

**REVISION OF THE GENUS *PLATYCHEIRUS* LE PELETIER et  
SERVILLE, 1828 (DIPTERA: SYRPHIDAE)  
IN THE FAUNA OF MACEDONIA**

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**ABSTRACT.** Investigation of hoverflies fauna in Macedonia has been carried out from 1987 to 2004. Beside new data from numerous field trips, in consideration were taken also reviewed data from the collections of the Macedonian Museum of Natural History - Skopje (SKO) and Department of Biology and Ecology - Novi Sad (DBE), Serbia. Those investigations determined 10 species of the genus *Platycheirus* in Macedonia, from which four [*Platycheirus fulviventris* (Macquart, 1829); *Platycheirus immaculatus* (Ohara, 1980); *Platycheirus manicatus* (Meigen, 1822) and *Platycheirus tarsalis* (Schummel, 1836)] are registered for the first time and two species are recently described - *Platycheirus brunnifrons* Nielsen, 2004 and *Platycheirus meridimontanus* Nielsen, 2004 - from the type localities in Macedonia.

**Key words:** Diptera, Syrphidae, *Platycheirus*, fauna, first records, Macedonia.

## INTRODUCTION

*Platycheirus* is relatively large genus, especially numerous in North Holarctic, where occurs in the zone of tundra and coniferous forest communities of boreal type. PECK (1988) for the European continent cited 36 species, but later, another 15 species have been added to this list. Initially GOELDLIN *et al.* (1990) added three species, and afterwards VOKEROTH (1990) another two. In the revision of the group *P. scutatus*, DOCZKAL *et al.* (2002) separated another three species. NIELSEN (2004) in his latest revision of species from the *P. ambiguus* group of European fauna described another seven species (*P. altomontis* Nielsen, 2004, *P. brunnifrons* Nielsen, 2004, *P. caesius* Nielsen, 2004, *P. clauseni* Nielsen, 2004, *P. goeldlini*

Nielsen, 2004, *P. meridimontanus* Nielsen, 2004, *P. subambiguus* Nielsen, 2004). Most comprehensive key for determination of European species of genus *Platycheirus* is given by VAN VEEN (2004) and at the same time NIELSEN (2004) added diagnostic characters for new species from the *P. ambiguus* group.

## MATERIAL AND METHODS

Results presented in this paper are based upon analysis of 79 specimens of this genus collected from the territory of the Republic of Macedonia, and deposited in the collections of the Macedonian Museum of Natural History - Skopje (SKO) and Department of Biology and Ecology - Novi Sad (DBE), Serbia. Insects are collected with entomology net.

Determination is carried out by means of several keys (COE, 1953; SACK, 1928-32; STUBS and FALK, 1983; VAN VEEN, 2004) and publications that deal with particular genera (VOCKEROTH and THOMPSON, 1987; GOELDLIN *et al.*, 1990; VOKEROTH, 1990; DOCZKAL *et al.*, 2002; VAN VEEN, 2004 and NILESEN, 2004).

Systematics and taxonomy are after SPEIGHT (2004), and also data on distribution. Systematics is adjusted to German check list (SCHUMANN *et al.*, 1999). Some data are added from Catalogues: GLUMAC (1972), PECK (1988), and from other publications. In the species list are given literature data and data from current investigations.

## RESULTS AND DISCUSSION

Genus *Platycheirus* was recently revised by great number of authors as VOKEROTH and THOMPSON (1987); GOELDLIN *et al.* (1990); VOKEROTH (1990); DOCZKAL *et al.* (2002); VAN VEEN (2004) and NIELSEN (2004). According to these results, many species are registered for Europe. In Macedonia this genus is represented with 10 species.

### *Platycheirus albimanus* (Fabricius, 1781)

as *Platycheirus podagratus* (Zetterstedt, 1838) in GLUMAC, 1968

**Published data:** Glumac, 1968: 868; KRPAČ *et al.*, 2001: 183.

**Erroneous references:** as *Platycheirus podagratus* (Zetterstedt, 1838) in GLUMAC, 1968: 868: Šar Planina Mt, river valley, on *Roripa* sp., 1♂, 2♀♀, 28.05.1960.; Mavrovo, mixed forest, on *Euphorbia* sp., 3♂♂, 2♀♀, 30.05.1960., SKO (= *P. albimanus*).

**Verified references:** (GLUMAC, 1968): Prilep, Treskavec, 1♀, 20.05.1968., (leg. Čingovski) SKO;

(KRPAČ *et al.*, 2001): Mavrovo, v. Nikiforovo, 1♂, 1♀, 23.05.1995., (leg. Krpač) SKO.

