



**NEW RECORDS OF BEES  
(HYMENOPTERA: APOIDEA: ANTHOPHILA) IN SLOVENIA**

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**Abstract** - Records of three species of solitary bees not known before in Slovenia are presented. *Andrena morio*, found in the Karst, and *Anthidium florentinum* from the coast, were recorded in 2011. *Anthophora dalmatica* was recognized from the museum specimens, originating from Istria.

KEY WORDS: Hymenoptera, Andrenidae, Megachilidae, Apidae, fauna, Slovenia

**Izveček** - NOVI PODATKI O ČEBELAH (HYMENOPTERA: APOIDEA: ANTHOPHILA) V SLOVENIJI

Predstavljeni so podatki o treh vrstah samotarskih čebel, ki v Sloveniji še niso bile znane. *Andrena morio*, najdena na Krasu, in *Anthidium florentinum* z obale sta bili zabeleženi v letu 2011. *Anthophora dalmatica* je bila prepoznana med muzejskimi primerki, zbranimi v Istri.

KLJUČNE BESEDE: Hymenoptera, Andrenidae, Megachilidae, Apidae, favna, Slovenija

During regular monitoring of the bee fauna of the Karst and Istria in Slovenia, two new species were recorded in the year 2011: *Andrena morio* and *Anthidium florentinum*. One additional species, *Anthophora dalmatica*, was recognized from the museum specimens. As this species is not well known, image of the closely related *A. atroalba* female is also presented for comparison. All three species new to Slovenia are members of the Mediterranean fauna and were found in the submediterranean faunal region which has the most diverse bee fauna. Several new records from this region were already published by Gogala (2009a & 2009b).

### List of species

#### ANDRENIDAE

#### *Andrena morio* Brullé, 1832

Kras: Lukovec, Poljska gora, VL07, 29. 5. 2011 on *Ruta divaricata*, *Jurinea mollis*, 1♂, A. Gogala leg.

Graeffe (1902) wrote about this Mediterranean species as rare in the Karst in June (»Im Juni auf dem Karste nicht häufig«). His record refers probably to the Italian part of the Karst (= Kras). I have not seen this remarkable species in the Slovenian Karst until May 29, 2011, when I observed several fresh females on Poljska gora near the village Lukovec. They were visiting *Ruta divaricata* (Rutaceae) and *Jurinea mollis* (Asteraceae). Some specimens collected only nectar, some also pollen. All specimens were completely black except for the lower part of the scopa that was whitish, what is typical for the species in the East Mediterranean. In the west, females often have white hairs in the form of a collar on the thorax. The western form was treated as the subspecies *A. m. lugubris* Erichson, 1840 by Warncke (1986). Gusenleitner & Schwarz (2002) treat it only as a colour form. If a colour form is limited to a clearly defined geographic area, it is reasonable to treat it as a subspecies. We know many Mediterranean species of bees where West and East Mediterranean subspecies are distinguished, or pairs of closely related species from both areas. In *Andrena morio*, however, no sta-



Fig. 1: *Andrena morio*, female on *Ruta divaricata*.



**Fig. 2:** *Anthidium florentinum*, male on *Lythrum salicaria*.

ble characters in the colour of pilosity can be recognized (M. Schwarz & F. Gusenleitner, pers. comm.).

*Andrena morio* is a polylectic and bivoltine species. It is active in May and June and from July to September (W estrich 1990). There is a question, however, whether the second generation exists near the northern edge of the species range, like the Karst of Slovenia.

#### MEGACHILIDAE

##### *Anthidium florentinum* (Fabricius, 1775)

Istra: Ankaran, Sv. Katerina, VL04, 5. 8. 2011 on *Lythrum salicaria*, 1<sup>♂</sup>, A. Gogala leg., 1\$1<sup>♂</sup>, photo A. Gogala

*Anthidium florentinum* is the largest of our carder bee species. Males are larger than females. I found a population at the sea coast in Ankaran, Slovenian Istria, in August. Males were patrolling flowering *Lythrum* plants. One large male didn't attack only other males, but also females. Only after I caught him, I could observe and photograph females foraging on *Lythrum* and couples during copulation.

*Anthidium florentinum* is a Mediterranean species, polylectic and univoltine, active in July and August.

#### APIDAE

##### *Anthophora dalmatica* Pérez, 1902

Istra: Padna, UL93, 23. 5. 1995, 1\$, A. Gogala leg.

Dragonja, Stena, UL93, 23. 5. 1995, 1\$, A. Gogala leg., 6. 5. 2000, 1\$, A. Gogala leg.

Strunjan, UL94, 12. 5. 1998, A. Gogala leg.

*Anthophora (Pyganthophora) dalmatica* is a poorly known species missing from all keys for identification. It is similar to *Anthophora retusa* (Linnaeus, 1758) to which the Slovenian specimens were aligned at first. The males are even more similar to *Anthophora atroalba* Lepeletier, 1841, with which they share the same form of the middle tarsus hair brush. Females, however, lack a clearly defined black band on the mesonotum. Black hairs are intermixed, instead, with lighter ones.

*Anthophora dalmatica* is an East Mediterranean species. Pérez (1902) described it on the female specimens from Dalmatia. In Slovenia it is present in Istria (sub-mediterranean region). It is probably a polylectic species, but in Greece frequently seen on *Muscari* (Hyacinthaceae) (J. Devalez, pers. comm.). As univoltine species, it flies in April and May.

### Discussion

Slovenian coastal region lies at the most northern bay of the Mediterranean sea. Many species of the Mediterranean fauna live here at the limits of their distribution



Fig. 3: *Anthophora dalmatica*, female collected in Padna, Istria.



**Fig. 4:** *Anthophora atroalba*, female from Rabat, Morocco.

areas. As the weather and temperatures change from year to year, so do also populations of these species. Many bee species are present only for a limited time, disappear after unfavorable conditions, and make a comeback again after some years. As we experience mild winters in recent years, it is not unusual to find species not recorded before. But all three species discussed in this paper were already known from the neighboring parts of Italy or Croatia. The records of *Anthophora dalmatica* are few just because the species is not present in the determination keys. Many records of *Anthophora atroalba* from the region probably refer to *A. dalmatica*.

The number of bee species, recorded in Slovenia at least once, is 560 at present.

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**Fig. 5:** *Anthophora dalmatica*, middle tarsus of the male.