**H. longipes var. longipes f. sparsa**
(Nakai 1930) W.G. Schmid 1991 stat. nov.

*Botanical Magazine*, Tokyo, 44:514 1930

アキギボウシ = 秋擬宝珠 = Aki Gibōshi

**H. longipes var. lancea** Honda 1935 (in syn.)

Honda: *Botanical Magazine*, Tokyo, 49:696 1935

ホソバイワギボウシ = 細葉岩擬宝珠 = Hosoba Iwa Gibōshi

**History and Nomenclature:** This taxon was described as *H. sparsa* by T. Nakai in 1930. W.G. Schmid (1991) reclassified this taxon (as stat. nov.) and formed a new combination *H. longipes var. longipes f. sparsa*, preferring the older name *sparsa* (Nakai, 1930) over *lancea* (Honda, 1935) on grounds of priority. The new forma applies to distinct populations in the river valleys of the prefectures of Shizuoka (静岡県; Shizuoka-ken) and Aichi (愛知県; Aichi-ken). The differentiating characters of *H. longipes var. longipes f. sparsa* are minor (narrow leaves, sparse flowers, purple anthers) and it occurs sympatrically within the boundaries of *H. longipes* habitat and only in a limited area. The Japanese vernacular name given by Nakai is derived from 秋擬宝珠 = アキギボウシ = Aki Gibōshi. The kanji 秋 means autumn and the derived meaning is “fall (-blooming) hosta.” This taxon was originally named as the species *H. sparsa* by Nakai in 1930. The species epithet *sparsa* (from Latin *sparsus* = sparingly, scattered), referring to its sparse flowering habit. This is not completely supported by field investigation. Some of the wild populations have individuals with considerable flower count, more so than could be characterized as “sparse.” In 1935 Honda described an almost identical specimen as *H. longipes var. lancea* (with

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**H. longipes var. longipes f. sparsa**
(in situ) Tenryu River Area (天竜川 = Tenryugawa = Heavenly Dragon River) Shizuoka-ken (静岡県)

Notice lance-shaped leaves and sparse flowering.

