

Four species of *Entedon* DALMAN (Hymenoptera:
Chalcidoidea: Eulophidae) new in the fauna of Poland

Cztery gatunki *Entedon* DALMAN (Hymenoptera: Chalcidoidea:
Eulophidae) nowe dla fauny Polski

Paweł JAŁOSZYŃSKI¹, Alex GUMOVSKY²

¹ Museum of Natural History, University of Wrocław,
Sienkiewicza 21, 50-335 Wrocław, Poland; e-mail: scydmaenus@yahoo.com

² Schmalhausen Institute of Zoology,
15 Bogdan Khmelnytsky St., 01601 Kiev-30, Ukraine;
e-mail: entedon@gmail.com, gumovsky@izan.kiev.ua

ABSTRACT. Four species of the genus *Entedon* DALMAN (Eulophidae: Entedoninae) are recorded from Poland for the first time: *Entedon cardui* ASKEW (Lower Silesia), *E. fuscitarsis* THOMSON (Western Sudety Mts and Eastern Beskidy Mts), *E. sparetus* WALKER (Lower Silesia) and *E. sylvestris* SZELENYI (Lower Silesia).

KEY WORDS: Hymenoptera, Chalcidoidea, Eulophidae, Entedoninae, new records, Poland.

Introduction

The eulophid subfamily Entedoninae was so far represented in Poland by 16 genera and 120 species (WIŚNIEWSKI 1997; JAŁOSZYŃSKI 2016). The most species-rich are *Chrysocharis* FORSTER, 1856 (35 spp. in Poland), *Pediobius* WALKER, 1846 (20 spp.), *Omphale* HALIDAY, 1833 (16 spp.), *Achrysocharoides* GIRAULT, 1913 (12 spp.) and *Entedon* DALMAN, 1820 (9 spp.) (WIŚNIEWSKI op. cit.). However, this group of chalcidoid wasps is poorly studied in Central Europe and far more species can be expected to occur in Poland. Moreover, some genera or groups of species have never been properly revised and identifications of species recorded by previous authors require verification. Morphological variability

of some species and existence of 'intermediary' forms hamper study on some genera and only molecular methods can clarify taxonomic dilemmas (e.g., GUMOVSKY & BOYADZHIEV 2003). New species were described in nearly each of recent generic revisions of European species (e.g., HANSSON 1985; GUMOVSKY 2007; HANSSON & SHEVTSOVA 2012), and reliable identifications can be made based on the already revised, representative comparative material.

In Poland, the study of chalcidoid wasps has been largely neglected for many years, chiefly due to lack of experts. Only parasitoids of economically important pest insects or seed-eating species attracted some attention. In the contemporary faunistic literature only two species of Entedoninae were recorded from Poland (WIŚNIEWSKI 2007; JAŁOSZYŃSKI 2016). One of them, *Horismenus specularis* (ERDÖS, 1954), was found for the first time in Central Europe (JAŁOSZYŃSKI 2016).

The genus *Entedon* DALMAN, 1820 comprises eulophid wasps that are endoparasitoid koinobionts of beetles. European species develop as larval (GUMOVSKY 1997, 2006) or egg-larval (GUMOVSKY 2007, 2008) endoparasitoids of weevils (Curculionidae, Apionidae), including bark beetles (Scolytinae), whereas the Afrotropical species are mostly associated with seed beetles (Chrysomelidae: Bruchinae) (RASPLUS 1990; GUMOVSKY & RAMADAN 2011). Only nine species have been recorded from Poland so far (compared to nearly a hundred species in Europe; NOYES (2016)). This is undoubtedly a result of exceptionally poor knowledge of the Chalcidoidea of Poland, and further studies will increase this number, presumably even several times.

