

Hybrizontinae of Hungary (Hymenoptera: Ichneumonidae)

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Abstract – The Hungarian fauna of the subfamily Hybrizontinae (Hymenoptera: Ichneumonidae) is revised based on the material of the Hymenoptera Collection of the Hungarian Natural History Museum, Budapest. Three species are proved to occur in Hungary: *Hybrizon buccatus* (Brebisson, 1825), *Hybrizon pilialatus* Tobias, 1988 and *Ogkosoma cremieri* (Romand, 1838). *Hybrizon pilialatus* and *Ogkosoma cremieri* are reported for the first time from Hungary. Collecting data to the species occurring in Hungary are given.

Key words – faunistics, *Hybrizon buccatus*, *Hybrizon pilialatus*, *Ogkosoma cremieri*, ant parasitoid

INTRODUCTION

The taxonomic position of Hybrizontinae was long uncertain. It was treated in the past as a subfamily of either Braconidae or Ichneumonidae, or as a separate family, until morphological and genetic evidence clarified its position as a subfamily of Ichneumonidae (ACHTERBERG 1999, QUICKE *et al.* 2009, BROAD *et al.* 2018). There are four extant, rather species-poor genera within this subfamily: *Ghilaromma* Tobias, 1988, *Hybrizon* Fallén, 1813, *Neohybrizon* Hisasue et Konishi, 2019, and *Ogkosoma* Haupt, 1913; *Ghilaromma*, *Neohybrizon* and *Ogkosoma* are known from the Palaearctic region, while *Hybrizon* from the Palaearctic, Nearctic and Oriental regions (ACHTERBERG 1999, YU *et al.* 2012, ACHTERBERG *et al.* 2013, HISASUE & KONISHI 2019, LIU *et al.* 2019). Species of this subfamily are known to be endoparasitoids of ant larvae (Formicidae), though the details of their biology are rather poorly known (see e.g. DONISTHORPE 1927, ACHTERBERG 1999, KOMATSU & KONISHI 2010, GÓMEZ DURÁN & ACHTERBERG 2011, KONISHI *et al.* 2012, HISASUE & KONISHI 2019).

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In this paper the Hungarian Hybrizontinae material of the Hungarian Natural History Museum (HNHM, Budapest, Hungary) is revised, and the collecting data to the species occur in Hungary are given. In total, 174 specimens of Hybrizontinae collected in Hungary were revised, identified or re-identified.

Taxonomy and nomenclature follow ACHTERBERG (1999), YU *et al.* (2012), MANDL (2013), and HISASUE & KONISHI (2019). Taxa are listed alphabetically. Identifications were based primarily on ACHTERBERG (1999); specimens were identified at species level by the first author by using a Nikon SMZ645 stereoscopic microscope. All mentioned specimens are deposited in the Hymenoptera Collection of the HNHM.

RESULTS

Genus *Ghilaromma* Tobias, 1988

Remarks – Only one species of the genus, *Ghilaromma fuliginosi* (Wilkinson, 1930), is known to occur in the Western Palaearctic region (ACHTERBERG 1999, KONISHI *et al.* 2012, YU *et al.* 2012). No specimen from Hungary has been found in HNHM material, though its presence in Hungary is probable.

Genus *Hybrizon* Fallén, 1813

Remarks – Four species of the genus are known from the Western Palaearctic region, namely *Hybrizon buccatus* (Brebisson, 1825), *Hybrizon ghilarovi* Tobias, 1988, *Hybrizon juncoi* (Ceballos, 1957) and *Hybrizon pilialatus* Tobias, 1988 (ACHTERBERG 1999, YU *et al.* 2012). Among these, *Hybrizon buccatus* (Brebisson, 1825) and *Hybrizon pilialatus* Tobias, 1988 have been proved to occur in Hungary, the latter is firstly reported here.

