

Known only from a single specimen taken by the Lumholtz expedition on the upper Río Bavispe, December "12," [=22] 1890. The status is most likely that of a winter visitant.

## ORDER PASSERIFORMES PERCHING BIRDS

### Family DENDROCOLAPTIDAE Woodhewers

#### *XIPHORHYNCHUS FLAVIGASTER TARDUS* BANGS AND PETERS

##### SONORA WOODHEWER

*Xiphorhynchus flavigaster tardus* Bangs and Peters, Bull. Mus. Comp. Zool., 68, Oct., 1928, 393 (Hacienda de San Rafael, "Chihuahua" [=Sonora], México).—Bangs, 1930, 257 (loc. of type).—van Rossem, 1931 c, 257 (Guirocoba); 1934 d, 446 (Hacienda de San Rafael).

Fairly common in summer (breeding) in the extreme southeastern Tropical zone foothills. Although previously reported from but two localities, this woodhewer is not uncommon. Specimens were taken and others noted at San Francisco Cañon, May 29 and 30, at Guirocoba between May 24 and June 16, and seen near Álamos on June 18, 1937 (Dickey coll.; van Rossem notes). Permanent residence seems likely, although the species has been observed to date only in May and June.

#### *LEPIDOCOLAPTES LEUCOGASTER UMBROSUS* MOORE

##### NORTHERN WHITE-STRIPED WOODHEWER

*Lepidocolaptes leucogaster umbrosus* Moore, Proc. Biol. Soc. Wash., 47, April 2, 1934, 87 (between San José and Guirocoba, Sonora, México); *ibid.*, in text (Mina Abundancia; Hacienda de San Rafael).

*Picolaptes leucogaster* (not *Xiphorhynchus leucogaster* Swainson) Salvin and Godman, 1891, 185, part (Nuri).—Ridgway, 1911, 259, part (Nuri).—van Rossem, 1934 d, 446 (Mina Abundancia; Hacienda de San Rafael).

*Lepidocolaptes leucogaster* Hellmayr, 1925, 319, part (Sonora).

Fairly common in spring and summer in the Tropical and Upper Sonoran zone foothills and lower mountains in the extreme southeastern corner of the State. The northernmost record to date is from Nuri on the Río Chico. Extremes of altitude at which detected are from approximately 1,500 feet at Nuri and Guirocoba to 5,500 feet at Rancho Santa Bárbara (Dickey coll.). Although Sonora records cover only the period from early April to mid-June, the fact that the species has been found in im-

mediately adjacent portions of Chihuahua in midwinter indicates permanent residence in Sonora also.

### Family COTINGIDAE Cotingas

#### *TITYRA SEMIFASCIATA HANNUMI* VAN ROSSEM AND HACHISUKA

##### NORTHWESTERN TITYRA

*Tityra semifasciata hannumi* van Rossem and Hachisuka, Proc. Biol. Soc. Wash., 50, Nov. 26, 1937, 197 (San Francisco Cañon, extreme southeastern Sonora, México).

Known only from the type locality, where two specimens, a pair in breeding condition, were taken and four other individuals seen on May 29, 1937. All were in semi-deciduous woodland in the Tropical zone at altitudes of from 1,400 to 2,000 feet.

#### *PLATYPSARIS AGLAIÆ RICHMONDI* VAN ROSSEM

##### RICHMOND BECARD

*Platypsaris aglaiae richmondi* van Rossem, Proc. Biol. Soc. Wash., 43, July 18, 1930, 130 ("Saric" [=Rancho La Arizona], Sonora, México); *ibid.*, in text (Tesia; Chinobampo; Guirocoba); 1931 c, 258 (same locs.); 1934 d, 446 (Alamos; Hacienda de San Rafael).—Bent, 1942, 7, in text (Sonora; crit.)—A.O.U. Comm., 1944, 452 (Saric).

*Platypsaris aglaiae albiventris* (not *Hadrostomus albiventris* Lawrence) Ridgway, 1907, 856, part (Alamos; Hacienda de San Rafael; Ysleta).—Hellmayr, 1929, 201, part (Sonora).

*Hadrostomus aglaiae* (not *Pachyrhynchus aglaiae* Lafresnaye) Salvin and Godman, 1890, 121, part (Ysleta).

Fairly common resident in the foothills and mountains in the extreme southeast, where occasionally reaching an altitude of 5,500 feet in the Transition zone. There are four records for the lowlands: Tesia, December 21, 1929, and Chinobampo, February 21 and 30, 1930; Isleta, May 16, 1888. A colony, apparently completely isolated by some 300 miles, exists at Rancho La Arizona in the extreme northcentral part of the State where Wright took six specimens between May 14 and June 24, 1929. Additional records are San Francisco Cañon where seen commonly on May 30, and Rancho Santa Bárbara in early June, 1937, where found to penetrate the Transition zone up to 5,500 feet (van Rossem notes; Dickey coll.).<sup>30</sup>

<sup>30</sup> This northern colony is apparently migratory for although nests of the previous year were found between May 6 and 10, 1937, no birds had appeared as yet.

## Family TYRANNIDAE Tyrant Flycatchers

*SAYORNIS NIGRICANS SEMIATRA* (VIGORS)

## WESTERN BLACK PHOEBE

*Muscicapa semiatra* Vigors, Zool. Voy. Blossom, 1839, 17 (Monterey, California).

*Sayornis nigricans semiatra* van Rossem, 1931 c, 262 (El Doctor; Pesqueira; Tecoripa; Saric; Obregon; Tesia; Chinobampo; San Jose de Guaymas; 15 mi. S. W. of Nogales; San Luis); 1934 d, 448 (Guaymas; Alamos; Nacozari; Oposura).

*Sayornis nigricans* (not *Tyrannula nigricans* Swainson) Allen, 1893 a, 37 (Granados).—Price, 1899, 92 (lower Colorado River).

*Sayornis nigricans nigricans* Ridgway, 1907, 597, part (Hermosillo).—Huey, 1935, 254 (Punta Peñascosa).

Common resident of the entire State (except that there is no record from any of the islands) below an altitude of 5,500 feet, with concentration on ponds, reservoirs, and streams. Numbers seem to be fairly stable throughout the year and the great bulk of the population is probably resident. Locality records in addition to those given are almost too numerous to cite; some of them are Guirocoba, March (Bishop coll.); El Álamo, and Rancho Costa Rica, December (Lamb notes); Guaymas, February and March (Mus. Comp. Zoöl.), Kino Bay, December; Rancho Santa Bárbara, June (Dickey coll.); San Pedro River, October and July; San Bernardino Ranch, August; Sonoyta, January; Colorado River at Monument 204, March (U. S. Nat. Mus.); Magdalena, May (Dawson notes); Cajón Bonito Creek, July (Mcarns notes).

