

New species and new records of ichneumon wasps from Hungary and adjacent countries (Hymenoptera: Ichneumonidae)

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Abstract – *Allophroides altivolus* sp. n. is described from Hungary, and an identification key to the Palearctic species of *Allophroides* is provided. Thirty-three ichneumon wasp species of various subfamilies were found to be new for Hungary, and one species is deleted from the Hungarian fauna due to previous misidentification of the voucher specimens. Seven species are first reported here from Romania, two species from Slovakia, one from Ukraine, and one from Croatia. With 14 figures.

Key words – *Allophroides*, Adelognathinae, Campopleginae, Cremastinae, Cryptinae, Diplazoninae, Diacritinae, Ichneumoninae, Mesochorinae, Ophioninae, Pimplinae, Poemeniinae, Tersilochinae, description, identification key

INTRODUCTION

Ichneumon wasps (Ichneumonidae) represent one of the most diverse families of the animal kingdom with a potentially great significance in biological control (TOWNES 1969, WAHL 1993). Despite that, they are one of the poorest known insect groups even in the European fauna (see e.g. VAS 2013 for a Hungarian overview). The ongoing identification process of the ichneumon wasp material in the Hungarian Natural History Museum (HNHM, Budapest) already yielded several faunistical and taxonomical results regarding the ichneumon wasp fauna of Hungary and adjacent countries (see e.g. VAS 2013, 2015, 2016a, b, c, VAS & KUTASI 2016, VAS & SCHWARZ 2018). Further, recently revealed results are given in this paper: a new species, *Allophroides altivolus* sp. n. of the subfamily Tersilochinae is described from Hungary; thirty-three species of various subfamilies are reported from Hungary for the first time, while one species is deleted from the Hungarian fauna due to previous misidentification; and the first records of two species from Slovakia, one species from Ukraine, seven species from Romania, and one species from Croatia are reported.

The taxa are listed alphabetically, ordered first by subfamily, then by genus and species. Ichneumonidae taxonomy and nomenclature follow YU & HORSTMANN (1997) and YU *et al.* (2012). The morphological terminology follows GAULD (1991) and GAULD *et al.* (1997) in general; however, in the species description the terminology of some characters is from HORSTMANN (1971, 1981).

The identification and the provided identification key were based on PERKINS (1959, 1960), CONSTANTINEANU (1959, 1965), BAJÁRI (1960), BAJÁRI & MÓCZÁR (1969), TOWNES (1969, 1970, 1971), HORSTMANN (1971, 1981), KASPARYAN (1981), BROCK (1982), HORSTMANN & KOLAROV (1988), HORSTMANN (1992, 2001, 2003, 2006), SCHWENKE (1999, 2000, 2002, 2004), KHALAIM (2007), KHALAIM *et al.* (2009), KHALAIM & YURTCAN (2011), BROAD (2011*a,b*), RIEDEL (2012, 2015), KOLAROV (2013), KLOPFSTEIN (2014), VARGA (2017) and RIEDEL (2018*a*, 2018*b*).

Earlier records of ichneumon wasp species in the corresponding countries' fauna were traced through the database of YU *et al.* (2012), then validated by checking the referred records. The specimens were identified by the author using a Nikon SMZ645 stereoscopic microscope. Photos were taken with Nikon D5200 and Nikon AF Micro Nikkor 60mm lens and MitutoyoM Plan Apo 5X microscope lens. Exposures were stacked in ZereneStacker, post image work was done with Photoshop CS5. Line drawings were partly drawn after specimens of the HNHM, and partly re-drawn after HORSTMANN (1971), HORSTMANN & KOLAROV (1988), and KHALAIM (2007). All mentioned specimens are deposited in the Hymenoptera Collection of the HNHM.

RESULTS

Adelognathinae

Adelognathus dorsalis (Gravenhorst, 1829)

Material – Hungary, Pest county, Páty, Mézeshegy, 1–6.V.2018, leg. Z. Vas, a single female specimen was collected by Malaise trap.

Remarks – First record for Hungary. This species is widely distributed in the Palaearctic region (YU *et al.* 2012).

Banchinae

Lissonota palpalis Thomson, 1889

Material – Hungary, Pest county, Szigetmonostor, ártéri erdő [= riverine forest], 47° 40' 47.78" N, 19° 5' 21.44" E, 8–10.VI.2018, leg. Z. Vas & V. Szőke, a single

female specimen was collected by Malaise trap during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is widely distributed in Europe (YU *et al.* 2012). YU *et al.* (2012) lists this species as present in Hungary citing ZILÁHI-KISS (1924) and MÓCZÁR (1939, 1941), however, those records refer to Romania and Slovakia, respectively, not to Hungary.

Campopleginae

Casinaría affinis Tschek, 1871

Material – Hungary, Bács-Kiskun county, Ágasegyháza, 21.IX.1978, leg. Hámori, a single female specimen was collected by pitfall trap.

Remarks – First record for Hungary. This species is widely distributed in Europe (YU *et al.* 2012, RIEDEL 2018a).

