

# Two new naturalized species from Korea, *Andropogon virginicus* L. and *Euphorbia postrata* Aiton

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**Abstract** - Here we reported two unrecorded naturalized species from Korean flora. *Andropogon virginicus* L. of Graminaeae and *Euphorbia postrata* Aiton of Euphorbiaceae are collected from Dong-gu, Ulsan-si and Sinjindo-ri, Taean-gun, Chungcheongnam-do respectively. *A. virginicus* L. was easily distinguishable from *Themeda triandras* var. *japonica* Makino by keel on glume, 2-4 racemes and long hairy rachis. Thus, the new Korean name, 'Na-do-sol-sae', was given. *E. postrata* Aiton was clearly distinguished from related taxa by hairs on only edges of fruits. The new Korean name, 'Nu-un-ttang-bin-dae' was given considering the species epithet. Descriptions, illustrations and photographs showing habitat were given.

**Key words** - Unrecorded naturalized species, Graminaeae, Poaceae, Euphorbiaceae

## Introduction

The number of introduced alien plants into Korea has been increased to date since the opening of the main harbor in 1876. Yim and Jeon (1980) made a list of 110 species of naturalized plants in Korea. Later Park (1995, 2001) reported 267 taxa of the naturalized plants in Korea. Recently the number of species is reaching to 271 species (Park et al, 2002), which had been accelerated by the increase of the international trade and interchange among countries. It is expected that introduction of alien plants will be increased continuously in the future. Many of them success to adapt and settle in Korean environment, with showing a serious problem to natural ecosystem in several species. Due to these reasons, it is important to study on their characteristics, habitat and distribution, which are essential to effectively manage them in the country. In this study, we report two new naturalized plants species of *Andropogon virginicus* L. (Graminaeae) and *Euphorbia postrata* Aiton (Euphorbiaceae), with illustration of their morphological characteristics.

## Materials and Method

This study carried out from Nov. 2006 to Nov. 2007 in Ulsan and Taean. The population size, locations, increasing trends, surrounding vegetation of new naturalized species was investigated. The specimens were collected in all site. All collections including the duplicates were given a serial number, which indicated in consecutive order the locality, date of collecting and plant characteristics. The identification of plants was referred to illustrations from Britton and Brown (1970), Osada (1993), Shimizu (2003). New descriptions, illustrations, pictures and keys with similar taxa were written and drawn by specimens. The voucher specimens which used in this study were deposited in Herbarium of Korea National Arboretum (KH).

## Results and Discussion

*Andropogon virginicus* L., Sp. Pl. 2: 1046, 1753. (Fig. 1, 2(A-C))

**Perennial herb.** Habitat vacant lots near the inhabited areas, forest side. Culms tufted, erect, (50-)81.4-110.5(-120) cm tall, branched above the middle, bearing racemes per node. Leaf

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blades (10-)24.5-40 cm long, 2.5-4.5 mm wide, folded and erect; sheaths compressed and keeled on back, margin with hairs; ligules (0.6-)0.7-0.9 mm tall, long-pubescent; sheaths of upper leaves diminished into spathe embracing 2-4 racemse.

**Inflorescence** racemes 1.9-4.5 cm long, with many paired spikelets, on long-hairy rachis. **Spikelets** one of the spikelets fertile and the other sterile; The ferile spikelet sessile; glumes alike, 3-4 mm long, keeled on both sides, thick and shining; lower lemma sterile, membranous, slightly shorter than glumes; upper lemma ca. 1/3 as long as the lower, with a straight awn 0.9-1.4(-2) cm long; the sterile spikelets is atrophied, pedicels ca. 4.5-5 mm long, longer than separated rachis, pinnately ciliate with long white hairs. (with reference to Osada, 1993)

Korea name: "Na-do-sol-sae" (나도솔새)

**Distribution:** A native of N. America, widespread in the S. America, Asia including Japan, Australia. (Shimizu, 2003). This species has been found common nearly all over the Japan since introduced 1940 (Osada, 1993) and first found to 3 site of Ulsan, Korea in 2006.