*SAYORNIS SAYA SAYA* (BONAPARTE)

## SAY PHOEBE

*Muscicapa saya* Bonaparte, Amer. Orn., 1825, 20, pl. 11, fig. 3 (Arkansas River, about 20 miles from the Rocky Mountains [=near Pueblo, Colorado]).

*Sayornis saya* Evermann and Jenkins, 1888, 67 (Nogales).—Allen 1893 a, 37 (San Pedro).—Ridgway, 1907, 602, part (Sonora).

*Sayornis saya saya* A.O.U. Comm., 1931, 207, part (Sonora).—van Rossem, 1931 c, 262 (El Doctor; Saric; Obregon; Tesia; 15 mi. S. of Nogales; San Luis); 1934 d, 448 (Guaymas; Alamos; Cumpas).

Evidently rather uncommon in summer in the northcentral portion of the State, where known to breed in the vicinity of Rancho La Arizona, Nogales, and Magdalena. Distribution of the subspecies *saya* in southern Arizona suggests summer residence eastward from Nogales; however, there are no Sonora records for that season other than those given above. In winter, commonly and widely distributed in Sonoran and Tropical zones nearly everywhere. Unpublished records are San Carlos Bay, De-

ember 24 (Dickey coll.); boundary south of Bisbee, September 23 (U. S. Nat. Mus.); Nogales, breeding, May 10; Magdalena, breeding, May 13 (Dawson notes); Rancho La Arizona, breeding, May 7 (van Rossem notes); El Álamo, December 2; Rancho Costa Rica, December 11 (Lamb notes); San Marcial, November 8 (Mus. Comp. Zoöl.); Cajón Bonito Creek, September 27; San Pedro River, October 11 (Mearns notes).

*SAYORNIS SAYA QUIESCENS* GRINNELL

DESERT PHOEBE

*Sayornis sayus quiescens* Grinnell, Condor, 28, No. 4, July 15, 1926, 180 (San José, about 45 miles northeast of San Quentin, Baja California, México).

*Sayornis saya quiescens* van Rossem, 1931 c, 262 (El Doctor).

*Sayornis saya saya* (not *Muscicapa saya* Bonaparte) Huey, 1935, 254 (Punta Peñascosa); 1942, 367 (Quitovaquita; Dowling Well).

(?) *Sayornis saya* Price, 1899, 92 (lower Colorado River).

Fairly common and generally distributed midwinter visitant in the northwest desert region, south, coastwise, to the vicinity of Guaymas and (casually?) to the lower Mayo River valley. Specimens of *quiescens* have been examined from El Doctor, January 24 to 30, 1929; San José de Guaymas, January 7, 1933 (Dickey coll.); Punta Peñascosa, February 27, 1934; Puerto Libertad, February 2, 1935; Kino Bay, February 14 to 27, 1935 (Nat. Hist. Mus.); Camoa, February 20, 1931 (Bishop coll.). In default of specimens the midwinter record of Price can be allocated only provisionally.<sup>31</sup>

*PYROCEPHALUS RUBINUS FLAMMEUS* VAN ROSSEM

WESTERN VERMILION FLYCATCHER

*Pyrocephalus rubinus flammeus* van Rossem, Trans. San Diego Soc. Nat. Hist., 7, No. 30, May 31, 1934, 353 (Brawley, Imperial County, California); 1934 d, 451 (Guaymas; Alamos; Fronteriza; Nacozari).

*Pyrocephalus rubineus* (not *Muscicapa rubinus* Boddaert) Baird, 1858, 201, part (San Bernardino); 1859, 9, part (San Bernardino).—Salvin and Godman, 1889, 60, part (Realito).

*Pyrocephalus rubineus*, var. *mexicanus* (not *Pyrocephalus mexicanus* Sclater) Brewer, 1874, 387 (Los Nogales).

<sup>31</sup> The range of *quiescens* covers a great deal more territory than that originally accorded it by Grinnell. It is the breeding race of southeastern California and southwestern Arizona, north at least to extreme southeastern Clark County, Nevada. In central Baja California *quiescens* has been found breeding as early as February 22 (van Rossem, 1931 c). Because of this, as well as from the appearance of some of the specimens examined, I suspect that *quiescens* is the resident race in northwestern Sonora.

*Pyrocephalus rubineus mexicanus* Evermann and Jenkins, 1888, 68 (Querobabi; Carbo).—Allen, 1893 a, 37 (San Pedro; Nacory; Granados).—Thayer and Bangs, 1906, 19 (Opodepe).

*Pyrocephalus rubinus mexicanus* Hellmayr, 1927, 22, part (Sonora).—van Rossem, 1931 c, 266 (El Doctor; Pesqueira; Tecoripa; San Javier, Saric; Obregon; Tesia; Tobari Bay; Guaymas; El Alamo; Agiabampo; San Luis).—Griscom, 1934, 385, part (Sonora; crit.).

Common resident of Sonoran and Tropical zones everywhere on the mainland although there is probably a recession during the winter months of part of the population from more northern localities. Additional localities are Rancho Costa Rica, December; Ures, January (Lamb notes); Pilares, June (Univ. Mich.); Guirocoba, June (Dickey coll.); Sonoyta, January; Colorado River at Monument 204, March (U. S. Nat. Mus.); Cerro Blanco, March (Field Mus.); Magdalena, May (Dawson notes); San Luis Mountains on the boundary, July; San Pedro River, July; Guadalupe Cañon, July (Mearns notes).

*TYRANNUS VOCIFERANS VOCIFERANS* SWAINSON

CASSIN KINGBIRD

*Tyrannus vociferans* Swainson, Quart. Journ. Sci., 20, 1826, 273 (Temascál-tepec, México).—Baird, 1858, 174 (Los Nogales); 1859, 8 (Los Nogales).—Sclater, 1862, 235 (Los Nogales); 1888, 269 (Los Nogales).—Brewer, 1874, 327, in text (Los Nogales).—Salvin and Godman, 1889, 99, part (Santa Rosa; Trinidad; Micoba; Los Nogales).—Allen, 1893 a, 36 (Leoncita; Fronteras).—Thayer and Bangs, 1906, 19 (Opodepe; La Chumata).—Ridgway, 1907, 694, part (Sonora).—van Rossem, 1931 c, 258 (Tecoripa; Saric; Obregon; Tesia; Chinobampo).

*Tyrannus vociferans vociferans* van Rossem, 1934 d, 446 (Alamos; Nacozari; Oposura).

