DARWINIANA 43(1-4): 74-83. 2005 ISSN 0011-6793

TWO NEW TAXA IN *CYRTOPODIUM* (ORCHIDACEAE) FROM SOUTHERN BRAZIL

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ABSTRACT: Batista, J. A. N. & Bianchetti, L. B. 2005. Two new taxa in *Cyrtopodium* (Orchidaceae) from southern Brazil. *Darwiniana* 43(1-4): 74-83.

Cyrtopodium kleinii and *C. brandonianum* subsp. *lageanum* (Cyrtopodiinae, Cymbidieae, Orchidaceae) from southern Brazil are described and illustrated. *Cyrtopodium kleinii* is similar to a group of terrestrial species characterized by their small pseudobulbs, buried underground, and small flowers, but it can be distinguished by the color of its flowers, lip lateral lobes slightly or not falcate and subequal in length and width, lip midlobe base with little or no constriction, and geographical distribution. *Cyrtopodium brandonianum* subsp. *lageanum* is similar in general flower color to typical *C. brandonianum*, but it can be distinguished by its earlier flowering, leaves poorly developed at anthesis and different shape and colour of the lip. Both taxa are rare and only known from southern Brazil.

Keywords: *Cyrtopodium*, Orchidaceae, Southern Brazil, Taxonomy.

RESUMEN: Batista, J. A. N. & Bianchetti L. B. 2005. Dos nuevos taxones en *Cyrtopodium* (Orchidaceae) del sur de Brasil. *Darwiniana* 43(1-4): 74-83.

Se describen e ilustran *Cyrtopodium klenii* y *C. brandoniamum* subsp. *lageanum* (Orchidaceae, Cymbidieae, Cyrtopodiinae) de la región sur de Brasil. *C klenii* se asemeja a un grupo de especies caracterizado por los pseudobulbos pequeños, enterrados en el suelo, y por las flores pequeñas; pero se distingue por el color de las flores, los lóbulos laterales del labelo poco o nada falcados, aproximadamente tan largos como anchos, por el lóbulo mediano del labelo con base poco o nada constricta y por la distribución geográfica. *C. brandoniamum* subsp. *lageanum* es similar a la variedad tipo en cuanto al patrón general de coloración, pero se distingue por florecer más tempranamente, por las hojas poco desarrolladas en la antesis, y por la forma y coloración del labelo. Ambos son taxones poco frecuentes, sólo conocidos para el sur de Brasil.

Palabras clave: *Cyrtopodium*, Orchidaceae, Sur de Brasil, Taxonomía.

Cyrtopodium R. Br. has a Neotropical distribution ranging from southern Florida to northern Argentina. About 45 species are known in the genus, 36 of which occur in Brazil. The center of diversity of the genus is in the Brazilian cerrado, where about 28 species occur. The main taxonomic works for the genus are those of Cogniaux (1898-1902) in *Flora Brasiliensis*, and Hoehne (1942) in *Flora Brasilica*. Warming (1884) and Menezes (2000) provide color illustrations and observations about the habitat and ecological preferences of many of the species.

Most of the species in the genus are terrestrial, and a few ones are epiphytic or lithophytic. The

Original recibido el 19 de noviembre de 2004; aceptado el 12 de agosto de 2005.

terrestrial species occupy a broad range of habitats, from dry rocky slopes to wet meadows. Most species of the genus begin a new cycle of growth and flower at the end of the dry season and the beginning of the rainy season, usually September and October in central and southeastern Brazil. A new vegetative shoot grows from the pseudobulb formed in the previous season. The reproductive shoot emerges from the base of the vegetative new shoot and, in most species of the genus, it grows faster, so that when plants are in full bloom the leaves of the new vegetative shoot are little developed and only become fully developed a few months after flowering. As the dry season approaches, the leaves wither and are eventually lost, and the plants become dormant.

Seven species of *Cyrtopodium* are known from southern Brazil. Most of them are from Paraná State, which represents the southernmost distribution limit for species such as *C. brandonianum* Barb. Rodr., *C. dusenii* Schltr., *C. paludicolum* Hoehne and *C. parviflorum* Lindl. An additional species, *C. pallidum* Rchb.f. & Warm., reaches Santa Catarina, while two others, *C. polyphyllum* (Vell.) Pabst ex F. Barros and *C. palmifrons* Rchb.f. & Warm. reach the northern part of Rio Grande do Sul. None of these species is restricted to southern Brazil, but *C. palmifrons* and *C. dusenii* appear to be more frequent in this region than in the rest of the country.

As part of an ongoing revision of *Cyrtopodium*, examination of dried specimens of the genus revealed two collections from southern Brazil that we were unable to assign to any known species. The recollection and examination of live specimens from one of the collection sites, 40 years after the first collection, showed that the plants in the two collections represented a new species, here described as *C. kleinii*. In addition, exploration of the region around the city of Lages, in Santa Catarina, revealed a infraspecific taxon of *C. brandonianum*, here described as *C. brandonianum* subsp. *lageanum*. According to the current knowledge of the new taxa, and using the World Conservation Union Red List Categories and Criteria (IUCN, 2001), both species can tentatively be classified as endangered. To avoid the possibility of predatory collection, the exact coordinates of the collections have been omitted here.

