Are the lateral wings of the column of orchids staminodes? A vascular approach on *Encyclia patens* (Orchidaceae)

Poliana Ramos Cardoso[1,3], Solange Cristina Mazzoni-Viveiros[2] & Fábio de Barros[3]

[1]Pós-Graduação em Biodiversidade Vegetal e Meio Ambiente, Instituto de Botânica, São Paulo, SP, cardoso.poliana@gmail.com; [2]Núcleo de Pesquisa em Anatomia, Instituto de Botânica; [3]Núcleo de Pesquisa Orquidário do Estado, Instituto de Botânica.

The floral vasculature is an important topic for taxonomic and phylogenetic research, highlighting as an important tool in understanding any changes in external morphological patterns and the sequence of these changes. In monandrous orchids, only the median stamen is normally fertile and the lateral stamens are sometimes represented as lateral wings of the column. The lateral appendages of the column have been much debated, and some authors have considered them as a staminodia. *Encyclia patens* Hook. has two subspecies with different column structure. *E. patens* subsp. *patens* possess one fertile stamen and two large lateral wings. According to the current literature, *E. patens* subsp. *serroniana* - a teratological subspecies - presents three fertile stamens, the regular median and two lateral ones. In order to test the hypothesis that the lateral wings of column are staminodes, we investigated these two subspecies using classical techniques in plant anatomy. Entire flowers were fixed, dehydrated, embedded in paraffin, transversal and longitudinal sectioned, stained and mounted. Relevant features were drawn from observations of the sections under a light microscope with an attached camera lucida. Six vascular traces arising from branching of initial traces of ovary come into the column in both species. Three vascular traces are seen in the lobes of stigma and the three remaining continue toward the anther. The central vascular trace is visualized in the median anther and each one of the two lateral traces reaches one of the lateral wings of *E. patens* subsp. *patens*. In *E. patens* subsp. *serroniana*, the central trace is visualized in the median anther and lateral traces are observed in each of both lateral anthers. The study of flower vascularization indicates that lateral wings of column are really staminodes. This register may be helpful in future insights about the taxonomy and phylogeny in the Laeliinae and related groups.

Key words: floral vascularization, Laeliinae.

Financial support: CAPES, CNPq.