Casinaría albipalpis (Gravenhorst, 1829)

Material – Romania, Bistrița-Năsăud county, Ilva Mare [on label: Nagyilva], date unknown, leg. E. Zilahi-Kiss, four male specimens were collected. – Hungary, Bács-Kiskun county, Hajós, 4–5.VI.2016, leg. Z. Soltész, two male specimens were collected by Malaise trap during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First records for Romania and for Hungary. This species is widely distributed in the Western Palaearctic region (YU *et al.* 2012, RIEDEL 2018a). YU *et al.* (2012) lists this species as present in Hungary citing ZILÁHI-KISS (1924), however, that record from Nagyilva [= Ilva Mare] refers to Romania, not to Hungary; as the actual specimens reported by ZILÁHI-KISS (1924) are deposited in the HNHM, I could ensure their correct identification, and conclude that they are representing the first record of this species in Romania.

Casinaría kriechbaumeri (Costa, 1884)

Material – Hungary, Pest county, Budapest, 25.VIII.1895, leg. Gy. Szépligeti, a single female specimen was collected. – Same location and collector, 28.VI.1896, a single male specimen was collected. – Same location and collector, 21.V.1897, a single female specimen was collected. – Same location and collector, 6.VI.1899, a single female specimen was collected. – Same location and collector, 10.VI.1900, a single male specimen was collected. – Hungary, Pest county, Budakeszi, 16.X.1953, leg. E. Bajári, a single female specimen was collected. – Romania, Alba county, Aiud [on label: Nagyenyed], 20.IV.1904, leg. unknown, a

single female specimen was collected. – Romania, Sălaj county, Cliș, 11.V.2015, leg. A. Podlussány, a single female specimen was swept.

Remarks – First records for Hungary and for Romania. This species is widely distributed in the Palearctic region (YU *et al.* 2012, RIEDEL 2018a).

Casinaria mesozosta (Gravenhorst, 1829)

Material – Romania, Caraș-Severin County, Oravița [on label: Oravicza], 1875, leg. J. Frivaldszky, lectotype (female) and a paralectotype (female) specimens of *Casinaria compressa* Szépligeti, 1916, a junior synonym of *Casinaria mesozosta* (Gravenhorst, 1829). – Romania, Brașov County, Brașov [on label: Brassó], date unknown, leg. F. Deubel, holotype (female) specimen of *Casinaria deubeli* Kiss, 1924, a junior synonym of *Casinaria mesozosta* (Gravenhorst, 1829). – Romania, Sălaj county, Șimleu Silvaniei, 5.VI.2014, leg. A. Orosz, G. Puskás, Z. Soltész & M. Ronkayné Tóth, a single female specimen was collected.

Remarks – First records for Romania. This species is widely distributed in the Palearctic region (YU *et al.* 2012, RIEDEL 2018a). The type locality of the lectotype and a paralectotype of *Casinaria compressa* Szépligeti, 1916 and that of the holotype of *Casinaria deubeli* Kiss, 1924, which taxa are both junior synonyms of *Casinaria mesozosta* (Gravenhorst, 1829), are erroneously linked to Hungary in YU *et al.* (2012), as they both refer to Romania. An other female paratype of *Casinaria compressa* Szépligeti, 1916 from Budapest correctly refers to Hungary.

Casinaria moesta (Gravenhorst, 1829)

Material – Hungary, Pest county, Budapest, Máriaremete, 4.V.1896, leg. Gy. Szépligeti, a single female specimen was collected. – Hungary, Komárom-Esztergom county, Pilismarót, date unknown, leg. Gy. Szépligeti, two female specimens were collected. – Romania, Bistrița-Năsăud county, Coldău [on label: Kudu], date unknown, leg. E. Zilahi-Kiss, a single female specimen was collected.

Remarks – First records for Hungary and for Romania. This species is widely distributed in the Palearctic region (YU *et al.* 2012, RIEDEL 2018a).

Casinaria nigripes (Gravenhorst, 1829)

Material – Hungary, Bács-Kiskun county, Hajós, mocsár [= swamp], 4–5. VI.2016, leg. Z. Soltész, a single male specimen was collected by Malaise trap during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is widely distributed in the Palearctic region (YU *et al.* 2012, RIEDEL 2018a).

Casinaria nigrotrochaterata Riedel, 2018

Material – Hungary, Veszprém county, Bakony Mts., date unknown, leg. unknown, a single male specimen was collected.

Remarks – First record for Hungary. This species is already known from Russia and Spain (RIEDEL 2018a).

Casinaria subglabra Thomson, 1887

Material – Hungary, Pest county, Budapest, 9.VI.1895, leg. Gy. Szépligeti, a single male specimen was collected. – Same location and collector, VI.1899, two male specimens were collected. – Hungary, Zala county, Keszthely, camping, 1980, leg. unknown, a single male specimen was collected.

Remarks – First records for Hungary. This species is widely distributed in Europe (YU *et al.* 2012, RIEDEL 2018a).