Cyrtopodium kleinii J. A. N. Batista & Bianchetti, sp. nov. TYPE: Brazil. Santa Catarina, Municipality of Lages, 3-XI-2003 (fl), *J.A.N. Batista 1443* (holotype, CEN; isotypes, AMES, K, RB, SP). (Figs. 1, 2)

C. linearifolio J. A. N. Batista & Bianchetti *morphologia florali simile, sed foliis latioribus sub anthesi et lobis lateralibus labelli brevioribus, paulo vel non falcatis, fere latioribus quam longioribus. Etiam C. dusenio* Schltr. *simile, sed inflorescentia generaliter simplici, colore florum et columna longiore. Simile C. brunneo* J. A. N. Batista & Bianchetti *colore florum sed labello breviore basi non contracta vel paulo contracta et distributione geographica in Brasilia meridionali restricta differt.*

Terrestrial herb. Pseudobulbs usually completely buried underground, occasionally partially exposed, small, ovoid, leafless from the second year onwards, externally whitened, greenish-brown when exposed to sun light, (2)3.5-5 x 1-1.5 cm. Roots thick, 4-5 mm wide, whitish, glabrous. Leaves at flowering 6-9, with the 2-3 lowermost sheath-like, usually partially developed, 8.5-24 x 0.5-1.7(2.2) cm, when fully developed ca. 10, spread, coriaceous, linear to linear-lanceolate, the two lowermost sheath-like, the eight uppermost 18-36 x 1.2-2.3 cm, articulate, articulation 2-4 cm from the apex of the pseudobulb, apex acuminate. Inflorescence lateral, erect, usually simple, lax, (16)23-36(51) cm, green to greenish-brown, occasionally with a lateral branch 5-9.5 cm long; peduncle (6)12-19 cm with two sheath-like bracts, adpressed, (0.8)1.4-2.7 x 0.5-1.1 cm; rachis 7-16(32) cm long; floral bracts small, lanceolate, shorter than the pedicel with ovary, (6)10-28 x 4-8 mm, acute, with brownish-purple spots over a greenish background; ovary with pedicel 1.2-3.1 cm long, green to dark-brown. Flowers 6-14(24), small. Sepals slightly concave, ovate to lanceolate-ovate, occasionally broadly ovate, apiculate, margins discreetly undulate, base completely whitened or with lilac dots, from the middle onwards with brown-lilac dots that converge towards the apex; dorsal sepal (8)9-12 x (4)6-7(8.5) mm; lateral sepals slightly oblique, (8)10-12 x (4)6-7(8.5) mm. Petals when young slightly concave, towards aging becoming slightly reflexed from the middle to the apex, broadly elliptical to occasionally almost orbicular, apex obtuse to occasionally

