

## NOTES ON THE BIRDS OF COLIMA, MEXICO

By JOHN DAVIS

From October 25 to November 18, 1957, my wife, Betty S. Davis, and I collected in the Mexican state of Colima. One hundred and seventy-two specimens representing 76 species were secured; these are now in the Museum of Vertebrate Zoology. Most of our collecting was done at various points from 5 to 24 miles northwest of Manzanillo, and specimens were also taken 2 miles east of Armería, near Cuyutlán, and near Tecomán. All these stations were on the low, coastal plain between 50 and 400 feet in elevation. In addition, three days were spent collecting near the city of Colima, at elevations between 1800 and 2150 feet.

Identification of specimens was based on comparison with material in the Museum of Vertebrate Zoology and especially with the superlative collections at the Moore Laboratory of Zoology, Occidental College. Permission to work in the Moore Collection was generously given by Dr. Raymond M. Selle.

In the following account, details are presented only if they augment distributional or taxonomic information contained in the "Distributional Check-list of the Birds of Mexico," parts 1 and 2 (Pac. Coast Avif., 1950, 1957), or if they present information of biological interest.

*Sula leucogaster*. Brown Booby. One was seen just offshore at Playa de Santiago, 4½ miles northwest of Manzanillo, on October 28. On previous visits to Manzanillo in December, 1954 and 1955, boobies were seen from the shore every day, and six were noted on one day in December, 1955, between Playa de Santiago and Manzanillo harbor. Part 1 of the Mexican Check-list (Pac. Coast Avif., 1950:23) lists one specimen of the race *nesiotes* recorded from Manzanillo, and Blake (1953:19) terms *nesiotes* accidental or casual at that locality. It seems probable that small numbers of Brown Boobies visit Manzanillo harbor and Bahía Santiago regularly in the fall and winter.

*Piaya cayana mexicana*. Squirrel Cuckoo. Fifteen and one-half miles northwest of Manzanillo, 1 ♀, October 28, 1 ♀, November 5; 2½ miles northwest of Colima, 1 ♀, November 10. Squirrel Cuckoos were common in the coastal lowlands and in the vicinity of Colima. The three collected are referable to the race *mexicana*. In the course of identifying them, the validity of the race *extima* van Rossem (1930:210), described from a single specimen collected at Guirocoba, Sonora, was checked. In the Mexican Check-list (Pac. Coast Avif., 1950:133) *extima* was synonymized with *mexicana*, with the footnote comment that "*Piaya cayana extima* van Rossem, based on one specimen from Sonora, requires confirmation." Granted that *extima* was described from only one specimen, van Rossem (1934:436) noted that "six specimens of the latter race [*extima*] have recently been examined, in the collection of Robert T. Moore, from Guirocoba, San Rafael, and Questa del Tigre, the last named locality being on the Sonora-Sinaloa boundary." In the Moore Collection there are five specimens from the localities mentioned by van Rossem; a sixth could not be found. In addition, there are four specimens from Los Leones and Huassa, Sinaloan localities near the Sonoran boundary. Comparison of these nine specimens from southern Sonora and extreme northern Sinaloa with seasonally comparable specimens of *mexicana* collected in Nayarit and Colima shows that the northern specimens are noticeably pale and cinnamonaceous above rather than dark and reddish as in *mexicana*, and ventrally they are paler, sandier, and generally brighter than the specimens of *mexicana* collected farther south, thus agreeing with van Rossem's original description. *Piaya cayana extima* was also characterized by the describer as having a longer tail and smaller bill than *mexicana*. The tail length of six male *extima* averages 317.8 mm. (301-327); of four male *mexicana* from Nayarit and Colima, 303.5 (293-310). Length of culmen from anterior edge of nostril for seven male *extima* averages 7.7 mm. (7.2-8.1); of five male *mexicana* from Nayarit and Colima, 8.0 (7.5-8.4). The difference in tail length appears to be valid; the difference in bill length may possibly be valid, although this could be determined only by statistical treatment of larger samples. In my opinion, *extima* is a clearly recognizable race with characters as originally described.

