

Notes on the vocalizations of Black-throated Tody-tyrant (*Hemitriccus granadensis*)

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In the following we briefly analyze and compare voice of the different races of Black-throated Tody-tyrant (*Hemitriccus granadensis*). We also try to quantify the extent of any vocal differences using the criteria proposed by Tobias *et al.* (2010), as a support for taxonomic review. We have made use of sound recordings available on-line from Xeno Canto (XC) and Macaulay Library (ML).

Main vocalizations are a short series of well-spaced notes (usually rising and falling in pitch, and accelerating/decelerating), and a much faster trill.

pyrrhops seems to utter more the short series of notes, *granadensis* mainly the trill, while *lehmani* again the short series of notes (based on the fairly low number of available recordings). There are no recordings available of the Venezuelan races (a recording from W Perija (ML204681) is so different that I have not included it in the analysis, as identification should be checked more thoroughly). Two recordings of *caesius* are of the short series.

We have measured some basic sound parameters for both vocalization types:

pyrrhops

note series (n=8)

| | |
|--------------------|-------------|
| lowest max. freq. | 1800-3000Hz |
| highest max. freq. | 2550-3300Hz |
| note length | 0.065-0.09s |
| pace | 0.14-0.25s |

trill (n=2)

| | |
|------------|-------------|
| pace | 0.08-0.096s |
| max. freq. | 2170-3600Hz |

caesius

note series (n=2)

| | |
|--------------------|-------------|
| lowest max. freq. | 1500-1800Hz |
| highest max. freq. | 2000-2140Hz |
| note length | 0.065-0.10s |
| pace | 0.13-0.40s |

granadensis/lehmanni

note series (n=3)

| | |
|--------------------|-------------|
| lowest max. freq. | 1800-2050Hz |
| highest max. freq. | 2050-2400Hz |
| note length | 0.065-0.08s |
| pace | 0.19-0.49s |

trill (n=3)

| | |
|------------|-------------|
| pace | 0.06-0.08s |
| max. freq. | 2600-3000Hz |

Overall vocalizations are quite similar.

The note series of *pyrrhops* is distinctive in having upslurred notes, and as a consequence reaches higher frequencies. Somewhat surprisingly, southern race *caesius* is much more similar to northern races (although only 2 recordings available)(Fig. 1).

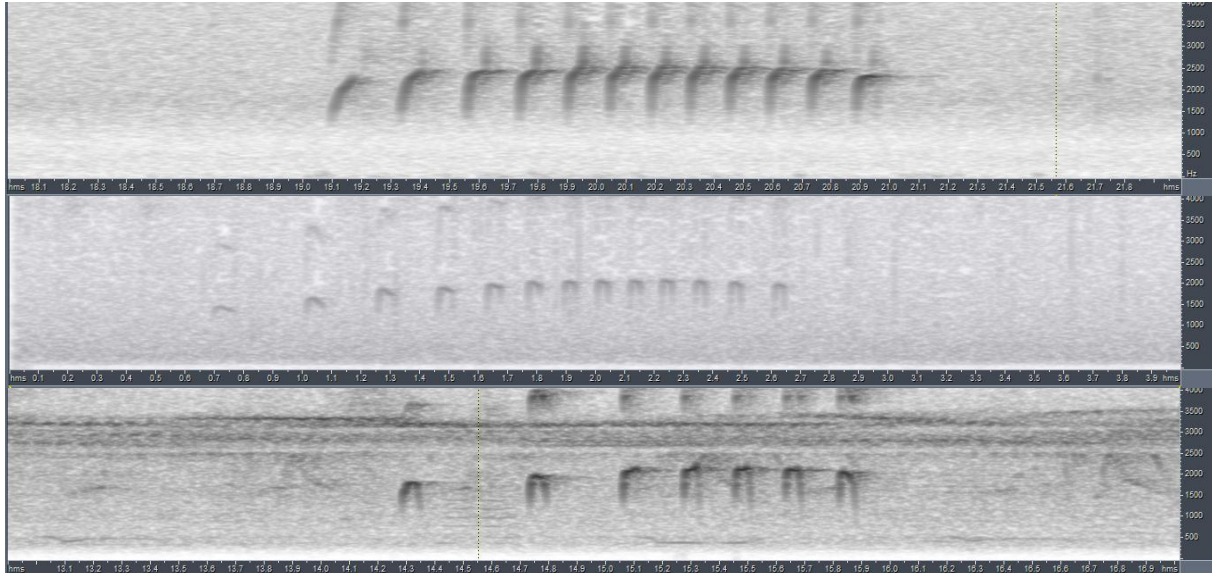


Figure 1: Typical examples of homologous vocalizations of *pyrrhops* (top), *caesius* (middle) and *lehmanni* (bottom).

It is quite remarkable that the vocal difference of *pyrrhops* vs. all other races including *caesius* coincides with the racial difference in lore colour.

As max. freq. and/or note shape are the only obvious differences, a vocal score of 2-3 could be given to *pyrrhops* vs. all others.

It is further intriguing that *granadensis* seems to utter (almost ?) exclusively the trill.

This note was finalized on 31st August 2015, using sound recordings available on-line at that moment. We would like to thank in particular the many sound recordists who placed their recordings for this species on XC and ML.

References

Tobias, J.A., Seddon, N., Spottiswoode, C.N., Pilgrim, J.D., Fishpool, L.D.C. & Collar, N.J. (2010). Quantitative criteria for species delimitation. *Ibis* 152(4): 724–746.

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