

A casual occurrence of *Physostegia virginiana* (Lamiaceae) in Poland

Artur Pliszko

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Abstract: This short note provides data on casual occurrence of *Physostegia virginiana* in Poland. It was found on abandoned allotments in the western part of the town of Skarżysko-Kamienna in 2015 (ATPOL cartogram unit: EE45). Its population consists of 153 generative ramets growing in three clumps. The habitat suggests that the plant probably escaped from cultivation with dumped garden waste.

Key words: *Physostegia virginiana*, casual alien, ornamental plant, distribution, Poland.

Introduction

Physostegia virginiana (L.) Benth., a rhizomatous perennial herb of the family Lamiaceae, is native to temperate regions of North America, including eastern United States, eastern Canada, and northeastern Mexico (Cantino 1982). It was divided by Cantino (1982) into two subspecies, namely *P. virginiana* subsp. *virginiana* and *P. virginiana* subsp. *praemorsa* (Shinners) P.D. Cantino. Apart from the differences in the size of flowers and leaves, these two subspecies have different geographical distributions and occupy different habitats. The type subspecies extends from Quebec to Manitoba, south to northeastern Kansas, southern Illinois, northern Tennessee, and eastern Virginia, and is usually found along the edges of rivers, lakes, and ditches, whereas the subspecies *praemorsa* is distributed from western Virginia and central North Carolina to southeastern New Mexico and northeastern Coahuila, north to central Missouri, northern Illinois, and northwestern Ohio, and is usually found in prairies and on open woodland slopes (Cantino 1981, 1982).

In the 17th century *P. virginiana* was taken into cultivation in Europe, and nowadays is widely cultivated as an ornamental in gardens and for cut-flower production (Cantino 1982, Cardin *et al.* 2002, Whiteley 2011). There are many cultivars (Whiteley 2011) that can be used, for example, in herbaceous and mixed borders (Phillips 1956). *Physostegia virginiana* was recorded as a garden escape or casual alien in many countries in the world, and furthermore, it became a naturalised species in France, Japan, and Australia (Randall 2012 and references cited therein). In Poland, it is treated only as a cultivated plant (Mirek *et al.* 2002), being found in flower gardens and cemeteries (Czarna *et al.* 2006, Bożek 2008, Dębicz 2012). This short note provides data on casual occurrence of *P. virginiana* in Poland.

Material and methods

Physostegia virginiana was identified using morphological features given by Cantino (1981, 1982) and Whiteley (2011). Identification of associated vascular plant species followed Rutkowski (2004) and Sun *et al.* (2010). Distribution map was prepared using the ATPOL cartogram method (Zajac 1978). Geographical-historical status followed Mirek *et al.* (2002) and Tokarska-Guzik *et al.* (2012). Syntaxonomical data followed Matuszkiewicz (2008). Voucher specimens of *P. virginiana* are deposited in the Herbarium of the Institute of Botany of the Jagiellonian University in Kraków (KRA 0451649 – 0451652).

Results

Physostegia virginiana was discovered in October 2015 on abandoned allotments between Paryska Street and Łakowa Street in the western part of the town of Skarżysko-Kamienna, south-central Poland. It grows here in three dispersed clumps (GPS coordinates: 51°6'57,84"N/20°50'51,54"E, 51°6'58,14"N/20°50'51,66"E, and 51°7'3"N/20°50'53,83"E), near the adjacent cultivated allotments. Presented site lies within the unit EE45 of the ATPOL cartogram grid (Fig. 1). Altogether, the population consists of 153 generative ramets (flowering or fruiting stems) (Fig. 2). In this anthropogenic habitat, which is under secondary succession, associated vascular plants are mainly represented by native species typical of meadow communities of the class *Molinio-Arrhenatheretea* (e.g. *Agrostis gigantea* Roth, *Dactylis glomerata* L., *Deschampsia caespitosa* (L.) P. Beauv., *Holcus lanatus* L., *Juncus effusus* L., *Lotus uliginosus* Schkuhr, *Potentilla anserina* L., and *Rumex crispus* L.). There are also associated alien plants, including a few species established in the Polish flora (e.g. *Aster novae-angliae* L., *Lysimachia punctata* L., and *Solidago canadensis* L.) and one species under cultivation in Poland, namely *Miscanthus sacchariflorus* (Maxim.) Hack.