*Chlorostilbon canivetii auriceps*. Fork-tailed Emerald. Nine miles northwest of Manzanillo, 1 ?

November 3. This species was rare, and besides the single specimen collected, only one other was seen, an adult male on November 11. The Mexican Check-list (Pac. Coast Avif., 1950:165) records this hummingbird as a "rare breeding bird at 2500 to 5500 feet altitude," but some individuals, at least, winter in the Pacific coastal lowlands.

*Muscivora forficata*. Scissor-tailed Flycatcher. One was seen on a roadside power line just north of Playa de Santiago on October 29 and 31, but each time it flew before it could be collected. The species is transient through eastern México and winters in small numbers in the southern part of the country. Its occurrence in Colima, where it has not been recorded before, is accidental.

*Myiarchus tyrannulus magister*. Wied Crested Flycatcher. Fifteen and one-half miles northwest of Manzanillo, 1 ♀, November 5; 3¾ miles northeast of Cuyutlán, 1 ♀, November 18. These specimens provide the first records for Colima.

*Empidonax difficilis*. Western Flycatcher. Nineteen miles northwest of Manzanillo, 1 ♂, October 27; 15½ miles northwest of Manzanillo, 1 ♀, October 30, 1 ♂, November 5. Western Flycatchers were abundant in wooded areas in the coastal lowlands and their call notes were one of the most prominent sounds in such areas. Comparison of the three specimens with material in the Museum of Vertebrate Zoology indicated that they were neither *difficilis* nor *hellmayri*. Available for comparison in the Moore Collection were the types, and extensive series, of *culiacani*, *bateli*, *immodulatus*, and *immemoratus*, and an extensive series of *occidentalis*. Rather than facilitating identification, this abundance of material proved extremely confusing, in part because of post-mortem color change in older specimens, and in part because of the high degree of variability within restricted populations. The Mexican population of *Empidonax difficilis* appears to have been badly over-split, and the assignment of racial identifications to western Mexican specimens will be largely meaningless until some patient, thorough, and dedicated taxonomist undertakes a revision of the species as a whole. For what it is worth, the three specimens from Colima were identified as *immodulatus* > *occidentalis*; one may guess that they were wintering birds originating somewhere in northwestern or central western México.

*Cissilopha san-blasiana nelsoni*. San Blas Jay. Fifteen and one-half miles northwest of Manzanillo, 1 ♀, October 25; 9 miles northwest of Manzanillo, 1 ♀, November 2; 2½ miles northwest of Colima, 1 ♀, November 10. San Blas Jays were common in wooded areas, travelling in noisy flocks of 10 or more. Their behavior contrasted with that of the Magpie-Jays (*Calocitta formosa*) which were seen on three occasions in flocks of about five to seven, and which were silent and so wary that I could not approach them within collecting distance.

Ridgway (1904:313) gives the iris color of *C. s. san-blasiana* (= *nelsoni*) as brown, based on "Xantus, manuscript" (*loc. cit.*:footnote a), and the iris color of *Cissilopha becheii* as yellow (*op. cit.*:316), again based on "Xantus, manuscript" (*loc. cit.*:footnote a). However, I noted the iris color of an adult female *C. s. nelsoni* collected on October 25 as "moderately bright yellow, with very faint greenish cast."

