

# *Gavilea gladysiae* (Chloraeae: Orchidaceae), a new orchid from southern Argentina and Chile

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**Abstract.** A new species, *Gavilea gladysiae*, is described and illustrated. This rare species inhabits the humid forests of Santa Cruz (southern Argentina) and the Magellan region (southern Chile). This species has been mistakenly identified as *Gavilea kingii* in herbarium collections and previous floristic works.

**Key Words:** *Gavilea*, Orchidaceae, Patagonian flora, southern Argentina, southern Chile, taxonomy.

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*Asarca kingii* Hook. f. was described in 1847 based on material collected at Port Famine, Magellan Region, Chile. The species was described as having small yellow flowers, lanceolate sepals, petals similar to the sepals but shorter, an entire, oblong, obtuse lip, and a short column (Hooker, 1847; Fig. 1C). In subsequent studies of the genus *Asarca* Lindl., this species was mentioned, but no new material was collected (e.g., Richard, 1852; Kraenzlin, 1904; Reiche, 1910; Skottsberg, 1924; Garay, 1954). Without seeing any material, but based on Hooker's comment on the short column, Correa (1956) transferred *Asarca kingii* to *Gavilea* Poepp. Later, in 1969, the same author placed *Gavilea cardioglossa* (Reiche) Martic var. *patagonica* (Garay) M. N. Correa, under the synonymy of *G. kingii*. The species was originally based on material collected at Lago Nahuel Huapi, Río Negro, Argentina, and Correa (1969) cited specimens from the Argentinean provinces of Neuquén (originally identified as *G. cardioglossa* var. *patagonica*) and Santa Cruz (originally identified as *G. kingii*).

Later, Lehnebach and Riveros (2000) reported the collection of *Gavilea kingii* in the X Region of Chile and expanding the northern limit of its distribution. Domínguez (2003) reported the collection of the species in the Magellan Region, near the type locality of the species. Finally, Ormerod (2002) disagreed with the placement of *G. cardioglossa*

var. *patagonica* as a synonym of *G. kingii* and elevated the variety to the species level, naming it *Gavilea trullata* Ormd.

After comparing several specimens identified as *Gavilea kingii* with the type specimen deposited in the herbarium at Kew (K), it has become evident that three different entities have been included under this name. The first one is *Gavilea cardioglossa* var. *patagonica*. This taxon should not be considered a synonym of *Gavilea kingii*, as suggested by Ormerod (2002), but of a different species, *G. trullata*. The specimen collected by Lehnebach and Riveros (2000) corresponds to this species. The second entity is *G. kingii*, from which the only known collection is the type specimen. The third entity corresponds with the remaining specimens wrongly identified as *Gavilea kingii* that do not match with the type specimen (e.g., Correa, 1969; Domínguez, 2003; Novoa et al., 2006). These specimens represent a new species, described below.

***Gavilea gladysiae* Chemisquy, sp. nov.** Type: Argentina. Prov. Santa Cruz: Dept. Lago Argentino, Parque Nacional Los Glaciares, Glaciar Perito Moreno, Sendero de la Costa, 21 Dec 2000, C. Guerrido & D. Fernández 296 (holotype: SI; isotype: NY). (Fig. 1A, B)

Herba erecta. Caulis 40–55 cm. Folia basilaria pseudo-rosulata, gradatim sursum dispersa, oblongo-lanceolata,



FIG. 1. A, B. *Gavilea gladysiae*. A. Habit and inflorescence. B. Flower details. C. *G. kingii*, flower details. D. *G. trullata*, flower details. (A, B from the holotype; C from *Capt. King, s. n.*, K, reproduced with permission from Royal Botanic Gardens, Kew; D from *Diem 2223*, BAB.)

erecta, acuta. Spica 10–13 cm, multiflora, bracteis ovarium subaequantibus. Flores flavovirentes. Sepalum dorsale oblongum, acuminatum, in apice recurvum. Sepala lateralibus oblongo-lanceolata, acuminata. Petala oblonga, acuminata, triente basali papillis prasinis humilibus seriatis tecta. Labellum sepalis aequilongum, oblongum, integrum, in apice obtusum, acuminatum, ad marginem repandum; papillae illis petalorum similes.

