HANDBOOK OF THE BIRDS OF THE WORLD Alive

ORNITHOLOGICAL NOTES

Notes on the vocalizations of Tawny-throated Leaftosser (*Sclerurus mexicanus*)

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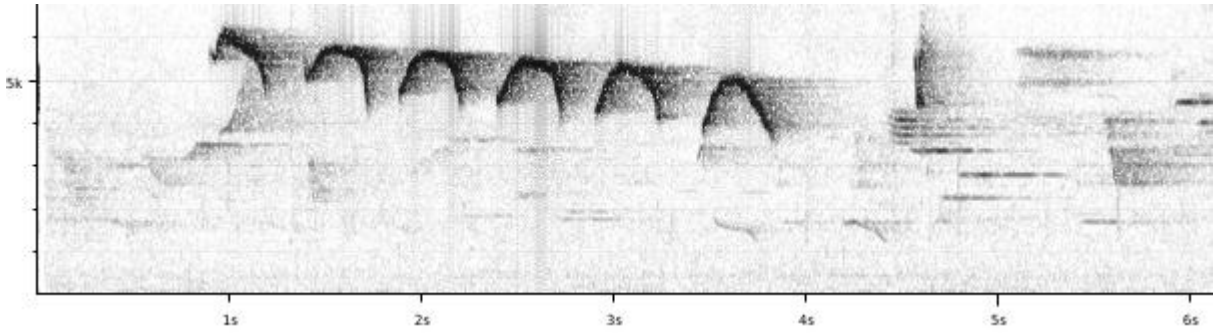
In the following we briefly analyze and compare voice of the different races of Tawny-throated Leaftosser (*Sclerurus mexicanus*). We also try to quantify the extent of any vocal differences using the criteria proposed by Tobias *et al.* (2010), as a support for taxonomic review. We have made use of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

Except for the two Central-American races, voice differences are not that obvious that we can immediately group them by ear. Thus, in order to group them for further analysis, we have chosen the geographical distribution of the races following d'Horta et al. (2013):
Sclerurus mexicanus mexicanus (Sclater 1856). Type locality: Córdoba, Veracruz, Mexico. This subspecies ranges from eastern Mexico to northern Nicaragua.
Sclerurus mexicanus pullus (Bangs 1902). Type locality: Boquete, Panama. Occurs from Costa Rica through Darién in eastern Panama.
Sclerurus mexicanus obscurior (Hartert 1901). Found in the Chocó lowlands of Ecuador and SW Colombia. This population consistently occurs at lower elevations than the adjacent *andinus*.
Sclerurus mexicanus andinus (Chapman 1914). A subspecies of the humid Andean slopes in the three Andean ranges of Colombia, western Ecuador, the Venezuelan Andean foothills east to Lara, and Serranía de Perijá. It may range locally to the adjacent lowlands in NW Colombia and the Magdalena Valley.
Sclerurus mexicanus macconnelli (Chubb 1919). This taxon comprises populations of the Guiana Shield and most of Amazonia, with the exception of the western portion at the base of the Andes.
Sclerurus mexicanus peruvianus (Chubb 1919). This taxon generally replaces *macconnelli* in NW Amazonia and at higher elevations in the Andean foothills of southern Peru and Bolivia. It also occurs in the lowlands and outlining ridges of NW Amazonia including both sides of the Napo/Amazon rivers in Ecuador and Colombia.
Sclerurus mexicanus bahiae (Chubb 1919). This population, endemic of the Atlantic forest of eastern South America, is allopatric with respect to all other *mexicanus* subspecies.

(this means a.o. that *obscurior* is really restricted to the Chocó lowlands, and that *andinus* gets into the western Andes of Ecuador, different from treatment in HBW)

