Notes on the vocalizations of Blue-throated Blue-flycatcher (*Cyornis rubeculoides*)

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In the following we briefly analyze and compare voice of the different races of Blue-throated Blue-flycatcher (*Cyornis rubeculoides*). 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).

Race *glaucocomans* has long been considered possibly a distinct species (HBW Alive: Clement 2016), and voice is said to be generally richer, with varied warbling notes, and more sustained. Voice of *glaucicomans* was also discussed more recently (Zhang *et al.* 2016) but again differences are described only qualitatively as having much longer strophes, with repetitions of complex phrases, and a deeper richer voice.

A comparison of song illustrated with sonograms:

glaucicomans

While not all song strophes are typical, repetition of a theme is almost always present (themes are either a single note, or more often 2-3 notes and occasionally more).

Most song strophes are longer than 2.5s. Most notes have a maximum frequency below 4kHz.

Strophes typically have some 10-20 notes.

Some examples of other races:

Repetitions of single notes occur, repeated themes of two or more notes however are not really identical. Song strophe typically is shorter than 2s. Strophes typically have some 10-15 notes. Note cover a fairly wide frequency range.

There are thus some clear vocal differences, which can be quantified as follows: *glaucicomans* has longer song strophes (2-3) which have more notes (1-2) and much more repetitions of themes (1-2). Furthermore average frequency of notes is (only) slightly lower-pitched (allow 1). When applying Tobias criteria, this would lead to a total vocal score of about 4.

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