



CHECKLIST OF THE HOVERFLIES (DIPTERA: SYRPHIDAE) OF SLOVENIA

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Abstract - A checklist of the hoverflies (Diptera: Syrphidae) of Slovenia is compiled. Until now, the hoverfly fauna of Slovenia has been poorly known and existing information scattered in journals and collections throughout Europe. The checklist is based on records extracted from 35 articles and twelve collections, supplemented by two years of fieldwork. In total 274 species are listed, 109 of the subfamily Syrphinae, 162 of the Eristalinae and 3 of the Microdontinae.

KEY WORDS: Hoverflies, Syrphidae, checklist, Slovenia, fauna

Izvleček – SEZNAM MUH TREPETAVK (DIPTERA: SYRPHIDAE) SLOVENIJE

Sestavljen je seznam muh trepetavk (Diptera: Syrphidae) Slovenije. Doslej je bila favna trepetavk v Sloveniji slabo poznana in obstoječi podatki raztreseni po revijah in zbirkah vsevprek Evrope. Seznam temelji na podatkih, zbranih iz 35 člankov in dvanajstih zbirk, dopolnjenih z dveletnim terenskim delom. Vsega skupaj je naštetih 274 vrst, 109 iz poddružine Syrphinae, 162 iz poddružine Eristalinae in tri iz poddružine Microdontinae.

KLJUČNE BESEDE: trepetavke, Syrphidae, seznam, Slovenija, favna

Introduction

Adult hoverflies (Diptera: Syrphidae) often resemble bees, wasps or bumblebees. The family includes species whose larvae are predatory, others whose larvae are phytophagous and many more with microphagous larvae. The various species inhabit

many different environments. In Europe more than 650 species of hoverfly exist, among which more than 450 can be found on the Balkan Peninsula. This high diversity is due to the high number of syrphid species endemic to the Balkan Peninsula. Every year hoverfly species new to science continue to be found here, because this region of Europe is relatively unexplored, entomologically.

Slovenia lies in the northwestern part of the Balkan Peninsula, between Italy, Austria, Hungary and Croatia. Despite Slovenia's small surface, it has a high biodiversity, because of the wide range of climatic conditions, geology and topography found in its territory. There are six phytogeographical regions in Slovenia: Sub Mediterranean, Dinaric, Alpine, Pre alpine, Pre dinaric and Sub Pannonian.

The great potential biodiversity in Slovenia has not until recently been recognized among dipterists. Studies of hoverflies have been sparse, but span more than 200 years. These studies tend to reflect the political situation in the territories of Slovenia. The first person who ever published about hoverflies in Slovene territories was Scopoli. However, few of his records can be traced back today, because his collection was destroyed in a fire. One century later, in the time of the Habsburg empire, Strobl (1893, 1894, 1909) published three voluminous works about the Diptera of the province of Steiermark. The southern part of Steiermark is nowadays in Slovenia and is called Štajerska (Styria). When, between 1920 and 1940, large parts of Slovenia became occupied by Italy, Italian entomologists collected in the western part of Slovenia, up to the vicinity of Postojna.

Between 1950 and 1970 several people went to the Balkan Peninsula: Lambeck's visit is apparent from unpublished data in the Zoological museum in Amsterdam. These people stayed in Slovenia only for a few days in the area around Postojna. In the period of 1965 till 1968, I. Sivec collected a large of number of species in Slovenia. Maček, who mainly focused on the hyponomological entomofauna, found *Cheilosia fasciata* and *Cheilosia semifasciata* as new to Slovenia. In 1972 Glumac (1972) made the first checklist of the hoverflies for the Balkan Peninsula. In it only 33 species were recorded for Slovenia.

In the nineties, Vujić and colleagues from Novi Sad published several articles on the hoverflies of the Balkan Peninsula, making in the process a significant contribution to knowledge of the fauna of Slovenia. Latterly, Slovenia has become more popular as a holiday destination and several entomologists have already visited the country, producing interesting records. The consequence of these various activities is that since the checklist of Glumac (1972) was published many new species have been recorded for Slovenia.

In this paper, we update the list of hoverfly species known, based on examination of available collections, literature review and additional fieldwork.

Materials and Methods

The material incorporated into the checklist was compiled from an extensive literature study, examination of collections in several museums and the results of intensive faunistic investigations in the years 2005 and 2006. In total 41 articles were found

which included mention of species of Syrphidae in the territories of Slovenia. The dates of these articles range from 1763 (Scopoli, 1763) to 2004 (De Groot 2004). In four reports or books Syrphidae were mentioned as a family of flies represented in Slovenia, but without reference to any species by name (Devetak et al 1977; Gregori et al 1984; Kopušar 1997, Sivec et al 2003). Records derived from the work of Scopoli were only included in the checklist when they were also mentioned in other literature sources. Other data can not be checked, because the Scopoli collection was destroyed.

The following collections were visited: Slovene Museum of Natural History (SMNH), Museum of Natural History in Vienna (MNHV), Zoological Museum Amsterdam (ZMA), Museum of Natural History Naturalis in Leiden (NNM), Museum of Natural History Cardiff (MNHC), the Museum of Natural History in Trieste (Trieste) and the Zoological Collection of the Biotechnical Faculty in Ljubljana (ZCBF). In addition, records from the private collections of Sander Bot (SB), Frank Dziock (FD), Dare Fekonja (DF), Maarten de Groot (MdG), Stanislav Gomboc (SG), Anne Jan Loonstra (AJL) and Jan H.C. Velterop (JV), from which SB, DF, MdG and SG were checked by the first author, were included in the checklist.

Furthermore, a faunistic survey was carried out in 2005 - 2006. In this period large parts of Slovenia were visited. For identification, Van Veen, Van de Goot and additional articles were used. Whenever an unknown specimen was found, an expert was consulted.

The taxonomy follows and nomenclature follows Syrph the Net and the database of world Diptera. As species names of the same species often change considerably over the years, or sibling species are found, several species names have been of necessity excluded from the list because of doubt as to which taxon they refer to. Synonyms were sourced from Peck, the database of world Diptera and other articles. Synonyms are referred to in Table 1 only in cases where there is only one known reference to the occurrence of a species in Slovenia, published under a name now recognized as a synonym.

Results and discussion

In total 274 species of hoverflies are listed for the fauna of Slovenia (Table 1). Among them 3 are from the subfamily Microdontidae, 109 from the subfamily Syrphinae and 162 from the subfamily Eristalinae. The larvae of 35.0 % of these species are known to be microphagous, 24.1 % phytophagous and 40.5 % zoophagous. For 0.4 % of the species the functional group to which the larvae belong is not yet known. In addition, the larvae of 18.4 % of the species depend on dead or dying wood.

Several names were omitted from the checklist, either because they could not be traced back, or there were new scientific insights into the distribution of the species or there was doubt about the identification of the material involved. Ten names were found not to be consistent with valid names (Table 2). These names could not be traced back via synonymy in the Diptera database or Peck (1988). It would be useful if the specimens on which these records are based could be re-located and their identity checked. Then there are species which had been recorded, but whose identi-

fication had to be regarded as doubtful or could not be traced back anymore. *Merodon spinipes*, *Merodon spicata*, *Platycheirus transfugus* and *Spilomyia fusca* (Sivec et al 2003) are species still requiring verification. In the museum of Natural History in Vienna a specimen determined as *Cheilosia faucis* was found, collected by Strobl. However, the specimen was covered with mould and could therefore not be identified anymore. A specimen of *Platycheirus aurolateralis* from "Monte Anagiore" was found, this locality name probably being a misspelling of Monte Maggiore (Učka, in Croatia) and is also omitted from the list. The specimens of *Xylota caeruleiventris* in Milankov et al. (1995) were published prior to the revision of *X. caeruleiventris/jakutorum* by Bartsch et al. (2002). Therefore a revision is needed for all *X. caeruleiventris* specimens by Milankov et al. (1995).