Casinaria trochanterator Aubert, 1960

Material – Romania, Sălaj county, Iaz, 16.VII.2015, leg. Z. Vas & P. G. Sulyán, a single female specimen was collected.

Remarks – First record for Romania. This species is widely distributed in the Western Palaearctic region (YU *et al.* 2012, RIEDEL 2018a).

Rhimphoctona melanura (Holmgren, 1860)

Material – Hungary, Veszprém county, Zánka, Bálint-hegy [= hill], 4.VI.2014, leg. S. Siffer, a single female specimen was collected. – Hungary, Komárom-Esztergom county, Szomor, 6.V.2017, leg. O. Merkl, a single female specimen was collected by a net attached to the roof of a car. – Hungary, Pest county, Szigetmonostor, ártéri erdő [= riverine forest], 47° 40' 47.78" N, 19° 5' 21.44" E, 8–10. VI.2018, leg. Z. Vas & V. Szőke, a single female specimen was collected by Malaise trap during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First records for Hungary. This species is widely distributed in the Western Palaearctic region (YU *et al.* 2012, VARGA 2017).

Cre mastinae*Cre mastus crassicornis* Thomson, 1890

Material – Hungary, Pest county, Szigetmonostor, 47° 40' 56.68" N, 19° 5' 50.72" E, 9.VI.2018, leg. Z. Vas & V. Szőke, a single female specimen was col-

lected during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is widely distributed in the Western Palaearctic region (YU *et al.* 2012).

Cryptinae

Cremnodes atricapillus (Gravenhorst, 1815)

Material – Hungary, Komárom-Esztergom county, Vértessomló, Szép Ilonka-kút [= well], 10–11.VI.2017, leg. Cs. Kutasi, a single female specimen was collected by pitfall trap.

Remarks – First record for Hungary. This species is widely distributed in Europe (YU *et al.* 2012). YU *et al.* (2012) lists this species as present also in Hungary citing ZILÁHI-KISS (1915, 1926), however, those records refer to Romania (Ünökkő [= Ineu] in the Rodnei Mountains), not to Hungary.

Diacritinae

Diacritus aciculatus (Vollenhoven, 1878)

Material – Hungary, Pest county, Szigetmonostor, ártéri erdő [= riverine forest], 47° 40' 47.78" N, 19° 5' 21.44" E, 8–10.VI.2018, leg. Z. Vas & V. Szőke, a single male specimen was collected by Malaise trap during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is widely distributed in the Palaearctic region (YU *et al.* 2012).

Diplazontinae

Sussaba roberti Klopstein, 2014

Material – Hungary, Pest county, Páty, Mézeshegy, 1–6.V.2018, leg. Z. Vas, a single male specimen was collected by Malaise trap. – Same location, 13–22.V.2018, leg. Z. Vas, a single female specimen was collected by Malaise trap.

Remarks – First records for Hungary. This species is widely distributed in the Palaearctic region (KLOPFSTEIN 2014).

Ichneumoninae

Coelichneumon biannulatus (Gravenhorst, 1820)

Material – Hungary, Veszprém county, Zánka, Bálint-hegy [= hill], IV.–VII.2016, leg. S. Siffer, a single female specimen was collected by window trap.

Remarks – First record for Hungary. This species is widely distributed in the Western Palaearctic region (YU *et al.* 2012), and has been found in Iran, too (KOLAROV & GHAHARI 2008).

Dicaelotus pudibundus (Wesmael, 1845)

Material – Hungary, Pest county, Páty, Mézeshegy, 25.IV.–1.V.2018, leg. Z. Vas, a single female specimen was collected by sweeping.

Remarks – First record for Hungary. This species is has been found in several countries of the Western Palaearctic region (YU *et al.* 2012).

Eupalamus lamentator (Thunberg, 1822)

Material – Hungary, Pest county, Szigetmonostor, ártéri erdő [= riverine forest], 47° 40' 47.78" N, 19° 5' 21.44" E, 8–10.VI.2018, leg. Z. Vas & V. Szőke, two male specimens were collected by Malaise trap during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is widely distributed in the Palaearctic region (YU *et al.* 2012).

Mesochorinae

Astiphromma aggressor (Fabricius, 1804)

Material – Hungary, Fejér county, Velence, Velencei-tó [= lake], 18.V.1951, leg. Á. Soós, a single female specimen was collected. – Hungary, Pest county, Budakeszi, Hársbokor-hegy, 14.V.1954, leg. E. Bajári, a single male specimen was collected. – Hungary, Heves county, Eger, Almár, 12.V.1956, leg. Reskovits, a single male specimen was collected. – Hungary, Heves county, Bükk Mts, Nagyvisnyó, Leány-völgy, 28.V.1956, leg. Mihályi & Zsirkó, a single male specimen was collected. – Same locality, 3.VI.1957, leg. Mihályi, a single male specimen was collected. – Hungary, Borsod-Abaúj-Zemplén county, Bükk Mts, [Miskolc,] Jávorkút, 17–18.V.2016, leg. P. G. Sulyán, three male specimens were collected by light trap. – Hungary, Pest county, Páty, Mézeshegy, 13–22.V.2018, leg. Z. Vas, a single female specimen was collected by Malaise trap.