**Observed specimens:** Jeonha-dong, Dong-gu, Ulsan, 2 Nov. 2007 (ParkSH71928, KH: 3 sheets); Jujeon-dong, Dong-gu, Ulsan, 20 Nov. 2006 (ParkSH71929, KH: 2sheets)

**Discussion:** This species was named to 'Na-do-sol-sae' in Korean because it is similar to *Themeda triandras* var. *japonica* Makino (Korean name: "Sol-sae"). It is well distinguished from the *T. triandras* var. *japonica* Makino by keel on glume, 2-4 racemes, long-hairy rachis. The another species of same genus, *A. brevifolius* Swartz is in korea. It is distinguished from *A. virginicus* by annual, tall shorter as 20-30 cm, 1 raceme.

Key to *A. virginicus* with related taxa

1. Annual. height shorter than 30 cm. Inflorescence with 1 raceme ..... *A. brevifolius*
1. Perennial. height longer than 50 cm. Inflorescence with 2-4 racemes ..... *A. virginicus*

***Euphorbia prostrata* Aiton, Hortus Kew. (W. Aiton) 2: 139, 1789; *Chamaesyce prostrata* (Aiton) Small, Fl. S. E.**

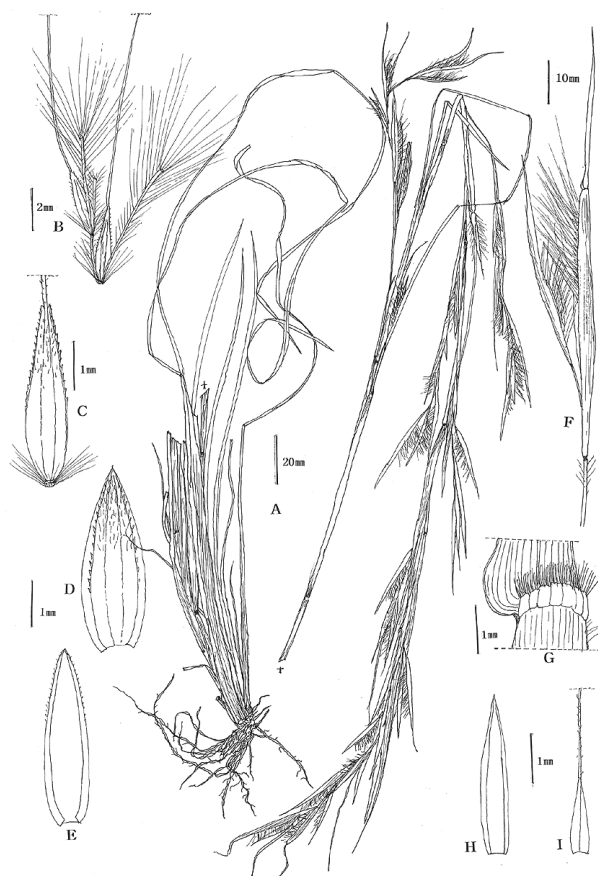


Fig. 1. *Andropogon virginicus* L.

A: Habit, B: Inflorescence, C: Spikelet, D: First glume, E: Second glume, F: Inflorescence, G: ligule, H: Lemma of first floret, I: Lemma of second floret

U. S. 713, 1903; *Euphorbia chamaesyce* L., Sp. Pl. 455. 1753. (Fig. 2(D-F), 3).

**Annual herb.** **Stem** prostrate, many branched in all directions, tall 6-20 cm long, densely hairs. **Leaf** opposite, blade oblong, 4-8 mm long, 2.5-5.5 mm wide, sparsely hairs on the ventral surface, margin low serrate; petiole very short, ca. 1 mm, densely hairs. **Inflorescence** cyathium, flowering Sep.-Oct., subtended, 4 glands, appendages depressed; involucre turbinate, ca. 1 mm long, 1 mm wide, usually glabrous **Male flower** many, usually shorter than cup. **Female flower** pedicellate, exerted from involucre; ovary sparsely pubescent on angles; styles nearly connate at base; stigma 3 and each cleft nearly to base. **Fruit** capsule sharply angled, long hairs especially near