The records based on specimens examined range from 1893 to 2006. The composition of the present-day syrphid fauna of Slovenia is likely to be different from the composition of the syrphid fauna of 100 years ago, due to both land-use changes that have occurred in the intervening period and the onset of climatic change that has begun to take effect recently. For example, over the last 40 years species composition changed noticeably in the Netherlands due to climate change. Further, as a consequence of the land use changes in Slovenia over the last decades there has been an increase in forest coverage resulting in 55% of the land surface now being forested. Changes in forest management can also influence the species composition greatly. Agricultural use of land has also intensified in the last decades. In consequence, some of the syrphid species recorded previously, and listed in Table 1, may no longer occur in Slovenia. In comparison with other European countries, the 264 species listed for Slovenia is a low number. Well surveyed countries like the Netherlands, Germany, Great Britain and Italy have 315, 460, 267 and 488 species respectively. It would not be surprising if further survey demonstrates that the number of species in Slovenia exceeds the number of species known for the Netherlands.

But where can we find these additional species? They could be expected from survey high in the Alps and in the sub Mediterranean coast, in particular. In addition the south Eastern part (Bela krajina), Eastern part (Dolenjska) and the Northern part (Pohorje) of Slovenia are all under-recorded areas. Furthermore, the early spring species are lacking from the checklist. There are also two other major collections potentially holding Slovenian material, the Strobl collection in Admont and the collection of the university in Novi Sad, that have yet to be examined, and it is hoped that these collections can be checked in the forthcoming years.

In conclusion, 35 years after the publication of the checklist by Glumac (1972) 237 species were added to the Slovène fauna. Therefore Slovenia has, with 270 species, already a rich hoverfly fauna for such a small country. Nevertheless, several new species are still expected to be found.

Acknowledgments

We want to thank the following persons and institutions for helping in various ways in compiling the checklist: Dr. C. van Achterberg, S. Bot, G. Bračko, Dr. B.

Brugge, Dr. A. Colla, Dr. F. Dziock, T. Faasen, D. Fekonja, D. Galjot, S. Gomboc, M. Kotarac, A. J. Loonstra, T.R. Nielsen, Dr. P. Sehnal, Dr. I. Sivec, Dr. B. Sket, J.T. Smit, Dr. M. Speight, Dr. T. Trilar, J.H.C. Velterop and Dr. A. Vujić. Special thanks to Dr. M.C.D. Speight for checking the English of this manuscript.

Table 1: Checklist of the Syrphidae of Slovenia. Per species the source(s) and if necessary also the synonym (syn.) used in this source are mentioned.

Subfamily: Microdontinae

Microdon Meigen, 1803

Microdon analis (Macquart, 1842)

Source: ZCBF, (De Groot 2004)

Microdon devius (Linnaeus, 1761)

Source: SMNH, JV

Microdon mutabilis (Linnaeus,

1758) s.l.

Source: MdG, DF

Subfamily: Syrphinae

Baccha Fabricius, 1805

Baccha elongata (Fabricius, 1775)

Syn: *Baccha nigripennis* (Strobl

1893a), *Baccha obscuripennis*

(NMW, (Lambeck 1968; Glumac

1972))

Source: Trieste, NMW, ZCBF, FD, (Strobl 1893a; Strobl 1909; Lambeck 1968; Glumac 1972; De Groot 2004)

Chrysotoxum Meigen, 1803

Chrysotoxum arcuatum (Linnaeus, 1758)

Syn: *Chrysotoxum fasciatum* (Lambeck 1968)

Source: AJL, (Lambeck 1968; De Groot 2004)

Chrysotoxum bicinctum (Linnaeus, 1758)

Source: SMNH, ZMA, NNM, ZCBF, AJL, FD, (Strobl 1893b; Strobl 1894; Strobl 1909; Coe 1960; Lambeck 1968; De Groot 2004)

Chrysotoxum caustum (Harris, 1776)

Syn: *Chrysotoxum sylvarum* (Strobl 1909)

Source: SMNH, ZMA, JV, (Glumac 1956a; Glumac 1956b, Strobl 1909)

Chrysotoxum elegans (Loew, 1841)

Source: SMNH, Trieste, (Strobl 1894; Glumac 1956a; Lambeck 1968; Glumac 1972)

Chrysotoxum fasciolatum (De Geer, 1776)

Source: SMNH, Trieste, MdG, (Coe 1960; Lambeck 1968)

Chrysotoxum festivum (Linnaeus, 1758)

Source: SMNH, ZCBF, AJL, (Strobl 1894; Strobl 1909; Glumac 1956a)

Chrysotoxum intermedium Meigen, 1822

Source: SMNH, MdG, (Glumac 1956a; Coe 1960)

Chrysotoxum octomaculatum Curtis, 1837

Source: AJL, (Strobl 1894; Coe 1960; De Groot 2004)

Chrysotoxum vernale Loew, 1841

Source: SMNH, ZCBF, SB, (Strobl 1909; De Groot 2004)

Chrysotoxum verralli Collin, 1940

Source: SMNH, AJL, DF, (Lambeck 1968)

Dasysyrphus Enderlein, 1938

Dasysyrphus albostriatus (Fallén, 1817)

Source: ZMA, SMNH

Dasysyrphus pinastri (De Geer, 1776)
Source: MdG

Dasysyrphus tricinctus (Fallén, 1817)
Source: ZMA, DF

Dasysyrphus venustus (Meigen, 1822)
Syn: *Syrphus lunulatus* (Trieste)
Source: SMNH, ZMA, ZCBF, Trieste, MdG, DF

Didea Macquart, 1834

Didea alneti (Fallén, 1817)
Source: ZMA, FD, (Lambeck 1968)

Didea fasciata Macquart, 1834
Source: ZMA, ZCBF, MdG, (Coe 1960; Lambeck 1968; Glumac 1972)

Didea intermedia Loew, 1854
Source: MdG

Doros Meigen, 1803

Doros profuges (Harris, 1780)
Source: NMW

Epistrophe Walker, 1852

Epistrophe diaphana (Zetterstedt, 1843)
Source: DF, (De Groot 2004)

Epistrophe eligans (Harris, 1780)
Source: SMNH

Epistrophe flava Doczkal & Schmid, 1994
Source: (De Groot 2004)

Epistrophe grossulariae (Meigen, 1822)
Source: ZMA, SMNH, SB, MDG, (Lambeck 1968; Glumac 1972)

Epistrophe melanostoma (Zetterstedt, 1843)
Source: SMNH, ZMA, JV

Epistrophe nitidicollis (Meigen, 1822)
Source: SMNH, ZMA

Epistrophe ochrostoma (Zetterstedt, 1849)
Source: SMNH, DF

Epistrophe obscuripes (Strobl, 1910)
Source: ZCBF

Epistrophella Dusek & Láska

Epistrophella euchroma (Kowarz, 1885)
Source: MdG

Episyrrhus Matsumura & Adachi, 1917

Episyrrhus balteatus (De Geer, 1776)
Syn: *Epistrophe balteata* (Strobl 1893b; Glumac 1972), *Syrphus balteatus* (Strobl 1893b; Leclerq 1961)
Source: ZMA, SMNH, NHMT, JV, ZCBF, SB, SG, (Strobl 1893b; Strobl 1909; Glumac 1956a; Leclerq 1961; Lambeck 1968; Glumac 1972; De Groot 2004)

Episyrrhus auricollis (Meigen, 1822)
Syn: *Meliscaeva auricollis* (SMNH (De Groot 2004)), *Epistrophe auricollis* (Lambeck 1968; Glumac 1972)
Source: SMNH, MdG, (Lambeck 1968; Glumac 1972; De Groot 2004)

Episyrrhus cinctellus (Zetterstedt, 1843)
Syn: *Meliscaeva cinctella* (ZMA (De Groot 2004)), *Epistrophe cinctella* (Lambeck 1968; Glumac 1972), *Syrphus cinctella* (Strobl 1893b; Strobl 1894; Strobl 1909; Coe 1960)
Source: SMNH, ZMA, ZCBF, AJL, FD, SB, (Strobl 1893b; Strobl 1894; Strobl 1909; Coe 1960; Lambeck 1968; Glumac 1972; De Groot 2004)

Eriozona Schiner, 1860

Eriozona syrphoides (Fallén, 1817)
Source: SMNH, ZMA, NHMT, MdG

Eriozona erratica (Linnaeus, 1758)

Syn: *Megasyrphus annulipes* (SMNH, SB), *Lasiophyticus annulipes* (Strobl 1909).
Source: SMNH, SB, (Strobl 1909)