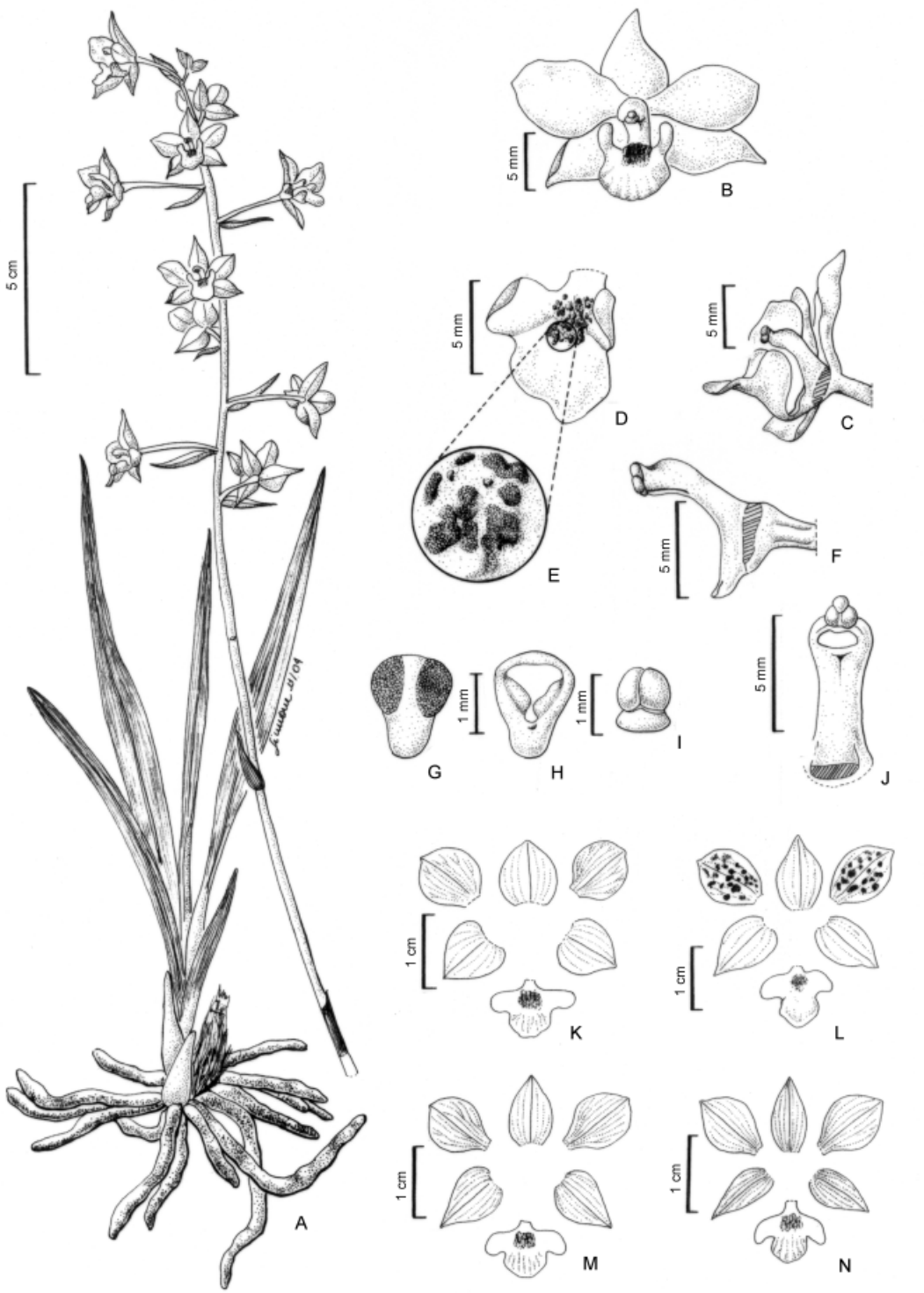

Fig. 1.- *Cyrtopodium kleinii*. A: habit. B: flower, front view. C: flower, side view. D: lip. E: a detail of the warts of the callus is enlarged. F: column, side view. G: anther, dorsal view. H: anther, ventral view. I: pollinaria. J: column, ventral view. K-N: perianth, each from a different specimen of the same population. Drawn from *Batista 1443* by Simone C. Souza e Silva.

rotundate, apiculate, margins discreetly undulate, 9.5-12 x (6)7-8 mm, whitened, base with lilac dots, margins brown-lilac and apex discreetly greenish. Lip three-lobed, 8-9.5 mm long, when spread (9)10-12 mm wide between the apex of the side lobes; base shortly unguiculate, 1-1.5 mm long, yellow; lateral lobes erect, parallel or slightly diverging, oblong-falcate, slightly falcate to occasionally non-falcate, 3-4 x (2.5)3-3.5(4) mm, apex obtuse, base not constricted, margins entire, smooth, red to reddish-brown; callus oblong, strongly verrucose, extending longitudinally from the base of the midlobe to the unguicule, base yellow, the verrucae red towards the apex; isthmus separating the lateral lobes from the midlobe absent or inconspicuous; midlobe somewhat subrotundate to occasionally somewhat reniform, 3.5-5 x (4)5-6 mm, slightly rugose and forming discrete grooves along the main veins, base slightly or not constricted, apex obtuse to roundish or occasionally slightly retuse when flattened, margin smooth, completely yellow or with the margins reddish. Column erect, arcuate, trigonous, 6(8) mm long and 2-2.5 mm wide at apex, truncate, base yellow with some reddish-purple, middle white to white-purple and towards the apex purple to greenish-purple; stigmatic surface green; column foot (1.5)2 mm long. Anther 2 x 1.8-2 mm, yellow, apex green; pollinia two, waxy, sulcate, ca. 1 mm long and 0.8 mm wide, yellow, attached to a triangular, hyaline stipe. Fruit deflexed, green, oblong to elongate, 6-8.5 x 1-1.5 cm, including the pedicel.

Etymology: The new species is named in honor of the late Roberto M. Klein who collected intensively in the state of Santa Catarina and contributed greatly to our knowledge of the flora of this state.

Distribution: *Cyrtopodium kleinii* is restricted to southern Brazil, in the states of Santa Catarina and Paraná, and has the southernmost distribution in Brazil among the terrestrial species of this genus that have underground pseudobulbs and small flowers. *Cyrtopodium kleinii* is a rare species, so far known only from two sites, one of them probably destroyed by transformation into a pine plantation. The native grasslands in the interior plateaus in the states of Paraná and Santa Catarina have been significantly reduced and the scarcity of suitable habitats may account for the rarity of *C. kleinii*. However, considering the distance between the two collection sites (~300 km), and the existence of other localities with similar vegetation and climate, some inside federal or state reserves, it is probable that the species will eventually be found at other sites in these states.