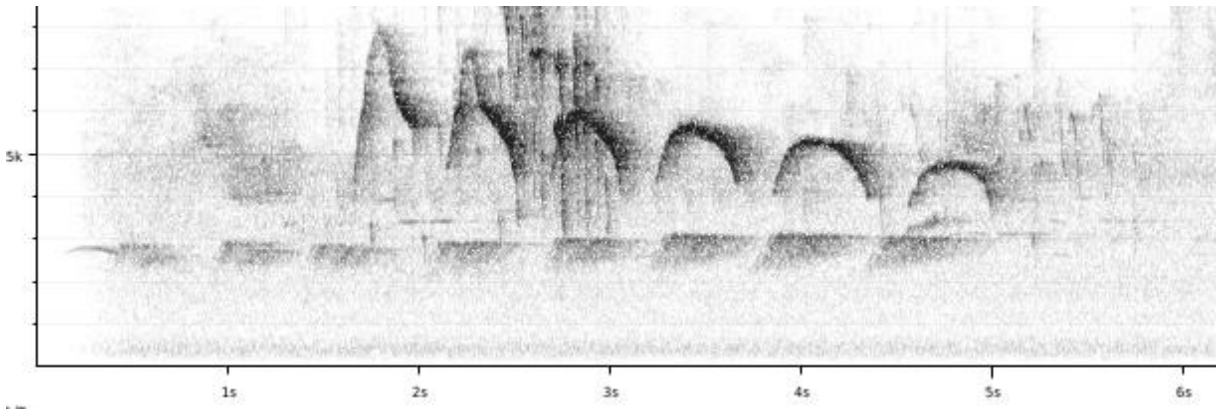
mexicanus (n=4)
a descending series of 3-9 fairly long high-pitched overslurred whistles, occasionally ending with a few stuttering notes

number of notes	3-9
longest note	0.33-0.55s
pace	0.44-0.7
highest freq	4900-6000Hz (first note has highest pitch)
note shape	round, quite symmetrical, overslurred



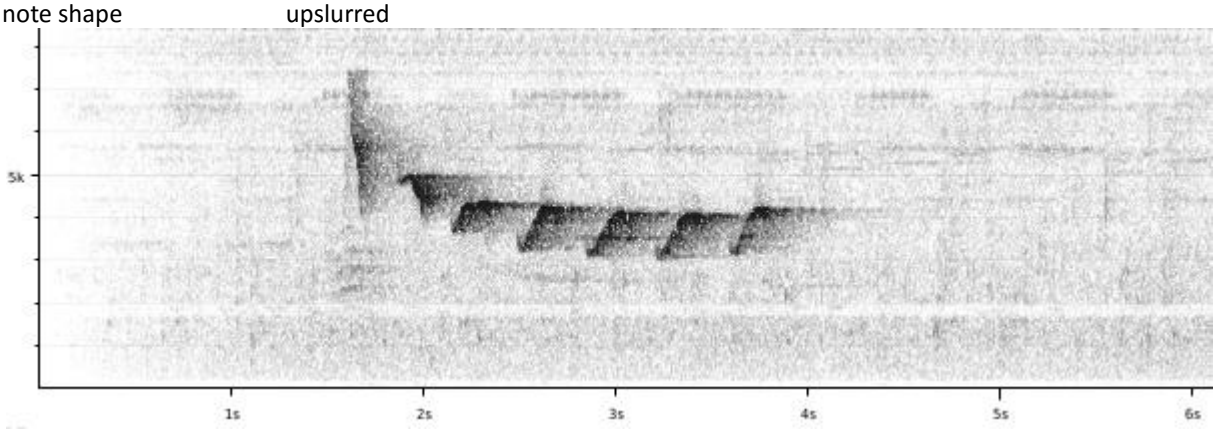
pullus (n=5)
a descending series of 3-8 fairly long high-pitched overslurred whistles (as *mexicanus,* but slightly higher-pitched), sometimes initiated by 'spik!' notes

number of notes	3-8
longest note	0.46-0.7s
pace	0.6-0.8
highest freq	6100-7900Hz (first note has highest pitch)
note shape	round, overslurred, first notes more peaked



