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New data for the tribes Milesiini and Xylotini (Diptera, Syrphidae) on the Balkan Peninsula

[Neue Daten für die Triben Milesiini und Xylotini (Diptera, Syrphidae) von der Balkanhalbinsel]

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Abstract: Distributional data are presented for four species of the tribe Milesiini (genus *Criorhina* MEIGEN, 1822) and 13 species of four genera of the tribe Xylotini (*Brachypalpoides* HIPPA, 1978, *Brachypalpus* MACQUART, 1834, *Chalcosyrphus* CURRAN, 1925, *Xylota* MEIGEN, 1822) occuring on the Balkan Peninsula. The species *Criorhina ranunculi* (PANZER, [1804]) is recorded on the Balkan Peninsula for the first time. A specimen of *Chalcosyrphus valgus* (GMELIN, 1790) from Dubasnica mountain (Serbia) presents the first verified record of the species on the Balkan Peninsula. Previously published reports of *Xylota coeruleiventris* ZETTERSTEDT, 1838 on the Peninsula actually belong to *X. jakutorum* BAGACHANOVA, 1980. *Brachypalpus laphriformis* (FALLÉN, 1816), *B. valgus* (PANZER, [1798]), *Criorhina asilica* (FALLÉN, 1816), *Xylota jakutorum* and *X. florum* (FABRICIUS, 1805) have been collected for the first time in Montenegro. The record of *Brachypalpus valgus* from Verno mountain is the first for Greece. A key to genera and species of the tribe Xylotini on the Balkan Peninsula and illustrations of characteristic morphological features are presented.

Key words: Syrphidae, *Brachypalpoides*, *Brachypalpus*, *Chalcosyrphus*, *Criorhina*, *Xylota*, Balkan Peninsula

Zusammenfassung: Verbreitungsangaben für vier Arten der Tribus Milesiini (Gattung *Criorhina* MEIGEN, 1822) und 13 Arten aus vier Gattung der Tribus Xylotini (*Brachypalpoides* HIPPA, 1978, *Brachypalpus* MACQUART, 1834, *Chalcosyrphus* CURRAN, 1925, *Xylota* MEIGEN, 1822), die auf der Balkanhalbinsel vertreten sind, werden vorgestellt. Die Art *Criorhina ranunculi* (PANZER, [1804]) wird zum ersten Mal auf der Balkanhalbinsel festgestellt. Ein Exemplar von *Chalcosyrphus valgus* (GMELIN, 1790) aus dem Dubasnica Gebirge (Serbien) stellt den ersten sicheren Nachweis der Art von der Balkanhalbinsel dar. Früher publizierte Angaben von *Xylota coeruleiventris* ZETTERSTEDT, 1838 von der Halbinsel gehören tatsächlich zu *X. jakutorum* BAGACHANOVA, 1980. *Brachypalpus laphriformis* (FALLÉN, 1816), *B. valgus* (PANZER, [1798]), *Criorhina asilica* (FALLÉN, 1816), *Xylota jakutorum* and *X. florum* (FABRICIUS, 1805) wurden zum ersten Mal in Montenegro gesammelt. Der Nachweis von *Brachypalpus valgus* von dem Verno Gebirge ist der erste für Griechenland. Ein Schlüssel zu den Gattungen und Arten der Tribus Xylotini von der Balkanhalbinsel und Abbildungen der charakteristischen morphologischen Eigenschaften werden gegeben.

Stichwörter: Syrphidae, *Brachypalpoides*, *Brachypalpus*, *Chalcosyrphus*, *Criorhina*, *Xylota*, Balkanhalbinsel

Introduction: The genera *Brachypalpoides* HIPPA, 1978, *Brachypalpus* MACQUART, 1834, *Chalcosyrphus* CURRAN, 1925, *Criorhina* MEIGEN, 1822 and *Xylota* MEIGEN, 1822 were most recently studied in the area of the former Yugoslavia nine years ago (VUJIĆ & MILANKOV, 1990; VUJIĆ & RADOVIĆ, 1990; MILANKOV et al., 1995). During the past nine years new material has been collected from many localities on the Balkan Peninsula. This paper presents the results of these investigations together with the examined material from the LANGHOFFER's collection (LANGHOFFER, 1919).

VUJIĆ & MILANKOV (1990) and VUJIĆ & RADOVIĆ (1990) presented keys to species of the genera *Brachypalpus* and *Criorhina* from the Balkan Peninsula. A supplement to the key for *Criorhina* species and a key for the genera and species of the tribe Xylotini (except *Brachypalpus*) are presented in this paper.

Material and methods: Specimens were studied from the collections of the Institute of Biology (IBNS), Novi Sad (leg. Milankov Vesna, Radišić, P., Radnović Sanja, Radnović, D., Radović Dragana, Šimić Smiljka & Vujić A.), Croatian Natural History Museum (CNHM), Zagreb (leg. Langhoffer) and Slovene Natural History Museum (SNHM), Ljubljana (leg. Sivec).
Determinations were based on the structure of the male genitalia and other morphological characteristics mentioned by HIPPA (1968, 1978), SACK (1928-1932), STUBBS & FALK (1983), and VUJIĆ & RADOVIĆ (1990).
Male genitalia were prepared and figured according to a standard procedure.
The locality records for the species were presented with the following collection data: region, municipality, date, and collector. In addition, the data on the specimens from IBNS were supplemented by UTM coordinates.