© 1984 H. Sugita
H. longipes f. sparsa is identical to natural allopatric populations found in the wild in Tenryu district, Tenryu River Area (天竜川 = Tenryugawa). One of the most baffling problems with this taxon is its taxonomic association with the cultivar H. ‘Tardiflora’. Some authors have judged H. longipes f. sparsa to be the same as H. ‘Tardiflora’ but this is incorrect as the latter produces yellow anthers and many flowers, while the former flowers sparsely (hence the epithet) and has purple anthers. A solution to this taxonomic problem is important enough to justify a separate chapter in this Species Update. H. longipes f. sparsa is here considered synonymous with populations of a lanceleaved taxon that is found in the same area, encompassing locations in Aichi-ken (愛知県) and Shizuoka-ken (静岡 県). These types are found allopatrically and sympatrically with the typical form of H. longipes (= H. longipes var. vulgata Schmid et Daniels; 1991). These narrow-
leaved forms are locally called 細葉 岩擬宝珠 = Hosoba Iwa Gibōshi = narrow-leaved rock hosta. This form is known since the Meiji period (明治時代; Meijidai; 1868-1912) as Hosoba Iwa Gibōshi. It can be found in temple gardens in central Honshu (see photo page 2) and Honda (1935) described H. longipes var. lancea using the ancient name as a basionym. Honda included habitat beyond Aichi and Shizuoka in southern Chūbu-chihō (中部地方) but he clearly describes the narrow-leaved type of H. longipes. Maekawa (1940) retained the name H. sparsa with the rank of species, but did not include Honda’s H. longipes var. lancea in its synonymy. The reason for this is not explained but may relate to the fact that the name H. sparsa has priority. Fujita (1976) combined many of the local phenotypical populations and included H. longipes f. sparsa (as H. longipes var. lancea) to be the synonymous to H. longipes var. longipes. He did not mention H. longipes f. sparsa. This “inclusive” approach to classification is not accepted here, because distinct phenotypes recognized in wild populations lose their established botanical (as well as horticultural) identity. For this reason, I have retained distinct local types with valid names as separate taxa. The overall sectional placement of the infraspecific taxa in the H. longipes complex is supported by genome size values (H. ‘Tardiflora’ = 26.0 pg) as determined by Zonneveld, B.J.M. and F. Van Iren (2001) and, in part, by RAPD analysis by Y. Yu (2002); and Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. (2005).
The H. ‘Tardiflora’ Problem:
H. ‘Tardiflora’ is related to H. longipes. Its genome size [DNA content (2C) in pg (10\(^{-12}\) gram) per Zonneveld et. al. 2001] is 26.0 pg, very close to that of the other members of the H. longipes complex and confirms this supraspecific sectional relationship. H. ‘Tardiflora’ was imported by the German plant collector-botanist Max Leichtlin (1831-1910) of Baden-Baden. Leichtlin worked closely with the staff of Kew Gardens including Walter Irving, so the Royal Botanic Garden, Kew, received the original plants in 1895. Leichtlin had grown this cultivar in Germany for several years before and was able to observe its late flowering habit, so he named it Funkia tardiflora (= the late blooming Funkia). Leichtlin never validly published this name nor did he record its origin in Japan. He may have obtained it in a Yokohama stall of plant sellers. It is doubtful that he actually ventured into the dangerous and rugged mountains of the then inaccessible Japanese Alps in Shizuoka-ken and Aichi-ken. This cultivar has had a rather convoluted nomenclatural history beginning in 1902, when it was first listed by Wright (1902; as Funkia lancifolia var. tardiflora). This was followed by a number of other, incorrect placements (see Schmid for complete listing; 1991; p. 108). W. Stearn reinstated Hosta ‘Tardiflora’ under Hosta, as H. tardiflora (apud Grey, 1938) and he further described it in detail (Stearn 1953). Stearn was first to note the difference and described H. sparsa as a distinct, separate species with purple anthers and H. ‘Tardiflora’ (as H. tardiflora) with yellow anthers. Fumio Maekawa included it in his 1940 monograph as a synonym (syn. nov.) for H. sparsa Nakai, using invalid name Funkia japonica var. tardiflora. In 1954 Nils Hylander confirmed this difference in anther coloration. Notwithstanding these revelations, Maekawa’s...
The synonymy of *Hosta* 'Tardiflora' with *H. sparsa* Nakai was generally accepted. However, the names used in Japan today reflect the differentiation, i.e., name for *H. sparsa* is Aki Giboshi = アキギボウシ) and a different name is in use for the cultivar *H. ‘Tardiflora’,* namely タルデイフロラギボウシ (the phonetic Katakana equivalent of “Tardiflora”). Considerable morphological differences were again pointed out in Schmid (1991, page 108) and Schmid also differentiated these hostas taxonomically. The analysis below was carried out using morphometric parameters described on pages 292-293 *The genus Hosta – Giboshi Zoku* (ギボウシ属).

**Table 1: Morphometric Differences between *H. sparsa* and *H. ‘Tardiflora’***

<table>
<thead>
<tr>
<th>MORPHOLOGY</th>
<th><em>H. sparsa</em></th>
<th>*H. ‘Tardiflora’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blooming Time*</td>
<td>August/September</td>
<td>September/October</td>
</tr>
<tr>
<td>Number of Flowers</td>
<td>6-13 (Maekawa)</td>
<td>12-50 (Stearn)</td>
</tr>
<tr>
<td>Aspect of Scape/Raceme</td>
<td>obliquely leaning</td>
<td>more erect, upright</td>
</tr>
<tr>
<td>Anther Color</td>
<td>dark purple</td>
<td>yellow</td>
</tr>
<tr>
<td>Veneration</td>
<td>3-6</td>
<td>6-8</td>
</tr>
<tr>
<td>Exsertion of Style beyond</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthers</td>
<td>10-18 mm</td>
<td>2-5 mm</td>
</tr>
</tbody>
</table>

