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Note

Conyza sumatrensis: a new alien plant in Romania

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ABSTRACT: A new alien plant species – *Conyza sumatrensis* – is reported from Dobrogea, Romania. We provide information about its morphological features, distribution, biology, ecology and invasiveness.

Key words: alien plant, Romanian flora, *Conyza sumatrensis*, invasive species

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INTRODUCTION

Eleven taxa of the American genus *Conyza* were reported from Europe: *C. bilbaoana* J. Rémy, *C. blakei* (Cabrera) Cabrera, *C. bonariensis* (L.) Cronquist, *C. canadensis* (L.) Cronquist, *C. floribunda* Kunth, *C. ivifolia* (L.) Less., *C.* × *mixta* Foucaud & Neyraut, *C. pampeana* (Parodi) Cabrera, *C. primulaefolia* (Lam.) Cuatrec, *C. sumatrensis* (Retz.) E. Walker, *C. triloba* Decne (Daisie 2009). Only one of these was reported until now from Romania – *Conyza canadensis*, a widespread species in the country, in ruderal places, abandoned agricultural fields, grasslands, dunes, etc. (Anastasiu & Negrean 2007). During the field work on alien flora from Constanța harbour, we recorded *Conyza sumatrensis* Retz., a new alien species in Romania.

MATERIAL AND METHODS

Plant material was photographed, collected and herborized. Morphological characters were compared with data from the literature (Fournier 1961, Wurzell 1988, Pruski & Sancho 2006, Vladimirov 2009). Herbarium specimens were deposited in the Herbarium of the Botanical Garden "D. Brândză", University of Bucharest (BUC). Geographic coordinates were registered with a hand-held Garmin GPS model eTrex Legend C, using WGS84 system. The number of individuals, number of inflorescences per plant, number of achenes per head and accompanying species were also recorded.

RESULTS AND DISCUSSION

Conyza sumatrensis (Retz.) E. Walker belongs to the Asteraceae (Compositae) family, tribe Astereae, subtribe Conyzinae, and is native from South America (Casasays 1989, Hao *et al*. 2009).

Nomenclature. According to Greuter (2006-2009), the accepted name for this taxon is *Erigeron canadensis* Retz. and the heterotypic synonyms are: *Conyza albida* Sprenq., *Conyza flahaultiana* Sennen, *Conyza naudinii* Bonnet, *Erigeron albidus* (Sprenq.) A. Gray, *Erigeron naudinii* (Bonnet) P. Fourn., *Erigeron crispus* subsp. *naudinii* (Bonnet) Bonnier. According to Flora Europaea (Cronquist 1976), *Conyza naudinii* Bonnet is a synonym for *Conyza floribunda* Kunth, but Greuter (2006-2009) considers this last taxon as a "misapplied name". According to The Plant List (2010), *Conyza sumatrensis* (Retz.) E. Walker is a synonym of *Conyza bonariensis* var. *leiotheca* (S.F.Blake) Cuatrec.

Morphological characters of photographed (Fig. 1) and collected material: *Conyza sumatrensis* is annual, up to 232 cm tall in the observed specimens, erect, sometimes with