Eupeodes Osten Sacken, 1877
Eupeodes corollae (Fabricius, 1794)

Syn: *Metasyrphus corollae*, *Syrphus corollae* (Trieste, (Glumac 1972))
Source: Trieste, JV, ZCBF, (De Groot 2004)

Eupeodes flaviceps (Rondani, 1857)
Source: SMNH

Eupeodes lapponicus (Zetterstedt, 1838)

Syn: *Syrphus lapponicus* (Coe 1960)
Source: SMNH, ZMA, ZCBF, AJL, SG, (Coe 1960; De Groot 2004)

Eupeodes latifasciatus (Macquart, 1829)

Syn: *Syrphus latifasciatus* (Glumac 1956a), *Epistrophe latifasciatus* (De Groot 2004), *Metasyrphus latifasciatus* (SMNH)

Source: SMNH, ZMA, MdG (De Groot 2004; Glumac 1956a)

Eupeodes luniger (Meigen 1822)

Syn: *Syrphus bucculatus* (Glumac 1956a), *Syrphus luniger*, *Metasyrphus luniger* (Glumac 1972; Lambeck 1968),

Source: SMNH, (Glumac 1956a; Lambeck 1968; Glumac 1972; De Groot 2004)

Eupeodes nitens (Zetterstedt 1843)
Syn: *Syrphus nitens* (Glumac 1972)
Source: (Glumac 1972)

Heringia Rondani, 1856

Heringia heringi (Zetterstedt, 1843)
Syn: *Pipiza heringi* (Strobl 1893b)
Source: ZCBF, (Strobl 1893b)

Heringia brevidens (Egger, 1865)
Source: (Strobl 1893b)

Heringia latitarsis (Egger, 1865)
Syn: *Neocnemodon* (Glumac 1972), *Cnemodon latitarsis* (Lambeck 1968)
Source: (Strobl 1893b; Lambeck 1968; Glumac 1972; Vujić 1999a)

Heringia pubescens (Delucchi & Pschorr-Walcher, 1955)
Source: (Vujić 1999a)
Leucozona Schiner, 1860

Leucozona laternaria (Müller, 1776)
Syn: *Ischyrosyrphus laternarius* (ZMA)

Source: ZMA, MdG
Leucozona glaucia (Linnaeus, 1758)
Source: ZMA, AJL, SB, FD

Leucozona inopinata Doczkal, 2000
Source: AJL, JV

Leucozona lucorum (Linnaeus, 1758)
Source: ZMA, AJL, MdG

Melangyna Verrall, 1901
Melangyna compositarum (Verrall, 1873)

Syn: *Melangyna labitarum* (ZMA, MdG, (Lambeck 1968))
Source: FD, MdG

Melangyna quadrimaculata (Verrall, 1873)
Source: MdG

Melangyna umbellatorum (Fabricius 1784)
Source: MdG

Melanostoma Schiner, 1860
Melanostoma mellinum (Linnaeus, 1758)

Source: SMNH, ZMA, JV, MdG, ZCBF, FD, SG, (Glumac 1956a; Coe 1960; Lambeck 1968; Glumac 1972; De Groot 2004)

Melanostoma scalare (Fabricius, 1794)

Syn: *Melanostoma gracile* (Strobl 1983a)

- Source: ZMA, ZCBF, MdG, FD
(Strobl 1893b)
- Meligramma* Frey, 1946
- Meligramma cincta*** (Fallén, 1817)
Syn: *Melangyna cincta* (SMNH),
Epistrophe cincta (Trieste (Glumac 1972), *Fagisyrphus cinctus* (Lambeck 1968))
Source: SMNH, Trieste, ZMA, ZCBF, (Glumac 1972; Lambeck 1968)
- Meligramma cingulata*** (Egger, 1860)
Source: SMNH, DF
- Paragus* Latreille, 1804
- Paragus albifrons*** (Fallén, 1817)
Source: (Glumac 1956a)
- Paragus bicolor*** (Fabricius, 1794)
Source: SMNH, (Strobl 1909; Glumac 1956a)
- Paragus bradescui*** Stanescu, 1981
Syn: *Paragus bicolor* var. *sexarcuatus* (Glumac 1956a)
Source: (Glumac 1956a; Vujić et al. 1999)
- Paragus finitimus*** Goedlin, 1971
Source: ZCBF
- Paragus haemorrhouus*** Meigen, 1822
Source: MdG, ZCBF
- Paragus pecchiolii*** Rondani, 1857
Syn: *Paragus majoranae* (ZMA)
Source: ZMA, MdG
- Paragus tibialis*** (Fallén, 1817)
Source: Trieste, MdG, (Strobl 1893b; Strobl 1909; Glumac 1956a; Glumac 1956b, Coe 1960; Lambeck 1968; Glumac 1972)
- Parasyrphus Matsumura, 1917
- Parasyrphus annulatus*** (Zetterstedt, 1838)
Source: SMNH, ZMA, ZCBF
- Parasyrphus lineola*** (Zettterstadt, 1843)
- Syn: ***Syrphus lineola*** (Strobl 1909)
Source: SMNH, FD, (Strobl 1909)
- Parasyrphus macularis*** (Zetterstedt, 1843)
Source: SMNH, ZCBF
- Parasyrphus malinellus*** (Collin, 1952)
Source: MdG
- Parasyrphus punctulatus*** (Verrall, 1873)
Source: MdG
- Parasyrphus vittiger*** (Zetterstedt 1843)
Syn: *Mesosyrphus vittiger* (Lambeck 1968), *Epistrophe vittiger* (Glumac 1972)
Source: MdG, (Strobl 1909; Lambeck 1968; Glumac 1972)
- Pipiza Fallén, 1810
- Pipiza austriaca*** Meigen, 1822
Source: MdG
- Pipiza festiva*** Meigen, 1822
Source: DF
- Pipiza noctiluca*** (Linnaeus, 1758)
Source: MdG, (Coe 1960; De Groot 2004)
- Pipiza quadrimaculata*** (Panzer, 1802)
Source: MdG, JV, ZCBF
- Pipizella Rondani, 1856
- Pipizella annulata*** (Macquart, 1829)
Source: MdG, (Vujić 1997)
- Pipizella bispina*** Šimić, 1987
Source: (Vujić 1997)
- Pipizella divicoi*** (Goedlin, 1974)
Source: (Vujić 1997)
- Pipizella maculipennis*** (Meigen, 1822)
Syn: *Heringia maculipennis* (Glumac 1956a; Glumac 1956b; De Groot 2004)
Source: (Glumac 1956a; Glumac 1956b, De Groot 2004)

Pipizella viduata (Linnaeus, 1758)
Syn: *Pipiza viduata* (Glumac 1956a),
Pipizella varipes (Lambeck 1968)
Source: MNHV, JV, FD, (Glumac
1956a; Lambeck 1968)

Pipizella virens (Fabricius, 1805)
Syn: *Heringia virens* (Vienna)
Source: MNHV, ZCBF, (Strobl
1893a; Glumac 1956a; Leclerq 1961;
Vujić 1997)

Platycheirus Le Peletier & Serville,
1828

Platycheirus albimanus (Fabricius,
1781)
Source: SMNH, ZMA, Trieste, JV,
ZCBF, SG, (Strobl 1909; Leclerq
1961)

Platycheirus angustatus (Zetterstedt,
1843)
Source: (Strobl 1909)

Platycheirus clypeatus (Meigen,
1822)
Source: ZCBF, (Strobl 1893b; Strobl
1909; Lambeck 1968; Glumac 1972;
De Groot 2004)

Platycheirus europaeus Goedlin,
Maibach & Speight, 1990
Source: MdG, FD

Platycheirus fulviventris (Macquart,
1829)
Source: MdG

Platycheirus manicatus (Meigen,
1822)
Source: SMNH, ZMA, MNHV, ZCBF

Platycheirus melanopsis Loew, 1856
Source: AJL

Platycheirus peltatus (Meigen, 1822)
Source: MdG

Platycheirus podagrata (Zetterstedt,
1838)
Source: (Strobl 1909)

Platycheirus scutatus (Meigen, 1822)
Source: NNM, ZCBF, (Strobl 1909)

