

First Record of Subfamily Histeromerinae (Hymenoptera: Braconidae) for the Balkan Peninsula

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Abstract: During the studies on the saproxylic organisms in Bistrishko Branishte Biosphere Reserve (Vitosha Mt., Western Bulgaria) in 2008 *Histeromerus mystacinus* WESMAEL has been found. Like in females a variation of antennomeres number for males (16 or 17) of *H. mystacinus* has also been recorded. The subfamily Histeromerinae FAHRINGER, the genus *Histeromerus* WESMAEL and the species *H. mystacinus* are reported for first time in Bulgaria and Balkan Peninsula.

Key words: Histeromerinae, *Histeromerus mystacinus*, first records, Bulgaria

Introduction

Histeromerinae FAHRINGER, 1930 is a small monotypic subfamily of Braconidae (Hymenoptera) with only four members, which are parasitoids of wood or fungus inhabiting beetle larvae or pupae of various families (SHAW, HUDDLESTON 1991).

The type species, *Histeromerus mystacinus* WESMAEL, 1838 is known from Europe – Belgium, Czech Republic, Denmark, England, France, Georgia, Germany, Hungary, Ireland, Lithuania, Netherlands, Poland, European Russia, Slovakia, Sweden, Ukraine, Wales (WESMAEL 1838, HEDQVIST 1976, SHENEFELT, MARSH 1976, TOBIAS *et al.* 1986, VAN ACHTERBERG 1992, 2009, SHAW 1995, SCHLARMANNOVA, LUKAS 2004, BROAD *et al.* 2009).

The species *H. mystacinus*, genus *Histeromerus* WESMAEL and subfamily Histeromerinae are reported below for first time in Bulgaria and Balkan Peninsula and some morphological and biological notes are given.

Material and Methods

The biological material has been collected in 2008 during investigations of saproxylic organisms on the territory of Bistrishko Branishte Biosphere Reserve situated in Vitosha Mt. (Western Bulgaria). Adults and cocoons of parasitoid wasps and larvae of their hosts were collected in the northern part of the Reserve near Vedra hut (42°35' N and 23°19' E) from wood of dry stem of various conifers and deciduous trees. The cocoons were placed in plastic banks at room temperature 20-23 °C for laboratory rearing of adult insects. The specimens are kept in the collection of University of Forestry, Sofia.

Results and Discussion

A total of 21 adults (3 ♂♂, 18 ♀♀) of *Histeromerus mystacinus* have been found in four localities (Fig. 1) as follows:

- **Locality 1**, 1500 m a.s.l.: five living adults (5 ♀♀) in semi-destroyed wood of dry stem of

Fagus silvatica L. with larvae of *Rhagium bifasciatum* FABRICIUS, 1775 and *Sinodendron cylindricum* (LINNAEUS, 1758); number of antennomeres: 19 (1), 20 (2), 21 (2); 05 July 2008.

- **Locality 2**, 1520 m a.s.l.: six adults (1 ♂, 5 ♀♀) reared from pupae found in dry stem wood of *Corylus avellana* L.; the pupae were collected on 20 April 2008 and the dead adults were checked on 19 June 2008; number of antennomeres: 16 (1 ♂), 18 (5 ♀♀).

- **Locality 3**, 1530 m: eight living adults (2 ♂♂, 6 ♀♀) in semi destroyed wood of *Betula pendula* ROTH stump with larvae of *Rhagium bifasciatum* and *Sinodendron cylindricum*; number of antennomeres: 17 (2 ♂♂), 18 (1 ♀), 19 (4 ♀♀), 20 (1 ♀); 05 July 2008.

- **Locality 4**, 1540 m: two adults (2 ♀♀, living and dead) found in a larval gallery of *Rhagium bifasciatum* in rotten wood of fallen stem of *Picea abies* (L.) KARSTEN; in addition of the wasps and remains of the mentioned beetle larva a group of cocoons (most probably of *H. mystacinus*) has been observed; number of antennomeres: 20 (1), the antennae of the other adult have been broken; 09 October 2008.

H. mystacinus is known as an ectoparasitoid on the preimaginal stages of some xylophagous beetles – *Sinodendron cylindricum* (Lucanidae), *Dicerca alni* (FISCHER, 1824) (Buprestidae), *Stenagostus rhombeus* (OLIVIER, 1790) (Elateridae), *Stictoleptura scutellata* (FABRICIUS, 1781), *Leptura aurulenta* FABRICIUS, 1792 and *Leptorhabdium caucasicum* KRAATZ, 1879 (Cerambycidae) (SHENEFELT, MARSH 1976, TOBIAS *et al.* 1986, SHAW 1995, LOBANOV 2003). In Slovakia the braconid was bred from Anobiidae (SCHLARMANNOVA, LUKAS 2004). According to VAN ACHTERBERG (1992) *Denticollis linearis* (LINNAEUS, 1758) (Elateridae), *Clytus arietis* (LINNAEUS, 1758) (Cerambycidae) and *Cis* sp. (Ciidae) have been reared together with *H. mystacinus* and they can be also suspected as hosts of the parasitoid.

