

Phylogenetic Analysis Phase II: Species Relationships

After determining the monophyly of *Corydalus*, it was appropriate to proceed with a species level phylogenetic analysis. Twenty-nine of 30 currently recognized species have been included in the analysis, considering *Chloronia* and *Platyneuromus* as outgroups (Appendix 2). Characters also were scored for the new species *C. amazonas*, known only from female specimens. However, it was excluded from the final analysis because of the many missing data. A parallel analysis with *C. amazonas* provides insight into its possible phylogenetic position. Characters from this analysis generally correspond with those in the previous (Phase I) section, except for several new ones. Characters not variable among all 31 taxa logically were excluded. Several characters coded generally in the previous analysis were subdivided into more character states because the more cohesive group under analysis allowed scoring in a finer fashion.

In total, 120 adult characters were scored for the 30 ingroup taxa and the 2 outgroup taxa (Table 35). As in the previous analysis, characters were coded (0 = plesiomorphic state, or state found in the outgroup; 1, 2, 3, 4, 5 = apomorphic states; ? = missing data), entered into a data matrix, and analyzed with PAUP for finding the shortest tree or set of trees under a heuristic search mode (including $n = 300$ random replicates of a stepwise addition search variant). A bootstrap 50% majority rule consensus tree (replicates $n = 1,000$) also was constructed. All characters were entered unordered and with equal weight.

Characters and Character States. The following list of characters conforms to the format in the previous analysis. Characters that have been