**H. okamotoi Araki 1942**


オクヤマギボウシ = Okuyama Gibōshi = 奥山擬宝珠 = Mount Okuyama Hosta

**History and Nomenclature:** In Japan, this species is called Okuyama Gibōshi, a name given by Y. Araki in 1942. Together with *H. okamotoi*, Araki named several other closely related species during this time and validly published their names, including *H. takiensis* and *H. aequinoctiiantha*. The Latin species epithet is derived from and honors Mr. Shogo Okamoto, who discovered and collected the original specimen in 1940. The three species make up the “late-blooming” component
of the *H. longipes* complex and they bloom about the same time in late September. Okuyama Gibōshi is named for Mount Okuyama (奥山), where the holotype was collected. Y. Araki published this species as a valid taxon with a Latin diagnosis and the holotype specimen No. 15699 (together with several syn- and lectotypes) is filed in Kyoto University Herbarium (京都大学総合博物館). The general area of populations occurs in the old province of Tamba (丹波国; Tamba-no kuni), which today encompasses the central part of modern Kyoto Prefecture (京都府 Kyōto-fu) and the east-central part of Hyogo Prefecture (兵庫県 Hyōgo-ken), both in the Kinki region on Honshu. This taxon is closely related to and part of the...
large and variable *H. longipes* complex and is one of the many *H. longipes* variants that exist in this area. Morphologically it is similar to *H. aequinoctiaanthana* and *H. takiensis*. Maekawa (1969) retained *H. aequinoctiaanthana* but no longer listed *H. okamotoi*. Using a much broader classification, Fujita (1976) reduced *H. aequinoctiaanthana* to varietal rank as *H. longipes* var. *aequinoctiaanthana* and listed *H. okamotoi* (as well as *H. takiensis*) as synonyms under the variety *H. longipes* var. *aequinoctiaanthana*. Due to considerable morphological differences among these taxa, this very broad approach to classification is not followed here. The *determinavit* notes affixed to the herbarium specimens by Gen Murata follow Fujita (1976). Schmid (1991) maintained specific rank based the existence of allopatric populations and also by participating in RAPD-DNA analysis and considering the differences in morphometric characters. Zonneveld (2001) considered this as a cultigen based solely on genome size with no further annotation. RAPD-DNA analysis by Y. Yu, (2002) and Sauve et. al. (2005) compared six taxa in the *H. longipes* complex and determined that these species can be differentiated with a single primer so this taxon is treated here as a species representing the populations in Kitakuwada District. It should be pointed out that this classification is used here because this taxon has natural representation and is included in a number of international data bases. The much broader classification of Fujita has merit, but tends to suppress important historical and botanical data essential to the understanding of this complex genus. Broad classifications are detrimental to taxonomic and horticultural identification and nomenclature. The latter in fact constitutes the only economic importance of the genus *Hosta*. 

![Image](image_url)
Plant Morphology:
Plant size 35–40 cm dia., 30 cm high (14–16 by 12 in.). Petiole 12.5–15 by 0.4 cm wide (5–6 by 0.16 in. wide) erect, purple-dotted with each “dot” being of linear shape. Leaf 10–12.5 by 5–7.5 cm (4–5 by 2–3 in.), erect and in line with petiole, entire, subcordate, truncate, petiole transition rounded, cuspidate tip, flat or wavy surface, erect, fleshy-leathery, smooth, green above, lighter, opaque green below. Venation 5–7, sunken above, very projected, smooth below. Scape 25–45 cm (10–18 in.), bending obliquely, purple or purple-dotted entire length, smooth round. Fertile bracts 1 cm long (0.3 in.) navicular, thin, membranous, white to whitish green, with spotting or purple-tinted, imbricated, not withering. Raceme 20–25 cm (8–10 in.), 10–20 flowers, spaced apart. Flowers outside first light purple then whitish, inside pale purple suffused, held erect in about horizontal position on long, strong horizontal or slightly ascending purple pedicels, perianth 5 cm (2 in.) long, funnel-shaped, expanding, in the central part dilated bell-shaped tepals ( ►◄ Type D Color, Schmid 1991), spreading straightly to ±angled to the axis of perianth, thin narrow hexagonal tube. September. Anthers yellow background, tightly purple-dotted, looks purple. Fertile. The anther coloration is has a yellow background with purple dotting and the possibility of interspecific origin exists.

