

## Notes on the vocalizations of Yellow-rumped Cacique (*Cacicus cela*)

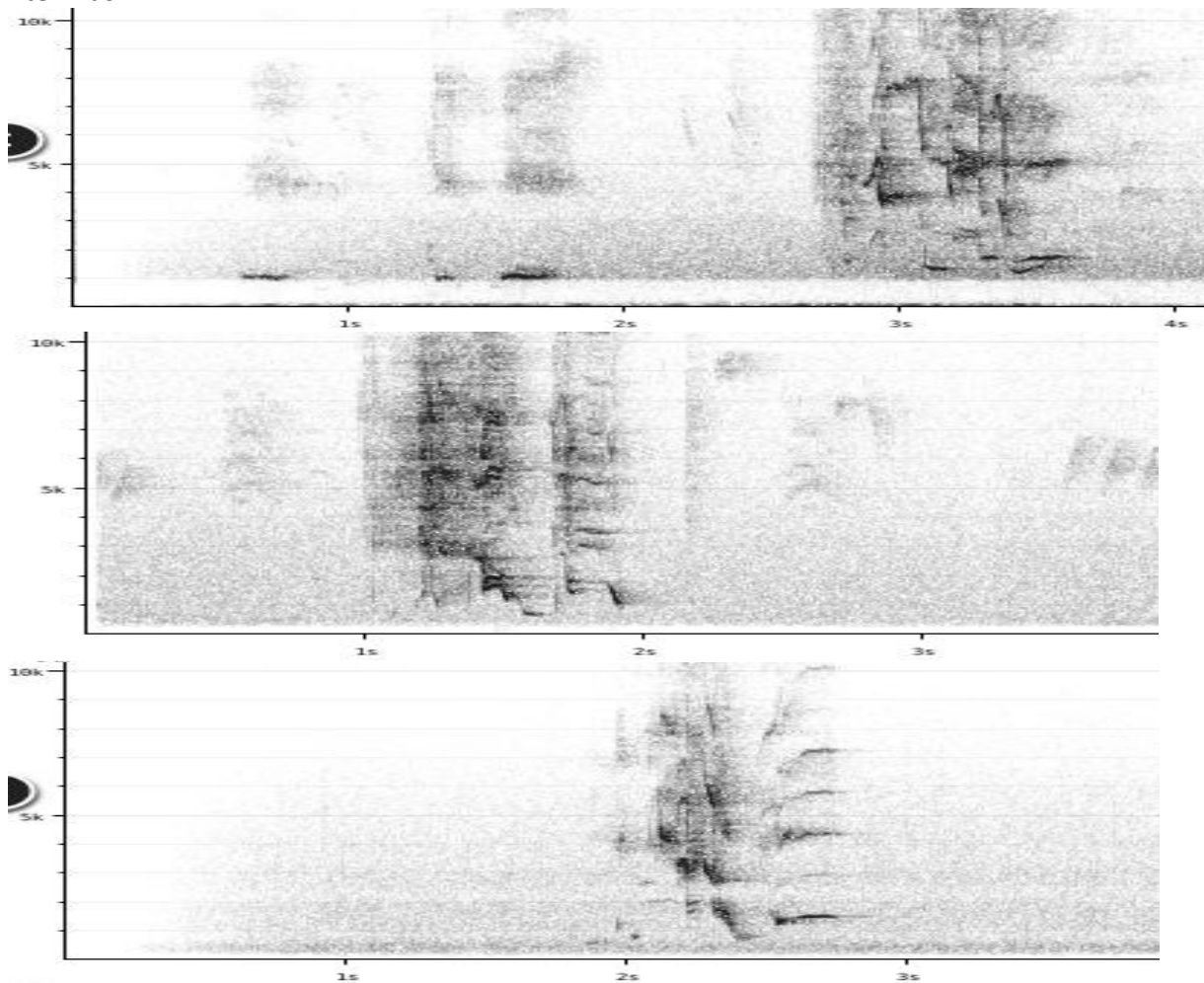
Peter Boesman

In the following we briefly analyze and compare voice of the three races of Yellow-rumped Cacique (*Cacicus cela*). 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.

