

**New records of ichneumon wasps in Hungary, Romania, Serbia and Slovakia
with a key to the Western Palaearctic
Xylophrurus species (Hymenoptera: Ichneumonidae)**

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Abstract – Nine ichneumon wasp species (including one genus) were found to be new for the Hungarian fauna: *Lissonota biguttata* Holmgren, 1860, *Temelucha brevipetiolata* Kolarov, 1989, *Temelucha mohelnensis* Šedivý, 1971, *Pleolophus brachypterus* (Gravenhorst, 1815), *Xylophrurus augustus* (Dalman, 1823), *Coelichneumon biguttorius* (Thunberg, 1789), *Coelichneumon sinister* (Wesmael, 1848), *Carria paradoxa* Schmiedeknecht, 1924, and *Ophion ocellaris* Ulbricht, 1926. *Temelucha notata* Kolarov, 1989 was found to be new for Romania. The first records of *Ophion costatus* Ratzeburg, 1848 from Slovakia and Serbia are also reported, as well as *Ophion minutus* Kriechbaumer, 1879, *Ophion obscuratus* Fabricius, 1798, *Ophion ventricosus* Gravenhorst, 1829, *Cidaphus alarius* (Gravenhorst, 1829), and *Priopoda apicaria* (Geoffroy, 1785) from Serbia. A tentative key to the females of Western Palaearctic *Xylophrurus* Förster, 1869 species is provided. With 16 figures.

Key words – *Carria*, *Cidaphus*, *Coelichneumon*, *Lissonota*, *Ophion*, *Pleolophus*, *Priopoda*, *Temelucha*, Banchinae, Cremastinae, Cryptinae, Ctenopelmatinae, Ichneumoninae, Mesochorinae, Metopiiinae, Ophioninae, Carpathian Basin

INTRODUCTION

Ichneumon wasps (Hymenoptera: Ichneumonidae) constitute one of the most diverse families of the animal kingdom with more than 30,000 described species (TOWNES 1969, WAHL 1993). However, they represent one of the most scarcely known insect groups even in the European fauna (see e.g. VAS 2013 for the Hungarian overview). Almost all species are solitary parasitoids of various arthropod hosts (WAHL 1993), including several pest insects; hence, they are an exceptionally important group of potential bio-control agents (GODFRAY 1994).

The ongoing identification process of the undetermined ichneumon wasp material in the Hungarian Natural History Museum (HNHM) has revealed further 9 new species records for the Hungarian fauna (including a new genus

record), 1 new record for the Romanian fauna, 6 for the Serbian fauna, and 1 for the Slovakian fauna. Hereby I report them in alphabetical order (first by sub-families, then by genera and species).

I also provide a tentative identification key to *Xylophrurus* Förster, 1869 (Cryptinae) species of the Western Palaearctic region. Although there are only 7 species occurring there, the species-level identification is complicated. No comprehensive key has been published including all the 7 species; each earlier work covered only a subset of them. Additionally, many different generic combinations and later synonymised names were used in previous works (20 specific names are now in combination with *Xylophrurus*, 7 valid and 13 junior synonyms) (YU *et al.* 2012). My attempt here is to present a nomenclaturally updated key including all valid *Xylophrurus* species of the region.

MATERIAL AND METHODS

The tentative key to females is based on original descriptions, subsequent treatments and previous keys (SCHMIEDEKNECHT 1904, 1931, HEINRICH 1951, KASPARYAN 1981, HORSTMANN 1993*b*, SCHWARZ & SHAW 1998).

Ichneumonidae taxonomy and nomenclature follow YU & HORSTMANN (1997) and YU *et al.* (2012). The identification was based on the keys provided by BAJÁRI (1960), TOWNES *et al.* (1965), TOWNES (1969, 1970*a*, 1970*b*, 1971), ŠEDIVÝ (1971), BROCK (1982), HORSTMANN (1993*a*), KOLAROV (1997), SCHWENKE (1999), BROAD (2011*a*, *b*), and RIEDEL (2012). The specimens were identified by the author using a Nikon SMZ645 stereoscopic microscope. Earlier records of ichneumon wasp species in the corresponding country's fauna were checked in MOCSÁRY (1897), ZILÁHI-KISS (1924, 1926, 1929), BAJÁRI (1960), BAJÁRI & MÓCZÁR (1969), ŠEDIVÝ (1989), SCHWENKE (1999), KOLAROV (2008), and YU *et al.* (2012). The voucher specimens are deposited in the HNHN Hymenoptera Collection.

