

## New species of *Brevilongium* (Orchidaceae) from Ecuador

Marta Kolanowska, Dariusz L. Szlachetko & Iwona Skorowska

**Summary:** Two new species of *Brevilongium*, *B. dalessandroi* and *B. dodsonii*, are described and illustrated based on Ecuadorian material. Both species can easily be distinguished from their congeners based on the lip callus form. The identification key to all known species of *Brevilongium* is provided.

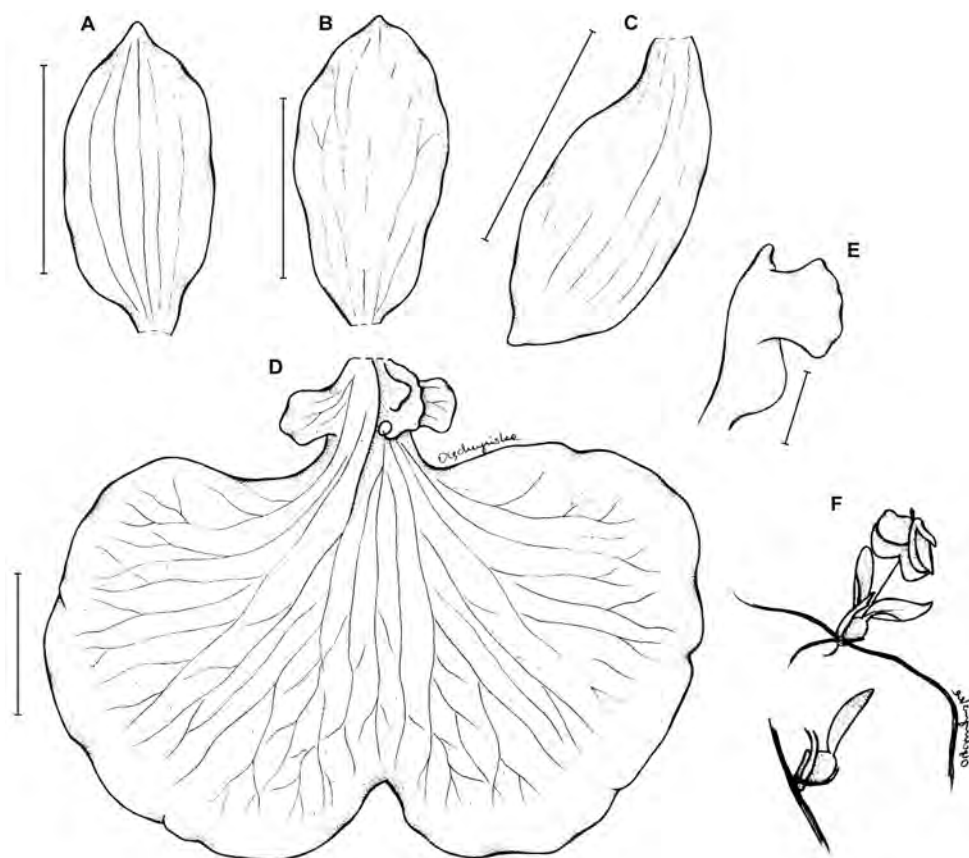
**Keywords:** biodiversity, Oncidiinae, Neotropics, taxonomy

The Neotropical orchid genus *Brevilongium* was described by Christenson and typified by *B. globuliferum* (Kunth) Christenson (= *Oncidium globuliferum* Kunth) (CHRISTENSON 2006).

The plants of *Brevilongium* produce long, thin, wiry rhizomes with remote, rudimentary, leafless sheaths. Pseudobulbs are ancipitous and unifoliate. Their inflorescence is usually simple, occasionally branching, erect to pendent, with single to few yellow, relatively large flowers with reddish or brownish patches on tepals. Sepals and petals are free, similar in shape and size. Lip is considerably larger than tepals, three lobed with basal callus. Tabula infrastigmatica is prominent, extending between stigma and lip base. Gynostemium is erect, short and delicate. Wings of column are uneven, irregular or denticulate on margins. Anther is subapical and incumbent. Clinandrium is obscure. Rostellum is short, conical-digitate in the middle, obtuse and bilobulate after removal of pollinarium (SZLACHETKO & KOLANOWSKA 2014).