**New data:** Skopje, Matka, 1♂, 27.04.1955., (leg. Bogoevski); Mavrovo, mountain river valley, on flowers, 2♀♀, 30.05.1960., (leg. Glumac); Dojran, river valley, on *Sinapis* sp., *Angelica* sp. and *Sambucus* sp., 1♂, 06.06.1960., (leg. Glumac); Pelister, 3♀♀, 19.07.1990., (leg. Krpač); Galičica Mt, 1♀, 29.07.1990., (leg. Krpač); Šar Planina Mt, Tri Vodi, 2♂♂, 30.08.1990., (leg. Krpač); Pelister, Niže Pole, 1♀, 13.06.1991., (leg. Krpač); r. Radika, Lukovo Polje, 1♀, 06.09.1994., (leg. Krpač); Ohrid, Gorica, 2♂♂, 01.05.1995., (leg. Krpač); v. Galičnik, 1♂, 24.05.1995., (leg. Krpač); Krčin Mt, 1♀, 25.05.1995., (leg. Krpač); Jablanica, 1♀, 07.06.1995., (leg. Krpač); Prilep, Pletvar, 1♂, 17.06.1997., (leg. Krpač); Ogražden, Preslap, 1♂, 02.07.1998., (leg. Krpač).

**Comment:** Widely spread species on the Balkan Peninsula. Previously in Macedonia was considered as rare species but our investigations showed that it is widely distributed, registered on numerous localities. Revision of material showed that published data of species *P. podagratus* in GLUMAC (1968: 868) belong to species *P. albimanus*.

***Platycheirus ambiguus* (Fallen, 1817)**

as *Platycheirus sticticus* (Meigen, 1822) in GLUMAC, 1968 (in part)

**Published data:** Vujić, 1995: 48.

**Erroneous references:** as *P. sticticus* in GLUMAC, 1968: 868 (in part): Mavrovo, 1♂, 1♀, 30.05.1960., (leg. Glumac) (= *P. ambiguus*).

**Verified references:** (VUJIĆ, 1995): Mavrovo, 3♂♂, 6♀♀, 09.06.1959.; Mavrovo, 1♂, 1♀, 30.06.1960., (leg. Glumac) IBNS.

**Comment:** In Macedonia this species is extremely rare and insufficiently investigated, registered at only one locality, Mavrovo. *P. ambiguus* is species very similar to species *P. sticticus*, very often mistaken with it. Its areal in Europe is uncertainly determined due to its confusion with other species (SPEIGHT, 2004).

***Platycheirus brunnifrons* Nielsen, 2004**

**Published data:** (NIELSEN, 2004: 9).

**Verified references:** (NIELSEN, 2004): Paratype: Pelister, Palisnopje, 2♂♂, 05.06.1990., (leg. Krpač).

**Comment:** The species has not been known for the science and there are no data about its biology. NIELSEN (2004) has made the key separating *P. brunnifrons* from the rest of European species in the *P. ambiguus* group.

***Platycheirus fulviventris* (Macquart, 1829)**

**New data:** Skopje, v. Taor, 1♂, 1♀, 03.04.1957., (leg. Čingovski); Skopje, s. Madžari, 1♀, 16.06.1958., (leg. Joksimović).

**Comment:** The species is registered for the first time in Macedonia (Skopje valley). It occurs in the plain, on open terrains and along channels.

***Platycheirus immaculatus* (Ohara, 1980)**

as *Melanostoma transfugum* (Zetterstedt, 1838) in GLUMAC, 1968 (in part)

as *Platycheirus sticticus* (Meigen, 1822) in GLUMAC, 1968 (in part)

**Published data:** none.

**Erroneous references:** as *P. transfugum* in GLUMAC, 1968: 868 (in part): Mavrovo, forest, on flowers, 3♀, 09.06.1959., (leg. Glumac); Mavrovo, mixed forest, on *Euphorbia* sp., 5♂♂, 6♀♀, 30.05.1960., (leg. Glumac) IBNS (= *Platycheirus immaculatus*).

as *P. sticticus* in GLUMAC, 1968: 868 (in part): Mavrovo, mixed forest, "hover" between trees, 1♂, 30.05.1960., (leg. Glumac) IBNS (= *Platycheirus immaculatus*).

**New data:** Pelister, Palisnopje, 1♂, 12.06.1991., (leg. Krpač).

**Comment:** DOCKAL (1996) deals with European species with which *P. immaculatus* can be confused. He noticed that males can be muddled with *P. ambiguus*, while females with *P. sticticus*. NIELSEN (2004) and VAN VEEN (2004) provided the distinguishing characters for this species. Until now, *P. immaculatus* was not noticed in Southern and Central Europe, and these records from Macedonia are first ones for the Balkan Peninsula. Findings far away from its range in the Northern Palearctic, show relict character of this species.

