Morphometric analysis to differentiate taxonomically seven species of *Eleutherodactylus* (Amphibia: Anura: Leptodactylidae) from an Andean cloud forest of Colombia

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ABSTRACT

The genus *Eleutherodactylus* contains a large number of species and species groups that have had a notoriously difficult taxonomy. Morphometric analyses open new approaches and perspectives to evaluate morphological characters in the taxonomic context. Morphometric and statistical analyses were applied to differentiate taxonomically seven *Eleutherodactylus* species that co-occur in an Andean cloud forest (six of these belonging to the unistrigatus group). Fifty one characters were evaluated to determine those characters that best separate the species and species groups. Using morphometric analyses we were able to discriminate among species and species groups defined a priori. Qualitative characters, particularly the colour patterns, allowed recognising the juveniles of two groups; however, the discriminant analyses could not differentiate them. Quantitative characters allowed easy recognition of those species with a large sample size. Ten of the eleven quantitative variables showed a good discriminatory power: Linear combination of tympanum-eye distance and eyelid width, tympanum-eye distance, tympanum diameter, phalangeal width of finger IV, head length, eyelid width, head width, eye diameter, snout-vent length, and interorbital distance. Distance between eye and nostril was excluded from the discriminant model because of its low discriminatory power. Thus, morphometric and qualitative variables proved be useful in differentiating among *Eleutherodactylus* species and species groups at adult and juvenile levels.