



A taxonomic synopsis of Brazilian Chloraeinae (Orchidaceae: Orchidoideae)

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Abstract

A taxonomic synopsis of Brazilian Chloraeinae (Orchidaceae) is presented. Artificial keys to separate the genera and species are included. Vegetative and floral features of all species are described and illustrated with drawings and photographs, and data on their distribution, phenology and ecology are presented. Two lectotypes and one neotype are proposed. The presence of *Bipinnula biplumata*, *B. montana*, *B. penicillata* and *Chloraea membranacea* in Brazil is confirmed, and *Bipinnula gibertii* is reported for the first time from this country.

Key words: *Bipinnula*, *Chloraea*, orchid nomenclature, orchid taxonomy

Introduction

Orchidaceae Jussieu (1789: 64) comprise about 24,000 species and constitute one of the more conspicuous angiosperm families because of their remarkable floral and vegetative morphological adaptations. Among American terrestrial orchids, species of subtribe Chloraeinae Pfitzer (1887: 98, as Chloraeae) are particularly appealing due to their showy and morphologically complex flowers. Chloraeinae are essentially an Andean orchid group (Correa & Sánchez 2003), and only nine species are found outside that region, in southern Brazil, northeastern Argentina and Uruguay: *Bipinnula biplumata* (Linnaeus 1781: 405) Reichenbach (1883: 62), *B. gibertii* Reichenbach (1877: 51), *B. montana* Arechavaleta (1899: 282), *B. penicillata* (Reichenbach 1878: 51) Cisternas & Salazar in Cisternas *et al.* (2012a: 10), *B. polysyka* Kraenzlin (1888: 317), *B. ctenopetala* Schlechter (1925: 24) (a dubious species; see below), *Chloraea bella* Hauman (1920: 99), *C. membranacea* Lindley (1840: 401) and *Gavilea odoratissima* Poeppig (1833: 19). The last is common and widely distributed in the Patagonian Andes, but has a disjunct distribution, with some small and isolated populations restricted to Sierra de la Ventana system in South Buenos Aires Province (Chemisquy 2012, Correa 1956).

In their current delimitation, Chloraeinae comprise about 70 species distributed in three genera (Correa & Sánchez 2003, Chemisquy 2012, Chemisquy & Morrone 2010, 2012 Cisternas *et al.* 2012a, Cisternas *et al.* 2012b): *Chloraea* Lindley (1827: 47; 45 species), *Bipinnula* Commerson ex Jussieu (1789: 65; 11–12 species) and *Gavilea* Poeppig (1833: 18; 17 species). In the last decades, Chloraeinae have been interpreted and delimited in different ways. The three genera cited above plus *Geoblasta* Barbosa Rodrigues (1891: 132; included in *Bipinnula*, see below) and *Codonorchis* Lindley (1840: 410) were referred by Dressler (1981, 1993), Szlachetko (1995), Kores *et al.* (2001) and Clements *et al.* (2002) to subtribe Chloraeinae based on multiple leaves, spiranthoid embryos, and non-tuberosid roots. However, although Dressler (1981, 1993) placed Chloraeinae in tribe Diurideae Endlicher (1842: 21), Szlachetko (1995) placed them in Geoblasteae Barbosa Rodrigues (1891: 132). More recently, Clements *et al.* (2002) recircumscribed Chloraeinae, including them in tribe Cranichideae Lindley ex Meisner

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