

Notes on the vocalizations of Mottled Owl (*Ciccaba virgata*)

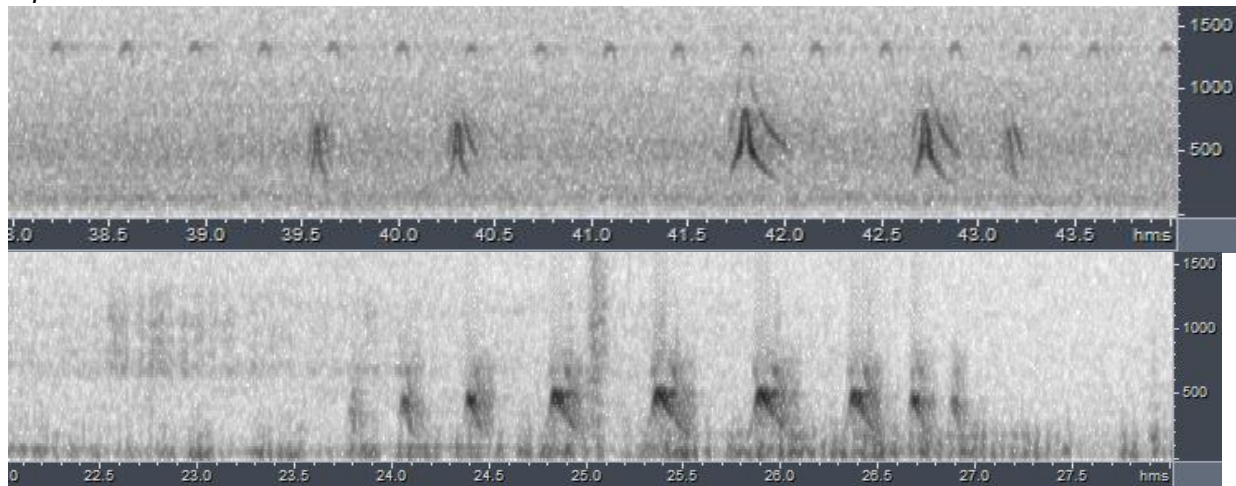
Peter Boesman

In the following text, I briefly analyze and compare the voice of the different races of Mottled Owl (*Ciccaba virgata*). I also try to quantify the extent of any vocal differences using the criteria proposed by Tobias *et al.* (2010), as a basis for taxonomic review. I have made use of sound recordings available online at Xeno Canto (XC) and the Macaulay Library (ML).

The available recordings suggest that there are two distinct vocal groups.

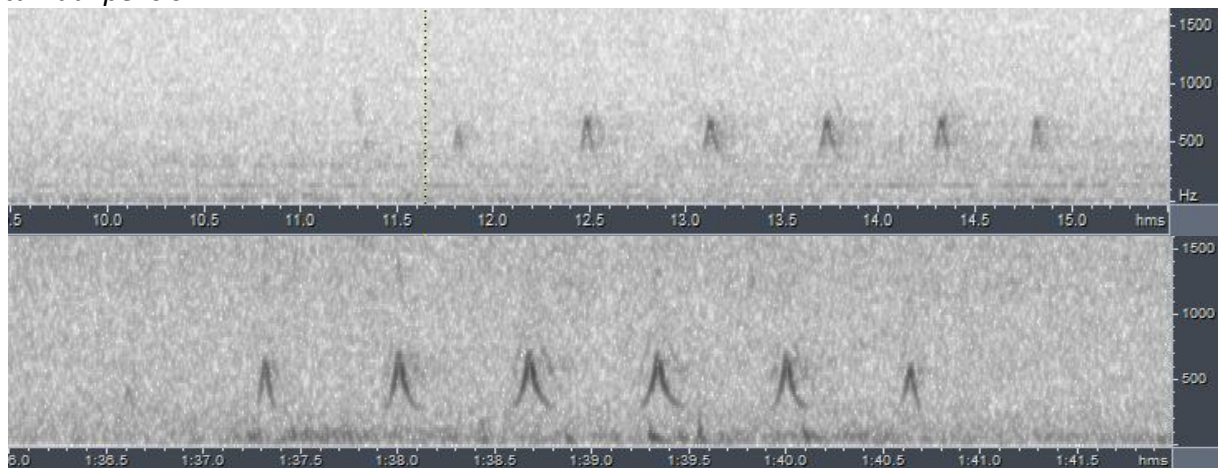
Group 1. Song is a series of typically 4–9 short emphatic sharply overslurred hoots. This voice can be heard in Middle America, Pacific South America (south to NW Peru) and NW South America, as illustrated in the following examples grouped by (presumed) subspecies:

squamulata



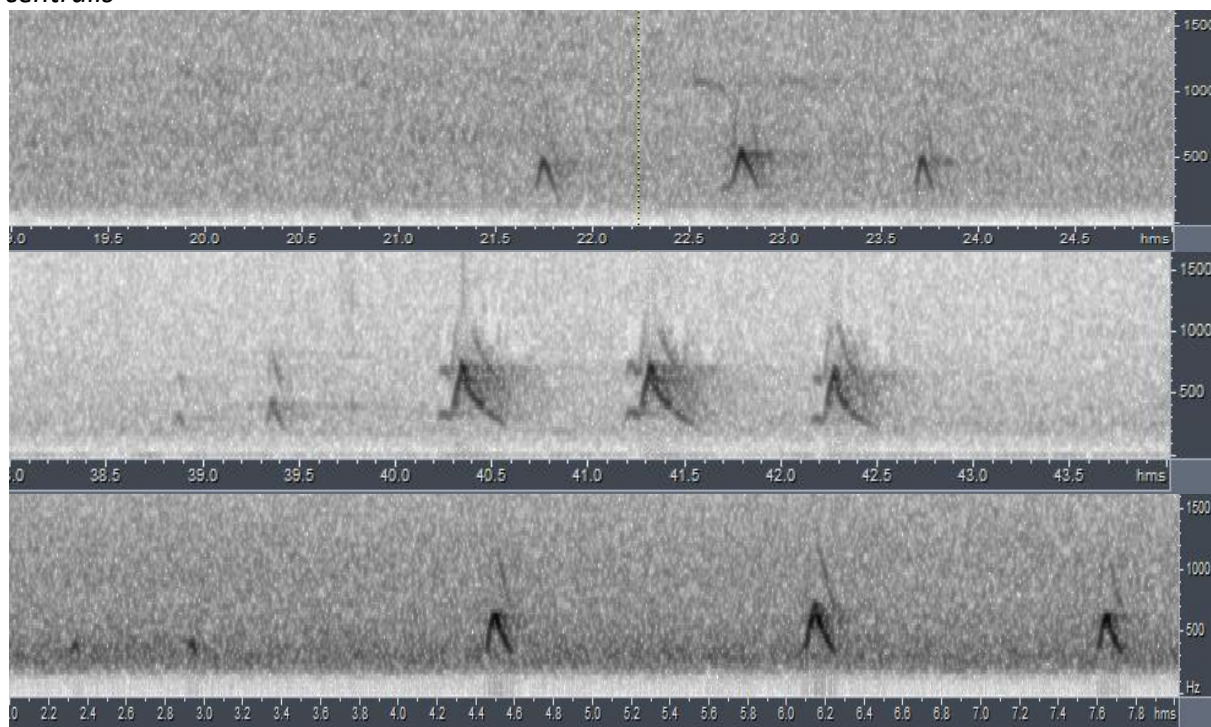
From top to bottom: XC2300099: *Colima, Mexico*, Peter Boesman; XC170476: *Nayarit, Mexico*, Erik Peñaloza.