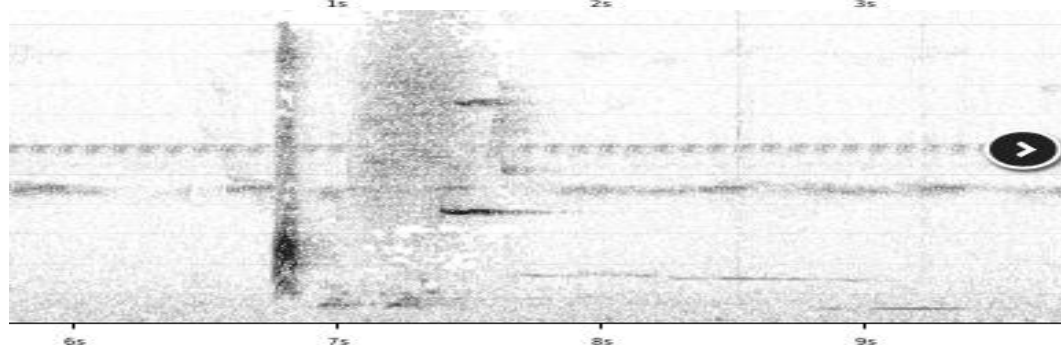
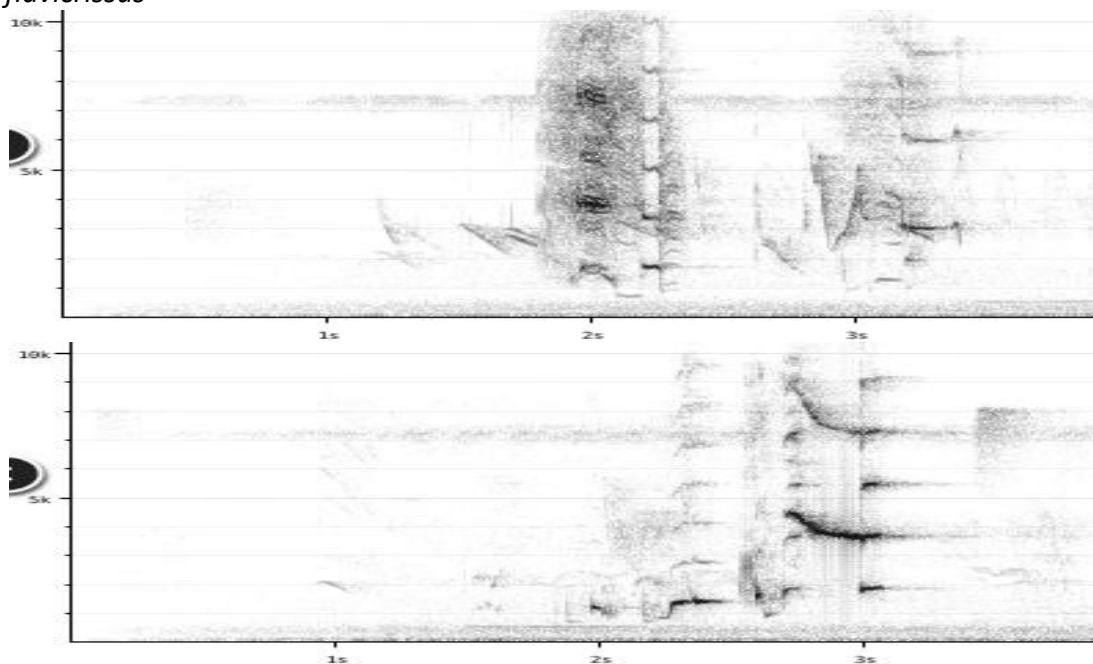
We have made use of sound recordings available on-line from Xeno Canto (XC) and Macaulay Library (ML).

