Conyza triloba, new to Europe, and *Conyza bonariensis*, new to the Czech Republic

***Conyza triloba*, nový druh pro Evropu, a *Conyza bonariensis*, nový druh pro Českou republiku**

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Šída O. (2003): *Conyza triloba*, new to Europe and *Conyza bonariensis*, new to the Czech Republic. – Preslia, Praha, 75: 249–254.

Conyza bonariensis (L.) Cronquist and *C. triloba* Decne. are reported as new alien species to the Czech Republic and Europe, respectively. *Conyza bonariensis* was collected in 1964 and 1965 in two localities in N Bohemia; the specimens are deposited in PRA. In both cases, the plants were introduced with cotton and occurred in areas of textile factories. *Conyza triloba* was collected once at the pond in the village of Černivsko in S Bohemia in 1971; the specimen is deposited in PR. The mode of introduction is unknown.

K e y w o r d s : *Asteraceae*, *Astereae*, alien species, plant invasions

Introduction

Introduction of species to areas where they are not native has been receiving increasing attention worldwide (e.g. Drake et al. 1989, Pyšek et al. 1995, Richardson et al. 2000). The alien flora of the Czech Republic currently includes 1378 species, 1046 of which are neophytes introduced after the discovery of America, and species of alien origin make up 33.4% of the total flora of the country (Pyšek et al. 2002, 2003ab). New alien species are continuously reported (Chrtek & Skočdopolová 2002, Dančák 2002, Petřík 2003, Mihulka et al. 2003) further increasing the number of non-native taxa in the national flora (Pyšek et al. 2003a).

In the main floral works covering the territory of the Czech Republic (e.g. Dostál 1950–1952, 1989, Smejkal 1982), *Conyza canadensis* (L.) Cronquist is the only representative of this genus. Naturalization of this species in the Old World started in the middle of the 17th century when it was reported for the first time from France (Jäger 1992). The oldest herbarium specimens from the Czech Republic are of cultivated plants collected in the university botanical garden in Prague in the last quarter of the 18th century.

The fourth volume of Flora Europaea (Tutin et al. 1976: 120) mentions only two species of the genus *Conyza*, i.e. *C. canadensis* and *C. bonariensis* (L.) Cronquist. Since the publication of this work, four more species have been reported in Europe. At present, *C. sumatrensis* (Retz.) E. Walker is naturalized throughout the Mediterranean Basin and Western Europe including Great Britain (Danin 1976a, b, Wurzell 1988). The beginning of the invasion of *C. floribunda* Humb., Bonpl. & Kunth into France and Spain is reported by Rivière (1987) and Thébaud & Abbot (1995). *Conyza blakei* (Cabrera) Cabrera, reported from Europe for the first time by Jovet & Vilmorin (1975), started to spread in the SE France (Bernard & Fabre 1983, Kerguélen et al. 1987). *Conyza bilbaoana* J. Rémy has been recently found in Britain and Ireland (Stanley 1996, Reynolds 1997).

Including *C. triloba* Decne., seven *Conyza* species have been introduced into Europe. Below, descriptions based on examined herbarium specimens and information on the new species to Europe (*C. triloba*) and the Czech Republic (*C. bonariensis*), are presented. The latter species was previously reported in the catalogue of alien plants of the Czech Republic (Pyšek et al. 2002) and both species included in the recent key to the Czech flora (Kubát et al. 2002). These reports are based on the findings described in detail in the present paper.

Conyza bonariensis

Conyza bonariensis (L.) Cronquist, Bull. Torr. Bot. Cl. 70: 632 (1943)
≡ *Erigeron bonariensis* L., Sp. Pl. 2: 863 (1753)
≡ *Leptilon bonariense* (L.) Small, Fl. S. E. U. S.: 1231 (1903)
= *E. crispus* Pourr., Mem. Acad. Toul. 3: 318 (1788)
= *E. linifolius* Willd., Sp. Pl. 3: 1955 (1803)
≡ *Conyzella linifolia* (Willd.) Greene, Fl. Francisc. 4: 386 (1897)
≡ *Leptilon linifolium* (Willd.) Small, Fl. S. E. U. S.: 1231 (1903)
= *Conyza ambigua* DC., Fl. Fr. 6: 468 (1815)
≡ *Erigeron ambiguus* (DC.) Sch. Bip. in Webb & Berthel., Phyt. Canar. 2: 208 (1844)

