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# Galeottia grandiflora

Text by Noelia Belfort Oconitrillo and Franco Pupulin/Watercolor by Sylvia Strigari

Tribe CYMBIDIEAE  
Subtribe ZYGOPETALINAE  
Genus GALEOTTIA A.Rich.

**Galeottia grandiflora** A. Rich., Ann. Sci. Nat. Bot. sér. 3, 3: 25. 1845. Type: Mexico. Oaxaca, Cordillera, 1840, *H. Galeotti 5066* (P). Synonyms: *Batemannia grandiflora* (A.Rich) Rchb.f., Bonplandia 4: 323. 1856. *Zygopetalum grandiflorum* (A.Rich) Benth. & Hook.f. ex Hemsl., Biol. Centr.-Amer. Bot. 3(16): 251. 1884. *Mendoncella grandiflora* (A.Rich) A.D.Hawkes, Orquídea (Niteroi) 25(1): 7. 1963.

Epiphytic, caespitose *herbs*, erect, to 30 cm tall, each shoot provided with distinct pseudobulb. *Pseudobulbs* ovoid, four-angled, smooth, pale green, 4–6 × 2.5–3.5 cm. *Leaves* 2–3, plicate, petiolate, elliptic, acute, to 25 × 10 cm. *Inflorescences* lateral, suberect to pendent, a few-flowered raceme, to 20 cm long, the peduncle terete, provided with 2–3 widely ovate, acute, loose bracts. *Ovary* clavate, to 4 cm long including the pedicel, subtended by a cucullate bract to 3 cm long. *Flowers* spreading, the sepals and petals greenish, longitudinally striped with dark purple to brown, the lip white with red-purple stripes. *Dorsal sepal* lanceolate, acute, slightly concave toward the apex, the margins undulate, 4.0–4.5 × 1.5–1.8 cm. *Lateral sepals* obliquely lanceolate, acute, inserted on the column foot, deeply concave toward the base, the inner basal margin convolute, 4.5–4.8 × 2 cm. *Petals* obliquely lanceolate to subtriangular, acute, inserted on the column foot, 4 × 1.8 cm. *Lip* fleshy, clawed, the lamina trilobed, 3.0 × 2.5 cm; the lateral lobes ovate, fimbriate on the apical margin, the midlobe widely ovate to subrhombic, the apical margins irregularly serrulate; callus subbasal, fleshy, semicircular, provided with several keels distally ending in short, acute teeth. *Column* arcuate, with a distinct foot, about 2 cm long, widened toward the apex, provided with broad, lateral, semicircular wings, the clinandrium deeply cucullate, fimbriate; rostellum tridentate, the central tooth longer. *Anther cap* cucullate, subquadrate-subrhombic, compressed, two-celled. *Pollinia* four, in two pairs of different sizes, linear-oblong to obovoid, on a triangular stipe; viscidium peltate.

The French naturalist Henri Guillaume Galeotti was born in Paris in 1814 from an Italian family originally from Milan. He was raised in Brussels, where he developed his passion for natural sciences and where he graduated as a geologist in 1830 under the tutorship of the eminent Flemish cartographer Philippe Vandermaelenn. His brilliant thesis on the geology of the Belgian province of Brabant won the gold medal from the Académie Royale des Sciences et Belles Lettres of Belgium in 1835.