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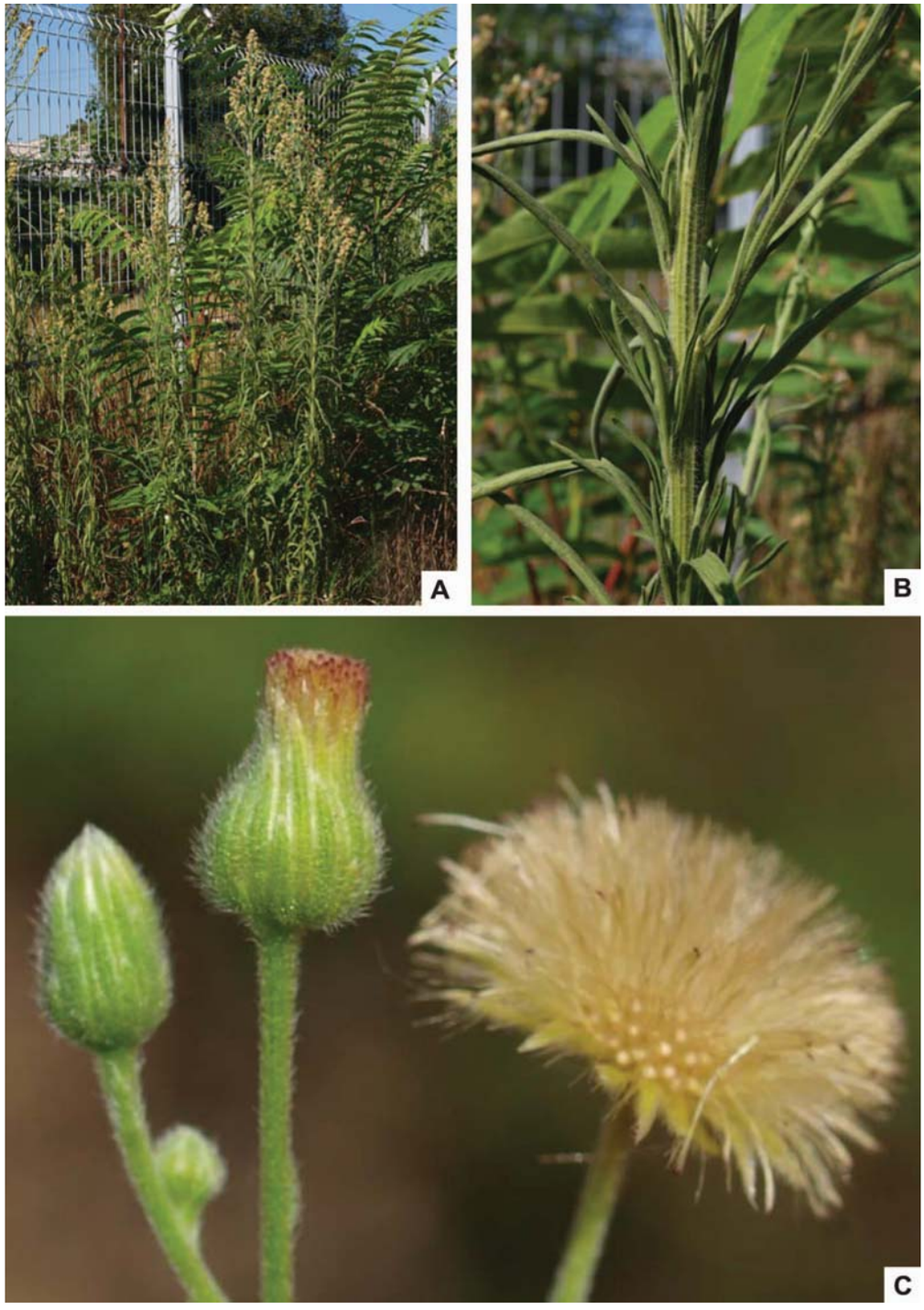

Fig. 1. *Conyza sumatrensis*: a. habit, b. stem with leaves, c. heads.

numerous floriferous stems (up to 22 floriferous stems); stem branched in inflorescence, lateral branches not overlapping the terminal one, and thus the inflorescence is rhombic. The stem is covered with two types of hairs: short hairs, directed upward and appressed and long hairs, patent or directed upwards. Leaves are numerous, simple, alternate, the lower elliptic-lanceolate to oblong-ovate, petiolate, remotely dentate (with 3-6 teeth on each side), the middle linear-lanceolate to linear, 4-10 x 0.6-1(1.2) cm, ± entire, the upper shorter and narrower, sessile. The inflorescence is rhombic in outline, 30-50 cm long, with many heads (up to 1200 to an individual of about 200 cm

height); involucrum 4-6 x (4)5-7 mm, bracts grayish-green, linear lanceolate, acuminate, densely hairy; female florets 110-200, with very short whitish ligules; hermaphrodite flowers *ca*. 15, with yellow corolla; achenes 1-1.5 mm long, with 3-5 mm long pappus of pale brown hairs.

An identification key is given below. It includes *Conyza bonariensis* as well, a species that is often confused with *Conyza sumatrensis* (Šida 2003, Wurzell 1988).

