



***HOPLITIS MAZZUCCOI* (SCHWARZ & GUSENLEITNER) IN SLOVENIA
AND *MICRERIADES* SPECIES OF THE EAST ADRIATIC COAST
(HYMENOPTERA: MEGACHILIDAE)**

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Abstract – First records of *Hoplitis mazzuccoi* (Schwarz & Gusenleitner) from Slovenia are presented with some notes on biology. The species is compared with *H. illyrica* (Noskiewicz), another member of the subgenus *Micreriades* Mavromoustakis.

KEY WORDS: *Hoplitis*, *Micreriades*, Hymenoptera, Megachilidae, fauna, Slovenia.

Izvleček – *HOPLITIS MAZZUCCOI* (SCHWARZ & GUSENLEITNER) V SLOVENIJI IN VRSTE PODRODU *MICRERIADES* VZHODNE JADRANSKE OBALE (HYMENOPTERA: MEGACHILIDAE)

Predstavljeni so prvi podatki o čebeli vrste *Hoplitis mazzuccoi* (Schwarz & Gusenleitner) v Sloveniji, z nekaj zapiski o biologiji. Vrsta je primerjana z vrsto *H. illyrica* (Noskiewicz), ki prav tako pripada podrodu *Micreriades* Mavromoustakis.

KLJUČNE BESEDE: *Hoplitis*, *Micreriades*, Hymenoptera, Megachilidae, favna, Slovenija.

During investigations of the Slovenian bee fauna, another species was newly discovered at the Karst edge in Slovene Istria, where several newly recorded species have already been found before (Gogala, 2009). In fact, it was found first in the same place (the proximity of a few meters) as the endemic *Melitta tomentosa* Friese.

Newly recorded species

Hoplitis mazzuccoi (Schwarz & Gusenleitner, 2005)

Istra: Rakitovec, Kavčič, UTM: VL23, 780 m, 30. 5. 2009, 1♀1♂, A. Gogala leg., 660 m, 2. 6. 2009, 1♂, A. Gogala leg.

It was June 22, 2006 when I noticed a small *Hoplitis* female at the entrance to a hollow dry *Rubus* stem. She returned regularly and obviously worked on a nest plug (fig. 1). At the time I didn't determine it correctly and only after May 30, 2009, when I collected male and female specimens at exactly the same place, I became aware of her identity. This time, the specimens patrolled a piece of dry wood and I observed a male (collected later) resting in a beetle burrow. The locality where all this happened is the southern slope of Mt. Kavčič above the village Rakitovec in Čičarija, Slovene Istria. The place is located at 780 m a.s.l., just below the rock escarpment and at the border with Croatia. A few days later I found males also in a place at 660 m, patrolling dry wood and also flowering *Lotus corniculatus* nearby. On June 9, the specimens were still patrolling the wood. A female was seen examining a beetle burrow.

As the biology of the *Micreriades* species is not well known, these are important observations. Unfortunately, the material used for nest construction cannot be seen on the photographs and the nest had not been opened. Some sand grains, however, could probably be among hairs of the photographed specimen, what could lead us to presume that this is the material used.

Hoplitis mazzucchi was described by M. Schwarz and F. Gusenleitner in 2005 (as a species of *Osmia*), when they distinguished it from the closely related *H. tenuispina* (Alfken, 1937). It is known from Austria, Slovakia, Hungary, Bulgaria and Turkey (Ungricht et al., 2008). So, it is an East Mediterranean species, while *H. tenuispina* is West Mediterranean. A well illustrated description of *H. mazzucchi* is found also in the article by B. Tkalců (1977) under the name of *H. tenuispina*. Both species are members of the subgenus *Micreriades* Mavromoustakis, 1958, recognized as a subgenus in *Hoplitis* by Praz et al. (2008).

***Micreriades* species of the East Adriatic coast**

Hoplitis illyrica (Noskiewicz, 1926) is another *Micreriades* species known from the East Adriatic coast. It is known from Croatia and Montenegro (lectotype comes from Hercegnovi, Montenegro), and also from some other Mediterranean countries: Italy, Macedonia, Greece, Bulgaria and Turkey (Ungricht et al., 2008). A description of a female is presented by Tkalců (1974) under the name *Heriades illyricus*. As *Micreriades* species are poorly known, I give here the distinguishing characters between *H. mazzucchi* and *H. illyrica*. The material of *H. illyrica*, used for comparison, is from the collection of Evgen Jaeger, preserved in the Slovenian Museum of Natural History. One male and one female were determined by Gijs van der Zanden in 1994. The data on the localities and collection dates are as follows:

Female: Croatia, Korčula Island, Vela Luka, 1.-15. 6. 1938, E. Jaeger leg.

Male: Croatia, Hvar Island, Jelsa, 1.-7. 6. 1935, E. Jaeger leg.

Differences between *Hoplitis mazzucchi* and *H. illyrica*

Hoplitis illyrica specimens are smaller than *H. mazzucchi*.

Females can be distinguished by the punctuation of the clypeus (fig. 2). In *H. mazzucchi*, the punctures on clypeus are very dense, spaces between them are narrower than the puncture diameter. In *H. illyrica*, the punctures are smaller and widely spaced in the central, convex part of the clypeus. The interval between punctures is at least as wide as the puncture diameter.

The head of *H. mazzucchi* female is wider than that of *H. illyrica*. The ratio between head width and head length is 0,98 in *H. mazzucchi* and 0,87 in *H. illyrica*.

Males can easily be distinguished by the shape of antennae, tergum 7 and sterna. Antennal segments of *H. mazzucchi* are longer and the last segment is curved to a hook-like point (less than in *H. leucomelana*, but more than in *H. ciliaris*). The last segment is not curved in *H. illyrica* (fig. 3).

Tergum 7 of both species has a spine in the middle of the apical edge. Beside that, tergum 7 of *H. mazzucchi* has angular dents or extensions laterally at the base (fig. 4, arrow). These are totally missing in *H. illyrica*.

Sternum 3 is also markedly different in compared species. In *H. mazzucchi*, its apical edge is incurved in the middle, and this curvature is covered with dense bristles, similar as in sternum 4. In *H. illyrica*, the apical edge of sternum 3 is almost straight, with only a few bristles (fig. 5). This character distinguishes *H. illyrica* also from *H. tenuispina*.



Fig. 1: *Hoplitis mazzucchi* female working on the nest plug in a dry *Rubus* stem. Mt. Kavčič, Rakitovec, June 22, 2006.



Fig. 2: Heads of *H. mazzuccoi* (left) and *H. illyrica* (right) females.



Fig. 3: Heads of *H. mazzuccoi* (left) and *H. illyrica* (right) males.



Fig. 4: Apical terga of *H. mazzuccoi* (left) and *H. illyrica* (right) males. The arrow points to a lateral dent in tergum 7, characteristic of *H. mazzuccoi*.



Fig. 5: Sterna of *H. illyrica* male.

Discussion

The discovery of another rarely found bee species at the Karst edge in Čičarija is yet another proof of the exceptionally high biodiversity in this area. Extensive grasslands, limestone ground, South-oriented inclination and the terrain which partly shelters from the strong bora wind are the most obvious causes for this diversity. The area is really worth of nature protection.

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