

The Grenada Dove (*Leptotila wellsi*) Is a Distinct Species

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Doves of the Neotropical genus *Leptotila* are similar morphologically, which has led to confusion about taxonomic relationships (Goodwin 1983). Since it was first described (Lawrence 1884, Wells 1887), the Grenada Dove (*Leptotila wellsi*) had been considered to be a distinct species that formed a superspecies with the Gray-fronted Dove (*Leptotila rufaxilla*) of South America and Trinidad (Bond 1978, Goodwin 1983). Despite an absence of evidence from living specimens, the Grenada Dove was reclassified recently as a subspecies of *L. rufaxilla* (A.O.U. 1983). We present evidence that *L. wellsi* and *L. rufaxilla* have distinct songs and important plumage differences. *L. wellsi* should be regarded as a full species endemic to the island of Grenada, West Indies.

A population of Grenada Doves estimated at 100 individuals was located in the southwest peninsula of Grenada in July 1987 (Blockstein 1988). This is apparently the only population of this endangered species (King 1977, USFWS 1977). The doves occurred on hillsides in xeric thornscrub, mostly on the Mt. Hartman estate. (See Blockstein [1988] for a more detailed description of the study area.)

Peter Hall recorded the song of a Grenada Dove on 25 July 1987, at the Mt. Hartman estate. He used a Sony TCM-5000 cassette recorder with a superdirectional JVC 510 condenser microphone. Blockstein had observed this bird for several days and, on 28 July, he flushed it into a mist net, measured, photographed, and released it. Hardy made a sonogram from Hall's tape (Florida Museum-856-1-1). He also supplied tapes and sonograms of *L. rufaxilla* from Trinidad (FM-491-59-2) and of *L. verreauxi* from Mexico (FM-37-11-1).

Blockstein conducted playbacks of tape-recorded songs of *L. rufaxilla* and *L. verreauxi* in the habitat of *L. wellsi*. Each tape was played for 1 min. An interval of 1 min between the tapes was allowed for response. The order of presentation of the tapes was alternated for each trial. Tapes were played arbitrarily in locations where doves might have been present. Later, after the song of *L. wellsi* was recorded, it was played back in separate trials.

Blockstein examined the type specimens of *L. wellsi* and specimens of *L. rufaxilla* and *L. verreauxi* at the U.S. National Museum and compared them with photographs and field notes on the dove captured in Grenada. He also compared them with descriptions of specimens of *L. wellsi* (Schwartz and Klinikowski

1963) in collections at Louisiana State University and the Academy of Natural Sciences of Philadelphia.

The song of *L. wellsi* is a single descending figure monotonously repeated every 7–8 s, sometimes for hours with very few interruptions. It is loud and audible for at least 100 m. The pitch declines steeply during each utterance, which distinguishes it from *L. rufaxilla* and *L. verreauxi* (Fig. 1). No songs of *L. wellsi* were audibly different from the song of the recorded individual. The doves sang for hours continuously throughout the morning and some continued into early afternoon. Singing resumed 1–2 h before sunset.

All singing occurred from branches 4–6 m high in trees 4–8 m tall. Song perches were either open or concealed. When disturbed, the doves flew downward at an angle to the ground and then ran from the observer.

No response was made by *L. wellsi* to songs of *L. rufaxilla* in 35 playback presentations. During 35 trials with the *L. verreauxi* tape, only one *L. wellsi* sang with-

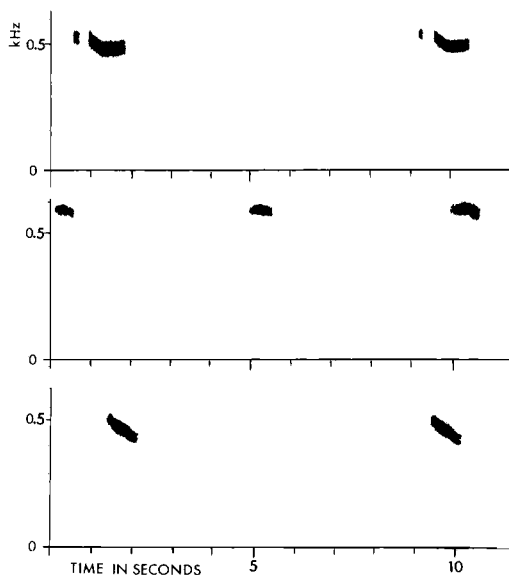


Fig. 1. A comparison of the songs of 3 species of doves of the genus *Leptotila*. Upper: Song of *L. verreauxi*, from FM 27-11-1. (Six km north of Mazatlan, Sinaloa, Mexico. 23 June 1974. R. A. Bradley.) Middle: *L. rufaxilla*. FM 491-59-2. (Andrews Trace, Arima, Trinidad. 27 May 1979. E. Bitterbaum.) Lower: *L. wellsi*. FM 856-1-1. (Mt. Hartman, Grenada, West Indies. P. Hall.) All sonograms are made with wide band pass (300 Hz) filter.

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in 1 min following presentation. Doves that had been silent began to sing following playback of tapes of *L. wellsi*, both during 1-min trials (8 of 12 trials) and during the session when the singing was recorded. This included at least two individuals other than the dove whose song was recorded. Doves also appeared to respond to each other's singing. At least once, two individuals appeared to be alternating songs in countersinging.

Three plumage characters distinguish *L. wellsi* from *L. rufaxilla*. The tail tips of *L. wellsi* are almost lacking in white, with a dull white area of <5 mm on the outer corner of the outer rectrix, in contrast to the conspicuous white tips of *L. rufaxilla*. The extent of white on the abdomen is much greater in *L. wellsi*, and the cinnamon on the underwing extends farther distally on the primaries, especially on the outer primaries. *L. rufaxilla* shows more gray on the abdomen and on the primaries.

Both *L. wellsi* and *L. rufaxilla* have red orbital skin (carmine in the living *L. wellsi*), in contrast to *L. verreauxi* which has blue orbital skin (Bond 1973). Lack and Lack (1973) erroneously cited Schwartz and Klinikowski (1963) as stating that *L. wellsi* has blue orbital skin. This error was reported previously by Bond (1973). Schwartz and Klinikowski (1963) collected an immature *L. wellsi* and an adult of each sex. They stated that all three individuals showed red eyeskin. This was verified on the specimen tags of the individuals they collected (RFK No. 3104 at Louisiana State University and ANSP No. 168451 at the Academy of Natural Sciences at Philadelphia). This is consistent with the specimen that I captured and with the type specimen (USNM 126924).

The distinctive song of the Grenada Dove and the lack of response to playbacks of *L. rufaxilla* provide evidence that the Grenada Dove has differentiated sufficiently to be regarded as a species distinct from the allopatric *L. rufaxilla*. Songs are important in courtship among Columbiformes and may often serve as isolating mechanisms in areas of sympatry (Goodwin 1983). The plumage differences are further evidence of reproductive isolation.

The Grenada Dove is one of two species of the genus *Leptotila* that inhabit the West Indies. It appears to be derived from *L. rufaxilla*, which it closely resembles. It is likely to have colonized Grenada either from Venezuela or, more likely, Trinidad, where *L. rufaxilla* occurs. *L. rufaxilla* inhabits humid forests (Goodwin 1983), whereas *L. wellsi* lives in xeric forest. Lack and Lack's (1973) speculation that *L. wellsi* is a geographic representative of *L. verreauxi* was based, in part, on

their mistaken impression that the two taxa had the same color of orbital skin. *L. wellsi* may be a relict that was more widely distributed when xeric conditions were more prevalent in the West Indies during the late Pleistocene (Pregill and Olson 1981).

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