

A NEW RACE OF BOOMING NIGHTHAWK FROM SOUTHERN MEXICO

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In a recent paper (Condor, 55, 1953:160-161) summarizing breeding records of the Booming Nighthawk (*Chordeiles minor*) in México, the authors described three specimens from Chiapas which could not be assigned to any known race. In the summers of 1953 and 1954, Alvarez del Toro collected five additional specimens in west-central Chiapas, bringing to eight the total number available from that area. Also, through the courtesy of Dr. Keith L. Dixon of the Department of Wildlife Management of the Texas Agricultural and Mechanical College, we have had the opportunity to examine a small series of breeding nighthawks collected in the Chilpancingo area of central Guerrero in the summer of 1954. With this additional material at hand, it is apparent that the birds of southern México represent an undescribed race, which may be known as

Chordeiles minor neotropicalis, new subspecies

Type.—Adult male, Mus. Vert. Zool. no. 129454, collected at Rancho Meyapac, 1050 meters, 4 miles north of Ocozocoautla, Chiapas, México, on June 28, 1953, by M. Alvarez del Toro; original no. 448.

Diagnosis.—Compared with *C. m. henryi* of Arizona, New Mexico, and northwestern México, ground color of the plumage of a darker value and more blackish (less brownish) hue; light mottling of the dorsal surface, malar region, and breast much less abundant, coarser, and buffy rather than tawny; light bars of the two central rectrices narrower; under parts washed with pale buff rather than tawny; white wing patch and, in male, subterminal tail bar smaller; size similar.

Compared with *C. m. chapmani* of the southeastern United States, ground color of the plumage of a lighter value; light mottling of the dorsal surface, malar region, and breast more abundant and buffier; ventral dark bars narrower and of a lighter value and more brownish (less blackish) hue; wing averages longer.

Compared with *C. m. hesperis* of the Great Basin and California, light mottling of the dorsal surface, malar region, and breast less abundant, coarser, and buffier (less whitish); light bars of the central two rectrices narrower; dark bars of the under parts wider; white wing patch and, in male, subterminal tail bar smaller; size averages slightly smaller.

Compared with *C. m. aserriensis* of south-central Texas and northern Tamaulipas, light mottling of the dorsal surface, malar region, and breast less abundant, coarser, and buffier (less ashy or whitish); light bars of the two central rectrices narrower; ventral dark bars, including those of under tail coverts, of a darker value, wider, and not broken posteriorly; general tone of under parts buffier; white wing patch and, in male, subterminal tail bar smaller; size larger.

Range.—Southern México from Chiapas north to central Guerrero, Veracruz, and southern Tamaulipas.

In Chiapas, *C. minor* is known to breed in the northeastern end of the central depression, in the hills north of Ocozocoautla and on the Meseta Copoya, 4 to 5 miles south of Tuxtla Gutiérrez. Localities of occurrence are in the arid division of the Upper Tropical Zone between about 1800 and 3600 feet elevation. This area was erroneously reported to be in the Lower Tropical Zone in our earlier paper (Condor, 55, 1953:161). This nighthawk has been observed in the vicinity of Tuxtla Gutiérrez and Chiapa de Corzo in all months from January through August. On June 25, 1947, a female was found incubating two eggs on the Meseta Copoya. An adult female and a chick were collected at Rancho Santa Julia on July 2, 1949 (Alvarez del Toro, Condor, 54, 1952:113). Observations of this species at the ranchos Meyapac and Santa Julia extend from April 24 through August. It probably nests near El Ocote, 25 miles northwest of Ocozocoautla, where it is common from April through August.



Fig. 1. Habitat of *Chordeiles minor neotropicalis* near Rancho Meyapac, Chiapas, México. Photograph taken on April 24, 1954.

The habitat of *neotropicalis* near the type locality is shown in figure 1. The region is quite humid as a result of frequent fog, and many of the trees, which occur in dense patches, are clothed with epiphytes. Farther to the north and at a higher elevation on the hills there is a tall mixed broad-leaved evergreen-deciduous forest.

Details concerning the occurrence of this species in Guerrero are to be reported by Dixon (MS).

Specimens of C. m. neotropicalis examined.—Total, 12 (all adult except as noted). CHIAPAS: Rancho Meyapac, 1050 m., 4 mi. N Ocozocoautla, male (type), June 28, 1953, testis 8×5 mm.; male, June 6, 1954, testis 13×8 mm.; male, June 13, 1954, testis 6×3.7 mm.; male, May 8, 1954, testis 7×4 mm.; female, June 28, 1953, "ovary enlarged." Rancho Santa Julia, 1090 m., 7 mi. N Ocozocoautla, 2 males, April 24, 1949, size of testes not recorded; female, July 2, 1949, brooding a chick. VERACRUZ: Boca del Río, jr. female, July 23, 1942. GUERRERO: Chilpancingo area, adult male, first-year male, and adult female.

