

**CONYZA BONARIENSIS, A NEW PLANT WITH INVASIVE CHARACTER
IN ROMANIAN FLORA**

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ABSTRACT

A new alien plant species – Conyza bonariensis – is reported from Mehedinți County, Romania. We provide information about its morphological features, distribution, biology, ecology and invasiveness.

INTRODUCTION

The genus *Conyza* Less. (*Asteraceae*) comprises more than 50 species, chiefly of warmer regions (MUNZ 1959).

Conyza bonariensis (L.) Cronquist is a thermo-cosmopolitan species originating from tropical America (MARTINČIČ et al. 1999).

From Germplasm Resources Information Network (GRIN) (as *Erigeron bonariensis* L.), the plant is native from Southern America and naturalized in: Africa, Asia-temperate, Asia-tropical, Australasia, Northern America, Pacific, Southern America, Europe: Northern Europe, Middle Europe (Belgium; Germany; Netherlands; Switzerland), Southeastern Europe [Albania; Bulgaria; Croatia; Greece (incl. Crete); Italy (incl. Sardinia, Sicily); Macedonia; Montenegro; Slovenia], Southwestern Europe [France (incl. Corsica); Portugal; Spain (incl. Balearic)].

In Europe it was introduced much later than *Conyza canadensis*, and has been naturalized almost throughout the Mediterranean region and the south-western parts of Europe (CRONQUIST 1976). Findings out of this range, such as the case of an occurrence of *Conyza bonariensis* in the British Isles (STACE 1997) and the Czech Republic (PYŠEK et al. 2002; ŠIDA 2002; ŠIDA 2003) are very rare, is reported as new alien species to the Czech Republic - was collected in 1964 and 1965 in two localities in N Bohemia. In both cases, the plants were introduced with cotton and occurred in areas of textile factories. It is established in the neighboring countries of Croatia: in Italy (PIGNATTI 1982), Slovenia (MARTINČIČ et al. 1999) and Montenegro (ROHLENA 1942). The first reliable data for Croatia are given by ROHLENA (1923), as *Erigeron linifolius* Willd., for the area of Dubrovnik, and somewhat later by BOLZON (1925), as *Erigeron crispus* Pourr., for Bay of Kvarner (Mali Lošinj and Krk). Since then it has been regularly noted as a naturalised

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species in the floras of the territory of today's Croatia (HAYEK 1931; DOMAC 1950, 1967, 1994; NIKOLIĆ 2000). In Bulgaria: according DIMITROV & TRIFONOV (2006) species is indicated at Black Sea Coast (*Southern*): Bourgas (DIMITROV & TRIFONOV, 2006) as *Erigeron bonariensis* L., but the indication is incorrect and should be referred to *Erigeron sumatrensis* Retz. In 2009 VLADIMIROV, PETROVA & YANKOV reported from Black Sea Coast (*Northern*): along the railroad tracks at the railway station in the city of Varna, a single plant. In Greece - Chalki, Rodos and reported from nearly all E Aegean islands; Samothraki: SW of Xiropotamos, Kamariotissa (BIEL & TAN 2007, 2009).

Closer to our geographical area, plant occurs in a catalog of seeds for exchange from Botanical Garden from Budapest (RICHTER 1872).

The species is cultivated ground and waste places; naturalized in the Mediterranean region and S. W. Europe.

MATERIAL AND METHODS

Material was collected to Bahna Valley and Drobeta Turnu-Severin railway station. The plant is deposited in the Herbarium of the University of Cluj (CL) and was compared with material collected by us in Southern France: *Conyza bonariensis* (L.) Cronq. /AST/ - Ga: St. Raphael N, Esterel, 9 X 1996 [BUCM] (TÂNASE & NEGREAN 1997: 64[†]). Fungi: *Podosphaera fusca* (Fr.) U. Braun & S. Takam. (*Oidium erysiphoides* Fr. [‡]; *Sphaerotheca erigerontis-canadensis* (Lév.) L. Junell; *Sphaerotheca fusca* (Fr.) Blumer[†]).

RESULTS AND DISCUSSIONS

Nomenclature. The accepted name for this taxon is *Conyza bonariensis* (L.) Cronquist, Bull. Torr. Bot. Cl. 70: 632 (1943).