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

Pollen: Pollen shape was not included by M.G. Chung and S.B. Jones in 1989. All of the other members of section Picnolepis (the H. longipes complex) have Subtype RG(V) (rugulate granulate) with shape OS (oblate-spheroidal); (Pollen shape after Erdtman, 1966). Thus, the assumption is that H. okamotoi has a similar or the same pollen type and shape, but this has not been confirmed and awaits investigation.
Genome Size: DNA content (Zonneveld, B.J.M. and F. Van Iren (2001). This taxon was included for this study as a cultigen and genome size was determined to be 24.3 pg from a single specimen of unknown origin. In this study, no further comment was made regarding the status of this taxon.

Fig A. DNA Banding Pattern
Primer OPB-17 (5′-AGGGAACGAG-3′)
29 = H. aequinoctiiantha.
30 = H. hypoleuca
31 = H. okamotio
33 = H. pycnophylla
34 = H. rupifraga
35 = H. takiensis

DNA Banding: Recent RAPD analysis (Y. Yu, 2002; Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005) has revealed the banding patterns of 6 related species accessions in section Picnolepis (See Fig. A on page 13). These species underwent comparative analysis in the 2002/2005 study and the 6 species shown in the banding pattern (illustrated in Fig. A) were compared using a single primer OPB-17 (5′-AGGGAACGAG-3′). Based on the banding pattern, the species listed with Fig. A were differentiated with this single primer OPB-17 and are therefore considered distinct entities in section Picnolepis. The banding patterns verify that these phenotypically differentiated taxa can also be differentiated genotypically.

Taxonomic Type and Synonymy:
H. okamotio Araki.
Type: In KYO, No. 15699, 1940; coll. Coll. S. Okamoto, near Chii-mura; Kitakuwada-gun (北桑田郡); Kansai (Kinki) region.
Hab.: Province of Tamba (丹波国; Tamba-no kuni), in Kyoto Prefecture (京都府; Kyōto-fu) and the east-central part of Hyogo Prefecture (兵庫県 Hyōgo-ken), both in the Kansai region (Kansai-chihō; 関西地方) = Kinki region (Kinki-chihō; 近畿地方) on Honshu.

Botanical Synonyms:

Japanese Language Synonyms:
H. okamotio = オクヤマギボウシ = 奥山簪擬宝珠 = Okuyama Gibōshi.
H. okamotoi (Cultivated)

1. Closeup of perianth and flower bud
   BVL UR Cultivated at Hosta Hill R.G. © W.G. Schmid 1990.09.17

2. Detail showing the linear spotting on the petioles
   Photo © H. Philips 2004

3. Closeup of young leaf showing linear spotting
   BVL UR Cultivated at Hosta Hill R.G. © W.G. Schmid 1990.07.21

*Please note:* The following specimen are all filed under No. 15699 in KYO.
H. okamotoi Holotypus
Coll. Kyoto Prefecture (京都府 Kyoto-fu); Chii-mura by S. Okamoto 1940
Holotype KYO No. 15699 Kyoto University Herbarium (京都大学総合博物館)
*H. okamotoi* (No Type designated)

Coll. 京都府 Kyōto-fu (丹波国; Tamba-no kuni), Chii-mura

KYO/NT Kyoto University Herbarium (京都大学総合博物館)
H. okamotoi (No Type designated)

Coll. 京都府 Kyōto-fu (丹波国; Tamba-no kuni), Chii-mura
KYO/NT Kyoto University Herbarium (京都大学総合博物館)
**H. okamotoi** Isotypus-Lectotypus

Coll. 京都府 Kyōto-fu (丹波国; Tamba-no kuni), Chii-mura; Kitakuwada-gun

Iso/Lectotype KYO Kyoto University Herbarium (京都大学総合博物館)
**H. okamotoi** Lectotypus

