ISSN 2336-3193
DOI: 10.1515/cszma-2017-0022
Acta Mus. Siles. Sci. Natur., 66: 177-180, 2017
Published: online 30th October 2017, print November 2017

A new record of *Senecio inaequidens* (Asteraceae) in Poland

Artur Pliszko

A new record of *Senecio inaequidens* (Asteraceae) in Poland. – Acta Mus. Siles. Sci. Natur., 66: 177-180, 2017.

Abstract: The paper presents a new Polish record of *Senecio inaequidens*, a perennial plant native to South Africa. It was found growing on roadside verge in Głogoczów, West-Beskidian Piedmont, southern Poland, on September 22, 2016. A map of distribution of *S. inaequidens* in Poland is presented using the ATPOL cartogram method and the pattern of its spread along motorways is discussed.

Key words: alien plant, distribution, naturalization, road transport, southern Poland.

Introduction

Senecio inaequidens DC. (Asteraceae), a perennial plant native to South Africa, was introduced to Europe with wool transport at the end of the 19th century (Ernst 1998). In the last few decades it has been naturalized in many West, Central, North and South European countries (Heger & Böhmer 2006, Milović & Pandža 2014, Randall 2017 and the literature cited therein). Moreover, it was also reported as naturalized in Central America (Mexico) and East Asia (Taiwan) (Villaseñor & Espinosa-Garcia 2004, Jung *et al*. 2005). In its native range, *S. inaequidens* occurs on steep, moist and grassy slopes, sandy and gravelly banks of periodic streams, at elevations between 1400 and 2850 m (Hilliard 1977). As an alien species, it is found on warm and dry ruderal sites, mostly with gravelly or sandy soil, often along railway and road tracks as well as in abandoned quarries and pastures (Heger & Böhmer 2006, Randall 2017 and the literature cited therein).

Senecio inaequidens was introduced to Poland most likely from Germany by railway transport in the second half of the 20th century (Ernst 1998, Kwiatkowski 2011). Nowadays, it is considered as a locally established alien and potentially invasive plant (Tokarska-Guzik *et al*. 2012). Abundant established populations of *S. inaequidens* are known from railway areas in Węgliniec and Miłkowice, Western Sudetes Foothills (Kwiatkowski 2011), waste lands, railways and banks of dam reservoir between Pietrzykowice Żywieckie and Zarzecze, Żywiec Basin (Kwiatkowski & Zając 2014) as well as from roadside verges of the A4 motorway in the Silesian Lowlands (Kocián 2016). Moreover, its casual occurrence has also been reported in some areas (Podgórska 2013). In this paper, a new record of *S. inaequidens* from southern Poland is presented.

Material and methods

Identity of *Senecio inaequidens* was confirmed using morphological features provided by Jung *et al*. (2005) and Kwiatkowski & Zając (2014). Map of distribution was created based on the ATPOL cartogram method (Zając 1978), considering a square of 10-km side as a basic cartogram unit. Occurrence records were obtained from the literature (Kwiatkowski 2011, Podgórska 2013, Kwiatkowski & Zając 2014, Kocián 2016, Kobierski & Ryś 2017) as well as from personal information. A voucher specimen of *S. inaequidens* is deposited at the Herbarium of the Institute of Botany of the Jagiellonian University in Kraków (KRA).

