**H. ventricosa** (Salisbury) Stearn 1931

*Gardener's Chronicle, 3 Ser., 90:27, ic. Pl. 22, 23 1931* (in annotation)

ジガク = 紫萼 = zi e (Chinese) [purple calyx]
ジギョクシン = 紫玉簪 = zi yu zan (Chinese) [purple calyx hosta]
파란 질경이 백합 = 벤트리코사 = (Korean) “qualitative” wonderful lily[1](Japanese: A. Kikuchi ex Maekawa 1937)

**History and Nomenclature:** How and exactly where *H. ventricosa* evolved in the vast reaches of China is unknown. This taxon has many unique morphometric characters and can easily separated from the other Chinese and Korean species that evolved in the same general geographic area. More of this below under *Habitat and Biology*. Its nomenclature is rather convoluted. It certainly had a Chinese name long before it was assigned scientific names. Early Chinese herbalists simply assigned the Kanji 紫萼 (= zi’e), which means “purple calyx.” The name derived from one of the most significant and unique morphological features of this species, namely its bell-shaped perianth composed of 3 sepals (the calyx) and 3 petals, which are...
alike in morphology so are referred to as tepals. The Kanji 紫玉簪 is also in use in China is, with the first Kanji meaning “purple,” the second “ball,” and the third “ornamental hairpin.” The applied horticultural meaning of the last two Kanji other traditional meaning, namely “bridge railing-post knob.” The shape of the tops of classic railing posts closely resembles the unopened bud initial of certain hosta flowers. This old name may have been in use long before the advent of the modern Japanese name Gibōshi (ギボウシ) for this species. The latter was not formulated and taxonomically established until Maekawa (1937) formally published it as ムラサキギボウシ (in Katakana) and むらさき ぎぼうし (in Hiragana). The two Kana transliterate to Murasaki Gibōshi, meaning “purple (-flowered) hosta.” Long before H. ventricosa became a legitimate, valid species in 1931, European naturalists traveling in China during the latter part of the 18th century discovered it. Imported in 1790 into England, it was one of the first hostas to be grown on the continent of Europe and probably described there in detail before it was given botanical scrutiny in Japan. Quickly distributed throughout Europe, this taxon was given a number of different scientific names, most containing the species epithet caerulea (also as caerulea or coerulea), as, for example, by Andrews Hemerocallis caerulea in 1805 and by Trattinnick as Hosta caerulea in 1812/1814. A hand-colored engraving by Andrews is included here (and in possession of this author). It is very accurate and leaves no
doubt as to the taxon’s identification as the species *H. ventricosa*. *Hemerocallis caerulea* was used from 1810 on as a scientific name. The name “Chinese daylily” also made its first appearance since *Hosta* was then considered *Hemerocallis*. Several botanical synonyms were also formulated early on. The old specific epithet *caerulea* was applied for over 160 years and so this taxon possessed no correct, taxonomically valid name under *Hosta* until W. Stearn applied the basionym *ventricosa* (of *Bryocles ventricosa*) to *Hosta ventricosa* (Salisbury) Stearn (1931). Translation of the specific epithet *ventricosa* describes the shape of the perianth as “swollen,” as in a bell-shaped perianth. Taxonomists accepted this placement including F. Mackawa (1937, 1940, 1969), M. G. Chung (1990), and W.G. Schmid (1991). Today this name is established and used in taxonomy. Research by Chung & Jones (pollen morphology; 1989); Zonneveld & Van Iren (genome size; 2001) and Sauve, Zhou, Yu, and Schmid (RAPD-DNA Analysis (Random Amplified Polymorphic DNA); 2005)
also support this placement. Systematic agreement is based on the fact that this taxon is unique and unlike any other taxon in the genus *Hosta*, being the only natural tetraploid in the genus with a chromosome number of \(2n = 120\). The species produces seed without actual fertilization (i.e., pseudogamous apomixis), which is a form of vegetative reproduction referred to as agamospermy. The unique morphology of the species *H. ventricosa* has revealed an identification problem that exists in some of the scientific literature. Macromorphological descriptions published in *Flora of China* (2000) include the attribution of a sporophytic chromosome count of \(2n = 60\) (correct \(2n = 120\!\)!), a “funnelform” perianth (correct = [“ventricose”] campanulate), a principal vein count of up to 11 vein pairs (correct = 9 maximum) and a flowering time from June until September (correct = late June—early July) produces seeds in August). As corrected within parenthesis, none of these characters fit the correct parameters set for the morphometry of this taxon. The photo Nju Plants [to the left] (Court: © Nanjing University) shows a correct specimen of *H. ventricosa* (紫萼). The other illustration featured is of an unknown taxon purported to be *H. ventricosa*, which it is not. This photo is featured in a horticultural writeup for *H. ventricosa* by the Chinese Qianlong Nursery in the Chinese picture caption. Several other taxonomic and horticultural sources feature photographs of plants presumed to be *H. ventricosa*, but they are obviously not, based on gross morphology alone. This creates a considerable problem with the habitat data reports in various Chinese publications. More is included in the next chapter *Habitat and Biology. Flora of China* (Vol. 24, 2000) places *Hosta* in the Liliaceae (百合科; bai he ke). Another taxonomic problem arises from the fact that some Chinese scientific publications place *H. ventricosa* in the family Grimmiaeeae (xerophytic cushion or tufted colonizers) and this placement is not accepted. Recent studies accept placement of *H. ventricosa* in the mono-