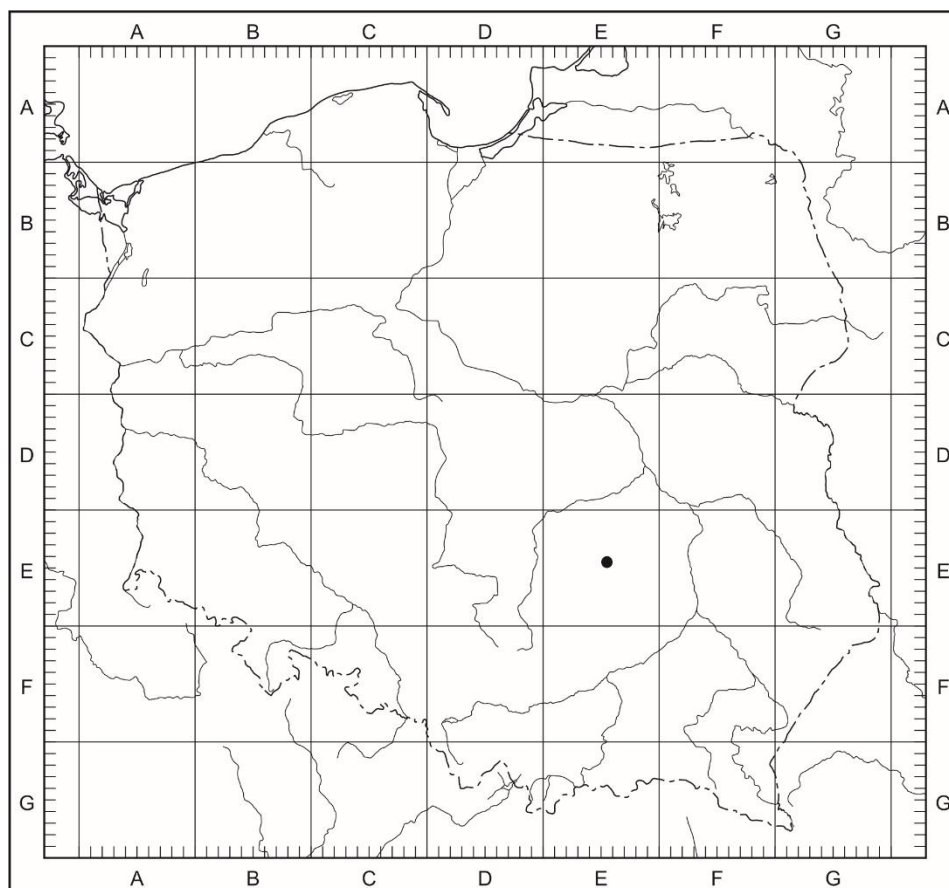


Fig 1: Distribution of *Physostegia virginiana* in Poland.

Discussion

The occurrence of *Physostegia virginiana* on abandoned allotments, which are located close to the adjacent cultivated allotments, suggests that the plant probably escaped from cultivation with dumped garden waste. Taking into consideration the definitions of alien plants by Pyšek *et al.* (2004), *P. virginiana* currently is a casual alien plant in Poland but its status may change in the future. Its local persistence and spread need further study. The plant

shows the clonal growth and relatively small native range. These two factors promote the transitioning of alien plants from casual to naturalised (Milbau & Stout 2008). In Australia, this species is naturalised on roadsides, and appears to spread via rhizomes and possibly by seed dispersal (Hosking *et al.* 2007). In Japan, it is treated as an invasive plant (Mito & Uesugi 2004). Moreover, it is also worth mentioning that, comparing the new records with the recent floristic data (Maciejczak 1988, Nobis 2007, Podgórska 2011), *P. virginiana* and its associated species *Miscanthus sacchariflorus* are new to the flora of the town of Skarżysko-Kamienna.



Fig 2: *Physostegia virginiana* on abandoned allotments in Skarżysko-Kamienna, south-central Poland (Photo by A. Pliszko, 4 October 2015).