Results and Discussion:

Tribe Milesiini

Genus *Criorhina* RONDANI, 1845

Brachymyia WILLISTON, 1882

The genus is distributed in the Holarctic region, with eight species known for Europe. PECK (1988) consigns some of the European species generally regarded as belonging to this genus, to a separate genus *Brachymyia* WILLISTON, 1882.

The key for Balkan species (VUJIĆ & MILANKOV, 1990: 107) can be supplemented with new species for this area as follows:

1. Hind femur considerably thickened and swollen, especially in male; hind tibia greatly swollen **1a**

- Hind femur only moderately thickened, not swollen; hind tibia rather swollen **2**

1a. Mesoscutum olive-green, covered with predominantly pale hairs; tergite 2 pale haired; (male genitalia in figure 1d in: VUJIĆ & MILANKOV (1990)) ..... ***Criorhina pachymera* (EGGER, 1858)**

- Mesoscutum black, covered with predominantly dark hairs; tergite 2 black haired; male genitalia in figure 1 ..... ***Criorhina ranunculi* (PANZER, [1804])**

1. *Criorhina asilica* (FALLÉN, 1816)

C. asilica rarely occurs away from old *Fagus* forests. It is a very localized fly, known from only few localities on the Balkan Peninsula. The record from Durmitor is the first for Montenegro.

Distribution: Europe; **Europe:** all regions, except Ireland, Portugal and Greece; **Balkan Peninsula:** Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia, Bulgaria.

New records (IBNS): Montenegro: Durmitor (Kanjon Sušice CN-38, 2.vi.1994, 2 ♂♂, leg. Vujić, A.); **Serbia:** Kopaonik (Samokovska reka DP-70, 22.vi.1991, 2 ♂♂, leg. Vujić, A.; Jasle-Čukara DN-89, 28.v.1994, 1 ♀, leg. Vujić, A.); **Macedonia:** Kožuf (Konsko FL-06, 14.v.1990, 1 ♂ 1 ♀, leg. Vujić, A., Radnović, D.).

2. *Criorhina berberina* (FABRICIUS, 1805)

C. berberina is the most commonly collected of the European *Criorhina* species. It is found in coniferous and deciduous forests being associated with overmature and dying trees. The species appears in two color varieties, one closely similar to the *Bombus lucorum*-group of bumble bees and the other resembling the *Bombus muscorum*-group of species. Both color varieties are found together in the same localities.

Distribution: Palaearctic; **Europe:** all regions, except Norway, Finland, Portugal and Bulgaria; **Balkan Peninsula:** Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia.

New records (IBNS): Montenegro: Durmitor (Skakala CN-37, 25.vi.1995, 1 ♂, leg. Vujić, A.); **Serbia:** Kopaonik (Samokovska reka DN-89, 22.vi.1991, 2

Genus *Brachypalpoides* HIPPA, 1978

The range of the genus *Brachypalpoides* occupies the Holarctic and Oriental regions with many of the species in the eastern Palaearctic. Only one species is known from Europe.

5. *Brachypalpoides lentus* (MEIGEN, 1822) (figures 3, 9)

B. lentus (MEIGEN, 1822) occurs in different woodland types, especially in beech forests. On the Balkan Peninsula, *B. lentus* is known from many mountains (MILANKOV et al., 1995).

Distribution: Europe, West Siberia; **Europe:** all regions, except Portugal and Bulgaria; **Balkan Peninsula:** Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia.

New records (IBNS): Montenegro: Durmitor (Skakala CN-37, 2.vii.1993, 1 ♂, leg. Vujić, A; 25.vi.1995, 1 ♂, leg. Vujić, A; Sušički kanjon CN-37, 1.vii.1993, 1 ♂, leg. Vujić, A; Jablan jezero CN-48, 6.vii.1992, 1 ♂; Prutaš CN-37, 2.vii.1993, 1 ♂, leg. Radnović, S.); Biogradsko jezero CN-85 (Razvršje 17.vii.1995, 2 ♂♂, leg. Vujić, A.).

Genus *Brachypalpus* MACQUART, 1834

The genus *Brachypalpus* is distributed in the Holarctic and north-eastern part of the Oriental region. Three species are generally recognized in Europe. PECK (1988) also cited the species *B. meigeni* SCHINER, 1857, which is otherwise taken to be a color variety of *B. laphriformis* (FALLÉN, 1816).

6. *Brachypalpus chrisites* EGGER, 1859

B. chrysites EGGER, 1859 is a rarely seen insect in Europe today. According to SPEIGHT & LUCAS (1992) any European forest from which it is recorded deserves particular attention for conservation and protection.

Distribution: Europe; **Europe:** Scandinavia and mountainous parts of Europe south to Pyrenees; central Europe to the European part of Russia; **Balkan Peninsula:** Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia.