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

**New data:** Mavrovo, 1♂, 15.06.1972., (leg. Čingovski); Pelister, 2♂♂, 19.07.1990., (leg. Krpač).

**Comment:** This species is registered for the first time in Macedonia, on only two localities in communities of conifer forests.

***Platycheirus meridimontanus* Nielsen, 2004**

as *Melanostoma transfugum* (Zetterstedt, 1838) in GLUMAC, 1968 (in part)

**Published data:** (NIELSEN, 2004: 20).

**Erroneous references:** *M. transfugum* in GLUMAC, 1968: 869 (in part): Oteševo, 2♂♂, 13.06.1959., (leg. Glumac); Mavrovo: 1♂, 30.05.1960., (leg. Glumac) (DBE).

**Verified references:** (NIELSEN, 2004): Holotype: Oteševo, 1♂, 13.06.1959., (leg. Glumac); Paratype: Oteševo, 1♂, 13.06.1959., (leg. Glumac); Mavrovo: 1♂, 30.05.1960., (leg. Glumac).

**Comment:** The species was described on the basis of type material from Macedonian Museum of Natural History - Skopje (NIELSEN, 2004); there are no data on its biology. The sample of holotype from Oteševo is listed as *M. transfugum* in GLUMAC (1968) (in part); the specimen from the same locality and one from the locality Mavrovo are described as paratypes. Those are the only findings of the species so far. Nielsen (2004) made the key in which this species is distinguished from others in the *P. ambiguus* group. Female of the species is still unknown.

***Platycheirus peltatus* (Meigen, 1822)**

**New data:** Šar Planina Mt, 1♀, 23.07.1939., (leg. A. Fadejev); Bistra Mt, Carevec, 1♀, 01.07.1972., (leg. Čingovski); Mavrovo, v. Nikiforovo, 1♂, 1♀, 06.07.1995., (leg. Krpač).

**Comment:** It is a rare species in Macedonia. Revision of the material from Glumac' collection has shown that specimens of species *P. peltatus* published by GLUMAC (1968: 868) belong to the species *P. scutatus*. Our investigations prove that taxon *P. peltatus* however is present in Macedonia, and this is the first confirmed record.

***Platycheirus scutatus* (Meigen, 1822)**

as *Platycheirus peltatus* (Meigen, 1822) in GLUMAC, 1968

**Published data:** (KRPAČ *et al.*, 2001: 183).

**Erroneous references:** *P. peltatus* in GLUMAC, 1968: River Radike valley, scrub, on leaves, 3♂♂, 31.05.1960., (leg. Glumac) SKO (= *P. scutatus*).

**Verified references:** (KRPAČ *et al.*, 2001): Mavrovo, mixed forest, on *Euphorbia* sp., 1♀, 30.05.1960., (leg. Glumac).

**New data:** Galičica, 1♀, 18.06.1997., (leg. Krpač); Skopje, Karpoš 1, 1♀, 28.10.2000., (leg. M. Ivanov).

**Comment:** *P. scutatus* is species registered almost in entire Balkan Peninsula except in Slovenia, Bosnia and Herecegovina and Albania. In Macedonia, this species is found at several localities. Recently described species *P. splendidus* Rotheray is rather similar to species *P. scutatus*, especially females, and therefore determination has to be carried out with utmost attention (SPEIGHT, 2004).

***Platycheirus tarsalis* (Schummel, 1836)**

**New data:** Bitola, Skočivir, 1♀, 12.07.1957., (leg. Bogoevski).

**Comment:** On the Balkan Peninsula, this species was registered only at several localities in Serbia and Montenegro, while in Macedonia (Bitola, Skočivir) is registered for the first time.

## CONCLUSION

After several years long investigations of hoverflies fauna (Diptera: Syrphidae), 10 species of genus *Platycheirus* are registered in Macedonia.

Two taxa are of special importance for the science: *Platycheirus brunnifrons* Nielsen, 2004 and *Platycheirus meridimontanus* Nielsen, 2004. They are newly described species, while the type material is from the collection of Macedonian Museum of Natural History. There are still no data on biology of these species, and their definite range is not yet determined.

Four species [*Platycheirus fulviventris* (Macquart, 1829); *Platycheirus immaculatus* (Ohara, 1980); *Platycheirus manicatus* (Meigen, 1822) and *Platycheirus tarsalis* (Schummel, 1836)] are registered for the first time in Macedonia.

Revision of the material from Glumac' collection has shown that specimens of species *P. peltatus* published by GLUMAC (1968: 868) belong to the species *P. scutatus*. However, new data from our investigations prove the existence of *P. peltatus* in Macedonia.

Due to erroneous identification, from the hoverflies fauna of Macedonia, are excluded two taxa: *Platycheirus podagratus* (Zetterstedt, 1838) and *Platycheirus sticticus* (Meigen, 1822).

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