Vocal repertoire is large, and comparison of homologous vocalizations therefore is not straightforward. One such vocalizations is what we could call the 'Oropendola-like' display-song:

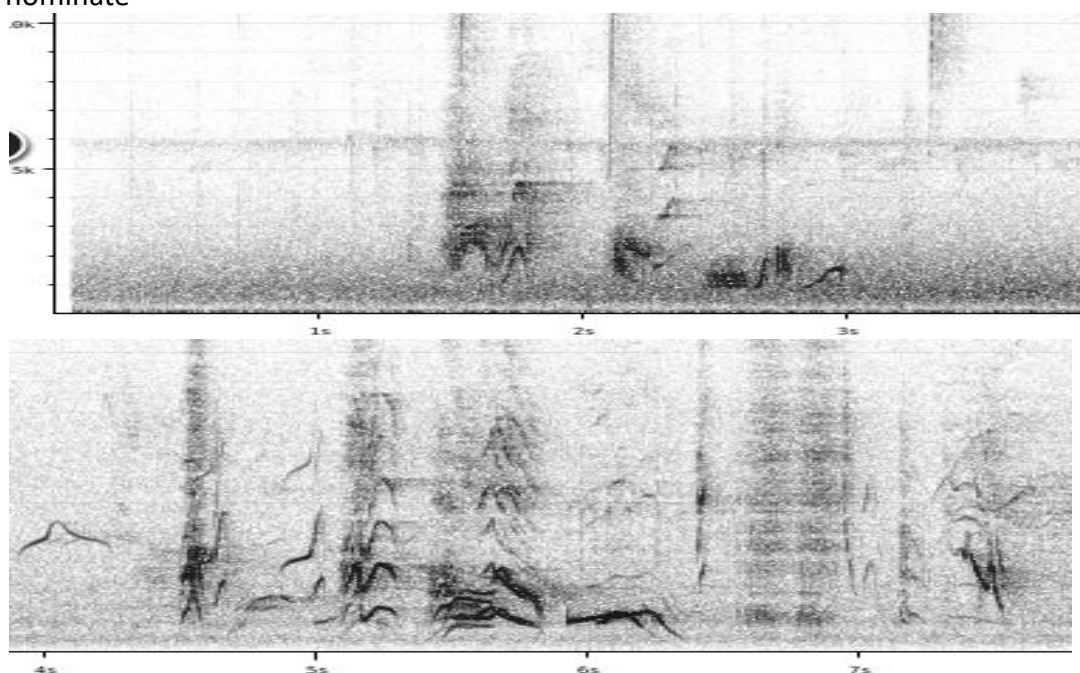
*vitellinus*

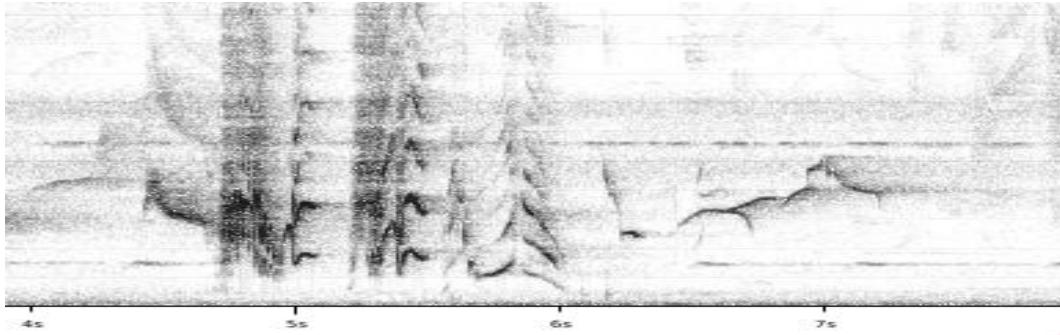


*flavicrissus*



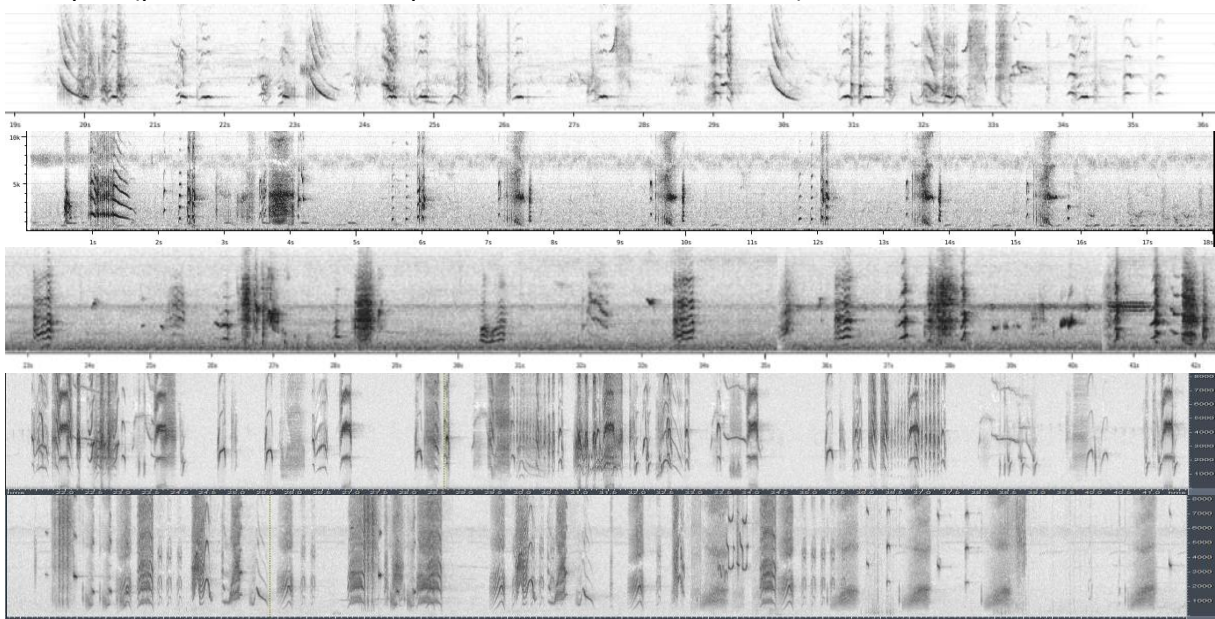
*nominate*





Even within this so-called display song, there is much variation within every subspecies. It would seem however that *vitellinus/flavicrissus* typically utters a scratchy note-complex followed by a clearer rather sharp-sounding ending note at fairly high but level pitch (which shows as a short flat line with harmonics on the sonogram). This vocalization is uttered quite often, and is not unlike some *Oropendola* display songs. Nominate at the other hand typically utters a few distinct scratchy notes followed by some mellow bubbling rather melodious low-pitched end notes, which don't have a flat pitch as in previous. This vocalization is also uttered relatively less frequently. Nominate thus has on average lower-pitched end notes, with slurred (non-flat) shape, which could be given a score of 2.

Another point of difference is that nominate has what could be called a 'second song type': this is an extremely varied longer song that can last for minutes and includes different loud whistles and screeches, many of which are clear mimicry of local birds and other sounds (see also Jaramillo *et al.* 1999). It does not include the above discussed display song. Examples (parts of an entire sequence, at different time scale):



This second song type is not known for *vitellinus/flavicrissus*. Some (rather uncommon) calls of these taxa can also be considered imitations, but this is never given in a long string of calls and imitations, and are definitely less convincing imitations (while in nominate many are near-perfect imitations).

