

Notes on the vocalizations of Rufous Gnateater (*Conopophaga lineata*)

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In the following we briefly analyze and compare voice of the different races of Rufous Gnateater (*Conopophaga lineata*). 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 on commercial publications (Isler *et al.* 2002).

Song is a sweet series of notes, especially rising in pitch towards the end, with seemingly quite some variation. We made some measurements of basic sound parameters:

cearae (n=2)

max. freq 4800-5150Hz
 freq. range 2700-3000Hz
 note length 0.14s
 total length 2.16-3s
 # notes 10-13
 note shape shape looks like letter 'M'

lineata (n=1)

max. freq 5600Hz
 freq. range 2700Hz
 note length 0.18s
 total length 2.5s
 # notes 11
 note shape shape looks like an irregular 'M'

vulgaris N (birds N of the Sao Paulo region)(n=5)

max. freq 4000-5000Hz
 freq. range 1600-2000Hz
 note length 0.16-0.28s
 total length 2.7-2.9s
 # notes 9-11
 note shape shape looks like half an 'M', only first part

vulgaris S (birds of the Sao Paulo region and further S)(n=7)

max. freq 4500-5500Hz
 freq. range 2500-3500Hz
 note length 0.065-0.1s
 total length 2.2-3.5s
 # notes 18-28
 note shape shape has now become irregular overslurred

If we look at note shape there is a very gradual change in shape from N to S, with *cearae* and *lineata* similar, and *lineata* similar to northern *vulgaris* (Fig 1.), and an abrupt change with southern *vulgaris*.

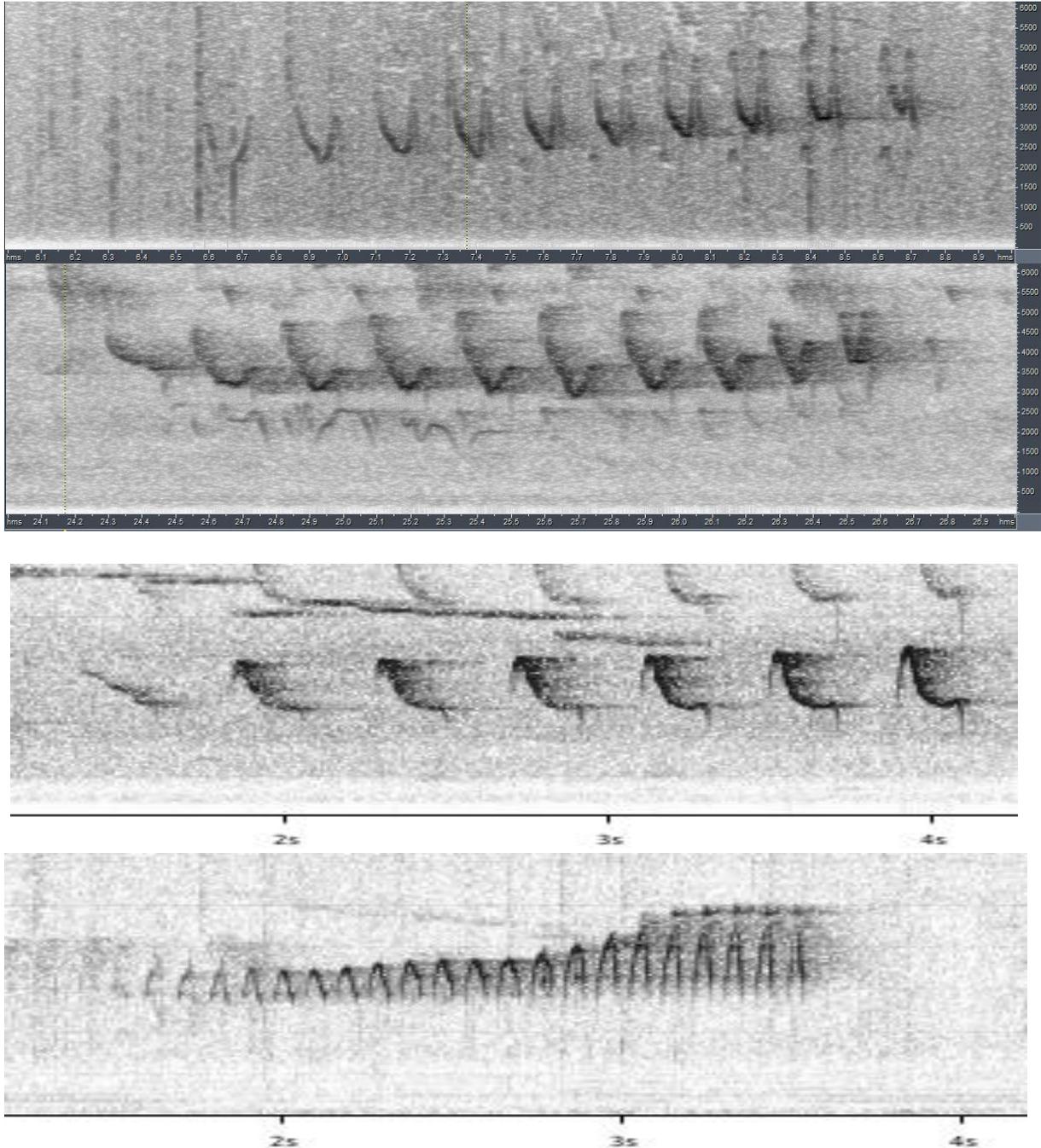


Figure 1: From top to bottom: *cearae*, *lineata*, *vulgaris* (N), *vulgaris* (S)

With only a few recordings of *cearae* and *lineata* available, we can't rely a lot on the measurements, but the least one can say is that differences between *cearae*, *lineata* and northern *vulgaris* are not striking at all. We don't even have recordings of song from the Recife population, which is located in between *cearae* and *lineata*. It is therefore surprising that some authorities elevated *cearae* to species rank to a large extent based on presumed vocal difference.

Based on the limited information we have available, it would seem that the score for vocal difference between *cearae* and *lineata/northern vulgaris* will be low (e.g. score 1 at most for note shape and score 1 for e.g. frequency range or note length), reflecting a minor vocal difference and rather just one extreme of a gradual change in loudsong from north to south.

Much more striking however is the vocal difference of southern birds of race *vulgaris* vs. all others, including northern birds of the same race *vulgaris*. There seems to be a fairly abrupt change in voice just north of Sao Paulo city. Note length, pace and number of notes are clearly different and would all score 2 or 3, leading to a score of about 5. This is an indication that *vulgaris* may comprise two different taxa.

This note was finalized on 13th 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.

References

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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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