

Morphological And Vocal Divergence In Disjunct Populations Of Three Endemic Atlantic Forest Rhynchocyclidae Species

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INTRODUCTION

The genus *Hemitriccus* Cabanis and Heine (1859) is a group of suboscine passerine birds that challenges traditional taxonomic revisions due to its morphological homogeneity. Despite its early description, very few studies have been conducted on many species within the genus, and for some, no taxonomic investigations have been carried out to clearly define species boundaries. This problem is particularly significant considering their allopatric distributions. Recent taxonomic studies of Neotropical suboscine passerines have demonstrated the importance of integrative approaches, especially for cryptic species complexes where traditional morphological characters provide limited diagnostic value.

AIM

Our investigation focused on three challenging *Hemitriccus* species (*H. mirandae*, *H. furcatus*, and *H. nidipendulus*) with disjunct distributions across Brazil.

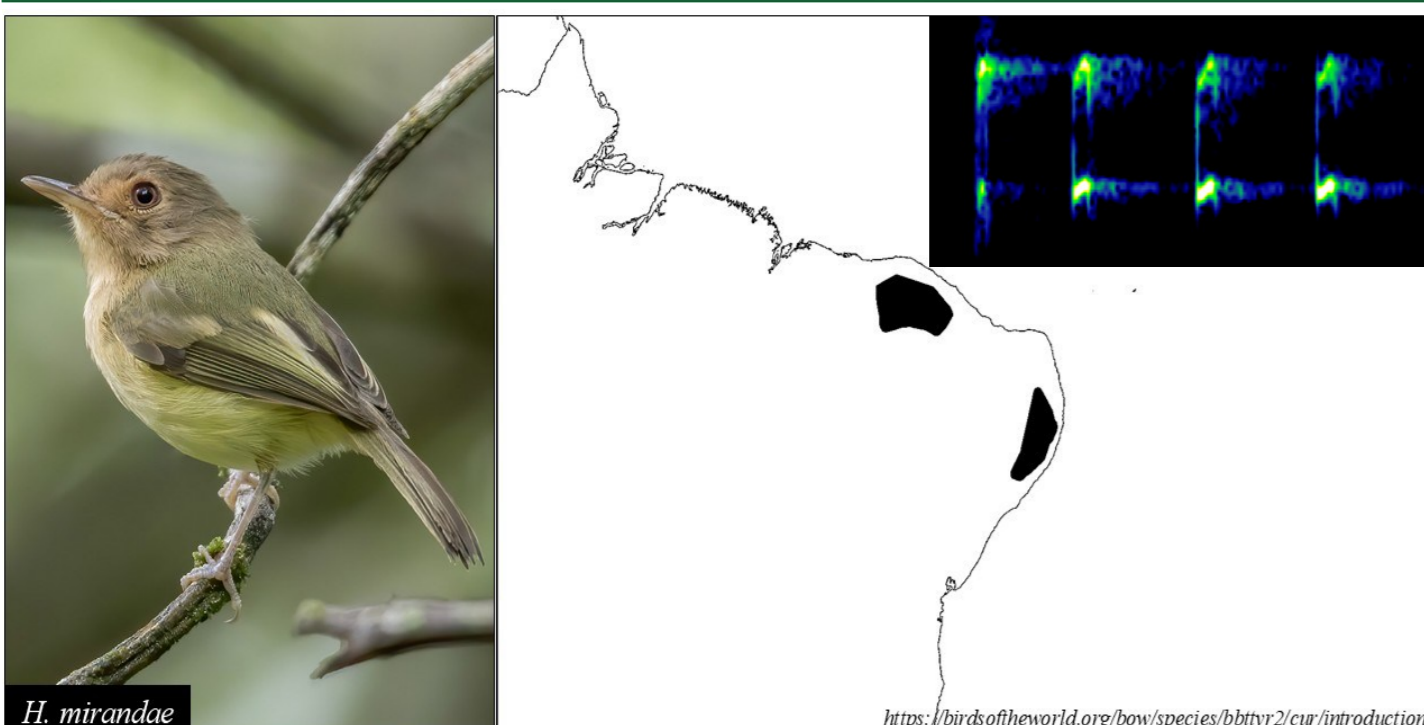


METHOD

- Bioacoustic analysis were made using convolutional neural networks (CNNs) using BirdNET
- Morphological examination of 35 voucher specimens from the Museu de Zoologia da Universidade de São Paulo.
 - Plumage coloration was assessed using standardized color catalogs.
 - Morphometric analysis included: **culmen length, width and height, tarsus, wing, and tail length.**
- Multivariate analysis of variance (MANOVA) was used to assess differences among populations, while Student's t-tests were applied to evaluate pairwise population differences.