tamaulipensis



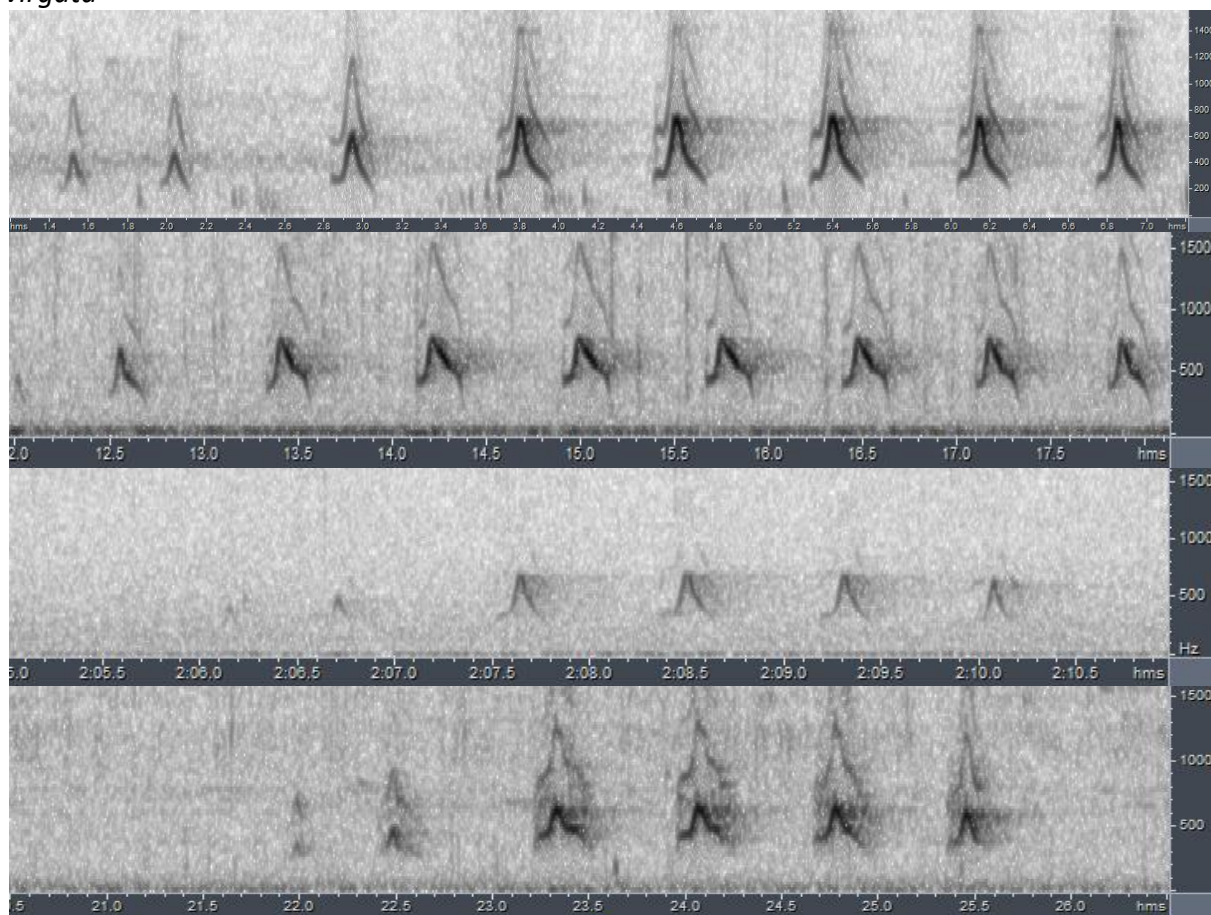
From top to bottom: XC58055: *Tamaulipas, Mexico*, Jon King; XC28882: *Tamaulipas, Mexico*, Dan Lane.

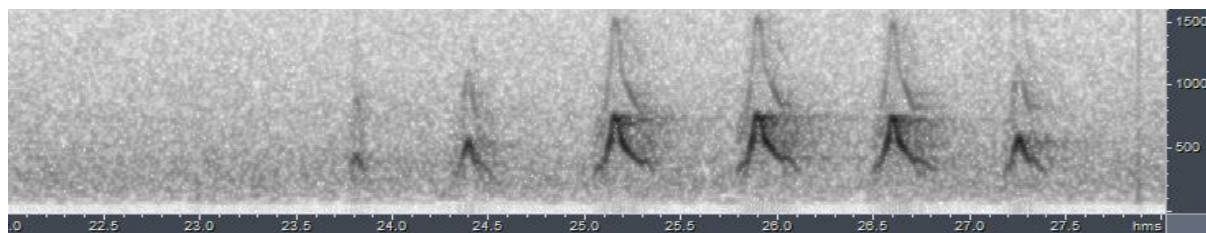
centralis



From top to bottom: XC230092: *Chiapas, Mexico*, Peter Boesman; XC76718: *Guatemala*, Doug Knapp; XC274426: *Costa Rica*, Peter Boesman.