Hybrizon buccatus (Brebisson, 1825)

Material examined – HUNGARY: **Budapest**: Csepel, Tamariska-domb [= hill], 20.V.2013, leg. O. Merkl, netting with car, 3♀; same locality, 29.V.2013, leg. O. Merkl, netting with car, 1♀; Hűvösvölgy, VII.1926, leg. L. Bíró, 1♀; Őrmező, 4.VII.1975, leg. J. Papp, 1♀. – **Bács-Kiskun county**: Bugac, 15.VII.1924, leg. Z. Szilády, 1♀; same locality, VI.1976, leg. L. Móczár, 1♀; same locality, VI.1977, leg. L. Móczár, 2♀; same locality, VII.1977, leg. L. Móczár, 1♀; same locality, IX.1977, leg. L. Móczár, 1♀; same locality, 4.VIII.1978, leg. L. Móczár, 2♀; Fülöpháza [on label: Fülöpháza, védett buckás], 19.V.1977, leg. Remete & Horányiné, 4♀; same locality, 6.VI.1977, leg. Z. Kaszab, 1♀;

Kecskemét, date unknown, leg. Györffy, 1♀; Kecskemét, homokbánya [= sand pit] 16.VII.1962, leg. Sólymosné, 1♀; Kéleshalom, 14.XI.1979, leg. Ádám & Hámori, 1♀; Kiskunsági NP [= National Park], 18–23.VI.1976, leg. L. Móczár, 9♀; Tompa, 28.VI.1956, leg. E. Bajári, 1♀. – **Baranya county**: Nagyharsány, Szársomlyó 9.VI.1979, leg. J. Papp, 1♀; Pécs, Mecsek Mts, 17.VI.1957, leg. L. Móczár, 1♀; same locality, 19.V.1966, leg. L. Móczár, 1♀; Peterd, 12.VIII.1925, leg. L. Bíró, 1♀. – **Békés county**: Szeghalom, date unknown, leg. unknown, 1♀. – **Borsod-Abaúj-Zemplén county**: Miskolc, Bükk Mts, Létrástető [= hilltop], 13.VII.1966, leg. L. Móczár, 1♀. – **Csongrád county**: Algyő, 2.VI.1966, leg. L. Móczár, 1♀; Ásotthalom, 31.V.1974, leg. L. Móczár, 1♀; same locality, 3.VI.1974, leg. L. Móczár, 5♀; Kiskundorozsma, 14.VI.1973, leg. L. Móczár, 1♀. – **Győr-Moson-Sopron county**: Fertő-Hanság NP [= National Park], Csorna, Madárvárta [= bird ringing station], 4.VIII.1997, leg. S. Tóth, Malaise trap, 1♀; same locality, 15.IX.1997, leg. S. Tóth, Malaise trap, 1♀; Fertő-Hanság NP [= National Park], Csorna, Király-tó [= lake], 7.VII.1998, leg. S. Tóth, Malaise trap, 1♀; Fertő-Hanság NP [= National Park], Várbalog, 26.VII.2000, leg. A. Podlussány, 1♀. – **Fejér county**: Nadap, Meleg-hegy [= hill], 11.VII.1997, leg. T. Vásárhelyi, 1♀. – **Hajdú-Bihar county**: Újszentmargita, 7.VII.1971, leg. J. Papp, 1♀; same locality, 16–18.VII.1974, leg. Z. Kaszab, 1♀. – **Heves county**: Felsőtárkány, Tar-kő, 900 m, 13.X.1984, leg. Ádám, 1♀. – **Komárom-Esztergom county**: Pilismarót, date unknown, leg. Gy. Szépliget, 1♀. – **Pest county**: Albertirsa, 6.VI.1967, leg. L. Móczár, 1♀; Bernecebaráti, Nagy-völgy [= valley], N48°0'42", E18°58'25", 3.VI.2015, leg. O. Merkl, netting with car, 2♀; Csévharaszt, 29.V.–5.VI.1968, leg. L. Móczár & Sólymosné, 10♀; same locality, 23.V.1972, leg. Mihályi, 1♀; Csömör, 23.VI.1966, leg. L. Móczár, 3♀; Dabas [on label: Gyón], date unknown, leg. E. Csiki, 1♀; Dabas, Rákóczi erdeje [= Rákóczi's forest], 31.V.2015, leg. O. Merkl, netting with car, 1♀; same locality, 13.VI.2015, leg. O. Merkl, netting with car, 2♀; Fót, Somlyó, 1.VI.1960, leg. Mihályi, 1♀; Órbottyán [on label: Ör.Sz.Miklós], 6.VI.1918, leg. K. Sajó, 1♀; Páty, Mézeshegy, 25.VI.–1.VII.2018, leg. Z. Vas, Malaise trap, 1♀; same locality, 8–15.VII.2018, leg. Z. Vas, Malaise trap, 1♀; same locality, 27.VIII.–3.IX.2018, leg. Z. Vas, Malaise trap, 1♀; same locality, 11–19.IX.2018, leg. Z. Vas, Malaise trap, 1♀; Sződ [on label: Vác-Sződ], 4.VII.1923, leg. L. Bíró, 19♀; same locality, 6.VII.1923, leg. L. Bíró, 1♀; same locality, 10.VII.1923, leg. L. Bíró, 9♀; same locality, 6.VI.1926, leg. L. Bíró, 1♀; same locality, 1.VIII.1927, leg. L. Bíró, 1♀; Sződ, Debegió-hegy [= hill], N47°43'4", E19°9'19", 14.VI.2015, leg. O. Merkl, netting with car, 1♀; Tatárszentgyörgy, N47°2'15", E19°21'55", 11.VI.2015, leg. O. Merkl, netting with car, 1♀; Vác [on label: Vác, Gajáritelep], 15.V.1925, leg. L. Bíró, 2♀; Vác [on label: Vác, Tudósdomb], 30.VI.1929, leg. L. Bíró, 16♀; same locality, 4.VIII.1929, leg. L. Bíró, 1♀; same locality, 24.VI.1930, leg. L. Bíró, 5♀; Vácduka, Csörög [on label: Duka, Csörög], 30.VII.1924, leg. L. Bíró, 1♀. – **Szabolcs-Szatmár-Bereg county**: Nyírség, Bátorliget, 17–28.VI.1948, leg. L. Móczár, 1♀; Tákos [on label: Tákos, Bockereki erdő], 8.VI.1966, leg. L. Móczár, 2♀; same locality, 9–18.VI.1966, leg. L. Móczár, 1♀. –