New records (IBNS): Montenegro: Durmitor (Crepulj poljana CN-48, 4.vii.1991, 1 ♀, leg. Vujić, A.; Ivan Do CN-47, 27.vi.1993, 1 ♀, leg. Radnović, D.;

Prutaš CN-37, 2.vii.1993, leg. Radnovic, S.); Biogradsko jezero CN-85, 28.iv.1990, 1 ♀, leg. Radnović, D., Vujić, A.; **Serbia:** Kopaonik (Samokovska reka DN-89, 2.v.1991, 2 ♂♂, leg. Vujić, A.; 2.v.1992, 1 ♀, leg. Vujić, A.; 24.v.1992, 1 ♂ 1 ♀, leg. Vujić, A.; 27.v.1994, 1 ♂, leg. Vujić, A.; Kadijevac DN-89, 21.vi.1991, 1 ♂, leg. Vujić, A., Radnović, D.; Sunčana dolina DN-89, 23.v.1993, 1 ♀, leg. Šimić, S.); Žljeb DN-33, 3.v.1991, 1 ♂ 1 ♀, leg. Vujić, A., Radnović, D..

7. *Brachypalpus laphriformis* (FALLÉN, 1816)

Brachypalus bimaculatus (MACQUART, 1829) of LANGHOFFER, 1919

B. laphriformis (FALLÉN, 1816) is a rare species known from old deciduous forests on localities scattered over Europe. The record from Durmitor is the first for Montenegro. The specimens from LANGHOFFER's collection determined as *B. bimaculatus* (MACQUART, 1829) were checked and they apparently belong to *B. laphriformis*.

Distribution: Europe; **Europe:** all regions except Luxembourg, Portugal, Bulgaria and Greece; **Balkan Peninsula:** Croatia, Montenegro, Serbia.

Published material (CNHM): Croatia (LANGHOFFER, 1919)**:** Zagreb, 1885, 1 ♂ (det. Langhoffer as *B. bimaculatus*); Klek, 20.vi.1910, 1 ♂ (det. Langhoffer as *B. bimaculatus*).

New records (IBNS): Montenegro: Durmitor (Skakala CN-37, 25.vi.1995, 2 ♀♀, leg. Vujić, A.); **Serbia:** Kopaonik (Samokovska reka DN-89, 22.vi.1991, 1 ♂, leg. Vujić, A.).

8. *Brachypalpus valgus* (PANZER, [1798])

Brachypalpus meigeni SCHINER, 1857 of LANGHOFFER, 1919

B. valgus (PANZER, [1798]) is the most commonly collected species of the genus on the Balkan Peninsula. It occurs in deciduous forests during early spring. These are the first records for Montenegro and Greece.

Distribution: Europe; **Europe:** Central Europe, from the Netherlands to Ukraine and from Poland to Greece; **Balkan Peninsula:** Croatia, Montenegro, Serbia, Bosnia and Herzegovina, Macedonia, Bulgaria, Greece.

Published material (CNHM): Croatia (LANGHOFFER, 1919)**:** Zagreb, 19.vi.1896, 1 ♀ (det. Langhoffer as *B. meigeni*); Zagreb, Draga, 4 ♂♂ 2 ♀♀ (det. Langhoffer as *B. valgus*).

New records (IBNS): Croatia: Benkovac WJ-47, 20.iii.1992, 1 ♀, leg. Stolić, S.; **Montenegro:** Rumija (Vladimir CM-55, 22.ii.1990, 1 ♂, leg. Vujić, A.;

CM-56, 21.ii.1990, 1 ♀, leg. Vujić, A.); **Serbia:** Kopaonik (Samokovska reka DN-89, 2.v.1992, 1 ♀, leg. Vujić, A.); Juhor (Dragoševac EP-15,25, 12.iii.1995, 1 ♂, leg. Vujić, A.); Rtanj EP-74, 14.iv.1991, 1 ♂, leg. Vujić, A.; Fruška gora (Ledinci DR-00, 25.ii.1990, 1 ♂, leg. Vujić, A.; 17.iv.1991, 1 ♀, leg. Vujić, A.; Glavica DR-00, iii.1994, 1 ♂, leg. Vujić, A.); Zrenjanin DR-52, iv.1992, 1 ♀, leg. Radišić, P.; Vršac (Široko bilo EQ-29, 22.iii.1991, 1 ♂, leg. Vujić, A.); **Greece:** Verno (Florina-Pisoderi EL-21, 11.v.1990, 1 ♂, leg. Vujić, A.).

Genus *Chalcosyrphus* CURRAN, 1925

The genus *Chalcosyrphus* was divided into seven subgenera by HIPPA (1978), with three of them, *Xylotodes*, *Xylotina* and *Xylotomima*, known from the Yugoslav region. The range of the genus *Chalcosyrphus* occupies the Holarctic and Oriental regions.