The heterotypic and homotypic synonyms are:

- ≡ *Erigeron bonariensis* L., Sp. Pl. 2: 863 (1753);
- = *E. crispus* Pourr., Mem. Acad. Toul. 3: 318 (1788);
- = *E. linifolius* Willd., Sp. Pl. 3: 1955 (1803);
- = *Conyza ambigua* DC., Fl. Fr. 6: 468 (1815);
- ≡ *Erigeron ambiguus* (DC.) Sch. Bip. in Webb & Berthel., Phyt. Canar. 2: 208 (1844).
- ≡ *Conyzella linifolia* (Willd.) Greene, Fl. Francisc. 4: 386 (1897);
- ≡ *Leptilon bonariense* (L.) Small, Fl. S. E. U. S.: 1231 (1903);
- ≡ *Leptilon linifolium* (Willd.) Small, Fl. S. E. U. S.: 1231 (1903).

Etymology (according Wild Plants of Malta):

- *Conyza* – *Conyza* – derived from Greek word „Konops” which means flea, and used Pliny as a name for some kind of a fleabane. **Fleabane** is a common name for some flowering plants in the family *Asteraceae*, subfamily *Asteroideae* (*Conyza*; *Erigeron*; *Inula*; *Pluchea*; *Pulicaria*), and one genus from subfam. *Cichorioideae*: *Vernonia*.

- *bonariensis* – referring to the fact that the plant may have originated from Buenos Aires in Argentina, South America.

The identification key includes *Conyza canadensis*, *Conyza bonariensis* and *Conyza sumatrensis*, species may be confused (ŠIDA 2003, WURZELL 1988).

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

Conyza canadensis (L.) Cronquist - Annual plants, up to 10-150 cm, patent hirsute. Leaves numerous, narrow, the lower up to 10 x 1 cm, oblanceolate, petiolate, often deciduous, the others linear, at least the upper sessile. Capitula less than 1 cm wide, generally numerous, in

a long, paniculate inflorescences with a single axis. Involucres 3-4 mm, equaling or slightly exceeding the style and pappus. $2n=18$.

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

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

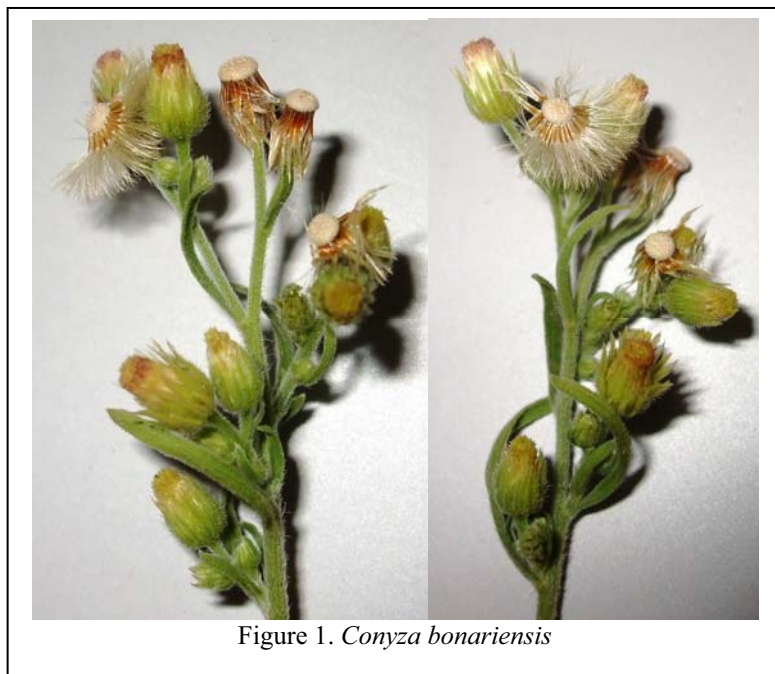
Conyza sumatrensis (Retz.) E. Walker - Annual plants, up to 232 cm. Leaves are numerous, simple, alternate, the lower elliptic-lanceolate to oblong-ovate, petiolate, remotely dentate (with 3-6 teeth on each side), the middle linear-lanceolate to linear, 4-10 x 0.6-1(1.2) cm, ± entire, the upper shorter and narrower, sessile. Inflorescence is rhombic in outline, 30-50 cm long, with many heads (up to 1200 to an individual of about 200 cm height); involucre 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 (ANASTASIU and DANIYAR, 2012).

