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RESEARCH ARTICLE

A new species of the genus *Syndipnus* (Hymenoptera: Ichneumonidae: Ctenopelmatinae: Euryproctini) with unusually depressed metasoma

Новый вид рода *Syndipnus* (Hymenoptera: Ichneumonidae: Ctenopelmatinae: Euryproctini) с необычной сплющенной дорсовентрально метасомой

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Abstract. A new species of the subfamily Ctenopelmatinae, *Syndipnus depressus* **sp. nov.** with strong dorsoventral compression of the metasoma, is described from Poland. Similarity of the new species to two ctenopelmatine species of the tribe Mesoleiini (*Mesoleius phyllotomae* Cushman, 1933 and *M. aceris* Shaw et Kasparyan, 2003), endoparasitoids of leaf mining sawflies of the genus *Heterarthrus* Stephens, 1835 (Tenthredinidae: Heterarthrinae), suggests that the new species may have similar hosts.

Резюме. В подсемействе Ctenopelmatinae описан из Польши новый вид *Syndipnus depressus* **sp. nov.** с сильно сплющенной дорсо-вентрально метасомой. Сходство нового вида с двумя другими видами трибы Mesoleiini (*Mesoleius phyllotomae* Cushman, 1933 и *M. aceris* Shaw et Kasparyan, 2003), эндопаразитоидами минирующих пилильщиков рода *Heterarthrus* Stephens, 1835 (Tenthredinidae: Heterarthrinae), дает основание предполагать, что новый вид имеет сходных хозяев.

Key words: taxonomy, Poland, Europe, West Palaearctic region, Tenthredinidae, Heterarthrinae, new species

Ключевые слова: систематика, Польша, Европа, Западная Палеарктика, Tenthredinidae, Heterarthrinae, новый вид

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Introduction

The Holarctic genus *Syndipnus* Förster, 1869 includes 30 species: 7 Nearctic and 23 Palaearctic (Yu et al., 2016). The genus may easily be distinguished from other Ctenopelmatinae genera (except for the *Rhorus mesoxanthus* species-group) by the immovably joined (partly fused) tergites 2 and 3, and absence of a glymma in tergite 1 of the metasoma. Since the publication of monographs by Schmiedeknecht (1913) and Meyer (1936), a few additional Palaearctic species have been described by Roman & Lack (1934), Habermehl (1935), Teunissen (1953), Kasparyan (2003) and Aubert (1998, 2007). A synopsis of the Nearctic species was given by Walley (1940, 1945).

All known host records of *Syndipnus* species are from nematine sawflies (Nematinae: Tenthred-

inidae) with open-living larvae feeding on coniferous and deciduous trees and on herbaceous plants (Aubert, 2000; Yu et al., 2016).

The aim of this work is to describe a new species of *Syndipnus* from Poland.

Material and methods

The holotype of the new species is deposited in the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZIN). Morphological terminology mainly follows that of Townes (1969, 1970). Taxonomy follows the catalogue TaxaPad (Yu et al., 2016). Layer photographs were taken in ZIN with a Canon EOS 70D digital camera attached to an Olympus SZX10 stereomicroscope, and partially focused images were assembled with Helicon Focus 6 Pro software.

Results

Order **Hymenoptera**

Family **Ichneumonidae**

Subfamily **Ctenopelmatinae**

Tribe **Euryproctini**

Genus ***Syndipnus*** Förster, 1869

Type species: *Euryproctus* (*Syndipnus*) *macrocerus* Thomson, 1883; designated by Viereck, 1914.

Syndipnus depressus sp. nov.
(Figs 1–5)

Holotype. Female; **Poland**, "Lomna Stac-ja at Warszawa, 10.6.1987, byliny", leg. Ja. Sawoniewicz (ZIN).

Etymology. The name of the new species refers to strong dorsoventral depression of its metasoma.

Comparative diagnosis. The new species can easily be distinguished from all congeners by the strongly dorsoventrally depressed metasoma; tergites 6 to 8 long and each projecting strongly beyond the preceding tergite (Fig. 2); ovipositor small, thin, entirely concealed by tergites 7 and 8 (Fig. 5); antenna with only 23 flagellomeres (in most congeners usually more than 24 flagellomeres; 19–21 flagellomeres only in *S. saotis* Kasparyan, 2003, but in this species metasoma is compressed laterally).

Description. Female (holotype). Fore wing 4.0 mm long. Antenna (Fig. 1) with 23 flagellomeres; flagellum 3.5 mm long, about 0.9 times as long as fore wing; two basal flagellomeres combined as long as maximum diameter of eye; length of subapical flagellomeres 1.3 times of their width. Head weakly and roundly narrowed behind eyes, almost 1.4 times as wide as mesoscutum between tegulae. Malar space finely granulate, about 0.6 of basal mandibular width. Face finely scabrous with fine scarce punctures, its central part with thin vertical rugae. Frons granulate, with median polished longitudinal shallow depression, and in lower half with more or less transverse irregular rugae. Temple smooth with fine sparse punctures and with granulation in its lower part (on cheek).