Platycheirus tetricus Dusek &
Laska, 1982
Source: MdG, (Vujić et al. 1993-
1994)

Pyrophaena Schiner, 1860
Pyrophaena rosarum (Fabricius,
1787)
Source: ZCBF, DF, MdG

Scaeva Fabricius, 1805
Scaeva dignota (Rondani, 1857)
Source: SMNH, ZCBF, MdG

Scaeva pyrastri (Linnaeus, 1758)
Syn: *Catabomba pyrastri* (Strobl
1893b; Strobl 1894), *Lasioglossum
pyrastri* (Novak & Kuštor 1982)
Source: SMNH, ZMA, Trieste, ZCBF,
AJL, SB, SG, (Strobl 1893b; Strobl
1894; Glumac 1956a; Coe 1960;
Glumac 1972; Novak & Kuštor 1982;
Radenković et al. 1995; De Groot
2004)

Scaeva selenitica (Meigen, 1822)
Syn: *Lasioglossum selenitica* (Glumac
1972)
Source: SMNH, ZMA, ZCBF, SB,
(Coe 1960; Glumac 1972; Radenković
et al. 1995)

Sphaerophoria Le Peletier & Serville,
1828

Sphaerophoria bankowskiae
Goedlin, 1989
Source: FD

Sphaerophoria batava Goedlin,
1974
Source: MdG

Sphaerophoria interrupta (Fabricius,
1805)
Syn: *Melithreptus menthrasti* (Strobl
1893b), *Sphaerophoria menthrasti*
(Trieste), *Sphaerophoria picta*
(Lambeck 1968)
Source: SMNH, Trieste, ZCBF,

(Strobl 1893b; Glumac 1956a; Lambeck 1968; Glumac 1972)

Sphaerophoria laurae (Goedlin, 1989)
Source: MdG

Sphaerophoria rueppelli
Wiedemann, 1830
Syn: *Melithreptus nitidicollis* Strobl 1893a
Source: MdG, (Strobl 1893a; De Groot 2004)

Sphaerophoria scripta (Linnaeus, 1758)
Syn: *Melithreptus dispar* (Strobl 1893b), *Melithreptus nigricoxus* (Strobl 1893b), *Melithreptus strigatus* (Strobl 1893b), *Melithreptus scriptus* (Strobl 1893b)
Source: SMNH, Trieste, MNHV, NNM, ZCBF, AJL, JV, SB, SG, (Strobl 1893a; Strobl 1893b; Glumac 1956a; Leclercq 1961; Glumac 1972; De Groot 2004)

Sphaerophoria taeniata (Meigen, 1822)
Syn: *Melithreptus taeniatus* (Strobl 1893a)
Source: SMNH, ZCBF, (Strobl 1893a)

Sphaerophoria virgata Goedlin, 1974
Source: ZCBF, MdG, (Vujić et al. 2001)

Syrphus Fabricius, 1775

Syrphus ribesii (Linnaeus, 1758)
Source: SMNH, ZMA, MNHV, NNM, ZCBF, SB, (Strobl 1893b; Strobl 1894; Strobl 1909; Glumac 1956a; Leclercq 1961; Glumac 1972; De Groot 2004)

Syrphus torvus Osten Sacken, 1875
Source: SMNH, ZCBF, MdG, (De Groot 2004)

Syrphus vitripennis Meigen, 1822
Source: SMNH, ZMA, ZCBF, MdG, JV, (Strobl 1894; Strobl 1909; Glumac 1956a; Coe 1960; Lambeck 1968; Glumac 1972)

Trichopsomyia Williston, 1888
Trichopsomyia flavitarsis (Meigen, 1822)
Syn: *Parapenium falvitarsis* (Coe 1960)
Source: (Coe 1960)

Xanthogramma Schiner, 1860
Xanthogramma citrofasciatum (De Geer, 1776)
Syn: *Xanthogramma festivum* (SMNH)
Source: SMNH, ZMA, NNM, DF (Glumac 1956a)

Xanthogramma dives (Rondani, 1857)
Source: MdG

Xanthogramma laetum (Fabricius, 1794)
Syn: *Xantogramma laeta* (ZMA)
Source: ZMA

Xanthogramma pedissequum (Harris, 1780)
Syn: *Xanthogramma ornatum* (Strobl 1893a; Glumac 1956a; Glumac 1956b)
Source: FD, MdG, SG, (Strobl 1893a; Glumac 1956a; Glumac 1956b; Leclercq 1961; De Groot 2004)

Xanthandrus Verrall 1901
Xanthandrus comitus (Harris, 1780)
Source: SMNH, ZMA, MdG (Lambeck 1968; Glumac 1972)

Subfamily: Eristalinae

Anasimyia Schiner, 1864
Anasimyia lineata (Fabricius, 1787)
Source: DF

Arctophila Schiner, 1860

Arctophila bombiformis (Fallén, 1810)

Source: SMNH

Blera Billberg, 1820

Blera fallax (Linnaeus, 1758)

Syn: *Cynorrhina fallax* (Glumac 1972)

Source: NMW, (Lambeck 1968; Glumac 1972)

Brachyopa Meigen, 1822

Brachyopa dorsata Zetterstedt, 1837

Source: (Vujić 1991)

Brachyopa pilosa Collin, 1939

Source: MdG

Brachyopa testacea (Fallén, 1817)

Source: (Vujić 1991)

Brachyopa vittata Zetterstedt, 1843

Source: ZMA, JV, (Vujić 1991)

Brachypalpoides Hippa, 1978

Brachypalpoides lentus (Meigen, 1822)

Syn: *Xylota lenta* (Coe 1960; Lambeck 1968)

Source: NMW, MdG, (Coe 1960; Lambeck 1968)

Brachypalpus Macquart, 1834

Brachypalpus chrysites Egger, 1859

Source: (Vujić & Milankov 1999)

Brachypalpus valgus (Panzer, 1798)

Source: (Vujić & Radovic 1990)

Callicera, Panzer, 1809

Callicera fagesii Guerin-Meneville, 1844

Source: MdG

Ceriana Rafinesque, 1815

Ceriana conopsoides (Linnaeus, 1758)

Syn: *Ceria conopsoides* (Strobl

1893a; Strobl 1893b)

Source: (Strobl 1893a; Strobl 1893b)

Chalcosyrphus Curran, 1925

Chalcosyrphus femoratus (Linnaeus, 1758)

Source: MdG

Chalcosyrphus nemorum (Fabricius, 1805)

Source: DF, MdG, (Milankov et al. 1995)

Chalcosyrphus piger (Fabricius, 1794)

Source: MdG

Cheilosia Meigen 1822

Cheilosia aerea Dufour, 1848

Syn: *Cheilosia zetterstadtii* (Strobl 1909)

Source: (Strobl 1909; Vujić 1996)

Cheilosia albipila Meigen, 1838

Source: (Vujić 1996)

Cheilosia albatarsis (Meigen, 1822)

Source: SMNH, MNHV, JV, (Vujić 1996)

Cheilosia antiqua (Meigen, 1822)

Syn: *Nigrocheilosia antiqua* (Vujić 1996)

Source: (Vujić 1996)

Cheilosia balkana Vujić, 1994

Source: (Vujić 1994; Vujić 1996)

Cheilosia barbata Loew, 1857

Source: SMNH, ZMA, AJL, JV, (Strobl 1893b; Strobl 1909; Lambeck 1968; Vujić 1996)

Cheilosia bracusi Vujić & Claussen, 1994

Source: (Vujić & Claussen 1994; Vujić 1996)

Cheilosia canicularis (Panzer, 1801)

Source: SMNH, ZMA, Trieste, ZCBF, (Vujić 1996; Vujić & Sikoparija 2001; De Groot 2004)