Habitat, Ecology and Phenology: *Cyrtopodium kleinii* was found growing in dry *campo limpo* (open grassland) mixed with some *campo sujo* (grass-herb-subshrub grassland) and *campo rupestre* (rocky grassland), on a slope at an altitude of 950 m. The soil was dark, sandy-clay, dry, shallow, and covered with gravel and rocks to varying degrees. Flowering of the species occurs during October and November. A new vegetative shoot is formed during flowering, but the leaves only become fully developed 1-2 months latter. During the dry season, the leaves are lost and the plants remain dormant with underground pseudobulbs. As with other terrestrial species in the genus, the flowering of *C. kleinii* is strongly enhanced by fire. The type material was collected in full bloom in an area previously burned, while unburned spots at the same site had no specimens in flower. In the other specimens from the same site (*Klein 4488*), also collected with flowers, the apexes of the pseudobulbs were burned, including the newer apexes, indicating that the area had been affected by fire in the year that material was collected.

Paratypes

BRAZIL. **Paraná.** Municipality of Ponta Grossa, 7-X-1969 (fl), *Hatschbach 22320* (HB, MBM). **Santa Catarina.** Lages, 1-XI-1963 (fl), *Klein 4488* (HB, HBR).

Taxonomic notes: *Cyrtopodium kleinii* (Fig. 1) was first collected by R. Klein in 1963. Guido F. J. Pabst examined dried specimens from this collection, but misidentified the species as *C. dusenii* and *C. galeandroides* Cogn. *Cyrtopodium kleinii* is similar to several other terrestrial species in the genus that are characterized by small, underground pseudobulbs and by small flowers with a predominant yellow and/or brownish color, including *C. dusenii* (Schlechter, 1920; Mansfeld, 1930; Hoehne, 1942), *C. linearifolium* J. A. N. Batista & Bianchetti (Batista & Bianchetti, 2001) and *C. brunneum* J. A. N. Batista & Bianchetti (Batista & Bianchetti, 2004). An additional species, *Cyrtopodium*

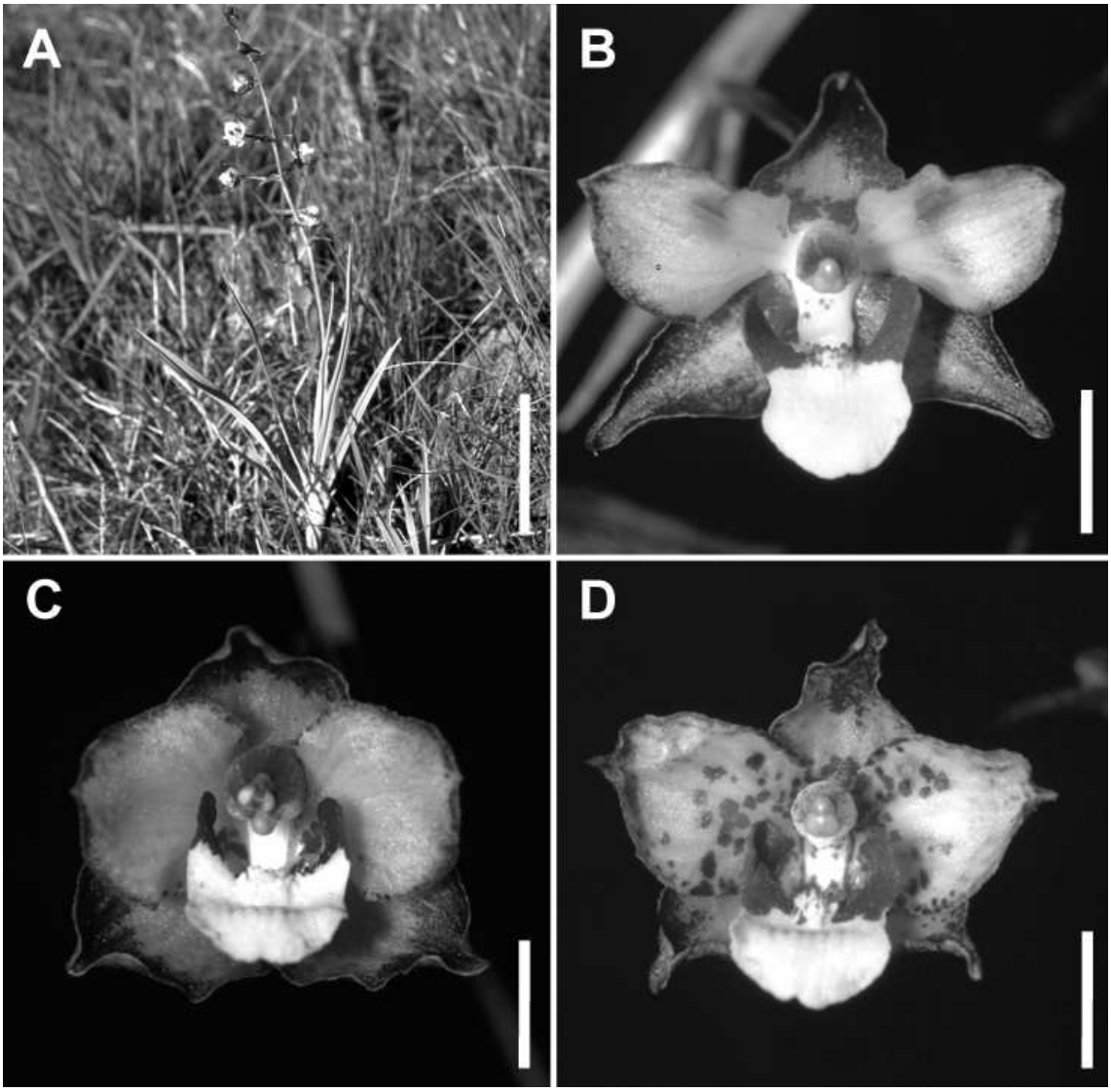

Fig. 2.- *Cyrtopodium kleinii*. A: plant in flower. Note the simple inflorescence and the well-developed leaves during flowering. B-D: flowers, front view, each from a different specimen of the same population. Photographed from live specimens from the collection *Batista 1443*, from Lages, Santa Catarina. Scale bars = 10 cm (A) and 5 mm (B-D).