Previously, orchids included by CHRISTENSON (2006) into his genus *Brevilongium* were classified in various taxonomic ranks. KRAENZLIN (1922) created a new subsection *Serpentia* within section *Varicosa* of *Oncidium* Sw. to embrace plants with wiry rhizomes. Almost 50 years later, GARAY (1970) elevated *Serpentia* to section rank in his review of *Oncidium*, which was typified by *O. serpens* Lindl. SENGHAS (1997) maintained GARAY's concept and contended section *Serpentia* within *Oncidium*. This taxon was later reviewed by STACY (1978), but WILLIAMS et al. (2001) proposed to include all *Serpentia* species in *Otoglossum* (Schltr.) Garay & Dunst. An other point of view was presented by CHRISTENSON (2006) who sorted out the new genus *Brevilongium* which differs from *Otoglossum* in having a twining, non-woody rhizome, 1- to few-flowered inflorescence, lip distinctively larger than tepals, prominent tabula infrastigmatica and obscure clinandrium (SZLACHETKO & KOLANOWSKA 2014). PRIDGEON et al. (2009) did not accept CHRISTENSON's concept of *Brevilongium* and treated it as a part of *Otoglossum*. NEUBIG et al. (2012) conducted molecular analysis and also proposed to amalgamate *Brevilongium* into *Otoglossum* together with *Ecuadorella* Dodson & G.A. Romero. Molecular data indicate the close relationship between *Otoglossum* s.str. and former *Oncidium* section *Serpentia*. But as recapitulated by SZLACHETKO & KOLANOWSKA (2014), there are distinctive morphologically differences between these taxa.

As currently recognized, *Brevilongium* embraces 10 species distributed from Central America to the northern part of South America with the greatest diversity observed in Ecuador.



**Figure 1.** *Brevilongium dalessandroi* Kolan., Szlach. & Skorowska. A – dorsal sepal; B – petal; C – lateral sepal; D – lip; E – gynostemium; F – habit. Scale bars = 10 mm (A–D); 2 mm (E). Drawn by N. Olędryńska.

During our studies on oncioid orchids, two additional species of *Brevilongium* were found. These are described here as new and placed within an identification key.

## Materials and methods

Dried herbarium specimens of oncioid orchids, over 5000 in total, deposited in herbaria AMES, AMO, B, BM, C, COL, CUV, F, FLAS, HUA, JAUM, K, MO, NY, P, PMA, UGDA, VALLE and W were examined according to the standard procedures. Each studied specimen was photographed and data from the label were taken. Both vegetative and generative characters of each plant were examined, i.e. the shape and size of the pseudobulbs, leaves, inflorescence architecture, shape and size of the floral bracts, flower morphology and gynostemium structure. The perianth parts were studied after softening flowers in boiling water.

## Taxonomic treatment

*Brevilongium dalessandroi* Kolan., Szlach. & Skorowska (Fig. 1)

**Diagnosis.** Species similar to *B. scansor* in lip shape, but with glabrous, 3-lobed callus.

**Type.** Ecuador, Zamora-Chinchi, about 2 km up the Rio Valladolid from the town, alt. 1950 m, 21 Apr 1986, *Dalessandro 612* [RPSC, holotype!]

