



## Species limits in antbirds (Aves: Passeriformes: Thamnophilidae): an evaluation of *Frederickena unduligera* (Undulated Antshrike) based on vocalizations

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### Abstract

The Undulated Antshrike, *Frederickena unduligera*, a resident of lowland humid forests of western Amazonia, is somewhat poorly known as a result of its low population density and retiring habits. In recent years, vocalizations of *F. unduligera* have been recorded sufficiently to permit geographic analysis. Vocalizations supply valuable measures of species limits for antbirds, whose vocalizations are thought not to be learned. Based on vocalizations, we found that populations of the Undulated Antshrike are more appropriately considered as two biological species. Three populations considered subspecies of *F. unduligera* await further evaluation pending the acquisition of additional vocal recordings, specimens, and tissue for genetic analysis.

**Key words:** speciation, Neotropics, *Frederickena*, systematics, vocalizations, Thamnophilidae

### Introduction

The Undulated Antshrike, *Frederickena unduligera* (Pelzeln 1869), was considered a monotypic species until Zimmer (1944) compared plumages of a small series of specimens. Zimmer described three new subspecies, primarily on the basis of female plumage characters, an arrangement which has been followed ever since (e.g., Peters 1951). *Frederickena unduligera* is a low density species throughout its range, restricted to large tracts of terra firme forest where it favors isolated patches of dense forest undergrowth, especially light-gap tangles around tree falls and stream edges (Zimmer and Isler 2003) and thick, impenetrable palm (often *Lepidocaryum tenue* and occasionally *Leopoldinia pulchra*) undergrowth in sandy and poorly drained forest spaces (pers. obs. and M. Cohn-Haft, pers. comm.). Specimens of *F. unduligera* are rare in collections, the birds vocalize relatively less frequently than do most other antshrikes, and consequently its geographic range is poorly known. *F. u. unduligera* is known only from the right bank of the upper and middle Rio Negro in Amazonas, Brazil; *F. u. fulva* has been thought to be restricted to south-central Colombia near the base of the Andes, eastern Ecuador, and northeastern Peru north of the Rio Amazonas and Rio Marañón (but see below); *F. u. diversa* is said to occur from the south bank of the Rio Amazonas in Peru south to southeastern Peru, extreme southwestern Brazil, and northwestern Bolivia; and *F. u. pallida* occupies the Purus-Madeira interfluvium in Amazonas, Brazil (Fig. 1).

Vocalizations of the Thamnophilidae appear not to be learned, to be an important isolating mechanism in the family, and consequently, to provide a “yardstick” (*sensu* Mayr and Ashlock 1991) for estimating