palmifrons, which occurs in Santa Catarina, is also characterized by small flowers, but this is an epiphytic species, with large, exposed pseudobulbs and a many-branched inflorescence. Another terrestrial species, *Cyrtopodium pallidum*, also has small, underground pseudobulbs and, usually, small flowers, but in this species the flowers are predominantly greenish-pink.

The species most similar to *C. kleinii* in flower morphology and color are *C. linearifolium* and *C. brunneum*, respectively. However, *C. kleinii* can be distinguished from these species, and from *C. dusenii*, by a series of vegetative and floral characters outlined in table 1 and in the following key. The most distinctive features of *C. kleinii* are the sepals and petals with brownish-purple spots on a whitish background (Fig. 2), the slightly or non-falcate lateral lobes of the lip that are approximately the same length and width, the base of the lip midlobe with little or no constriction (Fig. 1), and the geographical distribution that is restricted to southern Brazil.

Table 1.- Diagnostic characters for the terrestrial species of *Cyrtopodium* with small, underground pseudobulbs, and small, yellow and/or brownish flowers.

	C. kleinii	***C. brunneum***	***C. linearifolium***	***C. dusenii***
Leaves at anthesis	usually partially developed 8.5-24 x 0.5-1.7(2.2) cm	little developed 7-15 cm long	little developed 4-14 cm long	usually well-developed (9)15-28 x 0.8-1.4(1.8) cm
Mature leafs	18-36 x 1.2-2.3 cm	13-33 x 1-2.6 cm	16-37 x 0.5-0.8 cm	not recorded
Leaf articulation	present	present	absent	present
Lateral ramifications	0(1)	0(1)	0	(0)1-3
Flower color	sepals whitish with brown-lilac dots, lip lateral lobes red, midlobe yellow	sepals brownish, lip lateral lobes red, midlobe yellow	sepals greenish with brown spots, lip yellow with red stripes	yellow with reddish spots
Lip length	8-9.5 mm	(7)9-11(12) mm	(6)7(9) mm	6.5-8 mm
Lip width between apex of the lateral lobes when spread	(9)10-12 mm	10-12(14) mm	11-13 mm	6-9 mm
Lip lateral lobes	non-falcate to subfalcate	falcate	falcate	subfalcate to falcate
Length x width	3-4 x (2.5)3-3.5(4) mm	(3)4-5(6) x 2-3(4) mm	(3)4-5 x (2)2.5-3 mm	(2)3 x (1.5)2-2.5 mm
Lip midlobe base	little to non-constrict, isthmus absent or inconspicuous	constrict, isthmus evident, 1-2(3) mm long	constrict, isthmus usually evident, short, ca. 0.5-1 mm long	constrict, isthmus evident, ca. 1-1.5 mm long
Lip midlobe; length x width	3.5-5 x (4)5-6 mm	5-7 x (5)6-8(10) mm	(3)4-4.5 x (5)6-7(8) mm	4-5(6) x 5-6.5 mm
Column length	6(8) mm	6-7(8) mm	5-6 mm	ca. 3 mm
Distribution				
Brazil	southern (PR, SC)	central-western and southeastern (DF, GO, MG, MT)	central-western (DF, GO)	southern and southeastern (MG, PR, SP)

Key to the terrestrial species of Cyrtopodium with small, underground pseudobulbs and small, yellow and/or brownish, flowers

1. Leaves usually well developed at anthesis, inflorescence with (0)1-3 lateral branches, sepals and petals yellow spotted with red, columm short (ca. 3 mm long) ……..……. *C. dusenii*

1. Leaves little to well developed at anthesis, inflorescence usually simple or at most with one lateral branch, sepals and petals not yellow, column longer (5-8 mm long) ……..…… 2

2. Leaves usually partially developed at anthesis, inflorescence usually simple, occasionally with one lateral branch, lateral lobes of the lip little or non-falcate and of about the same length and width, midlobe base little or non-constricted; southern Brazil ……..……... *C. kleinii*

2. Leaves little developed at anthesis, inflorescence simple, very rarely with a lateral branch, lateral lobes of the lip usually evidently falcate, longer than wider, midlobe usually constricted at the base; central-western and southeastern Brazil ……..…… 3

3. Leaves not articulate, very narrow (less than 1 cm wide), erect, sepals greenish with brownish spots, lip (6)7(9) mm long, midlobe (3)4-4.5 mm long, including the isthmus ……..….. *C. linearifolium*