*) At Hosta Hill R.G. (34° North latitude)

Maekawa (1969) dropped the local native name 秋擬宝珠 (= Aki Giboshi = *H. sparsa*) and used *H. ‘Tardiflora’* (as *H. tardiflora*). In his publication, he also transferred the Japanese name Aki Giboshi to *H. ‘Tardiflora’* (as *H. tardiflora*). This placement is obviously incorrect and this transfer is the main reason why Japanese horticulturists have mixed up the names *H. ‘Tardiflora’,* Aki Giboshi (= *H. longipes* f. *sparsa*) and the local name for Aki Giboshi, i.e., Hosoba Iwa Giboshi (細葉 岩擬宝珠 = *H. longipes* var. *lancea*). Schmid (2006) covered the taxonomic connection between *H. sparsa* and *H. longipes* var. *lancea* in detail. D. Grenfell (1990) describes *H. ‘Tardiflora’* as having purple anthers and this supports an explanation for the present horticultural mixup: Plants of *H. sparsa* (= *H. longipes* f. *sparsa*; with purple anthers) were sent to Kew by Nakai. These plants are now cultivated in gardens and are considered *H. Tardiflora' alongside Leichtlin's “true” *H. ‘Tardiflora’*. This has a simple solution: Any specimens with purple anthers are from this import while those with yellow anthers are the original Leichtlin plant, namely *H. ‘Tardiflora’*. 

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Differentiation of Anthers
Left: *H. longipes* f. *sparsa*
Right: *H. ‘Tardiflora’*
(Not Dehisced) © W.G. Schmid
H. longipes var longipes f. sparsa (in BH)
Early Specimen in BH: Determinavit as “Hosta” Coll. 1932.10.10 (F.J. van Melle)
  (= saphma typo. [incorrect spelling] should be “tardiflora”)
This is H. longipes var longipes f. sparsa NOT H. ‘Tardiflora’ (see pages 4-6)
L. H. Bailey Hortorium Herbarium (BH); Department of Plant Biology
Cornell University
H. ‘Tardiflora’ (Irving) Stearn
This is not H. longipes f. sparsa • Note the floriferous habit • © V. Serafin/HL
Habitat and Biology:
The main habitat of allopatric populations of this species extends throughout the southern mountain and foothill areas of Chūbu Region (中部地方 Chūbu-chihō). It also exists sympatrically with populations of the typical species in areas beyond this habitat and this has been confirmed by field investigations (H. Sugita; 1987). Nakai (1930) and Maekawa (1940) described this distinct forma from an allopatric population in the northern reaches of the old provinces of Owari, (尾張国 Owari-no kuni) and Mikawa (三河国；Mikawa-no kuni) in present-day Aichi Prefecture (愛知県 Aichi-ken) and Shizuoka Prefecture (静岡県 Shizuoka-ken). Fujita (1976) listed the type from Musashi similar to the typical species. This habitat is similar to that of H. hypoleuca, except that it occurs at lower elevations near rivers and streams. Fujita (1976) mentioned
epiphytic growth habit but this has not been observed. Most populations in situ might be considered lithophytes, but they additionally absorb nutrients from shallow earth pockets in rock crevices and fissures. Under these taxing conditions, most individuals develop few leaves, as seen in the in situ photographs shown on pages 1 to 3. When moved into cultivation and given good cultural conditions, this species retains its narrow-leaved form, but it develops more leaves and grows into a large clumps, occasionally developing more flowers than described by Mae-kawa (1940; 6-13). The cultivated specimens show luxuriant leaf growth in nutrient-rich soil under good cultural conditions, but the floral count remains as sparse as the sparse count under endemic conditions. (Compare ▼ with ◄).
Plant Morphology:

Plant size 40 cm dia., 30 cm high (16 by 12 in.). Petiole 12.5–17.5 cm by 0.3 cm wide (5–7 by 0.12 in. wide) erect, green, purple-dotted, starting at leaf base, becoming progressively darker towards ground, insome individuals Leaf 7.5–15 cm by 5–7.5 cm wide (3–6 by 2–3 in.), erect and in line with petiole, broadly lanceolate, petiole transition very gradual, not decurrent, acuminate tip, flat surface, erect, rigid, leathery, glossy light green to dark green above, lighter, opaque green below. Venation 4–5, sunken above, very projected, smooth below. Scape 25–30 cm long (10–12 in.), straight, but posing obliquely, purple-dotted entire length, smooth round. Fertile bracts 1 cm long (0.3 in.) navicular, grooved, thin, membranous, white or whitish green purple-tinted, imbricated, withering shortly after anthesis. Raceme 12 cm, 6–8 flowers. (see detail above ▲) Flowers pale purple, Tepals Type D Coloration (Schmid 1991), held erect or in horizontal to subhorizontal position on long, purple pedicels, perianth 5 cm (2 in.) long, funnel-shaped, expanding, in the central part dilated slightly bell-shaped, tepals spreading straightly to ±angled or slightly recurved to the axis of perianth, thin narrow hexagonal tube. Anthers purple. September/October. Fertile.

Genome Size: DNA content (2C) in pg (one (10^-12) gram) = average given 26.0 ± 0.3. (Zonneveld, B.J.M. and F. Van Iren (2001).

Pollen: All of the members of section Pycnolepis (the H. longipes complex) have Subtype RG (V) (= rugulate granulate; subtype V) with shape OS (oblate-spheroidal) (Pollen shape after Erdtmann, 1966). Pollen size varies, depending on the variant examined and is in the range of P 91.1 ± 5.0 × E 85.2 ± 6.0 and P 91.8 ± 7.7 × E 86.5 ± 7.7 (Sizes given in μm · polar axis (P) × equatorial axis (E)). H. ‘Tardiflora’ is closely related to H. longipes and shows

H. longipes f. sparsa: Pollen Type RG(V) Grain Surface Detail (Rugulate-Granulate) SEM × 4000 (M.G. Chung)
the same pollen size and type as the other members of section Pycno-lepis (the *H. longipes* complex). The pollen of this cultivar was examined and typified by M.G. Chung and S.B. Jones, 1989, and is Subtype RG(V) (Note: interspecific variation of subtype V is recognized by the degree of fusion and density of the granules and the degree of fusion of the granulate elements. The pollen characteristics of *H. longipes* f. *sparsa* and *H. ‘Tardiflora’* support the placement of these taxa in section Picnolepis. This treatment is followed by Schmid (1991; 2010).

**DNA Banding:** Recent RAPD analysis (Y. Yu, 2002; Sauve, R.J., S. Zhou, Y. Yu, and W.G. Schmid. 2005) did not include *H. longipes* f. *sparsa* and *H. ‘Tardiflora’*. Other taxonomic parameters including palynology and morphometrics indicate a strong relationship with the other members of section Picnolepis. It was concluded that these taxa can be differentiated with these data alone.

**Taxonomic Type and Synonymy:**


*Botanical Magazine*, Tokyo, 44:514 1930 (with respect only to the populations in southern Chûbu)

Type: In T1 (T. Mori). Hab. wet rocks on river banks [Tenryugawa (天竜川) and Otogawa (男川)] in Shizuoka Prefecture (静岡県) and Aichi Prefecture (愛知県) and sporadically in other parts of southern Chûbu Region (中部地方).

