

SYMPHYOTRICHUM SUBULATUM (ASTERACEAE)- A FIRST REPORT OF AN ALIEN WEED IN INDIA

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INTRODUCTION

The genus *Symphyotrichum* Nees (Asteraceae) comprises c. 90 species (Brouillet & al., 2006; Chen & Brouillet, 2011) distributed mostly in America. *Symphyotrichum subulatum* (Michx.) G.L. Nesom, a weed commonly known as 'Annual Saltmarsh' or 'Eastern Annual Saltmarsh Aster' is a denizen of New World and now distributed in Old World also, including Europe, Australia, Africa and Asia (China, Taiwan). Interestingly, one of us (MS) found a member of Asteraceae growing gregariously as a weed among grasses in a park in Patiala, Punjab outside the boundary wall of a small reservoir. It was further noticed that in 2011 the plants were mowed twice during winter as a routine clearing of park and there was no subsequent external indication of the plants till they appeared during May of 2012. After critical study of the gathered material, the plant has been identified as *S. subulatum*, a species (introduced), hitherto unknown from India.

Symphyotrichum subulatum (Michx.) G.L. Nesom in Phytologia 77: 293. 1995; Brouillet & al., Fl. North America 20: 480. 2006; Y. Chen & L. Brouillet in Z.Y.Wu & al., Fl. China 20-21: 652. 2011. *Aster subulatus* Michx., Fl. Bor. - Amer. 2: 111. 1803. Type: Pennsylvania, *Michaux* s.n. [lectotype: P, photo!; designated by Boss. (Bossardet, 1970)]. **(Fig. 1, 2.)**

Annual herbs, up to 1m high. Stems erect, glabrous, green. Leaves, thin, glabrous, green to dark green; basal withering by flowering, petiolate with sheathing base-blades ovate to ovate-lanceolate to oblanceolate, 1 - 9 × 6 - 1.4cm, base, attenuate to cuneate, apex rounded to obtuse, margins entire or serrulate or crenulate; cauline ones petiolate to shortly petiolate or sessile, 2 - 12 × 0.1 - 1.8cm, narrowly lanceolate to linear-lanceolate, base attenuate, apex acute to acuminate, (acumen up to 1 cm long), margins subentire, entire or serrulate. Capitula numerous in diffuse, paniculiform synflorescences; peduncles 0.3 - 1cm long, glabrous. Involucres cylindric to turbinate, 5 - 7(-8.2)mm long; phyllaries in 3-5 series, unequal, lanceolate to linear-lanceolate, 1.6 - 5 × 0.4 - 0.7mm, base indurate, apex acute to acuminate, distally ciliate, margins hyaline, scarious, entire, glabrous, pale yellowish-green. Ray florets numerous in 1 series; lamina 1.3 - 2.5 × 0.2 - 1.3mm, glabrous, white to pink to purplish blue. Disc florets 7 - 12, 3 - 5mm long, yellow, sometimes tinged with purple; throat narrowly funnel-form; limbs 1.5 - 2.2mm long; lobes more or less spreading to erect, oblong-triangular, 0.5 - 1 × 0.3 - 0.5mm, glabrous. Androecium with 5 syngenesious stamens; stamens 1.7 - 2.5mm long; filaments 0.7 - 1mm long; anthers weakly sagittate, 1 - 1.5mm long; with subacute to acute apices. Gynoecium 4.5 - 5.5mm long; ovary oblong, 1 - 1.5 × 0.3 - 0.5mm; style 2.2 - 2.8 mm long, bifid at apex, style-branches rhomboid-lanceolate with minute hairs. Cypselae narrowly oblanceoloid to fusiform, light brown to purple, sometimes more or less compressed with 4 - 5 strong ridges, sparsely strigillose; 1.5 - 3 × 0.3 - 0.8mm, pappi 3 - 5mm long, white.

Flowering & Fruiting: September - February.

Habitat: Terrestrial, found growing gregariously among grasses.