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

Conyza bonariensis (L.). Cronquist – Annual plants. Erect stems (can be 20-75 (200) cm in height) covered with two kind of hairs, short ones, strongly appressed to the stem, arranged in a dense indumentum and long ones, patent, scattered. **Branching** extensively at the base, decreasing upwards. **Leaves** linear or linear lanceolate (narrow lanceolate), entire, 0.1–0.5 cm wide and 5–8 cm long, coarsely toothed and covered in fine hairs. Upper leaves are smaller and linear. **Inflorescence** cylindrical, usually in paniculiform to racemiform, rarely corymbiform arrays, composed of 15–40 capitula per branch. **Capitulas** 5–7 (10) mm in diameter, without ligulate flowers. Involucral bracts 3–4 (5) mm long, (leaf-like structures surrounding the flower head) have a brownish inner surface and the hairs (pappus) of the seed are cream the outer ones covered **with appressed hairs**, the inner ones hairy only along the midrib; Flowers occur at the ends of the branches. **Disc florets** 8–12 or more. **Pistillate florets** 60–150 or more, light-yellow; corollas ± equaling or surpassing styles, laminae 0 or to 0.3 mm. Surrounding each flower are involucre (bell-shaped leaf-like) bracts 3-5mm in length, the inside of each bract is white sometimes tinged purple or red. Achenes linear-lanceoloid, compressed, c. 1.5 mm, sparsely strigullose [or glabrous] straw colored, covered in hairs with 16-20 noticeably longer at the top that are white or pink, sordid, or tawny bristles 3–4 mm or more.

Presence in Romania

In the Romanian botanical literature, Simonkai (1886) mentions, with the doubtful presence, a plant under the name *Erigeron crispus* Pourr. [syn.: *Conyza ambigua* DC., *Erigeron transsilvanicus* Schur. (leg. Schur 1845, Dobra and Zam, county Hunedoara)], plant with intermediate characters between *Conyza canadensis* and *Erigeron acris* (incl. *E. podolicus*). SIMONKAI considers the fictional presence of this species in the Transylvania.



SÂRBU & OPREA (2011) considered the species *Conyza bonariensis* one and the same species indicated by SIMONKAI (1886) -*Erigeron transsilvanicus*- and hypothesize that it may be a natural hybrid between *Conyza canadensis* and *Erigeron acris* species, known in the literature as the \times *Conyzigeron huelsenii* (Valke) Ruaschert.

However, according (CRONQUIST 1976), *Conyza bonariensis* was introduced in Europe than later as *Conyza canadensis*, so before 1866 the plant does not exist in Europe. This means that the *Conyza bonariensis* species not the same plant with hybrid \times

Conyzigeron huelsenii (Valke) Ruaschert, as involving SÂRBU & OPREA (2011). Moreover, to us the plant has a strong thermophilic (Railway Station Drobeta, Bahna Valley).

Chorology:

a. distr. Mehedinți: Cireșul SW, Bahna Valley, in herbosis, 44°48'43,75"N, 22°31'15,48"E, alt. c. 242 m, 27 VIII 2010, leg. G. Negrean (N: 15.461) [CL].

b. distr. Mehedinți: Railway Station Drobeta Turnu-Severin, ad viam ferream, 44°37'17,57"N, 22°38'12,55"E, alt. c. 49 m, 24 VIII 2011, leg. G. Negrean & Ioana Ciortan (N: 15.462) [CL]. 8 VIII 2012, leg. Ioana Ciortan & G. Negrean [GN: 18.702], together with: *Acer negundo*, *Ailanthus altissima*, *Amaranthus deflexus*, *Bassia scoparia*, *Centaurea diffusa*, *Cephalaria transylvanica*, *Convolvulus arvensis*, *Conyza canadensis*, *Dasypyrum villosum*, *Erigeron annuus* subsp. *annuus*, *Gleditsia triacanthos*, *Juglans regia*, *Panicum dichotomiflorum*, *Petrorhagia saxifraga*, *Portulaca oleracea* subsp. *oleracea*, *Tribulus terrestris*, *Sorghum halepense*, etc.

CONCLUSIONS

1. The paper indicates the certain existence of the species *Conyza bonariensis* as an alien plant in Romania, from Mehedinți County.

2. *Conyza bonariensis* was recently indicated from Romania, as much from the confusion in the ancient literature (commented) and as the fact that one of the authors of the present paper (NEGREAN) communicated to Mr. Adrian OPREA that he found the plant in Mehedinți County. The publication of the species from the two authors (SÂRBU & OPREA 2011) contravenes the professional ethics, because the above authors did not have the permission of Mr. NEGREAN for the publication.

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