Coll. 京都府 Kyōto-fu (丹波国; Tamba-no kuni), Chi-mura; Kitakuwada-gun

Lectotype KYO Kyoto University Herbarium (京都大学総合博物館)
H. okamotoi Habitat
Notations:
As its close relatives H. takiensis and H. aequinocti-antha, this taxon has a similar habitat, adapted to thin soil on a rocky substrate in forested, isolated mountain valleys and on slopes. Occasionally, some individual can be seen growing epiphytically on tree trunks, but Araki’s notation that it is “chiefly” an epiphyte found on tree trunks may be an over-statement. General habitat is located in the former province of Tamba complex. His diagnosis reveals that this taxon is much smaller than other H. longipes variants inhabiting neighboring habitats. The later blooming period certainly differentiates it from the other species in the H. longipes complex (丹波国；Tamba-no kuni). The holotype was collected by Okamoto in the vicinity of the village of Chii-mura in Kita-kuwada-gun (北桑田郡). The holotype specimen was planted in Araki’s garden and the description was derived from these cultivated vouchers. The habitat of this taxon is very similar to that inhabited by other H. longipes populations. Araki considered this species to be close to H. rupifraga, also a local adaptation in the H. longipes complex but removed on Hachijo Island (八丈島；Hachijō-jima). This judgement seems to be an incompatible comparison because Hachijo Island is 375 km (233 miles) from the habitat of H. okamotoi most of it over water. In fact H. okamotoi much closer to H. longipes var. hypoglauca. In publishing this species novum, Araki placed it quite correctly in Picnolepis, i.e., the H. longipes complex. His diagnosis reveals that this taxon is much smaller than other H. longipes variants inhabiting neighboring habitats. The later blooming period certainly differentiates
it from the other species in the *H. longipes* complex growing in the surrounding prefectures. It is undoubtedly part of this group and has a number of identical morphological features including the coloration on the inside of the tepals (Type D Color, Schmid 1991). There is a hint of striping in the tepal coloration similar to *H. longipes* var. *hypoglauca* and outstanding coloration of the petioles and scapes and racemes points to a close connection. Although most taxonomic placements in the genus *Hosta* are judgment calls, this taxon’s general morphology parallels that of other members of the *H. longipes* complex. In this *Species Update*, this taxon is considered to be differentiated to a degree that would indicate species rank. Fujita published his judgement, considering this taxon to being synonymous to *H. longipes* var. *aequincoiiantha*. Still others consider it a cultigen, but this position is not followed here due to the existence of wild populations and types.

_H. okamotoi* (BGO Voucher - Cultivated)
Hosta Hill R.G. © W.G. Schmid 1991.05.10

**H. okamotoi in Cultivation:** Very few cultivated specimens of this species exist in North American and European gardens and its pictorial horticultural representation on the Web is non-existent. It deserves to be cultivated in gardens and is attractive. Its shiny, bright green leaves and late flowers make for a great show in autumn. At Hosta Hill the flowers appear in late September and fruiting takes place in November, around the average date of the first freeze of November 11 (Hosta Hill at 35°52′ N - 84°12′34″ W; 1188 feet (361m) AMSL) The cultivated specimen was collected in the habitat and compared with the type specimens. This species is a relatively late import from Japan and is not listed in Summers (1972). It is offered by a few hosta specialty nurseries.
Horticultural Progeny:

Note: *H. okamotoi* is available in the trade and represented in gardens. There is no horticultural progeny on record and the species is not listed in Zilis (*Hosta Handbook* - 2001). However, the *Hostapedia* refers his readers to pictures published by Schmid (1994) in *The Hosta Journal*, Vol. 25, No. 1, opposite page 100. These illustrations are also featured in this *Species Up-date*. The species has been used by some hybridizers but eventual progeny from these trials has not been published. It should make a good pod parent for hybridizers seeking red petioles. Fertility of this species is “somewhat low.” Arak mentions that the species is “somewhat” fertile, indicating perhaps that this may be an interspecific population. He stated: “. . . the genus *Hosta* seems to be in a period of mutation, thus many new species will be found,” alluding perhaps to the widespread interspecific hybridization of these populations. To be factual, this species is fertile only to a degree, but enough so to perpetuate itself in the wild.

In Japan, *Okuyama Gibōshi* is rarely found in gardens. In the wild, it is represented by populations near Mount Okuyama. Unfortunately, collectors have not been able to find the original population from which S. Okamoto collected the holotype in 1940, but nearby living populations conforming to the holotype occur in the area.
References:


Maekawa, F. 1940. The genus Hosta. J. of the Faculty of Science, Imperial University Tokyo, Section 3 Botany, Vol. 5:317–425.


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W. George Schmid, HostaLibrary.org/species/.