Common summer visitant to Sonoran and Tropical zones nearly everywhere, principally in the vicinity of streams and about habitations, except that there are no records for the desert regions north of Guaymas, nor from any of the islands. Winter records are all from Guaymas and Hermosillo southward and the species is evidently more or less restricted at that season to the Tropical zone. Records additional to those published are Camoa, February 9; Guirocoba, April 14 (Bishop coll.); Hermosillo, December 31 (Lamb notes); Guaymas, February 2 to 27 (Mus. Comp. Zool.); Magdalena, May 12; Nogales, May 10 (Dawson notes); Cajón Bonito Creek, July 3 and September 8 (Mearns notes); San Pedro River, July 29; Guadalupe Cañon, October 4; Santa Cruz River, October 22 and 23 (U. S. Nat. Mus. catl.). The last named date is the latest for the northern part of the State. The earliest seems to be March 24 at Nacozari.

*TYRANNUS VERTICALIS* SAY

## WESTERN KINGBIRD

*Tyrannus verticalis* Say, in Long's Exped. Rocky Mts., 2, 1823, 60, note (Ash River, near Rocky Mts. [=La Junta, Colorado]).—Thayer and Bangs, 1906, 19 (Opodepe).—Ridgway, 1907, 697 (Sonora).—van Rossem, 1931 c, 258 (San Javier; Saric; Guirocoba); 1934 d, 446 (Oposura).

Common summer visitant to Sonoran and Tropical zones south to the Mayo River valley. There are no records from any of the islands. Further locality records are San Luís and Colonia Independencia, May 3; Hermosillo, May 10; Tesia, June 22, 1937, breeding (van Rossem notes); San Bernardino Ranch, August 13, 1892; Colorado River at Monument 204, March 31, 1894 (U. S. Nat. Mus. catl.); Gray's Ranch on the boundary, April and May, 1939 (Huey, 1942). The earliest date of arrival is March 31 (Colorado River at Monument 204); the latest fall date is September 8 (Rancho La Arizona).

*TYRANNUS MELANCHOLICUS OCCIDENTALIS* HARTERT AND GOODSON

## WESTERN TROPICAL KINGBIRD

*Tyrannus melancholicus occidentalis* Hartert and Goodson, Novit. Zool., 24, Aug. 31, 1917, 412 (San Blas, Tepic [=Nayarit], México).—van Rossem, 1931 c, 258 (Tobari Bay; Guaymas; Agiabampo); 1934 d, 447, in text (southern Sonora).—Dickey and van Rossem, 1938, 352, in text (Sonora).—Phillips, 1940, 117 (Guaymas).

A common summer visitant to the Tropical zone coastal plain, north to the vicinity of Guaymas. In spite of extensive observation there is but one locality of record away from the vicinity of the seacoast and lower river valleys,—Guirocoba in the foothills at 1,450 feet, where the species is rather common. Additional localities are Camoa, June 5, 1931 (Bishop coll.); Masocari Island, May 15, and Tesia, June 20, 1937 (Dickey coll.). Actually, by personal observation, the distribution of this kingbird is practically continuous in the lowlands from the Sinaloa boundary north to Guaymas. The earliest date of arrival recorded is April 26 (Tóbari Bay). There are no data concerning fall departure.

*TYRANNUS CRASSIROSTRIS SEQUESTRATUS* VAN ROSSEM

## NORTHERN THICK-BILLED KINGBIRD

*Tyrannus crassirostris sequestratus* van Rossem, Condor, 43, No. 5, Sept. 18, 1941, 250 (Rancho La Arizona, Sonora, México).

*Tyrannus crassirostris pompalis* (not of Bangs and Peters) van Rossem, 1931 c, 259, part (Saric).

Known only as a fairly common summer visitant in the vicinity of Rancho La Arizona, where seemingly confined to riparian timber associations. Dates of record extend from May 7 to September 11.

*TYRANNUS CRASSIROSTRIS POMPALIS* BANGS AND PETERS

ÁLAMOS THICK-BILLED KINGBIRD

*Tyrannus crassirostris pompalis* Bangs and Peters, Bull. Mus. Comp. Zoöl., 68 No. 8, Oct. 1928, 396 (Hacienda de San Rafael, Chihuahua [=Sonora], México); *ibid.*, in text (Álamos).—Bangs, 1930, 268 (data on type).—van Rossem, 1931 c, 259, part (Tesia; Agiabampo); 1934 d, 446 (Álamos; Hacienda de San Rafael); 1941 b, 250, in text (southern Sonora; crit.).

*Tyrannus crassirostris* (not of Swainson) Salvin and Godman, 1889, 103, part (western Sonora).

Fairly common resident in the Tropical zone lowlands and foothills, chiefly in riparian associations, north to about 27° 10'. This race is thus separated from *sequestratus* by almost the entire length of the State. The northernmost records to date are Tesia in the lower Mayo River valley and Hacienda de San Rafael in the extreme eastern foothill region. Dates range from December 21 through June; the July-November hiatus most likely reflects lack of collecting or observation during that period. Although first recorded from Sonora by Salvin and Godman (1889), the basis is obscure. There are no specimens taken in Sonora in the British Museum, but Lloyd may have noted the species there in the spring of 1888. In addition to the records cited above, there are two specimens in the Museum of Vertebrate Zoology taken by Benson at Agua Marín, 8 miles northwest of Álamos on May 2, 1939.

*MYIODYNASTES LUTEIVENTRIS SWARTHI* VAN ROSSEM

ARIZONA SULPHUR-BELLIED FLYCATCHER

*Myiodynastes luteiventris swarthi* van Rossem, Condor, 29, No. 2, March 15, 1927, 126 (Huachuca Mountains, Arizona); 1931 c, 259 (Satic; Guirocoba); 1934 d, 477 (Hacienda de San Rafael); 1940, 79 (nomen.).—Bangs and Peters, 1928, 394 (Hacienda de San Rafael).—Bent, 1942, 106, in text (San Rafael).

*Myiodynastes luteiventris* (not of Sclater) Salvin and Godman, 1889, 48, part (Ysleta).—Ridgway, 1907, 657 (Hacienda de San Rafael; Cajon Bonito Creek).

*Myiodynastes luteiventris vicinior* (not of Cory) Zimmer, 1937, 26, in text (nomen.; crit.).

Summer visitant to the mountainous eastern area; possibly of general distribution although detected so far only in the extreme north and the extreme south. The chief associational requirement is relatively large timber along cañon streams. Zonal distribution extends from Tropical

into Transition in the south, and from low Upper Sonoran into Transition in the north. Additional records are from San Francisco Cañon (nest building; also migrating abundantly), May 29 and 30; Guirocoba, migrating abundantly after May 15, breeding June 2; Rancho Santa Bárbara, fairly common, breeding, June 6 to 15, 1937 (Dickey coll.; van Rossem notes). The earliest arrival date is May 2 (Guirocoba); the latest for fall is September 10 (Rancho La Arizona).<sup>32</sup>

*MYIOZETETES SIMILIS PRIMULUS* VAN ROSSEM

MAYO FLYCATCHER

*Myiozetetes similis primulus* van Rossem, Trans. San Diego Soc. Nat. Hist., 6, No. 8, Aug. 30, 1930, 198 (Tesia, Sonora, México); 1931 c, 259 (Tesia).—Griscom, 1934, 385 (Sonora).

