



Phylogenetic relationships in Brazilian *Pleurothallis sensu lato* (Pleurothallidinae, Orchidaceae): evidence from nuclear ITS rDNA sequences

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Abstract

Phylogenetic relationships for a large number of Brazilian species of *Pleurothallis sensu lato* (*Acianthera*, *Anathallis*, *Pabstiella* and *Specklinia*) were inferred in an analysis of ITS nrDNA using both parsimony and Bayesian methods. Our results show that: 1) most Brazilian *Pleurothallis* species recently transferred into *Stelis* in fact belong to the genus *Pabstiella*; 2) groups of species previously generally considered to be part of the genus *Specklinia* belong to *Pabstiella*; 3) some infrageneric groups—mostly compatible with Luer's sectional organization of his *Pleurothallis* subgenus *Acianthera*—are clearly supported within *Acianthera*; and 4) two species could represent a new genus.

Key words: *Acianthera*, *Anathallis*, Neotropical Orchidaceae, *Pabstiella*, *Specklinia*, *Stelis*

Introduction

Pleurothallis Brown in Aiton (1813: 211) (Orchidaceae, Pleurothallidinae) *sensu lato* is a complicated polymorphic and polyphyletic group, comprising over 2,000 specific names. Lindley proposed a first infrageneric classification as early as 1836, and the most recent one, after segregation of several genera over time by various authors, was that of Luer (1986a). In a conservative approach, Luer (1986a), instead of dividing the remaining group further into separate autonomous genera, organized *Pleurothallis* into subgenera and sections. The major improvement in our comprehension of the genus, however, was the reclassification of Pleurothallidinae by Pridgeon & Chase (2001), based on a study of the phylogenetic relationships in this subtribe (Pridgeon *et al.* 2001). Their results led to abandonment of Luer's original approach and reinstatement of older and/or hitherto often disregarded genera such as *Acianthera* Scheidweiler (1842: 292), *Anathallis* Barbosa Rodrigues (1877: 23), *Pabstiella* Brieger & Senghas (1976: 195) and *Specklinia* Lindley (1830: 8).

In Brazil, these groups comprise at least 300 species (the exact number depends on accepted synonymies). During the last decade, several authors have been working on Brazilian *Pleurothallis s.l.* and proposed transfers to these resurrected genera: *Acianthera* (Barros 2003, Borba 2003, Gonçalves & Waechter 2004), *Anathallis* (Luer 2009), *Pabstiella* (Barros 2002, Luer 2006, Kollmann 2010, Chiron & Bolsanello 2010a), or various genera (Barros 2005, 2006, Barros & Rodrigues 2009, Barros & Barberena 2010). According to Barros *et al.* (2010), there are only three *Pabstiella* species in Brazil. Chiron & Bolsanello (2010a), however, questioned the validity of the generally accepted placement of several species in *Stelis* Swartz (1799: 239) and expressed the opinion that the transfer of these species into *Pabstiella* would be a better decision. Luer (2007) had presumably a similar opinion when he validated several new combinations within this genus.