

TERRITORIAL SONGS OF THE WHITE-WINGED DOVE

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THE author spent five months in the winter and spring of 1948-49 and five months in the winter and spring of 1949-50 travelling by jeep in México. In connection with other biological work, she made a study of the territorial songs of several male White-winged Doves (*Zenaida asiatica*). She studied these songs principally at four localities—two in eastern México, two in western (see below).

Thirteen songs were formally transcribed—seven songs of the western race, *Z. a. mearnsi*, and six songs of the eastern race, *Z. a. asiatica*. Necessary for the work of transcription was a musical instrument (of known key) which could be carried about easily. The author found an alto recorder (vertical flute) satisfactory. Each song was quickly figured and fingered out, note by note, as the melody was repeated by the bird.

The intervals between certain notes in songs of the White-winged Dove are shorter than the shortest interval commonly used in our musical scale—i.e., that between a note and its sharp or flat. The diagrams presented in Figure 1 give, therefore, only the approximate position on the piano keyboard of the actual sounds. With each diagram are, however, the fingerings used on the alto recorder in determining the true bird sounds, and by repeating these *on the recorder* anyone may ascertain the exact notes. In all diagrams the key of C is used for the piano keyboard transcriptions. The alto recorder is always tuned to the key of F. Customary notations are used for the recorder fingerings. The following data pertain to the songs diagrammed in Figure 1.

- A. *Z. a. mearnsi* No. 1. January 5, 1949. Wild bird at Playa de Coyuca, near Acapulco, Guerrero.
- B. *Z. a. asiatica* No. 1. December 11, 1949. In cage at Hotel Balneario del Río Pánuco, Tampico, Tamaulipas.
- C. *Z. a. asiatica* No. 1. Same date and place as above. This is the common 'short' song, generally phrased as "Who cooks for you?", or "*Que triste estoy*" ("How sad I am"), which all white-wings sing.
- D. *Z. a. asiatica* No. 1. December 13, 1949. Same place as B.
- E. *Z. a. asiatica* No. 2. Same date and place as B.
- F. *Z. a. asiatica* No. 2. December 16, 1949. Same place as B. This song was given at 11 p.m., the lights near the bird cages in the hotel being on at that hour.
- G. *Z. a. mearnsi* No. 2. February 12, 1950. Ten miles south of Tepic, Nayarit, at 3200 feet elevation.
- H. *Z. a. mearnsi* No. 3. Same date and place as G.
- I. *Z. a. mearnsi* No. 4. Same date and place as G.
- J. *Z. a. mearnsi* No. 5. Same date and place as G.

The figure displays 13 musical transcriptions, labeled A through M, arranged in a grid-like fashion. Each transcription consists of a single staff of music in treble clef, with notes and accidentals. Below each staff is a series of numbers representing fingerings for the right hand. The transcriptions are as follows:

- A:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 5 3 3 3 5. Below: 1° 3° 2° 2° 2° 3°.
- B:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1° 1° 1°.
- C:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2. Below: 1° 1° 1° 1°.
- D:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1°.
- E:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2 2 2 2 2 3 2. Below: 1° 1° 1° 1° 1° 1° 1° 1° 2° 2°.
- F:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1° 1° 1°.
- G:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1°.
- H:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1°.
- I:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1°.
- J:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1°.
- K:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2 2 2. Below: 1° 1° 1° 1° 1° 1° 1°.
- L:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2 2. Below: 1° 1° 1° 1° 1°.
- M:** Notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4. Fingerings: 2 2 2 2. Below: 1° 1° 1° 1°.

FIG. 1. Transcriptions of songs of the White-winged Dove. For an explanation see page 330.

K. *Z. a. mearnsi* No. 6. Same date and place as G.

L. *Z. a. mearnsi* No. 7. Same date and place as G.

M. *Z. a. asiatica* No. 3. March 26, 1950. Near Valles, San Luis Potosí.

A given song is usually repeated from two to ten times; then, after an interval which varies greatly, the same song, or a variation of it, is repeated two to ten times, etc.

Besides the well known "Who cooks for you?" 'short' song, each male sings long songs which seem to be composed of 'short' songs with individual variations. This is clearly shown in the transcriptions B, C, D, E, and F of songs sung by caged birds at Tampico. Eastern white-wing No. 1 had the 'short' song (C) and three long songs, each being a series of variations of the same general theme. Eastern white-wing No. 2 had a 'short' song identical with that of eastern bird No. 1 and also two long songs, these differing *inter se* and also from the three long songs of eastern bird No. 1. All the songs were, however, obviously related: they seemed to be variations of exactly the same theme.

All the long songs recorded near Tepic, Nayarit, and at the Playa de Coyuca, Guerrero, were, save one, slight variations of the very same theme sung in eastern localities. The exception was a performance transcribed at Tepic: it was identical with one of the long songs sung by an eastern white-wing at Tampico. Each other long song studied was in some slight way different from every other one.

White-winged Dove songs usually have a range of about two full tones. Variations commonly consist in (1) different groupings of the notes; (2) different arrangements of these groups; and (3) different tempos (there may be a very considerable difference in the duration of an individual note). During any one singing (see paragraph immediately following explanation of the diagrams) a variation is repeated over and over without change.

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