

# First record of *Nysson hrubanti* Balthasar 1972 in Poland (Hymenoptera, Crabronidae)

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## Zusammenfassung

Jacek Wendzonka, Przemysław Żurawlew: **Erstnachweis von *Nysson hrubanti* Balthasar 1972 in Polen (Hymenoptera: Crabronidae).** Die Echte Grabwespe *Nysson hrubanti* Balthasar 1972 konnte das erste Mal in Polen nachgewiesen werden. Ein einzelnes Männchen der sehr seltenen Art wurde im Juli 2015 im Gołuchów Arboretum im Wielkopolsko-Kujawska Tiefland gesammelt. *N. hrubanti* ist eine in Zentral-Europa endemische Art, die an sandige Habitate gebunden ist.

## Summary

The crabronid wasp *Nysson hrubanti* Balthasar 1972 is reported from Poland for the first time. A single male of this rare species was collected in Gołuchów Arboretum in Wielkopolsko-Kujawska Lowland in July 2015. *N. hrubanti* is an endemic species in Central Europe dependent on sandy habitats.

## Introduction

Digger wasps (Sphecidae sensu lato) in the world fauna include just over 10,000 species (Pulawski 2020). In Poland 241 species are recorded, grouped in three families: Ampulicidae, Sphecidae and Crabronidae (Olszewski et al. in press). To date 103 species have been classified within the genus *Nysson* Latreille, 1802, of which 9 were found in Poland. During research on Aculeata of Pleszew District *Nysson hrubanti* Balthasar 1972 was discovered.

## Results

Material: 21.07.2015 – 1 ♂ leg. P. Żurawlew, det. et coll. J. Wendzonka, in Moericke trap.

Locality: Nizina Wielkopolsko-Kujawska, Gołuchów [UTM: YT04] [51°51'40.0" N, 17°56'09.4" E]

The habitat is a dry, regularly mown meadow located in the park-arboretum (Fig. 1). The area is sheltered from wind and highly sunny. Many patches of vegetation are withered, leaving uncovered naked soil, and there are numerous molehills. Nearby is the Ciemna River with many river banks. They are exposed in many places with bare visible slopes and sand drawn by the water. The park-arboretum in Gołuchów (160 ha) is a mosaic environment. Beside the Ciemna river and meadows, there are ponds and a large number of trees and bushes, many of which are protected as natural monuments. Since the 18th century, an Italian garden with an orchard has existed around the castle. For many decades, numerous researches on flora and fauna have been conducted in the park (Kiczyńska et al. 2015, Żurawlew 2018).

In total, 26 species of digger wasps have been found in the arboretum (unpubl. data). Apart from *N. hrubanti*, we found the interesting species *Tachytes panzeri* Dufour, 1841; *Trypoxylon fronticorne* Gussakovskij, 1936; *T. deceptorium* Antropov, 1991; *Rhopalum gracile* Wesm., 1852 and *Harpactus tumidus* (Panzer, 1801).



Fig. 1: Gołuchów – locality of *Nysson hrubanti* in Poland. Ciemna river in the foreground and dry meadow beyond (photo: Żurawlew).

## Discussion

*Nysson hrubanti* was described by Balthasar (1972) from the former Czechoslovakia: southern Slovakia and Moravia. Recently it was found again in the Czech Republic (Tropek et al. 2013). In Germany it was reported by Schmid-Egger (1996), and by (among others) Schnee (1997), Reder (2006), Theunert & Sprick (2008) and Theunert (2010). The species situation in Germany, in terms of distribution, is summarized by Tischendorf et al. (2011), which shows that *N. hrubanti* is present in most regions. Its range reaches the northwestern part of Germany. Most recently, *N. hrubanti* was also discovered in Austria (Wiesbauer 2016). Also, unpublished information about the presence of this species in the former USSR is known (Schmid-Egger 1996).

*N. hrubanti* is considered as a Central European endemic (Tropek et al. 2013). Its habitat are sandy and dune areas, although it does not need large surfaces of uncovered sand (Tischendorf et al. 2011). Researchers from the Czech Republic point to anthropogenic habitats like post-industrial heaps as substitutes for dunes (Tropek et al. 2013), considering *N. hrubanti* as a drift sand specialist (Tropek et al. 2016). However, the Gołuchów site is closer to the habitat of this species found in Ber-

lin, which includes dry meadows, ruderal localities, uncovered soil surfaces and bushes (Saure 2005). All these elements are present also at our site. So it seems that the species is not quite stenotopic.