Habitat and Biology:
The original habitat of this species is difficult to establish. Most scientific treatments, including Flora of China (Vol. 24, 2000) indicate that wild populations occur in Anhui (安徽), Fujian (福建), Guangdong (广东; eastern Guang), Guangxi (广西; western Guang), Guizhou (贵州), Hubei (湖北; north of lake), Hunan (湖南; south of lake), Jiangsu (江苏), Jiangxi (江西), and Sichuan (四川). None is reported in Korea (M.G. Chung 1990; KPNI-Korean Plant Name Index 2004). The ecology is listed as forests, grassy slopes, and hill-sides at 500-2400 m (1,640-7874 ft.). MOBOT published a map (p. 6) that also indicates habitat in the same general provincial areas listed above with a few minor differences. To complete habitat information, USGA also provides a list of U.S. states with geographic areas into which H. ventricosa has been introduced and is represented in the wild and in gardens. This taxon propagates apomictically and its offspring is identical to the parent. The states include Connecticut, Delaware, Indiana, Kentucky, Massachusetts, Maryland, Michigan, North Carolina, New Jersey, New York, Ohio,
Pennsylvania, Rhode Island, Virginia, Vermont, and West Virginia. I would like to add Georgia, since I have found and photographed small populations of this species in northern Georgia, Rabun County, on the banks of Black Rock Mountain Lake. It is quite possible that escaped individual and small populations exist in other states, or countries in the North America and in Europe. This species is widely cultivated in gardens the world over. Considering that this taxon has been cultivated in China for centuries, it may be that some of the native Chinese populations heretofore considered to be of wild origin are in fact escaped individuals. Such individuals are very fertile and are capable of apomictic propagation into groups of clones. For this study, the Chinese habitat areas listed by *Flora of China* may designate wild habitat as well as escaped, self-maintaining populations. In western gardens, this *Hosta* species is used as an ornamental. Its main reason for widespread cultivation in China is not only its ornamental value, but its consideration as a medicinal herb and its economical value as food. Numerous studies have been undertaken to investigate the cultivation, including required agricultural implications of *H. ventricosa* and its potential for such purposes (S. Wei, D. Min, 2004; Y.A. Ping, C. Jin, et al, 2004; Z. Yue at al., 2002; Ryde, C. 1966) have been studied. As pointed out previously, *H. ventricosa* ►►► (in situ) Escaped group in Rabun County, Georgia, USA Black Rock Mountain Lake © W.G. Schmid; 2006.06.27 El. 690 m (2,263 ft) AMSL N 34° 55′ 23.46″ — E 83° 24′ 31.25″
ventricosa has been incorrectly identified in some areas of China with other Hosta species (and possibly cultivars). The caveat here is that any such research is applicable only if the studied plants are H. ventricosa. Unfortunately, in western data bases, H. ventricosa has also been misidentified (as in Calphotos at berkeley.edu). Biologically, H. ventricosa is unique. It is the only natural tetraploid species in the genus Hosta with a chromosome number of 120 (2n). It produces seed without actual fertilization, through a process called pseudogamous apomixis, which is a specialized form of vegetative reproduction referred to as agamospermy (F. Fagerlind; 1946). This process, often mistaken for “self-pollination,” initiates seed production by diffusing growth substances from pollen and proceeds without the usual chromosome cycle of reduction divisions and fertilization. Zilis (2000, 2009) has further investigated this and stated that fertilization is required. However, instead of just developing a single, sexually produced embryo like all other hostas, multiple embryos, asexual in nature, develop out of endosperm tissue in the seed. Using a dissecting microscope Zilis found as many as ten embryos of various sizes growing in a single seed. He determined in test tubes nearly all of the embryos become seedlings, whereas in a greenhouse or garden bed, only