virgata

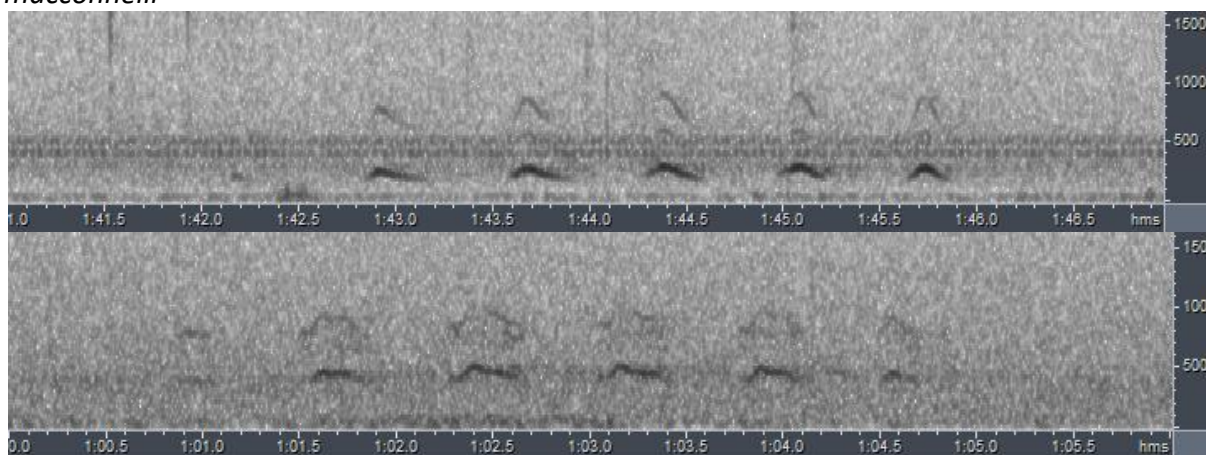




From top to bottom: XC97077: *Tumbes, Peru*, Dan Lane; XC261651: *Esmeraldas, Ecuador*, Olaf Jahn; XC244982: *Magdalena Valley, Colombia*, Oscar Marín; XC230095: *Carabobo, Venezuela*, Peter Boesman; XC11528: *Monagas, Venezuela*, Doug Knapp.

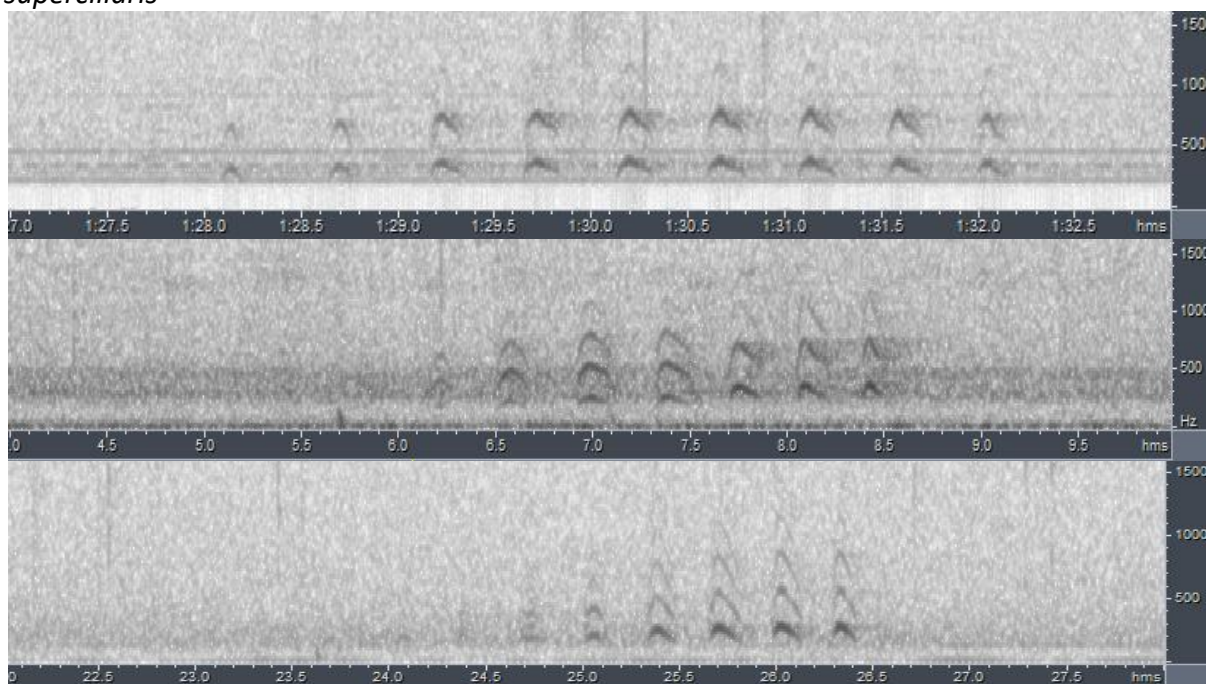
Group 2. Song is a series of 5–9 rather subdued hoots (with some variation, see below). This voice can be heard in the Guianas, the Amazon Basin and the Atlantic Forest.

