

PHYLOGENETIC ANALYSIS OF THE ANDEAN GENUS *BRACHYCLADIUM* LUER (SYN. *OREOPHILUS* HIGGINS & ARCHILA) AND CLOSELY RELATED GENERA BASED ON NUCLEAR ITS SEQUENCING

MARK WILSON^{1,3} & LOU JOST²

¹ Biology Department, The Colorado College, Colorado Springs, CO 80903, USA

² Via a Runtun, Baños, Tungurahua, Ecuador

³ Corresponding author: mwilson@coloradocollege.edu

We previously reported that nrITS sequencing and phylogenetic analysis revealed at least four cryptic species within *Brachycladium nummularium* (syn. *Oreophilus nummularius*). Sequencing of additional species in the genus revealed two major clades within *Brachycladium*, the “nummularium”-complex plus *B. stalactites* and Luer’s section *Amplectentes*. Since the relationship of *Brachycladium* to *Andinia* had been noted earlier, a number of *Andinia* species were also included. Two clades were observed, a clade containing *A. lappacea*, *A. pensilis*, and *A. vestigipetalata* that was closely related to *Brachycladium* and a second, more distantly related clade containing *A. dalstroemii*, *A. pogonion*, and *A. schizopogon*.

Samples of two additional genera, *Masdevalliantha* Szlachetko & Margonska and *Xenosia* Luer, were included in the analysis based upon morphological similarity to *Andinia*. These two genera formed a clade that was sister to both *Brachycladium* and *Andinia*. Only the node subtending clades of all four genera had a high level of bootstrap support, whereas nodes subtending clades of *Brachycladium* plus *Andinia*, or *Brachycladium* alone, had much lower support. If future chloroplast sequencing produces phylogenies congruent with nrITS, this would indicate that *Andinia*, *Brachycladium* (syn. *Oreophilus*), *Masdevalliantha*, and *Xenosia* should all be placed in the same genus.