

Neotypification of *Veronica pusanensis* (Scrophulariaceae)

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A type specimen is the specimen originally used to name a new species; thus, it is one of the most significant materials for taxonomic study. In our study on the inventory and management of endemic species in Korea, we checked the type materials for *Pseudolysimachion pusanensis* (Y. Lee) Y. Lee, combination name *Veronica pusanensis* Y. Lee, recorded as deposited at the herbaria of the Ewha Womans University and the National Institute of Biological Resources, and failed to find any specimens. Thus, we concluded that all type specimens of *V. pusanensis* have since been misplaced. According to articles 9.11 and 9.13 of the International Code of Nomenclature for algae, fungi, and plants, it is necessary to select a neotype if the holotype is missing and no other original material exists. Therefore, we designate the neotype maintained in the herbarium of the National Institute of Biological Resources of the Republic of Korea.

Keywords: National Institute of Biological Resources, neotypification, *Pseudolysimachion pusanensis*, *Veronica pusanensis*, Y. Lee

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INTRODUCTION

The plant genus *Pseudolysimachion*, belonging to the family Scrophulariaceae, is distributed throughout Asia and Europe; it comprises approximately 20 species (Hong *et al.*, 1998). The taxonomic status of *Pseudolysimachion* is regarded differently by various researchers. For example, genus *Veronica* subgenus *Pseudolysimachium* (Buchenau, 1894; Albach, 2008), genus *Veronica* section *Pseudolysimachium* (Koch, 1837), and genus *Pseudolysimachion* (Opiz, 1852; Yamazaki, 1968). Morphologically, *Pseudolysimachion* is distinguished from *Veronica* on the basis of characteristics such as perennial habit with spike-shaped inflorescences, subglobose capsule, wide cylindrical corolla tube, and number of basic chromosomes ($x = 17$). This genus has been widely recognized in taxonomic literature (Hong *et al.*, 1998; Yamazaki, 1999; Kim, 2007). From the Korean Peninsula, eight species and six varieties of *Pseudolysimachion* are reported, of which four taxa are endemic to the country (Kim, 2007).

Veronica pusanensis Y. Lee (Lee, 2004) was first found in Korea on the seashore in Busan. Later, Lee (2005) republished it with a new combination name *Pseudolysimachion pusanensis* (Y. Lee) Y. Lee. Since then, *P. pusanensis* is used as the accepted name and *V. pusanensis* is treated as a junior synonym (Kim *et al.*,

2019; Korea National Arboretum, 2019). This Korean endemic species is remarkably well distinguished from related species, *P. dahuricum* (Steven) Holub and *P. pyrethrina* (Nakai) T. Yamaz., in having seashore habitats, ascending stems, thick leaves, and dense racemes (Choi, 2016).

The holotype of *V. pusanensis* (Lee, 2004) was maintained in the herbarium of the Korea Plant Research Institute (KPRI). After the passing of Dr. Lee in 2008, all specimens including types at KPRI were donated to the Herbarium of the National Institute of Biological Resources (KB). Some of Dr. Lee's specimens, collected while he was a professor at Ewha Womans University (EWH), were deposited at EWH. Recently, while researching the inventory and management of endemic species in Korea, we checked these two herbaria and failed to find any *V. pusanensis* specimens. Therefore, we concluded that the holotype of *V. pusanensis* had been misplaced. According to Articles 9.11 and 9.13 of the *International Code of Nomenclature for algae, fungi, and plants* (Shenzhen Code, Turland *et al.*, 2018), a neotype may be selected if the holotype is missing and other original material no longer exists. Therefore, we designate the specimen in KB as the neotype of *V. pusanensis* (Fig. 1). This specimen was collected from the locality of the type specimen and corresponds well with the description of *V. pusanensis* (Lee, 2004; 2005).



Fig. 1. Neotype of *Veronica pusanensis* Y. Lee (H.D.Jang 505, KB barcode NIBRVP752966).

TYPE DESIGNATION

Pseudolysimachion pusanensis (Y. Lee) Y. Lee, Bull. Korea Pl. Res. 5: 55, 2005.

Basionym: *Veronica pusanensis* Y. Lee, Bull. Korea Pl. Res. 4: 16, 2004.

Neotype. (designated here). Korea, Busan-si, Gijang-eup, Jukseong-ri, 35°13'52.6"N, 129°14'40.2"E, 29 Jul. 2019, H.D.Jang 505 (KB! barcode NIBRVP752966) (Fig. 1).

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