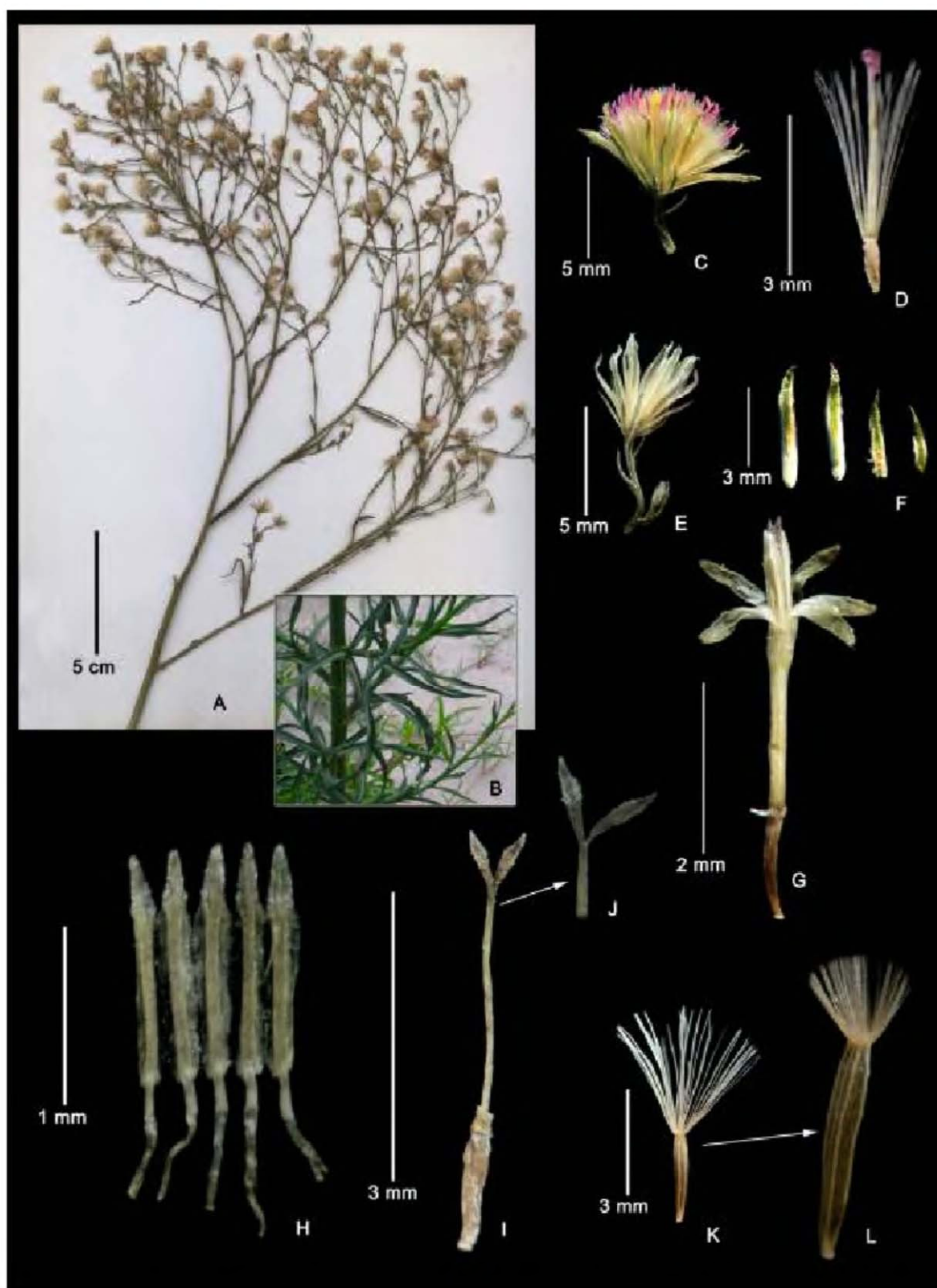


Fig. 1. *Symphyotrichum subulatum* (Michx.) G.L. Nesom: **A.** Portion of a twig; **B.** Portion of cauline leaves; **C.** Capitulum (at late flowering stage); **D.** Ray floret (at late flowering stage); **E.** Involucre with portion of peduncle; **F.** Phyllaries; **G.** Disc floret; **H.** Androecium; **I.** Gynoecium; **J.** Close-up of style apex (branched); **K.** Cypsela; **L.** Close-up of cypsela. [M. Sharma 27657, (CAL); A, C - L: from unmounted dry specimen]



Fig. 2. *Symphyotrichum subulatum* (Michx.) G.L. Nesom: **A.** Habit; **B.** Portion of Inflorescence; **C.** Close-up of flowers; **D.** Cypselae before dispersal. [Photo courtesy: Dr. Puneet Kumar]

Distribution: INDIA: Punjab (introduced); Native to Americas, including West Indies, Bermuda; widely introduced worldwide.

Specimens examined: INDIA, Punjab, Patiala, Urban Estate, 27.9.2011 (flowering), *M. Sharma* 27657 (PUN, 4 sheets; CAL); Patiala, Urban Estate, 6.10.2011 (fruiting), *M. Sharma* 27658 (PUN, 3 sheets); Patiala, Urban Estate, 27.9.2012 (flowering), *M. Sharma* 27671 (PUN, 5 sheets). ECUADOR, Riobamba, November 1858, *R. Spruce* 5769 (K, photo); Puerto Rico, Road 149 close to Maravilla, Toro Negro Forest, 03.10.1989, *P. Acevedo-Rodríguez & J. Alvarez* 2982 (NY, photo). MEXICO, Highland Battlefield near Buenavista, 24.07.1848, *J. Gregg* 290 (MO, photo); Chiapas, Along MEX-199 near km marker 220, 2295m, 22.02.2007, *J. Pruski, R. Ortiz & J. Martinez* M. 4209 (MO, photo). USA, Pennsylvania, *Michaux* s.n. [P (lectotype), photo]; Louisiana, Tangipahoa Parish, 10.09.2010, *J. Pruski & R. Ortiz* 4601 (MO, photo).

Note: Brouill & al. (*l.c.*) have recognized 5 varieties under *S. subulatum*, whereas Chen & Brouillet (*l.c.*) do not recognize any variety. The characters segregating these varieties are overlapping and we are unable to assign our material to any of these unambiguously. Dr. Nicholas Hind (pers. comm. in Sept. 2012) has also opined that it is not worth narrowing down *S. subulatum* to infraspecific taxa.

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