Remarks – First records for Hungary. This species is widely distributed in Europe (YU *et al.* 2012, RIEDEL 2015).

Astiphromma anale (Holmgren, 1860)

Material – Ukraine, Mukachevo [on label: Munkács], 3.V.1916, leg. Újhelyi, a single male specimen was collected.

Remarks – First record for Ukraine. This species is widely distributed in Europe (YU *et al.* 2012, RIEDEL 2015).

Astiphromma dorsale (Holmgren, 1860)

Material – Slovakia, Orava region [on label: Árva vármegye], 1883, leg. unknown, a single male specimen was collected.

Remarks – First record for Slovakia. This species is known from several countries of the Palaearctic region (YU *et al.* 2012, RIEDEL 2015).

Astiphromma italicum Schwenke, 1999

Material – Romania, Arad county, Ineu [on label: Borosjenő], date unknown, leg. Diószeghy, a single male specimen was collected. – Hungary, Veszprém county, Tihany, 6–11.V.1957, leg. Mihályi & Zsirkó, a single male specimen was collected. – Hungary, Pest county, Páty, Mézeshegy, 1–13.V.2018, leg. Z. Vas, two female specimens were collected by Malaise trap.

Remarks – First records for Romania and for Hungary. This species is known from several European countries (YU *et al.* 2012, RIEDEL 2015).

Astiphromma leucogrammum (Holmgren, 1860)

Remarks – This species is known from several European countries (YU *et al.* 2012, RIEDEL 2015). YU *et al.* (2012) lists this species as present in Hungary citing ZILÁHI-KISS (1924) and BAJÁRI & MÓCZÁR (1969). However, the former record refers to Romania (Enyed [= Aiud]), not to Hungary. During the re-identification of the European *Astiphromma* material of the HNHM the voucher specimens reported by BAJÁRI & MÓCZÁR (1969) turned out to be misidentified. As this species is currently without any authenticated record or voucher specimen regarding its occurrence in Hungary, it should be omitted from the Hungarian fauna.

Astiphromma nigrocoxatum (Strobl, 1904)

Material – Hungary, Pest county, Pilisszentkereszt, Dobogó-kő, 29.IV.1957, leg. Á. Soós, a single female specimen was collected. – Hungary, Pest county, Vác, Naszály, 25.IV.2007, leg. A. Grabant, Z. György, O. Merkl & A. Podlussány, a single female specimen was collected by sweeping.

Remarks – First records for Hungary. This species is known from several European countries (YU *et al.* 2012, RIEDEL 2015).

Astiphromma striatum (Brischke, 1880)

Material – Slovakia, Prešov region, Banské [on label: Bányapataka], 3.VII.1881, leg. unknown, a single male specimen was collected.

Remarks – First record for Slovakia. This species is known from several European countries (YU *et al.* 2012, RIEDEL 2015).

Mesochorus alpigenus Strobl, 1904

Material – Hungary, Pest county, Budapest, District XII, Kissvábhegy, 2.V.1897, leg. Gy. Szépligeti, a single male specimen was collected. – Hungary, Pest county, Pilisszántó, 26.VII.1972, leg. J. Papp, a single male specimen was collected. – Hungary, Békés county, Kardoskút, Vásárhelyi-puszta, 14–16.VI.2013, leg. P. Fehérvári & I. S. Piross, a single female specimen was collected.

Remarks – First records for Hungary. This species is known from several European countries (YU *et al.* 2012).

Mesochorus curvulus Thomson, 1886

Material – Hungary, Nógrád county, Bátortereny (Kistereny, Csente), 21–26.V.2016, leg. P. G. Sulyán, a single female specimen was collected by light trap.

Remarks – First record for Hungary. This species is widely distributed in the Holarctic region (YU *et al.* 2012).

Mesochorus fulgurator Horstmann, 2006

Material – Hungary, Heves county, Nagyvisnyó (Feketesárbérc), 8.VII.1982, leg. L. Zombori, a single female specimen was collected. – Hungary, Baranya county, Cserkút, 18.V.2013, leg. A. Kovács-Hostyánszki, a single female specimen was collected during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days. – Hungary, Borsod-Abaúj-Zemplén county, Bükk Mts, [Miskolc,] Jávorkút, 17–18.V.2016, leg. P. G. Sulyán, a single female specimen was collected by light trap.

Remarks – First records for Hungary. This species is known from several European countries (YU *et al.* 2012, RIEDEL 2018b).

Mesochorus heterodon Horstmann, 2006

Material – Hungary, Komárom-Esztergom county, Tatabánya, Csákányos-puszta, 9–11.VI.2017, leg. A. Podlussány & B. Tallósi, a single female specimen was collected during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is known from several European countries (YU *et al.* 2012, RIEDEL 2018b).