H. ventricosa (cult, voucher)
Emerging shoots with remains of last season vascular bundles
UGA Chung 212 Voucher © W.G. Schmid At Hosta Hill R.G. 1987.03.28
3 or 4 generally survive. My own research indicates the resulting seedlings are true (vegetative) clones of the mother plant. Nevertheless, it has been reported (Zilis 2000, 2009) that sporadically and infrequently H. ventricosa produces hybrids from rare, sexually produced embryos. These hybrids will be slightly different and some have been introduced. On the other hand, H. ventricosa makes an excellent pollen parent.

Plant Morphology: Macromorphological, H. ventricosa is unique, having deep violet-blue tepals forming a distinctly urn-shaped (campanulate) perianth and terete, straight scapes. A natural tetraploid apomict, it has unique rugulate pollen. Its taxonomic placement is also confirmed by RAPD-DNA analysis.

Plant size 80 cm dia. by 50 cm high (32 by 20 in.). Petiole 18–22 cm by 1 cm wide (7–9 by 0.350 in. wide), spreading horizontally (patens), forming a rosette shaped plant, un-marked except for light purple spotting at base, glossy light green, deeply grooved. Leaf 20–30 cm by 15–20 cm wide (8–12 by 6–8 in.), cordate, broadly ovate, transition truncate, open, flattened, cuspidate, torsionally twisted with spiral curl in tip, usually turned under, central leaf surface generally "flat," not arched but flat between veins, but irregularly undulate in the margin, not pruinose, semi-glossy, below very glossy, dark emerald green. Venation 8–9 (10), sunken above, projected, papilllose-strigose below. Scape 80–95 cm long (32–38 in.), straight, later bending under weight of heavy seed set often sub-horizontally, terete, mostly uniformly semi-gloss light green, lightly reddish, purple-dotted at base. Fertile bracts navicular, thin, membranaceous, first green, then white, withering, imbricated, nearly equal in size. Raceme 25 cm (10 in.) 20–30 flowers. Flowers 5.5 cm long and 3 cm broad, dark veins on a lighter colored background, general color very dark, bluish violet, purple-violet, perianth acutely expanding, bell-shaped, ▲ Type B tepals (Schmid 1991) tepal at tips ±parallel to axis of perianth, average anthesis. Anthers purple. There is some minor differentiation in the coloring of the tepals and the form of the perianth. See page 8 for a pictorial explanation; Blooms in July. Fertile, propagates by pseudo-gamous apomixis without the aid of pollen, capsule triangular, short, stubby, blunt tip. Chromosome count 2n = 120, a natural tetraploid.

Karyotype-Chromosomes: Sporophytic Count = 120; (2n); tetraploid apomict.

