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NEW LOCALITIES OF THE RARE SPECIES *MONOTROPA HYPOPHEGEA* IN WEST POMERANIA

NOWE STANOWISKA RZADKIEGO GATUNKU KORZENIÓWKI MNIEJSZEJ *MONOTROPA HYPOPHEGEA* NA POMORZU ZACHODNIM

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Streszczenie. Niniejsza praca przedstawia nowe stanowiska korzeniówki mniejszej *Monotropa hypophegea* L. – rzadkiego gatunku w Polsce i na Pomorzu Zachodnim. Odnotowano je na terenie Barlinecko-Gorzowskiego Parku Krajobrazowego, w okolicy miejscowości Płonno, oddalonej o ok. 6 km na wschód od Barlinka. Gatunek ten odnotowano w lasach mieszanych należących do Nadleśnictwa i Leśnictwa Barlinek, w oddziałach leśnych 705f, 708b, 709a i 709b. Populacja *Monotropa hypophegea* liczyła ponad 300 osobników.

Key words: Barlinek-Gorzów Landscape Park, *Monotropa hypophegea*, Forest Inspectorate of Barlinek, new localities.

Słowa kluczowe: Barlinecko-Gorzowski Park Krajobrazowy, korzeniówka mniejsza, Leśnictwo Barlinek, nowe stanowiska.

The bald Indian pipe is a small, non-chlorophyllous plant (10–25 cm tall) of the *Ericaceae* family. Its rhizome is thick with roots lacking root hairs. Its stem emerges directly from the soil and it is covered with alternate, scale-like leaves which are pale yellowish white to brownish-tinged. The inflorescence is a raceme of 3 to 6 (12) flowers. Initially its axis is pendulous but later it becomes straighter. The top flower is a 5 petal flower, whereas the side flowers are 4 petal ones. They are radially symmetrical with white, campanulate corolla. In the perianth, the calyx and the corolla are separate. It has 5 to 8(10) stamens, one 5-carpelled pistil with the style shorter than the ovary (which is characteristic for the species). The ovary after being pollinated transforms into a fruit – a capsule. Seeds are small with weakly developed embryos (Fig. 1) – Witkowska-Żuk (2013).

There are two species of the *Monotropa* genus known from Poland: the Dutchman's pipe *Monotropa hypopitys* var. *hirsuta* that was recorded scattered all over the country, and rarer one – the bald Indian pipe (Witkowska-Żuk 2013; Kwiatkowski 2008). So far it was treated as

a subspecies of *Monotropa hypopitys* (Szafer et al. 1976). In the Distribution Atlas of Vascular Plants in Poland both species were treated as an aggregate and their distribution was presented on one consolidated map (Atlas rozmieszczenia roślin... 2001). Due to the difficulties associated with the identification and determination of these two species, researchers observed a different number of localities. According to Zarzycki et al. (2002) this species has a large number of localities, whereas according to Szafer et al. (1976) it occurs in low numbers.



Fig. 1. Fruiting specimen of the rare *Monotropa hypophegea* L. in Barlinek-Gorzów Landscape Park (Barlinek Forest Inspectorate, 16 July 2013, photo: A. Borcz)

Ryc. 1. Owocujący osobnik korzeniówki mniejszej *Monotropa hypophegea* L. w Barlinecko-Gorzowskim Parku Krajobrazowym (Nadleśnictwo Barlinek, 16.07.2013 r., fot. A. Borcz)

The geographical range of *Monotropa hypophegea* covers the significant part of Europe, including Poland. Isolated localities are scattered in the Scandinavian Peninsula, the Iberian Peninsula, Ireland, Mediterranean islands (Sicily, Corsica), and in the western part of Siberia (Hultén and Fries 1986).

Monotropa hypophegea is a perennial plant. It grows in shady and moist spots with a thick layer of humus – in deciduous forests, and in mixed coniferous forests, where the dominant tree species are: the common beech *Fagus sylvatica*, the English oak *Quercus robur*, and occasionally the Scots pine *Pinus sylvestris*.

Despite the intensive floristic research conducted in the Barlinek-Gorzów Landscape Park, no localities of *Monotropa hypophegea* has been recorded in the past (Bacieczko 1995, 2000; Bacieczko et al. 2001; Myśliwy 2004, 2006, 2008). The first locality in the park area was recorded in August 2013 in the mixed coniferous forest of the Vaccinio-Piceetea class, located in the 705f (130 specimens), 708b (82 specimens), 709a (66 specimens) i 709b (41 specimens) forest sections. The localities belong to the AC 37 square of ATPOL cartographic system (Fig. 2).