Key to Balkan species of the genus *Chalcosyrphus*

1. Front and middle femora reddish-yellow, if these basally brown or dark, then hind femur reddish-yellow to apex **2**

\- Front and middle femora black **4**

2. Front and middle femora basally brown, hind femur reddish-yellow to the apex; apical part of hind tibia and tarsi of hind legs brown ..... ***C. (Xylotomima) pannonicus*** **(OLDENBERG, 1916)**

\- Front and middle femora and basal two-thirds of hind femur yellow; tibiae and tarsi of hind leg completely black **3**

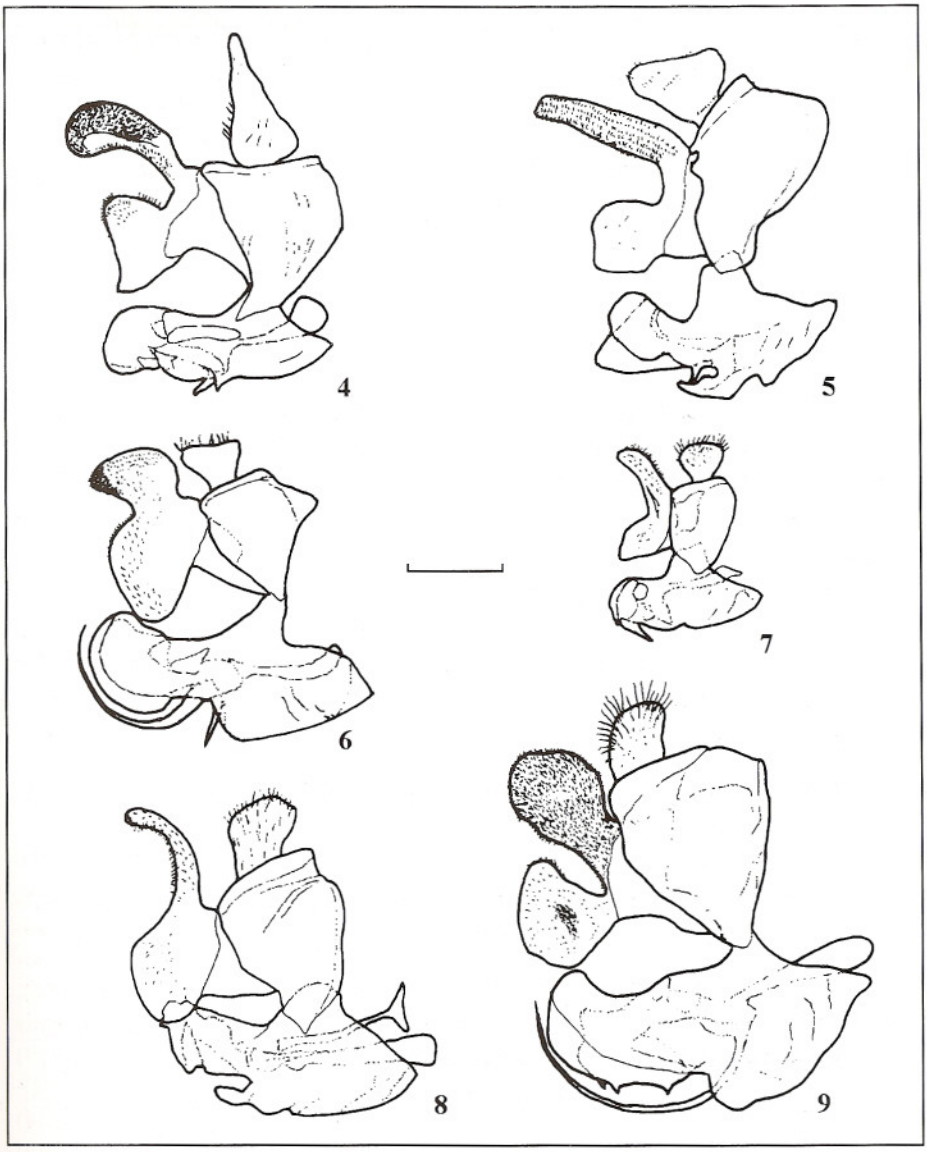
3. Hind femur dark on apical quarter; male: tergite 4 as long as tergite 3; male genitalia in figure 8 ..... ***C. (Xylotomima) rufipes*** **(LOEW, 1873)**

\- Hind femur dark only apically; male: tergite 4 more than 1,5 times as long as tergite 3; male genitalia in figure 5 ..... ***C. (Xylotomima) valgus*** **(GMELIN, 1790)**

4. Abdomen black or reddish-brown **5**

\- Tergites 2 and 3 with large, yellowish-red, lateral spots; legs black, only knees paler; hind femur in profile straight, broad, three times as broad as distal end of hind tibia, abdomen short; male genitalia in figure 6 ..... ***C. (Xylotina) nemorum*** **(FABRICIUS, 1805)**

5. Abdomen reddish-brown, except black tergite 1; mesonotum with short, ad-



Figures 4-9: 4-8: Male genitalia of *Chalcosyrphus* spp.**: 4.** *C. piger*; **5.** *C. valgus*; **6.** *C. nemorum*; **7.** *C. eunotus*; **8.** *C. rufipes*. **9.** Male genitalia of *Brachypalpoides lentus*. Scale 0,5 mm.

pressed hairs; legs predominantly black; hind femur medially very broad, covered with very short hairs; male genitalia in figure 4 ..... ***C. (Xylotodes) piger*** **(FABRICIUS, 1794)**

- Abdomen black; tergites 2-4 with white dusted, rectangular lateral spots;

mesoscutum, scutellum and metasternum with long, yellow hairs; knees, base of front and middle tibiae and tarsal segments 1-3, at least on middle legs, reddish-yellow; male genitalia in figure 7 ..... ***C. (Xylotodes) eunotus* (LOEW, 1873)**

The records for the species *Chalcosyrphus (Xylotina) nemorum* (FABRICIUS, 1805) (figure 6), *C. (Xylotomima) pannonicus* (OLDENBERG, 1916), *C. (Xylotodes) piger* (FABRICIUS, 1794) (figure 4), and *C. (Xylotomima) rufipes* (LOEW, 1873) (figure 8) are noted in MILANKOV et al. (1995).