**Description.** Pseudobulbs 2 cm long, 1.3 cm wide, suborbicular, strongly laterally compressed, unifoliate, subtended by foliaceous sheath. Leaf subsessile, 4 cm long, 1.5 cm wide, oblong-elliptic, obtuse. Flowers yellow with reddish-brown spots at the base of tepals and lip. Pedicel and ovary 40 mm long. Floral bract 7 mm long. Inflorescence 1–2-flowered, peduncle 20–30 mm long. Dorsal sepal 17 mm long, 9 mm wide, obovate, obtuse. Lateral sepals 15 mm long, 6 mm wide, shortly unguiculate, elliptic, obtuse. Petals 15 mm long, 6 mm wide, shortly clawed, elliptic, obtuse. Lip 36 mm long, subsessile, 3-lobed; lateral lobes 2 mm long and wide, auriculate, relatively small; middle lobe 30 mm long, 46 mm wide, reniform in outline, emarginate at the apex; isthmus between the lobes very short; callus 3-lobed, lateral lobes more or less triangular, middle lobe suborbicular, crenate along edge. Gynostemium 5 mm long, wings subquadrate-trapeziform, crenate on margins, glabrous.

**Etymology.** Dedicated to the collector of the type specimen.

**Distribution and habitat.** This species is known so far only from the eastern slopes of the Ecuadorian Andes, where it was found growing along the river bank at the altitude of about 1950 m in tangled masses up to 5 m long. Flowering occurs in April.

**Notes.** This species resembles *B. scansor* in the lip shape, but it may be distinguished by a glabrous, 3-lobed callus. The callus of *B. scansor* is basally pubescent, consisting of a subrhombic plate and four digitate projections.

***Brevilongium dodsonii* Kolan., Szlach. & Skorowska (Fig. 2)**

**Diagnosis.** Species resembling *B. serpens* in the lip shape, but with dentate callus with a digitate projection in front and entire margins of the column wings.

**Type.** Ecuador, Zamora-Chinchiipe, road Yangana to Valladolid, beyond the pass, alt. 2100 m, 24 Jul 1985, *Dodson & al.* 16056 [RPSC, holotype!; RPSC, isotypes!]

**Description.** Pseudobulbs up to 3 cm long, 2.5 cm wide, suborbicular, laterally compressed, unifoliate, subtended by a foliaceous sheath up to 12 cm long. Leaf sessile, up to 8 cm long, 3.6 cm wide, ovate, subacute. Inflorescence up to 4-flowered, peduncle 20–30 mm long. Flowers yellow spotted with brown. Pedicel and ovary 12 mm long. Floral bract 5 mm long. Dorsal sepal 8 mm long, 3 mm wide, unguiculate, ovate above the claw, obtuse. Lateral sepals 10.5 mm long, 2 mm wide, long-unguiculate, oblong-ovate above the claw, obtuse. Petals 9 mm long, 3.5 mm wide, unguiculate, ovate above the claw, obtuse. Lip 12.5 mm long, 8 mm wide across lateral lobes, 11 mm wide across middle lobe, sessile, 3-lobed; lateral lobes ovate, with somewhat undulate margins; middle lobe 6.5 mm long, bilobulate, emarginate and mucronate at the apex, lobules subcircular; isthmus between the lobes prominent, about 3 mm long; callus dentate with a long digitate appendage at the apex. Gynostemium 4 mm long, auricles subrectangular, glabrous.

**Etymology.** Dedicated to the collector of the type specimen.

**Distribution and habitat.** This species is known exclusively from the eastern slopes of the Ecuadorian Andes, where it was found growing as long-creeping plants in tree tops at the altitude of about 2100 m. Flowering occurs in July.

**Notes.** This species resembles *B. serpens* in the lip shape, but it is distinguished by the dentate callus with a long digitate projection in front and entire margins of the column wings. In *B. serpens*, the lip callus is tuberculate and the column wings are dentate.