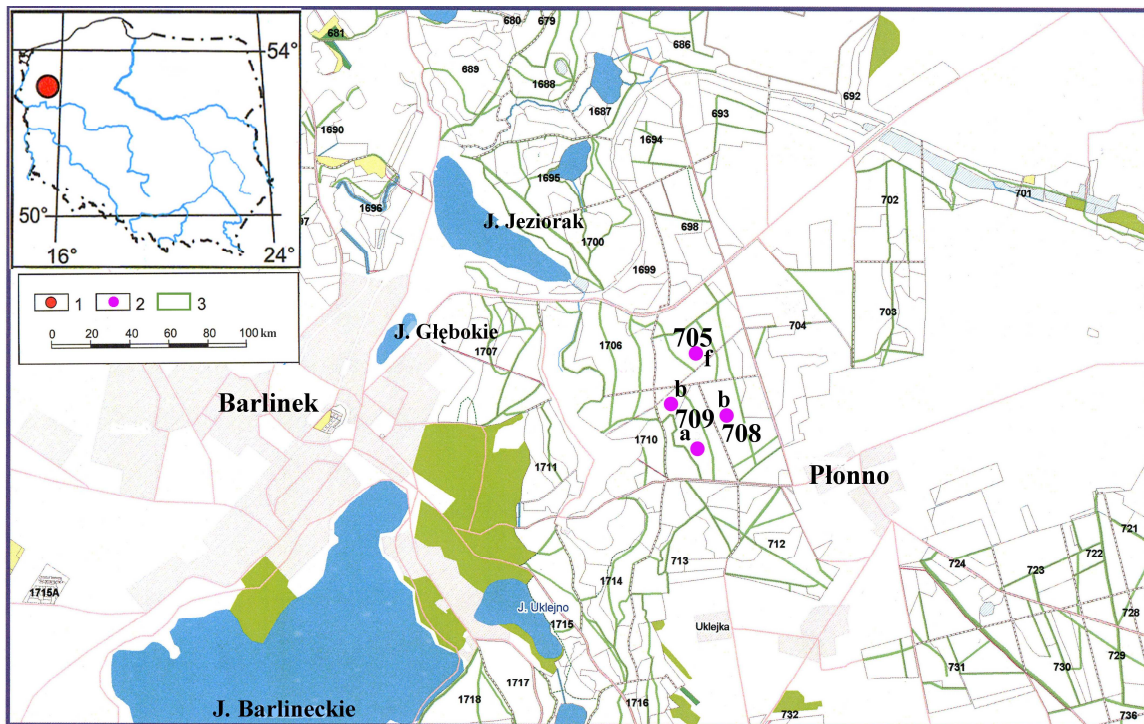


Fig. 2. Location of new localities of *Monotropa hypophegea* in the forest sections, in Barlinek-Gorzów Landscape Park: 1 – localities new to Poland, 2 – localities new to the forest sections, 3 – forest sections

Ryc. 2. Lokalizacja nowych stanowisk korzeniówki mniejszej w oddziałach leśnych w Barlinecko-Gorzowskim Parku Krajobrazowym: 1 – nowe stanowiska w Polsce, 2 – nowe stanowiska w oddziałach leśnych, 3 – oddziały leśne

In relation to the administrative location, the localities are situated in the Barlinek Commune, in the Myślibórz District, in the southern part of the West Pomerania Province. They are located in the Choszczno Lake District geophysical mesoregion (Kondracki 2001) and in the Pełczyce geobotanical landscape region (Matuszkiewicz 2008).

The population of *Monotropa hypophegea* recorded in the localities situated in the mixed coniferous forest comprised over 300 specimens in various stages of development, mostly in their generative phase. The complete floristic composition of the plant community in which *Monotropa hypophegea* was recorded is presented in the following phytosociological relevé: Date: 01.08.2013, location: ATPOL AC 39, sect. 705f, Płonno surroundings, Exposure: N, Latitude: [N] 52°59'55,7", Longitude: [S] 15°14'59,4", Cover of layers: a₁ – 40%, a₂ – 60%, b – 30%, c – 5%, d – 1%; Relevé area: 625 m².

Pinus sylvestris a₁ 3, *Quercus robur* a₂ 2, *Fagus sylvatica* a₂ 2, *Monotropa hypophegea* 1, *Vaccinium myrtillus* +, *Quercus robur* c +, *Sorbus aucuparia* c +, *Fagus sylvatica* c 1, *Pteridium aquilinum* +, *Deschampsia flexuosa* +, *Mnium punctatum* d +, *Brachythecium salebrosum* d +, *Rhytidiadelphus squarrosus* d +.

Currently the population of *Monotropa hypophegea* in Barlinek-Gorzów Landscape Park does not appear to be threatened. However, it is difficult to deduce its actual status due to the specific biology of the species. *Monotropa hypophegea*, like other parasitic plants blossoms rarely, but its rhizomes can survive many years underground.

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Abstract. This study presents new localities of *Monotropa hypophegea* L. – a species rare to Poland and to West Pomerania. They were recorded in the Barlinek-Gorzów Landscape Park, in the vicinity of the Płonno village, which is situated eastwards, 6 km away from Barlinek. They occur in the mixed forests that belong to the Forest Inspectorate of Barlinek, in the forest sections: 705f, 708b, 709a, and 709b. Population of this species comprises over 300 specimens.