- Cheilosia carbonaria** Egger, 1860
Source: SMNH, (Coe 1960; Vujić 1996; De Groot 2004)
- Cheilosia chloris** (Meigen, 1822)
Source: SMNH, (Vujić 1996)
- Cheilosia chrysocoma** (Meigen, 1822)
Source: (Vujić 1996)
- Cheilosia crassisetata** Loew, 1859
Syn: *Nigrocheilosia crassisetata* (Vujić 1996)
Source: (Vujić 1996)
- Cheilosia cynocephala** Loew, 1840
Source: ZMA, Trieste
- Cheilosia derasa** Loew, 1857
Syn: *Nigrocheilosia derasa* (Vujić 1996)
Source: AJL, JV, (Vujić 1996)
- Cheilosia fasciata** (Schiner & Meigen, 1853)
Source: (Maček 1973; Maček 1978; Maček 1993)
- Cheilosia flavipes** (Panzer, 1798)
Source: Trieste, ZCBF, (Vujić 1996)
- Cheilosia fraterna** (Meigen, 1830)
Source: (Vujić 1996)
- Cheilosia frontalis** Loew, 1857
Source: (Vujić 1996)
- Cheilosia gagatea** Loew, 1857
Syn: *Nigrocheilosia gagatea* (Vujić 1996)
Source: MNHV, MdG, (Vujić 1996)
- Cheilosia gigantea** (Zetterstedt, 1838)
Source: (Vujić 1996)
- Cheilosia grisella** Becker, 1894
Syn: *Nigrocheilosia grisella* (Vujić 1996)
Source: (Vujić 1996)
- Cheilosia himantopa** (Panzer, 1798)
Source: NMW, SB, (Vujić & Sikoparija 2001)
- Cheilosia hypena** Becker, 1894
Source: (Vujić 1996)

- Cheilosia illustrata** (Harris, 1780)
Syn: *Syrphus oestraceus* (Strobl 1909)
Source: SMNH, ZMA, MNHV, AJL, DF, MdG, SB, (Strobl 1909; Lambeck 1968; Glumac 1972; Vujić 1996)
- Cheilosia impressa** Loew, 1840
Syn: *Platychirus impressa* (Strobl 1894)
Source: SMNH, ZMA, Trieste, AJL, JV, SB, (Strobl 1893b; Strobl 1894; Strobl 1909; Coe 1960; Lambeck 1968; Vujić 1996)
- Cheilosia impudens** Becker, 1894
Syn: *Nigrocheilosia impudens* (Vujić 1996)
Source: (Vujić 1996)
- Cheilosia lasiopa** Kowarz, 1885
Source: (Vujić 1996)
- Cheilosia laticornis** Rondani, 1857
Syn: *Cheilosia latifacies* (SMNH, Vujić 1996)
Source: SMNH, ZMA, AJL, SB, (Glumac 1956a; Vujić 1996)
- Cheilosia latifrons** (Zetterstedt, 1843)
Source: (Glumac 1956a)
- Cheilosia lenis** (Becker, 1894)
Syn: *Cheilosia omissa* (Vujić et al. 1993-1994; Vujić 1996)
Source: (Vujić et al. 1993-1994; Vujić 1996)
- Cheilosia lenta** Becker, 1894
Source: (Vujić et al. 1993-1994; Vujić 1996)
- Cheilosia loewi** Becker, 1894
Syn: *Nigrocheilosia loewi* (Vujić 1996)
Source: (Strobl 1909; Vujić 1996)
- Cheilosia longula** (Zetterstedt, 1838)
Source: SMNH, (Strobl 1909; Vujić 1996; De Groot 2004)
- Cheilosia melanura** (Becker, 1894)
Source: SMNH, (Vujić 1996)
- Cheilosia morio** (Zetterstedt, 1838)

Source: (Vujić 1996; Vujić et al. 2001)	1998
Cheilosia mutabilis (Fallén, 1817)	Source: (Vujić 1996)
Source: (Strobl 1909; Vujić 1996)	Cheilosia urbana (Meigen, 1822)
Cheilosia nigripes (Meigen, 1822)	Syn: <i>Cheilosia praecox</i> (Vujić 1996)
Syn: <i>Nigrocheilosia nigripes</i> (Vujić 1996)	Source: SMNH, ZCBF, Vujić 1996
Source: SMNH, (Glumac 1956b, Vujić 1996)	Cheilosia uviformis Becker, 1894
Cheilosia pagana (Meigen, 1822)	Source: (Vujić 1996)
Syn: <i>Cheilosia paganus</i> (Coe 1960)	Cheilosia variabilis (Panzer, 1798)
Source: SMNH, ZMA, (Coe 1960; Lambeck 1968; Vujić 1996; De Groot 2004)	Source: SMNH, ZMA, FD, (Strobl 1909; Coe 1960; Vujić 1996)
Cheilosia personata Loew, 1857	Cheilosia velutina Loew, 1840
Syn: <i>Nigrocheilosia personata</i> (Vujić 1996)	Source: MdG
Source: SMNH, AJL, SB, (Vujić 1996)	Cheilosia vernalis (Fallén, 1817)
Cheilosia pictipennis Egger, 1860	Source: SMNH, ZMA, AJL, (Strobl 1909; Glumac 1956a; Vujić 1996)
Source: Vujić 1996	Cheilosia vicina (Zetterstedt, 1849)
Cheilosia proxima (Zetterstedt, 1843)	Syn: <i>Nigrocheilosia vicina</i>
Source: ZMA, Vujić 1996, (Strobl 1909; Vujić 1996)	Source: MdG, (Vujić 1996)
Cheilosia pubera (Zetterstedt, 1838)	Cheilosia vulpina (Meigen, 1822)
Syn: <i>Nigrocheilosia pubera</i> (SMNH, (Vujić 1996))	Source: Trieste, AJL, FD, (Vujić 1996)
Source: SMNH, (Vujić 1996)	
Cheilosia ranunculi Doczkal, 2000	Chrysogaster Meigen, 1803
Source: MdG	Chrysogaster basalis Loew, 1857
Cheilosia rhynchops Egger, 1860	Source: MNHV
Source: (Vujić 1996)	Chrysogaster coemiteriorum (Linnaeus, 1758)
Cheilosia scutellata (Fallén, 1817)	Source: (Strobl 1893a; Strobl 1893b; Strobl 1894; Strobl 1909)
Syn: <i>Platychirus scutellata</i> (NNM)	Chrysogaster hirtella Loew, 1843
Source: SMNH, ZMA, NNM, AJL, JV, (Strobl 1894; Strobl 1909; Coe 1960; Vujić 1996; De Groot 2004)	Source: DF, MdG
Cheilosia semifasciata Becker 1893	Chrysogaster solstitialis (Fallén, 1817)
Source: (Maček 1976; Maček 1977)	Source: MNHV, JV, (Vujić 1999b; De Groot 2004)
Cheilosia soror (Zetterstedt, 1843)	
Source: ZMA, (Strobl 1909; Coe 1960; Lambeck 1968; Vujić 1996)	Criorhina Meigen, 1822
Cheilosia subpictipennis Claussen,	Criorhina asilica (Fallén, 1816)
	Source: MdG
	Criorhina berberina (Fabricius, 1805)
	Syn: <i>Criorrhina oxyanthea</i> (MNHV)
	Source: MNHV, NMW, AJL, DF, MdG, (Vujić & Milankov 1999; Vujić & Milankov 1990)

Criorhina floccosa (Meigen, 1822)

Source: DF

Criorhina pachymera (Egger, 1858)

Source: DF

Eristalinus Rondani, 1845

Eristalinus aeneus (Scopoli, 1763)

Syn: *Eristalis aeneus* (Strobl 1893a)

Source: SMNH, ZCBF, (Strobl 1893a; Strobl 1893b; Strobl 1909)

Eristalinus sepulchralis (Linnaeus, 1758)

Syn: *Eristalis sepulchralis*

Source: SMNH, (Strobl 1893a; Strobl 1893b; Strobl 1909; Glumac 1956a; Coe 1960; De Groot 2004)

Eristalis Latreille, 1804

Eristalis alpina (Panzer, 1798)

Source: SMNH, MdG, (Strobl 1894)

Eristalis arbustorum (Linnaeus, 1758)

Source: SMNH, MNHV, ZCBF, AJL, JV, SG, (Strobl 1893b; Strobl 1909; Glumac 1956a; Lambeck 1968; Glumac 1972; De Groot 2004)

Eristalis nemorum (Linnaeus, 1758)

Source: SMNH, SG, (Strobl 1893a; Strobl 1909; Lambeck 1968; Glumac 1972; Šimić & Vujić 1990)

Eristalis intricaria (Linnaeus, 1758)

