



Nysson distinguendus Chevrier, 1867 (Hymenoptera, Crabronidae), a new species to the fauna of Poland

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Abstract: One female of *Nysson distinguendus* Chevrier, 1867 was found in the Wielkopolska-Kujawy Lowland in Toruń-Glinki, where vegetation is formed by multi-age pine forests with dry heaths and psammophilous grasslands. This is the first record in Poland. The present data indicate that this species may be just as widespread as *N. dimidiatus* Jurine, 1807, with whom *N. distinguendus* has long been identified.

Key words: Hymenoptera, Crabronidae, *Nysson distinguendus*, first record, Poland

INTRODUCTION

Hymenoptera of the genus *Nysson* Latreille, 1796 are represented by 102 species worldwide (Pulawski 2013), including 33 species confirmed from Europe (Barbier 2013) and 8 species from Poland (Wiśniowski 2004). It is the largest genus of the Nyssonini tribe.

Representatives of this genus are of medium size – the body length of species occurring in Poland ranges from 4 to 12 mm. Their characteristic features are as follows: two discoidal cells and three submarginal cells on the forewing, while the second submarginal cell is petiolate. The marginal cell does not form an additional cell. Abdomen with yellow and/or red patterns. Mandibles are short and crooked. Eyes are convex and their internal edges without cut-outs are parallel or convergent downwards. Antennae are short and thick, and their distal parts are the key characteristics of males. The thorax is short and wide with clinging silver hair on the ventral side. Propodeum is coarsely striped or creased with thick teeth on both sides. The second sternite is convex, often with a steep wall within the anterior part. The pronounced pygidial area in females and the seventh tergite in males are flat on both sides with tiny, more or less elongated teeth. Hind tibiae with hair on the outer surface (Noskiewicz & Pulawski 1960, Lomholdt 1984, Jacobs 2007). The genus is widespread throughout the world in continental areas; more abundant in the Holarctic, however, than in the Palearctic (Bohart & Menke 1976, Lomholdt 1984).

For a long time *N. distinguendus* has been considered as synonymous with *N. dimidiatus*, and still is by some experts (Pulawski 2013). Synonymization of *N. distinguendus* was done by Handlirsch in 1887. Only in 1996 Schmid-Egger presented characteristic features of *N. distinguendus* and restored its taxonomic identity. At present, most experts recognise *N. distinguendus* and *N. dimidiatus* as two separate species.

The aim of the study is to determine whether *N. distinguendus*, recently raised to the rank of species, is also found in Poland.

TAXONOMIC IDENTIFICATION

Identification keys for *Nysson* are provided by Schmid-Egger (1996) and Jacobs (2007), where the following characters are considered for the two similar species:

N. dimidiatus: Female. T1 (= the first abdominal tergite) of without white spots, entirely light red, T2 (= the second abdominal tergite) sides light red from the middle to the base. Segments of antennae always black.

Male. T1 without or with 2 small white spots, half larger than spots on T2. T1 mostly light red, seldom partly or completely dimmed. Dark clypeus.

N. distinguendus: T1 and T2 in females with white spots, T1 usually dimmed at the terminal part, T2 sides light red. Segments of antennae sometimes lightened.

T1 in males with 2 white spots of the same size as spots on T2. T1 usually entirely black, seldom light red. Clypeus sometimes with two bright spots.

MATERIAL EXAMINED

Nysson dimidiatus is rarely recorded in Poland, so far known from the Baltic Coast, Pomeranian Lakeland, Masurian Lakeland, Wielkopolska-Kujawy Lowland, Lower Silesia and Sandomierz Basin (Wiśniowski 2004).

The reviewed material of *N. dimidiatus* was collected from the following regions:

The Wielkopolska-Kujawy Lowland

Toruń-Strugaj (CD48), 22 Jun 1976 – 1♀, leg. T. Pawlikowski

Trzebaw (XT29), 14–23 May 2006 – 1♀, 21–30 Jun 2007 – 1♀, 8–17 Jul 2007 – 1♂, leg. H. Piekarska-Boniecka

Gorzyczki (XT27), 1–10 Jul 2009 – 1♀ leg. H. Piekarska-Boniecka

the Nature Reserve “Gorzowskie Murawy” (WU14), 19 Jun 2012 – 1♂, leg. P. Olszewski

The Masurian Lakeland

Sierakowo (CD59), 9 Jul 2011 – 1♂, 3 Jul 2012 – 1♀, 7 Jul 2012 – 1♀, leg. P. Olszewski.