3. Leaves articulate, 1-2.6 cm wide, spread, sepals brownish, lip (7)9-11(12) mm long, midlobe 5-7 mm long, including the isthmus ……..…. *C. brunneum*

Cyrtopodium brandonianum Barb. Rodr. subsp. **lageanum** J. A. N. Batista & Bianchetti, subsp. nov. TYPE: Brazil. Santa Catarina, Municipality of Lages, 4-XI-2003 (fl), *J.A.N. Batista 1444* (holotype, CEN; isotypes, AMES, RB, K, SP). (Figs. 3 & 4 B)

A C. brandonianum Barb. Rodr. subsp. brandonianum florescentia praecoci, foliis paulo evolutis sub anthesis, labello lobis lateralibus angustioribus, isthmo perevoluto et lobo centrali transverse et late ovato, non reniformi, fere tam longo quam lato, et colore labelli omnino roseo differt.

Terrestrial herb. Pseudobulbs completely buried underground, small, ovoid, acuminate, leafless from the second year onwards, externally whitened, 3-5 x (1)1.4-2 cm. Roots ca. 5 mm wide, whitened, glabrous. Leaves at flowering 5-6, little developed, erect, coriaceous, linear, the 1-2 lowermost sheath-like, the largest 11-21 x 0.3-0.6 cm, articulate, articulation 2-3 cm from the apex of the pseudobulb, apex acuminate, leaves fully developed not examined. Inflorescence lateral, erect, simple, lax, 19-39 cm tall, brownish-green to purple; peduncle 15-21 cm long with 2-3(4) sheath-like bracts, adpressed, 0.6-1.9 x 0.5-1 cm; rachis (4.5)8-18 cm long; floral bracts ovate to ovate-lanceolate, shorter than the pedicel and ovary, 12-17 x 5-8 mm, apex acute; ovary with pedicel 1.8-3 cm long, brownish-green. Flowers (5)10-14, showy. Sepals slightly concave, ovate to elliptical, occasionally obovate, apex apiculate, margin undulate, base whitened, middle with lilac dots, towards the apex brownish; dorsal sepal 13-16 x 9-11 mm; lateral sepals, 12-17 x (6)9-11 mm. Petals slightly concave, usually partially reflexed in fully opened flowers, broadly elliptical to obovate, 13-17 x (8)11-12 mm, apex rounded, apiculate, base slightly attenuate, margins slightly ondulate, base whitened, from the middle onwards with lilac dots that converge towards the apex. Lip three-lobed, (12)15-17 mm long, when spread (14)17-20 mm wide between the apex of the side lobes; base unguiculate, 2-3 mm long, white; lateral lobes erect, parallel, slightly falcate, oblong, 5-7 x (2.5)3-3.5(4) mm, base little or not constricted, margins entire, pinkish; callus verrucose, extending from the base of the central lobe to the region between the lateral lobes, white; isthmus separating the lateral lobes from the central lobe usually evident, (1)2-3 mm long; central lobe, transversally broadly ovate, (6)9-11 x (9)11-13 mm, apex with a protruding fold, when flattened discreetly retuse, margins smooth, pinkish with the margins whitened, the pink becoming white with aging. Column erect, slightly arcuate, trigonous, apiculate, 8(9) mm long, 4-5 mm wide at apex, base and middle whitened to pinkish, towards apex purple, stigmatic surface green; column foot (2)3(4) mm long, yellowish. Anther (2.5)3 x 1.5-2 mm, yellow, apex truncate, light green; pollinia two, waxy, sulcate, ca. 1 x 0.7 mm, yellow, attached to a triangular hyaline stipe ca. 1 mm long and 2 mm wide. Fruit deflexed, green, about 5.5 x 1.5 cm, including the pedicel.

Etymology. The new subspecies epithet refers to the municipality of Lages, in Santa Catarina, so far the only known locality for the taxon.

Distribution. *Cyrtopodium brandonianum* subsp. *lageanum* is a rare taxon so far only known from a single population at the type locality, in the municipality of Lages, in the mountain range of the state of Santa Catarina, in southern Brazil.

Habitat, Ecology and Phenology. *Cyrtopodium brandonianum* ssp. *lageanum* grows in *campo limpo* (open grassland) on well-drained slopes at an altitude of around 1000 m. The soil is dark, sandy-clay, well-drained, dry, usually with rocks on the surface. Flowering occurs from October to November. As with other terrestrial species in the genus, flowering of the new taxon is enhanced by fire; all plants with flowers were observed in a previously burnt area. Similarly to most other species in the genus and contrary to typical *C. brandonianum*, development of the flowers exceeds vegetative growth, and when the plants are in full bloom the leaves are little developed.

