HANDBOOK OF THE BIRDS OF THE WORLD Alive

ORNITHOLOGICAL NOTES

Notes on the vocalizations of Dull-mantled Antbird (*Myrmeciza laemosticta*)

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In the following we briefly analyze and compare voice of the two races of Dull-mantled Antbird (*Myrmeciza laemosticta*) in order to quantify the extent of any vocal differences as a support for taxonomic review. We have made use of sound recordings available on-line from Xeno Canto (XC).

Voice of the two races *palliata* and *laemosticta* has already been analyzed previously (Chaves *et al.* 2010). It was subsequently also extensively discussed in http://www.museum.lsu.edu/~Remsen/SACCprop475.html
The overall conclusion being that *palliata* is (far) more different vocally from *laemosticta*, than *palliata* from Esmeraldas Antbird *M. nigricauda.* An additional quick comparison of *palliata* vs *nigricauda* was performed, after which it was agreed that vocal difference is here also 'large enough' using with some flexibility standards for allopatric populations in antbirds (Isler et al. 1998).

In the following we evaluate the same data using however the criteria proposed by Tobias *et al.* (2010). Table 2 from the Chaves paper allows to calculate some effect sizes:

palliata vs. *laemosticta*

duration (s)	2.46 ± 0.32 vs 1.67 ± 0.16 -> effect size 3.12 -> score 2
pace (n/s)	3.10 ± 0.28 vs. 5.03 ± 0.45 -> effect size 5.15 -> score 3
interval length (s)	162.68 ± 27.32 vs. 98.24 ± 38.46 -> effect size 1.93 -> score 1

Besides the parameters measured, more parameters which quantify the important vocal difference could be defined, such as e.g. difference in max. freq. of the two last notes, with *palliata/nigrescens* ending with a much higher-pitched last note, which would also lead to a score of 2 or 3 (when making abstraction of 'incomplete songs')(Fig. 1).
In any case, it is clear that both taxa differ significantly in loudsong, leading to a total score of 5 or 6.

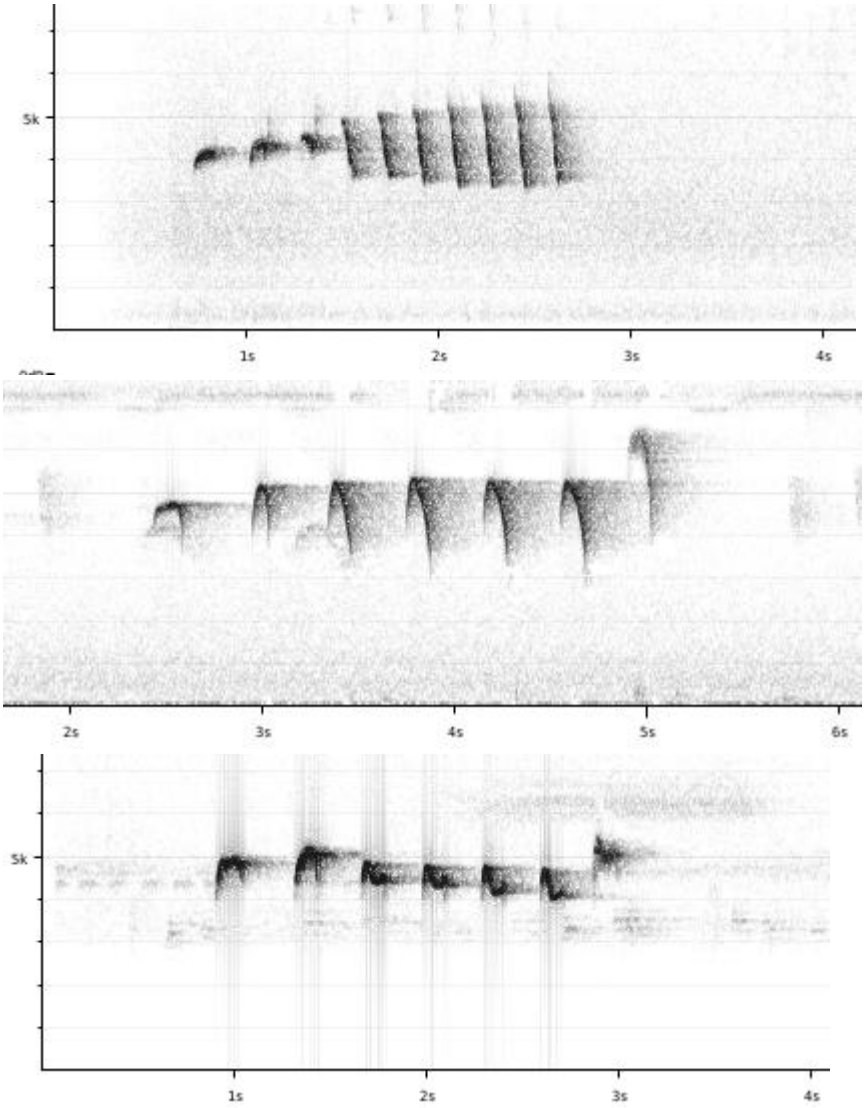

Figure 1: top to bottom: typical loudsong of *M.l.laemosticta* (Panama), *M.l.palliata* (N Colombia) and *M. nigricauda* (NW Ecuador)

In the same way we can quantify vocal differences between *palliata* and *nigricauda*:

palliata vs. *nigricauda*

duration (s)	2.46 ± 0.32 vs. 2.13 ± 0.18 -> effect size 1.27 -> score 1
pace (n/s)	3.10 ± 0.28 vs. 3.16 ± 0.35-> effect size 0 -> score 0
interval length (s)	162.68 ± 27.32 vs. 187.67 ± 56.58 -> effect size 0.5 -> score 1
peak frequency (Hz)	4609 ± 266 vs. 5178.3 ± 327 -> effect size 2.91 -> score 2

The data were taken from a rather small number of recordings (n=10). Given that most differences are very small, they would have to be confirmed by measuring a larger number of samples (which are becoming available gradually).

Again, besides the parameters measured, a few more parameters could be defined which quantify the subtle differences between both races. E.g. *palliata* notes gradually increase slightly in pitch, *nigricauda* notes decrease in pitch at some point. One could define the parameter 'max. freq. first note minus max. freq. third last note'.
Making abstraction of 'incomplete songs' this gives the following measurements:
palliata freq. change *c* +400Hz to +900Hz
nigricauda freq. change c -500Hz to 0Hz
This leads to a score of about 2-3. This is however also a frequency-related parameter (although more related to freq. range rather than peak freq.).
There is also a difference in note shape, with *palliata* having mostly round overslurred notes, and *nigricauda* having a more irregular shape, especially towards the end.

From all data together, it would seem that vocal differences between *M.l. palliata* and *M. nigricauda* are indeed less striking but nevertheless reach a total score of about 3-4.

This note was finalized on 11th May 2015, using sound recordings available on-line at that moment. We would like to thank in particular the sound recordists who placed their recordings for this species on XC: Ken Allaire, Peter Boesman, David Bradley, Diego Calderon, Juan Chaves, Andres Cuervo, Thomas Donegan, Ottavio Janni, Jose Gustavo Leon, Hans Matheve, Alexandre Renaudier, Andrew Spencer and Tom Stevens.

References

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