

**MEDITERRANEAN BEE SPECIES, NEWLY RECORDED IN SLOVENIA
(HYMENOPTERA: APOIDEA)**

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Abstract – Five bee species are newly recorded in Slovenia: *Lasioglossum laterale* (Brullé, 1832), *Andrena thomsoni* DUCKE, 1898, *Melitta tomentosa* FRIESE, 1900, *Protosmia tiflensis* (MORAWITZ, 1876) and *Ceratina chalcites* GERMAR, 1839. The food plants of the concerned bee species are reported.

KEY WORDS: Hymenoptera, Apoidea, Halictidae, Andrenidae, Melittidae, Megachilidae, Apidae, fauna, Slovenia.

**Izveček – MEDITERANSKE VRSTE ČEBEL, PRVIČ NAJDENE V SLOVENIJI
(HYMENOPTERA: APOIDEA)**

Pet vrst čebel je prvič najdenih v Sloveniji: *Lasioglossum laterale* (Brullé, 1832), *Andrena thomsoni* DUCKE, 1898, *Melitta tomentosa* FRIESE, 1900, *Protosmia tiflensis* (MORAWITZ, 1876) in *Ceratina chalcites* GERMAR, 1839. Ugotovljene so hranilne rastline teh vrst.

KLJUČNE BESEDE: Hymenoptera, Apoidea, Halictidae, Andrenidae, Melittidae, Megachilidae, Apidae, favna, Slovenija.

Introduction

The climate change of the last years had unfavorable impacts on many wild bee species. The severe summer droughts caused likely radical decrease or extinctions of populations of many species active in the summer months. Their food plants did not flower or are affected in their nectar production, leading to a secondary impact on bees.

In early spring the species suffer also, due to the mild winters. They emerge earlier, but are then threatened by the random cold episodes.

In spite of these issues, I found during the last few years some still unrecorded Mediterranean species in Slovene Istria. Some of them are very rare and only a few specimens are owned by the world museums. We know very little about their life habits. I report here the findings of species, not listed for Slovenia by Gogala (1999), Gogala & Jenič (2003) or later publications.

List of species

HALICTIDAE

Lasioglossum laterale (Brullé, 1832)

Hrastovlje, Zanigrad, UTM: VL14, 29. 3. 2008 on *Prunus mahaleb*, 1♀, A. Gogala leg.

Lasioglossum laterale is rare in the northern Mediterranean basin. The species ranges from Spain to Turkey and to Switzerland and Hungary in the North (Ebmer, 1988). In early spring (March 29th) I observed and photographed females of this species on mahaleb cherry (*Prunus mahaleb*) in Zanigrad (at the Karst edge, limit of the Karst area). I observed specimens in copulation (not collected). Finding a male in this period would be important as only in a few halictid bee species males fly in the spring. In most species, males are active in the autumn, when the new generation emerges. I tried to confirm this observation in 2009, but the longer winter delayed the blooming of the mahaleb cherries. During the April flowering, I didn't find any specimen. In 2008, when I observed them, the flowering bush was one of a few already in bloom and the bees congregated there.

ANDRENIDAE

Andrena thomsoni Duce, 1898

Podpeč, UTM: VL14, 1. 5. 1994, 1♀, A. Gogala leg.

Hrastovlje, Zanigrad, UTM: VL14, 29. 3. 2008 on *Prunus mahaleb*, 1♀, A. Gogala leg.

The North Mediterranean andrenid bee *Andrena thomsoni* was found on the same mahaleb cherry bush as the previous species. The specimen from Podpeč, found in 1994, was misidentified as *A. congruens*.

The species is polylectic (visiting *Prunus* and *Salix* in spring, *Inula* and *Daucus* in June (Duce, 1898)), bivoltine and flies from March to May and in June. The species was described on the material collected by A. Duce near Trieste and Monfalcone in Italy, as well as in Rijeka (Croatia) by H. Friese.

MELITTIDAE

Melitta tomentosa Friese, 1900

Rakitovec, Kavčič, UTM: VL23, 15. 9. 2007, 1♀, A. Gogala leg., 12. 8. 2008, 1♂, A. Gogala leg.

Sočerga, Veli Badin, UTM: VL13, 10. 8. 2008, 1♂, A. Gogala vid., 19. 8. 2008, 1♀, photo A. Gogala, 1♂, A. Gogala vid.

Melitta tomentosa was described by H. Friese in 1900 based on two specimens collected in Rijeka, Croatia, by A. Korlević. These were the only known specimens until Michez & Eardley (2007) found 5 additional museum specimens from Quarner and Opicina near Trieste, where one male was found on *Campanula* by E. Graeffe in 1855. I found females in September 2007 on Mt. Kavčič above Rakitovec at the Karst edge in Slovene Istria. They collected pollen of *Campanula pyramidalis*. In the same place and on the same plant, I found one male in August 2008. In Veli Badin near Sočerga, not far away, I observed both sexes visiting flowers of *Campanula pyramidalis* as well. I conclude that the bee is monolectic, dependent on this Illyric-Adriatic plant species, distributed from North Italy to Albania along the Adriatic coast (Topić & Ilijanić, 2005).