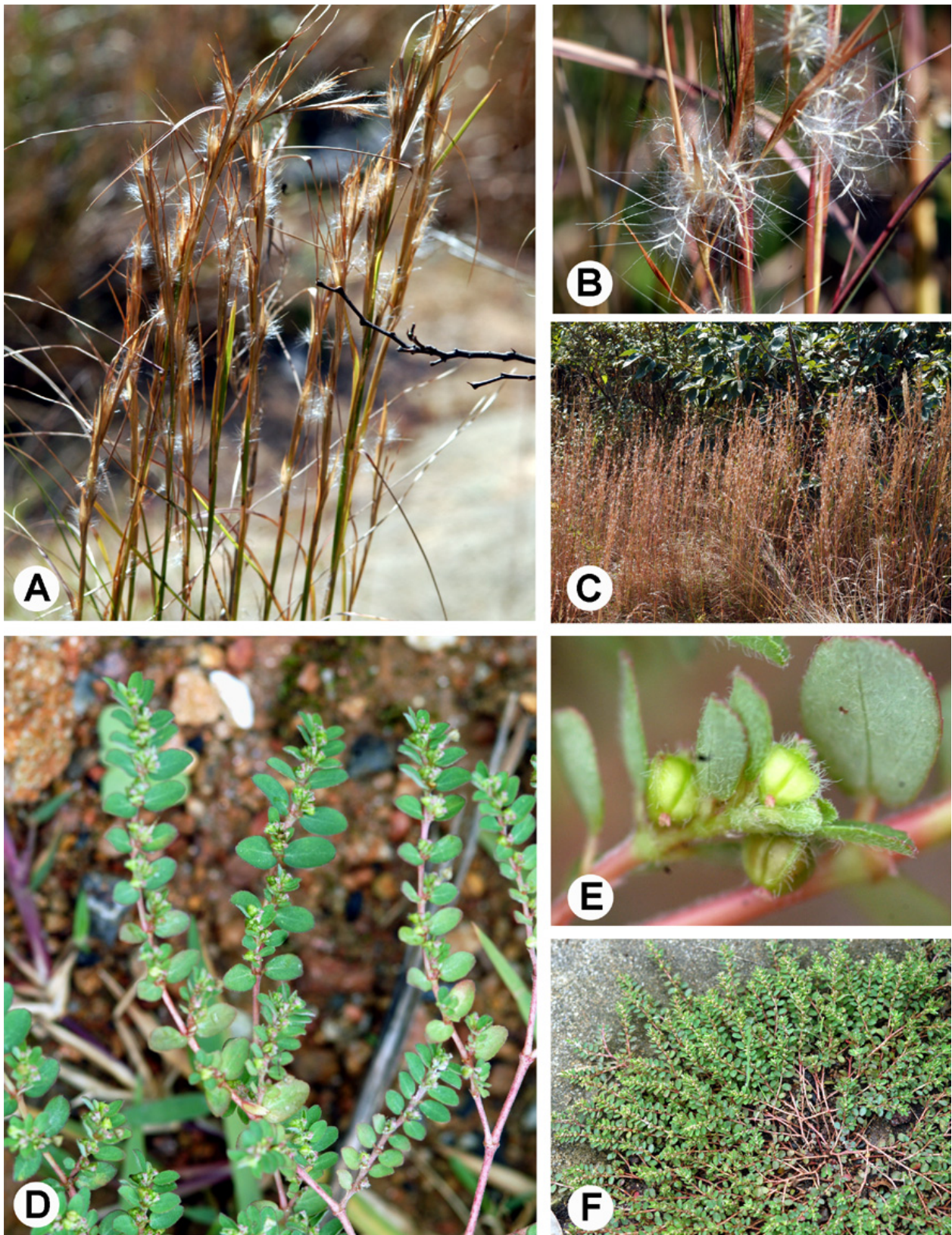


Fig. 2. Photographs of habitats of *Andropogon virginicus* L. (A-C) and *Euphorbia prostrata* Aiton(D-F)



the angles, 1.2 mm long, 1.3 mm wide. **Seed** tetragonal, the faces with low transverse wrinkles.