Common resident in the lower Mayo River valley. The extreme localness of many Tropical zone species is well exemplified by this flycatcher. Careful personal search in other, apparently equally suitable Tropical zone localities, has failed to produce a single specimen, nor has it been encountered elsewhere in Sonora by any of the several collectors who have investigated the region.

*MYIOZETETES SIMILIS TEXENSIS* (GIRAUD)

GIRAUD FLYCATCHER

*Muscicapa texensis* Giraud, Sixteen Species Texas Birds, 1841, pl. 1 (Texas = [probably] Vera Cruz, México).

A single specimen, seemingly typical of this race, was taken by W. J. Sheffler at Guirocoba on December 5, 1941, and is now in his collection. Its status is almost certainly that of a casual, in all probability from east of the Sierra Madre by way of one of the great east-west cañons.

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<sup>32</sup> Birds from southeastern Sonora by no means represent typical *swarthi*, for although they are pale colored and have narrow streaking below there is a pronounced yellowish flush dorsally. The apparent gap in the range of this species between latitudes 28° (Bravo, Chihuahua) and 31° (Cajón Bonito Creek) may be significant in this connection. It is difficult to believe that such a gap actually exists, but on the other hand no Sulphur-bellied Flycatchers were taken by Campbell in El Tigre Mountains, by Cahoon in the Sierra de Oposura, by Brown in the Sierra de San Antonio, nor, so far as can be determined, by any of the several collectors who have worked the Chihuahua side of the boundary between the above given latitudes. If this proves to be the case, *swarthi* in typical form occupies a rather limited and isolated range.

## PITANGUS SULPHURATUS PALLIATUS VAN ROSSEM

## WESTERN DERBY FLYCATCHER

*Pitangus sulsuratus* (sic) *palliatus* van Rossem, Proc. Biol. Soc. Wash., 50, Feb. 23, 1937, 25 (Álamos, Sonora, México); *ibid.*, in text (Agiabampo; Basacori [=Masocari] Island).

*Pitangus sulphuratus palliatus* van Rossem, 1940, 84 (Sonora; monog.).—Peters, 1943, 77 (re. type).—Wetmore, 1943, 288, in text (southern Sonora; crit.).

*Pitangus sulphuratus derbianus* (not *Saurophagus derbianus* Kaup) Peters, 1929 b, 448, in text (Sonora).—van Rossem, 1931 c, 259 (Agiabampo); 1934 d, 447 (Álamos).—Zimmer, 1937, 26, part (Sonora).—Bent, 1942, 98, in text (Agiabampo; Álamos).

Summer visitant in the extreme south, where virtually confined to the Tropical zone coastal plain. The earliest date of arrival is March 8 (Álamos); there are no data on fall departure. In addition to the cited localities, the species was found at Camoa, April 19, 1939 (Mus. Vert. Zool.) and at Tesia (commonly) in late June, 1937 (Dickey coll.). Possibly the Derby Flycatcher is resident, since W. J. Sheffler is certain (notes) that four individuals were seen by him at Guirocoba between November 13 and 20, 1944.

## MYIARCHUS CINERASCENS CINERASCENS (LAWRENCE)

## ASH-THROATED FLYCATCHER

*Tyrannula cinerascens* Lawrence, Ann. Lyc. Nat. Hist. New York, 5, 1851, 121 ([Between San Antonio and the Río Grande] Western Texas).

*Myiarchus cinerascens* Evermann and Jenkins, 1888, 67 (Nogales).—Salvin and Godman, 1889, 91, part (Yecera).—Nelson, 1904 b, 33 (Central Sonora).

*Myiarchus cinerascens cinerascens* Thayer and Bangs, 1906, 19 (La Chumata; Opodepe).—Ridgway, 1907, 625, part (La Chumata; Opodepe).—[?] Mailliard, 1923, 455 (San Pedro Nolasco Island).—Hellmayr, 1927, 160, part (Cerro Blanco Mines).—van Rossem, 1931 c, 260, part (San Javier; Saric; El Álamo; Tesia; 10 miles W. of Magdalena); 1932, 136, part (Tiburón Island, part [winter]); 1934 d, 447 part (Oposura; Nacoziari).—Griscom, 1934, 388, part (Oposura; La Chumata; Nacoziari; Guaymas, part; Opodepe).—Bent, 1942, 128, part (Sonoyta; Tesia; Pozo de Luís).—Huey, 1942, 367 (Gray's Ranch; Dowling Well).

*Myiarchus crinitus*, var. *cinerascens* Brewer, in Baird, Brewer, and Ridgway, 1874 (2), 337, in text (Los Nogales).

*Myiarchus cinereus* Stone and Rhoads, 1905, 682 (Colony).

*Myiarchus mexicanus* (not *Tyrannula mexicana* Kaup) Baird, 1858, 179 (Los Nogales).

*Myiarchus nuttingi inquietus* (not *Myiarchus inquietus* Salvin and Godman) Nelson, 1904 b, 38, part (Nacoziari).

Common summer visitant to Sonoran zones the width of the State northerly, and south in the central-eastern interior at least to latitude 29° 30'. Occurs as a winter visitant over the Lower Sonoran and Tropical

deserts south at least to the Mayo River valley. As a transient, the distribution is general. Some stations not listed above are San Marcial, November 5, 1905 (Mus. Comp. Zoöl.); Kino Bay, February 16 to 27, 1935; Puerto Libertad, January 28 to February 3, 1935 (Nat. Hist. Mus.); San Pedro River, July 29, 1893; Monument 205, March 19, 1894; Cajón Bonito Creek, July 3, 1892; San Luís Mountains, July 12, 1893 (U. S. Nat. Mus.; Mearns notes); San Luís, May 3, 1937 (van Rossem notes).

*MYIARCHUS CINERASCENS MEXICANUS* (KAUP)

KAUP FLYCATCHER

*Tyrannula mexicana* Kaup., Proc. Zool. Soc. Lond., 19, [Oct.], 1852, 51 (México=State of Zacatecas).

*Myiarchus cinerascens cinerascens* (not *Tyrannula cinerascens* Lawrence) Ridgway, 1907, 625, part (Batamotal).—[?] Townsend, 1917, 17, part (Tiburón Island).—van Rossem, 1931 c, 260, part (Pesqueira; 10 miles N. of Guaymas; Guirocoba; Guaymas; Kino Bay; Tiburón Island); 1932, 136 (Tiburón Island, part; Kino Bay; Guaymas; crit.); 1934 d, (Guaymas).—Griscom, 1934, 388, part (Guaymas, part).—Bent, 1942, 128, part (Guaymas).

