



SHORT COMMUNICATION

***Zygostates dasyrhiza* (Kraenzl.) Schltr. (Orchidaceae: Oncidiinae),  
a new record from Rio Grande do Sul, Brazil**

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**ABSTRACT:** (*Zygostates dasyrhiza* (Kraenzl.) Schltr. (Orchidaceae: Oncidiinae), a new record from Rio Grande do Sul, Brazil). *Zygostates dasyrhiza* (Kraenzl.) Schltr. is here documented for the first time for the state of Rio Grande do Sul, Brazil. A morphological description, data about geographic distribution and habitat, an artificial key to the three *Zygostates* species native to Rio Grande do Sul, and additional comments about this species are provided.

**Key words:** Oncidiinae, Orchidaceae, taxonomy, geographic distribution, Southern Brazil.

**RESUMO:** (*Zygostates dasyrhiza* (Kraenzl.) Schltr. (Orchidaceae: Oncidiinae), novo registro para o Rio Grande do Sul, Brasil) A presença de *Zygostates dasyrhiza* (Kraenzl.) Schltr. (Orchidaceae: Oncidiinae) é documentada pela primeira vez para o estado do Rio Grande do Sul. Neste trabalho são apresentados a descrição, distribuição geográfica, hábitat e comentários adicionais para a espécie, bem como uma chave artificial para separar as três espécies de *Zygostates* nativas do Rio Grande do Sul. Palavras-chave: Oncidiinae, Orchidaceae, taxonomia, distribuição geográfica, Região Sul.

## INTRODUCTION

*Zygostates* Lindl. (Orchidaceae) belongs in the subfamily Epidendroideae Kostel., tribe Cymbidieae Pfitz. and subtribe Oncidiinae Benth. (Chase *et al.* 2003). This genus was originally proposed by John Lindley in 1837, and its name is a reference to the symmetrical pair of side arms that are found at the base of the column of the type species (*Z. cornuta* Lindl.) (Chase & Toscano de Brito 2009).

*Zygostates* is a neotropical genus comprising about 19 species of small epiphytes (Chase *et al.* 2003, Chase & Toscano de Brito 2009). This genus has a disjunct distribution, occurring in northern South America and the Atlantic Forest in Brazil, and is absent from the Guianas and Amazonia. *Zygostates* is especially species-rich in the Southeast Region of Brazil (Chase & Toscano de Brito 2009) in Atlantic Forest, from about sea level to 1000 m (Chase & Toscano de Brito 2009).

Toscano de Brito (2001) considered *Dipteranthus* Barb. Rodr. a synonym of *Zygostates*, an idea supported by morphological analyses and is in agreement with ideas previously expressed by Pfitzer (1897). According to Toscano de Brito (2001, and references therein) and Chase & Toscano de Brito (2009), these genera were traditionally separated by floral (presence/absence of beaked anther) and vegetative (presence/absence of pseudobulbs and different types of leaves) characters, but these authors also agree that those traits are neither consistent nor taxonomically reliable.

The aim of this paper is to present a new record for the

orchid flora of Rio Grande do Sul. We herein formally include *Z. dasyrhiza* (Kraenzl.) Schltr. for the first time into the orchid flora of this state. A description of this species and an artificial key to the three *Zygostates* species native to Rio Grande do Sul are provided.

## MATERIALS AND METHODS

Specimens in the following herbaria were consulted: A, B, BM, CEN, CTES, F, G, GH, HAS, HB, HEPH, HUEFS, IBGE, ICN, K, K-L, M, MBM, NY, P, PACA, PEL, R, RB, S, SP, UB, UEC, VIC, and W (acronyms according to Thiers 2009). This paper follows the general orchid classification and terms proposed by Chase *et al.* (2003) and Dressler (1993), respectively. Abbreviations for authors of plant names are in accordance with Brummitt & Powell (1992). Delimitations of the physiographic regions of Rio Grande do Sul follow Fortes (1959). Photos of *Z. dasyrhiza* were taken in the field with a Sony H7 digital camera. The generic concept of *Zygostates* follows that of Chase & Toscano de Brito (2009) and Toscano de Brito (2001). Additional *Z. dasyrhiza* illustrations can be found in Toscano de Brito (2001) and Chase & Toscano de Brito (2009).

## RESULTS AND DISCUSSION

Until now, only *Zygostates alleniana* Kraenzl. and *Z. pellucida* Rehb. f. were known to occur in Rio Grande do Sul. Based on a review of the literature and specimens from herbaria, *Z. dasyrhiza* is formally documented for

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the first time for the state of Rio Grande do Sul. The label of specimen 71186 at PACA states that this specimen may be a new record for the orchid flora of Rio Grande do Sul, a suggestion that the authors of this paper confirmed. Pabst & Dungs (1977) cited *Z. dasyrhiza* from the states of Santa Catarina and Paraná, as well as from Paraguay. This species is geographically separated from the similar *Z. alleniana* Kraenzl., which occurs mainly

in the “Depressão Central” of Rio Grande do Sul. In addition, *Z. alleniana* can be easily separated by details of its perianth and by its smooth roots. *Zygostates dasyrhiza* is recognized in the field (even in absence of flowers) because of its pilose roots (Fig. 1B). *Zygostates pellucida* can be separated from *Z. dasyrhiza* because of its mostly green flowers, covered with trichomes, and by its smooth roots.

#### Key to the species of *Zygostates* Lindl. from Rio Grande do Sul

- |  |                             |
|--|-----------------------------|
| 1. Labellum navicular; petals whitish and plane, without trichomes .....       | 2                           |
| 1'. Labellum non-navicular; petals greenish and involute, with trichomes ..... | <i>Zygostates pellucida</i> |
| 2. Roots glabrous .....  | <i>Zygostates alleniana</i> |
| 2'. Roots pilose .....   | <i>Zygostates dasyrhiza</i> |

*Zygostates dasyrhiza* (Kraenzl.) Schltr., Repert. Spec. Nov. Regni Veg. 16: 449. 1920. Fig. 1 (Additional figures in Toscano de Brito 2001, p. 194 and Chase & Toscano de Brito 2009, p. 392).

