

**NEW RECORD OF INTERGENERIC HYBRIDS $\times$ *RHIZANTHERA INTERMEDIA* BERNACKI
[*DACTYLORHIZA FUCHSII* (DRUCE) SOÓ $\times$ *PLATANThERA BIFOLIA* (L.) L. C. M.
RICHARD] (ORCHIDACEAE, ORCHIDOIDEAE) IN POLAND**

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ABSTRACT: A new locality of intergeneric hybrids $\times$ *Rhizantha intermedia* Bernacki *Dactylorhiza fuchsii* (Druce) Soó $\times$ *Platanthera bifolia* (L.) L. C. M. Richard was found in May 2010 in the reserve "Jasień" near Radomsko town (Central Poland). This is the third report of the occurrence of this hybrid in Poland.

KEY WORDS: *Rhizantha intermedia*, *Dactylorhiza fuchsii*, *Platanthera bifolia*, hybridization, orchids

Introduction

Orchids belong to the evolutionarily young plant group, which developed little barriers and mechanisms that would protect them against pollination with pollen of different species and consequently – the fertilization and the production of seeds, which fosters the process of natural hybridization (Bernacki 1989). Hybrids are usually found on the border of the population coverage of parental species. Natural hybridization between plant species often occurs in disturbed habitats and is generally considered as threat for rare and endangered species (Cuzzolino et al. 2006).

The hybrids described within the Orchidaceae family are infraspecific, interspecific and the particularly interesting intergeneric ones.

The most popular hybrid within the genus *Platanthera* is the widely described *P. bifolia* × *P. chlorantha* (*P. ×hybryda* Brügger) (Bernacki 1989; Delforge 2006). Intergeneric hybrids in the genus *Platanthera* are very rare.

Another relatively frequent hybrid ×*Rhizanthra somersetensis* is the result of crossbreeding *P. bifolia* × *D. maculata* (Peitz 1972; Hunt 1975; Bernacki 1989). In addition, there were also described other hybrid taxa of the genus ×*Rhizanthra*, i.e. ×*Rhizanthra chevallieriana* (E. G. Cam) Soó [*Dactylorhiza maculata* subsp. *elodes* × *Platanthera bifolia*] and ×*Rhizanthra fournieri* (Royer) Soó [*Dactylorhiza sambucina* subsp. *sambucina* × *Platanthera bifolia*] (Peitz 1972, Soó 1973, Soó and Borsos 1966, Bernacki 1986-1987).

Reports on hybrid identification are frequently based on a diagnosis of herbarium specimens. Photographic documentation of such hybrids is also very uncommon (Lang 2001), while it would be particularly useful especially when the identification becomes problematic. Hybrids may come into being where related species or genera grow close together and bloom at the same time. In Orchidaceae family natural hybrids are often not distinguishable from their parental species what can explain the paucity of the literature data referring to hybrid morphology and origin. Theoretically, two combinations that result in a hybrid, ×*Rhizanthra intermedia*, are equally probable, i.e. pollination of *Dactylorhiza fuchsii* with the pollen of *Platanthera bifolia* or opposite situation, namely pollination of *Platanthera bifolia* with the pollen of *Dactylorhiza fuchsii*, yet life expectancy, condition as well as morphological feature combination in both types of hybrids may not be the same (Jakubska-Busse and Gola 2010).

There is little information on occurrence of ×*Rhizanthra* in Polish botanical literature, although such information was published by German botanists, including Ascherson and Graebner (1898-1899), Schube (1903), Holzfuss (1925) with respect to Silesia, west Poland and Pomerania (Bernacki 1989). Data on hybrid occurrence in Poland can also be found in papers of Soó (1960), Reinhard (1967), Peitz (1972) and Hunt et al. (1975).