Source: SG

Eristalis jugorum Egger, 1858

Source: SMNH, SB, (Šimić & Vujić 1990)

Eristalis horticola (De Geer, 1776)

Source: SMNH, AJL, MdG, (Strobl 1893b; Strobl 1909; Šimić & Vujić 1990)

Eristalis pertinax (Scopoli, 1763)

Source: SMNH, NNM, Trieste, ZCBF, SG, (Strobl 1909; Glumac 1956a; Šimić & Vujić 1990; De Groot 2004)

Eristalis rupium Fabricius, 1805

Source: (Lambeck 1968; Glumac 1972; Šimić & Vujić 1990)

Eristalis similis (Fallén, 1817)

Syn: *Eristalis pratorum* (SMNH, Trieste, ZCBF, AJL, SB, FD, (Glumac 1956a; Coe 1960; Šimić & Vujić 1990; De Groot 2004))

Source: SMNH, Trieste, ZCBF, AJL, SB, FD, (Glumac 1956a; Coe 1960; Šimić & Vujić 1990; De Groot 2004)

Eristalis tenax (Linnaeus, 1758)

Source: SMNH, Trieste, JV, ZCBF, AJL, FD, SG, (Strobl 1893a; Strobl 1893b; Strobl 1909; Glumac 1956a; Leclercq 1961; Lambeck 1968; Glumac 1972; Šimić & Vujić 1990; De Groot 2004)

Eumerus Meigen, 1822

Eumerus amoenus Loew, 1848

Source: (Coe 1960)

Eumerus flavitarsis Zetterstedt, 1843

Source: AJL, Trieste, (Strobl 1909; Vujić & Šimić 1995-1998)

Eumerus funeralis Meigen, 1822

Syn: *Eumerus tuberculatus* (Glumac 1956a)

Source: AJL, (Glumac 1956a)

Eumerus ornatus Meigen, 1822

Source: (Coe 1960)

Eumerus ovatus Loew, 1848

Source: MdG

Eumerus pulchellus Loew, 1848

Source: (Strobl 1893a)

Eumerus ruficornis Meigen, 1822

Source: Trieste

Eumerus strigatus (Fallén, 1817)

Syn: *Eumerus lunulatus* (Strobl 1893a; Strobl 1909)

Source: (Strobl 1909; Glumac 1956a; De Groot 2004)

Eumerus tricolor (Fabricius, 1798)

Source: ZMA, FD, (Strobl 1893b);

- Strobl 1909; Coe 1960
Ferdinandea Rondani, 1844
Ferdinandea cuprea (Scopoli, 1763)
Source: DF, MdG, ZCBF
Ferdinandea ruficornis (Fabricius, 1775)
Source: (De Groot 2004)
Helophilus Meigen 1822
Helophilus hybridus Loew, 1846
Source: MdG, (De Groot 2004)
Helophilus pendulus (Linnaeus, 1758)
Source: SMNH, ZCBF, (De Groot 2004)
Helophilus trivittatus (Fabricius, 1805)
Source: SMNH, ZCBF (Strobl 1893b; Strobl 1894; De Groot 2004)
- Lejogaster Rondani*, 1857
Lejogaster tarsata (Meigen, 1822)
Syn: *Liogaster splendida* (Glumac 1956a), *Chrysogaster splendida* (Strobl 1909), *Chrysogaster aenea* (Strobl 1893b)
Source: (Strobl 1909; Glumac 1956a; Strobl 1893b)
- Melanogaster Rondani*, 1857
Melanogaster viduata (Linnaeus, 1758)
Syn: *Chrysogaster viduata* (Glumac 1956a), *Melanogaster nuda* (MdG (Vujić et al 1999))
Source: MdG, (Glumac 1956a; Vujić et al 1999)
- Merodon Meigen, 1803
Merodon aeneus Meigen, 1822
Source: SMNH, MdG, (Strobl 1894; Strobl 1909; De Groot 2004)
Merodon albifrons Meigen, 1822
Syn: *Lampetia albifrons* (Glumac 1956a)
- Source: (Glumac 1956a)
Merodon armipes Rondani, 1843
Syn: *Lampetia armipes* (Glumac 1956a)
Source: SMNH, (Glumac 1956a)
Merodon avidus (Rossi, 1790)
Source: MdG
Merodon cinereus (Fabricius, 1794)
Source: SMNH, ZMA, (De Groot 2004)
Merodon constans (Rossi, 1794)
Syn: *Merodon montanus* (Strobl 1909)
Source: SMNH, AJL, (Strobl 1909; De Groot 2004)
Merodon equestris (Fabricius, 1794)
Source: SMNH, (Lambeck 1968)
Merodon rufus Meigen, 1838
Syn: *Merodon rufa* (De Groot 2004)
Source: AJL, MdG, (Coe 1960; De Groot 2004; Radenković & Vujić 1993/1994)
- Mesembrius Rondani* 1857
Mesembrius peregrinus (Loew, 1846)
Source: MdG
- Milesia Latreille*, 1804
Milesia crabroniformis (Fabricius, 1775)
Source: SMNH, DF
Milesia semiluctifera (Villers, 1789)
Source: (Strobl 1893a)
- Myathropa Rondani*, 1845
Myathropa florea (Linnaeus, 1758)
Source: SMNH, ZCBF, JV, (Strobl 1893a; Strobl 1893b; Strobl 1909; Glumac 1956a; Coe 1960; Lambeck 1968; Glumac 1972; De Groot 2004)
Myolepta Newman, 1838
Myolepta dubia (Fabricius, 1805)
Syn: *Myiolepta luteola* (Strobl 1893a)

Source: (Strobl 1893a; Strobl 1894)

Myolepta vara (Panzer, 1798)

Source: ZMA

Neoascia Williston, 1886

Neoascia annexa (Müller, 1776)

Source: MNHV, MdG, (Vujić 1990)

Neoascia meticulosa (Scopoli, 1763)

Source: MdG

Neoascia obliqua Coe, 1940

Source: FD

Neoascia podagrifica (Fabricius, 1775)

Syn: *Ascia podagrifica* (Strobl 1893a)

Source: MNHV, Trieste, ZCBF, FD,

JV, (Strobl 1893a; Strobl 1909;

Glumac 1956a; Vujić 1990)

Neoascia tenur (Harris, 1780)

Source: (Strobl 1893b; De Groot 2004)

Neoascia unifasciata (Strobl, 1898)

Source: MdG

Orthonevra Macquart, 1829

Orthonevra frontalis (Loew, 1843)

Syn: *Orthoneura frontalis* (Strobl

1893a)

Source: (Strobl 1893a)

Orthonevra nobilis (Fallén, 1817)

Syn: *Chrysogaster nobilis* (Strobl
1909)

Source: SMNH, Strobl 1909; Vujić
1999b)

Parhelophilus Girschner, 1897

Parhelophilus versicolor (Fabricius,
1794)

Source: (De Groot 2004)

Pelecocera Meigen, 1822

Pelecocera tricincta Meigen, 1822

Source: SMNH, DF, MdG

Psarus Latreille, 1804

Psarus abdominalis (Fabricius, 1794)

Source: (Strobl 1909)

Rhingia Scopoli, 1763

Rhingia campestris Meigen, 1822

Source: ZMA, NNM, ZCBF

Rhingia rostrata (Linnaeus, 1758)

Source: SMNH, (Strobl 1893b; De
Groot 2004)

Sphegina Meigen 1822

Sphegina clavata (Scopoli, 1763)

Source: AJL, (Vujić 1990)

Sphegina clunipes (Fallén, 1816)

Source: ZMA, Trieste, FD, MdG, SB,
(Strobl 1893b; Lambeck 1968; Vujić
1990; De Groot 2004)

Sphegina elegans Schummel, 1843

Syn: *Sphegina kimakovicsi* (Strobl
1909)

Source: ZMA, AJL, FD, (Strobl 1909;
Lambeck 1968; Glumac 1972; Vujić
1990)

Sphegina latifrons Egger, 1865

Source: (Vujić 1990)

Sphegina montana Becker, 1921

Source: ZMA, (Vujić 1990), AJL,
MdG

Sphegina sibirica Stackelberg, 1953

Source: AJL, MdG (Vujić 1990)

Sphegina sublatifrons Vujić, 1990

Source: (Vujić 1990)