The small size of the white wing patch and, in the male, the subterminal tail bar is alone sufficient to distinguish available specimens of *neotropicalis* from Chiapas from nearly all specimens of the large series of *henryi*, *hesperis*, and *aserriensis* that were examined. In adult males of *neotropicalis* the average width of the tail bar measured at the center of the inner web of the outermost rectrix is 7.5 mm., and in none of the specimens does the white bar extend to the outer web of this feather. Corresponding measurements for some other races and the percentage of specimens in which the bar extends to the outer web are as follows: *henryi*, 11.0 mm., 60 per cent; *hesperis*, 10.4 mm., 85 per

cent; *aserriensis*, 10.3 mm., 85 per cent. In *chapmani* the bar averages 8.8 mm. and only in an occasional specimen does it extend to the outer web.

In the darkness of the dorsal surface and the small size of the wing and tail markings, specimens of *neotropicalis* closely resemble lighter specimens of *chapmani* from the southeastern United States. The similarity in color and pattern between those two widely separated populations is more probably a result of convergence of adaptive characters than an indication of phylogenetic relationship.

With regard to certain characters, namely the darkness of the ground color and ventral dark bars, *neotropicalis* represents an end segment of a cline which terminates to the north in *henryi* of Arizona and New Mexico. From north to south in the southwestern United States and northwestern México there is a gradient of increasing darkness of the ground color and increasing intensity of the tawny markings and ventral buff or tawny suffusion (Selander, Condor, 56, 1954:74). However, the light buff color of the mottling and ventral suffusion in birds from Chiapas distinguishes them from birds from the southern part of the range of *henryi*, in which the darkness of the ground color approaches that of *neotropicalis*.

Two of the three specimens available from central Guerrero differ from Chiapas specimens in having more numerous light mottling dorsally, and in this character they seem to approach *henryi*, although the color of the mottling is predominantly buffy rather than tawny as in *henryi*. The other specimen, a first-year male, from Guerrero has extremely dark ventral bars quite unlike those of either *henryi* or Chiapas specimens of *neotropicalis*. The white wing and tail markings of all three specimens are small as in *neotropicalis* from Chiapas. The tail bar of the adult male measures 6.5 mm.

There is a breeding population of *C. minor* along the coastal plain of central Veracruz, of which two specimens have been reported. One of these, which recently was examined, is a juvenile that was collected at Boca del Río on July 23, 1942. It was tentatively referred to *aserriensis* by Wetmore, but it is too dark for that form. In view of the fact that the other specimen from Veracruz, a female taken from a nest near the city

Table 1
Measurements of Adult Males of *Chordeiles minor* in Millimeters

Locality	No.	Range	Wing		No.	Range	Tail	
			Mean with standard error	Standard deviation ¹			Mean with standard error	Standard deviation ¹
<i>neotropicalis</i>								
Chiapas	6	188-199	195.3±1.9	4.7	6	103-112	106.8±1.5	3.8
Guerrero	1		195		1		105	
<i>henryi</i>								
Four Corners region, SW United States	19	188-203	196.0±0.9	4.1	20	103-115	109.1±0.7	2.9
S New Mexico, S Arizona	6	197-209	202.1		6	108-114	111.8	
<i>chapmani</i>								
SE United States exclusive of Florida	13	182-196	187.8±1.3	4.8	14	98-108	103.0±0.8	3.1
Florida ²	14	178-192	184.1±1.2	4.6	14	99-110	105.0±0.8	2.9

¹ N-1 used throughout.

² Data from Oberholser (Bull. U. S. Nat. Mus., 86, 1914:78-79).

of Veracruz, also is dark, having previously been identified as *chapmani* (Warner and Mengel, Wilson Bull., 63, 1951:292), it is unlikely that this population is referable to *aserriensis*.

Since the foregoing was written, Graber (Condor, 57, 1955:125-126) has shown that birds from southern Tamaulipas and Veracruz are not referable to *aserriensis* or *chapmani*. After discussing geographic variation in the nighthawks of the coastal plain of northeastern México, he suggested that birds from southern Tamaulipas and Veracruz represent an unnamed race. Judging from his description and photographs of two specimens from southern Tamaulipas, this population is referable to *neotropicalis*.

On May 21, 1954, Selander collected an adult male about 35 miles southwest of the city of Veracruz, at a point one mile south-southeast of La Tinaja. The left testis measured 5.1 mm. in length. This bird was one of several Booming Nighthawks that flew back and forth over grassy hills near the Río Blanco in the late afternoon following a rain storm. They apparently were feeding on winged termites that were emerging from the ground in large numbers. One bird repeatedly dived and "boomed" over a localized area on a grassy slope. In view of the date these birds may have been migrants rather than members of a local breeding population, but, in any event, it is difficult to place the specimen racially. Dorsally it is nearly as light as *aserriensis* but the mottling of the scapulars is mostly buffy rather than ashy or whitish. Ventrally it is similar to *neotropicalis* and quite different from *aserriensis* in having wide dark bars without irregular breaks posteriorly and in having the posterior under parts suffused with buff. The general coloration of this bird suggests the race *howelli* but the white areas of the wing and tail are much too small for that form. Also, the tail length (98 mm.) falls below the minimum recorded for *howelli*. The wing length is 186 mm. In size it is similar to *aserriensis* and *chapmani*. The specimen is probably an intergrade between *aserriensis* and either *chapmani* or *neotropicalis*.

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Museum of Vertebrate Zoology, Berkeley, California, and Instituto Zoológico del Estado, Tuxtla Gutiérrez, Chiapas, México, December 1, 1954.