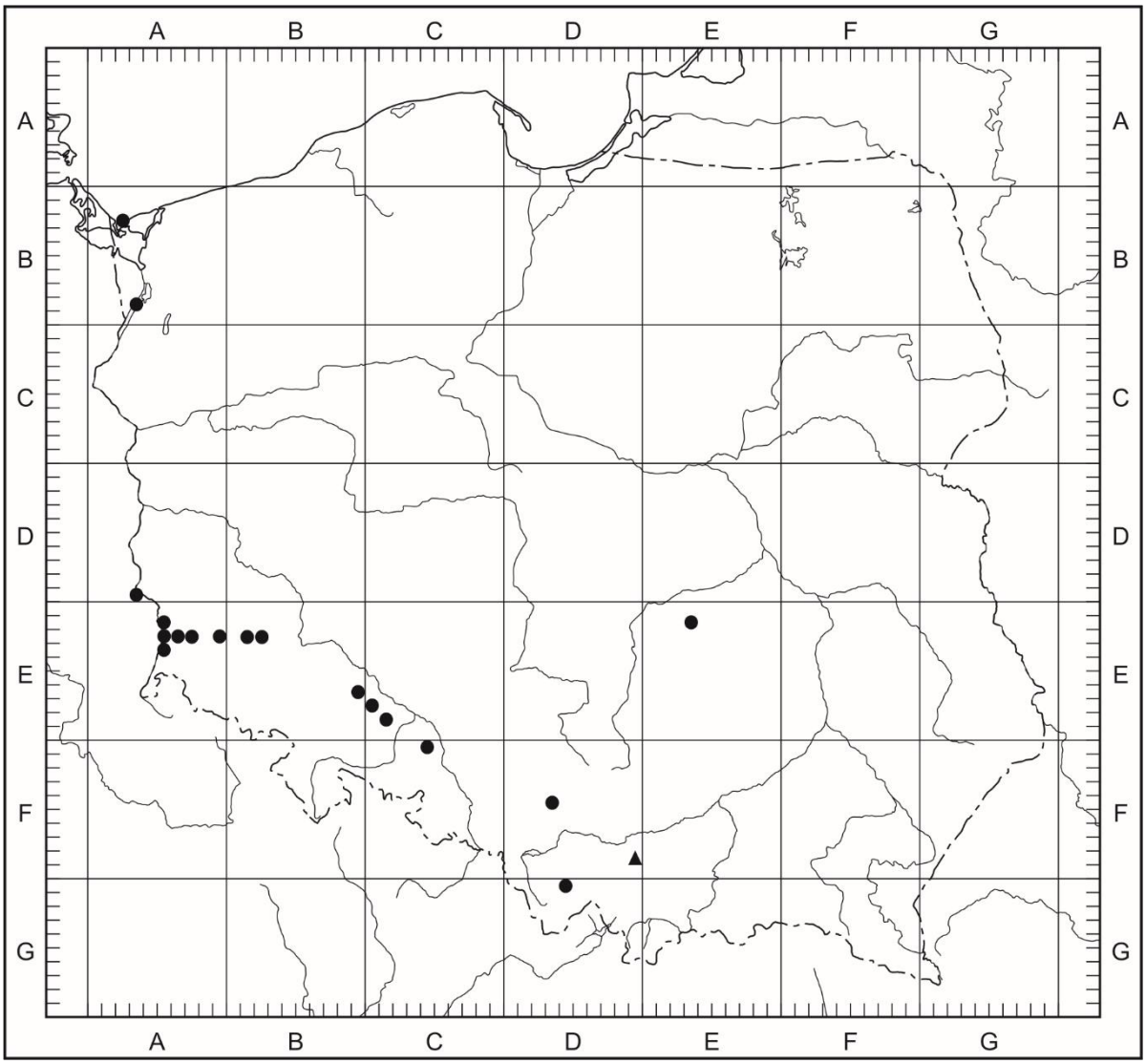

Fig 1: Distribution map of *Senecio inaequidens* in Poland according to the ATPOL cartogram method (● – known localities; ▲ – new locality).

Results and discussion

A new stand of *Senecio inaequidens* was discovered near the national road No. 7 in Głogoczów, West-Beskidian Piedmont, Lesser Poland Province, southern Poland (GPS: 49°55,042′N/19°52,438′E; altitude: 251 m a.s.l.), on September 22, 2016. This site is located within the unit DF89 of the ATPOL cartogram grid. Currently, stands of *S. inaequidens* are distributed within 19 cartogram units (square of 10-km side) of the ATPOL grid and are concentrated in the south-western part of the country (Fig. 1). A single plant of *S. inaequidens* was found growing on roadside verge among *Agrostis stolonifera* L., *Plantago major* L., *Polygonum aviculare* L. and *Potentilla anserina* L. Both sides of the road were investigated along the section of about 5 km in Głogoczów and adjacent villages (i.e. Mogilany and Bęczarka), however, other stands of the presented species have not been seen.

Taking into consideration the recently published data (Kwiatkowski 2011, Podgórska 2013, Kwiatkowski & Zając 2014, Popiela *et al*. 2015, Tokarska-Guzik 2015, Kocián 2016) and newly discovered locality, the ongoing spread of *S. inaequidens* to the east is clearly noticeable in Poland. In this respect, it should be pointed out that *S. inaequidens* produces

a large number of viable achenes (up to 29 000 per plant), which are easily transported by wind, and therefore can colonize new areas in relatively short time (Ernst 1998). Among various anthropogenic habitats occupied by *S. inaequidens*, roadside verges and slopes along the motorways seem to be very suitable habitats for fast colonization due to intensive traffic providing easy dispersal of the achenes by wind and vehicles (Kocián 2016). The importance of motorways for plant introduction and establishment in Poland has been evidenced in the case of many other species such as *Dittrichia graveolens* (L.) Greuter, *Erigeron sumatrensis* Retz., *Gypsophila perfoliata* L., and *Symphyotrichum ciliatum* (Ledeb.) Nesom (Kocián 2015, Nobis & Pliszko 2016, Pliszko 2016a, b).