**Botanical Synonyms:**

*H. sparsa*: Maekawa 1940

*H. longipes* var. *lancea* Honda: *Botanical Magazine*, Tokyo, 49:696 1935 (pp.; with respect to the sparse-flowered populations observed in southern Chûbu)

*H. tardiflora* Stearn 1938/1953; Maekawa 1969; pp incorrect


**Japanese Synonyms:**

Aki Gibôshi = アキギボウシ = 秋擬寶珠
Hosoba Iwa Gibôshi = ホソバイワギボウシ = 細葉岩擬寶珠

**Horticultural Synonyms:**

*H. tardiflora* f. *sparsa* incorrect

*H. tardiflora* incorrect

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H. longipes f. sparsa in Cultivation:
Aside from academic vouchers, the origins of cultivated specimens of H. longipes f. sparsa is not well known. K. Watanabe of Gotemba (御殿場市) operates a nursery and is the source of many hosta imports. In his 1985 book (Watanabe; 1985), he includes H. longipes f. sparsa but as a synonym of H. longipes var. lancea. He has also been a commercial source for this species. This may be one of the reasons why there is confusion about these two names in horticulture. Since these are botanical names, they must follow taxonomic priority of names requires that H. longipes f. sparsa be used. Numerous photographs of authentic specimens under cultivation attest to the fact that a number of phenotypes have been collected. Some have very long leaves (as seen in the photo above – compare to leaf sizes in situ to the right), while other clones show reduced length to width ratio. My own observations in the habitat has shown that there can a considerable difference of leaf length/width, but most wild populations have much shorter leaves with the aver-
age ratio measured in situ being 3:1 to 4:1, which is very close to the botanical descriptions. It is not known why some cultivated plants develop longer leaves. This forma does not appear by name on the A.J. Summers (1972) list. However, it is possible that some of the “unnamed” imports on the list may have been *H. longipes f. sparsa*, but it is no longer possible to ascertain their true identity. In the mid-1980s, some vouchers were obtained by the author from academic sources. In Europe as well as North America specimens of *H. tardiflora* (also as *H. ‘Tardiflora’*) were intermingled with *H. longipes f. sparsa*. Specimens received by Kew from Nakai turned out to have purple anthers (Grenfell 1990) and other differences (see page 4-5). All of the cultivated clones purported to be this forma were eventually differentiated from *H. ‘Tardiflora’* by morphometric analysis and are now recognized as the form. The several specimens obtained from Japanese horticultural sources as hosta nurseries as Aki Gibōshi (秋擬宝珠) and Hosoba Iwa Gibōshi (細葉 岩擬宝珠) have also been positively identified. K. Watanabe in his detailed 1985 treatise (in Japanese) also mentioned the *H. ‘Tardiflora’*/*H. longipes f. sparsa* (as *H. longipes var. lancea*) mixup and stated: “In Japan, Aki Gibōshi is mixed up (with *H. ‘Tardiflora’*) because *H.
I reported this in my monograph (W.G. Schmid 1991). The names might cause confusion because Hime Iwa Gibōshi is the Japanese name for *H. gracillima*. Very similar is the cultivar *H. ‘Gosan Golden Dwarf’*, which originated at Hosta Hill (see below).

**Horticultural Progeny:**

*H. longipes* f. *sparsa* (= *H. longipes* var. *lancea*) is available in the trade. Since several clones were collected from the habitat, phenotypical differences should be expected. Some clones have much longer leaves on cultivated specimens than those observed in the wild and the reason for this is unknown (see pages 10-11). Other differences concern mainly the leaf size and shape and the considerable variation is seen on the in situ photo on page 10. The species forma has a limited habitat in which most of the clones observed (Schmid 1991; 2006) have similar macromorphology, except that stated for the leaves. According to the AHS registration database, *H. longipes* f. *sparsa* is rarely used for hybridizing. One hybrid made at Hosta Hill involves *H. ‘Gosan Golden Dwarf’* (W.G. Schmid 2009). The

*H. ‘Gosan Golden Dwarf’*

(W.G. Schmid 2009)

© Hosta Hill R.G. 1991.09.07
parentage is ♀ H. longipes f. sparsa × ♂ H. ‘Ogon Iwa’. The yellow form of H. longipes is in gardens and is (per the ICNCP) incorrectly called H. longipes ‘Aurea’. No other cultivars with H. longipes f. sparsa are in current databases.

References:
Maekawa, F., 1940. The Genus Hosta. J. of the Faculty of Science, Imperial University Tokyo, Section 3 Botany, Vol. 5:389.

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