First report of *Stellaria sessiliflora* Y. Yabe (Caryophyllaceae) from Korea

Ji Hyeon So¹, Dae Hong Kim¹, Ae Sook Koo¹, Myoung Jun Kim², and Nam Sook Lee¹,³*

¹Interdisciplinary Program of EcoCreative, The Graduate School, Ewha Womans University, Seoul 120-750, Korea
²Yeomiji Botanical Garden, Seogwipo-si, Jeju-do, Korea
³Department of Life Science, Ewha Womans University, Seoul 120-750, Korea

(Received 18 May 2015; Accepted 5 June 2015)


*Stellaria sessiliflora* was described by Yoshitaka Yabe based on a specimen collected in Tsushima province in Japan on 31,
July, 1901 (Fig. 1) and it was treated as a variety of *S. japonica* by Makino (1909).

According to the Flora of Japan (Satake, 1982; Akiyama, 2006), *Stellaria sessiliflora* occurs on Jeju Island in Korea, as well as in Japan. However, it has never been formally reported or described taxonomically in the Korean botanical literature. Several populations of *S. sessiliflora* have been observed from Haean-dong (23 April, 2012), Jeolmul forest, Saryeoni forest (Gyourae-ri), and Halla-eco-forest (Bonggae-dong) at an elevation of 400–600 m on Jeju Island. In addition, we found a photograph of one specimen (Slide No. 6294; Fig. 2), which was collected on Jeju Island by Ohwi in May, 1935 (Lee, 2012). The specimen indicates that *S. sessiliflora* has occurred on Jeju Island for some time. Recently, *S. sessiliflora* has listed in Bio Resource Information Service (BRIS) without a Korean name. The Unique Resource Number 14001191150200-071-00324591 of BRIS was provided by the National Arboretum, which is a dried specimen (KHB14190986) collected by Park et al. on Jeju Island on 16 May 2012. A dried specimen (Unique Resource Number 14003771150100-071-00002407) and seeds (Unique Resource Numbers 14003771110103-071-00110888-91) collected on 07 May 2013 documented by the Korea Forest Research Institute, though it has not formally described for the Korean flora, these specimens support the view that *S. sessiliflora* is distributed in Korea. The morphological characters and the habitat of these specimens observed are consistent with the original description of *S. sessiliflora* (Yabe, 1903).

This species is distinguished from the related *S. media* by its broader leaves with slightly undulate margin, its petiolate leaves on the upper part of stem, and its 10 stamens (Table 1). In addition, as Ankei (1982) mentioned, *S. sessiliflora* grows in shady areas under deciduous broadleaf forest, while *S. media* grows in full sun or semi-shade beside roads. The local name ‘Geu-Neul-Byeol-Kkot’ (meaning Shade Chickweed in Korean) was given to *S. sessiliflora* based on its distinct habitat requirements.

### Taxonomic Treatment


(Figs. 3–5)


**Korean name:** Geu-Neul-Byeol-Kkot 그늘별꽃

**Herbs** perennial, 10–30 cm tall. **Stems** usually decumbent, soft hair on a longitudinal line. **Leaves** ovate to cordate-orbicular, 1–4 cm long, 0.7–2.5 cm wide, apex acute, margin slightly undulate, base rounded to shallowly cordate, pubescent; petiole upper one shorter than middle one, 0.2–1.5 cm long, long-pubescent. **Inflorescence** solitary from the axil. **Flowers** pedicels 0.2–1.3 cm long, pubescent; sepals elliptic lanceolate, 0.4–0.6 cm, apex acute, 1-nerved, long-

### Table 1. The morphological comparison between *Stellaria sessiliflora* and *S. media* based on the descriptions of Japanese Flora (Ohwi, 1984).

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>S. sessiliflora</em></th>
<th><em>S. media</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant duration</td>
<td>perennial</td>
<td>biennial or annual</td>
</tr>
<tr>
<td>Habitat</td>
<td>forest</td>
<td>roadside</td>
</tr>
<tr>
<td>Exposure</td>
<td>shaded</td>
<td>full or half exposed</td>
</tr>
<tr>
<td>Stem</td>
<td>ascending to decumbent</td>
<td>decumbent</td>
</tr>
<tr>
<td>Petiole of upper leaf</td>
<td>distinct</td>
<td>sessile</td>
</tr>
<tr>
<td>Leaf shape</td>
<td>ovate to cordate-orbicular</td>
<td>ovate</td>
</tr>
<tr>
<td>Leaf size (L. × W.) (cm)</td>
<td>1–4 × 0.7–2.5</td>
<td>1–2 × 0.8–1.5</td>
</tr>
<tr>
<td>Leaf apex</td>
<td>acuminate</td>
<td>acute</td>
</tr>
<tr>
<td>Leaf margin</td>
<td>slightly undulate</td>
<td>entire</td>
</tr>
<tr>
<td>Leaf base</td>
<td>rounded to shallowly cordate</td>
<td>rounded to obtuse</td>
</tr>
<tr>
<td>Sepal shape</td>
<td>lanceolate</td>
<td>narrowly oblong</td>
</tr>
<tr>
<td>Seed shape</td>
<td>reniform-globose</td>
<td>slightly flattened globose</td>
</tr>
<tr>
<td>Seed tubercles</td>
<td>semi-rounded</td>
<td>obtuse</td>
</tr>
</tbody>
</table>
Fig. 1. Type specimen of *Stellaria sessiliflora* Y. Yabe in TI.