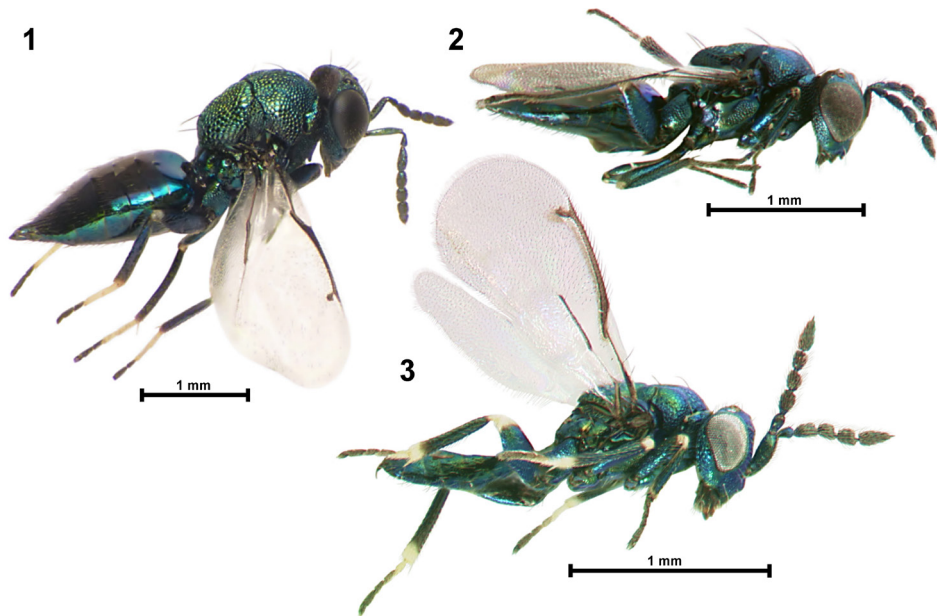
In the present paper we record four species of *Entedon* as new in Poland. All voucher specimens are deposited in the collection of the first author, Wrocław, Poland.

List of species

Entedon cardui ASKEW, 2001

- Lower Silesia: XS37 Wrocław Świniary, 3 VII 2016, 1 ♀, meadow and oak forest edge, sweeping net, leg. P. JAŁOSZYŃSKI.

To date, this species was known from Spain, Bulgaria, Greece, Italy, France and Ukraine, and reported as a parasitoid of the seed-eating weevil *Rhinocyllus conicus* (FROELICH) in flowerheads of Asteraceae (GUMOVSKY 2007).



Figs / Ryc. 1–3. *Entedon cardui*, female/samica (1); *Entedon fuscitarsis*, female/samica (2); *Entedon sylvestris*, male/samiec (3)

Entedon fuscitarsis THOMSON, 1878 (Fig. 2)

- Western Sudety Mts: WS64 Wojcieszów, near natural reserve Góra Miłek, 19 VII 2014, 1 ♀, beech forest, swept from low vegetation, leg. P. JAŁOSZYŃSKI;
- Eastern Beskidy Mts: FV08 Ropienka, 27 VI 2015, 1 ♀, meadow on a slope, sweeping net, leg. P. JAŁOSZYŃSKI.

No biological data are available for this species. Distribution: Hungary, Netherlands, Sweden, European Russia (NOYES 2016).

Entedon sparetus WALKER, 1839

- Lower Silesia: XS37 Wrocław Świniary, 3 VII 2016, 1 ♀, meadow and oak forest edge, sweeping net, leg. P. JAŁOSZYŃSKI.

This species is widely distributed in Europe, recently also recorded from Ukraine, Georgia, Kyrgyzstan, Russian Far East and Morocco (GUMOVSKY 2007). *Entedon sparetus* develops as an egg-larval parasitoid of weevils (among others, *Gymnetron* spp., *Larinus* spp., *Lixus* spp.) in stems of plants. This species and *E. cardui* are very similar; males distinctly differ in the antennal structure, but females can be distinguished only on the basis of a different ratio of the eye height / malar space (GUMOVSKY 2007).

Entedon sylvestris SZELENYI, 1981

(Fig. 3)

- Lower Silesia: XS37 Wrocław Świniary, 5 VI 2015, 3 ♂♂, meadow and mixed forest edge, sweeping net, leg. P. JAŁOSZYŃSKI.

To date, this species was known to occur in Bulgaria, Greece, Hungary, Netherlands, Ukraine and United Kingdom (GUMOVSKY 2006; NOYES 2016). It is a larval endoparasitoid of the seed-eating weevil *Ceutorhynchus sisymbrii* (DIECKMANN) (Curculionidae) associated with *Sisymbrium loesellii* L. (Brassicaceae). The mature parasitized larva of the host buries itself in soil, and the parasitoids pupate underground and emerge from soil late spring (GUMOVSKY 2006). Interestingly, *C. sisymbrii* has just been recorded from environs of Wrocław (including exactly the same collecting site as that of *Entedon sylvestris* reported here), and its newly discovered presence in Lower Silesia is interpreted as a result of dispersal from the west (WANAT et al. 2016).