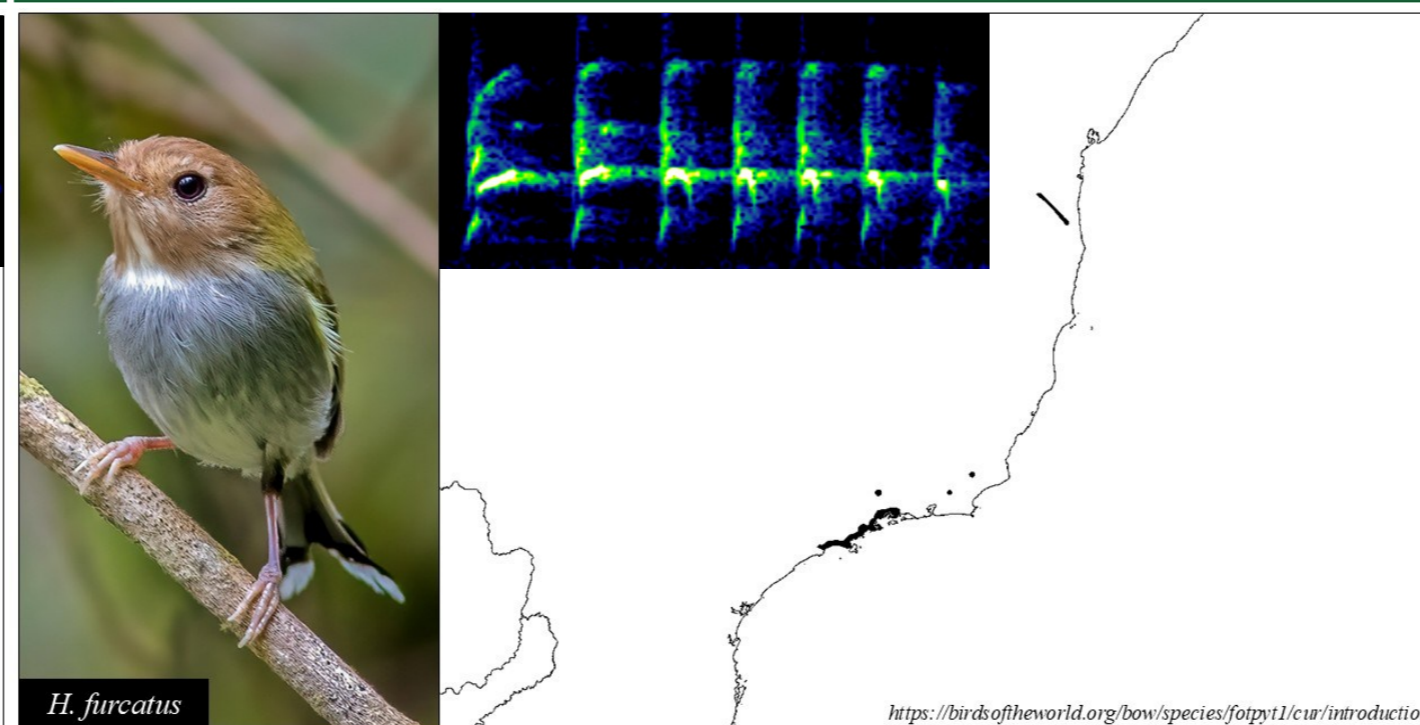
RESULTS & DISCUSSION

H. mirandae



H. mirandae
Foto feita por Brad Murphy

H. furcatus



H. furcatus
Foto feita por Fabio Girolano

H. nidipendulus

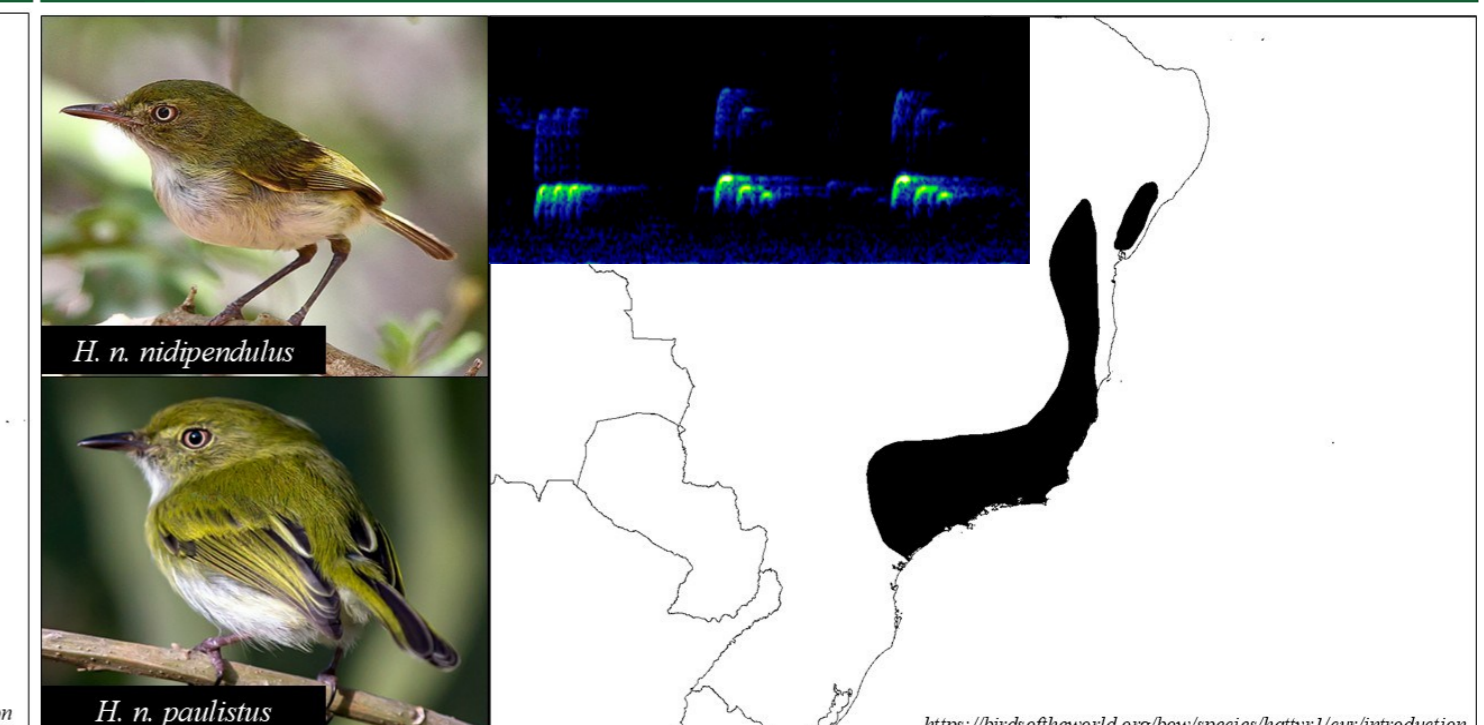


Foto de *H. n. nidipendulus* feita por Luiz Rondini e *H. n. paulistus* feita por Marco Guedes



Ventral views of specimens of *H. mirandae*

Hemitriccus mirandae specimens exhibited pale yellow underparts (2.5Y 8/4), which became lighter posteriorly, contrasting with their uniform greenish-olive dorsum (49-Greenish Olive).