Rhizanthra intermedia in Poland was found by Bernacki in 1982 in the floristic reserve "Góra Tuł" near Cieszyn (Southern Poland, West Carpathians). The occurrence of this taxon was also confirmed near Leszna Górna and Ustronie in Silesian Foothills (Bernacki 1989). Regrettably, no occurrences of this hybrid have been reported from other parts of Poland.

Record details:

N 50°59'901'', E 19°33'905''. The position of ×*Rhizanthra intermedia* was stated in the reserve "Jasień" (Fig. 1) near the town of Radom (Łódź province), in the municipality Kobieles Wielkie that belongs to the Forestry Commission Gidle (Grzeškowiak and Nawrocka-Grzeškowiak 2008).

"Jasień" Reserve (area of 14,5 ha) was established to protect the yew *Taxus baccata*. It is located between right-bank floodplain tributary of the Warta in Mezoregion – Włoszczowska Basin 342.14 (Olaczek 2008). In the vicinity of the reserve are the lakes that contribute to cyclical flooding (Grzeškowiak and Nawrocka-Grzeškowiak 2008). In addition, there occur yew trees, typical to the periodically flooded areas, such as *Alnus glutinosa*, *Betula pubescens* and *Populus tremula*.

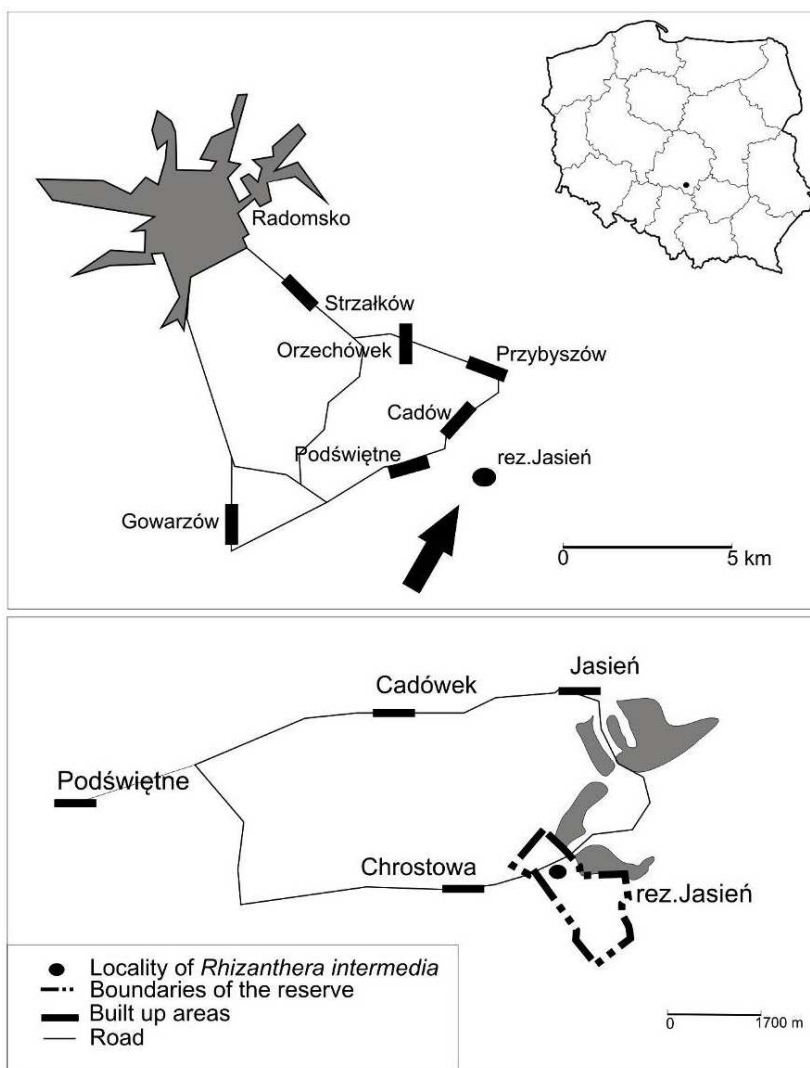
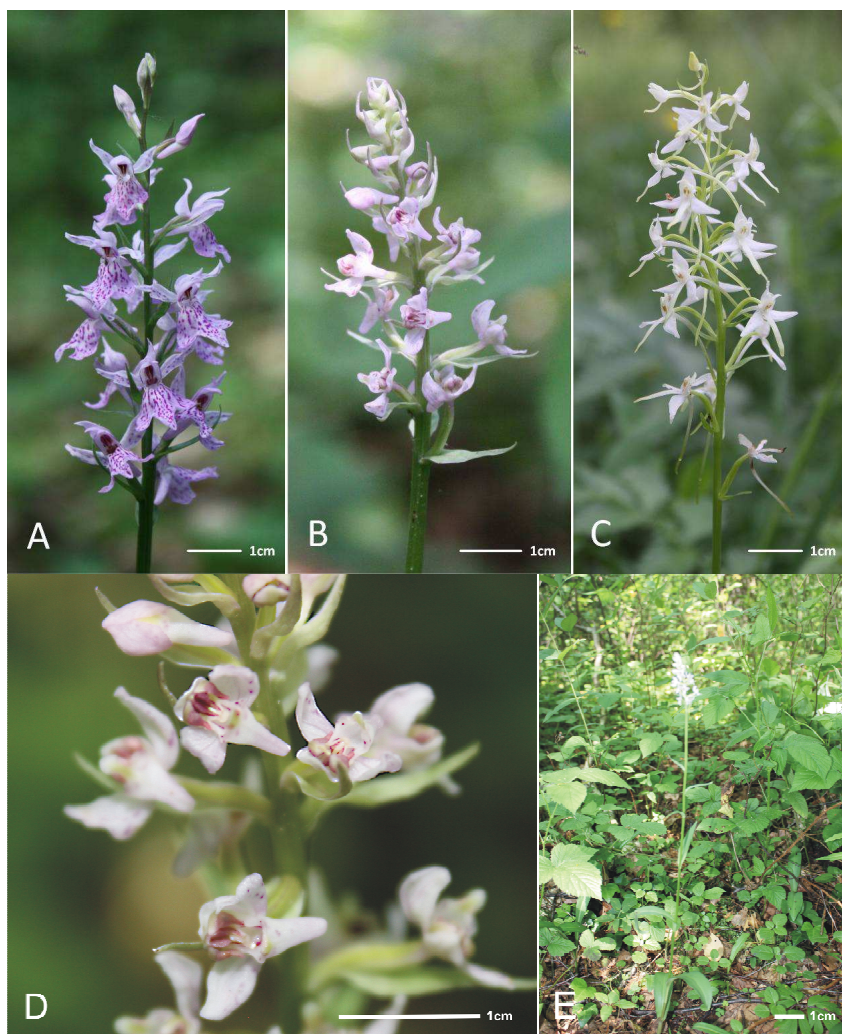


Fig. 1. A new locality of *Rhizanthra intermedia* Bernacki in the nature reserve "Jasień" (Central Poland)

In May 2010, a blooming orchid $\times$ *Rhizanthra intermedia* was found growing in the company of the parent species, i.e. *Dactylorhiza fuchsii* (Druce) Soó and *Platanthera bifolia* (L.) L. C. M. Rich. (Phot. 1). There wasn't deliberately prepared the herbarium material from discovered hybrids, leaving it on the ground for further observations in subsequent growing seasons, especially the range of morphological variation (phenotypic plasticity) and growth.



Phot. 1. Morphological features of the studied taxa: **A.** *Dactylorhiza fuchsii* (Druce) Soó, **B., D., E.** Hybrid $\times$ *Rhizantha intermedia* Bernacki, **C.** *Platanthera bifolia* (L.) L. C. M. Rich.

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