



Billbergia BROMELIACEAE

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Billbergia Thunberg (Pl. Bras. 3: 30, 1821). **Type:** *Billbergia speciosa* Thunberg. — **Bromelioideae** — **Lit:** Smith & Downs (1979: 1975–2036, Fl. Neotropica); Barros & Costa (2008: monograph Rio de Janeiro State); Gaiotto F. & al. (2010: monograph Paraná State). **Distr:** S Mexico to Bolivia and N Argentina, with a centre of diversity in Brazil. **Etym:** For Gustaf Johan Billberg (1772–1844), Swedish botanist and zoologist.

Incl. *Anacyclia* Hoffmannsegg (1833). **Type:** *Anacyclia farinosa* Hoffmannsegg [*nom. illeg.*, ≡ *Bromelia zebrina* Herbert].

Incl. *Eucallias* Rafinesque (1838) (*nom. illeg.*, Art. 52.1). **Type:** *Eucallias versicolor* Rafinesque [*nom. illeg.*, ≡ *Bromelia zebrina* Herbert].

Incl. *Jonghea* Lemaire (1852). **Type:** *Jonghea splendida* Lemaire.

Incl. *Cremobotrys* Beer (1854) (*nom. illeg.*, Art. 52.1). **Type:** *Bromelia zebrina* Herbert.

Incl. *Helicodea* Lemaire (1864). **Type:** *Helicodea baraquinia* Lemaire [typification according to L. B. Smith & Downs, Fl. Neotrop. 14(3): 1977, 1979].

Perennial terrestrial or epiphytic rosette plants, usually acaulescent, offsetting and with usually short stolons; **Ros** broadly funnel-shaped to tubular; **L** sheaths inconspicuous to distinct, **L** lamina narrowly to broadly linear-oblong, often with conspicuous pale cross-bands, tip often rounded tongue-shaped with a small mucro, margins coarsely to finely serrate or rarely entire; **Inf** simple or compound, peduncle erect or curved, fliferous part often arching to nutant; peduncular **Bra** usually large, thin, often bright red to magenta, overlapping; **Fil** large and showy, actinomorphic or slightly zygomorphic, sepals and petals forming a short to long epigynous tube; **Sep** lobes free, erect, glabrous to densely farinose or floccose-lanate; **Pet** free, at the basis with 2 scales, with a long claw and a somewhat broader, long but still narrow tip, ascending to recurved or tightly recoiled at anthesis; **St** usually exerted; **Fil** all free or those of the inner whorl adnate to the petal base to the height of the scales; **Ov** completely inferior; **Sty** longer than the stamens; **Fr** green to violet fleshy berries, globose, with persistent calyx.

A genus of some 60 species. *Billbergia* forms part of the higher core *Bromelioideae* in all recent molecular phylogenies. It is with the exception of 2 species strongly supported as monophyletic, and is closely related to *Quesnelia* and a small group of *Aechmea* species (Sass & Specht 2010). Evans & al. (2015) also found 3 species outside a well-supported core *Billbergia* clade. The genus is traditionally divided into 2 subgenera, Subgen.

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Billbergia (inflorescences simple or branched, peduncle often glabrous; petals recurved or slightly coiled) and Subgen. *Helicodea* (Lemaire) Baker 1889 (inflorescences simple, peduncle densely white-lanate; petals coiled), but the molecular phylogeny of Sass & Specht (2010) found no support for this division.

Succulence: Succulence is absent or ill-defined in most species of the genus, although many have distinctly coriaceous leaves and are native to semi-arid places. In cultivation, the degree of succulence of several species is strongly influenced by the watering and light regime, with more pronounced succulence under dry and bright conditions. Below, a very small selection of succulent-leaved species (all from subgen. *Billbergia*) is presented by way of example.

Horticulture: Most species have relatively short-lived flowers, making them unattractive for horticultural purposes. The only species more commonly seen in the trade is *B. nutans*, and several cultivars and selections are encountered. Formally named intergeneric hybrids are known with *Aechmea* (= ×*Billmea*), *Cryptanthus* (= ×*Biltanthus*, see separate entry in this handbook), *Neoregelia* (= ×*Neobergia*, see separate entry in this handbook), and *Quesnelia* (= ×*Billnelia*).

