus with dorsally swollen basotarsomere. Only lateral margins of frons anteriorly pollinose. ... <i>Platycheirus magadanensis</i> Mutin
-	Tarsomeres 4–5 of pro- and mesotarsus brownish dorsally and other tarsomeres yellow. Basotarsomere of metatarsus not swollen. Frons with lateral triangular pollinose spots. ... <i>Platycheirus hyperboreus</i> (Staeger)

The following characters differentiate *P. magadanensis* from the females of the other species. The females of *Platycheirus clypeatus* (Meigen), *P. europaeus* Goeldlin, Maibach & Speight, *P. latens* Mutin, *P. mongolicus* (Stackelberg) and *P. occultus* Goeldlin, Maibach & Speight have entirely yellow pro- and mesotarsus and frons with large lateral pollinose triangles. The frons of *P. angustipes* Goeldlin, Maibach & Speight and *P. ramsarensis* females have similar large lateral pollinose triangles but the mesotarsus has brownish yellow tarsomeres 3-5. The protarsus of *P. angustipes* female has brownish yellow tarsomeres 3-4 and the basal half of profemur is dark, blackish. The protarsus of *P. ramsarensis* female has brown tarsomeres 3-4 and only the basal half of profemur has longish erect pile posteriorly. The female of *P. angustatus* (Zetterstedt) has entirely yellow pro- and mesotarsus, a shiny posterior part of anepisternum and a narrow bluish black frons with small lateral pollinose triangles. The protarsus of *P. podagratus* female has brownish yellow tarsomeres 3-4 and the mesotarsus has brownish yellow tarsomeres 3-5. The abdomen of *P. podagratus* is broadest at the tergum 3 (Fig. 6).



Fig. 6. Abdomen of *Platycheirus podagratus* female, dorsal view.

So, the female of the species *Platycheirus magadanensis* mostly resembles the female of the species *P. hyperboreus* (Staeger). Care is needed when determining melanistic females of *Platycheirus*. Especially females of *P. podagratus* and *P. ramsarensis* which have almost as dark metaleg and abdomen as *P. magadanensis* and also the females of *P. podagratus* have also very similar frons with *P. magadanensis*.

5. Acknowledgements

The author wants to thank Iiro Kakko from the Finnish Expert Group for Diptera for loaning the female specimens of *Platycheirus* to determine them. The author wants to give special thanks to Valerij Mutin and Tore R. Nielsen for valuable comments on the manuscript. Thanks also to Kaj Winqvist, who checked the English language.

6. References

- Barkalov, A.V. & Mutin, V.A. 2014. Two new species of Syrphidae (Diptera) from Chukotka (Northern Russian Far East). – *Zootaxa*, 3846 (2): 285–292. <http://dx.doi.org/10.11646/zootaxa.3846.2.8>
- Bartsch, H., Binkiewicz, E., Rådén, A. & Nasibov, E. 2009. *Tvåvingar: Blomflugor: Diptera: Syrphidae: Syrphinae. Nationalnyckeln till Sveriges flora och fauna. DH53a.* – ArtDatabanken, Sveriges lantbruksuniversitet, Uppsala, 406 pp.
- Haarto, A. 2015. The description of the female of *Platycheirus troll* Mutin (Diptera, Syrphidae) with a preliminary key to the Northern Palaearctic females of the *Platycheirus clypeatus* group. – *Zootaxa* 4000 (3): 383–391. <http://dx.doi.org/10.11646/zootaxa.4000.3.5>
- Haarto, A. & Kerppola, S. 2007. *Suomen kukkakärpäset ja lähialueiden lajeja – Finnish Hoverflies and some species in adjacent countries.* – Ympäristöministeriö, Otavan kirjapaino Oy, Keuruu, 647 pp.
- Mutin, V.A. & Barkalov, A.V. 1999. 62. Family Syrphidae. In: Lehr, P.A. (Ed.), *Key to the insects of Russian Far East. Vol. 6. Diptera and Siphonaptera. Part 1.* – Dal'nauka, Vladivostok, pp. 342–500. [in Russian]
- Nielsen, T.R. 2014. Synopsis of the *Platycheirus ambiguus* species group (Diptera, Syrphidae), with description of *Platycheirus arnei* sp. n. and a preliminary key to the species. – *Norwegian Journal of Entomology* 61: 57–75. <http://www.entomologi.no/journals/nje/2014-1/pdf/nje-vol61-no1-nielsen.pdf>
- Nielsen, T.R. & Barkalov, A.V. 2017. A revision of and key to the Holarctic and Oriental *Platycheirus manicatus* group species (Diptera, Syrphidae). – *Norwegian Journal of Entomology* 64: 28–52. <http://www.entomologi.no/journals/nje/2017-1/pdf/nje-64-no1-2017-28-52-nielsen.pdf>

Ollikainen, M. & Ollikainen, M. 2004. The Finnish coordinate reference systems. Published by the Finnish Geodetic Institute and the National Land Survey. Available at http://www.maanmittauslaitos.fi/sites/default/files/Finnish_Coordinate_Systems.pdf

Thompson, F.C. 1999. A key to the genera of the flower flies (Diptera: Syrphidae) of the Neotropical Region including descriptions of new genera and species and a glossary of taxonomic terms. – Contributions on Entomology, International 3 (3): 321–378.

van Steenis, J. & Goeldlin de Tiefenau, P. 1998. Description of and key to the European females of the *Platycheirus peltatus* sub-group (Diptera, Syrphidae), with a description of the male and female of *P. islandicus* Ringdahl, 1930, stat.n. – Mitteilungen der Schweizerischen entomologischen Gesellschaft, 71: 187–199.

van Veen, M.P. 2004. *Hoverflies of Northwest Europe: Identification keys to the Syrphidae*. – KNNV Publishing, 256 pp.