9. *Chalcosyrphus* (*Xylotodes*) *eunotus* (LOEW, 1873) (figure 7)

C. eunotus (LOEW, 1873) was collected from only few localities on the Balkan Peninsula (VUJIĆ & RADOVIĆ, 1990; MILANKOV et al., 1995). The first record for Croatia (the vicinity of Zagreb) was published by LINDEN (1988, after DIRICKX, 1994) and the specimens from Plitvice lakes extend the range of the species south.

Distribution: Europe; **Europe:** Central Europe, from Great Britain to Romania and Serbia; **Balkan Peninsula:** Croatia, Serbia, Macedonia.

New records (IBNS): Croatia: Plitvička jezera WK-46, 30.iv.1990, 2 ♂♂, leg. Vujić, A., Radnović, D.

10. *Chalcosyrphus* (*Xylotomima*) *valgus* (GMELIN, 1790) (figure 5)

Chalcosyrphus femoratus auct., nec LINNAEUS, 1758

The species was cited in literature under the name *femoratus* LINNAEUS, 1758, but checking the LINNAEAN collection proved that this name must be synonymized with *Chalcosyrphus curvipes* (LOEW, 1854) and the oldest name for *femorata* of later authors must be *Musca valga* GMELIN, 1790 (THOMPSON et al., 1982). On the Balkan Peninsula, the species was published in several papers. The analysis of museum samples has shown that the specimen from Croatia (LANGHOFFER, 1919) belongs to *C. pannonicus*, and samples from Fruška gora (GLUMAC, 1959) to *C. rufipes* (MILANKOV et al., 1995). The specimens from Bulgaria (DRENSKY, 1934) and from Durmitor collected by Mihalyi and deposited at the collection of Natural History Museum in Budapest (ŠIMIĆ, 1987) have not been checked. The record from Dubašnica is the first for Serbia and the first verified one for the Balkan Peninsula.

Distribution: Palaearctic; **Europe:** all regions, except Great Britain, Ireland, Hungary, Portugal and Greece; **Balkan Peninsula:** Montenegro (?), Serbia, Bulgaria (?).

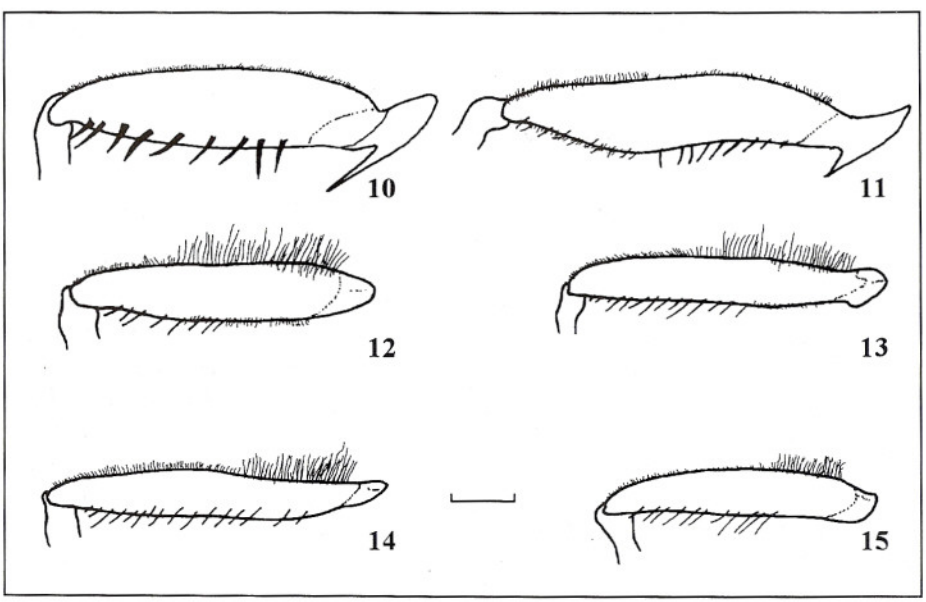
New records (IBNS): Serbia: Dubašnica (Demizlok EP-77, 14.v.1994, 1 ♂, leg. Vujić, A.).

Genus *Xylota* MEIGEN, 1822

The species of the genus *Xylota* are distributed in the Holarctic, Australian and Oriental region. PECK (1988) lists 11 species of this genus in Europe.

Key to Balkan species of the genus *Xylota*

1. Eyes holoptic (male) 2
- Eyes separated (female) 10
2. Hind trochanter with long, distinct spur 3
- Hind trochanter with one or two indistinct spurs 4



Figures 10-15: Hind femur of *Xylota* spp.: **10.** *X. segnis*, male; **11.** *X. ignava*, male; **12.** *X. florum*, male; **13.** *X. florum*, female; **14.** *X. jakutorum*, male; **15.** *X. jakutorum*, female. Scale 1,0 mm.

