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NEW RECORDS OF *Pimpla turionellae* (HYMENOPTERA: ICHNEUMONIDAE) IN CROATIA

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Pimpla turionellae (Hymenoptera: Ichneumonidae) was found during research into the biology and ecology of the codling moth (*Cydia pomonella*) in north-west Croatia. The discovery of *Pimpla turionellae* represents a new record of this ichneumonid endoparasitoid for the Zagreb County.

Hymenoptera, Ichneumonidae, new record, Croatia

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Tijekom istraživanja biologije i ekologije jabukova savijača (*Cydia pomonella*) na području sjeverozapadne Hrvatske pronađena je parazitska osica *Pimpla turionellae* (Hymenoptera: Ichneumonidae). Pronalazak ove vrste predstavlja prvi nalaz ovoga endoparazitoida na području Zagrebačke županije.

Hymenoptera, Ichneumonidae, novi nalaz, Hrvatska

Pimpla turionellae is a common and widely distributed species in the Palaearctic and Oriental region. It is a solitary endoparasitoid of a wide variety of lepidopteran species mainly living in woodland, hedgerows and orchards (Meyer, 1925; Jackson, 1937; Führer, 1975; Mani et al., 1986). Parasitoid females attack exposed pupae as well as pupae hidden in plant tissues such as leaf rolls, bark, buds or shoots of trees (Bogenschütz, 1978). They feed on the haemolymph of their hosts and on floral nectar (Wäckers et al., 1996).

Order: Hymenoptera Linnaeus, 1758
Superfamily: Ichneumonoidea Latreille, 1802
Family: Ichneumonidae
Subfamily: Pimplinae Wesmael, 1845
Tribe: Pimplini
Genus: *Pimpla*
Species: *Pimpla turionellae* (Linnaeus 1758)

Pupal parasitoids rely strongly on plant-derived physical cues for exact host location. The host pupae are highly restricted in their abdominal movements and they do not produce cues related to feeding or defecation. In the case of pupation within plants, most host-related cues are not detectable for the searching parasitoids due to the concealing plant tissue. Members of the hymenopteran families, Ichneumonidae have evolved an active host-location strategy called vibrational sounding. Females "scan" substrates for hidden hosts by transmitting vibrations via their antennae and receiving the reflected signals via the subgenual organs in their tibiae. This echo-location on a solid substrate enables the detection of density differences that may be caused by the concealed body of the host or by its feeding tunnels or pupation chambers (Fischer, 2002). This form of echo-location has so far been demonstrated only for two species of the ichneumonid genus *Pimpla* (Henaut, 1990; Wäckers et al., 1998) and the species *P. turionellae* is one of them (Otten, 2000).

In the vegetation season of 2010 we found two specimens (♀ - length: 10.8 mm and ♂ - length: 9 mm) (Figure 1 & 2) of this species in codling moth pupae (*Cydia pomonella* L.) in an apple orchard in Kloštar Ivanić, Croatia. The first finding of *P. turionellae* in Croatia was recorded by Hensch in Krapina (1929) (Kolarov, 2008). After his records in the Krapina (Zagorje County) this is the first record of this species in the Zagreb County.

The codling moth, *C. pomonella,* is a major pest in apple and pear orchards, damaging a large part of the world production. It has been controlled by synthetic insecticides that select resistant populations in conventional and organic production systems as well. New control techniques have recently been adopted, such as mating disruption, but success is subjected to biological and environmental factors. Studies on natural regulation of the codling moth by parasitoids and predators are therefore of economic and ecological interest (Monteiro et al., 2008).

Figure 1. *Pimpla turionellae* (L.) (♂)

Figure 2. *Pimpla turionellae* (L.) (♀)

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