MEGACHILIDAE

Protosmia tiflensis (Morawitz, 1876)

Osmia graeffei Schmiedeknecht, 1892

Dragonja, Stena, UTM: UL93, 27. 5. 2008 on *Stachys subcrenata*, 1♂, A. Gogala leg., 1♀1♂, photo A. Gogala

Protosmia tiflensis was described based on specimens from Caucasus, and *Osmia graeffei* Schmiedeknecht, 1892 from individuals caught in Trieste. It was found by E. Gräffe, who observed a female entering beetle burrows in wood (Gräffe, 1892). It is hypothesized that the species nests in these burrows. I noticed and photographed a copulating couple on the flower of *Stachys recta* (Lamiaceae) at the Stena near Dragonja in Istria on May 27, 2008. Additional males patrolled around these plants; I am consequently suggesting that it is the foodplant, but I cannot say it is the only one. Banaszak & Romasenko (1998) list Fabaceae and Lamiaceae as the flowers visited. Univoltine species, active from April to June.

APIDAE

Ceratina chalcites Germar, 1839

Rakitovec, UTM: VL13, 3. 6. 1992, 1♀, A. Gogala leg.

Movraž, Movraška vala, UTM: VL13, 5. 8. 1999, 1♀, A. Gogala leg.

Rakitovec, Kavčič, UTM: VL23, 19. 6. 2008, 1♀, A. Gogala leg.

North Mediterranean species, the largest *Ceratina* in Europe. Found in Slovenia at the Karst edge in Istria (Rakitovec and Movraž, submediterranean region). The specimens found in 1992 and 1999 were misidentified as *C. chalybea*.

Polylectic species (Terzo et al., 2007). In Slovenia observed on *Cirsium pannonicum* in June. Nests in hollow plant stems. Univoltine. Flies from April to October.

Discussion

The newly recorded species were already known from the vicinity, whether from the surroundings of Trieste in Italy, or the Croatian coast. But the Slovenian coast is



Fig. 1: *Lasioglossum laterale* female on *Prunus mahaleb*. Zanimograd, March 2008.

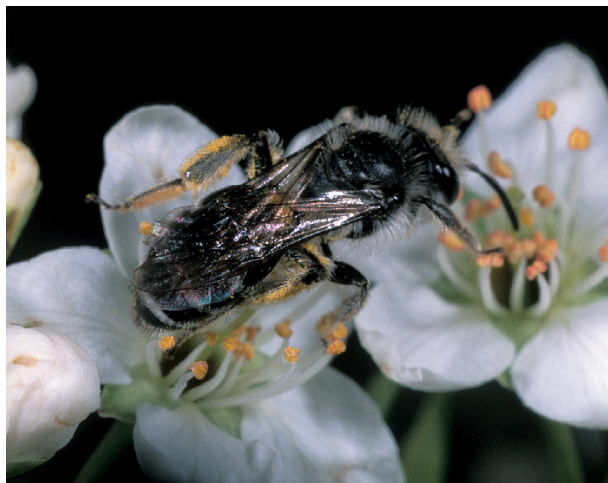


Fig. 2: *Andrena thomsoni* female on *Prunus mahaleb*. Although observed in March (early for most bee species), the specimens were worn off already.

generally less warm than the coast near Trieste or Rijeka, because it is built of sandstone. The warmer limestone ground is found in the interior at higher elevations, with the exception of a small area near the village Dragonja. All the species concerned were found at localities on the limestone ground. Most of them at the southern edge of the Kras (Karst) plateau, and *Protosmia tiflensis* in the isolated limestone area near Dragonja.

There is a question whether the species were overlooked in Slovenia in the past, or they spread their territories in the last warm years. The answer is clear for *Ceratina chalcites* and *Andrena thomsoni*, because older specimens were found in the collection. We do not know the answer for other species, but the populations of species must fluctuate in response to the weather conditions. With better knowledge of the food plants and other preferences of the species, we can expect to find more



Fig. 3: *Melitta tomentosa* female on *Campanula pyramidalis*. Veli Badin, August 2008.



Fig. 4: *Protosmia tiflensis* couple on *Stachys recta*. Dragonja, May 2008.

localities of rare species. We can search for *Melitta tomentosa*, for example, wherever *Campanula pyramidalis* grows, from North Italy to Albania. The territories of bee species, however, could be much smaller than the territories of their food plants, as they are dependent on other conditions also.

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Fig. 5: *Ceratina chalcites* female on *Cirsium pannonicum*. Kavčič, Rakitovec, June 2008.

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