RESULTS

Banchinae

Lissonota biguttata Holmgren, 1860 (Fig. 1)

Material – Hungary, Veszprém County, Zánka, Bálint-hegy [= hill], 8.VI.2013, leg. T. Németh. – A single female specimen was collected by window trap.



Fig. 1. *Lissonota biguttata* Holmgren, 1860, female

Remarks – *Lissonota biguttata* has been found in most European countries (YU *et al.* 2012). YU *et al.* (2012) lists this species as present in Hungary citing ZILAHÍ-KISS (1924); however, the localities in ZILAHÍ-KISS's (1924) work refer to present-day Romania (Borosjenő [= Ineu], and Mt. Retezat). Hence, the first record for Hungary is the one reported here. *Lissonota biguttata* is a koinobiont endoparasitoid of the geometrid moths *Oreophthera* spp. (BETZ & SCHWERDTFEGGER 1970).

Cremastinae

Temelucha brevipetiolata Kolarov, 1989 (Fig. 2)

Material – Hungary, Budapest, XII. district, Svábhegy, 4.V.1900, leg. Gy. Szépligeti. – A single male specimen was collected.

Remarks – *Temelucha brevipetiolata* has only been recorded from Bulgaria and Turkey so far (KOLAROV 1989, KOLAROV & BEYARSLAN 1999). KOLAROV (1997) supposed that this species may be a Balkan endemism; however, the Hungarian occurrence suggests a wider distribution in Europe. This species might be a koinobiont endoparasitoid (WAHL 1993) without any known hosts (YU *et al.* 2012).



Fig. 2. *Temelucha brevipetiolata* Kolarov, 1989, male



Fig. 3. *Temelucha mohelnensis* Šedivý, 1971, female

Temelucha mohelnensis Šedivý, 1971

(Fig. 3)

Material – Hungary, Budapest, XII. district, Svábhegy, 17.VII.1899, leg. Gy. Szépligeti. – A single female specimen was collected.

Remarks – *Temelucha mohelnensis* has been found in several countries of Western and Central Europe (YU *et al.* 2012). This species might be a koinobiont endoparasitoid (WAHL 1993) without any known hosts (YU *et al.* 2012).

Temelucha notata Kolarov, 1989

(Fig. 4)

Material – Romania, Satu Mare County, Hadad [= Hodod], collecting date unknown, leg. E. Zilahi-Kiss. – A single female specimen was collected.

Remarks – *Temelucha notata* has been recorded from Bulgaria and Italy (KOLAROV 1989, 1995) so far. This species might be a koinobiont endoparasitoid (WAHL 1993) without any known hosts (YU *et al.* 2012).

Cryptinae

Pleolophus brachypterus (Gravenhorst, 1815)

(Fig. 5)

Material – Hungary, Nógrád County, Nagyoroszi, Mt. Börzsöny, 3.VI.2015, leg. V. Szőke. – A single female specimen was collected.



Fig. 4. *Temelucha notata* Kolarov, 1989, female

Remarks – *Pleolophus brachypterus* has been found in most European countries (YU *et al.* 2012). YU *et al.* (2012) list this species as present in Hungary citing ZILÁHI-KISS (1924, 1929); however, the localities in those references refer to present-day Romania (Jeder [= Iadăra], and Mt. Retezat). Hence, the first record for Hungary is the one reported here. The females are brachypterous. This species is a polyphagous ectoparasitoid of cocoons of various insect hosts including Tenthredinidae and Geometridae (HORSTMANN 1993a).



Fig. 5. *Pleolophus brachypterus* (Gravenhorst, 1815), female

Xylophrurus augustus (Dalman, 1823)
(Fig. 6)

Material – Hungary, Pest County, Pilisborosjenő, 24.III.2014, leg. J. Muskovits. – A single female specimen was collected.

Remarks – *Xylophrurus augustus* is a widespread species in the Western Palearctic region (YU *et al.* 2012). YU *et al.* (2012) list this species as present in Hungary citing ZILÁHI-KISS (1924, 1926); however, the localities in those references refer to present-day Romania (Hadad [= Hodod], Oroszmező [= Rus], Keisd [= Saschiz], and Erdélyi-érchegység [Munții Metaliferi]). Hence, the first record for Hungary is the one reported here. This species is a polyphagous ectoparasitoid of various hosts, including symphytan and aculeatan Hymenoptera and wood boring Coleoptera (see YU *et al.* (2012) for a list of references).