Annual plants with erect stem, branched above, lateral branches overtopping main axis. Stem covered with two kind of hairs, short ones, strongly appressed to the stem, arranged in a dense indumentum and long ones, patent, scattered. Leaves linear or linear lanceolate, entire, 0.1–0.5 cm wide and 5–8 cm long, hairy. Inflorescence cylindrical, composed of 15–40 capitula per branch. Capitulas 5–7 mm in diameter, without ligulate flowers. Involucral bracts 3–4 mm long, the outer ones covered with appressed hairs, the inner ones hairy only along the midrib. Flowers light-yellow.

This species was collected by V. Jehlík in Northern Bohemia in the village of Košťálov (distr. Semily, 50°34'20" N, 15°24'10" E) in 1964 (two specimens) and in the town of Šluknov (distr. Děčín, 51°00'20" N, 14°27'40" E) in 1965. All plants were observed grow-

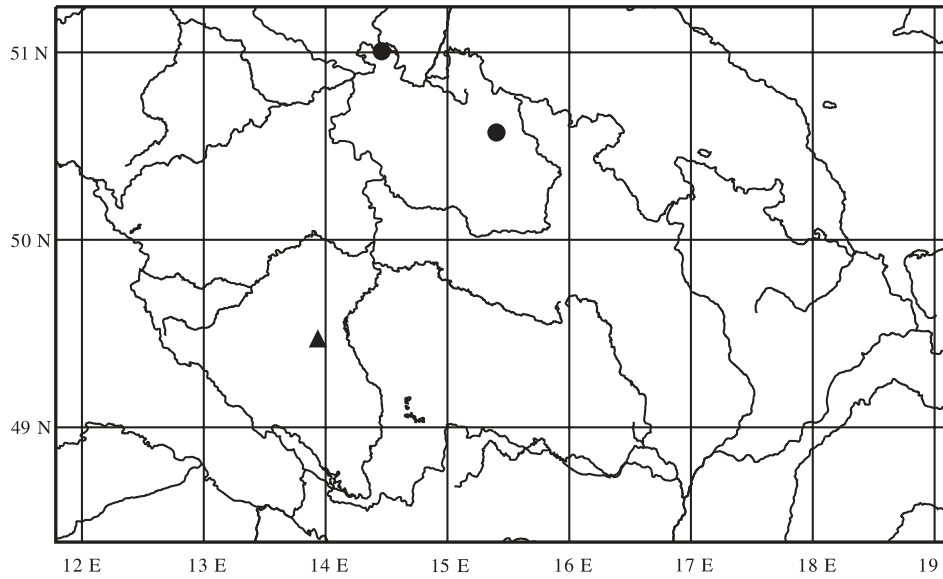

Fig. 1. – Localities of *Conyza triloba* Decne. (triangle) and *Conyza bonariensis* (L.) Cronquist (circles) in the Czech Republic.

ing on cotton-refuse in the areas of textile factories. All specimens were correctly determined, however, these finds were not published. In Jehlík (1998), only the occasional introduction into the Czech Republic with cotton is mentioned, albeit without reference to a particular locality (Fig. 1).

The species is native to South America and is naturalized in warm areas throughout the world, in Europe mainly in the Mediterranean Basin. It is more thermophilous than its close relative *C. sumatrensis* (syn. *C. albida* Willd. ex Spreng.). In temperate Europe, e.g. in the British Isles, it permanently occurs only in big cities and is absent from rural areas due to their colder climate (Wurzell 1994). Both *C. bonariensis* and *C. sumatrensis* are often confused but can be distinguished by the following diagnostic characters (those of *C. sumatrensis* are given in brackets): stem up to 60 cm tall (up to 150 cm), lateral branches overtop the main axis (lateral branches do not overtop the main axis, inflorescence rhombic in outline), leaves usually less than 6 mm wide (5–20 mm wide).