1a Ligulate florets present, white, of 0.5-1 mm; involucral bracts glabrous or scattered hairy.

C. canadensis

1b Ligulate florets absent or very short, not more than 0.5 mm, often with reddish apex; involucral bracts usually hirsute 2

2a Inflorescence rhombic; ligules very short, up to 0.5 mm, head 3-7 mm.

C. sumatrensis

2b Inflorescence pyramidal, with elongate branches overlapping the main axis; ligules absent; head 7-10 mm

C. bonariensis

Distribution. *Conyza sumatrensis* is known as one of the most widespread species throughout the world (Thébaud & Abbott 1995, Pruski & Sancho 2006). In Europe, it was recorded for the first time in 1875 as escaped from the Botanical Garden Cotlliure, France (Casasayas 1989). At present, it is spread in western and southern parts of the continent (Greuter 2006-2009). In the countries neighbouring Romania it has been recorded until now from Serbia (Vrbničanin *et al*. 2004) and Bulgaria (Vladimirov 2009).

In Romania we recorded *Conyza sumatrensis* in the Dobrogea region, inside and close to Constanța harbour: to Oil Terminal – Convex area (N44°08'43.2″, E28°39'55.3″) – 45 individuals; between gate five and gate six (N44°09'28.3″, E28°38'10.0″) – 110 individuals; between gate one and gate three (N44°10'27.5″, E28°39'04.2″) – 218 individuals.

Biology, **ecology**. *Conyza sumatrensis* flowers from the middle of July to October, fruiting in August-November. Every individual produces a huge amount of achenes, over 200,000.

Conyza sumatrensis is a thermophile species and prefers arid and sun-baked niches (Wurzell 1988). It grows in warm, sunny places, usually in man-made habitats: road embankments, along railroad tracks, abandoned arable land and field margins (Vladimirov 2009). It was also observed in some secondary grasslands, in close proximity to railways and roads (Vladimirov 2009). In Catalonia (NE Spain) *Conyza sumatrensis* was recorded in cultivated sites (Masalles *et al*. 1996), as well as in reedbeds and dune communities (Pino *et al*. 2006).

In and outside of Constanța harbour this plant was recorded in ruderal places, along roadsides and railways, accompanied by other ruderal species such as: *Ailanthus altissima, Setaria viridis, Ambrosia artemisiifolia, Crepis foetida* subsp. *rhoeadifolia, Lactuca serriola, Periploca graeca, Elymus repens, Conyza canadensis,* etc.

Way of introduction. The flora of the Constanța harbour has been monitored since 2004, but *Conyza sumatrensis* was recorded for the first time later, in July, 2009. We consider it a very recent introduction, probably with containers transported by ships. According to Hao *et al*. (2009), the velocity of settling down in still air for the achenes of *Conyza sumatrensis* is 0.240±0.033 m/s, suggesting a relatively high dispersal potential. The distance between the populations from Varna (Bulgaria) reported by Vladimirov (2009) and Constanța (Romania) is about 100 km, so a natural spread from Bulgaria could also be possible. However, the inventory of alien plant species along the Black Sea Shore between Cape Midia (Romania) and Cape Kaliakra (Bulgaria) did not reveal the presence of *Conyza sumatrensis* in this area (Anastasiu *et al*. 2009).

Invasiveness. *Conyza sumatrensis* is an aggressive xenophyte in Greece (Danin 1976), invasive in Serbia (Vrbničanin *et al*. 2004) and is a highly invasive taxon in Bulgaria (Vladimirov 2009). In the Dobrogea region it is naturalised but, considering its reproductive traits (Hao *et al*. 2009), a fast spread of *Conyza sumatrensis* in Romania is expected. We strongly recommend preventive measures to remove the plant from the harbour and its vicinity.

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REZIME

Conyza sumatrensis: nova strana vrsta u flori Rumunije

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Nova strana vrsta u flori Rumunije – *Conyza sumatrensis* – zabeležena je na području Dobrudže. U radu se daju podaci o njenim morfološkim karakteristikama, rasprostranjenju, biologiji, ekologiji i invazivnosti.

Ključne reči: strana vrsta, flora Rumunije, *Conyza sumatrensis*, invazivna vrsta