Mesochorus globulator (Thunberg, 1822)

Material – Hungary, Baranya county, Mecsek Mts, Misina, 19.V.1966, leg. L. Móczár, a single female specimen was collected. – Hungary, Nógrád county, Bátor-terenye (Kisterenye, Csente), 22.VII.–5.VIII.2016, leg. P. G. Sulyán, a single female specimen was collected by light trap. – Hungary, Bács-Kiskun county, Fülöpháza, VII.–IX.2017, leg. F. Szentkirályi, two female specimens were collected by light trap.

Remarks – First records for Hungary. This species is known from the Western Palaearctic and Nearctic regions (YU *et al.* 2012).

Mesochorus macrophyae Schwenke, 1999

Material – Hungary, Somogy county, Vörs, Kis-Balaton, 13.VI.1950, leg. E. Bajári & L. Móczár, a single female specimen was collected.

Remarks – First record for Hungary. This species is has been known from Germany so far (YU *et al.* 2012, RIEDEL 2018b).

Mesochorus pelvis Schwenke, 2002

Material – Romania, Caraş-Severin county, Băile Herculane [on label: Herkulesfürdő], VII.1907, leg. Schmidt, three male specimens were collected. – Hungary, Pest county, Budakeszi, Hársbokorhegy, 18.V.1953, leg. Kovács, a single male specimen was collected by light trap.

Remarks – First records for Romania and for Hungary. This species is known from several European countries (YU *et al.* 2012, RIEDEL 2018b).

Mesochorus punctipleuris Thomson, 1886

Material – Croatia, Primorje-Gorski Kotar county, Šumareva Kuća Mošune [on label: Mosune], 10.VII.1897, leg. K. Kertész, a single specimen was collected (probably a male, but the apex of metasoma is damaged).

Remarks – First record for Croatia. This species is known from the Western Palaearctic and Nearctic regions (YU *et al.* 2012).

Stictopisthus flavescens (Fonscolombe, 1852)

Material – Hungary, Pest county, Budapest, Soroksári Botanikus Kert [= Botanical Garden], 2.VI.2017, leg. O. Merkl, a single female and two male specimens were collected by a net attached to the roof of a car.

Remarks – First record for Hungary. This species is known from some Western and Central European countries (YU *et al.* 2012).

Ophioninae

Ophion brevicornis Morley, 1915

Material – Hungary, Komárom-Esztergom county, Tatabánya, Csákányospuszta (Felső-erdő), 9–10.VI.2017, leg. Cs. Kutasi, a single female was collected during the Hungarian Biodiversity Research Society's annual field work occasions called Biodiversity Days.

Remarks – First record for Hungary. This species is known from several European countries (YU *et al.* 2012).

Ophion pteridis Kriechbaumer, 1879

Material – Hungary, Pest county, Ócsa, Bird Ringing Station, 17.VII.2013, leg. T. Háczi, a single female specimen was collected by light trap. – Hungary, Pest county, Vácrátót, Botanical Garden, 30–31.III.2017, leg. L. Ronkay & M. Tóth Ronkayné, a single female specimen was collected by light trap.

Remarks – First records for Hungary. This species is known from several countries of the Palearctic region (YU *et al.* 2012).

Pimplinae

Zatypota percontatoria (Müller, 1776)

Material – Hungary, Pest county, Valkó, Szentpál-hegy [=hill], 28.IX.1997, leg. O. Merkl, a single male specimen was collected. – Hungary, Pest county, Dabas, Rákóczi erdeje, 13.VI.2015, leg. O. Merkl, a single male specimen was collected by a net attached to the roof of a car. – Hungary, Pest county, Budapest, Soroksári Botanikus Kert [= Botanical Garden], 21.VI.2017, leg. O. Merkl, a single male specimen was collected by a net attached to the roof of a car.

Remarks – First records for Hungary. This species is known from several countries of the Holarctic region (YU *et al.* 2012).

Poemeniinae

Poemenia collaris (Haupt, 1917)

Material – Hungary, Nógrád county, Bátorfyerénye (Kisterénye, Csente), 21–26.V.2016, leg. P. G. Sulyán, a single male specimen was collected by light trap.

Remarks – First record for Hungary. This species is known from several European countries (YU *et al.* 2012).

Tersilochinae

Allophroides altivolus sp. n.

(Figs 1–3, 13, 14)

Material examined – Holotype: female, Hungary, Pest county, Szigetbecse, 2.IV.2016, collected by a net attached to the roof of a car, leg. O. Merkl, Id. No. HNHM-HYM 153030. – Paratypes: female, same collecting data as the holotype, Id. No. HNHM-HYM 153031; male, same collecting data as the holotype, Id. No. HNHM-HYM 153032.