Acknowledgements: I would like to thank Krzysztof Ziarnek for providing me data on the occurrence of *Senecio inaequidens* in Szczecin and Łunowo.

References

Ernst W.H.O. (1998): Invasion, dispersal and ecology of the South African neophyte *Senecio inaequidens* in the Netherlands: from wool alien to railway and road alien. – Acta Bot. Neerl. 47(1): 131-151.

Heger T. & Böhmer H.J. (2006): NOBANIS – Invasive Alien Species Fact Sheet – *Senecio inaequidens*. – From: Online Database of the European Network on Invasive Alien Species – NOBANIS www.nobanis.org. (date of access 10 January 2017).

Hilliard O.M. (1977): Compositae of Natal. University of Natal Press, Pietermaritzburg, South Africa, 658 pp.

Jung M.-J., Yang S.-Z. & Kuoh C.-S. (2005): Notes on two newly naturalized plants in Taiwan. – Taiwania 50(3): 191-199.

Kobierski P. & Ryś R. (2017): Rozmieszczenie wybranych taksonów roślin naczyniowych na obszarze powiatu żarskiego (zachodnia Polska). – Przegl. Przyr. 28(1): 3-42.

Kocián P. (2015): *Dittrichia graveolens* (L.) Greuter – a new alien species in Poland. – Acta Mus. Siles. Sci. Natur. 64(3): 193-197.

– (2016): The first records of *Senecio inaequidens* along motorways in Poland and Slovakia. – Acta Mus. Siles. Sci. Natur. 65(2): 129-133.

Kwiatkowski P. (2011): African species *Senecio inaequidens* DC. in southwestern Poland: expansion or invasion? pp. 201-214. In: Zemanek B. (ed.): Geobotanist and Taxonomist. A volume dedicated to Professor Adam Zając on the 70th anniversary of his birth, Institute of Botany, Jagiellonian University, Cracow, 219 pp.

Kwiatkowski P. & Zając T. (2014): Nowe stanowisko *Senecio inaequidens* (Asteraceae) w południowej Polsce. – Fragm. Florist. Geobot. Polon. 21(1): 27-40.

Milović M. & Pandža M. (2014): New localities of *Senecio inaequidens* DC. in Croatia. – Nat. Croat. 23(1): 219-227.

Nobis M. & Pliszko A. (2016): New localities of *Symphyotrichum ciliatum* (Asteraceae) in Poland. – Acta Mus. Siles. Sci. Natur. 65(3): 283-286.

Pliszko A. (2016a): *Erigeron sumatrensis* (Asteraceae), casual alien new to the Polish flora. – Bot. Lith. 22(2): 182-184.

– (2016b): New records of *Gypsophila perfoliata* (Caryophyllaceae) in Poland. – Acta Mus. Siles. Sci. Natur. 65(3): 215-218.

Podgórska M. (2013): Zagadnienia geobotaniczne Garbu Gielniowskiego. Część II. Antropofity. – Fragm. Florist. Geobot. Polon. 20(1): 77-92.

Popiela A., Łysko A., Sotek Z. & Ziarnek K. (2015): Preliminary results of studies on the distribution of invasive alien vascular plant species occurring in semi-natural and natural habitats in NW Poland. – Biodiv. Res. Conserv. 37: 21-35.

Randall R. P. (2017): A global compendium of weeds. 3rd edition. Perth, Western Australia, R. P. Randall, 3654 pp.

Tokarska-Guzik B. (2015): *Senecio inaequidens* DC. pp. 165-166. In: Zając A. & Zając M. (eds): Distribution of kenophytes in the Polish Carpathians and their foreland, Institute of Botany, Jagiellonian University, Cracow, 304 pp.

Tokarska-Guzik B., Dajdok Z., Zając M., Zając 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.

Villaseñor J. L. & Espinosa-Garcia F. J. (2004): The alien flowering plants of Mexico. – Divers. Distrib. 10: 113-123.
Zając A. (1978): Atlas of distribution of vascular plants in Poland (ATPOL). – Taxon 27(5-6): 481-484.

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