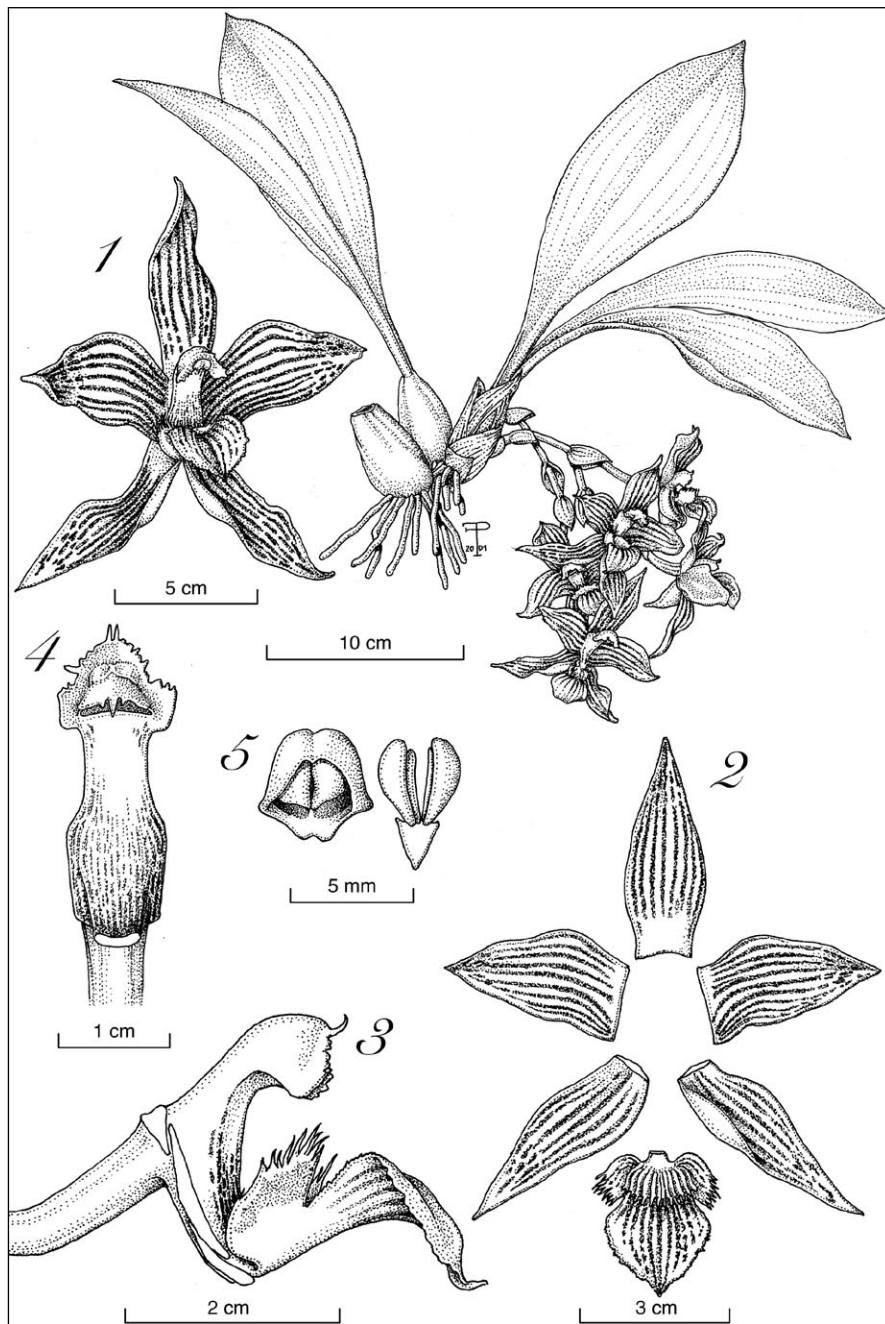
A few months before being bestowed his prize, Galeotti left for Mexico, where he was sent by the Vandermaelen brothers to study the geology and plants of that country. He traveled throughout the country for five years, mostly exploring the plateau of Mexico and collecting some 7,000 herbarium specimens, among which a wide variety of Cactaceae, probably his preferred family. Together with another great plant hunter and orchidologist, Jean Linden, he climbed the Pico Orizaba at 18,000 feet (5,486 m), the third highest mountain north of Colombia after Mount Logan and Mount McKinley (Denali). Back in Europe, he established a business as a cactus importer, and in 1853 he was appointed director of the Jardin Botanique de Bruxelles. He died prematurely from tuberculosis in 1858 at the age of 44.

In 1844–1845 he published, together with his colleague Achille Richard (1794–1852), a short monograph (*Monographie des Orchidées mexicaines*) and a larger work devoted to the orchids of Mexico. In the latter, *Orchidographie mexicaine*, they presented six new orchid genera and 137 new species. Among these, the genus *Galeottia* was proposed by Richard to honor his colleague and friend. The type species for the genus, *Galeottia grandiflora*, was based on a plant collected by Galeotti in 1840 in the Cordillera of Oaxaca, and in the original description it was illustrated with a pencil sketch made by Galeotti himself.