References

- Bożek M. (2008): Pollen yield and pollen grain dimensions of some late-summer plant species of the Lamiaceae family. – J. Apic. Sci. 52(1): 31-36.
- Cantino P.D. (1981): Change of status for *Physostegia virginiana* var. *ledinghamii* (Labiatae) and evidence for a hybrid origin. – Rhodora 83: 111-118.
- (1982): A monograph of the genus *Physostegia* (Labiatae). – Contr. Gray Herb. 211: 1-105.
- Cardin L., Onesto J. P. & Moury B. (2002): First report of Alfalfa mosaic virus in *Physostegia virginiana*. – Plant Dis. 86(1): 72.4-72.4.
- Czarna A., Piskorz R. & Wyrzykiewicz-Raszewska M. (2006): Vascular plants on selected Catholic cemeteries of Jelenia Góra and its surroundings. – Roczn. AR Poznań 378, Bot.-Stec. 10: 69-86.
- Dębicz R. (2012): Zieleń cmentarzy w krajobrazie wsi Dolnego Śląska. Uniwersytet Przyrodniczy we Wrocławiu, Wrocław, 311 pp.
- Hosking J.R., Conn B.J., Lepschi B.J. & Barker C.H. (2007): Plant species first recognised as naturalised for New South Wales in 2002 and 2003, with additional comments on species recognised as naturalised in 2000-2001. – Cunninghamia 10(1): 139-166.
- Maciejczak B. (1988): Flora synantropijna Kielc, Skarżyska-Kamiennej i Starachowic. Kieleckie Towarzystwo Naukowe, Kielce, 162 pp.
- Matuszkiewicz W. (2008): Przewodnik do oznaczania zbiorowisk roślinnych Polski. Wydawnictwo Naukowe PWN, Warszawa, 537 pp.
- Milbau A. & Stout J.C. (2008): Factors associated with alien plants transitioning from casual, to naturalized, to invasive. – Conserv. Biol. 22(2): 308-317.
- Mirek Z., Piękoś-Mirkowa H., Zajac A. & Zajac M. (2002): Flowering plants and pteridophytes of Poland, a checklist. W. Szafer Institute of Botany, Polish Academy of Sciences, Kraków, 442 pp.
- Mito T. & Uesugi T. (2004): Invasive alien species in Japan: the status quo and the new regulation for prevention of their adverse effects. – Global Environmental Research 8(2): 171-193.
- Nobis M. (2007): Rośliny naczyniowe zachodniej części Przedgórz Ilżeckiego (Wyżyna Małopolska). – Prace Botaniczne 40: 1-458.
- Phillips C.E.L. (1956): The small garden. Pan Books, London, 414 pp.
- Podgórska M. (2011): Flora roślin naczyniowych Garbu Gielniowskiego (Wyżyna Małopolska). – Prace Botaniczne 44: 1-304.
- Pyšek P., Richardson D.M., Rejmánek M., Webster G.L., Williamson M. & Kirschner J. (2004): Alien plants in checklists and floras: towards better communication between taxonomists and ecologists. – Taxon 53(1): 131-143.
- Randall R.P. (2012): A global compendium of weeds. 2nd edition. Department of Agriculture and Food, Western Australia, 1119 pp.
- Rutkowski L. (2004): Klucz do oznaczania roślin naczyniowych Polski niżowej. Wydawnictwo Naukowe PWN, Warszawa, 814 pp.
- Sun Q., Lin Q., Yi Z.-L., Yang Z.-R. & Zhou F.-S. (2010): A taxonomic revision of *Miscanthus* s. l. (Poaceae) from China. – Bot. J. Linn. Soc. 164(2): 178-220.
- Tokarska-Guzik B., Dajdok Z., Zajac M., Zajac A., Urbisz A., Danielewicz W. & Hołdyński C. (2012): Rośliny obcego pochodzenia w Polsce ze szczególnym uwzględnieniem gatunków inwazyjnych. Generalna Dyrekcja Ochrony Środowiska, Warszawa, 197 pp.
- Whiteley A.C. (2011): *Physostegia* Benth. pp. 90. In: Cullen J., Knees S.G. & Cubey H.S. (eds): The European garden flora, vol. 5, Boraginaceae to Compositae, 2nd edition. Cambridge University Press, Cambridge, 639 pp.
- Zajac A. (1978): Atlas of distribution of vascular plants in Poland (ATPOL). – Taxon 27(5-6): 481-484.

Author's address: Artur Pliszko, Department of Plant Taxonomy, Phytogeography and Herbarium, Institute of Botany, Jagiellonian University in Kraków, Kopernika 31, 31-501 Kraków, Poland.
E-mail: artur.pliszko@uj.edu.pl