Genome Size: DNA content (2C) in pg (one (10^-12) gram) = average given 39.4. (Zonneveld, B.J.M. and F. Van Iren (2001).
Floral differentiation:
*H. ventricosa* is a species that propagates by pseudogamous apomixis without the aid of pollen fertilization (see page 7 for details). This takes place without the usual chromosome cycle of reduction divisions and fertilization. All of the offspring are alike and are clones of the mother plant. One would expect that all offspring would be true duplicates of the mother plant, but this is not the case. Apparently, the various populations of *H. ventricosa* undergo adaptive and minor morphological variations expressed in slightly different tepal coloration patterns and perianth shapes as shown in the two photographs ◄ and ▼.
H. ventricosa (non-type specimen) B.C. No. 00220121
Coll.: H.T Tsai # 52945; 1933.07.16; in CVH (Chinese Virtual Herbarium)
Loc. cit.: Yúnnán Shěng (云南省), Hirakawa Cty. (平川县) in ravine 2500m
(中国数字植物标本馆成员馆开源系统)
H. ventricosa (non-type specimen) B.C. No. 01318061
Coll.: N. 406; Date: 1959.07.25; in CVH (Chinese Virtual Herbarium)
Coll. loc. cit.: Guizhou Sheng (贵州省), Nayong Cty. (纳雍县)
Hab.: Hilly site. (中国数字植物标本馆成员馆开源系统)
Pollen: Palynological data (M. G. Chung and S.B. Jones; 1989; Pollen shape after Erdtm an, 1966) confirm correlations with the 1940 sectional treatment of F. Maekawa in the monotypic sub-genus Bryocles section Eubryocles. This is based on its distinct and unique rugulate pollen type with occasionally tectate-columellate-like wall stratification unlike any others present in the genus Hosta (Fig. 7). Pollen size varies in the range of P 79-90 × E 72-83 (sizes given in µm (polar axis (P) × equatorial axis (E)). Maekawa’s placement is also supported by macromorphometric data (W.G. Schmid; 1991).

**H. ventricosa:** Pollen Type RU (rugulate)
Proximal polar view of whole grain
SEM × 650 (M.G. Chung)

**DNA Banding:** RAPD cluster analysis (Y. Yu, 2002; Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005) has confirmed the genotypical differentiation of the several species placed in subgenus Bryocles (F. Maekawa 1940; W.G. Schmid 1991). Comparison of the banding patterns and cluster analysis supports the unique taxonomic position of *H. ventricosa* and its placement in the monotypic section *Eubryocles.*
Taxonomic Type and Synonymy:

**H. ventricosa** Stearn


Type: Ill. in R.A. Salisbury, 1812 (basionym); accepted taxon (in BH): GRIN (USDA, ARS, National Genetic Resources Program); ITIS (Integrated Taxonomic Information System: Taxon Serial No.: 42953); IPNI; MOBOT.

**Botanical Synonyms:**


*H. japonica* var. *caerulea* Inuma apud Makino: *Somoku Dzusetsu*, Ed. 3, 2:462, pl. 349 1910 (with respect only to the name).


**Chinese, Japanese and Korean Synonyms:**

シガク = 紫萼 = ズイエ (Chinese = Purple Calyx)
シギョクシン = 紫玉簪 = ズイユザン (Chinese = Purple Ball Ornamental Hairpin = Purple Hosta)
파란 질경이 백합 = 벤트리코사 = (Korean = The [Qualitative] Wonderful Lily)
ムラサキギボウシ = むらさきぎぼうし = 紫擬宝珠 = (Japanese = Murasaki Gibōshi [A. Kikuchi ex Maekawa 1937] = Purple Hosta)

**Horticultural Synonyms:**

- **H.** ‘Barlow Hall Castle’ hort.
- **H.** ‘Borsch No. 3’ hort.
- **H.** coerulea hort. **incorrect.**
- **H.** ‘Krossa No. E-4’ Krossa.
- **H.** ventricosa ‘Russels Form’ hort. UK.
- **Glockenfunkie** (German).

- **H.** ‘Blue Bugles’ hort.
- **H.** ‘Chartreuse Ruffles’ hort.
- **H.** ‘Green Satin’ hort.
- **H.** ‘Mack No. 7’.

- **H.** ventricosa ‘Russels Form’ hort. UK.
- **Blaue Glockenfunkie** (German).

