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Abstract

Here we described and illustrated a new endemic species of *Allium* sect. *Sacculiferum* (Alliaceae), namely *A. linearifolium* H. J. Choi et B. U. Oh. This species, from the central part of Korea, is clearly distinguished from other species of sect. *Sacculiferum*, especially its close relative, *A. thunbergii* G. Don by linear, terete, fistulous and long leaves. A key to these species is provided.

Key words: Alliaceae, *Allium* sect. *Sacculiferum*, new species, *A. linearifolium*

The genus *Allium* L., which traditionally belongs to the tribe Allieae under the Liliaceae (Bentham and Hooker, 1883; Vvedenskii, 1935; Lawrence, 1951; Xu, 2000), but recent many authors generally place in its own family Alliaceae (Dahlgren *et al.*, 1985; Takhtajan, 1997; Rahn, 1988; Judd *et al.*, 1999). *Allium* is distributed mainly in N. Hemisphere, especially in the temperate regions of Eurasia, and some species are known from S. Hemisphere such as Africa and Central and South America (Hutchinson, 1959; Ohwi, 1984; Rahn, 1988; Takhtajan, 1997; Xu, 2000). Most species of this genus with alliaceous odors and tunicated bulbs, and several species are economically important to vegetable, ornamental and medical use (Rahn, 1988; Judd *et al.*, 1999). Currently, as many as 5 subgenera, 46 sections and 11 subsections have been recognized within the genus

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(검수: 2003년 1월 19일, 완료: 2003년 2월 13일)
(Samoylov et al., 1999).
Sect. *Sacculiferum* is a small group within subgenus *Rhizirideum* of *Allium*, but poorly delimited in boundary of species (Lee et al., 2002). When Gritzenko (1979) proposed this section, he included two species, *A. sacculiferum* Maxim. and *A. komarovianum* Vved. from far eastern Russia. These two taxa were, however, synonymized and included in a rather broadly circumscribed *A. thunbergii* G. Don (Xu, 1980; Lee, 1996; Lee et al., 2002). In the recent infrageneric classification of *Allium*, Hanelt and Fritsch (1994) broadened the concept of sect. *Sacculiferum* by including *A. chinense* G. Don and relative *A. virgunculacea* F. Maek. & Kitam. This section characterized by globose to ovate bulbs, simple coriaceous bulb coat, more or less solid 3-5 angular or keeled flat leaves, subglobose rose or violet flowers, simple or 1-2 teethed filaments much longer than tepals, deep nectary grooves at the base of the ovary covered by hood-like projections, compressed obovate seeds and finally by phenologically extremely late flowering. About 4 species in the section including above-mentioned 3 species and *A. taquetii* H. Lév., which has been misidentified as *A. cyaneum* Regel, are widely distributed in northeastern Asia.

On the basis of the results from our own observations of Korean *Allium* materials, 10 species, representing 3 subgenera and 9 sections, are now recognized (Lee, 1996; Xu, 2000; Lee et al., 2002). Among these, Korean species of sect. *Sacculiferum* are *A. taquetii* and *A. thunbergii*.

In the present work, we described and illustrated one new species of *Allium* sect. *Sacculiferum* collected in 2002 from Mt. Woraksan, Jechon-si, Chungcheongbuk-do, Korea. *A. linearifolium* H. J. Choi et B. U. Oh is distinctive from the others of sect. *Sacculiferum* in having linear, terete, fistulous and long leaves. Especially, this new species is morphologically very similar to *A. thunbergii*, but the former is clearly distinguished by size, cross section shape, and anatomical characteristics of leaf (Table 1, Figs. 1 and 2).

**Allium linearifolium** H. J. Choi et B. U. Oh, sp. nov. (Fig. 1, Fig. 2)

**Holotype**: Korea. Chungcheongbuk-do, Jechon-si, Mt. Woraksan, slopes of rocky area, 805-810m, 36°52'N, 128°06'E; 2. October 2002, H. J. Choi et al. 2002001, CBU.

**Paratypes**: H. J. Choi et al. 2002002 to 2002037 (CBU).
Table 1. Comparison of leaf characters between *A. linearifolium* and *A. thunbergii*.