Data on the iris color of specimens of *Cissilopha* in the collections of Robert T. Moore and the Museum of Vertebrate Zoology are available, the latter forwarded through the courtesy of Frank A. Pitelka and George F. Fisler. In the following account, terms on specimen labels such as "straw," "greenish lemon," and "yellowish green" are considered to denote a yellow iris color. Since there appeared to be no difference between sexes with respect to eye color, males and females were considered together. Of 23 specimens of *C. s. san-blasiana* collected at or near Acapulco, Guerrero, the eye color of two juveniles was gray-blue, of seven first-year birds yellow, of twelve adults yellow, and of two adults brown. The absence of brown-eyed first-year birds suggests either that the two brown-eyed adults are variants, eye color normally changing from gray-blue in the juveniles to a definitive yellow in first-year birds and adults, or that there is a further change from yellow to brown late in adult life and that the two brown-eyed adults were old birds. However, the situation is different in a series of 22 *C. s. nelsoni* (*san-blasiana* of Ridgway) from Nayarit, Jalisco, and Colima. Seven first-year birds are all brown-eyed. Of 15 adults, 12 are yellow-eyed and three are brown-eyed. This suggests that in this race the iris is brown in first-year birds and changes to a definitive yellow in adults. The three adults with brown irides apparently represent individuals in which eye color was slow to change. Although there is a possibility that there may be an interracial difference in definitive eye color between *san-blasiana* and *nelsoni*, it seems more likely that the definitive eye color of the species as

a whole is yellow and that the brown-eyed adults of both races represent individuals which retained the first-year iris color. A similar situation has been described for the Rufous-sided Towhee (*Pipilo erythrophthalmus*) in which two of 60 adult males of the race *megalonyx* had pale eyes similar to those of first-year birds rather than the bright red eyes characteristic of adults of that subspecies (Davis, 1957:200). If eye color in *C. san-blasiana* does pass from gray-blue in the juvenile through a brown phase to a definitive yellow, these changes must occur more rapidly in the nominate race than in *nelsoni*; the seven first-year individuals of the nominate race, all yellow-eyed, were collected between July 27 and January 1, whereas the seven first-year *nelsoni*, all brown-eyed, were collected between October 24 and March 20, a period which includes the dates of collection of five of the seven specimens of typical *san-blasiana*. At any rate, Ridgway and Xantus were in error in ascribing brown eye color to adult *nelsoni*, and any possible difference in eye color between *C. beecheii* and *C. s. san-blasiana* is bridged by *C. s. nelsoni*. A single brown-eyed first-year *beecheii* and three yellow-eyed adults confirm Ridgway's description of the definitive eye color in that species as yellow.

*Vireo atricapilla*. Black-capped Vireo. Fifteen and one-half miles northwest of Manzanillo, 1 ♀, October 27. Although the species has been recorded as a winter visitor to Jalisco and Michoacán, this is apparently the first record for Colima. The individual collected was the only one seen.

*Passer domesticus*. House Sparrow. This species was common about the town of Tecomán. It has not been recorded before from Colima.

*Tanagra affinis godmani*. Lesson Euphonia. Fifteen and one-half miles northwest of Manzanillo, 1 ♀, October 31; 2 miles east of Armería, 2 ♂ ♂, November 12. This species has been recorded in Colima only from "Sierra Madre," a Xantus locality apparently near the city of Colima. The present records indicate that it occurs, at least in winter, in the coastal lowlands as well. Euphonias were seen on every occasion high in the tops of tall, rather bare trees, individuals sometimes perching at the very tips of such trees. The stomachs and intestines of the two collected on November 12 were crammed with green seeds, each surrounded by a very sticky, gelatinous covering, probably mistletoe seeds.

*Habia rubica rosea*. Red Ant-Tanager. Fifteen and one-half miles northwest of Manzanillo, 1 ♂, October 30; 9 miles west of Manzanillo, 1 ♂, November 3. This species was uncommon and the two collected were the only ones seen. Both were collected in heavy, brushy undercover in deep forest. These are the first records for Colima. The race *rosea* occurs on the Pacific slope of México from Nayarit to Guerrero. The two specimens from Colima are shorter-winged and smaller-billed than specimens from Nayarit and Jalisco in the Moore Collection. Wing lengths of the Colima specimens are 85.0 and 86.1 mm., averaging 85.5; ten males from Nayarit and Jalisco average 90.6 mm. (87.7-94.4). Bill lengths of the Colima specimens are 22.5 and 23.7 mm., averaging 23.1; bill lengths of nine specimens from Nayarit and Jalisco average 24.6 mm. (23.7-25.5). Additional material from Colima might indicate the presence there of a small race separable from *rosea*; a further possibility is the presence of a north-south cline of decreasing size culminating in Guerrero, with the terminal populations sufficiently distinct to warrant the separation of the southern population.