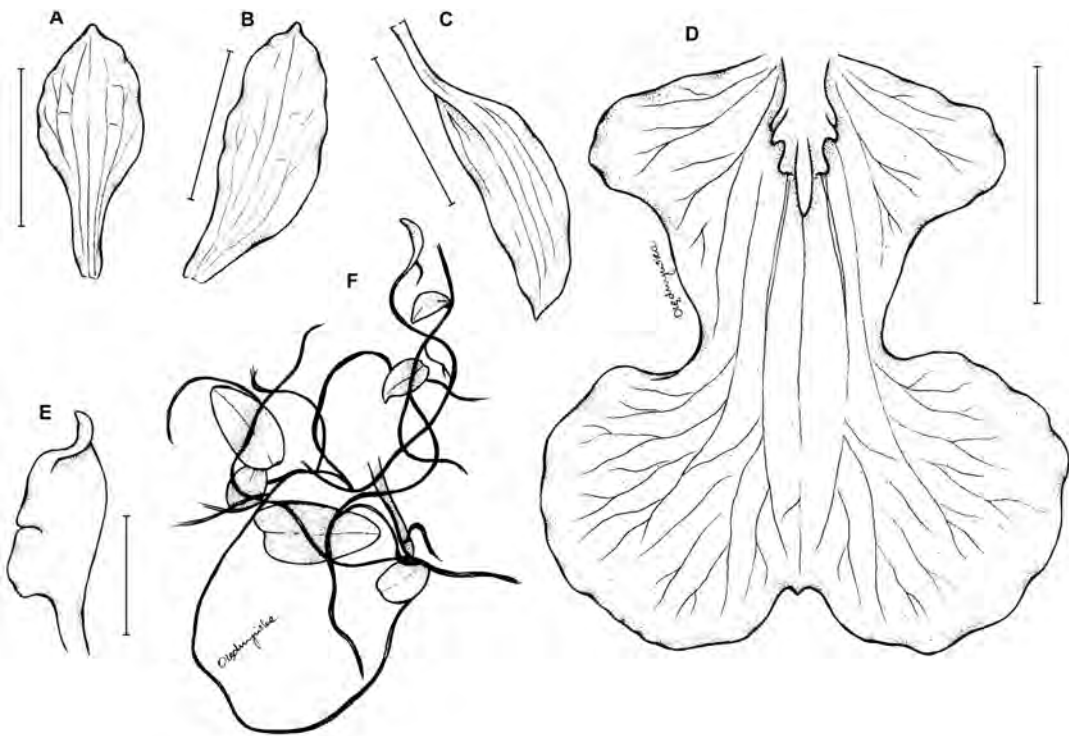


Figure 2. *Brevilongium dodsonii* Kolan., Szlach. & Skorowska. A – dorsal sepal; B – petal; C – lateral sepal; D – lip; E – gynostemium; F – habit. Scale bars = 5 mm (A–D); 2 mm (E). Drawn by N. Olędryńska.

### Identification key of *Brevilongium* species

1. Lip wider than long ..... 2
- Lip longer than wide ..... 5
2. Isthmus between lobes very short ..... 3
- Isthmus between the lobes distinctive ..... 4
3. Lip callus consisting of a subrhombic plate and four digitate projections ..... *B. scansor*
- Lip callus 3-lobed ..... *B. dalessandroi*
4. Lip lateral lobes triangular-auriculate, inconspicuous ..... *B. globuliferum*
- Lip lateral lobes triangular, prominent ..... *B. allenianum*
5. Lip basal lobes ovate-triangular ..... 6
- Lip basal lobes rounded ..... 8
6. Lip isthmus prominent, callus extending to the isthmus base ..... 7
- Lip isthmus very short, callus does not reach the isthmus ..... *B. luerorum*
7. Lip widest across middle lobe, gynostemium with subrectangular, entire wings ..... *B. dodsonii*
- Lip widest across lateral lobes, gynostemium with dolabriform, crenate wings ..... *B. palaciosii*
8. Lip basal lobes prominent, suborbicular, petals very shortly unguiculate ..... 9
- Lip basal lobes inconspicuous, auriculate, petals distinctly unguiculate ..... 10