macconnelli



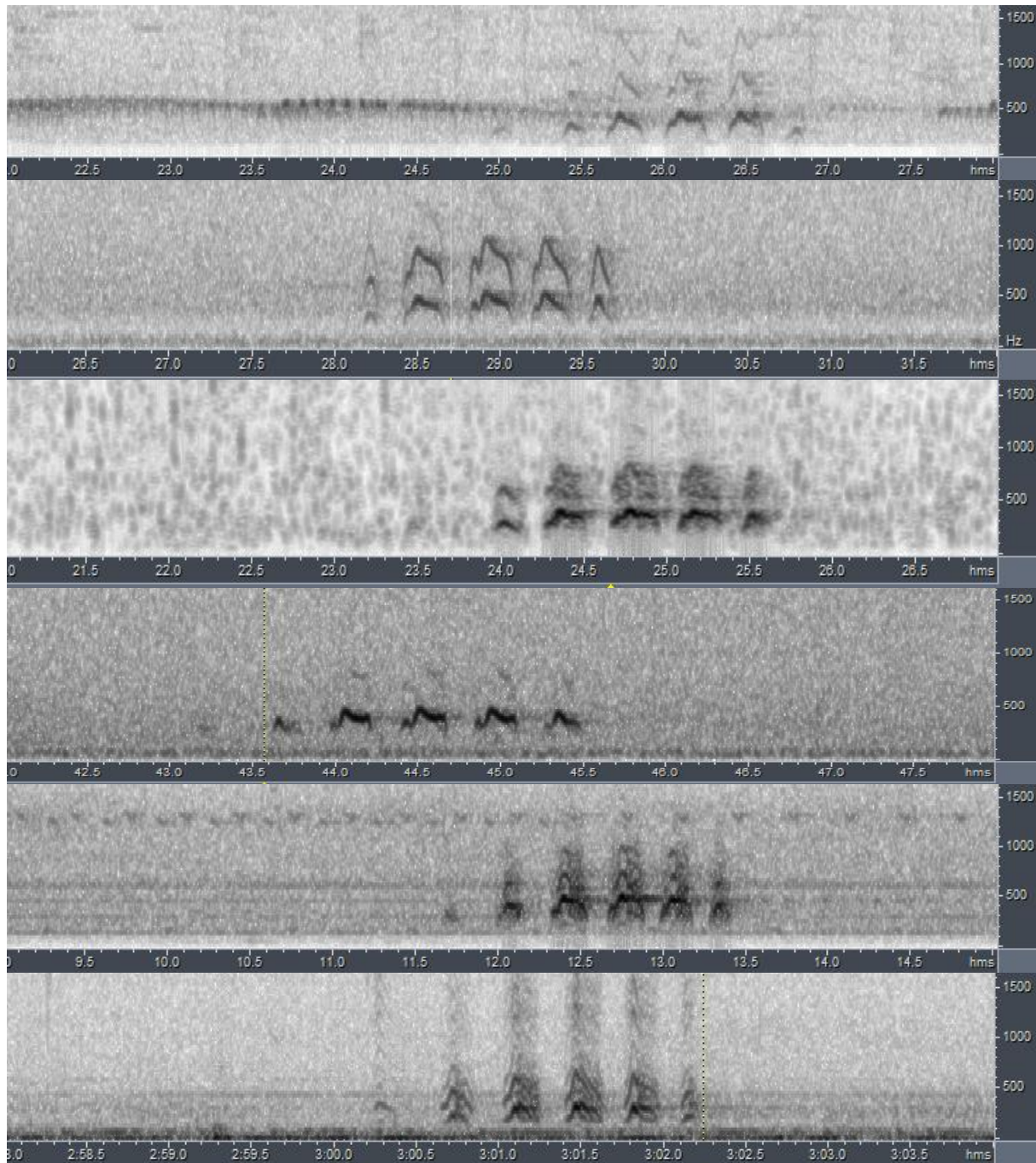
From top to bottom: ML14505: *Guyana*, Mark Robbins; ML11602: *Suriname*, Thomas Davis.