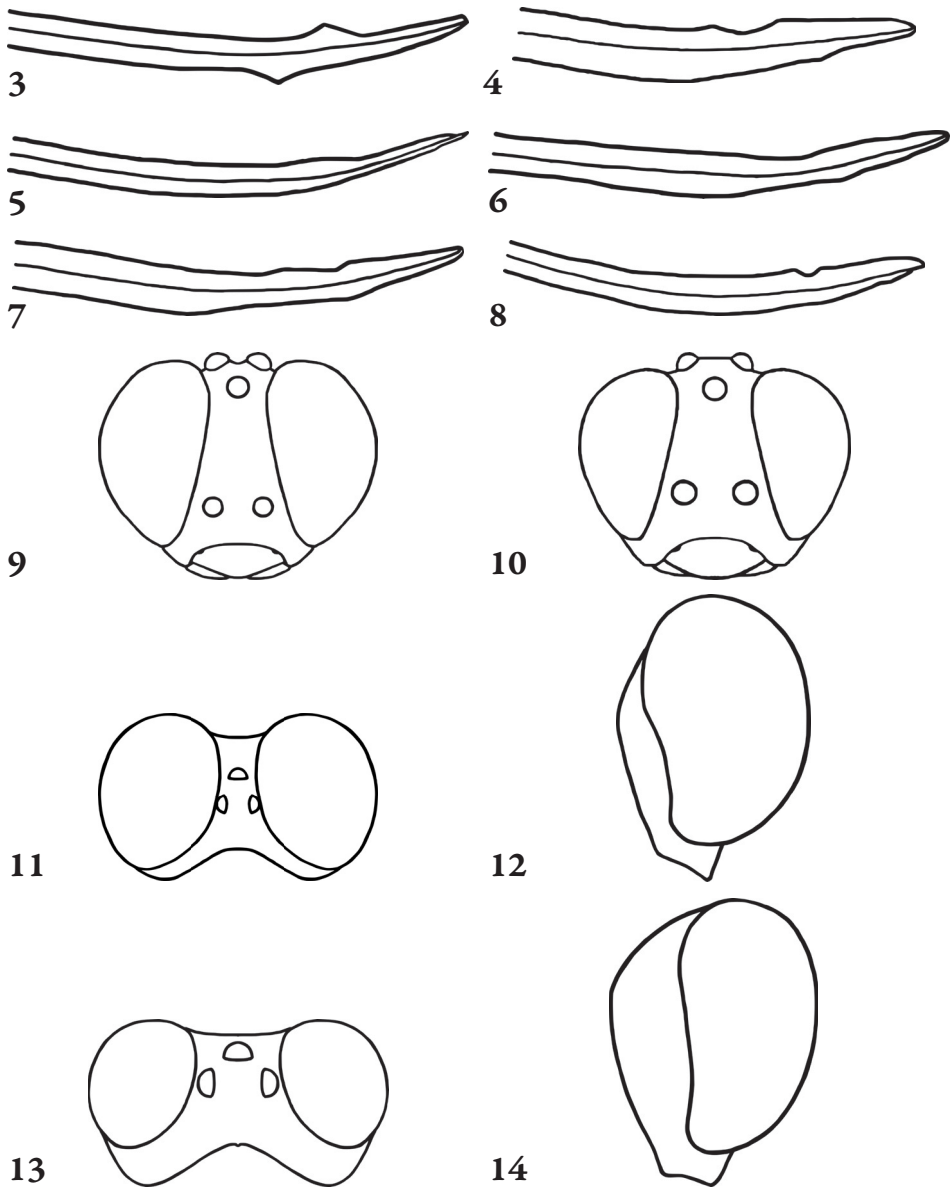
Diagnosis – *Allophroides altivolus* sp. n. is easily recognizable among the Palaearctic species of the genus: females of the new species can be distinguished from the females of all known species by the length of ovipositor sheath and by the shape of ovipositor apex. Additionally, females of *A. boops* (Gravenhorst, 1829), *A. platyurus* (Strobl, 1904), and *A. acutatus* Khalaim 2007 differ also by having at least basally darkened hind femur (it is entirely reddish in females of *A. altivolus* sp. n.). In females of *A. rufifemur* Horstmann, 1971 and *A. rufobasalis* Horstmann et Kolarov, 1988 hind femur is entirely reddish, too, however, they differ from the new species by longer ovipositor sheath, by the shape of ovipositor apex, and by the reddish yellow basal flagellomeres. Male of *A. altivolus* sp. n. most resembles to the male of *A. boops* (Gravenhorst, 1829) due to the darkened hind tibia and the very close position of lateral ocellus to eye (touching or almost touching the eye), but it can be separated from *A. boops* (Gravenhorst, 1829) by its distinctly longer gena. Among the Nearctic species of the genus, *A. altivolus* sp. n. resembles to *A. granulatus* Horstmann, 2013 due to the similar length of ovipositor sheath and the granulate, matt head and mesosoma, but it can be easily separated from the new species by the shape of ovipositor apex and the microsculpture of the first tergite in case of females, and by shorter gena in case of males.

Description – Female (Figs 1, 3). Body length ca 3.5 mm.

