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New data on the occurrence of ants of the subfamily *Ponerinae* (*Hymenoptera*, *Formicidae*) in Poland

Abstract. The paper gives new sites of two ant species rarely recorded from Poland, namely native *Ponera coarctata* (L.) and imported *Hypoponera punctatissima* (ROG.). The occurrence of *P. coarctata* in the Pieniny Mts (the Western Carpathians) is described.

Key words: ants, *Ponera coarctata*, *Hypoponera punctatissima*, fauna of Poland, ecology, synanthropic fauna

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The subfamily *Ponerinae* – comprising 42 genera and about 1300 species – is one of the most giant extant ant taxa. In the respect of species richness it occupies the third position among the 16 subfamilies of the family *Formicidae*. It also belongs to a group of six subfamilies which are represented in all the main zoogeographic regions, occurring most abundantly in the following ones: Neotropical (348 species), Indo-Australian (=Malesian; 289), Afrotropical (239), and Australasian (202). In the Palaeartic region occur 39 species (BOLTON 1995).

In the Polish myrmecofauna *Ponerinae* are represented merely by two species of different genera, namely the outdoor (native) *Ponera coarctata* (L.) and the synanthropic (imported) *Hypoponera punctatissima* (ROG.) (PISARSKI 1975, CZECHOWSKI, CZECHOWSKA 1997); both species are very rare in Poland.

The collection of Polish ants in the Museum and Institute of Zoology of Polish Academy of Sciences (MIZ PAS) in Warsaw is being reviewed. In the course of this inspection some hitherto unknown sites (or even regions) in which these species occur in Poland have become known on the basis of evidential specimens collected as far back as the 1950s. The current report has

been expanded to include data from recent field studies in the Pieniny Mts (the Western Carpathians).

Ponera coarctata (LATREILLE, 1802)

Formica coarctata LATREILLE, 1802.

Ponera coarctata: LATREILLE 1804.

P. coarctata is an expansive Mediterranean species. It occurs from the south to 52°N in Europe (thus the northern limit of its range runs in Poland), in the maritime areas of Morocco, Algeria, Tunisia, Lebanon and Syria, and in the east it reaches the Caucasus Mts (TAYLOR 1967). First of all the species inhabits open habitats, mainly dry or semidry grasslands on limy or sandy substratum, but it has also been recorded from light tree stands. It builds simple nests in humus, under moss or stones. Its colonies consist of 20–40 adults and are monogynous (SEIFERT 1994). Sexuials appear (in Poland) in August and September.

In Poland, where there is the northern limit of the species' range, *P. coarctata* has been recorded from few (and only xerothermic) sites in the Wielkopolsko-Kujawska Lowlands (KULMATYCKI 1922), Upper Silesia (NOVOTNY 1931), the Lubelska Uplands (PEŁAŁ 1961), the Western Beskidy Mts (CZECHOWSKI 1992), the Pieniny Mts (WOYCIECHOWSKI 1985), and (vaguely) from the Mazovian Lowlands (PISARSKI 1982).

The ant collection in the MIZ PAS contains *P. coarctata* specimens from the following new localities (regions which are new for the species are marked with an asterisk):

- * 1. Krzyżanowice ad Pińczów (Małopolska Uplands), 11.08.1953, leg. group of IZ PAS¹ (♂);
- * 2. Chotel Czerwony ad Pińczów (Małopolska Uplands), 21.08.1954, leg. B. PISARSKI (♀♀);
- * 3. Forest "Dębina" ad Pińczów (Małopolska Uplands), 26.08.1956, leg. group of IZ PAS (♀);
- 4. Kazimierz Dolny (Lubelska Uplands), 21.05.1956, leg. A. RIEDEL (♀♀); 8.07.1962, leg. B. PISARSKI (♀♀);
- 5. Piwniczna ad Nowy Sącz (Beskid Sądecki, Western Beskidy Mts), 16.08.1956, leg. E. DAUKSZA et A. KOSTROWICKI (♀, ♀♀).

