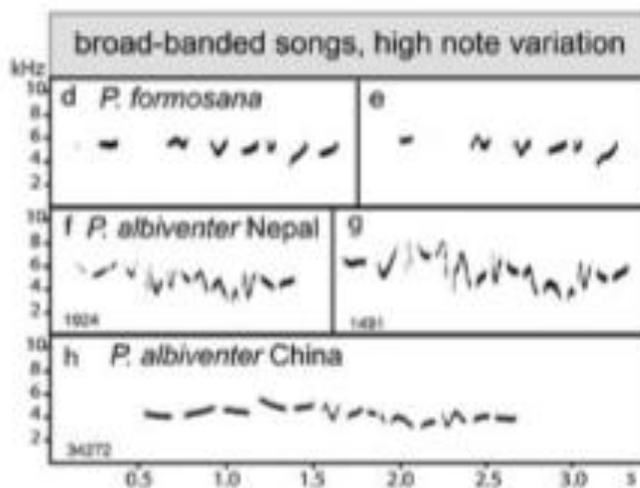


Notes on the vocalizations of Scaly-breasted Wren-babbler (*Pnoepyga albiventer*)

Peter Boesman

In the following we briefly analyze and compare voice of the different races of Scaly-breasted Wren-babbler (*Pnoepyga albiventer*). 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).

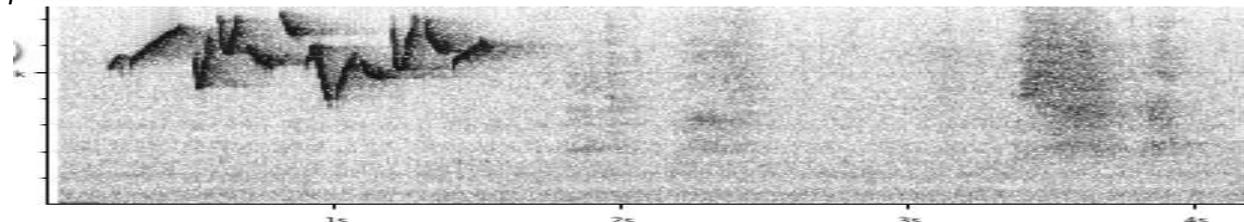
Voice has already been analyzed in Päckert *et al.* (2013), concluding that there is a significant vocal difference in frequency and time parameters between Nepal and China populations, the latter being longer in duration and having a narrower frequency range. These findings were summarized in the following figure:

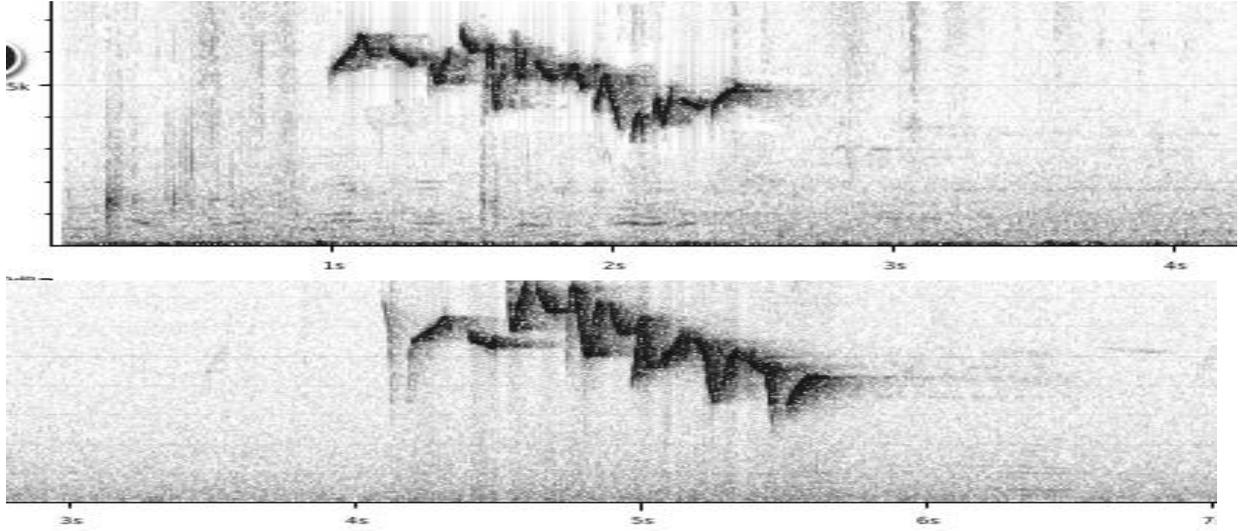


As apparently no recordings were analyzed from intermediate regions (Bhutan and NE India), and quite a few recordings are available, we will reassess vocal differences here, which will also allow quantification according to Tobias criteria.