<table>
<thead>
<tr>
<th>Leaf characters</th>
<th><em>A. linearifolium</em></th>
<th><em>A. thunbergii</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>min.</td>
<td>mean</td>
</tr>
<tr>
<td>Number</td>
<td>3.0</td>
<td>4.6</td>
</tr>
<tr>
<td>Length (cm)</td>
<td>19.0</td>
<td>43.1</td>
</tr>
<tr>
<td>Width (mm)</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Cross section</td>
<td>terete</td>
<td>fistulous</td>
</tr>
<tr>
<td>Surface</td>
<td>lustrous</td>
<td>dark green</td>
</tr>
<tr>
<td>Abaxial midrib</td>
<td>absent</td>
<td></td>
</tr>
</tbody>
</table>

Bulbus subglobosus 8.0~19.0 mm diametro. Folia 3~10 linearis teres fistulosa 19.0 ~70.5 cm longa 1.0~3.2 cm lata, petioli 4.2~13.2 cm longe in vaginam clausam membranaceam. Scapus erectus vel ascendens 20.5~37.5 cm longus 0.9~2.2 mm diametro. Umbella 6~81 flora. Perianthii segmenta purpureo-rubra ovata apace abtusa 4.5~7.1 mm longa. Staminum filamenta 5.1~11.0 mm longa exserta. Ovarium viridis basi nectaris 3. Capsula 4.5~5.4 mm longa 4.8~6.1 mm lata.

Perennial bulbiferous herbs, growing from April to November. Roots with short and cylindrical rhizomes. Bulbs ovate, 8.0~19.0 mm wide. Scapes erect or ascending, covered with leaf sheath at base, cylindrical and solid in cross section, 20.5~37.5 cm long, 0.9~2.2 mm wide. Leaves alternate at base, linear, terete and fistulous in cross section, conical at apex, midrib absent, 19.0~70.5 cm long, 1.0~3.2 mm wide. Inflorescences terminal, umbel, 6~81 flowered, spathe-like bract 1, membranous; pedicels slender, dark green or purple, 7.0~18.0 mm long. Flowers bisexual: tepals 6, elliptic, rose to purple, with dark green or dark purple midrib, rounded at apex; outer tepals 3, 4.5~6.2 mm long, 2.9~3.9 mm wide; inner tepals 3, 5.5 ~7.1 mm long, 3.1~4.0 mm wide; stamens 6, inserted on lower part of tepals, anthers bilocular, filaments dilated at base, entire or toothed; carpels 3, locules 3, ovules 2 per locule, style 1, erect, filiform, stigma entire. Fruits capsules, 4.5~5.4 mm long, 4.8~6.1 mm wide. Seeds black, semi-elliptic, 2.7~4.2 mm long, 1.8~3.0 mm wide.

Korean name: Seon-bu-chu (선부추)

*A. thunbergii* is widely known from the far east including Ussouri, Vladivostok,
Fig. 2. 1~4. Photographs of *Allium linearifolium* (1: General view in habitat of type locality, 2: Suspended leaves and inflorescences of some individuals in habitat, 3: Linear leaves and a inflorescence, 4: Enlarged umbellate flowers) 5, 6. Cross section types of leaves (5: *A. linearifolium*, 6: *A. thunbergii*. D: Adaxial, B: Abaxial, C: Central cavity).
China, Taiwan, Japan and Korea (Vvedenskii, 1935). In contrast, Current distribution of *A. linearifolium* is very limited. This species is only found at the rocky mountain slopes above 700m of type locality and never been collected elsewhere. Therefore *A. linearifolium* is thought to be endemic to Korea. The two species of *Allium* sect. *Sacculiferum* can be distinguished by the following key.

**A key to the two species of *Allium* sect. *Sacculiferum***

1. Leaves flat to 3-angular, usually solid, not lustrous, light green to green, 11.8 ~48.5cm long, 2.8~11.0mm wide; abaxial midrib projected; habitat lowland pastures to high mountain slopes

   "..........................*A. thunbergii*

1. Leaves terete, fistulous, lustrous, dark green, 19.0~70.5cm long, 1.0~3.2mm wide; abaxial midrib absent; habitat only rocky mountain slopes above 700m

   "..........................*A. linearifolium*

**Acknowledgments**

This research was supported by a grant (PF001302-00) from the Plant Diversity Research Center of the 21st Century Frontier Research Program, funded by the Ministry of Science and Technology of the Korean government. Especially, we deeply thanks to Dr. Woo-Tchul Lee for providing his invaluable materials.

**Literature cited**


부추속 부추절의 1신종：선부추

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한국의 중부지방에서 발견된 부추속 산부추절(과과)의 1신종, 선부추(A. linearfolium H. J. Choi et B. U. Oh)를 기재하였다. 선부추는 단면이 동글고 속이 비었으며, 길고 굵게 뻗은 잎의 특징으로 동북아시아에 분포하는 산부추절 내 다른 종들, 특히 근연인 산부추(A. thunbergii)와 두렵이 구별되었다. 한국과 동북아시아에 분포하는 것으로 알려진, 이들 두 종의 검색표를 제시하였다.

주요어：과과, 부추속 산부추절, 신종, 선부추

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