(?) *Myiarchus cinerascens* Belding, 1883, 343 (Guaymas).

Fairly common resident of Lower Sonoran and Tropical zones from Tiburón Island and Kino Bay southward. Two winter records north of the established breeding range, Puerto Libertad, January 28, 1935 (3 specimens in Nat. Hist. Mus.), and Pesqueira, February 24, 1929 (Dickey coll.), may be within the breeding range, the northern and eastern limits of which are unknown at this time.<sup>33</sup>

*MYIARCHUS CINERASCENS PERTINAX* BAIRD

LOWER CALIFORNIA FLYCATCHER

*M.[yiarchus] pertinax* Baird, Proc. Acad. Nat. Sci. Phila., [11], 1859, Sigs. 21-23, Oct.-Nov. [Jan. 12, 1860], 303 (Cape San Lucas, Baja California, México).

<sup>33</sup> While seemingly identical with *cinerascens* in coloration, birds from the range outlined above differ in slightly smaller size, proportionately slightly longer tail, and more rounded wing in which the tenth (outer) primary is about equal to the third instead of to the fourth or the fifth. Kaup's type, which I examined at Darmstadt in August, 1933, was obtained from Wollweber; hence, the State of Zacatecas is almost certainly the type locality. It is not marked as to sex but the rather indistinct character of the markings on the outer rectrices and the small size led me to believe it to be a female. Osgood (Auk, 24, 1907: 219-220), has long ago examined this type and commented on the post-mortem fading. The measurements of wing and tail are 91.5 and 87.0 mm., respectively. Since these are very close indeed to the measurements of the 13 Sonora females, I see no objection to using Kaup's name tentatively. Unfortunately, I did not take the wing formula. Griscom (1934 p. 388) has previously segregated this race (under Groups 2 and 3) so far as his Sonora material would permit, but applied no name.

*Myiarchus cinerascens pertinax* van Rossem, 1942 g, 184 (San Esteban Island).

*Myiarchus cinerascens cinerascens* (not *Tyrannula cinerascens* Lawrence) Townsend, 1923, 17, part (San Esteban Island).—van Rossem, 1931 c, 260, part (San Esteban Island).

Breeds on San Estéban Island, where presumably resident, although specimens have been taken only on April 17 and 18, 1930 (Dickey and Nat. Hist. Mus. colls.).

*MYIARCHUS NUTTINGI INQUIETUS* SALVIN AND GODMAN

GUERRERO FLYCATCHER

*Myiarchus inquietus* Salvin and Godman, Biol. Centr.-Amer., Aves, 2, March, 1889, 88 (Acaguisotla [=Acahuizotla], Guerrero, México).—Allen, 1893 a, 36 (Oputa [Nov. 9, not "Sept." 9]; Bacadehuachy, [Nov. 20, not "Dec." 20]).

*Myiarchus nuttingi inquietus* Nelson, 1904 b, 38, part (Alamos; Hacienda de San Rafael).—Ridgway, 1907, 631, part (Alamos; Oputa; Bacadehuachy).—Hellmayr, 1927, 161 (Sonora).

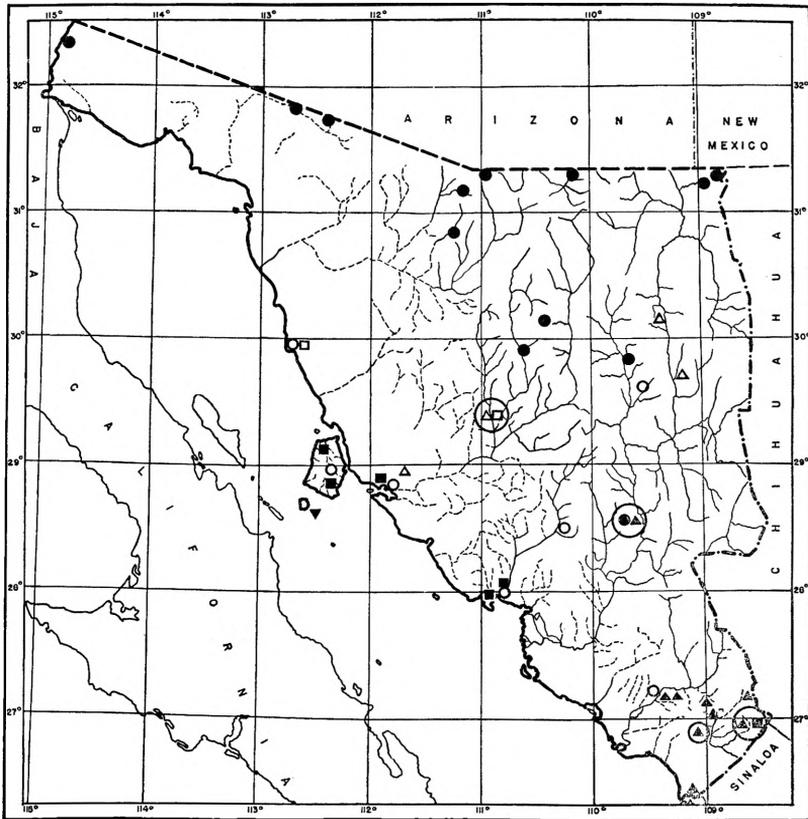
*Myiarchus cinerascens inquietus* van Rossem, 1931 c, 260 (Pesqueira; San Javier; Tesia, Chinobampo; Guirocoba); 1932, 137, in text (Alamos District; crit.); 1934 d, 447 (Hacienda de San Rafael; Alamos); 1936 b, 117 (Sonora).

*Myiarchus* [sic.] *inquietus* Ridgway, 1894 a, 66 (Oputo; Bacadehuachy; crit.).

*Myiarchus nuttingi* (not of Ridgway) Griscom, 1932 a, 253, part (Sonora; crit.).