Korean name: “Nu-un-ttang-bin-dae”(누운땅빈대)

Distribution: A native of tropical America, widespread in the China, Taiwan, Japan, Europe. In Korea, first found to Taean-gun, Sinjindo in 2007

Observed specimens: Korea. Sinjindo-ri, Geunheung-myeon, Taean-gun, Chung cheongnam-do, 1 Oct. 2007 (ParkSH71321, KH: 14 sheet)

Discussion: It was named to Korean name ‘Nu-un-ttang-bin-dae’ considering species epithet. This species is distinguished from *E. maculata* L. and *E. humifusa* Willd. by hairs on

capsule and *E. supina* Rafin by a feature that the hairs on capsule are especially near angles and no spot on leaves. Some literatures (Britton and Brown, 1970; Shimizu, 2003) treat subgenus *Chamaesyce* in genus *Euphorbia* as genus *Chamaesyce*. But this study has adopted the genus name as *Euphorbia* because Korea has still applied *Euphorbia* united.

Key to *E. prostrata* Aiton with related taxa

- 1. Stem ascending. Leaves 1-3cm long ..... *E. maculata* L.
- 1. Stem prostrate. Leaves less than 15mm long
  - 2. Capsule without hairs ..... *E. humifusa* Willd.
  - 2. Capsule with hairs
    - 3. Leaves with red spots. Hairs all over capsule ..... *E. supina* Rafin.
    - 3. Leaves without spots. Hairs on only angles of capsule ..... *E. prostrata* Aiton

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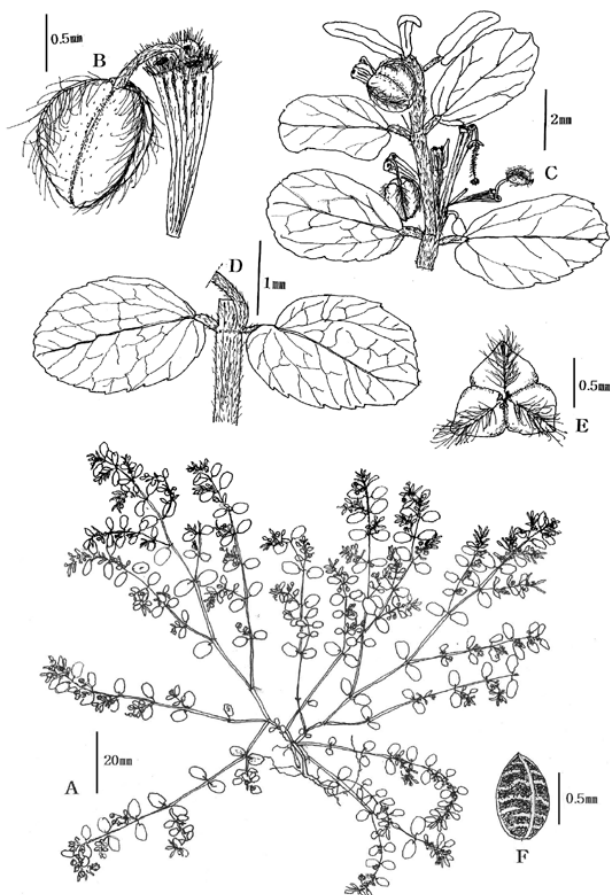


Fig. 3. *Euphorbia prostrata* Aiton  
A: Habit, B: Cyathia, C: Apex of branch, D: A part of branch, E: Fruit, F: Seed

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