Herb, stem erect, 40–55 cm tall, from a fascicle of long, fleshy, roots. Leaves 5–8, in pseudorsette or ascending scattered along the stem, 14–21 × 2–3.5 cm, oblong to linear-lanceolate, fleshy, apex acute, gradually reducing to bracts. Inflorescence 10–13 cm long, dense, producing 10–17 flowers. Floral bracts conspicuous, lanceolate, not longer than the ovary, 1.7–2.7 × 0.4–0.55 cm, hyaline, acuminate, 4-nerved. Flowers greenish yellow. Dorsal sepal oblong, (1.2–)1.6–1.9 × 0.4–0.6 cm, apex acuminate and recurved, membranaceous, 5-nerved. Lateral sepals oblong-lanceolate, 1–1.4 cm × 0.3–0.5 cm, acuminate, membranaceous, 5-nerved. Petals oblong, 0.9–1.2 × 0.35–0.55 cm, acuminate, membranaceous, 5-nerved, with green minute tubercles or excrescences over the veins, covering basal third of the petal. Lip with shape, color, texture and papillae similar to the petals, but, 0.85–1.3 × 0.5–0.7 cm, apex cuspidate, margin repand, membranaceous, 6-nerved. Column short and stout, (0.4–)0.6–0.65 cm long, terete, in a 90° angle with the ovary, yellow with red lateral margins. Ovary oblong-lanceolate, 1.65–1.9 × 0.5–0.6 cm, erect. Capsule oblong-ovate, 1.8–2.5 × 0.8–1 cm, papery, shiny, 6-ribbed, with remains of floral pieces at the apex.

**Distribution.**—The new species is endemic to the southern provinces of Argentina and Chile, and until now has only been collected in the Province of Santa Cruz (Argentina) and the Magellan Region (Chile; Fig. 2). *Gavilea gladysiae* inhabits humid forests mainly formed by *Nothofagus*, where it grows protected from the strong winds by the trees and shrubs (Domínguez, 2003; Novoa et al., 2006; Johnson, unpubl. data).

**Phenology.**—Flowering occurs in summer (December–February).

**Etymology.**—This species is named in honor of Gladys Rosciszewski, who taught me the beauty of Biology and encouraged me throughout my career.

**Additional specimens examined. ARGENTINA.** PROV. SANTA CRUZ. Dept. Lago Argentino: Fiordo Spegazzini, Bahía Puesto Vacas, Lat S 50° 12', Long W 73° 13', 19 Jan 1967, O. Boelcke et al. 12588 (SI); Parque Nacional Los Glaciares, Canal de los Témpanos, Sendero de la Costa, 7 Dec 2005, C. Guerrido & D. Fernández 687 (SI); Ventisquero Moreno, 10 Dec 1968, E. de Marco de Kreibohm 677a (SI).

**CHILE.** XII REGIÓN. PROV. MAGALLANES. Punta Arenas, sector Fuerte Bulnes, 53°37'S, 70°56'W, 25 m, 19 Dec 2004, E. Domínguez 310 (CONC).

In view of the few collections made, *Gavilea gladysiae* seems to be a rare species. In fact, Domínguez (2003) reported a population of only ten individuals for southern Chile while Andrés Johnson (unpubl. data) only mentioned seven plants growing in Santa Cruz, Argentina. In both studies, the specimens were identified as *G. kingii*.

*Gavilea gladysiae*, together with *G. cardioglossa*, *G. trullata*, *G. supralabellata* M. N. Correa and *G. kingii* are the only species of *Gavilea* with entire lip, and they have been assigned to the *Gavilea* section *Anadenia*. Differences among *G. gladysiae* (Fig. 1B), *G. kingii* (Fig. 1C) and *G. trullata* (Fig. 1D), species usually grouped under *G. kingii*, are summarized in Table I. The main differences are the color of the



FIG. 2. Geographic distribution of *Gavilea gladysiae* (circles; the star indicates the type locality), *G. trullata* (squares) and *G. kingii* (diamond).