*Aimophila ruficauda acuminata*. Russet-tailed Sparrow. Fifteen and one-half miles northwest of Manzanillo, 1 ♀, October 25; 7½ miles northwest of Manzanillo, 1 ♂, November 5; 3 miles northeast of Colima, 1 ♀, November 8; 5 miles northeast to 6 miles southeast of Tecomán, 4 ♂ ♂, 1 ♀, November 14-17. Russet-tailed Sparrows were common in brushy fencerows and in roadside brush in open situations at all of the localities visited. The first bird collected was a first-year female about three-quarters of the way through the postjuvenile molt; it was one of a group of three birds. The other specimens were all of adults in worn plumage and all showed signs of reproductive activity. Males collected on November 5, 14, 15 (2), and 17 had left testes measuring 5, 6 × 4, 6 × 3, 7 × 4, and 6 × 4 mm., respectively. A female collected on November 8 had an ovary 3 mm. long. The ovary was soft, not hard and "gravelly," as is typical of the post-breeding organ. The largest follicle was 1 mm. in diameter. A thick, edematous incubation patch was present, indicating that this bird was either incubating or brooding young. A female collected on November 14 had a fully expanded oviduct and the ovary bore three freshly ruptured follicles. A defeathered but non-edematous incubation patch was present, indicating that this individual was incubating a set of three recently laid eggs. The eight specimens indicate that *Aimophila ruficauda* in Colima raises at least two broods, and that nesting may still be under way in middle and late November.

Although it is not possible to compare accurately the times of breeding at various localities with-

out adequate samples collected over the entire breeding season at each locality, the label data on specimens in the Moore Collection suggest that breeding may start and finish later at coastal localities than at interior localities. Only females are considered here, as males may reach full reproductive capacity well before actual nesting begins. Three females collected at Xiutepec, Cuautla, and Atlacomulco, all in Morelos, between April 28 and September 27, were all designated by the collector (W. W. Brown) as breeding; two females collected at Emiliano Zapata, Morelos, on November 19 and 22, were labeled by Brown "ovaries [sic]  $\frac{1}{4}$  enlarged" and "ovaries [sic] tiny" respectively. A female collected 12 miles south of Zirandaro, Guerrero, on May 30 by Chester C. Lamb had the "[vary]. well developed." On the other hand, four females collected by Lamb at Puerto Vallarta, Jalisco, at sea level, on June 7 (2), 17, and 20, were all labeled "[vary]. small." Two females collected by Lamb 22 miles south of Autlán, Jalisco, about thirty miles east of the coast, on October 21 and 22, were labeled "[vary]. nearly full size" and "laying" respectively. Finally, the females taken near Colima and Tecomán, approximately 35 and 10 miles from the coast, on November 8 and 14, were nesting.