9. Lip middle lobe flabellate-suborbicular ..... *B. tapascoi*  
 – Lip middle lobe bilobulate, lobules suborbicular ..... *B. trachycaulon*  
 10. Lip middle lobe 3–4 times wider than lateral lobes ..... *B. sancti-pauli*  
 – Lip middle lobe slightly wider than lateral lobes ..... *B. serpens*

## Acknowledgements

The curators and staff of the cited herbaria are thanked for their kind hospitality and assistance during visits. We are grateful to Natalia Olędrzyńska for preparing illustrations. The research described here has been supported by the Polish Ministry of Science and Higher Education (research grant No. 8124/B/PO1/2011/40) and by the Grantová Agentura České Republiky (GA ČR; grant No. 14-36098G).

## References

- CHRISTENSON E. A. (2006): *Brevilongium*, un nouveau genre neotropical (Orchidaceae: Oncidiinae) – *Richardiana* **6**(1): 45–49.
- GARAY L. A. (1970): A reappraisal of the genus *Oncidium* Sw. – *Taxon* **19**: 443–467.
- KRAENZLIN F. (1922): Orchidaceae-Monandreae, Tribus Oncidiinae – *Odontoglosseae* Pars II. Leipzig: Engelmann.
- NEUBIG K. M., WHITTEN M. W., WILLIAMS N. H., BLANCO M. A., ENDARA L., BURLEIGH J. G., SILVERA K., CUSHMAN J. C. & CHASE M. W. (2012): Generic recircumscriptions of Oncidiinae (Orchidaceae: Cymbidieae) based on maximum likelihood analysis of combined DNA datasets. – *Bot. J. Linn. Soc.* **168**: 117–146.
- PRIDGEON A. M., CRIBB P. J., CHASE M. W. & RASMUSSEN N. F. (2009): *Genera Orchidacearum*. Vol 5. Epidendroideae (Part Two). – Oxford: Oxford University Press.
- SENGHAS K. (1997): Subtribus: Oncidiinae. – In: SENGHAS K. [ed.]: *Schlechter. Die Orchideen III*: 2057–2306. – Berlin: Paul Parey.
- STACY J. E. (1978): Studies in the genus *Oncidium*. II Section *Serpentia*. – *Bot. Mus. Leaflet* **26**(1): 55–63.
- SZLACHETKO D. L. & KOLANOWSKA M. (2014): Generic delimitation of the genera *Brevilongium* and *Otoglossum* (Orchidaceae) with description of new species from Colombia and Panama. – *Pl. Biosyst.* **148**(6): 1148–1159.
- WILLIAMS N. H., CHASE M. W., FULCHER T. & WHITTEN W. M. (2001): Molecular systematics of the Oncidiinae based on evidence from four DNA sequence regions: Expanded circumscriptions of *Cyrtorchilum*, *Erycina*, *Otoglossum*, and *Trichocentrum* and a new genus (Orchidaceae). – *Lindleyana* **16**: 113–139.

Addresses of the authors:

Dariusz L. Szlachetko  
 Iwona Skorowska (corresponding author)  
 Department of Plant Taxonomy and Nature Conservation  
 University of Gdańsk  
 ul. Wita Stwosza 59  
 80-308 Gdańsk  
 Poland  
 E-Mail: iwona.skorowska@phdstud.ug.edu.pl

Marta Kolanowska  
Department of Plant Taxonomy and Nature Conservation  
University of Gdańsk  
ul. Wita Stwosza 59  
80-308 Gdańsk  
Poland  
Department of Biodiversity Research  
Global Change Research Institute AS CR  
Bělidla 4a  
603 00 Brno  
Czech Republic

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Wulfenia](#)

Jahr/Year: 2017

Band/Volume: [24](#)

Autor(en)/Author(s): Kolanowska Marta, Szlachetko Dariusz L., Skorowska Iwona

Artikel/Article: [New species of Brevilongium \(Orchidaceae\) from Ecuador 193-198](#)