Pronotum with short epomia obscured (hidden) by adjacent rugae; dorsolateral area behind epomia smooth and almost impunctate; lower corners of pronotum with irregular rugae. Mesoscutum smooth with rather superficial moderately large punctures; notauli rather long but not deep; median lobe of mesoscutum dorsally polished with sparse short setae and with small impunctate area, behind this area (in posterior half) with longitudinal rugosity and rather coarse punctures. Prescutellar groove wide, crenulated with about nine short transverse rugae. Scutellum smooth, moderately punctate, with short dorsolateral carinae. Mesopleuron smooth with sparse fine punctures, with light rugosity on front margin and near subtegular ridge; speculum large. Upper end of prepectal carina almost reaching hind margin of pronotum at its middle. Mesopleural pit as a short groove, about 0.25 times as long as mesopleuron. Mesopleural suture before mesepimeron with about nine deep pits. Metapleuron roughly scabrous with small polished area before front end of indistinct pleural carina; submetapleural carina distinct. Propodeum rugose, with transverse rugosity on basal area and areola; median longitudinal carinae and carinae enclosing laterally apical area rather coarse (Figs 3, 4).

Metasoma strongly depressed (Fig. 2), dorsally with first tergite completely and second tergite at basal two tenths and widely laterally (except distal two tenths) matt, with thin scabrous sculpture; following tergites shining, subpolished, with sparse fine setae (Fig. 4). First tergite 1.25 times

Figs 1–5. *Syndipnus depressus* **sp. nov.**, female, holotype. **1**, head and antenna, lateral view; **2**, body, lateral view; **3**, mesosoma, dorsal view; **4**, propodeum and base of metasoma, dorsal view; **5**, apical segments of metasoma, ventral view.

as long as wide at hind margin; petiole at base narrow, 0.3 times as wide as posterior width of tergite. Second and third tergites confluent, mediodorsally without distinct suture between them. Tergites 6 to 8 long and each projecting strongly beyond preceding tergite (Fig. 2). First tergite without epipleura; tergites 2–8 with epipleurae wide, about twice as long as wide, strongly turned under; tergites 2 and 3 with epipleurae separated from their tergites by distinct crease; and tergites 4–7 with epipleurae without distinct crease. Spiracles dorsad of creases in tergites 2 and 3, and laterad (on turned margins) in tergites 4–7. Sternites 2–8 strongly sclerotised, with weak median longitudinal fold on sternites 2 and 3, and without distinct fold on sternites 4–6 (Fig. 5). Ovipositor small and completely hidden under tergites 7 and 8 (Figs 2, 5).

Antennae blackish. Head and mesosoma black. Clypeus and mandible yellow; palpi dark brown, fourth and (or) third maxillary palpomeres yellowish. Small sclerite between hind corner of pronotum and tegula whitish yellow; tegula yellowish, translucent. Pterostigma brownish, pale at extreme base. Legs completely reddish yellow with hind tibia at apical 0.25 and hind tarsomeres 2–5 slightly brownish rufous (Fig. 2). Metasoma blackish; tergites 1 and 2 in apical two tenths reddish brown (Fig. 4); sternites 2–6 blackish brown.

Male unknown.

Remarks. Syndipnus depressus **sp. nov.** differs from congeners and from most other ichneumonids by the strong dorsoventral compression of the metasoma. This unusual morphological peculiarity and habitus of the new species suggests that the new species may have unusual hosts, other than Nematinae.

Discussion

An unusual apomorphy of the genus *Syndipnus*, the tergites 2 and 3 fused, is exceptionally rare in the family Ichneumonidae (but is an important synapomorphy in Hymenoptera for all Braconidae) and is met in only a few genera: in *Rothneyia* Cameron, 1897, *Hemigaster* Brullé, 1846, females of *Polyaulon* Förster, 1869 (Cryptinae), females of *Pedunculus* Townes, 1969 (Pedunculinae), *Exenterus* Hartig, 1837 (Tryphoninae), in *Rhorus mesoxanthus* species-group of the genus *Rhorus* Förster, 1869, and in *Syndipnus* (Ctenopelmatinae). Other considerable modifications in the structure of metasoma of some *Syndipnus* species perhaps are connected with utilisation of ecologically new hosts. In the genus *Syndipnus*, hosts are known for only five or six species and all of them are the nematine sawflies (Tenthredinidae: Nematinae) with larvae living openly on coniferous, willows and grasses. *Syndipnus depressus* **sp. nov.** described here differs from congeners and from most other ichneumonids by the strong dorsoventral depression of the metasoma. By this unusual morphological peculiarity and by habitus, the new species is similar to two ctenopelmatine species of the tribe Mesoleiini: *Mesoleius phyllotomae* Cushman, 1933 and *M. aceris* Shaw et Kasparyan, 2003. Both are endoparasitoids of leaf-mining sawflies of the genus *Heterarthrus* (Tenthredinidae: Heterarthrinae) whose larvae feed on *Betula* Linnaeus, 1753 and *Acer* Linnaeus, 1753, respectively. These data can be considered as clues for possible trophical links of *S. depressus* **sp. nov.** with similar concealed hosts (perhaps to leaf mining sawflies of the subfamily Heterarthrinae).

An other species, *Syndipnus saotis*, also has an uncommon modification of the metasoma with its very strong lateral compression and sheath broad ovate. This species has received its specific name due to its high convergent similarity to the genus *Saotis* (also Mesoleiini), which includes only specialised parasitoids of gall-forming sawflies of the tribe Euurini on *Salix*. Quite possibly, *S. saotis* is also a parasitoid of concealed hosts (such as gall-forming sawflies). Thus, the strong morphological transformation in both species may be correlated with utilsation of new ecological entities, i.e. concealed hosts in plant tissues.

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