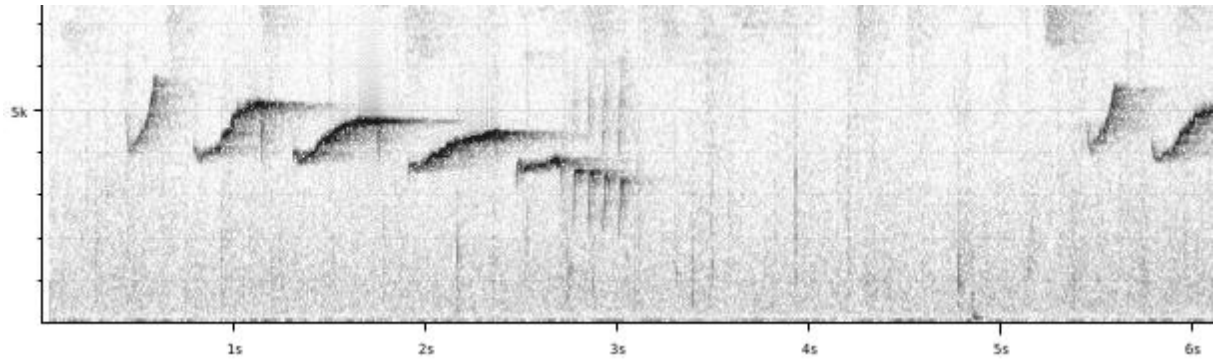
obscurior (n=??,due to confusion of exact boundaries)
Typical song of true lowland birds (?) is a rapid descending series of 6-7 upslurred notes, sometimes introduced by a single 'spik!' note

number of notes	6-7
longest note	0.2-0.25s
pace	0.28-0.32
highest freq	4500-5600Hz
note shape	upslurred



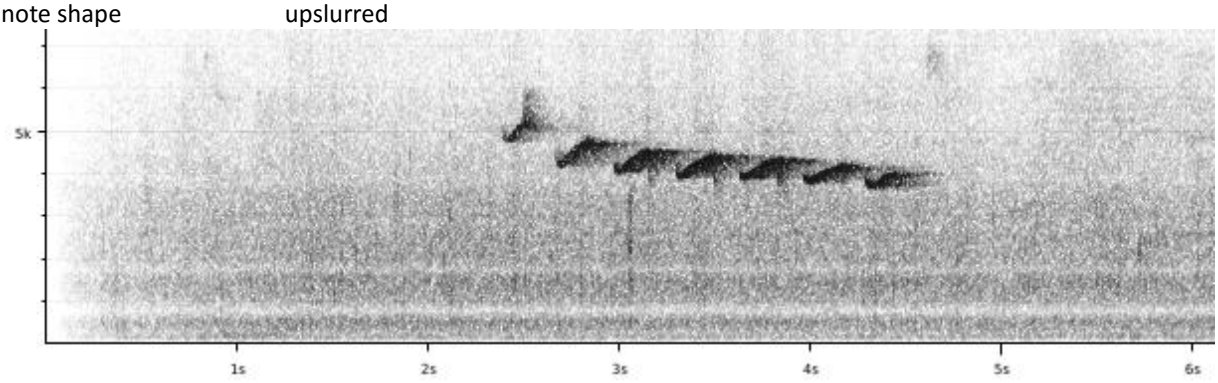
andinus (n=7)
a descending series of 4-6 upslurred notes often ending into a stuttering series of shorter notes, second notes usually longest, the first note notably shorter, all in all resulting in a rather rhythmic delivery.

number of notes	4-6
longest note	0.34-0.45s
pace	0.32-0.4
highest freq	5400-5600Hz
note shape	upslurred



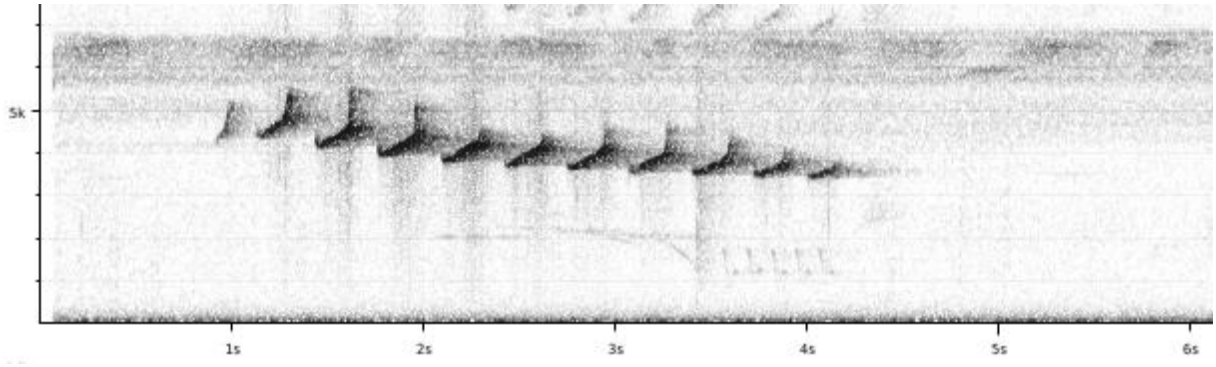
peruvianus (n=7)
a descending series of 7-9 upslurred notes, sometimes ending in a stuttering series of shorter notes

number of notes	7-9
longest note	0.23-0.27s
pace	0.32-0.35
highest freq	4100-5200Hz
note shape	upslurred



