Korean Journal of Plant Taxonomy
52(1): 77–79, 2022

SHORT COMMUNICATION
https://doi.org/10.11110/kjpt.2022.52.1.77

Aster danyangensis, a replacement name for *Aster altaicus* var. *uchiyamae* (Asteraceae)

Jae Young KIM, Hyeong Jun JO, Kae Sun CHANG[1], Dong Chan SON[2] and Gyu Young CHUNG*

Division of Horticulture and Medicinal Plant, Andong National University, Andong 36729, Korea
[1]Division of DMZ Forest and Biological Resources Conservation, Korea National Arboretum, Yanggu 24564, Korea
[2]Division of Forest Biodiversity and Herbarium, Korea National Arboretum, Pocheon 11186, Korea

Corresponding author
Gyu Young CHUNG
E-mail: gychung@andong.ac.kr

OPEN ACCESS
© 2022 the Korean Society of Plant Taxonomists.
This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://creativecommons.org/licenses/by-nc/4.0) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT: *Aster altaicus* var. *uchiyamae*, a Korean endemic plant, should be treated as a species rank because it is clearly distinguished from *A. altaicus* var. *altaicus* by the morphological characteristics of the plant habit, leaf width, and head size. Nevertheless, when *A. altaicus* var. *uchiyamae* was treated as a species rank, the epithet *uchiyamae* was unavailable in *Aster* owing to the earlier name *A. uchiyamae*, which was a replacement name for the illegitimate name *A. depauperatus*. Therefore, we propose *A. danyangensis* as a new replacement name for *A. altaicus* var. *uchiyamae*. The specific epithet *danyangensis* refers to the geographic location of Danyang-gun, where the species was discovered. We also designate the lectotype and isolectotype of *A. danyangensis*.

Keywords: *Aster danyangensis*, *A. altaicus* var. *uchiyamae*, endemic plant, lectotype, isolectotype, replacement name

RECEIVED 14 February 2022; **REVISED** 21 February 2022; **ACCEPTED** 15 March 2022

INTRODUCTION

Aster L. is one of the largest genera within the family Asteraceae, consisting of about 180 species, and is widely distributed in the temperate regions of the world (Ling et al., 1985; Nesom, 1994; Noyes and Rieseberg, 1999). Owing to the notoriously high propensity toward interspecific hybridization and polyploidy, limitations of species delimitation are often difficult to define (Jones, 1980). However, the species can be readily grouped into subgenera and sections characterized by the features of the habit, leaf, capitulum, receptacle, pappus, and achene (Chung and Kim, 1991a, 1991b, 1993; Ito 1995; Chen et al., 2011; Chung, 2018).

Aster altaicus var. *uchiyamae* Kitam., a Korean endemic plant, is found in limited area along the banks of the Namhan River in the Republic of Korea. It was described as a new variety based on a single gathering of *T. Uchiyama s.n.* made in 1902 from "Keisho, Suianpho" (currently Suanbo in Chungcheongbuk-do), one of several voucher specimens reported with the name *A. altaicus* Willd. in Flora Koreana (Nakai, 1911). However, this variety should be treated as a species rank because it is clearly distinguished from *A. altaicus* var. *altaicus* by the morphological characteristics of the plant habit (perennial for *A. altaicus* var. *altaicus* vs. biennial for *A. altaicus* var. *uchiyamae*), leaf width (ca. 7–15 mm vs. 3 mm), and head size (2.5–3.5 cm vs. 4.0–4.5 cm) (Chung and Kim, 1993; Chung and Jeong, 1999; Chen et al., 2011).

Nevertheless, when *A. altaicus* var. *uchiyamae* was treated as a species rank, the epithet *uchiyamae* was unavailable in *Aster* due to the earlier name *A. uchiyamae* Nakai, which was a replacement name for the illegitimate name *A. depauperatus* H. Lév. & Vaniot (Nakai, 1941). *Aster uchiyamae* Nakai was accepted as a legitimate name on some botanical websites, such as those of the Global Compositae Database (GCD; https://www.compositae.org), the International Plant Names Index (IPNI; http://www.ipni.org), and the Plant List (TPL; http://www.theplantlist.org). However, *A. depauperatus* was sometimes treated as synonym for *A. meyendorffii* (Regel & Maack) Voss (= *A. ciliosus* Kitam.) (Kitamura, 1937; Chang et al., 2014b). As a result of checking the holotype of *A. depauperatus* (*Faurie 1074* (E00413387); an image of the holotype is available at https://data.rbge.org.uk/search/

herbarium/?cfg=fulldetails.cfg &specimen_num=447093), it was identified as *A. hispidus* L. with a white crown pappus of ray florets. In conclusion, *A. uchiyamae* Nakai, a replacement name for *A. depauperatus*, is a different taxon name from that of *A. altaicus* var. *uchiyamae* Kitam. Therefore, we propose the new replacement name of *A. altaicus* var. *uchiyamae* under Articles 6.11 and 58.1 of the International Code of Nomenclature (ICN) (Turland et al., 2018).

TAXONOMIC TREATMENT

Aster danyangensis J. Y. Kim & G. Y. Chung, nom. et stat. nov.

Replaced synonym: *Aster altaicus* var. *uchiyamae* Kitam., Mem. Coll. Sci. Kyoto Imp. Univ. Ser. B, 13: 367, 1937.—Type: KOREA. Chungcheongbuk-do: Chungju-si, Suanbo-myeon, Suanbo, "Keisho (慶尙道), Suianpho (水安浦)," 2 Oct 1902, *T. Uchiyama s.n.* (lectotype, designated here: TI, Fig. 1; isolectotype: TI, Fig. 2)

Etymology: The specific epithet *danyangensis* refers to the geographic location of Danyang-gun, where the species was discovered.