This seems to be quite an important vocal difference (reinforced by the fact that it seems to play an important role in competition between males (Jaramillo 1999)). While strictly spoken, Tobias criteria do not consider 'lack of important homologous vocalization', a score of about 2-3 could be allowed here, or alternatively one could quantify by counting the number of different notes used by a single bird, in which case nominate would reach a far higher number, leading also to a score of about 2-3.

Besides these two song types, all taxa have several short call notes. These are typically given irregularly, either single or in short series, and lack the complexity of the imitated vocalizations. Examples are 'tchak', 'chuck', 'week', 'kiuck', 'kerreck', etc... In general, such calls of nominate sound harsher, more piercing, than in the 2 other races, which often emit rather subdued 'chuk' calls, but this is not readily quantified (allow 1).

All in all, despite the complex vocalizations, which to some extent surpass the possibilities of expressing vocal differences by measuring basic sound parameters, the listed differences are clear and verifiable, and indicate that there is a significant vocal difference between nominate and *vitellinus/flavicrissus*.

It is recommended to collect more recordings of *vitellinus/flavicrissus* as available numbers are fairly low for such a common species (presumably because lacking imitation and continuous loud vocalizations, song is less spectacular than in nominate...). As an example, only 6 (!) of the 127 recordings in Macaulay Library are of *vitellinus/flavicrissus*.

This note was finalized on 15th July 2016, 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

Jaramillo, A. & Burke, P. (1999). The New World Blackbirds: The Icterids. Christopher Helm. London.

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.

## Recommended citation

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