Earlier, the presence of *P. coarctata* in the Western Beskidy Mts was recorded on the basis of one nest at Ochotnica Górna in the Gorce Mts (CZECHOWSKI 1992). The nest was among stones on a south-facing slope in a small clearing in the middle of the artificially planted pine forest (pine forest is a habitat phytosociologically alien to this region).

To date, the occurrence of *P. coarctata* in the Pieniny region has been recorded on the basis of a single worker found in lichenaceous grassland on top of Mt Szafranówka (740 m a.s.l.) in Małe Pieniny (Small Pieniny Mts)

¹ Institute of Zoology of Polish Academy of Sciences – the former name of the Museum and Institute of Zoology, PAS.

(WOYCIECHOWSKI 1985). Between 1994 and 1997, specialist myrmecological investigations were carried out in Pieniny Centralne and Zachodnie (Central and Western Pieniny Mts). About 120 nests of *P. coarctata* were found during these studies. Xerothermic grasslands (*Origano-Brachypodietum*) developing on the limy soil of warm and dry slopes of southern and south-western aspects were the typical habitats of the species. The density of *P. coarctata* nests in these habitats was 10 per 100 m² on average, 24/100 m² at most, and this was very high. Apart from *P. coarctata* there were some other ant species generally considered rare, and these, too, reached similar abundances. These species included, among others, *Tapinoma ambiguum* EM. (CZECHOWSKI et al. 1999) and, only recently recorded from Poland, *Leptothorax nadigi* KUTTER (CZECHOWSKA et al. 1998) and *L. albipennis* CURTIS (CZECHOWSKA, CZECHOWSKI 1999). *P. coarctata* was most abundant in the Trzy Korony massif, both on its southern and south-western aspects. The species was also recorded from the following mountains in the Pieniny range: Grabczycha, Podskalnia Góra, Cisowiec Duży, Cisowiec Mały, Długa Grapa, Czerwone Skały, and Zamczysko.

Hypoponera punctatissima (ROGER, 1859)

Ponera punctatissima ROGER, 1859.

Ponera punctatissima: NOVOTNY 1937, STITZ 1939, PISARSKI 1957.

H. punctatissima is a South-European species, known also from the Caribbean Islands, western Africa and Lebanon. It nests in soil, under stones, in wall crevices. Moreover, it has been introduced into central, western and northern Europe and there it occurs as a synanthropic form in heated spaces, most frequently in hothouses, but also in bakeries, kitchens, bathrooms etc. The nuptial flight (in Poland) takes place in June and July (PISARSKI 1975).

In Poland within its present boundaries *H. punctatissima* has so far been recorded (only in hothouses) from two sites in Upper Silesia, namely from Rudy² (ROGER 1859, STITZ 1939) and Bytom (NOVOTNY 1937) and from one site in the Mazovian Lowlands: the Botanical Gardens of Warsaw University (PISARSKI 1957). In the collection of the MIZ PAS, apart from a series of workers collected in the hothouse of the Botanical Gardens in Warsaw (6.07.1954, leg. B. PISARSKI), there are three unrecognized single specimens of alate females labelled:

1. Warszawa, Łazienki Królewskie, 6.06.1956, leg. E. DAUKSZA;
2. Warszawa, Academy of Agriculture, 24.07.1975, leg. S. MAZUR;
- * 3. Rokitno-Załącze ad Włoszczowa [Małopolska Uplands], 14.06.1958, leg. P. TROJAN.

The first of these specimens was found under unknown circumstances. About the other two it is known that they were caught outdoors, but in the

² The former "Rauden" (ROGER 1859) is now Rudy near Racibórz, the county of Opole. PISARSKI mistook "Rauden" for Ruda (1957) or Ruda Śląska (1975).

case of social insect sexuals this does not mean that the species occurs in a given habitat or even region. The Warsaw park Łazienki Królewskie is next to the Botanical Gardens and it has its own hothouse. The Academy of Agriculture also has greenhouses. Sexuals of exotic ants living there may easily escape outside and fly all over the neighbourhood. The last specimen of the above-mentioned *H. punctatissima* females must have come (airborne) from far away. Maybe even from the south of Europe.

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