*N. hrubanti* is a nest parasite of other crabronids. The most likely host is *Harpactus lunatus* (Dahlbom, 1832), possibly also *H. laevis* (Latreille, 1792) and *Alysson spinosus* (Panzer, 1801) (Schmid-Egger 1996, Theunert 2010, Tischendorf et al. 2011). None of them was found at the examined locality, whereas *H. tumidus* was found in the flight period of *N. hrubanti*. However, the presence of *H. lunatus*, which is common in Pleszew District, cannot be excluded.

Balthasar (1972) considered *N. hrubanti* to be a very rare species and despite many later records from Germany this opinion persists to this day. In Germany this species is listed as potentially endangered (Schmid-Egger 2010) and in Czech Republic as critically endangered (Tropek et al. 2013, 2016). In Poland, *N. hrubanti* is probably very rare, as evidenced by its relative late discovery (compared to German data). It can be ruled out that it is not recognized due to improper determination, because this species is not difficult to determine and it is immediately "eye-catching" (Fig. 2). However, it may have been overlooked (Schmid-Egger 2010). It is small, delicate and usually not an abundant species.



Fig. 2: *Nyssan hrubanti* ♂, habitus, lateral view (photo: Wendzonka).

The species can be recognized with the following character combinations:

- punctation of mesonotum with punctures similar in size, interspaces smooth and shiny (Fig. 3)
- tergum I red, punctation similarly though with smaller points (Fig. 4)
- sternum II slightly bulging (Fig. 5)
- Medial vein of hindwing begins far behind the anal cell, and its distance is equal to or greater than the length of the nervulus; in a case of similar *N. quadriguttatus* this distance is much smaller (Fig. 6)
- ♂♂ have a characteristic tergum VII (Fig. 7)

A detailed description and key to the genus was provided by Balthasar (1972), a key to the group of *N. hrubanti*/*N. quadriguttatus* is also given by Schmid-Egger (1996) and Standfuss & Standfuss (2017).



Fig. 3: *Nyssan hrubanti* ♂, punctation of mesonotum and scutellum, also visible tegula and yellowish pronotal lobus (photo: Wendzonka).

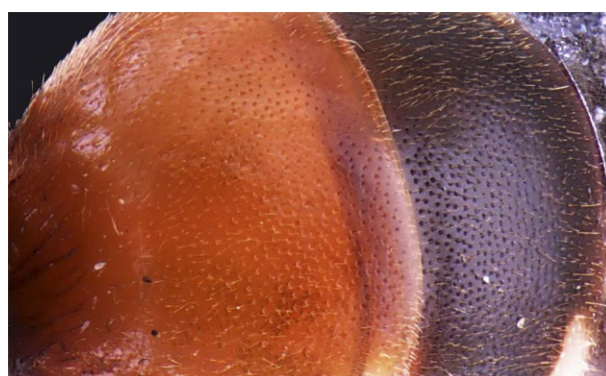


Fig. 4: *Nyssan hrubanti* ♂, punctation of terga I and II (photo: Wendzonka).

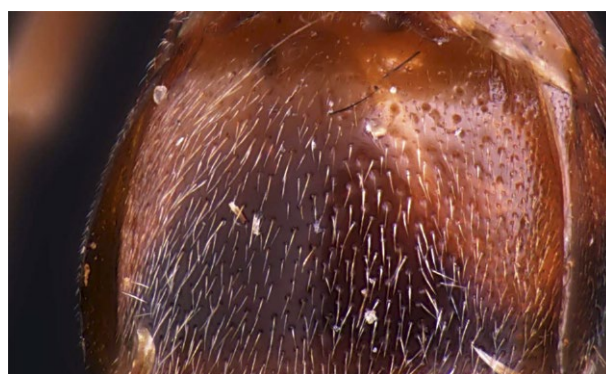


Fig. 5: *Nyssan hrubanti* ♂, punctation of sternum II (photo: Wendzonka).



Fig. 6: *Nyssan hrubanti* ♂, venation of hind wing (photo: Wendzonka).



Fig. 7: *Nysson hrubanti* ♂, tergum VII (photo: Wendzonka).

## Acknowledgement

We are very grateful to Michał Brodacki (Warsaw, Poland), Christian Schmid-Egger (Berlin, Germany), Reiner Theunert (Hohenhameln, Germany) and Rolf Witt (Ede- wecht, Germany) for their invaluable help.

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Jahr/Year: 2020

Band/Volume: [11](#)

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Artikel/Article: [First record of Nysson hrubanti Balthasar 1972 in Poland \(Hymenoptera, Crabronidae\) 55-57](#)