A tentative identification key to females of *Xylophrurus* species occurring in the Western Palearctic region is provided below.

- | | | |
|---------|--|--|
| 1 (4) | Thorax entirely or on dorsal part red. | |
| 2 (3) | Antenna with whitish ring | <i>X. augustus</i> (Dalman, 1823) |
| 3 (2) | Antenna without whitish ring | <i>X. nigricornis</i> (Thomson, 1885) |
| 4 (1) | Thorax black. | |
| 5 (6) | Propodeum with long and acute dentiparal spines | <i>X. kokujevi</i> (Meyer, 1924) |
| 6 (5) | Propodeum without dentiparal spines, at most with slightly raised carinae. | |
| 7 (8) | Ovipositor sheath is subequal to metasoma | <i>X. dentatus</i> (Taschenberg, 1865) |
| 8 (7) | Ovipositor sheath longer than metasoma. | |
| 9 (10) | Ovipositor sheath ~2.5× as long as hind tibia | <i>X. tumidus</i> (Desvignes, 1856) |
| 10 (9) | Ovipositor sheath less than 2× as long as hind tibia. | |
| 11 (12) | Head unusually wide behind eyes | <i>X. coraebi</i> (Thomson, 1885) |
| 12 (11) | Head not unusually wide behind eyes | <i>X. lancifer</i> (Gravenhorst, 1829) |



Fig. 6. *Xylophrurus augustus* (Dalman, 1823), female

Ctenopelmatinae

Priopoda apicaria (Geoffroy, 1785)

(Fig. 7)

Material – Serbia, Mt. Kablar, 43° 54' 44" N, 20° 11' 29" E, 9.V.2015, leg. P. G. Sulyán. – A single male specimen was collected by light trap.

Remarks – *Priopoda apicaria* is a widespread species in the Western Palaearctic region (YU *et al.* 2012). This species is a nocturnal endoparasitoid of sawflies (WAHL 1993, AUBERT 2000).

Ichneumoninae

Coelichneumon biguttorius (Thunberg, 1789)

(Fig. 8)

Material – Hungary, Pest County, Göd, 6.VI.2014, leg. I. Lukács. – A single male specimen was collected.



Fig. 7. *Priopoda apicaria* (Geoffroy, 1785), male



Fig. 8. *Coelichneumon biguttorius* (Thunberg, 1789), male

Remarks – *Coelichneumon biguttorius* seems to be a widespread species in the Palearctic region; it has been reported from a few countries from Sweden to Mongolia (YU *et al.* 2012). This species might be an endoparasitoid of lepidopteran hosts (WAHL 1993); however, no host species has been known yet (YU *et al.* 2012).

Coelichneumon sinister (Wesmael, 1848)
(Fig. 9)

Material – Hungary, Pest County, Göd, 18.IX.1987, leg. I. Lukács. – A single female specimen was collected.

Remarks – *Coelichneumon sinister* has been reported from several countries in the Western and Eastern Palearctic (YU *et al.* 2012). YU *et al.* (2012) list this species as present in Hungary citing ZILAHÍ-KISS (1924, 1929); however, the localities in those references refer to present-day Romania (Hammersdorf



Fig. 9. *Coelichneumon sinister* (Wesmael, 1848), female

[= Gușterița], Hermannstadt [= Sibiu], and Keisd [= Saschiz]). Hence, the first record for Hungary is the one reported here. This species is an endoparasitoid of various lepidopteran hosts (see YU *et al.* (2012) for a list of references).

Mesochorinae

Cidaphus alarius (Gravenhorst, 1829)

(Fig. 10)

Material – Serbia, Ovčar Banja, 43° 54' 33" N, 20° 12' 17" E, 8.V.2015, leg. P. G. Sulyán. – 2 females were collected by light trap.

Remarks – *Cidaphus alarius* is a widespread species in the Palaearctic region (YU *et al.* 2012). This species is a nocturnal hyperparasitoid of Ichneumonidae and Tachinidae (WAHL 1993, SCHWENKE 1999).