Head: Antenna with 15 flagellomeres; basal flagellomeres relatively slender, first flagellomere ca 2× as long as wide apically; apical flagellomeres distinctly widened to apex, last flagellomere 1.4–1.6× as wide basally as apical width of first flagellomere; last flagellomere 1.4–1.6× as long as wide basally. Head, except clypeus, entirely granulate, without punctures and with relatively long, dense, whitish hairs. Apical two-third of clypeus much less granulate and shinier, with a few large, weak punctures and with very long hairs, on apical edge with long and stout, parallel placed hairs. Gena ca 0.6× as long as width of eye; ocular-ocellar distance slightly shorter than posterior ocellar length. Occipital carina complete.



Figs 1–2. *Allophroides altivolus* sp. n., 1 = holotype, female, left lateral habitus, 2 = paratype, male, right lateral habitus (photo by Z. Soltész)



Figs 3–8. Ovipositor apex of *Allophroides* species, 3 = *A. altivolus* sp. n., 4 = *A. boops* (Gravenhorst, 1829), 5 = *A. acutatus* Khalaim, 2007, 6 = *A. platyurus* (Strobl, 1904), 7 = *A. rufifemur* Horstmann, 1971, 8 = *A. rufobasalis* Horstmann et Kolarov, 1988. – **Figs 9–14.** Head of male *Allophroides* species, 9 = *A. boops* (Gravenhorst, 1829), frontal view, 10 = *A. platyurus* (Strobl, 1904), frontal view, 11 = *A. boops* (Gravenhorst, 1829), dorsal view, 12 = *A. boops* (Gravenhorst, 1829), lateral view, head facing right, mouthparts excluded 13 = *A. altivolus* sp. n., dorsal view, 14 = *A. altivolus* sp. n., lateral view, head facing right, mouthparts excluded

Inner eye orbits divergent ventrally. Face ca 3× as wide as long, slightly elevated centrally. Clypeus separated from face, flat in profile, apical margin weakly convex, blunt, with indistinct, shallow median notch. Malar space about as long as basal width of mandible. Upper mandibular tooth distinctly longer than lower tooth.

Mesosoma: Mesosoma entirely granulate, without punctures and with relatively long, dense, whitish hairs; propodeum slightly shinier with indistinct, weak punctures, hairs on propodeum ca 2× longer and slightly sparser than hairs on mesoscutum. Notaulus very shallow and short, indistinct. Scutellum strongly convex with lateral carina reaching about the middle. Sternaulus indistinct; speculum matt, granulate; epicnemial carina distinct, reaching about middle of hind margin of pronotum; posterior transverse carina of mesosternum incomplete. Pterostigma large and wide with rounded posterior margin, ca 2× as long as wide, its width ca 1.1–1.4× as long as *r-rs* vein. Fore wing with vein *cu-a* postfurcal. Vein *2m-cu* postfurcal with one bulla. Distal abscissa of *Rs* straight; distal abscissa of *R* on front margin of fore wing (metacarpus) ca 0.5× as long as pterostigma. Legs relatively slender, hind femur 3.9× as long as high. Coxae finely granulate. Longer spur of hind tibia ca 0.35× as long as first tarsomere of hind tarsus. Tarsal claws thin, pectinate with few, indistinct basal pecten, arolium longer than claws. Pleural carina of propodeum strong; propodeal spiracle small, circular, separated from pleural carina by ca 2× its diameter. Basal area of propodeum with longitudinal wrinkles, lateral margins more or less distinct. Petiolar area of propodeum more than 2× as long as basal area, anteriorly rounded, 0.9× as long as wide, bounded by strong carinae.

Metasoma: First tergite 1.7–2× as long as wide apically, dorsal surface finely granulate, with strong longitudinal wrinkles; glymma at middle of tergite; apical margin of first sternite reaching to middle of the tergite. From second tergite onwards tergites with very finely reticulate to almost smooth, shiny, sparsely but relatively strongly punctate and sparsely hairy surface; punctures denser and stronger on laterotergites; thyridium as a very narrow transverse furrow. Ovipositor sheath upcurved, 1.2–1.3× as long as first tergite. Ovipositor compressed, apex distinctive: upper valve abruptly, flatly narrowed to tip after a distinctly elevated, tooth-like angulation; lower valve gradually narrowed to apex with a distinctly elevated, tooth-like angulation; angulation on upper valve more distal than on lower valve.

Colour: Antenna mainly blackish; apical margins of scapus and pedicellus with narrow yellowish brown patches, basal flagellomeres black to dark brownish. Head black; maxillary and labial palpi brownish, mandible reddish brown except blackish base and dark brownish teeth. Mesosoma black except yellowish brown tegulum. Pterostigma brown, yellowish brown along wing margin, proximal and distal corners pale. Coxae mainly blackish, apically reddish brown; trochanters, trochantelli, femora, tibiae and tarsi reddish to yellowish, apical tarsomeres brownish. Metasoma entirely to almost entirely black with more or less

distinct dark reddish brown patches on hind margins of tergites and on laterotergites. Ovipositor sheath dark brown.

