Notes on the vocalizations of Southern Nightingale-wren (*Microcerculus marginatus*)

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In the following we briefly analyze and compare voice of the different races of Southern Nightingale-wren (*Microcerculus marginatus*). 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).

An overview of the song of the different races:

luscinia: Song is a rapid rising series of short notes followed by a long sequence of pure whistles, starting at about 7kHz and going down to about 5kHz, with pauses gradually getting longer and longer.

squamulatus

In Venezuela, song of birds in the coastal Cordillera is structurally similar to *luscinia* (a fast rising series followed by a long series of well-spaced pure whistles), but whistles are decidedly lower pitched (going down to 3-4kHz).

In the foothills and lowlands, other patterns of whistles, going up and down in pitch, exist:

corrasus: Song is a single high-pitched whistle followed by a series of whistles gradually descending in pitch (down to about 4kHz).

occidentalis: Song is a single high-pitched whistle followed by a long series of whistles gradually descending in pitch (down to about 3-4kHz).

taeniatus Song is a single (lower-pitched) whistle followed by a long series of whistles gradually descending in pitch (down to about 3-4kHz).

marginatus: Seemingly has different song types: either one or more intro whistles followed by a long descending series, or whistles given more in irregular patterns going up and down in pitch. Whistles go down in pitch to c. 2-3kHz.

At least in W Amazonia also an alternative song exists, a long series of fast delivered whistles.

It is clear from the above examples that there is a considerable amount of variation in song, even within the presently recognized taxa.

Song of race *luscini* stands apart in having the highest pitch, whistles not going below c. 5kHz (vs. typically 2-4kHz for all other races) (scored 2-3). It is also the race which (at least on average) starts its song with the highest number of introductory rising notes.

As a result, there is also a clear vocal break between *M. philomela* (which has a song consisting of short whistles randomly going up and down in pitch) and *M.m. luscini* (which has a song consisting of a fast series of rising whistles followed by a very long series of long pure whistles gradually descending in pitch, but remaining above c. 5kHz). If we would make abstraction of the other races of *M. marginatus*, total vocal score between *philomela* and *luscini* is about 5, based on whistles down to c. 3kHz vs. down to c. 5kHz (2-3), max. pitch difference between 2 subsequent notes (2-3), note length (2), max. pace etc..

The song of *M. philomela* does however resemble more e.g. the up and down pattern of *M.m. marginatus*, although still with some small differences.

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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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