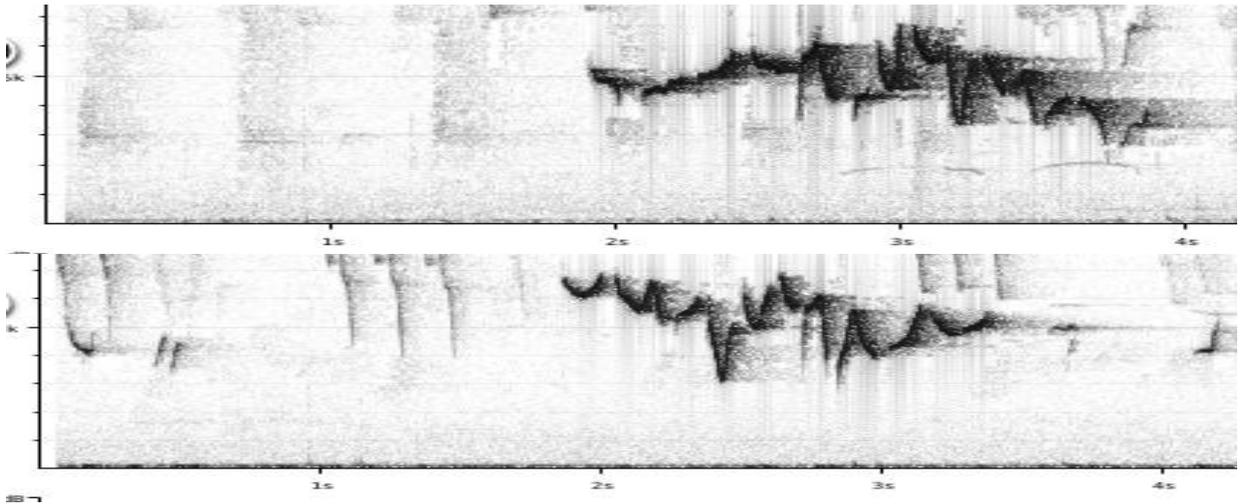
A few examples:

palidior

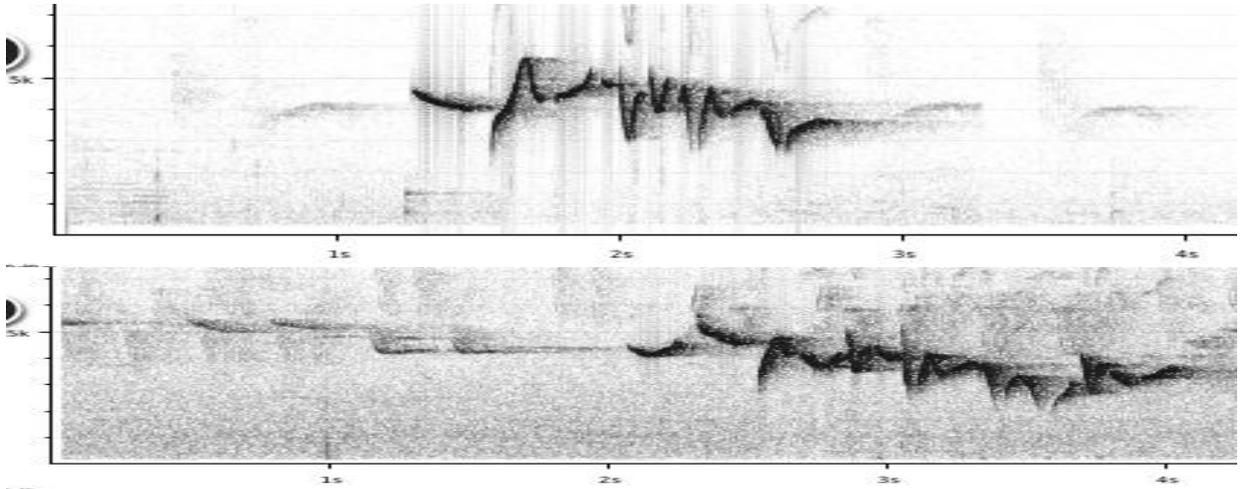


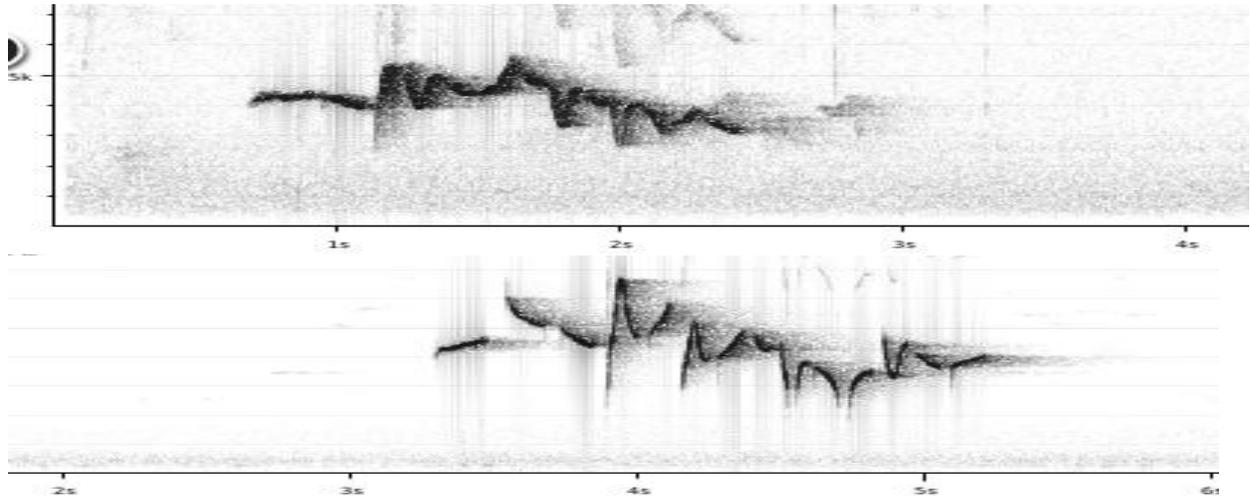


albiventer



'mutica'





From the above, we can deduce that sonograms for Chinese *mutica* don't show such a striking difference as depicted in Päckert *et al.* (2013). We can nevertheless deduce that e.g. 3 of the 4 examples from China stay below 6kHz, while all others go above 6kHz. This may be somewhat clinal however: *palidior* reaches highest frequencies, then *albiventer*, then '*mutica*'. Given that vocal differences are clearly not that straightforward I have made measurements of the basic sound parameters:

palidior (n=3)

max. freq.	6670 - 7400Hz
min. freq.	2370 - 3700Hz
freq. range	3300 - 5000Hz
# elements	12 - 15
total length	1.33 - 1.54s
av. pace (s/element)	0.10 - 0.11

albiventer (n=7)

max. freq.	6400 - 7500Hz
min. freq.	2100 - 2900Hz
freq. range	3700 - 4800Hz
# elements	11 - 16
total length	1.53 - 2.07s
av. pace (s/element)	0.11 - 0.14

'*mutica*' (n=4)

max. freq.	5450 - 6500Hz
min. freq.	1611 - 2400Hz
freq. range	3100 - 4700Hz
# elements	11 - 16
total length	1.48 - 1.96s
av. pace (s/element)	0.12 - 0.135

It is clear that maximum frequency is the most distinctive parameter for '*mutica*'. Minimum frequency is rather clinal between races. All other parameters show less pronounced differences (including frequency range and phrase duration, for which we can't confirm the findings of Päckert *et al.* (2013)).

We therefore finalize with an effect size calculation of combined *palidior/albiventer* vs. 'mutica' for maximum frequency:

<i>palidior/albiventer</i> (n=10)	av. 6968Hz	SD 334Hz
'mutica' (n=4)	av. 5762Hz	SD 429Hz

-> Effect size 3.13

-> score 2

We can thus conclude that 'mutica' indeed shows some vocal difference compared to *palidior/albiventer*, but this difference seems to be rather minor and may well be the result of a clinal change from west to east.

This note was finalized on 12th February 2016, 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: Nick Athanas, Mike Catsis, Subhajit Chaudhuri, Brian Cox, Niels Poul Dreyer, Peter Ericsson, Frank Lambert, Antero Lindholm, Mike Nelson, Mathias Ritschard, Sudipto Roy, Ante Strand, Joshi Viral and George Wagner.

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