Somogy county: Darány, 23.VI.1982, leg. J. Papp, 1♀; Fonyód, date unknown, leg. Gy. Szépligeti, 2♀; Kaposvár, 5.VIII.1965, leg. Zs. Józán, 1♀; Zamárdi [on label: Zamárdi-felső], 10–18.VII.1965, leg. L. Móczár, 3♀; Zamárdi, Tóközpuszta 24.VI.1953, leg. E. Bajári, 1♀. – **Vas county:** Gyöngyösfalu [on label: Kis-Pöse], leg. L. Méhely, 1♀; Kőszeg, VIII.1938, leg. Visnya, 2♀; same locality, 26.VI.1939, leg. Visnya, 1♀; Kőszeg Mts, Velem [on label: Velemei erdő], 10.VII.1960, leg. Mihályi, 1♀; Hegyhátszentjakab, 28.V.1983, leg. I. Rozner, 1♂. – **Veszprém county:** Tihany, 31.VII.1929, leg. I. Zilahi-Sebess, 1♀; same locality, 22.VI.1967, leg. L. Móczár, 1♀. – **Zala county:** Lasztonya, 27.VI.1967, leg. L. Móczár, 1♀.

Remarks – This species was reported from Hungary several times, and is widely distributed in the Palaearctic region (ACHTERBERG 1999, KONISHI *et al.* 2012, YU *et al.* 2012).

Hybrizon pilialatus Tobias, 1988

Material examined – HUNGARY: **Bács-Kiskun county:** Ágasegyháza, 26.IX.1973, leg. K. Horstmann, 1♂; Kerekegyháza, Kondor-tó [= lake], 23.VIII.1979, leg. J. Papp, 1♂; Tabdi, 6.IX.–25.X.1977, leg. Ádám & Hámori, pitfall trap, 1♂. – **Békés county:** Gyula, Szanazug, 18.IX.1963, leg. Móczár L., 1♂; same locality, 20–25.IX.1963, leg. Sólymosné, 1♂. – **Fejér county:** Fehérvárcsurgó, VII.1923, leg. L. Bíró, 1♂. – **Győr-Moson-Sopron county:** Lébény, Fertő-Hanság NP [= National Park], 25.IX.1995, leg. A. Podlussány, 1♀; same locality, 23.IX.1999, leg. A. Podlussány, 1♂. – **Pest county:** Szigetbecse, nedves rét [= wet meadow], 100 m, 2.X.1994, leg. O. Merkl, 3♂.

Remarks – First records for Hungary. This Western Palaearctic species has been reported from Austria, Bulgaria, Czech Republic, Germany, Italy, Poland and Russia (Kostroma Oblast) so far (ACHTERBERG 1999, YU *et al.* 2012, MANDL 2017).

Genus *Neohybrizon* Hisasue et Konishi, 2019

Remarks – This genus and its only species, *Neohybrizon mutus* Hisasue et Konishi, 2019, was recently described and are known from Japan (HISASUE & KONISHI 2019). No specimen of this genus has been found from Hungary in HNHM.

