

H. crassifolia Y. Araki

Acta Phytotaxonomica et Geobotanica, Vol. 12, 118 1943
(論文: 荒木英一日本ギバウシ属新植物; Yeichi Araki)
アツバギボウシ = 厚葉擬宝珠 = *Atsuba Gibōshi*

History and Nomenclature: *Hosta crassifolia* is one of the enigmatic species published by the Japanese botanist Yeichi Araki in 1943. The holotype No. 15798 in KYO was collected by Araki on Mount Ibuki (伊吹山) in Shiga Prefecture (滋賀県; Shiga-ken). I use the term enigmatic because this species is differentiated from the other local phenotypes based on leaf morphology. Some taxonomists consider it of species rank, while others have subordinated it under a related species, simply as a

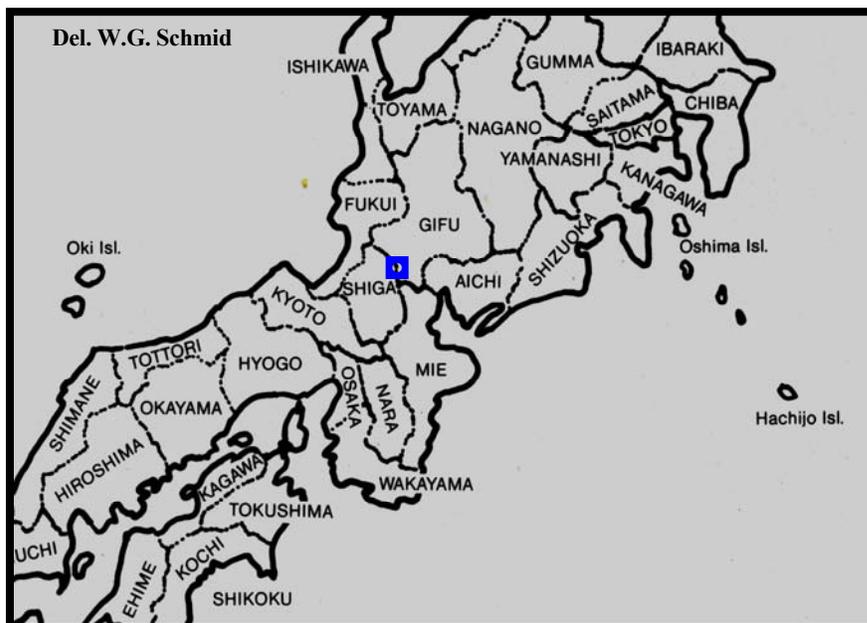


Habitat of *H. crassifolia* Holotype
Mount Ibuki (伊吹山 · Ibukiyama) in Shiga-ken (滋賀県)

phenotypical variant. Taxonomically and using flower morphology as a base characteristics, it is remotely similar to *H. montana* (= *Ōba Gibōshi* = オオバギボウシ), as in Araki's own description: "*Haec species nova cum Hosta montana F. Maekawa remote affinis. Tamen differt foliis ovato-oblongis ab petiole longo decurrentibus, valde crassis, supra intense lucidis, perianthio tenuiore.*" This taxon's thick-textured leaves gave rise to the Japanese name 厚葉擬宝珠 = *Atsuba Gibōshi*, the kanji 厚葉 translating to "thick leaf." The Latin species epithet comes from Latin *crassus*, which means "thick." Maekawa (1969) did not include it in his entry *Hosta Trattinnick* printed in *New Encyclopedia of Horticulture*. This taxon was included by Fujita (1976) in a very broad sense under *Ōba Gibōshi*. (Note:

Fujita considered *H. sieboldiana* var. *sieboldiana* and *H. montana* to be synonymous but this placement has not been accepted here, based on differentiation of these taxa by RAPD analysis (see Yu, Y. 2002 and Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005). Schmid (1991) considered this taxon a possible interspecific hybrid and his latest opinion is that should be considered of uncertain status, because no recent reports or photographic evidence of natural populations have come forth, nor has this taxon been included in in morphometric, palynological, nor DNA or genome weight analysis, so there are few supporting scientific data. The main reason for inclusion here is to record the historical and scientific information gathered about it. The taxon is represented by a holotype in KYO (No. 15798) and Araki provided an, albeit very short, Latin diagnosis.

Habitat and Biology: In 1942 and 1943, Y. Araki carried out research into native *Hosta* populations in the central Kansai region (Kansai-chihō; 関西地方, which is also known as the Kinki region). It lies in the South-Central area of Honshu. Araki found a differentiated endemic taxon among populations of *H. montana* growing on Mount Ibuki (伊吹山; Ibukiyama). This is in the general area of the former Omi-no-kuni (近江国), an old province of Japan, which today part of Shiga prefecture (滋賀県 Shiga-ken). Mount Ibuki is 1,377 m = 4,518 feet AMSL, which makes it one of the highest peaks in this area, straddling the border between the Gifu (岐阜) and Shiga (滋賀県) prefectures. Its thick-textured leaves are elongated, ovate-oblong and decurrent to the petiole, a shiny green above (ventral surface), moderately pruinose or not at all on the abaxial surface of the leaf. The leaves are much smaller than those of *H. montana*. Its flowers are white and similar to *H. montana* but thinner in substance. It has purple anthers. Morphology points to interspecific hybrid origin, but in this Species Update this taxon is considered at variant of *H. montana*, and possibly a tetraploid rather than diploid type.