3. Hind trochanter with long, thin, curved, sharp spur (figure 10); hind femur ventrally with sparse, strong, short spines (figure 10); basal third of hind

tibia yellow; tergites 2 and 3 yellowish-red; frons and face greyish-white dusted; male genitalia in figure 20 ..... *X. segnis* (LINNAEUS, 1758)

- Hind trochanter with long stout projecting, dull spur (figure 11); hind femur with dense, short bristles ventrally (figure 11); tibiae pale, only hind tibia with medial dark band; tergites 2 and 3 reddish-orange; frons and face golden-yellow dusted; male genitalia on figure 22 ..... *X. ignava* (PANZER, [1798])

4. Tergite 4 with very dense, long, golden-yellow hairs and color of tergite not visible; hind trochanter with small, dull spur **5**

- Tergite 4 without dense golden-yellow hairs, or if present, then color of tergite clearly visible; hind trochanter usually mostly with one small dull spur ... **6**

5. Tibiae pale, sometimes hind tibiae apically darkened, tergite 2 with slightly visible reddish-yellow lateral spots; tergite 3 laterally with golden-yellow hairs; face grey dusted; male genitalia in figure 18 ..... *X. xanthocnema* COLLIN, 1939

- Only basal third of tibiae pale; golden-yellow hairs on tergite 2 form large, lateral spots; face golden-yellow dusted; male genitalia in figure 23 ..... *X. sylvarum* (LINNAEUS, 1758)

6. Abdomen black or with pale lateral spots on tergites 2 and 3 ..... **7**

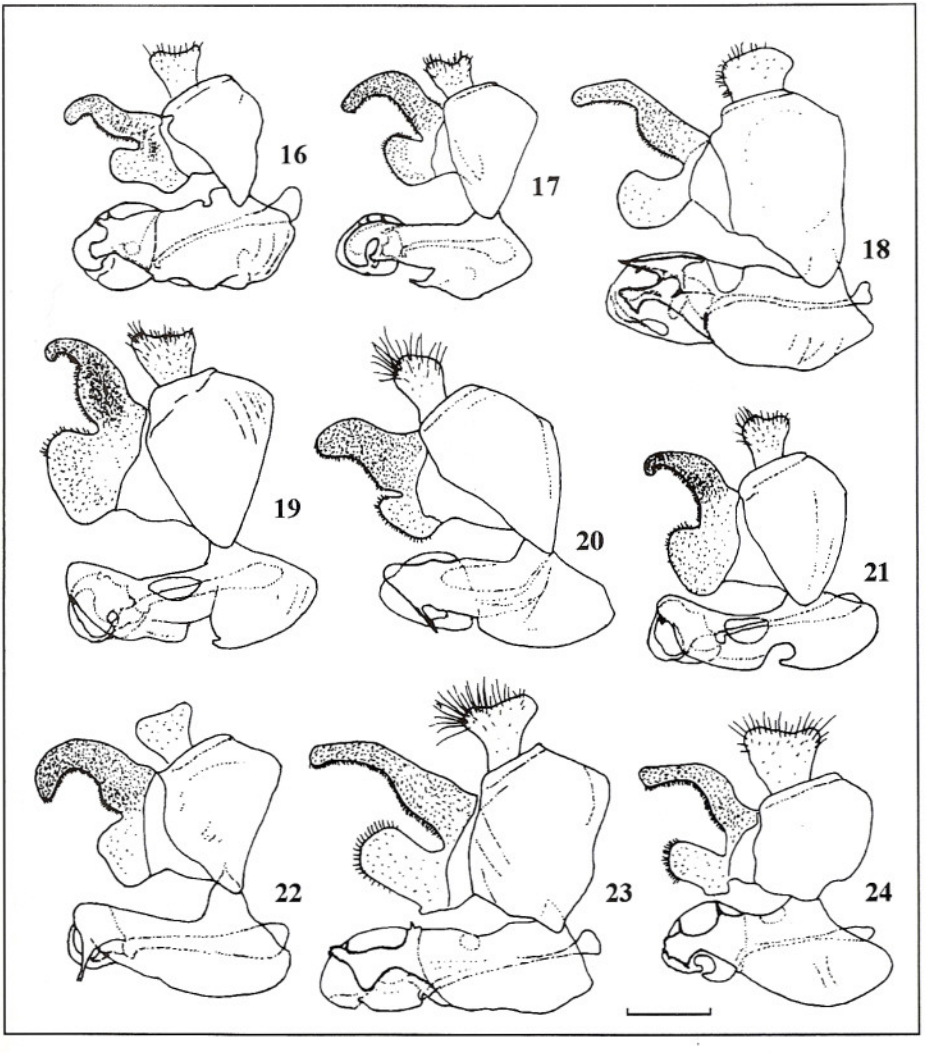
- Tergites 2 and 3 brown-yellow; frons and face whitish-grey dusted; legs black; basal third of tibiae and at least tarsal segments 1-3 of front and middle legs pale; male genitalia in figure 17 ..... *X. tarda* (MEIGEN, 1822)

7. Tergites 2 and 3 with pale spots **8**

- Abdomen dark; mesoscutum with band of black hairs between wing base; tergites 2 and 3 laterally with large, shiny, golden spots covered with long, yellow hairs; tergite 4 also with long, yellow hairs; mesonotum with long light-yellow hairs; coxae and hind femur dorsally with long, white hairs; femora black; basal third of tibiae, and tarsal segments 1 and 2 yellowish-red; male genitalia in figure 19 ..... *X. triangularis* (ZETTERSTEDT, 1838)