*Ornithocephalus dasyrhizus* Kraenzl., Kongl. Svenska Vetenskapsakad. Handl., 46(10): 77. 1911.

*Zygostates paranaensis* Schltr., Repert. Spec. Nov. Regni Veg. 23: 68. 1926.

Epiphyte, 20 mm high. Roots fasciculate, pilose, 36-63 mm long. Rhizome inconspicuous. Pseudobulbs inconspicuous, one-leaved. Leaves conduplicate, 8.3-10.2 mm long, 3.1-4 mm wide, erect, apex acute. Inflorescence lateral, erect; 4-5 flowered. Flowers greenish white, nonresupinate. Pedicel 4.4-4.7 mm long (including the ovary), sulcate. Dorsal sepal 2.7 mm long, 1.4 mm wide, elliptic-lanceolate, slightly incurvate, free, entire, apex acute. Lateral sepals 2.2 mm long, 1.4 mm wide, ovate-lanceolate, slightly incurvate, free, margins entire, apex acute. Petals 3.4 mm long, 2.2 mm wide, elliptic-ovate, plane, free, margins entire to slightly sinuate,

apex rounded. Labellum 2.7 mm long, 3.6 mm wide, entire, navicular, not articulated with column, apex acuminate. Column 2 mm long, 0.7 mm high, margins erose-membranose; pollinarium 2.5 mm long with four waxy, yolk-yellow, elliptic pollinia; stipes 1.6 mm long, laminar, hyaline; viscidium 0.4 mm long.

*Distribution and ecology*: In the state of Rio Grande do Sul, this taxon mostly occurs in highland *Araucaria* rain forests, in the “Campos de Cima da Serra” and the “Encosta Superior do Nordeste” regions (regional names following Fortes 1959). These small orchids dwell on trees covered by lichens and mosses.

*Specimens examined*: BRAZIL. RIO GRANDE DO SUL: **Cambará do Sul**, 3 Jun. 2010, C.R. Buzatto 633 (ICN); **Caxias do Sul**, 16 Jan. 1992, A. Jasper s.n. (PACA 71186); **São Francisco de Paula**, 15 Dec. 2008, C.R. Buzatto 462 (ICN).

*Additional specimens examined*: BRAZIL. SANTA CATARINA: **Urubici**, 1 Dec. 2008, C.R. Buzatto 425 (ICN).



Figure 1. A-B. *Zygostates dasyrhiza*. A. Habit; B. Detail of pilose root (arrow). Scale bars (all figures): 10 mm.

## REFERENCES

- BRUMMITT, R. K. & POWELL, C. E. 1992. *Authors of plant names*. Kew: Royal Botanic Gardens. 732 p.
- CHASE, M. W. & TOSCANO DE BRITO, A. L. V. 2009. *Zygostates*. In.: PRIDGEON, A. M., CRIBB, P. J., CHASE, M. W. & RASMUSSEN, F. N. (Eds.). *Genera Orchidacearum: Epidendroideae part 2*. Oxford University Press, vol. 5. 664 p.
- CHASE, M. W.; BARRET, R. L.; CAMERON, K. N. & FREUDENSTEIN, J. V. 2003. DNA data and Orchidaceae systematics: a new phylogenetic classification. In.: DIXON, K. M., KELL, S. P., BARRETT, R. L., CRIBB, P. J. (Eds.) *Orchid Conservation*. Kota Kinabalu, Sabah, Malaysia: Natural History Publications. 418 p.
- DRESSLER, R. L. 1993. *Phylogeny and classification of the orchid family*. Portland: Dioscorides Press. 316 p.
- FORTES, A. B. 1959. *Geografia física do Rio Grande do Sul*. Porto Alegre: Globo. 393 p.
- PABST, G. F. J. & F. DUNGS. 1977. *Orchidaceae Brasilienses*. Kurt Schmiersow, Hildesheim, Germany, vol. 2.
- PFITZER, E. 1897. Orchidaceae. In.: ENGLER, A. & PRANTL, K. (Eds.). *Die natürlichen pflanzenfamilien*. Nachtrag und register zu Teil II-IV. Wilhelm Engelmann, Leipzig. p. 110-111.
- STAFLEU, F. A. & COWAN, R. S. 1976-1988. *Taxonomic literature*. Utrecht: Scheltema & Holkema.
- THIERS, B. 2009. *Index Herbariorum*: a global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. Available in: <<http://sweetgum.nybg.org/ih/>>. Access in: 25 Oct. 2009.
- TOSCANO DE BRITO, A. L. V. 2001. Systematic review of the *Ornithocephalus* Group (Oncidiinae; Orchidaceae) with comments on *Hofmeisterella*. *Lindleyana*, 16(3): 157-217.

## INDEX OF SCIENTIFIC NAMES

## (SYNONYMS IN ITALICS)

- Dipteranthus* Barb. Rodr., 130
- Zygostates* Lindl.,  
*alleniana* Kraenzl., 130, 131  
*cornuta* Lindl., 130  
*dasyrhiza* (Kraenzl.) Schltr., 130, **131**, **131f**  
*paranaensis* Schltr., 131  
*pellucida* Rchb. f., 130, 131
- Ornithocephalus* Hook.  
*dasyrhizus* Kraenzl., 131

## EXSICCATAE CHECKLIST

*Jasper, A.: s.n.* PACA 71186

*Buzatto, C.R.: 425, 462, 633* (ICN)