Genus *Ogkosoma* Haupt, 1913

Remarks – Only one species of the genus, *Ogkosoma cremieri* (Romand, 1838), is known to occur in the Western Palaearctic region (ACHTERBERG 1999, KONISHI *et al.* 2012, YU *et al.* 2012); it has been found from Hungary, and is firstly reported here.

Ogkosoma cremieri (Romand, 1838)

Material examined – HUNGARY: **Pest county**, Páty, Mézeshegy, 47°30'37.33"N, 18°51'19.63"E, 2–9.X.2018, leg. Z. Vas, Malaise trap, 1♂.

Remarks – First record for Hungary. This apparently rare species has been reported from several countries of the region (ACHTERBERG 1999, YU *et al.* 2012).

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REFERENCES

- ACHTERBERG C. VAN 1999: The West Palaearctic species of the subfamily Paxylommatinae (Hymenoptera: Ichneumonidae), with special reference to the genus Hybrizon Fallén. – *Zoologische Mededelingen Leiden* 73(2): 11–26.
- ACHTERBERG C. VAN, YOU L. S. & LI X. Y. 2013: Hybrizon Fallén (Hymenoptera, Ichneumonidae, Hybrizoninae) found in Hunan (China). – *Journal of Hymenoptera Research* 30: 65–74. <https://doi.org/10.3897/JHR.30.3182>
- BROAD G. R., SHAW M. R. & FITTON M. G. 2018: *Handbooks for the identification of British insects. Vol. 7. Part 12. Ichneumonid wasps (Hymenoptera: Ichneumonidae): Their classification and biology.* – Royal Entomological Society, London, vi + 418 pp.
- DONISTHORPE H. ST. J. K. 1927: *The guests of British ants, their habits and life-histories.* – G. Routledge and Sons, London, 244 pp.
- GÓMEZ DURÁN J.-M. & ACHTERBERG C. VAN 2011: Oviposition behaviour of four ant parasitoids (Hymenoptera, Braconidae, Euphorinae, Neoneurini and Ichneumonidae, Hybrizontinae), with the description of three new European species. – *ZooKeys* 125: 59–106. <https://doi.org/10.3897/zookeys.125.1754>
- HISASUE Y. & KONISHI K. 2019: A new genus of the subfamily Hybrizontinae (Hymenoptera: Ichneumonidae) from Japan. – *Zootaxa* 4664(2): 241–250. <https://doi.org/10.11646/zootaxa.4664.2.6>

- KOMATSU T. & KONISHI K. 2010: Parasitic behaviors of two ant parasitoid wasps (Ichneumonidae: Hybrizontinae). – *Sociobiology* **56**(3): 575–584.
- KONISHI K., CHOI M.-B. & LEE J.-W. 2012: Review of the East Asian species of the genera Hybrizon Fallén and Ghilaromma Tobias (Hymenoptera: Ichneumonidae: Hybrizontinae). – *Entomological Research* **42**: 19–27. <https://doi.org/10.1111/j.1748-5967.2011.00352.x>
- LIU J.-X., ACHTERBERG C. VAN, ZHENG B.-Y. & YANG Q.-M. 2019: Hybrizon Fallén (Hymenoptera, Ichneumonidae, Hybrizontinae) in China. – *Journal of Hymenoptera Research* **72**: 11–26. <https://doi.org/10.3897/jhr.72.39333>
- MADL M. 2013: Zur Kenntnis der Hybrizontinae (Hymenoptera, Ichneumonidae) Österreichs. – *Linzer biologische Beiträge* **45**(1): 789–792.
- MADL M. 2017: Erstnachweis von Hybrizon pilialatus Tobias, 1988 (Hymenoptera: Ichneumonidae: Hybrizontinae) in Österreich. – *Beiträge zur Entomofaunistik* **18**: 151–170.
- QUICKE D. L. J., LAURENNE N. M., FITTON M. G. & BROAD G. R. 2009: A thousand and one wasps: a 28S rDNA and morphological phylogeny of the Ichneumonidae (Insecta: Hymenoptera) with an investigation into alignment parameter space and elision. – *Journal of Natural History* **43**: 1305–1421. <https://doi.org/10.1080/00222930902807783>
- YU D. S., ACHTERBERG C. VAN & HORSTMANN K. 2012: *Taxapad 2012, Ichneumonoidea 2011*. – Database on flash-drive. www.taxapad.com, Ottawa, Ontario, Canada.