The following name is of unresolved application but is referred to this genus: *Tillandsia osyana* hort. ex K. Koch (1862) (*nom. inval.*, Art. 32.1c).

B. brasiliensis L. B. Smith (Arq. Bot. Estado São Paulo ser. 2, 1: 105, 1943). **Type:** Brazil, Santa Catarina? (*De Vos* s.n. in *Hort. Verschaffelt* s.n. [[icono]: Rev. Hort. 41: 87, Fig. 21, 1869]). — **Lit:** Barros & Costa (2008: 1175–1176). **Distr:** Brazil (Rio de Janeiro, Santa Catarina?); ecology not described. – Fig. 1.

Incl. *Helicodea leopoldii* Hort. Verschaffelt ex Lemaire (1864) ≡ *Billbergia leopoldii* (Hort. Verschaffelt ex Lemaire) Linden (1869) (*nom. illeg.*, Art. 53.1); **incl.** *Billbergia ianthina* hort. ex E. Morren (1871) (*nom. inval.*, Art. 32.1c); **incl.** *Billbergia nuptialis* Hort. Makoy ex E. Morren (1871) (*nom. inval.*, Art. 32.1c); **incl.** *Billbergia kuhlmannii* L. B. Smith (1950).

Acaulescent, to 80 cm tall, with short ascending rhizomes; **Ros** rather narrowly tubular, with 8–10 leaves; **L** sheath broadly elliptic, rigid, margins spiny, **L** lamina to 80 × 6–7 cm, basal parts with broad pale cross-bands, thick and fleshy (E. Gouda, pers. comm.), somewhat lepidote, esp. on the lower face, tip broadly acute to roundish, apiculate, margins with laxly arranged **Sp**, these brown, antrorse, 1.5–3 mm; **Inf** decurved, simple, floriferous part usually nodding, somewhat densely 28- to 30-flowered, densely white-farinose, peduncle 35–41 cm, white-farinose; peduncular **Bra** congested below the floriferous part, lanceolate, acute, rose-red; floral **Bra** minute, almost covered by the indumentum; **Fl** sessile, suberect, 65 mm; **Sep** very slightly asymmetrical, oblong, 10–17 × 6 mm, rose-red, white-farinose;

Fig. 1 *Billbergia brasiliensis*. (Copyright: E. J. Gouda)



Pet linear, acute, \pm 50 mm, greenish-rose with dark blue-purple apical part, with 2 fimbriate scales, contorted or somewhat spirally recurved for a short distance only; **St** included; **Fr** not described.

Originally described from Santa Catarina, but without locality data. Barros & Costa (2008) report the taxon from Rio de Janeiro, and its occurrence in Santa Catarina is unlikely. Suspected as probable intersubgeneric hybrid by Smith & Downs (1979: 2007) and Reitz (1983: 485–486), but compared with the similar *B. pyramidalis* by Barros & Costa (2008).

B. euphemiae E. Morren (Belgique Hort. 22: 11, tt. 1–2, 1872). **Type:** Cult. BG Liège (*Anonymus* s.n. [LG, GH [photo]]). — **Distr:** Brazil (Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro); epiphytic or lithophytic in forest. **I:** Smith & Downs (1979: 2013); Barros & Costa (2008: 1178); Machado & al. (2016: 138).

Incl. *Billbergia euphemiae* var. *nudiflora* L. B. Smith (1955); **incl.** *Billbergia euphemiae* var. *saundersioides* L. B. Smith (1955); **incl.** *Billbergia euphemiae* var. *purpurea* M. B. Foster (1957).

