A new record of *Eleocharis parvula* (Roem. & Schult.) Bluff, Nees & Schauer (Cyperaceae) in Korea

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ABSTRACT: *Eleocharis parvula* (Roem. & Schult.) Bluff, Nees & Schauer (Cyperaceae), was found in Ganghwa-gun, Incheon Metropolitan City in Korea. This species is distinguished from related taxa in Korea by its small fusiform tubers, culms without septa when dry, 3-fid stigmas and style base confluent with the apex of achene. This taxon was named ‘Gaet-ba-neul-gol’ in Korean based on its habitat. We provide its description, illustrations, photographs and a key to the related taxa in Korea.

Keywords: *Eleocharis parvula*, *Eleocharis*, Cyperaceae, new record

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**Eleocharis** R. Br. (Cyperaceae Juss.) includes about 200 species and is widely distributed (González-Elizondo and Peterson, 1997). It is characterized by unbranched culms, leaves basal and reduced to tubular sheaths, inflorescence of a single terminal spikelet, style base persistent as a tubercle (González-Elizondo and Peterson, 1997; Goetghebeur, 1998; Smith et al., 2002; Dai and Strong, 2010).

In worldwide classification of the genus, Svenson (1929a, 1929b, 1929d, 1929e, 1932a, 1932b, 1934, 1937a, 1937b, 1939a, 1939b, 1939e) recognized 9 series and 2 subseries. In the most recent classification, González-Elizondo and Peterson (1997) recognized 4 subgenera, 7 sections, 8 series and 7 subseries based on the morphology of the achenes and scales. But, these morphological infrageneric classifications are not supported by molecular studies (Roalson and Friar, 2000; Yano et al., 2004).

Thirteen taxa of *Eleocharis* R. Br. are distributed in Korea (Oh and Lee, 1997; Oh, 2006; Kang et al., 2015). Among them, *E. changchaensis* Y. C. Oh & G. Lee is an illegitimate name without Latin description and type (IPNI, 2015). In this study, *Eleocharis parvula* (Roem. & Schult.) Bluff, Nees & Schauer is reported as a newly founded taxon in Korea. In addition, we provide its description, illustrations, photographs and a key of related taxa.

**Taxonomic Treatment**

*Eleocharis parvula* (Roem. & Schult.) Bluff, Nees & Schauer, Comp. Fl. German. (ed. 2) 1: 93 (1836). (Figs 1, 2)

Type: In inundatis ripis lacus Kölmienfis in Mansfeldia (type: BM, photograph!).

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Perennials. Roots fibrous. Rhizomes terminated by tubers; tubers fusiform, 2−4.5 mm long. Culms longer than leaves, 0.9−3 cm long. Leaves 1.1−2.6 cm long. Spikelet ovoid, 1.7−3.7 mm long, 0.9−2.2 mm wide. Scales stramineous, 6−10 per spikelet, 1.2−2 mm long, apex rounded to subacute. Perianth bristles 4, equaling or slightly exceeding achene, minutely retrorsely spinulose. Stamens 3; filaments 1−1.8 mm long; anthers 0.3−0.8 mm long. Stigmas 3. Achenes obovate, trigonous, 0.8−1.5 mm long, 0.4−0.8 mm wide, style base triangular, confluent with apex of achene.

Korean name: Gaet-ba-neul-gol (갯바늘골).

Fruiting: Sep. to Oct.

Distribution: Africa, America, Asia, Australia, Europe and South Korea.

Korea: Incheon Metropolitan City.


Note: E. parvula (Roem. & Schult.) Bluff, Nees & Schauer belongs to Eleocharis subg. Eleocharis sect. Pavulae which is usually treated as monotypic (González-Elizondo and Peterson, 1997; Smith et al., 2002). This species is distinguished from taxa of Eleocharis by having small fusiform tubers and style base confluent with apex of achene (Svenson, 1929; González-Elizondo and Peterson, 1997; Smith et al., 2002). It grows at coastal saline wetlands in Korea and is also found at salt marshes, salt lakes and brackish mud or sand along the seacoast in Africa, America, Asia, Australia and Europe (Svenson, 1929; Smith et al., 2002; Adam, 2009; Dai and Strong, 2010; Hoshino et al., 2011). E. parvula (Roem. & Schult.) Bluff, Nees & Schauer is used for ornament (Simpson and Inglis, 2001). This species was named ‘Gaet-ba-neul-gol’ in Korean based on its habitat.

A key to E. parvula (Roem. & Schult.) Bluff, Nees & Schauer and its related taxa in Korea.

1. Culms with transverse septa when dry; achenes longer than 1.9 mm.
2. Scales rounded at apex ·················· E. dulcis (남방개)
2. Scales obtuse at apex ·················· E. kuroguwai (올방개)
1. Culms without transverse septa when dry; achenes shorter than 1.9 mm.
3. Plants without fusiform tubers; style base separated from achene by a constriction.
4. Stigmas 2.
5. Style base as wide as achene.

Fig. 1. Photographs of Eleocharis parvula (Roem. & Schult.) Bluff, Nees & Schauer. A. Habit; B. Spikelets; C. Achenes.
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6. Perianth bristles 4–5  

   6. Perianth bristles absent  

   E. kamtschatica var. reducta (muwahipyoolbanggaemageji)

5. Style base 1/2 as wide as achene

7. Perianth bristles 5–6  

   E. mamillata var. cyclocarpa (molgoengiyol)

6. Perianth bristles 4  

   E. equisetiformis (gakakkol)


9. Perianth bristles 4  

   E. acicularis f. longiseta (cheotangkol)


10. Perianth bristles plumose

   E. wichurai (chondamkogol)

11. Perianth bristles spinulose

   E. × yezoensis (kindawoingok)

8. Culms terete.

11. Style base 2/3–3/4 as wide as achene  

   E. attenuata f. laeviseta (chamawolgol)

12. Perianth bristles longer than tip of style base

   E. congesta var. japonica (chamawolgol)

12. Perianth bristles shorter than tip of style base

   E. congesta var. thermalis (chamawolgol)

3. Plants with fusiform tubers; style base confluent with apex of achene  

   E. parvula (gaetabanggil)

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**Fig. 2.** Illustrations of *Eleocharis parvula* (Roem. & Schult.) Bluff, Nees & Schauer. A. Habit; B. Tuber; C. Spikelet; D. Scale; E. Abaxial view of achene; F. Side view of achene.
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Literature Cited