Taxonomic notes. *Cyrtopodium brandonianum* subsp. *lageanum* and *C. brandonianum* subsp. *brandonianum* (Fig. 3) are similar in overall vegetative and reproductive characters. In both taxa, the pseudobulbs are small, whitish and completely buried underground, the inflorescence is simple, and the flowers are medium to large in size, and predominantly pinkish-purple. However, the two taxa differ in the periods of flowering and

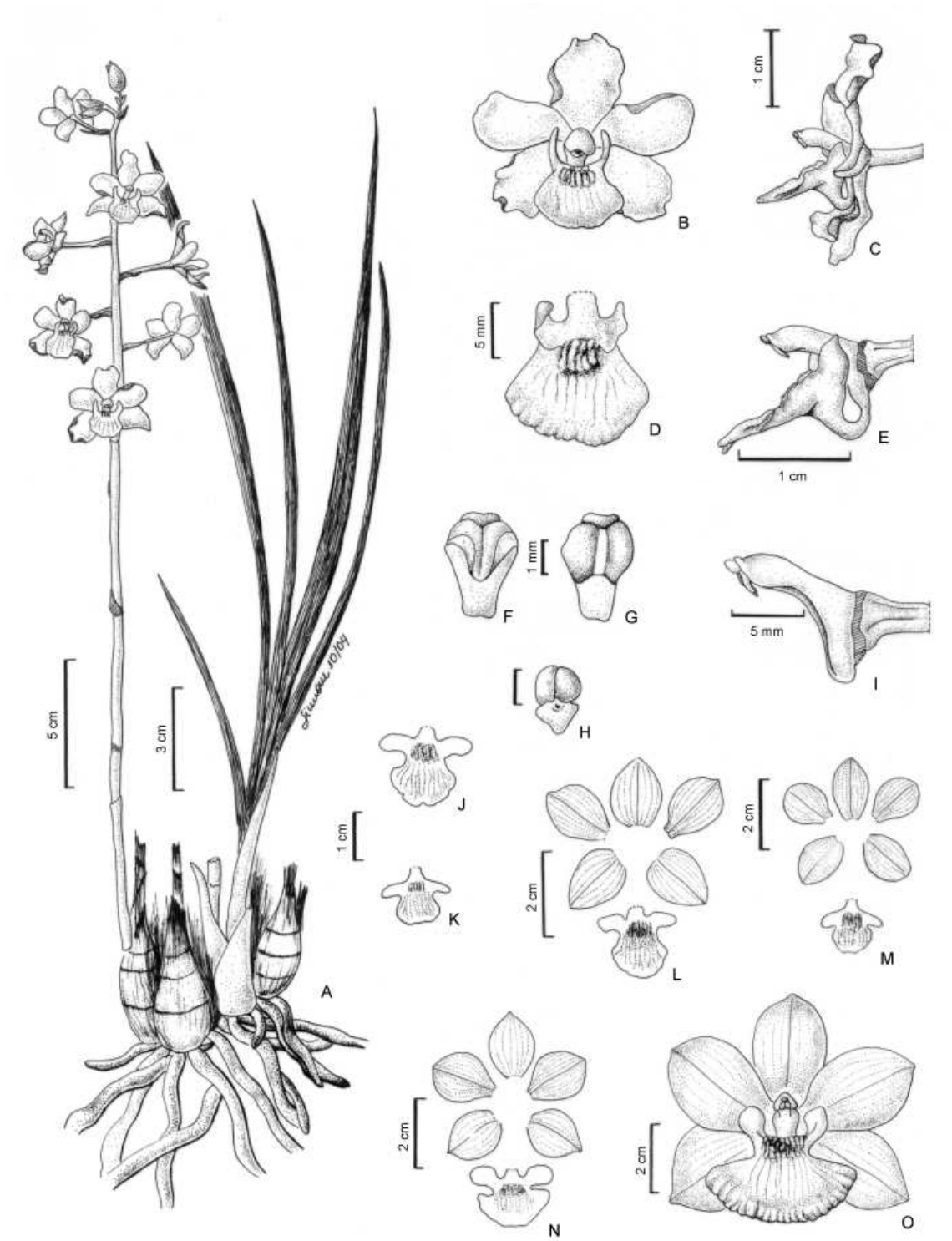

Fig. 3.- *Cyrtopodium brandonianum* subsp. *lageanum*. A: habit. B: flower, front view. C: flower, side view. D: lip. E: column and lip, side view. F: anther, ventral view. G: anther, dorsal view. H: pollinaria. I: column, side view. J-K: variations in the morphology and size of the lip. L-M: perianth, each from a different specimen of the same population. *Cyrtopodium brandonianum* subsp. *brandonianum*. N: perianth. O: flower, front view. A-M drawn from *Batista 1444* and N-O drawn from *Batista 350* (CEN), from Brasília, Distrito Federal, by Simone C. Souza e Silva.

Table 2. Diagnostic characters for *Cyrtopodium brandonianum* subsp. *lageanum* and *C. brandonianum* subsp. *brandonianum*..