Acaulescent, to 60–70 cm tall, with short, stout, ascending rhizomes; **Ros** broadly tubular, with few leaves; **L** sheath large, narrowly elliptic, entire, **L** lamina 30 – 64 \times (2.4–) 3–6 cm, thickly coriaceous, long-oblong, with white-lepidote transverse bands, tip rounded to broadly acute, apiculate, margins with laxly arranged small teeth; **Inf** decurved, 22–35 cm, floriferous part nodding to pendent, laxly to densely 6- to 20-flowered, simple, peduncle red, densely white-farinose; peduncular **Bra** suberect, large, lanceolate-elliptic, acute, whitish-red, upper **Bra** congested below the floriferous part, lax to somewhat dense; **Fl** spreading, 50–60 mm, very shortly pedicellate; **Sep** asymmetrical, 12–18 mm, narrowly elliptic, rounded, minutely apiculate; **Pet** linear, \pm 30 mm, linear, obtuse, green, purple or dark blue towards the tip, with 2 fimbriate scales, never coiled; **St** included; **Fr** not described.

Divided into 4 ill-defined varieties by Smith & Downs (1979: 2012), but the differences appear to be minor, and var. *nudiflora* was synonymized already by Barros & Costa (2008: 1176). The

leaves are quite succulent at least in some clones, and Pereira & al. (2011) record up to \pm 50% water storage volume.

B. nutans H. Wendland *ex* Regel (Gartenflora 18: 162, t. 617, 1869). **Type:** BG Herrenhausen (*Anonymus* s.n. [LE?; [icono]: l.c. t. 617]). — **Lit:** Fagundes & Mariath (2010: fruit anatomy). **Distr:** Brazil (Paraná, Santa Catarina, Rio Grande do Sul), Uruguay, Paraguay, Argentina (Jujuy, Salta, Misiones, Córdoba); epiphytic or rarely lithophytic. **I:** Rauh (1990: 119: Fig. 88); Gaiotto F. & al. (2010: 89); Klein V. & Klein (2013: 76–77); Roguenant & al. (2016: 527). – Fig. 2.

Incl. *Billbergia schimperiana* Wittmack *ex* Baker (1889) \equiv *Billbergia nutans* var. *schimperiana* (Wittmack *ex* Baker) Mez (1896); **incl.** *Billbergia nutans* fa. *rupestris* Hassler (1919); **incl.** *Billbergia nutans* var. *striata* Reitz (1965).

Acaulescent, 40 (–50) cm tall, with numerous short stolons and forming dense somewhat untidy-



Fig. 2 *Billbergia nutans*. (Copyright: E. J. Gouda)

looking clumps; **Ros** narrowly tubular, with 12–15 erect to somewhat arching leaves; **L** sheath oblong, 4 – 5 × 2 – 2.5 cm, subglabrous, **L** lamina linear to very narrowly triangular, to 60 (–70 or 100 cm under shady conditions) × (0.6–) 1–1.7 (–2) cm, somewhat canaliculate, leathery-coriaceous to distinctly fleshy, sparsely appressed-lepidote, margins near the base spinose-serrate, **Sp** 1 mm; **Inf** decurved, to 40 cm, appearing simple but composed of usually 1-flowered branches, peduncle very slender, glabrous, flowering part arching to drooping, few-flowered; peduncular **Bra** similar to the leaves, densely imbricate, basal **Bra** long-attenuate, green, upper **Bra** shorter, red, all grey-lepidote, longer than the internodes; floral **Bra** small, inconspicuous; **Fl** somewhat distichously arranged, sessile to shortly pedicellate; **Sep** erect, narrowly elliptic to ovate-lanceolate, acute, 15–20 (–27?) mm, rose with dark blue margins, towards the tip green with bluish blotch; **Pet** 35–46 mm, linear, obtuse, pale green with blue margins, with 2 coarsely serrate scales, tips pure green, spreading to recurved; **St** included; **Fil** of the inner series shortly connate with the petals; **Fr** ellipsoid, 35–45 × 12–14 mm, green, glabrous.

A naturally occurring form from Rio Grande do Sul with yellow longitudinal lines on the leaves was separated as var. *striata*. According to Gaiotto F. & al. (2010), *B. schimperiana* falls within the variability of the species, and recognition as separate taxon at any rank seems unwarranted. Guillot Ortiz & al. (2016) report the taxon as local neophyte in Spain.

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