**H. takahashii Y. Araki 1942**


シヒゾギボウシ = Shihizo Gibōshi
해인비비추 = Hae-in-bi-bi-chu (Korean = *H. tardiva*)

**History and Nomenclature:** In Japan *H. takahashii* is called Shihizo Gibōshi, “Shihizo's Hosta.” It was named for the collector Shihizo Takahashi by the Japanese botanist Y. Araki in 1942. This taxon is one of the many local morphs growing in the general area of the former Ōmi-no kuni (近江国), an old province of Japan, which today comprises Shiga prefecture. The holotype lists the point of collection as being in the general area of Mount Ibuki (伊吹山; Ibukiyama) in Shiga-ken (滋賀県), straddling the border between the Gifu (岐阜; Gifu-ken) and Shiga (滋賀県 Shiga-ken) prefectures. Araki not only collected on his own but he also accepted collections from other researchers and collectors, cultivated them in his garden and established them as taxa. He found a number of local morphs and interspecific hybrids are represented by isolated populations in the mountainous habitat of the Kansai region (Kansai-chihō; 関西地方 - also known as the Kinki region) of central Honshu. The species epithet *takahashii* represents the Latinized form of the collector's name Takahashi. Maekawa (1969) was the first to disregard this taxon. Fujita (1976) considered it synonymous with *H. tardiva*. Korean botanists have accepted Fujita’s position and
the Korean name is Hae-in-bi-bi-chu (해인비비추), which is the Korean name for *H. tardiva*. The taxonomic synonymy with *H. tardiva* is not supported by morphometrics (Schmid 1991) nor DNA analysis (Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid; 2005) and I retained this taxon as a species in 1991 (Schmid, 1991). In addition, its genome size of 21.9 pg (Zonneveld, B.J.M. and F. Van Iren. 2001) indicates a position in the *H. sieboldii/H. rectifolia* complex. This taxonomic placement better conforms to habitat conditions and adjacent population types seen in its habitat. Allopatric populations do exist in the wild and for this reason I have included it in this species update. It may be an interspecific hybrid that has found an environment where it maintains itself successfully, regardless of its measured low fertility (Zonneveld, B.J.M. and F. Van Iren. 2001). More significant than the phenotypical differences listed under Biology, below, is the differentiation by RAPD analysis. *H. takahashii* was compared with *H. tardiva*, *H. tibae* and *H. tsushimensis*. Based on the resulting banding patterns, *H. takahashii* was differentiated from the other taxa by a single primer (refer to DNA banding details under *Plant Morphology*). The holotype shows two *determinavit* labels: One by Murata, inserting Fujita’s opinion (1976) and a later one in 1992 inserting a *H. ×tardiva* by Haynes E. Curry at UGA (1988/1992); apparently indication as a *H. tardiva* (interspecific?) hybrid. Some authors disagree with this judgment by considering this a culton and writing the name as a cultivar name *H. ‘Takahashii’* per the ICNCP.

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

![Habitat Map Near Ibukiyama](image)

**Habitat and Biology:**

Before 1942, Y. Araki discovered several new phenotypes among native *Hosta* populations in central Kansai region (Kansai-chihō 関西地方 - also known as the Kinki region). Kansai lies in the South-Central area of Honshu. Araki found a new taxon in the general area of Mount Ibuki (伊吹山), which is listed on the holotype specimen. The species occupies the shaded slopes of the mountain and evolved as a “local type.” Although many of the variants in the *H. sieboldii* complex “look” different, they have similar flower morphology. This variant has somewhat different
flowers as detailed under Morphology, but it is highly differentiated by its ovate leaves that are much larger than both *H. sieboldii*, *H. tardiva* or *H. rectifolia*. The leaves have acuminate tips and their shape is cordate with a truncate base and a distinct leaf-to-petiole transition. The flowers do not have the distinct, dark lines as seen in *H. sieboldii*, but barely visible lines, which blend more into the back-ground color. The anthers are purple. The flower buds are purple suffused and the scapes, raceme and seeds show much purple spotting.

►►► *H. takahashii*  
(cultivated plant)  
Shihizo Gibōshi  
シヒゾギボウシ  
Elongating scapes and racemes  
Hosta Hill R.G.  
► © W.G. Schmid 1990.08.11