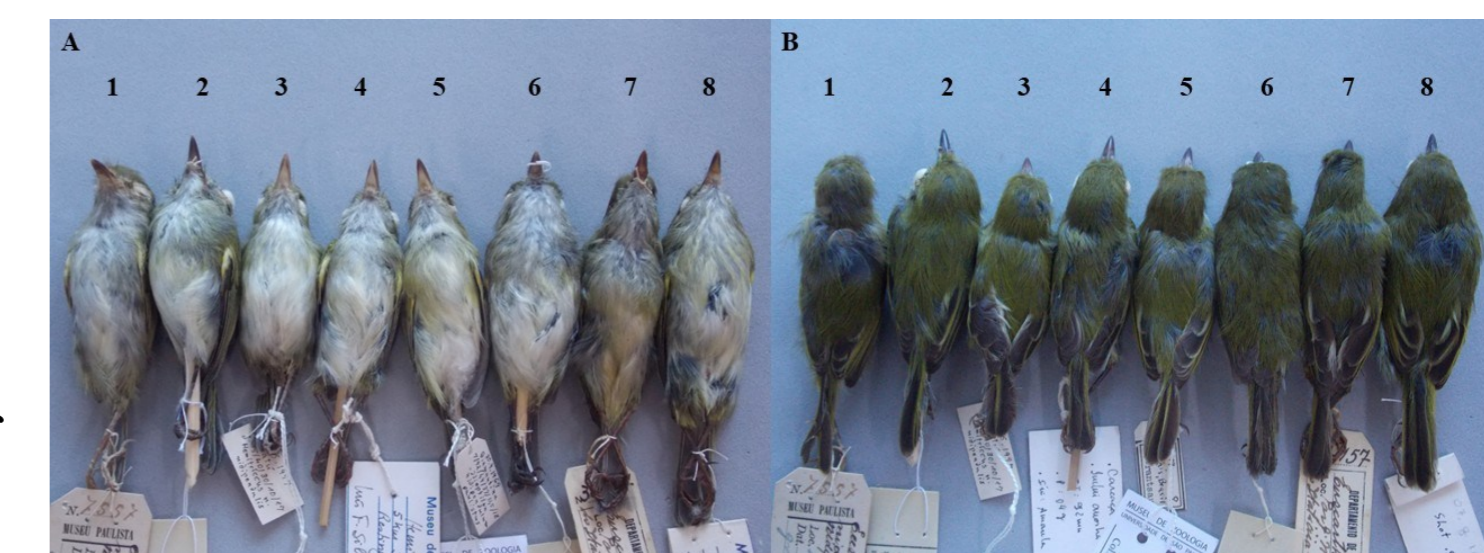
Only one specimen of the northwestern population was available, therefore no statistical analysis were made



Ventral views of specimens of *H. furcatus*

H. furcatus showed a more complex plumage with a gray chest (N 6/0) grading to a light-gray abdomen (10Y 8/6), and upperparts featuring a brownish head (23 Raw Umber) transitioning to a greenish-olive body (49 Greenish Olive).

There were no specimens of the northern population, therefore no statistical analysis were made



Ventral (A) and dorsal (B) views of specimens of *H. nidipendulus* (1-4: *H. n. nidipendulus*; 5-8: *H. n. paulistus*)

H. nidipendulus displayed distinctive gray underparts (N 6/0) with prominent yellowish streaking (157 Sulfur Yellow) and consistent greenish-olive (49 Greenish Olive) upperparts.

CONCLUSION

As of now these findings support the synonymization of *H. n. paulistus* with *H. n. nidipendulus*, while highlighting the need for additional sampling to clarify the taxonomic status of *H. mirandae* and *H. furcatus* populations.

FUTURE WORK / REFERENCES

- Perform a manual analysis of the recordings to check CNN validity
- Examine more specimens of *H. mirandae* and *H. furcatus*