TABLE I  
CHARACTERS COMPARING *GAVILEA GLADYSIAE* WITH *G. TRULLATA* AND *G. KINGII*.

	<i>Gavilea gladysiae</i>	<i>Gavilea trullata</i>	<i>Gavilea kingii</i>
Inflorescence	flowers densely set	flowers laxly set	flowers densely set
Flower color	yellow	white	yellow
Lip	oblong, apex blunt with a point	trullate, apex acuminate	oblong, apex obtuse
Lateral sepals	oblong-lanceolate, apex acuminate	oblong-lanceolate, apex caudate	lanceolate, apex acute
Excrescences of the lip	basal third of the lip	up to the apex	up to 2/3 of the lip
Excrescences of the petals	basal third of the petal	up to the apex	basal third of the petal

flowers, the shape of the sepals and lip, and the distribution of the excrescences on the lip and petals. Moreover, *G. trullata* and *G. gladysiae* have an allopatric distribution, since *G. trullata* has been collected in the provinces of Neuquén and Río Negro (Argentina) and the X Region (Chile) while

*G. gladysiae* has been collected in the province of Santa Cruz (Argentina) and the Magellan Region (Chile), near the type locality of *G. kingii* (Fig. 2). Differences among *G. gladysiae* and other species of *Gavilea* are summarized in the following key of species.

### Key to *Gavilea gladysiae* and similar species

1. Lip three-lobed.
  2. Flowers yellow.
    3. Lateral sepals acuminate; apical lobule of lip acute.....*G. litoralis*
    3. Lateral sepals caudate, with fleshy apex; apical lobule of lip oblong.....*G. lutea*
  2. Flowers white.
    4. Apical lobule of lip oblong, lip with scarce tubercles and excrescences, lip margin crenate.....*G. australis*
    4. Apical lobule of lip triangular, with abundant tubercles and excrescences, lip margin entire.
      5. Petals with tubercles over the central veins, apical lobule of the lip elongated, triangular to almost linear.....*G. araucana*
      5. Petals without tubercles, lip densely covered with long warts and excrescences, apical lobule of the lip not elongated.....*G. wittei*
1. Lip entire.
  6. Lip densely covered with tubercles and excrescences, sepals and petals awl-shaped, naked petals.....*G. supralabellata*
  6. Lip with few warts over the veins, petals with tubercles over the veins.
    7. Lateral sepals subulate-lanceolate, tail pointed, with fleshy apex.....*G. cardioglossa*
    7. Sepals and petals oblong or oblong-lanceolate, apex acute or acuminate.
      8. Lateral sepals lanceolate, lip apex obtuse .....*G. kingii*
      8. Lateral sepals oblong-lanceolate, lip apex acute or acuminate.
        9. Lip oblong, with warts and excrescences up to the basal third of the lip, flowers yellow .....*G. gladysiae*
        9. Lip triangular, with warts and excrescences up to the apex of the lip, flowers white .....*G. trullata*

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### Appendix 1. Additional specimens analyzed in the present study

*Gavilea kingii* (Hook f.) M. N. Correa. CHILE. XII REGION: MAGALLANES, Puerto del Hambre, *Capt. King s. n.* (Typus, K).

*Gavilea trullata* Ormrdr. ARGENTINA. NEUQUÉN: LOS LAGOS, Quetrihué, 20 Dec 1952, *Diem 2223 (BAB)*; 1939, *Diem 2007 (SI)*. RÍO NEGRO: BARILOCHE, Lago Nahuel Huapi, Brazo Tristeza, 18 Jan 1942, *Pérez-Moreau 48490 (Typus; BAA)*; Puerto Blest, Lago Frías, 14 Mar 1959, *de la Sota 2191 (LIL)*.