Conyza bonariensis is rarely introduced into Central Europe, and occurs there only temporarily.

Conyza triloba

Conyza triloba Decne., Ann. Sci. Nat., Paris, ser. 2, 2: 261 (1834)
≡ *Erigeron trilobus* (Decne.) Boiss., Fl. Orient. 3: 168 (1875)
≡ *Nidorella triloba* (Decne.) DC., Prodr. 5: 321 (1836)
= *Conyza pinnatifida* Roxb., Fl. Ind. 3: 320 ([Oct.–Dec.] 1832), nom. illeg. [ICBN Art 53.1; Greuter et al. 2000], non (Thunb.) Less., Syn. Gen. Comp.: 204 ([Jul.–Aug.] 1832)
= *Erigeron pinnatifidus* D. Don, Prodr. Fl. Nepal.: 172 (1825), nom illeg. [ICBN Art 53.1; Greuter et al. 2000], non Thunb., Prod. Pl. Capens.: 153 (1800)
≡ *Conyza stricta* var. *pinnatifida* [D. Don] Kitam. in Hara, Flora E. Himalaya: 337 (1966)
= *Nidorella chrysocoma* DC., Prodr. 5: 322 (1836)
≡ *Conyza chrysocoma* (DC.) Vatke, Brem. Abh. 9: 120 (1885)

Annual or perennial herb. Stem erect, slightly hairy, 15–60 (–80) cm tall, 1.5–3.0 (–5.0) mm in diameter, slightly angulate. Leaves 1.5–2.5 (–4.0) cm long and 6–8 (–15) mm wide, petiolate, divided into three or five lanceolate, obtuse lobes, slightly hairy. Inflorescence paniculate, composed of 20–80 (–200) capitula, triangular in outline, stem branched from 1/2–3/4 of its height. Capitula small, 2.0–3.5 mm long at anthesis. Involucral bracts linear-lanceolate, acute, 1–2.5 mm long and ca. 0.5 mm wide, straw-coloured and scarious at margins, green along medium rib. Flowers yellow. Pappus white or bright straw-coloured.

This species was collected by M. Deyl from a pond in the village of Černivsko near Blatná (distr. Strakonice, 49°28'30" N, 13°56'10" E) in 1971 (Fig. 1, 2). It has a wide distribution: Morocco to N, central and NE Africa, Madagascar, SW Asia to India and the Himalayas (Wild 1969, Grierson 1982). Previously, the species was not reported as alien from Europe. A single, unidentified specimen consisting of one flowering plant was found during a revision of *Erigeron acris* agg. in PR. During a visit to the locality in 1999, this species was not found. The way of introduction is unknown. One possibility is with fish feed; similar occurrences of *Achillea pannonica* and *A. crithmifolia* in a pond in the vicinity of Blatná were recorded by J. Danihelka (pers. comm.).

This taxon is often included in *C. stricta* Willd. as var. *pinnatifida* Kitam. (e.g. Wild 1969, Grierson 1982). *C. stricta* occurs in central, E and S Africa, India and the Himalayas up to SW China. It differs from *C. triloba* in having entire leaves without lobes, but some-

Fig. 2. – *Conyza triloba* Decne. Flora Bohemica: Distr. Blatná [recte Strakonice], ad piscinam prope vicum Černivsko. V. 1971, leg. M. Deyl (PR).

times with teeth on margins. The two taxa differ in their morphology and distribution ranges, and intermediates, probably of hybrid origin, are rare. On these grounds, I prefer to consider them as species rather than varieties.

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Souhrn

V průběhu revize materiálu rodů *Conyza* a *Erigeron* pro 7. díl Květeny ČR byla nalezena *Conyza bonariensis* (L.) Cronquist jako nový druh pro Českou republiku a *C. triloba* Decne. jako nový druh pro Evropu.