With a view to find in locality 4 the cerambycid *Rhagium bifasciatum* can be added to the list of above mentioned potential hosts.

In Bistrishko Branishte Biosphere Reserve braconid adults have been found in decayed wood of four trees – *Fagus silvatica*, *Corylus avellana*, *Betula pendula* and *Picea abies*. The trees known to associate with *H. mystacinus* up to now are *B. pendula*, *F. silvatica*, *Alnus glutinosa* L., *Salix* and

Quercus spp. (BIGNELL 1902, DERKSEN 1941, VAN ACHTERBERG 1992, SHAW 1995). It has also been reared from a sporocarp of the fungus *Polyporus* sp. (VAN ACHTERBERG 1992). The variety of these trees – coniferous and deciduous on one hand, with soft and hart wood on the other suggests that *H. mystacinus* does not show particular preferences not only for the insect host but for their host tree also.

For the collected specimens of *H. mystacinus* a different number of their antennomeres was determined. The females' antennae have 18 (6 ex.), 19 (5), 20 (4) and 21 (2) segments and the males have 16 (1 ex.) and 17 (2). The variation of antennal segments is known phenomenon for *Histeromerus* and other genera of Braconidae. According to VAN ACHTERBERG (1992) for females of *H. mystacinus* the number of antennomeres varies (between 18 and 21) and for the males only 17-segmented antennae have been known yet. This characteristic has been used in

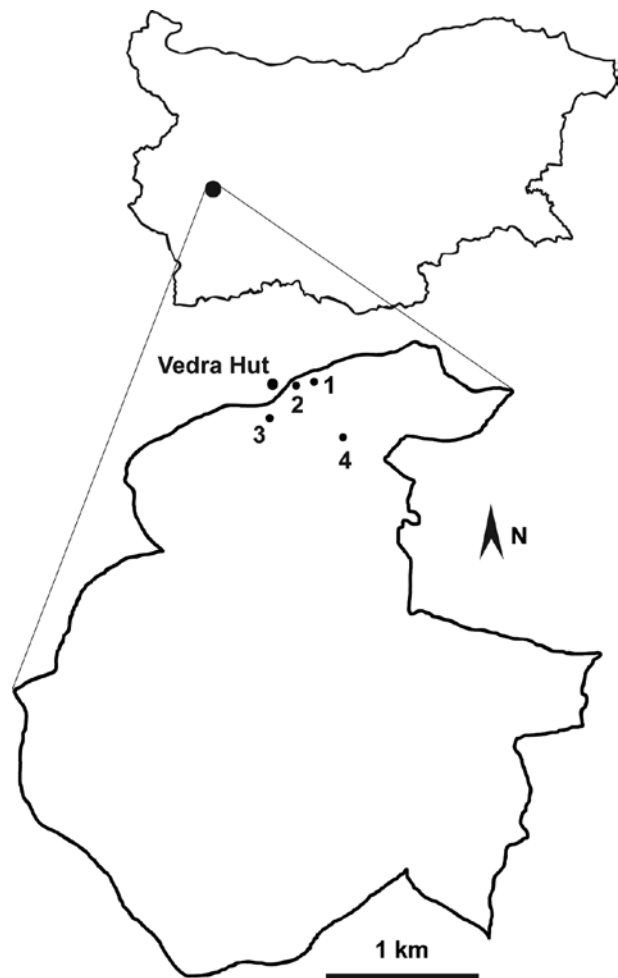


Fig. 1. Location of the Bistrishko Branishte Biosphere Reserve on Bulgaria and *H. mystacinus* localities mentioned in text.

the key to the species of genus *Histeromerus* (ibid.).

In Europe the large hymenopterous family Braconidae is presented by 33 subfamilies (VAN ACHTERBERG 2009) and 29 among them were known for the Bulgarian fauna until now (see VAN ACHTERBERG 1994, 2009, ATANASSOVA 1997, HE *et al.* 1997, KOLAROV 1997, BALEVSKI 1999, VAN ACHTERBERG, GUERRERO 2000, TODOROV 2007).

In conclusion, the using of appropriated methods as a hand collection from dead wood would lead

to finding of new *H. mystacinus* localities in Bulgaria and addition to knowledge of it biology.

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