**H. ventricosa (cult.)**

<table>
<thead>
<tr>
<th>Style and anther posterior</th>
<th>Early seed pods w/ flower remains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehiscing pollen visible right anther</td>
<td>©W.G. Schmid Hosta Hill R.G. 2007.07.22</td>
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**H. ventricosa in Cultivation:** **H.** *ventricosa* was one of the first hostas grown anywhere on the continent of Europe. European naturalists traveling in China during the latter part of the 18th century discovered it there and in 1790, live specimens were imported into England by George Hibbert, a wealthy Englishman and collector of
unique plants. It was illustrated and described in several European floras before it was botanically researched in Japan. It was not until the “Father of Japanese Botany,” T. Makino (牧野富太郎) edited the Illustrated Flora (Somoku Zusetsu; 草木図說) by Y. Iinuma (飯沼慾斎) published in 1910 (Ed. 2, p. 462, pl. 349) that a botanical treatment was published in Japan. Hibbert considered this species subtropical and grew it under glass at first. Its hardiness was quickly discovered and it was then transferred to open gardens. Distributed from England it reached France before 1800 and was part of the collection Mme. Josephine Bonaparte had assembled at the gardens of Château de Malmaison near Paris. There it served as a model for one of the two watercolors Pierre-Joseph Redouté made of hostas while employed at the gardens. It appeared in Germany and Sweden between 1800 and 1805 and was included by Trattinnick as $H. caerulea$ in 1812. The old and invalid epithet caerulea was in use for over 160 years, but in 1931, Stearn published its valid name $H. ventricosa$ Stearn (1931). The first mention of this species in the New World occurred in The American Flower Garden Directory edited by the U.S. florist Robert Buist in 1839. Only three entries for Funkia (now Hosta) were included in his directory, among them Hosta ventricosa as Funkia caerulea, “with blue flowers.” Thus, the first specimens of this species came to North America before the 1830s. Later, Edward Sprague Rand's Garden Flowers appeared in 1866 and included Hosta ventricosa as Funkia ovata. With its widely bell-shaped purple (actually purple-striped) flowers and dark green shiny leaves, $H. ventricosa$ has become a desired landscape hosta. It is a fortunate circumstance that its apomictic nature enables gardeners to produce readily clones by way of seed. Today, more than two centuries after its introduction, it is still in demand for mass plantings, in the border, as edgings and as a specimen plant. It is popular, because it adapts without difficulty to various environmental conditions and it can be grown in sunny areas. Cultivated worldwide it is planted in many old and new gardens. Due to its apomictic propagation, wild collected specimens are not differentiated from those cultivated in botanic gardens and otherwise in cultivation.
Although minor differences have been observed, the diversity seen in other wild *Hosta* populations is not expressed in this species and it is virtually impossible to separate wild stock from specimens that have cultivated origin. Vouchers held by herbaria, including CAS, K, MO, BH and others are listed with Sichuan Province (四川省) being the point of origin in Sichuan. All conform closely to the specimens cultivated in gardens today and to specimens collected by Daniel J. Hinkley (with DJHC numbers) in Sichuan Province. The only visible difference is a minor variability of flower morphology as noted and photo-illustrated on page 9.

Left and ▼ below:
Specimen and label (in K) *H. ventricosa* (as *Funkia ovata*); by Carl Johann Maximowicz 1862.
**H. ventricosa** (cultivated)

▲ With buds and bud initials
Leaf mound shaded by shrubs
at Hosta Hill R.G.
© W.G. Schmid June 2007.06.19

With wild grasses ▲
and *Stachys bizzantina* (foreground)
at Flower Farm Gardens
© W.G. Schmid June 1987.07.06

▲ **H. ventricosa** (cult. in situ)
Cultivated as a field crop
Shāndōng Shěng (山東)
Línu County (临朐县)