C. bonariensis (L.) Cronquist, pocházející z Jižní Ameriky, je obecně zdomácnělá v jižní Evropě. Do České republiky byl druh dvakrát přechodně zavlečen s bavlnou; byl sbírán V. Jehlíkem v letech 1964 a 1965 v severních Čechách na odpadu ze zpracování bavlny. *C. bonariensis* může být zaměněna s podobným druhem *C. sumatrensis* (Retz.) E. Walker, který je plně naturalizovaný ve střední a západní Evropě a mohl by být též nalezen zavlečený v České republice. Oba druhy se liší v následujících znacích (znaky *C. sumatrensis* v závorce): lodyha do 60 cm vysoká (až 150 cm), postranní větve převyšují terminální (postranní větve nepřevyšují hlavní osu květenství, květenství v obrysu kosočtverečné), listy max. 6 mm široké (5–20 mm široké).

Conyza triloba Decne. je primárně vázána na tropické a subtropické oblasti Afriky a Asie, od Maroka po Indii a oblast Himálaje, východní Afrikou k jihu až po Madagaskar. Ojedinělé zavlečení tohoto druhu do České republiky (jediná rostlina byla sbírána M. Deylem v roce 1971 v obci Černivsko nedaleko Blatné) je prvním údajem o výskytu v Evropě. Způsob zavlečení ani provenience nejsou známy, jednou z možností může být zavlečení prostřednictvím krmiva pro ryby.

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Appendix 1. – Herbarium specimens examined.

Conyza bonariensis. Czech Republic: Distr. Děčín, Šluknov, two individuals on the compost from the cotton-refuse in the yard of spinning mill Benar 13 at the railway-station. Introduced with Egyptian cotton. 340 m a.s.l., 15 October 1965, leg. V. Jehlík 3820 (PRA) [2 specimens, translated from Czech]. – Distr. Semily, Košťálov, one individual at the heap of the cotton-refuse in the yard of spinning mill Kolora 07 at the right bank of the Olešnice [recte: Oleška] river to the south of spot height 472. Introduced with cotton. 360 m a.s.l., 12 October 1964, leg. V. Jehlík 1326 (PRA) [1 specimen, translated from Czech]. – Algeria: Sidi-Okba near Biskra. 19 June 1902, leg. L. Chevalier 430 (PR, PRC). – Croatia: Dubrovnik, Lapad. 2 August 1912, leg. L. F. Čelakovský (PRC). – Egypt: Kairo. 29 April 1908, leg. J. Bornmüller 10373 (PR). – Israel: Tel-Aviv. 10 June 1928, leg. N. Feinbrun & D. Soltschansky 93 (PRC). – Italy: Sardegna: Santa Teresa di Gallura. 13 August 1881, leg. E. Reverchon 54 (PR). Sicily: Palermo. July 1896, leg. H. Ross 37 (PR, PRC). – Napoli, Portici. 15 June 1913, leg. G. Pellanda (PR). – Portugal: Lisboa, the university area. 18 September 1999, leg. O. Šída 1528 (PR). – Spain: San Sebastian. 14 August 1873, herb. H. A. Oertel (PR). – Canary Islands, Gran Canaria, Tafira. June 1897, leg. A. C. Cook 681 (PRC). – Yugoslavia: Montenegro, Novi Bar. 6 July 1930, leg. J. Dostál (PRC).

Conyza sumatrensis. France: Pyrénées-Orientales: Elne. September 1906, leg. E. J. Neyraut (PR, PRC). – Portugal: Lisboa, the university area 18. September 1999, leg. O. Šída 1256 (PR).

Conyza triloba. Czech Republic: Distr. Strakonice, at the pond in the village of Černivsko. May 1971, leg. M. Deyl (PR) [1 specimen, label in Latin]. – Madagascar: Imerina, Andrangolaoka. October 1880, leg. J. M. Hildebrandt 4092 (PR). – Morocco: Anti-Atlas, Oued Massa au gué de Zaderrast. 14 April 1935, leg. Jattefossé (PR). – Ksar-es-Souk. April 1927, leg. H. Humbert (MA). – Oued Massa near Tiznit. 6 April 1936, leg. O. Paulsen (C). – Oued Issen. 5 May 1923, leg. E. Jahandiez 251 (C). – Israel: Sinai, Wadi Adani. 12 January 1842, leg. A. Kaiser (PRC).