Sphegina verecunda Collin, 1937

Source: AJL, (Lambeck 1968; Vujić
1990)

Sphiximorpha Rondani, 1850

Sphiximorpha subsessilis (Illiger,
1807)

Source: NMW

Spilomyia Meigen, 1803

Spilomyia manicata (Rondani, 1865)

Source: (De Groot 2004)

Spilomyia saltuum (Fabricius, 1794)

Source: (Strobl 1894)

Syritta Le Peletier & Serville, 1828

Syritta pipiens (Linnaeus, 1758)
Source: SMNH, Trieste, ZCBF, SG,
(Strobl 1893b; Strobl 1909; Glumac
1956a; Leclercq 1961; Lambeck 1968;
De Groot 2004)

Temnostoma Le Peletier et Serville,
1828

Temnostoma bombylans (Fabricius,
1805)
Source: AJL, DF, MdG, (Lambeck
1968; Glumac 1972; De Groot 2004)

Temnostoma meridionale
Krvosheina & Mamayev, 1962
Source: NMW

Temnostoma vespiforme (Linnaeus,
1758)
Source: AJL, MdG, (Coe 1960;
Lambeck 1968)

Volucella Geoffroy, 1762

Volucella bombylans (Linnaeus,
1758)
Source: SMNH, Trieste, MNHV,
AJL, MdG, DF, JV, SB, (Strobl 1909;
Lambeck 1968; De Groot 2004)

Volucella inanis (Linnaeus, 1758)
Source: SMNH, ZMA, MNHV, AJL,
MdG, DF, FD, SB, (Strobl 1893b;
Strobl 1894; Strobl 1909; Coe 1960;
Lambeck 1968; De Groot 2004)

Volucella inflata (Fabricius, 1794)
Source: MNHV, (Strobl 1909), DF

Volucella pellucens (Linnaeus, 1758)
Source: SMNH, ZMA, Trieste, ZCBF,
AJL, DF, FD, MdG, JV, (Strobl 1909;
Coe 1960; Lambeck 1968; De Groot
2004)

Volucella zonaria (Poda, 1761)
Source: ZMA, Trieste, NMW, ZCBF,
AJL, DF, FD, (Strobl 1909; Coe
1960)

Xylota Meigen, 1822

Xylota abiens Meigen, 1822
Source: MdG
Xylota caeruleiventris Zetterstedt,
1838
Source: AJL

Xylota florum (Fabricius, 1805)
Syn: *Zelimiya florum* (Trieste)
Source: Trieste, (Milankov et al.
1995; Vujić & Milankov 1999)
Xylota ignava (Panzer, 1798)
Source: (Strobl 1909; Milankov et al.
1995; Vujić & Milankov 1999)

Xylota jakutorum Bagatshanova,
1980
Source: MdG, SB, (Vujić & Milankov
1999)

Xylota segnis (Linnaeus, 1758)
Source: DF, MdG, JV, (Strobl 1893b;
Coe 1960; Lambeck 1968; Milankov
et al. 1995; Vujić & Milankov 1999;
De Groot 2004)

Xylota sylvarum (Linnaeus, 1758)
Source: Trieste, SB, MdG, (Coe
1960; Lambeck 1968; Milankov et al.
1995; Vujić & Milankov 1999; De
Groot 2004)

Xylota triangularis Zetterstedt, 1838
Source: (Milankov et al. 1995)
Xylota xanthocnema Collin, 1939
Source: AJL, MdG, (Coe 1960)

Table 2: List of omitted names

Names	References
A list of not retraced names	
<i>Eumerus lasilus</i>	Trieste
<i>Cheilosia brachyptera</i>	Glumac 1956a
<i>Cheilosia rufipes</i>	SMNH
<i>Melanostoma hyalinatum</i>	Strobl 1893
<i>Myiolepta ruficornis</i>	Strobl 1893
<i>Lasiophiticus lunulatus</i>	Strobl 1909
<i>Lasiophiticus obscurus</i>	Strobl 1909
<i>Syplomia fusca</i>	Sivec et al. 2003
<i>Syrphus lasiophtalmus</i>	Strobl 1909
Doubtful identification	
<i>Merodon spinipes</i>	De Groot 2004
<i>Merodon spicatus</i>	De Groot 2004
<i>Platycheirus transfugus</i>	De Groot 2004
<i>Xylota caeruliventris</i>	Milankov et al. 1995
Location not in Slovenia	
<i>Platycheirus aurolateralis</i> Stubbs, 2002	Dozckal et al. 2002

References

- Bartsch, H.D., Nielsen, T.R., Speight, M.C.D.**, 2002. Reappraisal of *Xylota caeruleiventris* Zetterstedt, 1838, with remarks on the distribution of this species and *X. jakutorum* Bagatshanova, 1980 in Europe. *Volucella* 6: 69-80.
- Coe, R. L.**, 1960: A further collection of Diptera from Jugoslavia, with localities and notes. *Glasnik Prirodjačkog Muzeja u Beogradu* B 16: 43-67.
- De Groot, M.**, 2004: Faunistic notes on hoverflies (Diptera: Syrphidae) in Slovenia. *Acta Entomologica Slovenica* 12(2): 217-228.
- Devetak, D., Podobnik, A., Napotnik, N., Jurc D. & Mastnak, C.**, 1977. Prispevek k flori, favni in ekologiji Krke v okolici Dobrave. *Varstvo narave*, Ljubljana 10: 3-22.
- Glumac, S.**, 1956a: Syrphidae (Diptera) slobodne teritorije Trsta (zone B) - Kopra i Umaga, sakupljene 1955 god. *Glasnik Prirodjačkog Muzeja srpske zemlje* B 8(3): 173-203.
- Glumac, S.**, 1956b: Zakonitosti rasprostranjenja i brojnosti vrsta familije Syrphidae (Diptera) Jugoslavije. *Glasnik prirodjačkog muzeja srpske zemlje* B8: 205-224.
- Glumac, S.**, 1972: Catalogus Faunae Jugoslaviae, III/IV Syrphoidea. Slovenska akademija znanosti in umetnosti, Ljubljana. 70 str.
- Gregori, J., Kryštofek, B., Sivec, I., Šere D. & Štangelj, M.**, 1984. Inventarizacija favne povirja Radulje in Lahinje. Prirodoslovni muzej Slovenije, Ljubljana. 27 str.
- Kopušar, N.**, 1997. Pomembnejše bolezni in škodljivci gojenih rastlin in primerjava med intenzivnim in ekstenzivnim pridelovanjem. V: M. Svetina (ured.), *Zbornik raziskovalnega tabora Bele vode* 96, str. 39-48, ERICO Velenje, Inštitut za ekološke raziskave, Velenje.
- Lambeck, H. J. P.**, 1968: Contribution to the knowledge of the Syrphid fauna of the Republic of Slovenia and adjacent territories (Diptera: Syrphidae). *Biol. vestnik* 16: 95-101.
- Leclercq, M.**, 1961: Syrphidae (Diptera) de Yougoslavie, I. *Fragmента Balcanica* 22(81): 179-181.