Fig. 10. *Cidaphus alarius* (Gravenhorst, 1829), female

Metopiinae

Carria paradoxa Schmiedeknecht, 1924
(Fig. 11)

Material – Hungary, Pest County, Vác, Naszály, 14.IV.2007, leg. O. Merkl, A. Kotán, N. Rahmé. – A single male specimen was collected at sunset with the use of a net attached to the roof of a car.

Remarks – *Carria paradoxa* seems to be a rare Palearctic species, it has been reported from only a few countries in the region (YU *et al.* 2012). It is also the first occurrence of the metopiine genus *Carria* Schmiedeknecht, 1924 in Hungary. This species is a koinobiont endoparasitoid of tortricid hosts (WAHL 1993, YU *et al.* 2012).

Ophioninae

Ophion costatus Ratzeburg, 1848
(Fig. 12)

Material – Serbia, Ovčar Banja, 43° 54' 33" N, 20° 12' 17" E, 8.V.2015, leg. P. G. Sulyán. – 3 females and 1 male were collected by light trap. – Slovakia, Košice



Fig. 11. *Carria paradoxa* Schmiedeknecht, 1924, male



Fig. 12. *Ophion costatus* Ratzeburg, 1848, female

Region, Ardovo, 48° 31' 16" N, 20° 25' 22" E, 17.IV.2015, leg. G. P. Katona, T. Korompai, R. Enyedi. – One male was collected by light trap.

Remarks – *Ophion costatus* is a widespread species in the Palearctic region (YU *et al.* 2012). ŠEDIVÝ (1989) listed it from Czechoslovakia; however, this record refers to present-day Czech Republic, not to Slovakia. Hence, the two records reported here constitute the first records for Slovakia and for Serbia. This species is a nocturnal koinobiont endoparasitoid of noctuid hosts (WAHL 1993, ŠEDIVÝ 2001, YU *et al.* 2012).

Ophion minutus Kriechbaumer, 1879

(Fig. 13)

Material – Serbia, Ovčar Banja, 43° 54' 33" N, 20° 12' 17" E, 8.V.2015; Serbia, Mt. Kablar, 43° 54' 44" N, 20° 11' 29" E, 9.V.2015, leg. P. G. Sulyán. – 6 females and 8 males were collected by light trap.

Remarks – *Ophion minutus* is a widespread species in the Palearctic region (YU *et al.* 2012). This species is a nocturnal koinobiont endoparasitoid of lepidopteran hosts (WAHL 1993, ŠEDIVÝ 2001, YU *et al.* 2012).



Fig. 13. *Ophion minutus* Kriechbaumer, 1879, female

Ophion obscuratus Fabricius, 1798

(Fig. 14)

Material – Serbia, Ovčar Banja, 43° 54' 33" N, 20° 12' 17" E, 8.V.2015; Serbia, Mt. Kablar, 43° 54' 44" N, 20° 11' 29" E, 9.V.2015., leg. P. G. Sulyán. – 2 females were collected by light trap.

Remarks – *Ophion obscuratus* is a widespread species in the Palaearctic and Oriental regions (YU *et al.* 2012). This species is a nocturnal koinobiont endoparasitoid of various lepidopteran hosts (GYÖRFI 1943, BROCK 1982, WAHL 1993, YU *et al.* 2012).

Ophion ocellaris Ulbricht, 1926

(Fig. 15)

Material – Hungary, Pest County, Ócsa, bird ringing station, 10.VI.2015, leg. Á. Mészáros. – A single female was collected by light trap.

Remarks – *Ophion ocellaris* is a rare but widespread species in Europe (YU *et al.* 2012). This species is a nocturnal koinobiont endoparasitoid of Thyatiridae and Geometridae hosts (WAHL 1993, ŠEDIVÝ 2001, YU *et al.* 2012).

Ophion ventricosus Gravenhorst, 1829

(Fig. 16)

Material – Serbia, Ovčar Banja, 43° 54' 33" N, 20° 12' 17" E, 8.V.2015, leg. P. G. Sulyán. – 6 females were collected by light trap.



Fig. 14. *Ophion obscuratus* Fabricius, 1798, female



Fig. 15. *Ophion ocellaris* Ulbricht, 1926, female

Remarks – *Ophion ventricosus* is a widespread species in the Western Palaearctic region (YU *et al.* 2012). This species is a nocturnal koinobiont endoparasitoid of various lepidopteran hosts (BROCK 1982, WAHL 1993, YU *et al.* 2012).



Fig. 16. *Ophion ventricosus* Gravenhorst, 1829, female

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