Seemingly a fairly common resident of the Tropical zone north, in the interior at least, to about 28° 30'. Definite breeding stations are Agiabampo on the coast and Guirocoba in the extreme southeastern foothills. A very probable breeding locality is San Javier. Whether fall and winter occurrences north and west of the breeding range, as known, are due to seasonal dispersal or represent resident localities cannot be determined at this time. Unrecorded specimens are from Camoa, February 10, 1931 (Bishop coll.); Rancho Costa Rica, December 15, 1932; Agiabampo, May 17, 1937; Guirocoba, May 22 to 31, 1937 (Dickey coll.); Agua Marín, May 5, 1939 (Mus. Vert. Zool.).<sup>34</sup>

<sup>34</sup>I once presented evidence (1931 c and 1932) that *inquietus* was conspecific with *cinerascens*, and on the basis of the material then available it seemed a logical conclusion. More recent data, particularly that presented by Griscom (1934) concerning the situation in Guerrero, seem to indicate strongly that two closely related but distinct species are involved and that the truly impressive number of intermediates are the result of hybridization on a mass scale. Personal field work during the breeding season supports this latter view, for at Guirocoba in 1937 I found both present in typical form, though connected by intermediates showing various combinations of characters. Additionally, intergradation in a geographic sense over the area from Sonora to Guerrero is out of the question, except as zonal distribution might be a factor. This obviously is not the case in Guerrero. On present data the breeding ranges of *cinerascens* and *inquietus* in Sonora appear to be complementary with overlap along a narrow belt, but future field work may well prove such segregation to be non-existent.



MAP 11. Distribution of two species of the genus *Myiarchus*. Circles, *M. cinerascens cinerascens*; squares, *M. c. mexicanus*; triangles, *M. nuttingi inquietus*; hollow figures, transient or winter stations outside of established breeding range; large circles, evidence of hybridism present.

*MYIARCHUS TYRANNULUS MAGISTER* RIDGWAY

ARIZONA CRESTED FLYCATCHER

*Myiarchus mexicanus magister* Ridgway, Proc. Biol. Soc. Wash., 2, April 10, 1884, 90 (Camp Lowell, Arizona); 1907, 623 (Ortiz; Ysleta).—Thayer and Bangs, 1906, 19 (La Chumata).

*Myiarchus tyrannulus magister* Hellmayr, 1927, 162 (Sonora).—van Rossem, 1931 c, 260 (Saric; Guaymas; Guirocoba; 1934 d, 447 (Hacienda de San Rafael).—Bent, 1942, 123 (Ortiz; Nogales).—Huey, 1942, 367 (Gray's Ranch on the boundary).

*Myiarchus magister* Salvin and Godman, 1889, 89, part (Ysleta).

Common summer visitant and transient almost everywhere up to and including the lower fringe of the Transition zone. Most common, how-

ever, in giant cactus areas in Lower Sonoran and Tropical zone deserts. There are no records as yet for any of the islands, nor for the Sonora side of the Colorado River. Additional stations are Álamos, April 25, 1939 (Mus. Vert. Zool.); Magdalena, May 12, 1925 (Dawson notes); Agiabampo, May 17; San Francisco Cañon, May 30; Rancho Santa Bárbara, June 11, 1937 (Dickey coll.; van Rossem notes). The earliest arrival date is April 25 (Álamos). There are no dates for fall departure.

*MYIARCHUS TUBERCULIFER OLIVASCENS* RIDGWAY

OLIVACEOUS FLYCATCHER

*Myiarchus lawrencei olivascens* Ridgway, Proc. Biol. Soc. Wash., 2, April 10, 1884, 91 (Santa Efigenia, Oaxaca, México); Thayer and Bangs, 1906, 19 (La Chumata).

*Myiarchus lawrenceii olivascens* Ridgway, 1907, (Alamos; Yecera; Realito; Guadalupe; Hacienda de San Rafael).

*Myiarchus tuberculifer olivascens* Hellmayr, 1927, 186 (Sonora).—van Rossem, 1931 c, 261 (San Javier; Saric; Tesia; Chinobampo; Magdalena; Guirocoba; Agiabampo); 1934 d, 448 (Alamos; Mina Abundancia; Hacienda de San Rafael); 1936 d, 137 (Sonora; range).—Bent, 1942 (Cajon Bonito Creek; Saric; Guaymas; Agiabampo; Oposura).

*Myiarchus lawrencii* (not *Muscicapa lawrencii* Giraud) Salvin and Godman, 1889, 94, part (Yecera; Realito; Guadalupe).

Common summer visitant to Tropical, Sonoran, and Transition zones in the southern part of the State north, chiefly or entirely in the Upper Sonoran zone of the mountainous eastern part, to the Arizona boundary. Winters, apparently in fair numbers, north at least to the Mayo River valley. Some additional record stations are Ysleta, May 16, 1888 (Brit. Mus.); Cerro Blanco Mines, April 4, 1903 (Chicago Nat. Hist. Mus.); Cajón Bonito Creek, July 3, 1892; San José Mountains, August 8, 1893 (Mearns notes); San Francisco Cañon, May 30, 1937 (van Rossem notes); Rancho Santa Bárbara, June 6 and 9, 1937 (Dickey coll.). Numerous March and early April records may pertain either to migrating or wintering individuals; the earliest date for northern localities is April 4 (Cerro Blanco Mines). As is all too frequently the case there is a scarcity of fall departure data. The latest record at present is August 19 (Rancho La Arizona).<sup>35</sup>

<sup>35</sup> The apparent indifference of *tuberculifer* to zonal or associational considerations over most of its Central American and Mexican range is truly surprising. Equally so is the restriction of habitat in the extreme northwest. Southern Sonora apparently marks the northern limit of general distribution: north of that region the zonal range narrows abruptly and is practically restricted to timbered localities in the Upper Sonoran zone.

*NUTTALLORNIS BOREALIS* (SWAINSON)

## OLIVE-SIDED FLYCATCHER

*Tyrannus borealis* Swainson, Fauna Bor.-Am., 2, 1831 [Feb., 1832], 141, pl. 35 (Cumberland House [=Carleton House], Saskatchewan).

*Nuttallornis borealis cooperi* Moore, 1938 a, 25 (Guirocoba).

Spring and fall migrant at lower elevations; probably more common than the few known occurrences might suggest. Noted by Dawson at Magdalena several times between April 22 and May 15, and at Nogales, May 10, 1925 (notes); specimen in the Dickey collection taken at Agiabampo, May 17, 1937. Instances of fall occurrence are San Bernardino River on the boundary, August 15 and September 4, 1892 (U. S. Nat. Mus. catl.); Guirocoba, September 25, 1933.<sup>36</sup>

*CONTOPUS VIRENS RICHARDSONII* (SWAINSON)

## WESTERN WOOD PEWEE

*Tyrannula richardsonii* Swainson, Fauna, Bor.-Amer., 2, 1831 [Feb., 1832], 146, pl. 46, lower fig. (Cumberland House, [Saskatchewan], Canada).

*Myiochanes richardsonii richardsonii* van Rossem, 1931 c, 265, part (Guirocoba; Saric, part).