In addition to the species previously mentioned, the following were collected: Ruddy Ground Dove (*Columbigallina talpacoti eluta*), White-fronted Dove (*Leptotila verreauxi angelica*), Orange-fronted Parakeet (*Aratinga canicularis clarae*), Mexican Parrotlet (*Forpus cyanopygius cyanopygius*), Finsch Parrot (*Amazona finschi finschi*), Groove-billed Ani (*Crotophaga sulcirostris sulcirostris*), Ferruginous Owl (*Glaucidium brasilianum cactorum*), Pauraque (*Nyctidromus albigollis nelsoni*), Broad-billed Hummingbird (*Cyananthus latirostris magicus*), Cinnamomeous Hummingbird (*Amazilia rutila rutila*), Ruby-throated Hummingbird (*Archilochus colubris*), Citreoline Trogon (*Trogon citreolus citreolus*), Rufous-crowned Motmot (*Momotus mexicanus mexicanus*), Golden-cheeked Woodpecker (*Centurus chrysogenys flavinuchus*), Ivory-billed Woodhewer (*Xiphorhynchus flavigaster mentalis*), Rose-throated Becard (*Platypsaris aglaiae albiventris*), Masked Tityra (*Tityra semifasciata griseiceps*), Vermilion Flycatcher (*Pyrocephalus rubinus mexicanus*), Western Kingbird (*Tyrannus verticalis*), Tropical Kingbird (*Tyrannus melancholicus occidentalis*), Thick-billed Kingbird (*Tyrannus crassirostris pompalis*), Vermilion-crowned Flycatcher (*Myiozetetes similis primulus*), Kiskadee Flycatcher (*Pitangus sulphuratus derbianus*), Ash-throated Flycatcher (*Myiarchus cinerascens cinerascens*), Olivaceous Flycatcher (*Myiarchus tuberculifer querulus*), Coues Flycatcher (*Contopus pertinax pallidiventris*), Traill Flycatcher (*Empidonax traillii brewsteri*), Least Flycatcher (*Empidonax minimus*), Rough-winged Swallow (*Stelgidopteryx ruficollis psammochrous*), Sinaloa Wren (*Thryothorus sinaloa sinaloa*), White-bellied Wren (*Uropsila leucogastra pacifica*), Blue Mockingbird (*Melanotis caerulescens caerulescens*), Mockingbird (*Mimus polyglottos leucopterus*), Rufous-backed Robin (*Turdus rufo-palliatu rufo-palliatu*), White-necked Robin (*Turdus assimilis lygrus*), Blue-gray Gnatcatcher (*Polioptila caerulea amoenissima*), Loggerhead Shrike (*Lanius ludovicianus mexicanus*), Bell Vireo (*Vireo bellii arizonae* and *V. b. medius*), Solitary Vireo (*Vireo solitarius plumbeus*), Nashville Warbler (*Vermivora ruficapilla ridgwayi*), Olive-backed Warbler (*Parula pitiaiyumi pulchra*), Yellow Warbler (*Dendroica petechia rubiginosa*), Black-throated Gray Warbler (*Dendroica nigrescens*), MacGillivray Warbler (*Oporornis tolmiei tolmiei*), Yellow-breasted Chat (*Icteria virens auricollis*), Wilson Warbler (*Wilsonia pusilla chryseola*), American Redstart (*Setophaga ruticilla*), Mexican Caticque (*Cassiculus melanicterus*), Bronzed Cowbird (*Tangavius aeneus assimilis*), Boat-tailed Grackle (*Cassidix mexicanus obscurus*), Orchard Oriole (*Icterus spurius*), Wagler Oriole (*Icterus wagleri wagleri*), Hooded Oriole (*Icterus cucullatus cucullatus*), Scarlet-headed Oriole (*Icterus pustulatus pustulatus*), Summer Tanager (*Piranga rubra cooperi*), Lesser Goldfinch (*Spinus psaltria psaltria*), Gray Saltator (*Saltator coeruleus richardsoni*), Cardinal (*Richmondia cardinalis carnea*), Yellow Grosbeak (*Pheucticus chrysopleps chrysopleps*), Blue Grosbeak (*Guiraca caerulea salicaria*), Blue Bunting (*Cyanocompsa parellina indigotica*), Varied Bunting (*Passerina versicolor dickeyae*), Painted Bunting (*Passerina ciris pallidior*), Leclancher Bunting (*Passerina leclancherii grandior*), Blue-black Grassquit (*Volatinia jacarina splendens*), Olive Sparrow (*Arremonops rufivirgata sumichrasti*), and Lark Sparrow (*Chondestes grammacus strigatus*).

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