

SEBASTIAN SALATA¹ , TOMASZ RUTKOWSKI^{2,3} , LECH BOROWIEC⁴ 

First record of *Nylanderia jaegerskioeldi* (MAYR, 1904) (Hymenoptera: Formicidae) from Central Europe

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^{1,4} Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Przybyszewskiego 65,
51-148 Wrocław, Poland

² Department of General Zoology, Faculty of Biology, Adam Mickiewicz University, ul Umultowska 89,
61-614 Poznań, Poland

³ Natural History Collections, Faculty of Biology, Adam Mickiewicz University, Umultowska 89,
61-614 Poznań, Poland

emails: ¹sdsalata@gmail.com, ²pardosa@gazeta.pl, ⁴lech.borowiec@uwr.edu.pl

Abstract: *Nylanderia jaegerskioeldi* (MAYR, 1904), a common tramp species, is recorded from Poland for the first time. It is the first record of this species from Central Europe and the first observation of this species in the indoor locality. Its updated distribution in Palearctic is provided and features allowing a certain separation of *N. jaegerskioeldi* from *N. vividula* (NYLANDER, 1846) are discussed.

Key words: ants, tramp species, Lower Silesia.

INTRODUCTION

Nylanderia jaegerskioeldi (MAYR, 1904) is an Afrotropical species that spread its range to the Palearctic region (LAPOLLA *et al.* 2011). It is a common tramp species known from most of Mediterranean countries. So far it has been recorded from Algeria (BERNARD 1953), Cyprus (SALATA *et al.* 2019), Egypt (BERNARD 1953), Greece (SALATA *et al.* 2019), Israel (VONSHAK & IONESCU-HIRSCH 2009), Lebanon (TOHMÉ & TOHMÉ 2014), Malta (GÓMEZ 2017), Morocco (TAHERI *et al.* 2017), Portugal (OBREGÓN & REYES 2012), Spain (ESPADALER & COLLINGWOOD 2001), Syria (BERNARD 1953) and Turkey (KIRAN & KARAMAN 2012). *Nylanderia jaegerskioeldi* is a synanthrope associated with open, arid and sunny habitats that can be easily located within Mediterranean region. Unlike *N. vividula* (NYLANDER, 1846), another tramp species recorded from several Mediterranean and European countries, there are no records of *N. jaegerskioeldi* from greenhouses or other indoor localities. Below we present the first record of *N. jaegerskioeldi* from Poland and discuss features that allow distinguishing this species from *N. vividula*.

RESULTS

Species was recorded from Africarium in Wrocław Zoological Garden. Africarium is a newly established construction being an exhibition of characteristic African habitats, both marine and terrestrial. First single specimen of *N. jaegerskioeldi* was collected in 2015, a year after Africarium erection. Its presence was confirmed after 3 years, in the same locality. Below we provide a detailed description of collecting area:

– **Poland, Lower Silesia**, Wrocław, ZOO, Afrykarium, 117 m, 51.10406N/17.088E, 1w, 19.02.2015, coll. T. Rutkowski (DBET); idem., 12w, 10.04.2018, coll. S. Salata (DBET).

Specimens were collected on plants surrounding a formicarium and a footpath between the ant farm and an entrance to the Congo jungle house. Locality was humid and sunny. Despite intense effort specimens were not found in the jungle exhibition and other parts of Africarium. Therefore, we assume that the nest is settled in the vicinity of the ant farm. Based on the personal information, from the employee responsible for the leafcutter ants colony, *Nylanderia* workers are often found stealing food from the ant farm. This observation can confirm our assumption that the *Nylanderia* colony depends on resources available from the formicarium and is established in its vicinity.

DISCUSSION

Hothouses of Wrocław Zoological Garden hosts two tramp species. Mentioned in the paper *N. jaegerskioeldi* and recorded in 2015 *Hypoponera ergatandria* (FOREL, 1893) (SALATA *et al.* 2015). Both were observed in indoor localities, characterized by constant high temperature and humidity. *Hypoponera ergatandria* was also discovered in soil, in the Congo jungle house in Africarium. Transportation of colonies together with plants used in construction of the Africarium exhibitions appears to be the most possible way of introduction of those species to Wrocław ZOO. Progressing development of Wrocław ZOO and other zoological and botanical gardens in Poland can cause other, unintended introduction of tramp species in the nearest future.

There are only two *Nylanderia* tramp species recorded from Europe (both, boreal and mediterranean parts): *N. jaegerskioeldi* and *N. vividula*. In the only scientific resource that studies both of those species (LAPOLLA *et al.* 2011) *N. vividula* is separated from *N. jaegerskioeldi* based on the number of erect macrosetae on scape fewer than 10. Nevertheless, the authors noted a great variability in *N. jaegerskioeldi* scape setosity and suggested that this taxon might be a group of cryptic species. In specimens collected in Wrocław the number of macrosetae varied from 8 to 10, therefore species separation based on this feature appeared to be uncertain. After study on species redescrptions (LAPOLLA *et al.* 2011, KALLAL & LAPOLLA 2012) and investigation of specimens collected in Mediterranean countries we concluded that the difference in gaster pilosity provide valuable feature in species delimitation. *Nylanderia jaegerskioeldi* has gaster with erected macrosetae and a layer of abundant, appressed pubescence while *N. vividula* has gaster lacking of layer of appressed pubescence (Figs. 3-6). We consider and recommend this feature as more accurate and certain in determination of tramp *Nylanderia* species known from European countries.

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STRESZCZENIE

Pierwsze stwierdzenie *Nylanderia jaegerskioeldi* (MAYR, 1904) (Hymenoptera: Formicidae) w Centralnej Europie

W pracy zaprezentowano pierwsze stwierdzenie *Nylanderia jaegerskioeldi* (MAYR, 1904) na terenie Polski. Jest to jednocześnie jedyne znane stanowisko tego inwazyjnego gatunku w Centralnej Europie. Robotnice *N. jaegerskioeldi* zebrane zostały w latach 2015 i 2018 w Afrykarium znajdującym się we wrocławskim ZOO. *Nylanderia jaegerskioeldi* w Europie znana była do tej pory jedynie z Obszaru Śródziemnomorskiego i obecna obserwacja jest pierwszą podającą ten gatunek z obiektu zamkniętego, charakteryzującego się stałą, wysoką temperaturą i wilgotnością. Dodatkowo przedyskutowano zaktualizowany zasięg występowania *N. jaegerskioeldi* w Palearktyce i omówiono cechy umożliwiające odróżnienie tego gatunku od *Nylanderia vividula* (NYLANDER, 1846), drugiego inwazyjnego gatunku rodzaju *Nylanderia* wykazywanego z ciepłych, zamkniętych pomieszczeń w Europie.



Figs. 1–2. *Nylanderia jaegerskioeldi*, worker. 1. dorsal view; 2. lateral view (photos L. Borowiec).
Ryc. 1–2. *Nylanderia jaegerskioeldi*, robotnica. 1. widok z góry; 2. widok z boku (fot. L. Borowiec).



Figs. 3–6. Gaster pilosity. 3–4. *N. vividula*; 5–6. *N. jaegerskioeldi* (photos L. Borowiec).
 Ryc. 3–6. Owłosienie odwłoka. 3–4. *N. vividula*; 5–6. *N. jaegerskioeldi* (fot. L. Borowiec).