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Revision of the Palaearctic brood parasitic genus *Nipponodipogon* Ishikawa, 1965 of spider wasps (Hymenoptera: Pompilidae: Pepsinae)

AKIRA SHIMIZU¹, ARKADY S. LELEJ^{2,3} & VALERY M. LOKTIONOV²

¹Department of Biological Sciences, Graduate School of Science and Engineering, Tokyo Metropolitan University, Hachioji, Tokyo, Japan. E-mail: shimizu-akira@tmu.ac.jp

²Institute of Biology & Soil Science, Russian Academy of Sciences, Vladivostok, 690022, Russia. E-mails: lelej@biosoil.ru, pompilidaefer@mail.ru

³Corresponding author. E-mail: lelej@biosoil.ru

Abstract

The systematics and bionomics of the Palaearctic brood parasitic genus *Nipponodipogon* Ishikawa, 1965 are revised. Seven species are listed. A new species *N. sudai* Shimizu, **sp. nov.** (Japan, Honshu) and the hitherto unknown males of *N. iwatai* (Ishikawa, 1965) and *N. nagasei* (Ishikawa, 1965) are described and illustrated. Six species from Japan and the Russian Far East are redescribed. A key to species is provided.

Key words: systematics, *Dipogon* genus-group, Deuterageniini, new species, Japan, Russian Far East

Introduction

Nipponodipogon Ishikawa, 1965 is a pompilid genus belonging to the subfamily Pepsinae, distributed in the Far Eastern part of Eurasia and the Japan Archipelago. Ishikawa (1965) created this taxon as a subgenus of the genus *Dipogon* Fox, 1897, based on the three species, *D. (N.) iwatai* Ishikawa, 1965, *D. (N.) nagasei* Ishikawa, 1965 and *D. (N.) mandibularis* Ishikawa, 1965, the first of which is the type species of the genus. In this paper, he also erected further two new subgenera of *Dipogon*, i.e., *Myrmecodipogon* Ishikawa, 1965 and *Stigmatodipogon* Ishikawa, 1965. These taxa and *Dipogon* and *Deuteragenia* Šusterka, 1912 are closely related each other, forming the ‘*Dipogon* genus-group’ (or tribe Deuterageniini *sensu* Engel & Grimaldi (2006), Lelej & Loktionov (2012b)). Later, Ishikawa (1968) described another new species of *Nipponodipogon*, *D. (N.) hayachinensis* Ishikawa, 1968 from Mt. Hayachine, northeast Honshu, Japan. In his review of *Dipogon* and *Poecilageniella* Ishikawa, 1965 of the Russian Far East, Lelej (1986) described two new species of *Dipogon* (*Nipponodipogon*), *D. (N.) rossicus* Lelej, 1986 and *D. (N.) kurilensis* Lelej, 1986. Currently, only these two species have been known from Russia (Lelej 1995, Lelej 2000, Loktionov & Lelej 2014).

Phylogenetic relationships within the *Dipogon* genus-group were first analyzed using a cladistic method by Lelej and Loktionov (2012b), based on 13 species of seven genera, using 24 morphological characters. They recognized the following relationship among them: *Priocnemis* Schiødte, 1837 (out group) + [*Stigmatodipogon* + {(*Deuteragenia* + *Mesagenia* Haupt, 1959) + [(*Winnemanella* Krombein, 1962 + *Nipponodipogon*) + (*Myrmecodipogon*) + *Dipogon*]}]. Regarding *Mesagenia*, only one species of this genus, *M. antropovi* (Lelej, 1995) was used in their analysis and based on these data it was synonymized with *Deuteragenia bokhaica* (Lelej, 1986). Molecular analyses, however, have not been carried out and further analyses seem to be needed to clarify their phylogeny.

Species of *Nipponodipogon* are brood parasitic wasps. Shimizu and Ishikawa (2002) pointed out the peculiar features in their antennal structure: the antenna is short, stout and thickened toward the middle of the flagellum, and flagellomeres 2–10 are somewhat flattened on the anteroventral side. Because a similar structure is found in the brood parasitic pompilids, *Poecilagenia* Haupt, 1927 (Shimizu 2000) and *Evagetes* Lepageletier de Saint-Fargeau,