- Maček, J.**, 1973: Beitrag zur Kenntnis der Blattminen Sloweniens II. *Zoologischer Anzeiger* 191(5/6): 404-410.
- Maček, J.**, 1976: Untersuchungen zur hyponomologischen fauna Sloweniens. II. *Acta Entomologica Jugoslavica* 12(1-2): 59-65.
- Maček, J.**, 1977: Listni zavrtači Slovenije VI. Zb. Bioteh. fak. Univ. Ljubl., Ljubljana 28: 161-167.
- Maček, J.**, 1978: Listni zavrtači gozdnega rastja v Sloveniji. II. *Zbornik gozdarstva in lesarstva*, Ljubljana 16(1): 63-82.
- Maček, J.**, 1993: Die Blattminierinsekten Sloweniens. XXIII [Listni zavrtači Slovenije. XXIII]. Zb. Bioteh. fak. Univ. Ljubl., Ljubljana 61: 181-187.
- Milankov, V., Vujić, A. & Šimić, S.**, 1995: Species of Xylotini (Diptera: Syrphidae) from the Yugoslav region. *Entomologist's Gazette* 46: 209-216.
- Mršić, N.**, 1997: Biotic diversity in Slovenia, Slovenia the "hot spot" of Europe. 129 Ministrstvo za okolje in prostor, Uprava RS za varstvo narave. Ljubljana.
- Novak, T. & Kuštor, V.**, 1982: Zur Fauna der Wände dreier Höhlen Nordostsloweniens (Jugoslawien). *Die Höhle* 33(3): 27-32.
- Peck, L. V.**, 1988: Syrphidae. p. 363. In: A. Soos and L. Papp: Catalogue of Palearctic Diptera. Akad. Kiado, Budapest.
- Radenković, S., Šimić, S. & Vujić, A.**, 1995: Genus *Scaeva* Fabricius 1805 (Diptera, Syrphidae) on the Balkan peninsula. *Zbornik Matice srpske za prirodne nauke*, Novi Sad 88: 51-57.
- Radenković, S. & Vujić, A.**, 1993/1994: New data of genus *Merodon* Meigen, 1803 (Diptera: Syrphidae) for Serbia, Montenegro and Croatia. *Glasnik prirodnjačkog muzeja u Beogradu*, Beograd B48: 165-170.
- Reemer, M.**, 2005: Saproxylic hoverflies benefit by modern forest management (Diptera: Syrphidae). *Journal of Insect Conservation* 9: 49-59.
- Reemer, M., Smit, J. T. & Van Steenis, W.**, 2003: Changes in ranges of hoverflies in the Netherlands in the 20th century (Diptera: Syrphidae). - Proceedings of the 13th International Colloquium of the European Invertebrate Survey, Leiden, EIS-Nederland.
- Rotheray, G.**, 1993: Guide to Hoverfly Larvae (Diptera, Syrphidae). *Dipterist digest* 9: 1-155.
- Scopoli, J. A.**, 1763: Entomologia Carinolica exhibens insecta Carnioliae indigena et distributa in ordines, genera, species, varietates. Methodo Linnaeana. Trattner, Vindobonae. (IV), XXXII, 424.
- Šimić, S. & Vujić, A.**, 1990: Vrste roda *Eristalis* Latreille, 1804 (Diptera Syrphidae) iz zbirke instituta za biologiju u Novom Sadu. *Glasnik Prirodnog Muzeja u Beogradu* B 45: 115-126.
- Sivec, I., Horvat, B. & Trilar, T.**, 2003: Dvokrilci - Diptera. V: Sket, B., Gogala, M. & Kuštor, V. (Ured.), Živalstvo Slovenije, str. 419-432, Tehniška založba Slovenije, Ljubljana.
- Speight, M. C. D.**, 2005: Species accounts of European Syrphidae (Diptera) 2005. pp. 242. M. C. D. Speight, E. Castella, J.-P. Sarthou and C. Monteil Syrph the Net, the database of European Syrphidae. Syrph the Net publications, Dublin.
- Speight, M. C. D., Sarthou, E. & Monteil, C.**, 2004: Syrph the Net, the database of European Syrphidae. Syrph the Net publications. Dublin.
- Ståhl, G., Hippa, H., Rotheray, G., Muona, J. & Gilbert, F.**, 2003: Phylogeny of Syrphidae (Diptera) inferred from combined analysis of molecular and morphological characters. *Systematic entomology* 28(4): 433-450.
- Strobl, P. G.**, 1893a: Beiträge zur Dipterenaufzählung des österreichischen Litorale. *Wiener Entomologische Zeitung* 12(2): 74-80.
- Strobl, P. G.**, 1893b: Die Dipteren von Steiermark I. *Mitteilungen Natur Verein für Steiermark* 29.

- Strobl, P. G.**, 1894: Die Dipteren von Steiermark II. *Mitteilungen Natur Verein für Steiermark* 46: 199.
- Strobl, P. G.**, 1909: Die Dipteren von Steiermark IV. *Mitteilungen Natur Verein für Steiermark* 4: 192.
- Van de Goot, V. S.**, 1981: De zweefvliegen van Noordwest-Europa en Europees Rusland, in het bijzonder van de Benelux. KNNV Publisher. Hoogwoud.
- Van Veen, M.**, 2004: Hoverflies of Northwest Europe, Identification keys to the Syrphidae. KNNV Publishing. Utrecht.
- Vujić, A.**, 1990: Genera *Neoascia* Willington 1886 and *Sphegina* Meigen 1822 (Diptera: Syrphidae) in Yugoslavia and description of species *Sphegina sublatifrons* sp. nova. *Glasnik Prirodognog Muzeja u Beogradu* B 45: 77-93.
- Vujić, A.**, 1991: Species of genus *Brachyopa* Meigen (Diptera: Syrphidae). *Bulletin of Natural History Museum in Belgrade* 46: 141-150.
- Vujić, A.**, 1994: *Cheilosia balkana* sp. nov., new species of "proxima" group (Diptera, Syrphidae). *Entomofauna* 15 (39): 445-456.
- Vujić, A.**, 1996: Genus *Cheilosia* Meigen and related genera (Diptera: Syrphidae) on the Balkan Peninsula. Department of Natural Science of Matica srpska. Novi Sad, Matica srpska: 194.
- Vujić, A.**, 1997: The genus *Pipizella* (Diptera, Syrphidae) on the Balkan Peninsula and description of *Pipizella zloti* sp. n. *Dipterist Digest* 4: 51-60.
- Vujić, A.**, 1999a: The subgenus *Neocnemodon* Goffe, 1944 (Diptera, Syrphidae) on the Balkan Peninsula and description of *Heringia (Neocnemodon) larusi* spec. nov. *Dipteron* 2 (7): 133-142.
- Vujić, A.**, 1999b: The tribe Chrysogasterini (Diptera: Syrphidae) in the Balkan Peninsula, with the description of three new cryptic species. *Studia dipterologica* 6(2): 405-423.
- Vujić, A. & Claussen, C.**, 1994: *Cheilosia bracusi*, a new hoverfly from the mountains of Central and Southern Europe (Diptera: Syrphidae). *Bonn. Zoologische Beitraege* 45(2): 137-146.
- Vujić, A. & Milankov, V.**, 1990: Taksonomski status vrsta roda *Criorrhina* Meigen 1822 (Diptera: Syrphidae) zabeleženih u Jugoslaviji. *Glasnik Prirodognog Muzeja u Beogradu* B 45: 105-114.
- Vujić, A. & Milankov, V.**, 1999: New data for the tribes Milesiini and Xylotini (Diptera, Syrphidae) on the Balkan Peninsula. *Dipteron* 2(6): 113-132.
- Vujić, A. & Radović, D.**, 1990: Vrsta roda *Brachypalpus* Macquart 1834 (Diptera Syrphidae) u Jugoslaviji. *Glasnik Prirodognog Muzeja u Beogradu* B 45: 95-104.
- Vujić, A. & Sikoparija, B.**, 2001: Species related to *Cheilosia canicularis* (Diptera: Syrphidae) on the Balkan peninsula. *Acta Entomologica Serbica* 6(1-2): 107-120.
- Vujić, A. & Šimić, S.**, 1995-1998: Genus *Eumerus* Meigen 1822 (Diptera: Syrphidae) in area of former Yugoslavia. *Glasnik Prirodognog Muzeja u Beogradu* B 49-50: 173-188.
- Vujić, A., Šimić, S. & Radenković, S.**, 1999: Mediterranean species related to *Paragus hermannensis* Kaplan, 1981, with the description of *Paragus gorgus* spec. nov. (Diptera, Syrphidae). *Volucella* 4(1-2): 29-44.
- Vujić, A., Šimić, S. & Radenković, S.**, 2001: Endangered species of hoverflies (Diptera: Syrphidae) on the Balkan peninsula. *Acta Entomologica Serbica* 5(1-2): 93-105.
- Vujić, A., Šimić, S., Radović, D., Vapa, L., Radišić, P., Milankov, V. & Radenković, S.**, 1993-1994: Diversity in some groups of Diptera (Arthropoda: Insecta) on the Balkan Peninsula. *Ekologija* 28 - 29 (1-2): 1-8.
- Wraber, T.**, 1969: Floristika v Sloveniji v letu 1968. *Biološki vestnik*, Ljubljana 17: 187.

Received / Prejeto: 10. 9. 2007