superciliaris



From top to bottom: XC97086: *Loreto, Peru*, Dan Lane; XC118836: *Rondônia, Brazil*, Gabriel Leite; XC304876: *Pará, Brazil*, Sidnei Dantas.

borelliana



From top to bottom: XC210365: *São Paulo, Brazil*, Rodrigo de la Rosa; XC320324: *Santa Catarina, Brazil*, Alexandre Bianco; XC315460: *Santa Catarina, Brazil*, Eduardo Patrial; ML135648: *Misiones, Argentina*, Juan Areta; XC55665: *Itapúa, Paraguay*, Myriam Velázquez; ML166782: *Chaco, Argentina*, Juan Areta.

The above examples show clear vocal differences in the song:

Group 1 has a song comprising sharply overslurred notes, clearly visible as an upside down V-shape in the sonograms. Base frequency of the central notes reaches frequencies well above 500 Hz (maximum frequency: average 776 Hz, SD 110 Hz, $n = 20$). Hoots are given at a leisurely pace, typically with pauses of 0.5 seconds or more. Pitch and pace may vary somewhat, depending on the level of excitement.

Group 2 has a song of much less emphasized hoots, and maximum base frequency typically remains around 500 Hz (maximum frequency: average 485 Hz, SD 82 Hz, $n = 12$). Within this group, each race appears to display further subtle differences: Guianan *macconnelli* seems to have a distinctly slower song ($n = 2$), while hoots in Amazonian *superciliaris* are shorter and less modulated than in southern *borelliana*. In the latter two subspecies, the pace is notably faster than in Group 1.

Vocal differences can be quantified by applying the Tobias criteria. Both groups differ in maximum frequency (effect size 3.0, score 2) and in pace (score 2, except race *macconnelli*), which would give a total vocal score of 4. Within group 2, each race can also be identified by voice with reasonable confidence (based on the few available recordings!). If this is further confirmed when more recordings become available, it is likely that quantification of vocal differences for these three taxa would also lead to a total score of about 3 in a pair-wise comparison.

Koenig *et al.* (2009) treated the Mottled Owl complex as two distinct species, Mexican Wood-Owl (including races *squamulatus*, *tamaulipensis* and *centralis*) and Mottled Wood-Owl (comprising the other four races), citing their vocal distinctiveness as one of the main reasons for this treatment. From the above, it is clear that nominate *virgata* (at least vocally) also pertains to the northern group (the northern species would then be named *C. virgata*, although the type locality for this taxon 'Bogotá' as vaguely defined by Cassin (1849) and more precisely by von Berlepsch (1908) is very unlikely to be accurate, thus any detailed taxonomic revision will require some nomenclatural action).

Vocal distinctiveness of both groups was noted previously within Peru (Sanchez *et al.* 2012), but a comparative analysis over the entire range has not been performed until now.

Where the ranges of both groups meet, it is interesting to investigate the issue in further detail. Recordings from S Tachirá in W Venezuela (elevation 1100 m; e.g. ML59905) and E Ecuador (elevation 1350 m; e.g. XC99430) clearly pertain to Group 1, which suggests that taxon *virgata* also occurs along the E Andes S to Ecuador. In this region, it is parapatric with race *superciliaris* of the Amazon Basin. However, observations of this taxon are quite rare, especially in NW Amazonia, with apparently no voice recordings available from Amazonian Colombia and Venezuela (ML112266 is erroneously attributed to Mottled Owl, but is in fact a call of Spectacled Owl *Pulsatrix perspicillata*). Equally, the easternmost recordings pertaining to Group 1 are from Caño Colorado, Monagas, NE Venezuela, just N of the Orinoco (XC230106), while Group 2 reaches the S Orinoco Delta (ML145505).

Voice is an increasingly important element in assessing taxonomic status, and in particular in Strigidae, several recent cases have been largely influenced by vocal characters. It would seem that in the Mottled Owl complex, there is a clear vocal divergence between the above-mentioned two groups, which meet both in the N Andean foothills (where they may be parapatric) and around the Orinoco Delta, which clearly forms a physical barrier. There is therefore a strong indication that two species may be involved.

This note was finalized on 21st March 2017, using sound recordings available online at that time. I thank, in particular, the many sound recordists who made their recordings of this species available on XC and ML and Guy Kirwan for revising the original text.

References

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Recommended citation

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