Most species of *Galeottia* have been historically first described in other genera of the *Zygopetalum* complex, which also includes *Batemannia* Lindl., *Zygopetalum* Hook. and *Zygosepalum* (Rchb.f.) Rchb. f., because of the difficulties in assigning clear generic circumscriptions within this

group of pseudobulbous *Zygopetalinae*. Alex D. Hawkes (1927–1977) added to the confusion in 1963, when he proposed replacing the name *Galeottia*, which he considered invalid, with *Mendoncella*, in the erroneous belief that the name *Galeottia* had been previously and validly used by Martens and Galeotti to describe a family of grasses (Poaceae). Actually, Martin Martens and Galeotti had not published *Galeottia* in 1842, as Hawkes thought, as they neither provided a description for this name nor accept it as a valid genus. As *Galeottia* M.Martens & Galeotti was a *nomen invalidum* and *nomen nudum*, according to the scientific nomenclature of plants, the substitute proposed by Hawkes was both illegitimate and superfluous. Meanwhile, Hawkes transferred to his *Mendoncella* three species of *Galeottia*, and to these, Leslie A. Garay added a new species and combined another seven taxa under that genus in 1973.

As presently understood, *Galeottia* comprises 12 species ranging from southern Mexico (North America) through Central America to Peru and northern Atlantic Brazil (South America), with the highest diversity on the western slopes of the Peruvian and Colombian Andes (Pupulin 2009). Garay (1973) considered *Galeottia* (as *Mendoncella*) close to *Batemannia*, from which it can be distinguished by the petals decurrent on the column foot, a corrugated or flabellate crest at the base of the hypochile and the lateral sepals inrolled-gibbose at the base. As suggested by one of the authors (Pupulin 2009), the prominent ribbed crest of the lip, the two-winged column and the distinctly saccate base of the lateral sepals characterize the genus *Galeottia* among the taxa of the *Zygopetalum* complex. Whitten and collaborators (2005) carried out a combined analysis of nuclear and plastid DNA data sets that elucidated a strongly supported clade including *Galeottia*, together with *Batemannia* and *Zygosepalum labiosum*, as the most derived group of the *Zygopetalum* complex. Some species of *Galeottia* (plus *Batemannia lepidia*), however, are on a long branch relative to the other members of this clade, and the inclusion of additional genome regions in the molecular analysis is still required for a better understanding



*Galeottia grandiflora*. The plant.

1. Flower.
2. Dissected perianth.
3. Column and lip, lateral view.
4. Column, ventral view.
5. Anther and pollinarium.

All drawn from F. Pupulin 3006 (JBL-spirit) by Franco Pupulin.

of the phylogenetic relationships among these genera.

*Galeottia grandiflora* is the species in the genus with the northernmost distribution. North of Colombia, it can be distinguished easily from other Zygopetalinae because of its large, tetragonous pseudobulbs with plicate, glossy leaves; large flowers with greenish sepals and petals, longitudinally striped with dark purple to brown; and the white lip with red-purple stripes (Pupulin 2010). Although it is a widespread species, ranging southward to Colombia, it is also an uncommon epiphyte from tropical to premontane wet forests, at 330–3,600 feet (100–1,100 m) elevation. In Costa Rica, it

has been recorded from the Caribbean watershed of northern and central mountain chains and from the Pacific drainage of the Cordillera de Talamanca up to the Osa Peninsula (Pupulin 2010).

Flowering of *Glt. grandiflora* occurs from February to August, mostly at the beginning of the rainy season. The large and fleshy flowers, produced when the new, immature pseudobulbs have completely developed new leaves, are strongly and pleasantly scented. Natural pollination has not yet been documented in *Galeottia*, but the presence of floral fragrances in some scented species suggest male euglossine bees as the most probable pollinators.

In terms of cultivation, *Galeottia* species are best grown in pots, filled with compost that retains moisture but allows ample air circulation around the thick roots. Plants should be maintained in partial shade, preventing exposure to direct sunlight and providing constant humidity throughout the year. Watering should be abundant during the growing season, with a partial rest after new pseudobulbs mature following flowering. *Galeottia grandiflora* is a warm-climate plant and tolerates higher temperatures than other species of the genus.

#### References

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