	C. brandonianum* subsp. *lageanum	***C. brandonianum* subsp. *brandonianum***
Flowering	Oct-Nov	(Oct)Dec-Jan(Mar)
Leaves at anthesis	little developed	fully developed
length x width	11-21 x 0.3-0.6 cm	(24)41-60(81) x (0.7)1-1.5(2.1) cm
Lip lateral lobes width	(2.5)3-3.5(4) mm	(3.5)4.5-6 mm
Isthmus; length	evident; (1)2-3 mm	little developed to completely absent; 0-1(2) mm
Lip midlobe morphology	transversally broadly ovate, not reniform	typically reniform
Lip midlobe width x length	(8.5)11-13 x (6)9.5-11 mm	(14)16-19(21) x 8-10(12) mm
Lip midlobe width/length	1.1 to 1.2(1.4)	(1.4)1.7 to 2(2.2)
Lip colour	pink	pinkish-purple to purple
Distribution	Brazil: southern (SC)	Brazil: central-western, southeastern and southern (DF, GO, MG, MT, PR, SP); Argentina & Paraguay

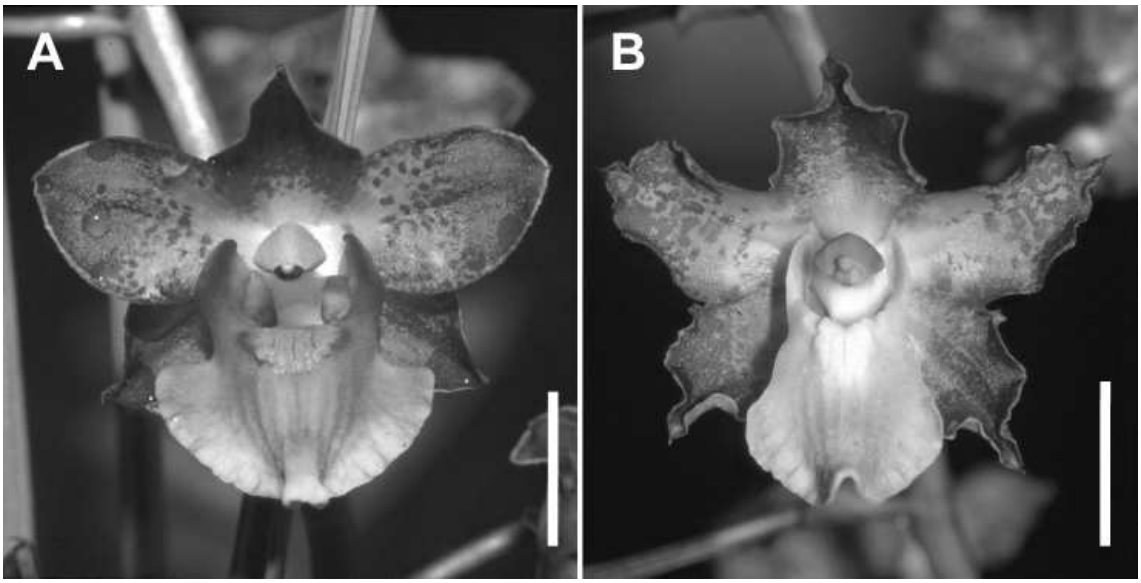

Fig. 4.- *Cyrtopodium brandonianum* subsp. *brandonianum*. A: Flower, front view. Photographed from live specimen from Brasília, Distrito Federal, in central Brazil. *Cyrtopodium brandonianum* subsp. *lageanum*. B: Flower, front view. Photographed from live specimen from the collection *Batista 1444*, from Lages, Santa Catarina. Scale bars = 1 cm.

vegetative development. The two taxa are similar in the general morphology and colour of the sepals and petals, although there are significant differences in the lip (Fig. 4). The main differences between the two taxa are outlined in table 2. Despite the initial differences in lip colour, in both taxa the lip frequently turns dull and discoloured with aging, sometimes becoming almost completely white.

Considering the similarity between typical *C. brandonianum* and the new taxon, the latter is better treated as an infraspecific taxon. In defining the infraspecific rank of the new taxon, we followed Stace (1989), who defined a subspecies as “a population of several biotypes forming a more or less distinct regional facies of a species”. This is exactly the case of *C. brandonianum* subsp. *lagea-*

num since there is no geographical superposition with *C. brandonianum* and the ecological and morphological differences between the two taxa are significant. The nearest known populations of *C. brandonianum* are located in the Municipality of Palmeiras, in the state of Paraná, about 260 km north of Lages, and represent the southernmost (about 25°30'S) record for the species in Brazil. *Cyrtopodium brandonianum* has also been reported from the departments of Empedrado and Esquina in the province of Corrientes, in Argentina (Sánchez, 1986), both of which are located even further south (close to 30°S), about 900 km from Lages, but at much lower altitudes. Although only a few specimens of *C. brandonianum* subsp. *lageanum* have been collected so far, about a dozen individuals were observed in flower during the collection, and it is expected that this taxon will eventually be found at other sites in the mountain range of Santa Catarina.

ACKNOWLEDGMENTS

The authors thank Marcia A. N. Batista for her logistical support that made the journey to Santa Catarina possible and for her constant encouragement, the curators of HB, HBR and MBM for loans or for providing access to their collections, Simone C. Souza e Silva for preparing the illustrations, Tarciso Filgueiras for the Latin diagnoses, Stephen Hyslop for reviewing the English and two anonymous reviewers for improvements in the manuscript.

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