N. distinguendus was found in the Wielkopolska-Kujawy Lowland: Toruń-Glinki (52°58'8"N, 18°33'17"E, UTM: CD37), 10 Jun 2012 – 1♀, leg., det. et coll. P. Olszewski. The specimen of *N. distinguendus* was caught by entomological net during the course of the entomological research conducted in the valley areas of the Vistula River.

DISCUSSION

Relatively little is known about the biology of species from the genus *Nysson* (Evans & O'Neill 2007). The genus includes cleptoparasites i.e. hymenoptera, which had lost their instinct to hunt and build nests, because they got specialized in laying eggs and feeding on resources gathered by other Sphecidae from the genera: *Alysson* Panzer, 1806, *Argogorytes* Ashmead, 1899, *Gorytes* Latreille, 1805, *Harpactus* Shuckard, 1837, *Hoplisoides* Gribodo, 1884 and *Oryttus* Spinola, 1836 (Bohart & Menke 1976, Bitsch 2010). The latter genus is absent in Poland. According to Schmid-Egger (1996) and Blösch (2000), *Alysson spinosus* (Panzer, 1801), *Harpactus elegans* (Lepelletier, 1832), *Harpactus laevis* (Latreille, 1792) and *Harpactus lunatus* (Dahlbom, 1832) can be hosts of *N. distinguendus*. In search of host's nests, females fly low to the ground. After they find a nest, they sneak in and lay eggs on the lower part of the pronotum under the wings or behind the posterior coxae of prey. Larvae of cleptoparasites hatch earlier than larvae of hosts and eat the offerings collected by a female. Pupation takes place in a cocoon (Blösch 2000). In the studied area of Toruń-Glinki the specimens of *Harpactus lunatus*, a likely host species of *N. dimidiatus*, were also collected.

According Schmid-Egger (1996) *Nysson distinguendus* prefers dune areas. Our finding of this species may confirm this opinion because the specimen was caught in the western district of Toruń-Glinki, where vegetation is formed by multi-age pine forests with dry heaths and psammophilous grasslands (Figure).



Figure. The habitat of *Nysson distinguendus* in Toruń-Glinki.

So far in Europe *N. distinguendus* was reported from Germany, the Czech Republic (Schmid-Egger 1996, Blösch 2000, Bogusch et al. 2009) and Sweden (Johansson 2010). However, in Finland, Italy and the Netherlands, *N. dimidiatus* var. *distinguendus* occurs (Lefebvre 1971, Zanden 1977, Pagliano 2009, Bitsch 2010). Probably *N. distinguendus* is more widespread in Europe, particularly in areas where its hosts occur. Therefore, the current data may also indicate a wide distribution of this species as *N. dimidiatus*.

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STRESZCZENIE

[*Nysson distinguendus* Chevrier, 1867 (Hymenoptera: Crabronidae) – nowy gatunek dla fauny Polski]

Podczas prowadzenia badań entomologicznych na obszarach dolinnych rzeki Wisły złowiono jedną samicę grzebacza *Nysson distinguendus* Chevrier, 1867: Wielkopolska-Kujawy Lowland: Toruń-Glinki, (UTM: CD37). Gatunek ten długo był uważany za tożsamy z *N. dimidiatus* Jurine, 1807, którego zasięg obejmuje całą Europę. Od czasu, gdy przywrócono jego odrębność taksonomiczną, został wykazany z Niemiec, Czech oraz Szwecji. Natomiast z Finlandii, Włoszech i Holandii wykazywano *N. dimidiatus* var. *distinguendus*. Aktualne dane mogą wskazywać na równie szerokie rozprzestrzenienie tego gatunku co *N. dimidiatus*.

Accepted: 12 October 2013