Male (Figs 2, 13, 14): Body length ca 4 mm. Similar to female except in following characters. Antenna with 14 flagellomeres; apical flagellomeres less widened to the apex, last flagellomere 1.3× as wide basally as apical width of first flagellomere; last flagellomere slenderer, 1.9× as long as wide basally. Eyes large, strongly convergent dorsally, lateral ocellus almost touching eye. Gena ca 0.3× as long as width of eye. Face ca 2.3× as wide as long. Malar space about 0.5× as long as basal width of mandible. Legs more slender, hind femur 4.2× as long as high. First tergite slenderer, ca 3.5× as long as wide apically, dorsal surface finely granulate, with weaker longitudinal wrinkles and with shallow concave area just before spiracles; apical margin of first sternite reaching to 0.6 of tergite length. Thyridium ca as long as wide. Tegulum dark brown. Coxae black; trochanters, trochantelli blackish; femora dark brown at least on basal half, apically reddish. Second tergite reddish brown.

Distribution – Currently known only from Hungary.

Ecology – No host is known. Its flight period seems to start relatively early in the spring.

Etymology – The specific epithet *altivolus* is the masculine form of the Latin adjective *altivolus*, -a, -um, meaning ‘soaring, flying high’, referring to the circumstances of the collecting of the new species, i.e. the type specimens were caught from the air by a net attached to the roof of a moving car.

Identification key to the Palearctic *Allophroides* species

Supporting characters are given in parentheses.

Females

- | | | |
|---|---|--|
| 1 | Hind femur at least basally darkened | 2 |
| – | Hind femur entirely reddish | 4 |
| 2 | Ovipositor sheath ca 0.7× as long as first tergite (ovipositor apex as Fig. 4) | <i>A. boops</i> (Gravenhorst, 1829) |
| – | Ovipositor sheath longer than first tergite | 3 |
| 3 | Ovipositor sheath 1.5× as long as first tergite (ovipositor apex as Fig. 5) | <i>A. acutatus</i> Khalaim, 2007 |
| – | Ovipositor sheath 2–2.6× as long as first tergite (ovipositor apex as Fig. 6) | <i>A. platyurus</i> (Strobl, 1904) |
| 4 | Ovipositor sheath more than 3× as long as first tergite (ovipositor apex as Fig. 7) | <i>A. rufifemur</i> Horstmann, 1971 |
| – | Ovipositor sheath at most 2× as long as first tergite | 5 |
| 5 | Ovipositor sheath 1.2–1.3× as long as first tergite; ovipositor apex as Fig. 3; basal flagellomeres dark | <i>A. altivolus</i> sp. n. |
| – | Ovipositor sheath ca 2× as long as first tergite; ovipositor apex as Fig. 8; basal flagellomeres reddish yellow | <i>A. rufobasalis</i> Horstmann et Kolarov, 1988 |

Males (note that the males of *A. rufifemur* Horstmann, 1971 and *A. acutatus* Khalaim, 2007 are unknown)

- 1 Lateral ocellus touching or almost touching eye (cf. Fig. 9) (hind femur either entirely reddish or at least basally darkened; basal flagellomeres either dark or reddish yellow) 2
- Lateral ocellus more distant from eye (Fig. 10); hind femur at least basally darkened; basal flagellomeres dark *A. platyurus* (Strobl, 1904)
- 2 Hind femur entirely reddish; basal flagellomeres reddish yellow
..... *A. rufobasalis* Horstmann et Kolarov, 1988
- Hind femur at least basally darkened; basal flagellomeres dark 3
- 3 Gena very short, ca 0.15× as long as width of eye in dorsal view (Figs 11, 12) (antenna with 13 flagellomeres) *A. boops* (Gravenhorst, 1829)
- Gena longer, ca 0.3× as long as width of eye in dorsal view (Figs 13, 14) (antenna with 14 flagellomeres) *A. altivolus* sp. n.

Remarks – Presently known distributions are as follows (YU *et al.* 2012): *A. acutatus* Khalaim, 2007 is known from the eastern part of Russia; *A. altivolus* sp. n. is known from Central Europe; *A. boops* (Gravenhorst, 1829) is known from several countries of the Western Palaearctic region; *A. platyurus* (Strobl, 1904) is known from Northern and Central Europe, and from the eastern part of Russia; *A. rufifemur* Horstmann, 1971 is known from Western and Central Europe; *A. rufobasalis* Horstmann et Kolarov, 1988 is known from Southern Europe, Central Asia, and from the eastern part of Russia. From Hungary only *A. boops* (Gravenhorst, 1829) (GYÖRFI 1944) and *A. altivolus* sp. n. have been recorded so far.

Phradis denticulatus Khalaim, 2007

Material – Hungary, Borsod-Abaúj-Zemplén county, Szögliget (Derenk), 4.VIII.2016, leg. E. Kondorosy, a single female specimen was collected.

Remarks – First record for Hungary. This species is widely distributed in the Palaearctic region (YU *et al.* 2012).

*

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