Note: Regarding the typification of *Aster altaicus* var. *uchiyamae*, Kitamura mentioned a single collection (*T. Uchiyama s.n.*) in the protologue, which was gathered from Suianpho (水安浦), Keisho (慶尙道), in the Republic of Korea. Later, Chang et al. (2014a) reported the 'holotype' at Tokyo University (TI), though the label has been changed from 水安浦 to 水安堡 (error in Chinese characters). Nevertheless, the use of the term 'holotype' is not correct in this case and must be corrected to lectotype under Art. 9.9 of the ICN, as Kitamura only referred to a single gathering and not to a single specimen. There are currently two specimens at TI that could belong to the aforementioned type materials (Figs. 1, 2). Those duplicates are to be considered syntypes (Art. 9.5 of the ICN). Therefore, based on the information discussed above, we designated the sheet with a handwritten label of Uchiyama reading "*Aster altaicus* Willd." as the lectotype of *Aster danyangensis* (Fig. 1). Its type information fits the protologue perfectly, which supports it being original material. The selected sheet bears a complete and well-preserved specimen that displays all of the diagnostic morphological features needed for the identification of the species, such as the plant habit, leaf width, and head size (Chung and Kim, 1993; Chung, 2018). Any other specimen from Uchiyama's gathering in

Fig. 1. Lectotype of *Aster danyangensis* J. Y Kim & G. Y. Chung.

Fig. 2. Isolectotype of *Aster danyangensis* J. Y Kim & G. Y. Chung.

Suanbo must be considered as an isolectotype (Recommendation 9C of the ICN) (Fig. 2).

ORCID: Jae Young KIM https://orcid.org/0000-0002-2327-8510; Hyeong Jun JO https://orcid.org/0000-0003-2622-0290; Kae Sun CHANG https://orcid.org/0000-0003-4454-6059; Dong Chan SON https://orcid.org/0000-0002-6773-0580; Gyu Young CHUNG http://orcid.org/0000-0002-4891-1140

ACKNOWLEDGMENT

This study was supported by a research grant of Andong National University (2021).

CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

LITERATURE CITED

Chang, C. S., H. Kim and K. S. Chang. 2014a. A Catalogue of Vascular Plant Type Specimens from Korea. Designpost, Goyang, 267 pp.

Chang, C. S., H. Kim and K. S. Chang. 2014b. Provisional Checklist of Vascular Plants for The Korea Peninsula Flora. Designpost, Paju. Pp. 240–245.

Chen, Y. L., L. Brouillet and J. C. Semple. 2011. *Aster*. *In* Flora of China, Vols. 20–21. Wu, Z. Y. and P. H. Raven (eds.), Science Press, Beijing and Missouri Botanical Garden Press, St. Louis, MO. Pp. 574–632.

Chung, G. Y. 2018. *Aster*. *In* The Genera of Vascular Plants of Korea. Flora of Korea Editorial Committee (ed.), Hongreung Publishing Co., Seoul. Pp. 342–345.

Chung, G. Y. and H.-J. Jeong. 1999. Study on the leaf morphology of Korean *Aster* L. and its allied taxa. Korean Journal of Plant Resources 12: 50–61.

Chung, G. Y. and Y. S. Kim. 1991a. A taxonomic study of the pappus morphology on the genus *Aster* L. and its allied groups in Korea. Korean Journal of Plant Taxonomy 21: 197–209.

Chung, G. Y. and Y. S. Kim. 1991b. A taxonomic study of the receptacle morphology on the genus *Aster* L. and its allied groups in Korea. Korean Journal of Plant Taxonomy 21: 229–238.

Chung, G. Y. and Y. S. Kim. 1993. A study on the capitulum morphology of the genus *Aster* L. and its allied taxa in Korea. Korean Journal of Plant Taxonomy 23: 105–118.

Ito, M. 1995. *Aster* L. *In* Flora of Japan, Angiospermae, Dicotylenodeae, Sympetalae, Vol. IIIb. Iwatsuki, K., T. Yamazaki, D. E. Boufford and H. Ohba (eds.), Kodansha, Tokyo. Pp. 59–73.

Jones, A. G. 1980. A classification of the new world species of *Aster* (Asteraceae). Brittonia 32: 230–239.

Kitamura, S. 1937. Compositae Japonicae. Pars prima. Memoirs of the College of Science, Kyoto Imperial University, Series B 13: 1–421.

Ling, R., Y. L. Chen and C. Shih. 1985. *Astereae*. *In* Flora Reipublicae Popularis Sinicae, Vol. 74. Ling, R. and Y. L. Chen (eds.), Science Press, Beijing, Pp. 70–353.

Nakai, T. 1911. Flora Koreana, Pars secunda. Journal of the College of Science, Imperial University of Tokyo 31: 6–11.

Nakai, T. 1941. Notulae ad Plantas Asiae Orientalis (XVII). Journal of Japanese Botany 17: 675–691.

Nesom, G. L. 1994. Review of the taxonomy of *Aster sensu lato* (Asteraceae: Astereae), emphasizing the New World species. Phytologia 77: 141–297.

Noyes, R. D. and L. H. Rieseberg. 1999. ITS sequence data support a single origin for North American Astereae (Asteraceae) and reflect deep geographic divisions in *Aster s.l.* American Journal of Botany 86: 398–412.

Turland, N. J., J. H. Wiersema, F. R. Barrie, W. Greuter, D. L. Hawksworth, P. S. Herendeen, S. Knapp, W. H. Kusber, D. Z. Li, K. Marhold, T. W. May, J. McNeill, A. M. Monro, J. Prado, M. J. Price and G. F. Smith. 2018. International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code) Adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. [Regnum Vegetabile 159]. Koeltz Botanical Books, Glashütten, 254 pp.