(Please note: The habitat areas shown give approximate locations only)

■ = Populations of *H. crassifolia*
Habitat Map
 Near Ibukiyama
 伊吹山
 滋賀県



H. crassifolia
 (Very young plant in cultivated garden setting)
 Hosta Hill R.G. © W.G. Schmid 1989.09.01

Plant Morphology: Very thick leaves may indicate that this taxon is tetraploid. It is of slow growth. Plant size 50–65 cm dia. by 30 cm high (20–26 by 12 in.). Leaf to 25 cm long by 14 cm wide (10.0 by 5.5 in.), thick substance, oblong-ovate, petiole transition decurrent to the petiole, sometimes slightly undulate, shiny green above, lighter green below, sometimes slightly or not pruinose, leaf tip acute-mucronulate. Venation 8-12, sunken above, projected below. Scape 65 cm long (26 in.), erect, green. Fertile bracts, navicular, long, thick, green, persisting, not withering at anthesis. Raceme 30 – 36 cm (12 - 16 in.), 15-19 flowers. Flowers 3.5–4.5 cm long and 3–4 cm broad (1.5–2 by 1.25–1.50 in.), white Type A ▼▼ coloration (Schmid 1991);

perianth expanding, in the central part slightly dilated bell-shaped, lobes spreading, half open, not flaring as much as *H. montana*; short pedicels, projecting stamens. June. Seed pods green. Anthers purple. Fertile.

Karyotype-Chromosomes: Sporophytic Count = 60; 12 large, 48 small; (2n).

Pollen: (Pollen shape after Erdtman, 1966): Pollen palynology was not determined by M.G. Chung and S.B. Jones, 1989.

Genome Size: DNA content (2C) in pg (one 10^{-12} gram) not determined. (Zonneveld, B.J.M. and F. Van Iren (2001).

DNA Banding: Recent RAPD analysis did not include *Hosta crassifolia*. (Y. Yu, 2002; Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005).



Type A Tepal
 (Schmid 1991; p 363;
 Plates 193-208) © Schmid

Taxonomic Type and Synonymy:

H. crassifolia Araki

Acta Phytotaxonomica et Geobotanica, Vol. 12, 118 1943.

Type: In KYO, No. 15798 University Herbarium (京都大学総合博物館); coll. Y. Araki, Mount Ibuki (伊吹山; Ibukiyama), Shiga Prefecture (滋賀県 Shiga-ken), Omi-no-kuni (近江国); Hab.: In rocky woods, alpine meadows and river valleys in central Honshu, Japan.

Botanical Synonyms:

H. sieboldiana var. *sieboldiana* Fujita: *Acta Phytotaxonomica et Geobotanica*, Vol. 27, 3/4:75 1976 (Accepted in sensu lato – name maintained per holotype).

Japanese Language Synonyms:

アツバギボウシ = 厚葉擬宝珠 = Atsuba Gibōshi = thick-leaved hosta.

***H. crassifolia* in Cultivation and Horticultural Progeny:**

H. crassifolia is rarely seen in gardens. No horticultural progeny is on record.



H. crassifolia
(cultivated garden setting
in bloom with some seed set)
Hosta Hill R.G.
Photo by W.G. Schmid 1991,09.26



H. crassifolia
(cultivated garden setting)
Hosta Hill R.G.
© W.G. Schmid 1991.09.01

References:

- Araki, Y. 1943. *Acta Phytotaxonomica et Geobotanica*, Vol. 12, 118 1943. (論文: 荒木英一日本ギボウシ属新植物)
- Chung, M.G. and S.B. Jones. 1989. Pollen morphology of *Hosta* Tratt. (Funkiaceae) and related genera. *Bulletin of the Torrey Botanical Club*, Vol. 116, 1:31–44.
- Fujita, N., 1976. The Genus *Hosta* (Liliaceae) in Japan. *Acta Phytotaxonomica et Geobotanica*, Vol. 27, (3–4) pp. 66–96.
- Maekawa, F., 1971. The Genus *Hosta* in Japan. *New Flowering Plants*, Tokyo, 70:3–7.
- Maekawa, F., 1969. *Hosta* Trattinnick. In *New Encyclopedia of Horticulture*, Seibundoshinkosha, Tokyo, Vol. 3:1105–1109.
- Ohwi, J., 1953; (1965). *The Flora of Japan* (日本植物誌; 1953 in Japanese; in 1965 in English). Edited by F. G. Meyer and E. H. Walker, Smithsonian Institution, Fam. 52, 11:287–291.
- Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005. Random amplified polymorphic DNA (RAPD) analysis in the genus *Hosta*. *HortScience* 40(4).
- Schmid, W.G. 1991. *The genus Hosta: Gibōshi Zoku* (ギボウシ属). London and Portland: Timber Press.
- Schmid, W.G. 2004. *Hosta* species and DNA fingerprinting. *Bull. Brit. Hosta Hemerocallis Soc.* 2004: 50, 59-66.
- Yu, Y. 2002. Classification of hosta species and cultivars based on RAPD analysis. TSU Graduate School (with W.G. Schmid); published in summary in Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005 (which see).
- Zilis, M.R. 2009. *The Hostapedia*. Rochelle: Q & Z Nursery, Inc.
- Zonneveld, B.J.M. and F.Van Iren. 2001. Genome size and pollen viability as taxonomic criteria: Application to the genus *Hosta*. *Plant Biology*, 3, pp. 176-185. G. Thieme Verlag: Stuttgart.

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