© W.G. Schmid June 2007.06.19
**Variegation in *H. ventricosa*:** Several variegated forms of *H. ventricosa* were known, cultivated, and first described and validly named in Europe. They are sports of the species. One is a viridescent center-variegated type, which arose in the garden of hosta pioneer von Siebold at Leiden before 1856 and was first mentioned that year as *Funkia ovata* foliis aureomaculatis Siebold (a nomen nudum) in *Catalogue raisonné et Prix-courant*, p. 12 1856. Much later Hensen (1963) applied the cultivar name *H. ventricosa* ‘Aureomaculata’ under which it is known today. It differs from the species, having slightly smaller leaves with distinct yellow center variegation in spring. Many different forms are reported, some with much more yellow in the leaf and others with considerably less (see photographs p. 20, 22). In Japan this cultivar is known under its vernacular Japanese name *Fuiri Murasaki Gibōshi* = 紫擬宝珠 = 斑入りムサキギボウシ = the “variegated purple-flowered hosta.”

Occasionally the descriptor 黄金色 (= gold or yellow colored) is added. Unlike the yellow-marginined cultivar, this hosta is viridescent, meaning that the yellow color becomes greener and in some cases fades to all green. The yellow-marginined form of this species is not mentioned in the Japanese academic literature and the vernacular
Japanese name Kifukurin Murasaki Gibōshi = 黄覆輪 紫擬宝珠 = the “yellow margin purple-flowered hosta” is of horticultural origin. It arose in Europe as a sport and had numerous names until it was rediscovered and introduced by Alan Bloom at his nursery at Bressingham, near Diss, Norfolk, England. He called *H. ventricosa* ‘Aureo-Variegata’ or ‘Variegata’, but these names are invalid in accordance to the rules of the ICNCP and no longer used because they are not specific as to the form of variegation. Hensen (1985) treated it as a cultivar form, assigned the correct cultivar name *H. ventricosa* ‘Aureomarginata’. This cultivar differs from the species only by its distinct, very irregular margin that is golden yellow in spring and fades to a yellowish or creamy white later in the season (See page 19). In sunny positions, the variegation may bleach to almost white. Some plants develop much wider margins and exhibit more yellow-white than green in the leaf and this modification appears to be permanent. There is also considerable variation among the leaves of a given plant. A number of other, naturally occurring sports (other than *H. ventricosa* ‘Aureomaculata’ and *H. ventricosa* ‘Aureomarginata’). In the wild as well as in gardens, a variable viridescent yellow form has been found. One of these came to light at Hosta Hill R.G. in 1985. This sport developed in a clump that was heretofore all green. Seedlings from *H. ventricosa* ‘Aureomaculata’ also sport to all yellow forms. One of these was registered in 1985 as H. ‘Fury of Flame’ by M. Zilis/T&Z Nursery. All of the yellow forms are viridescent and as the central leaves develop in a yellow color the peripheral leaves have already turned green or all-yellow sports will be all-green by summer’s onset. Reports indicate that in other sports, the yellow color is more
lasting and the plant remains mostly yellow all season. A Japanese sport is referred to as Ki Murasaki Gibōshi = 黄紫擬宝珠 = the “yellow purple-flowered hosta.” Hybridizers attempted to make the yellow color more showy and permanent. One of these hybrids is a margined form H. ‘Rachel’ by B. Kuk, registered in 2005. The yellow color in all of these sports is either viridescent or variable, changing from yellow to green or to creamy white (see illustration on page 19).

H. ventricosa
‘Aureomarginata’

Early spring variegation shows a yellow color, the margin color turns to creamy white later in the season (See Page 19)
© Tony Avent
Note the early season bright colors

Horticultural Progeny:
*H. ventricosa* is used primarily as a pollen parent. Some rare instances are known in which it was reportedly used as a pod parent in spite of the fact that it is a pseudogamous apomict, i.e., it normally does not produce hybrid offspring as a pod parent. Some sports have *H. ventricosa* morphology, but are smaller in leaf size. The following listings includes hybrids as well as sports.

