

Abstract*

Ants of Botanical and Zoological Gardens of Warsaw (Poland)

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With the enlarging part of mankind living in urban areas, conservation of biodiversity in these habitats becomes increasingly important. Botanical and zoological gardens, located usually within big cities, are maintained as islands of plant and (or) animal diversity and serve as places of recreation and education (e.g. SODERSTOM 2008, HEYWOOD 2011). However, they may host not only intentionally introduced species but some exotic animal tramp species, mainly invertebrates, as well (ADLER *et al.* 2011). Most likely a wide range of native species also exist in such habitats, perhaps even when they are lacking in surrounding areas as less favourable. Thus botanical and zoological gardens may serve as unique refugee within urban areas e.g. for native ant species. To test this hypothesis, in 2009 myrmecofauna of three Gardens within Warsaw (Poland) were studied: Zoological Garden (Zoo), Warsaw University Botanical Garden (BG WU) and Polish Academy of Sciences Botanical Garden - Center for Biological Diversity Conservation (BG PAS). Ant fauna was investigated by nest searching and collecting of randomly found individuals. In total, 27 ant species and 1073 samples were collected, including 19 species represented by 439 nest samples. The highest species richness was found in BG PAS and the lowest in Zoo (22 and 13 species respectively). Myrmecofauna of Botanical Gardens differ significantly from each other and as many as 17 species (16.3%) were found in only one of them (Sørensen similarity index of 0.54). On the other hand, every species found in Zoo was also present in BG WU and (or) BG PAS (Sørensen index of 0.86 and 0.63, respectively). In all Gardens *Lasius niger* strongly dominated. Seven other species collected in every Garden were *Myrmica rubra*, *M. rugulosa*, *Tetramorium cf. caespitum*, *L. brunneus*, *L. flavus*, *Temnothorax crassispinus* and *Formica cunicularia*. The results raise the total number of ant species reported from the Warsaw green from 28 to 37 species, with as much as 73% found in Botanical Gardens (cf. CZECHOWSKA and CZECHOWSKI 1999, ŚLIPIŃSKI *et al.* 2011). These data strongly suggests that Botanical Gardens constitute valuable sources and refuges of ant biodiversity within strongly transformed habitats of big cities.

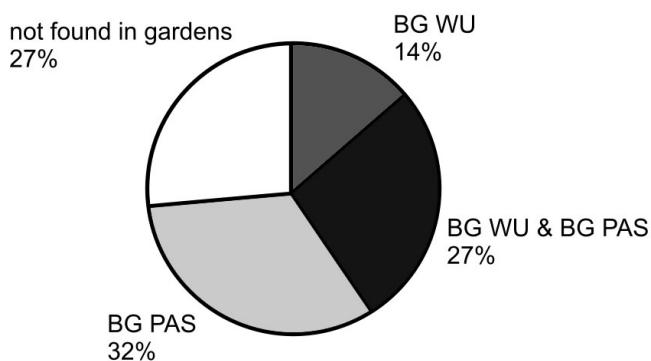


Fig. 1. Distribution of outdoor ant species of Warsaw between Botanical Gardens and other areas (BG WU – Botanical Garden of Warsaw University, BG PAS – Botanical Garden of the Polish Academy of Sciences).

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Extended abstract of the presentation held at the 4th Central European Workshop of Myrmecology, 15-18.09.2011, Cluj-Napoca, Romania