Racemes with seed pods and a closer look at pods  
► © W.G. Schmid 1990.09.30
H. takahashii (Holotypus) シヒゾギボウシ
Coll. loc. cit.: In Ibukiyama (伊吹山), Shiga-ken (滋賀県) by S. Takahashi
KYO No. 14833 [1938.09.09] Kyoto Univ. Herbarium (京都大学総合博物館)
Plant Morphology:
Plant size 50–65 cm dia. by 30 cm high (20–26 by 12 in.). Petiole 17.5–25 cm by 4–1 cm wide (7–18 by 0.16–0.45 in. wide), slightly winged, erect, green with purple-dotted at the base, lighter above. Leaf 12.5–20 cm by 10–17 cm wide (5–8 by 4–6.7 in.), erect, broadly ovate, petiole transition truncate, cordate, slightly undulate, wavy in the margin, smooth, shiny light, elm green above, glossy light green below, tip acuminate. Veneration 5–8, sunken above, very projected, smooth below. Scape 65–80 cm long (26–32 in.), erect, green, purplish red dotted at the base. Sterile bracts 3(5), clasping the stem; fertile bracts, navicular, long, thick, grooved, green, persisting, not withering at anthesis. Raceme 30 cm (12 in.), 15–30 flowers. Flowers 3.5–4.5 cm long and 3–4 cm broad (1.5–2 by 1.25–1.50 in.), purple-violet, Type B coloration (Schmid 1991 ▲▲) perianth expanding, in the central part slightly dilated bell-shaped, lobes spreading, half open, short pedicels, projecting stamens. September. Seed pods light green, purple-dotted. Anthers densely purple-dotted, look purple. Fertility: Partially Fertile.

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

Genome Size: DNA content (2C) in pg (one (10^-12) gram) = 21.9 ± 1.09. (Zonneveld, B.J.M. and F. Van Iren (2001). See note under DNA banding.

DNA Banding: Recent RAPD analysis (Y. Yu, 2002; Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005). In additions to other taxa, the banding patterns of 4 related species accessions (See Fig. B) were compared in the 2002/2005 study. The 4 species shown in the banding pattern were compared using a single primer OPB-01 (5' -GGTTTCGCTCC-3'), generated three bands as shown in Fig. B. The polymorphic band (850bp) common to (36) H. tardiva, (39) H. takahashii, (40) H. tibae allowed for the separation of (41) H. tsushimensis from the group. The second band (937bp), which was common to (36) H. tardiva and (40) H. tibae allowed for their separation.

Banding Pattern (Fig. B)

36 = H. tardiva
39 = H. takahashii
40 = H. tibae
41 = H. tsushimensis
from (39) *H. takahashii*. The third band (676bp) allowed for the separation of (40) *H. tibae* from (36) *H. tardiva*. Separation of *H. takahashii* from this group is an indication that this species related to but not synonymous with *H. tardiva*. Genome size in pg for *H. tardiva* is 22.7 ± 1.1 and for *H. takahashii* is 21.9 ± 1.09. (Zonneveld, B.J.M. and F. Van Iren (2001).

**Taxonomic Type and Synonymy:**

*H. takahashii* Araki.


Type: In KYO, No. 14833, 1938.09.09; coll. loc. cit.: S. Takahashi, Mt. Ibuki (伊吹山), Shiga Prefecture (Shiga-ken; 滋賀県), central Honshu, Japan.

**Botanical Synonyms:**

*H. takahashii* = *H. tardiva* Fujita, N., 1976; synonym not accepted here)

*H. takahashii* = *H. × tardiva* Curry, H.E. Currie, H. E., 1988/1992; s.l.; synonym not accepted here)

**Japanese Language Synonyms:**

*H. takahashii* = シヒゾギボウシ = Shihizo Gibōshi

**Korean Language Synonyms:**

*H. takahashii* = 해인비비추 = Hae-in-bi-bi-chu (= *H. tardiva* – s.l.)
H. takahashii in Cultivation: This species is in cultivation and has been sold in the hosta trade since about 1995. It has beautiful late-blooming flowers and its leaf mound is tidy and attractive. At least two clones have been seen. Both apparently came from Japan (not vouchered, but conforming to the holotype) and one of them has unique 3-colored flowers: The narrow tube is dark purple and the perianth outside is white with dark, purple lines, while the inside is of a uniform purple color with darker stripes. The Japanese call this Kinshoku Gibōshi (三色ギボウシ = “Tricolored Hosta”) and the equivalent cultivar name would be H. takahashii ‘Kinshoku’. Regardless, whether regular flowers or tri-colored ones, H. takahashii is a good horticultural subject.
Horticultural Progeny: No horticultural progeny of *H. takahashii* is on record.

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**H. takahashii** Flowers

Hosta Hill R.G. © W.G. Schmid 1990.08.25

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**H. ‘Kinshoku’ Flowers**

Hosta Hill R.G. © W.G. Schmid 1990.09.17

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**H. takahashii** (Cultivated plant)
Seed stage
Hosta Hill R.G. © W.G. Schmid; 1990.09.17
H. takahashii
(Cultivated Plant)
Hosta Hill R.G.
© W.G. Schmid
All photographs

seed pods – detail
Notice purple dotting
1990.09.23

H. takahashii
[三色ギボウシ]

species flower buds and perianth
1989.08.09

H. ‘Kinshoku’

tricolor flowers of H. ‘Kinshoku’
1989.08.07
References:

H. takahashii
(Cultivated plant)
Hosta Hill R.G.
© W.G. Schmid
1989.08.19

Note: Other species in background are already carrying seed pods, while late-blooming H. takahashii is still in full bloom

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**H. takahashii** (シヒゾギボウシ)
Shihizo Gibōshi (Araki 1942) © W.G. Schmid
Hosta Hill R.G. 1998.10.21

Seed capsules after dehiscing; showing both fertile and aborted seeds

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