8. Basal third of hind tibia light-yellow; pale color clearly separated from dark **9**

- Only base of hind tibia reddish-yellow; pale coloration not clearly separated from dark; tergites 2 and 3 laterally with reddish-yellow spots; slender species with elongated abdomen; male genitalia in figure 16 ..... *X. abiens* (MEIGEN, 1822)



Figures 16-24: Male genitalia of *Xylota* spp.: **16.** *X. abiens*; **17.** *X. tarda*; **18.** *X. xanthocnema*; **19.** *X. triangularis*; **20.** *X. segnis*; **21.** *X. jakutorum*; **22.** *X. ignava*; **23.** *X. sylvarum*; **24.** *X. florum*. Scale 0,5 mm.

9. Tergite 2 longer than wide; lateral reddish-yellow spots on tergite 2 longitudinal, rectangular (figure 27); distal half of hind femur ventrally with sparse spines (figure 12); male genitalia in figure 24 ..... ***X. florum* (FABRICIUS, 1805)**

- Tergite 2 as long as wide; tergite 2 with transverse lateral reddish-yellow spots (figure 28); hind femur ventrally with short spines (figure 14); male

genitalia in figure 21 ..... *X. jakutorum* BAGACHANOVA, 1980

10. Tergite 4 with dense, long, yellow hairs, color of tergite not visible **11**

- Tergite 4 without yellow hairs, or if present, then color of tergite clearly visible **12**

11. Tibiae pale, only distal third of hind tibia darkened; tarsi of hind legs partly darkened; hind femur dorsally with short, erect, white hairs; lateral reddish-yellow spots on tergite 2 inconspicuous, tergite 3 laterally with golden hairs; face grey dusted ..... *X. xanthocnema* COLLIN, 1939

- Only basal third of tibiae pale; tarsal segments 1-3 of hind legs pale; hind femur dorsally with long, unequal, erect, white hairs; hind trochanter with two dull spurs; margins of shiny lateral spots on tergite 2 usually with yellow hairs; tergite 3 laterally with dense golden-yellow hairs; face yellow dusted .. .. *X. sylvarum* (LINNAEUS, 1758)

12. Tergites 2 and 3 yellow-red or reddish-brown **13**

- Abdomen dark or with lateral spots on tergites 2 and 3 ..... **15**

13. Hind femur ventrally with numerous small, dense spines **14**

- Hind femur ventrally with sparse, strong spines; femora black; basal third of tibia and at least tarsal segments 1-3 of front and middle legs pale; frons and face greyish-white dusted ..... *X. segnis* (LINNAEUS, 1758)

14. Large species (11-12 mm); face golden-yellow dusted; frons with broad, grey dusted band; tergites 2 and 3 bright-red; tergite 4 blue, mat; tibiae and tarsi pale, except two distal brown tarsal segments; hind tibia distally darkened ..... *X. ignava* (PANZER, [1798])

- Smaller species (8-10 mm); face whitish-grey dusted; frons narrower, laterally with grey dusted spots; tergite 2 with dark band; tergite 4 metallic shining; legs black; basal third of tibiae and tarsal segments 1-3 of front and middle legs white-yellow ..... *X. tarda* (MEIGEN, 1822)

15. Basal third of hind tibia light-yellow; pale color clearly separated from dark **16**

- Only base of hind tibia reddish-yellow; pale color not clearly separated from dark; tergites 2 and 3 laterally with reddish-yellow spots ..... *X. abiens* (MEIGEN, 1822)

16. Mesoscutum covered with adpressed yellow hairs **17**

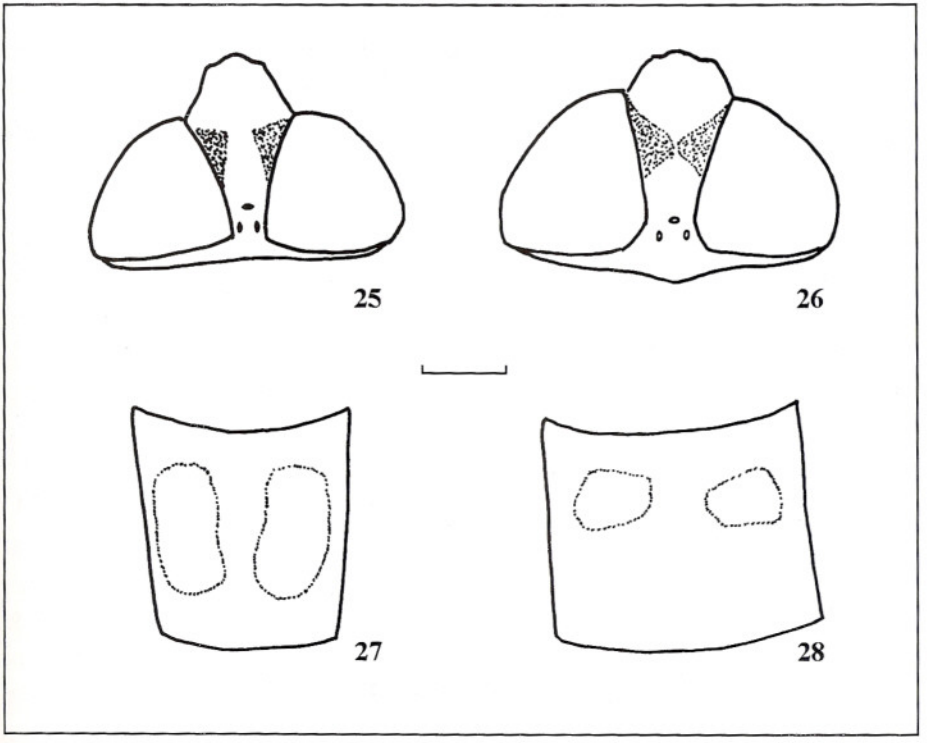
- Mesoscutum with long, erect, yellow hairs, except band of black hairs between wing base; coxae and hind femur dorsally with long white hairs .....