Fig. 2. Photograph of specimen (Slide No. 6294) of *Stellaria sessiliflora* Y. Yabe (Lee, 2012).

Fig. 3. Voucher specimen of *Stellaria sessiliflora* Y. Yabe in EWH.

Fig. 4. Photographs of *Stellaria sessiliflora* Y. Yabe taken by M.J. Kim in Jeju Island on 23 April 2012. A. Flower and Leaves; B. Lateral view of flower; C. Capsule.
Stellaria sessiliflora Y. Yabe (Caryophyllaceae)

pubescent; petals 5, white, deeply bifid; stamens 10; pistils 3.

**Fruit** a capsule, ovoid-globose, 6-valved. **Seeds** obliquely reniform-globose, 0.1−0.12 cm diameter, dark brown, densely mammillate with semi-rounded tubercles. Flowering Apr. to May. Chromosome number 2n = 56 (Tani, 1981).

**Distribution:** Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea (Jeju Island, elevation 400−600 m).

**Habitat:** Forest edges and wet fields beside streams under the shade or semi-shade of deciduous broadleaf forest.


JAPAN, Tsushima, Mt. Ontake, 31 Jul. 1901, Y. Yabe 00010544 (TI); Tokyo, Kitaku, Takinogawa, 26 Apr. 1905, T. Makino 00010541 (TI); Gunma, Mt. Tanigawa, 24 Jun 1934, Y. Satake 00010542 (TI); Aichi pref., M. Furuse 00010543 (TI); Nagato guni, Ootseu gun, 27 Oct. 1918, Nikai-Juurou 00010545 (TI).

Stellaria sessiliflora was determined as an unresolved name in the Plant List (2013), but the name was accepted in Species 2000 & ITIS Catalogue of Life 2014 (Roskov et al., 2014). DNA data show that it is clearly separated from other taxa in Stellaria (Greenberg and Donoghue, 2011).

**Key to Stellaria sessiliflora and the related taxa in Korea**

1. Leaves at least lower ones distinctly petiolate; ovate or deltoid-ovate; hairs, if present, simple, unbranched.

2. Styles 5  
   S. aquatica 쌈별꽃
2. Styles 3.

3. Stems and pedicels glabrous; upper surface of leaves often with a few long multicellular appressed hairs …
   S. diversiflora 일월산별꽃
3. Stems and pedicels with a longitudinal series of soft hairs; upper surface of leaves glabrous or nearly so.

4. Leaves 4−8 cm long; nerves of sepals obsolete …
   S. bungeana 큰별꽃
4. Leaves 1–4 cm long; nerves of sepals 1.
5. Leaves sessile at the upper part of stem; stamens 1–7

\[ \text{S. media 별꽃} \]
5. Leaves petiolate at the upper part of stem; stamens 10

\[ \text{S. sessiliflora 그늘별꽃} \]
1. Leaves sessile or subsessile, hairs branched.
6. Stems and leaves silky pubescent; petals fimbriate

\[ \text{S. radians 왕별꽃} \]
6. Stems and leaves glabrous; petals bifid or absent.
7. Leaves oblong-lanceolate, apex obtuse to subacute

\[ \text{S. alsine var. undulata 벼룩나물} \]
7. Leaves linear or broadly, apex acute.
8. Stems surface slightly scabrous; petals equal to slightly longer than sepals

\[ \text{S. longifolia 긴잎별꽃} \]
8. Stems surface smooth; petals about twice longer than sepals

\[ \text{S. filicaulis 실별꽃} \]

This taxonomic key was modified from the one available in Flora of Japan (Ohwi, 1984) and The Genera of Vascular Plants of Korea (Choi, 2007).

**Acknowledgment**

This research was supported by the BK21 Plus Program (Creative Academy of Ecoscience, 31Z20130012990) funded by the Ministry of Education and National Research Foundation of Korea. We thank Dr. Stephan Gale of Kadoori Farm and Botanical Garden Hong Kong for the correction of our manuscript, Ms. Akiko Shimizu of the Herbarium of the University of Tokyo and S.Y. Jung of the Korea National Arboretum for the image specimens of *Stellaria sessiliflora* Y. Yabe.

**Literature Cited**


