

A preliminary phylogenetic analysis of *Pleurothallis sensu lato* based upon nuclear and plastid sequences

M. WILSON*, C. BELLE, A. DANG, P. HANNAN, L. KELLOGG, C. KENYON, H. LOW, A. MOCHIZUKI, A. NGUYEN, N. SHEADE, L. SHAN, A. SHUM, T. STAYTON, C. VOLZ, B. VOSBURGH, H. WELLMAN & M. WOOLLEY

Biology Department, The Colorado College, Colorado Springs, CO 80903, USA

*Author for correspondence: mwilson@coloradocollege.edu

Morphological studies of *Pleurothallis sensu lato* by Luer and by Szlachetko have led them to propose several segregate genera, including *Acronia*, *Ancipitia*, *Colombiana*, *Elongatia*, *Lindleyalis*, *Lalexia* (for *P. quadrifida*), *Mirandopsis*, *Rhynchopera*, *Talpinaria*, and *Zosterophyllanthos*, leaving a much smaller group of species in *Pleurothallis sensu stricto*. In contrast, in molecular phylogenetic analyses by Pridgeon *et al.*, species in the proposed taxa *Ancipitia*, *Colombiana*, *Mirandopsis*, *Pleurothallis*, *Lindleyalis*, *Rhynchopera*, and *Talpinaria* formed a clade, indicating *Pleurothallis* should be defined more broadly; however, the analyses included only 15 species in total from these groups. The current investigation includes several species from each of the proposed segregate genera (excluding *Mirandopsis*) as well as from each of the groups within *Pleurothallis sensu stricto* (*Antenniferae*, *Longiracemosae*, and *Macrophyllae-Racemosae*),

for a total of ~143 ingroup species. Nuclear ITS and plastid *matK* markers have been sequenced for the majority of the species, and sequencing of 3' *ycf1* and *trnL-F* is underway. Preliminary analyses indicate that the species sampled from the taxa *Acronia*, *Ancipitia*, *Colombiana*, *Lindleyalis*, *Lalexia*, *Pleurothallis*, *Rhynchopera*, and *Talpinaria* do form a well-supported clade, as anticipated from the results of Pridgeon *et al.* However, from the proposed genus *Elongatia*, only the species *Elongatia excelsa*, *E. macrophylla*, *E. restrepioides*, and *E. sijmii* are included in the clade. Internally, there are well-supported distinct clades for species in the groups *Ancipitia/Colombiana*, *Lalexia*, *Lindleyalis*, *Loddigesia*, *P.* section *Macrophyllae-Fasciculatae* (excluding Mesoamerican species in the *P. excavata*-group), and *Rhynchopera*. *Pleurothallis* section *Pleurothallis* subsection *Acroniae* is not monophyletic, its members distributed among three clades.