Breeds in the San Luís Mountains in the extreme northeast and possibly at high altitudes at other points southward. Specimens nearest to this race, though not typical, have been examined from "San Luís Mountains, Mexican Boundary Line," June 17, 1892, and Cajón Bonito Creek, "Chihuahua," 10 miles south of Monument 66, July 6, 1892 (U. S. Nat. Mus.). Occurs also as a spring and fall transient, probably in some numbers in spite of the few specimens so far collected. Spring records are from Guirocoba, May 2, 1931 (Bishop coll.); May 6, 1930; Rancho La Arizona ["Saric"], May 29, 1929. Fall records are all from Rancho La Arizona between August 11 and 29, 1929.

*CONTOPUS VIRENS SATURATUS* BISHOP

## NORTHWESTERN WOOD PEWEE

*Contopus richardsonii saturatus* Bishop, Auk, 17, No. 2, April, 1900, 116 (Haines, Alaska).

<sup>36</sup> After some consideration and the examination of a large number of western specimens, I have concluded that the recognition of two races of the Olive-sided Flycatcher is not practical, at least on the basis of the ranges now allocated respectively to *borealis* and *cooperi*. This course has already been advocated by Wetmore (Proc. U. S. Nat. Mus., 86, 1939: 200-201). There is the possibility that two races exist, but a large number of breeding birds are necessary in order to test this. The great majority now available are migrants.

*Myiochanes richardsonii richardsonii* (not *Tyrannula richardsonii* Swainson) van Rossem, 1931 c, 265, part (Saric, part; Guasimas Lagoon).

Evidently a rather common spring and fall transient. Specimens have been examined as follows: Agiabampo, May 17, 1937; Guirocoba, May 27, 1937; Guásimas Lagoon, May 12, 1930; Rancho La Arizona, 5 specimens August 16 to September 16, 1929 (Dickey coll.); Guirocoba, April 27, 1931 (Bishop coll.).

#### CONTOPUS VIRENS PLACENS (VAN ROSSEM)

##### PALLID WOOD PEWEE

*Myiochanes virens placens* van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 17, April 30, 1940, 84 (Madera Cañon, alt. 6000 feet, Santa Rita Mountains, Arizona); *ibid.*, in text (central and eastern Sonora).

*Myiochanes richardsonii richardsonii* (not *Tyrannula richardsonii* Swainson) Ridgway, 1907, 521, part (Sonora).—Hellmayr, 1927, 191, part (Sonora).—van Rossem, 1931 c, 265, part (Saric, part); 1934 d, 450 (Hacienda de San Rafael; Oposura; La Chumata; crit.)

*Myiochanes richardsoni richardsoni* A.O.U. Comm., 1910, 214, part (Sonora); 1931, 210, part (Sonora).

*Horizopus richardsoni* Thayer and Bangs, 1906, 19 (La Chumata).

Common summer visitant to lower mountains and foothills in the extreme southeast, north (Sierra de Oposura and Sierra de San Antonio) to the Arizona boundary. Arboreal associations rather than climatic zones seem largely to govern distribution in the southern part of the range at least, for the race occurs from Tropical to the lower fringe of the Transition; northerly it seems to favor the Upper Sonoran. There are no records for the coastal plain, even during migrations. Unpublished localities are San José Mountains, August 7, 1893 and October 3, 1892 (U. S. Nat. Mus.); Rancho Santa Bárbara, breeding in mid-June, 1937; Guirocoba, breeding, mid-May to late June, 1937 (Dickey coll.). The earliest date of arrival is May 7 (Hacienda de San Rafael); the latest fall date is October 3 (San José Mountains).<sup>37</sup>

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<sup>37</sup> As previously remarked (van Rossem, 1940), specimens from the mountains in the vicinity of the boundary from the Huachuca Mountains eastward are not typical. Generally speaking they tend toward the darker coloration of *richardsonii* but possess the small size of *placens*. The two specimens examined from the San José Mountains are in this category and their assignment is necessarily arbitrary. In listing the several Wood Pewees as races of *virens*, I do not believe that the difference in call notes (advanced as an argument) is a valid reason for regarding eastern and western birds as different species.

## CONTOPUS PERTINAX PALLIDIVENTRIS CHAPMAN

## COUES FLYCATCHER

*Contopus pertinax pallidiventris* Chapman, Auk, 14, No. 3, July, 1897, 310 (Pima County, Arizona).

*Myiochanes pertinax pallidiventris* Ridgway, 1907, 515 (Yecera; Alamos; San Jose Mts.).—A.O.U. Comm., 1910, 213 (Sonora); 1931, 210 (Sonora).—Hellmayr, 1927, 203 (Sonora).—Bailey, 1928, 442 (Sonora).—van Rossem, 1931 c, 265 (Saric; Chinobampo); 1934 d, 450 (Alamos; Mina Abundancia; Oposura).—Phillips, 1911, 78 (Sonora).—Bent, 1942, 266, in text (Oposura; Saric).

*Contopus musicus* (not *Tyrannula musica* Swainson?) Salvin and Godman, 1889, 82, part (Sierra Madre of Sonora; Yecera).

A fairly common summer visitant in the Transition zone of the eastern mountains the full length of the State. Detected in summer in the San José Mountains, [Sierra de] Oposura, Yécora, and at Rancho Santa Bárbara. A migratory record is Rancho La Arizona ("Saric") in the Upper Sonoran zone, August 25, 1929. Winters, apparently in some numbers, in the Tropical zone foothills in the extreme south (Álamos, 13 specimens February 4 to March 28, 1888; Chinobampo, 3 specimens February 15 to March 4, 1930). The migrations of this flycatcher are obviously much less extensive than is the case with other local members of the genus, and are, to some extent at least, merely in the nature of an altitudinal shift.

## EMPIDONAX TRAILLII BREWSTERI OBERHOLSER

## BREWSTER FLYCATCHER

*Empidonax traillii brewsteri* Oberholser, Ohio Journ. Sci., 18, No. 3, Jan., 1918, 93 (Cloverdale, Nye County, Nevada); *ibid.*, in text (Nogales).—Hellmayr, 1927, 209 (northern Sonora).—van Rossem, 1931 c, 264 (Saric; Guirocoba; Tiburon Island); 1932, 137 (Tiburon Island).—Bent, 1942, 211, part in text (Nogales).

*Empidonax traillii brewsteri* Bailey, 1928, 437 (northern Sonora).—Moore, 1940, 352 (Cocorit; Guirocoba).

*Empidonax pusillus* (not *Tyrannula pusilla* Swainson ?) Baird, 1858, 194 (Los Nogales).—Sclater, 1859, 411 (Los Nogales).