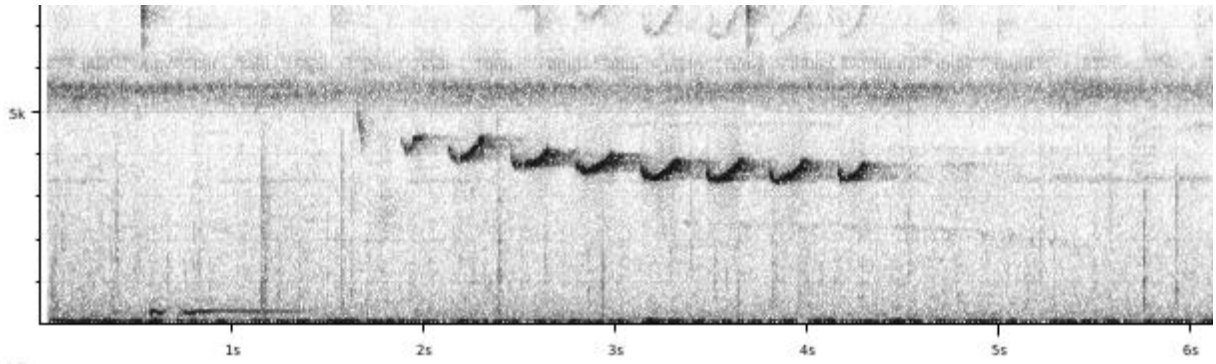
macconnelli (n=6)
a descending series of 8-15 upslurred notes, sometimes ending in a stuttering series of shorter notes, and sometimes introduced by one or more 'spik!' notes

number of notes	8-15
longest note	0.16-0.23s
pace	0.21-0.35
highest freq	4700-5600Hz
note shape	upslurred



bahiae (n=4)
a descending series of 7-12 upslurred notes, sometimes ending in a stuttering series of shorter notes.

number of notes	7-12
longest note	0.19-0.22s
pace	0.25-0.3
highest freq	4400-4700Hz
note shape	upslurred



Discussion

Differences between several races are rather subtle at most, and there is quite some variation in the song of all races, depending on level of excitement, which makes things complicated.

The *mexicanus/pullus* group clearly stands apart, although even this group has few basic parameters which are truly unique. Comparing with all other races, max. frequency on average is higher, longest note is longer, pace is slower and note shape is very different. (If we would apply Tobias scoring against all other races as one group, based on pace (score 2-3), note length (score 2) and note shape (score 1-2) this would result in a total score of about 4-5.

Next, *andinus* is the easiest one to recognize by ear. It has fewer notes (together with *obscurior*), and a rather rhythmic pattern due to the rather drawn-out second and third note, which are clearly longer than in other South-American races. BUT, some recordings are not clear whether they are *obscurior* or *andinus*, which makes identification between these 2 races far less clear-cut.

peruvianus/macconnelli/bahiae have on average more notes, shorter than *andinus*.

It is clear that a multivariate statistical analysis would be needed to find out more precisely about vocal separation among South-American groups. Above all, however, in order to allow grouping, confusion about geographical boundaries should be tackled as well.

At present, on the basis of voice, we can discern 2 well-defined groups (*mexicanus/pullus* vs. the others) which differ vocally by a score of 4-5.

A further subdivision of South-American races into 3 subgroups can receive only minor vocal support, *andinus* for its fewer longer notes (scoring at most 1+2=3) and *obscurior* for its fewer notes without rhythmic pattern (score 1 or 2).

This note was finalized on 22nd April 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, without whom above analysis would not have been possible.

References

d'Horta, F. M., A. M. Cuervo, C. C. Ribas, R. T. Brumfield & C. Y. Miyaki. (2013). Phylogeny and comparative phylogeography of *Sclerurus* (Aves: Furnariidae) reveal constant and cryptic diversification in an old radiation of rain forest understory specialists. *Journal of Biogeography* 40:37-49.

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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