STRESZCZENIE

Dane faunistyczne dotyczące błonkówek z podrodziny Entedoninae (Chalcidoidea: Eulophidae) występujących na terenie Polski są bardzo fragmentaryczne. Dziewięć gatunków z rodzaju *Entedon* DALMAN wykazano z naszego kraju, co jest liczbą bardzo małą w porównaniu z blisko setką gatunków znanych dotychczas z Europy (przy czym liczba ta rośnie wraz z pojawianiem się rewizji kolejnych grup gatunków). Błonkówki należące do tego rodzaju są parazytoidami larw (rzadziej jaj i larw) chrząszczy, przede wszystkim ryjkowcowatych, poza Europą również strąkowców. *Entedon cardui* ASKEW, *E. fuscitarsis* THOMSON, *E. sparetus* WALKER oraz *E. sylvestris* SZELENYI są w niniejszej pracy podane po raz pierwszy z Polski. Okazy pochodzą z Dolnego Śląska (*E. cardui*, *E. sparetus*, *E. sylvestris*) oraz z Sudetów Zachodnich i Beskidu Wschodniego (*E. fuscitarsis*). Interesującym faktem jest odnalezienie *E. sylvestris* oraz jego gospodarza, ryjkowca *Ceutorhynchus sisymbrii* na tym samym stanowisku, przy czym chrząszcz ten wcześniej nie był znany z Dolnego Śląska.

REFERENCES

- GUMOVSKY A.V. 1997: Review of the genus *Entedon* DALMAN, 1820 (Hymenoptera, Eulophidae, Entedoninae). 1. Infrageneric division of the genus with the description of a new subgenus from Africa. *Vestnik Zoologii*, **31** (5–6): 24-36.
- GUMOVSKY A. 2006: The biology and morphology of *Entedon sylvestris* (Hymenoptera: Eulophidae), a larval endoparasitoid of *Ceutorhynchus sisymbrii* (Coleoptera: Curculionidae). *Journal of Hymenoptera Research*, **15** (2): 232-250.
- GUMOVSKY A.V. 2007: A taxonomic revision, biology and morphology of immature stages of the *Entedon sparetus* species group (Hymenoptera: Eulophidae), egg-larval endoparasitoids of weevils (Coleoptera: Curculionidae). *Bulletin of Entomological Research*, **97**: 139-166.
- GUMOVSKY A. 2008: Parasitism of *Entedon costalis* (Hymenoptera: Eulophidae) in *Glocianus punctiger* (Coleoptera: Curculionidae): an example of intentional discovery of the parasitoid-host association. *Zootaxa*, **1964**: 40-68.
- GUMOVSKY A.V., BOYADZHIEV P. 2003: Review of the Bulgarian *Entedon* DALMAN, 1820 (Hymenoptera: Eulophidae: Entedoninae). *Acta Zoologica Bulgarica*, **55** (2): 3-32.
- GUMOVSKY A., RAMADAN M. 2011: Biology, immature and adult morphology, and molecular characterisation of a new species of the genus *Entedon* (Hymenoptera: Eulophidae) associated with the invasive pest *Specularius impressithorax* (Coleoptera: Chrysomelidae, Bruchinae) on *Erythrina* plants. *Bulletin of Entomological Research*, **101**: 715-739.
- HANSSON C. 1985: Taxonomy and biology of the Palaearctic species of *Chrysocharis* FORSTER, 1856 (Hymenoptera: Eulophidae). *Entomologica Scandinavica (supplement)* **26** pp. 1-130.
- HANSSON C., SHEVTSOVA E. 2012: Revision of the European species of *Omphale* HALIDAY (Hymenoptera, Chalcidoidea, Eulophidae). *ZooKeys*, **232**: 1-157.
- JAŁOSZYŃSKI P. 2016: Dwa nowe dla Polski gatunki Eulophidae (Hymenoptera: Chalcidoidea). *Wiadomości entomologiczne*, **35** (2): 117-120.
- NOYES J.S. 2016: Universal Chalcidoidea Database. WWW publication, the Natural History Museum, London. Available from: <http://www.nhm.ac.uk/research-curation/projects/chalcidooids/index.html> (accessed 26 October 2016).
- RASPLUS J.-Y. 1990: Nouvelles especes afrotropicales du genre *Entedon* DALMAN et notes sur leur biologie. *Bulletin de la Société entomologique de France*, **94**: 223-245.
- WANAT M., MAZUR M., CELADYN R., RUTA R., KAZIMIERCZAK M., JAŁOSZYŃSKI P., MOCARSKI Z., SZYPUŁA J., SIENKIEWICZ P. 2016: New distributional records of fifty weevil species (Coleoptera: Curculionoidea) in Poland. *Acta Entomologica Silesiana*, **24**: 1-20.
- WIŚNIEWSKI B. 1997: *Chalcidoidea (bez Mymaridae)*, [In:] J. RAZOWSKI (ed.) *Wykaz Zwierząt Polski*, t. V. Wyd. ISEZ PAN, Kraków, 5: 132-158.
- WIŚNIEWSKI B. 2007: Dodatki do fauny błonkówek (Insecta, Hymenoptera) Ojcowskiego Parku Narodowego. *Prądnik, Prace Muzeum SZAFERA*, **17**: 131-148.