..... ***X. triangularis* (ZETTERSTEDT, 1838)**

17. Frons with two, separated dusted spots (figure 25); basal two-thirds of hind femur dorsally with long, erect, white hairs, some of them longer than others (figure 13) ..... ***X. florum* (FABRICIUS, 1805)**

\- Frons with connected, dusted spots (figure 26); only base of hind femur dorsally with long, white hairs (figure 15) .....
..... ***X. jakutorum* BAGACHANOVA, 1980**

The records for the species *Xylota tarda* (MEIGEN, 1822) (figure 17), and *X. triangularis* (ZETTERSTEDT, 1838) (figure 19) are noted in MILANKOV et al. (1995).



Figures 25-28: *Xylota* spp.: **25-26:** head, ventral view, female: **25.** *X. florum*; **26.** *X. jakutorum*; **27-28:** tergite 2: **27.** *X. florum*; **28.** *X. jakutorum*. Scale 1,0 mm.

11. *Xylota abiens* MEIGEN, 1822 (figure 16)

This is the first record of the species on the Pannonian mountain Fruška

gora, an area examined from 1956-1991, with 203 recorded syrphid species (VUJIĆ & GLUMAC, 1994). *X. abiens* MEIGEN, 1822 is the 204th species of hoverfly found on Fruška gora. The specimen published for Montenegro (ŠIMIĆ, 1987) belongs to *X. xanthocnema* COLLIN, 1939 (MILANKOV et al., 1995).

Distribution: Palaearctic; **Europe:** western, central and eastern parts; **Balkan Peninsula:** Croatia, Serbia, Macedonia.

New records (IBNS): Serbia: Fruška gora (Čortanovci DR-20, 19.iii.1994, 1 ♀, leg. Vujić, A.).

12. *Xylota florum* (FABRICIUS, 1805) (figures 12, 13, 24, 25, 27)

X. florum (FABRICIUS, 1805) is a rare species on the Balkan Peninsula known from few localities (MILANKOV et al., 1995). The record from Macedonia (GLUMAC, 1968) is unchecked. Two males from Biogradsko jezero lake are the first specimens of *X. florum* collected in Montenegro. This species prefers the old deciduous forests.

Distribution: Palaearctic; **Europe:** all regions, except Portugal, Bulgaria and Greece; **Balkan Peninsula:** Slovenia, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia (?).

New records (IBNS): Montenegro: Biogradsko jezero CN-85, 15.vii.1995, 2 ♂♂, leg. Vujić, A.; **Serbia:** Beljanica EP-69, (Žagubica 15.vii.1993, 1 ♀, leg. Radović Dragana).

13. *Xylota ignava* (PANZER, [1798]) (figures 11, 22)

The association with *Picea* forest in northern and continental Europe makes *X. ignava* (PANZER, [1798]) a northern and montane insect in Europe (SPEIGHT & LUCAS, 1992). On the Balkan Peninsula the species is distributed in different woodlands types, from high mountain spruce forest to Mediterranean evergreen woods.

Distribution: Palaearctic; **Europe:** all regions; **Balkan Peninsula:** Slovenia, Montenegro, Serbia, Macedonia, Bulgaria.

New records (IBNS): Montenegro: Boka Kotorska (Morinj CN-00, 4.v.1994, 1 ♂, leg Vujić, A.); Durmitor (Skakala CN-37, 29.vi.1993, 1 ♂, leg. Radišić, P.; 6.vii.1994, 1 ♀, leg. Vujić, A.; Kanjon Sušice CN-38, 2.viii.1994, 1 ♀, leg. Radišić, P.; Prutaš CN-37, 2.vii.1993, 1 ♀, leg. Radnović, S.).

Distribution: Europe; **Europe:** all regions (except extreme north and south); **Balkan Peninsula:** Croatia, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia.

New records: Croatia (SNHM): Velebit, 16.vii.1972, 1 ♀; **Montenegro** (IBNS): Orijen BN-90, 2.viii.1995, 1 ♂, leg. Vujić, A.; Durmitor (Jablan jezero CN-48, 6.vii.1992, 1 ♀, leg. Vujić, A.); Biogradsko jezero CN-85, (Razvršje 15.vii.1995, 1 ♂, leg. Vujić, A.; 17.vii.1995, 1 ♀, leg. Milankov Vesna, 3 ♂♂, leg. Vujić, A.).

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