*Note that Direct species progeny only is shown.* If a *H. ventricosa* hybrid or sport is involved, List 3 will include the cultivar name. Note that some cultivars are indicated to be hybrids with *H. ventricosa* as a pod parent. None of these has been definitively researched to verify this relationship and they are listed from the AHS Registrars Cultivar Registry. The following code abbreviations are used:

♀ = the species as a pod parent directly = List 1
♂ = the species as a pollen parent directly = List 2
All other cultivars in which *H. venusta* is involved = List 3

List 1: Cultivars with *H. venusta* ♀ as a pod parent:

- *H. ‘Collector's Choice’ ♀ H. ventricosa × ♂ H. (?) by W. Janssen 2009*
- *H. ‘Jolly Green Dwarf’ = ♀ H. ventricosa × ♂ H. (?) by T. Avent 2006*
- *H. ‘Lakeside Ebony Echoes’ = ♀ H. ventricosa × ♂ H. ventricosa by M. Chastain 2002*

List 2: Cultivars with *H. venusta* ♂ as a pollen parent:

- *H. ‘Slick Willie’ = ♀ H. ventricosa × ♂ H. ‘Invincible’ by J. Hadrava 1996*
- *H. ‘Sunny Disposition’ = ♀ H. ventricosa × ♂ H. ‘Birchwood Parky’s Gold’ by F. Nyikos 2001*
List 2: Cultivars with *H. ventricosa* ♂ as a pollen parent:

*H. ‘Betty’* = ♀ *H. nakaiana* × ♂ *H. ventricosa* by R. H. Benedict 1983

*H. ‘Heartache’* = ♀ *H. ‘Gold Regal’* × ♂ *H. ventricosa* by R. Benedict 2009

*H. ‘Kiwi Black Magic’* = ♀ *H. sieboldiana* × ♂ *H. ventricosa* by B. Sligh 1999


*H. ‘Rachel’* = ♀ *H. ‘Heart Ache’* × ♂ *H. ventricosa* by B. Kuk 2005


*H. ‘Venucosa’* = ♀ *H. ‘Undulata’* × ♂ *H. ventricosa* by A. Summers 1986

*H. ‘Venucosa’* = ♀ *H. ‘venusta’* × ♂ *H. ventricosa* by A. Summers 1986

List 3: Other cultivars with *H. ventricosa* directly involved:

*H. ‘Crystal Fountain’* = Sport of: *H. ventricosa* by B. Banyai 1999


*H. ‘Fury of Flame’* = Sport of: *H. ventricosa* by M. Zilis/T&Z Nursery 1985

*H. ‘Gold Flush’* = Sport of: *H. ventricosa* by A. Bloom 1984

*H. ‘Lakeside Black Satin’* = Sport of *H. ventricosa* hybrid by M. Chastain 1993

*H. ‘Mama’s Gold’* = Sport of *H. ventricosa* hybrid by R. Snyder 1999

*H. ‘Minnesota Nice’* = Sport of *H. ventricosa* ‘Aureomaculata’ by R. Snyder 1997


*H. ‘Odyssey’* = Sport of *H. ventricosa* hybrid by B. Armold 1999

*H. ‘PeeDee Elfin Bells’* = Sport of *H. ventricosa* hybrid by U. Syre-Herz 1987

*H. ‘PeeDee Picotee’* = Sport of *H. ventricosa* hybrid by U. Syre-Herz 1987

*H. ‘Tiffney’s Dart Vader’* = Sport of *H. ventricosa* by J. Dreesen 1999

*H. ventricosa* ‘Aureomaculata’ = Sport of *H. ventricosa* by K. Hensen (1963)

*H. ventricosa* ‘Aureomarginata’ = Sport of *H. ventricosa* by K. Hensen (1963)

*H. ‘Waving Wuffles’* = Sport of *H. ventricosa* by T. Avent 1995
References:


Korean Plant Name Index (koreaplants.go.kr).


Matsumura, J., 1905. Index plantarum japonicarum, Tokyo, 2:200 (ex Miquel)


Nash: Torreya, 11:7 1911.


Salisbury, R. A., 1812. On the cultivation of rare plants, especially such as have been introduced since the death of Mr. Philip Miller. *Transactions of the Horticultural Society London*, 1:262–366 (Niobe, Bryocles, p. 335).


Stearn, W. T., 1931. The hostas or funkias, a revision of the plantain lilies. *Gardener's Chronicle*, 3 Ser., 90:27; ic. Plate 22, 23.


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