Known to date as a fairly common fall and spring migrant in Sonoran and Tropical zones. Fall dates are from August 3 (Guirocoba) to October 6 (San José Mountains). Spring dates are from May 10 (Magdalena) to June 7 (Guirocoba), or possibly even later ("June," Nogales; Baird, 1858). The extreme late spring migration of *brewsteri* has led to speculation as to possible breeding south of the United States boundary; however, there are no data to support this. Further stations are San José Mountains, October 6, 1892; San Bernardino Ranch on the boundary, August 17, 1893 (U. S. Nat. Mus.); Masocari Island, May 15 and 16,

1937; Guirocoba, May 26, 1937; migrating commonly but not breeding at either point (van Rossem notes); Magdalena, May 10, 1925 (Dawson notes).

*EMPIDONAX MINIMUS* (BAIRD AND BAIRD)

LEAST FLYCATCHER

*Tyrannula minima* W. M. and S. F. Baird, Proc. Acad. Nat. Sci. Phila., 1, No. 28-29, July-Aug., 1843 [Sept. 18], 284 (Cumberland County [=Carlisle], Penna.)

*Empidonax minimus* van Rossem, 1934 d, 448 (Alamos).—Moore, 1940, 354 (Alamos).

Accidental or casual visitant or spring migrant. Known only from the single specimen in the Museum of Comparative Zoölogy, taken by Frazar at Alamos on March 7, 1888.

*EMPIDONAX HAMMONDII* (XANTUS)

HAMMOND FLYCATCHER

*Tyrannula hammondii* De Vesey [=Xantus], Proc. Acad. Nat. Sci. Phila., 10, 1858 [after April 19], 117 (Fort Tejón, California).

*Empidonax hammondii* Ridgway, 1907, 565 (San Jose Mountains).—van Rossem, 1934 d, 448 (Mina Abundancia; Nacozari; Oposura).

*Empidonax hammondi* Allen, 1893 a, 37 (Los Cuervos).—Moore, 1940, 360, in text (El Cobre).

*Empidonax obscurus* (not *Tyrannula obscura* Swainson ?) Salvin and Godman, 1889, 77, part (Micoba; exam. in Brit. Mus.).

Fairly common fall and spring transient through the mountainous eastern part of the State. Dates for the fall migration extend from August 11 (San José Mountains) to October 15 (Las Cuevas); those for spring from April 4 (Maicoba) to May 21 [Sierra de] Oposura, the latter possibly a summering non-breeder. Unpublished record stations are San José Mountains, October 3, 1892, and August 11, 1893 (U. S. Nat. Mus.); Rancho La Arizona, migrating May 8, 1937 (van Rossem notes); Cajón Bonito Creek, September 8 and 27, 1893 (Mearns notes).

*EMPIDONAX WRIGHTII* BAIRD

WRIGHT FLYCATCHER

*E.[mpidonax] wrightii* Baird, Rep. Expl. and Surv. R. R. Pac., 9, 1858, 200 (El Paso, Texas).

*Empidonax wrightii* Allen, 1893 a, 37 (Oputo).—Ridgway, 1907, 567 (Micoba).—van Rossem, 1931 c, 264 (Tecoripa; San Javier; Saric; Obregon; Tesia; 15 miles S. of Nogales); 1932, 137 (Tiburon Island); 1934 d, 449 (Alamos).

*Empidonax wrightii* Moore, 1940, 357 (Guerojaqui; Guirocoba; Tesia; Alamos).—Bent, 1942, 233 (Tiburon Island; 15 mi. S. W. of Nogales).

Transient and winter visitant, practically throughout the State. Occurs in all zones although most of the records are from sea level to about 1,500 feet. Additional to the above localities are Rancho Costa Rica, December 15, 1932 (Dickey coll.); San José Mountains, August 8, 1893; San Bernardino Ranch, August 23, 1893 (U. S. Nat. Mus.); Chinobampo, February 4 and March 4, 1931 (Bishop coll.). Extreme dates are August 8 (San José Mountains) and April 17 (San Javier).

*EMPIDONAX GRISEUS* BREWSTER

GRAY FLYCATCHER

*Empidonax griseus* Brewster, Auk, 6, No. 2, April, 1889 [separates issued January 31], 87 (La Paz, Baja California, México); *ibid.*, in text (Alamos).—A.O.U. Comm. 1890, 62 (Sonora).—Bendire, 1895, 320 (Alamos).—Sharpe, 1901, 140 (Sonora).—Ridgway, 1907, 570 (Alamos; San Bernardino Ranch).—van Rossem, 1931 c, 265 (Tecoripa; San Javier; Obregon; Tesia; Chinobampo); 1934 d, 449 (Alamos; Cumpas; Oposura).—Moore, 1940, 362 (Soyopa; Agiabampo; Guirocoba).

*Empidonax canescens* Nelson, 1904 a, 80 (southern Sonora).

Common winter visitant and transient in Sonoran and Tropical zones nearly everywhere, except that there are no records for the extreme northwestern deserts. Extreme dates are September 18 (Guirocoba) and April 20 (Agiabampo). Unrecorded specimens are from Tiburón Island, November 4, and Sierra Seri, November 16, 1941 (Mus. Vert. Zool.); Ures, January 28, 1933 (Dickey coll.).

*EMPIDONAX DIFFICILIS DIFFICILIS* BAIRD

WESTERN FLYCATCHER

*Empidonax difficilis* Baird, Rep. Expl. and Surv., R. R. Pac., 9, 1858, xxx, 198 (West coast; Fort Steilacoom; Ft. Tejon [=Fort Tejón, California]).—Allen, 1893 a, 37 (Las Cuevas).—Thayer and Bangs, 1906, 19 (La Chumata).

*Empidonax difficilis difficilis* Ridgway, 1907, 577, part (Sonora).—Townsend, 1923, 17 (Tiburon Island).—van Rossem, 1931 c, 263, part (Tecoripa; San Javier; Saric, part; Tesia, part); 1932, 137 (Tiburon Island); 1934 d, 449 (Alamos; Hacienda de San Rafael; Mina Abundancia; Oposura).—Brodkorb, 1935, 3 (Sonora).—Moore, 1940, 369 (Soyopa; Guirocoba; Saric; Tecoripa; San Javier; Tesia, part).—Bent, 1942, 252, part, in text (Tesia; Alamos).—Huey, 1942, 367 ("April 24 to May 12" [=Dowling Well; Gray's Ranch]).

A fairly common resident, in the sense of year-around occurrence, of almost the entire State from sea level to the upper limits of the Upper Sonoran zone, although there are no summer records from the northwestern desert region. Most numerous during spring and fall migra-

tions, which occur chiefly in April-May and September-October, but mid-summer and midwinter records cover most of the territory from the Arizona boundary southward, particularly (in the former case) in the foothills and lower mountains. There are no authentic breeding records, and, what is most significant, no summer juveniles have been collected. Unpublished records not covered in the bibliography above are Guaymas, March 1 to 25, 1905 (Mus. Comp. Zoöl.); Masocari Island, May 15, 1937 (Dickey coll.); Pozo de Luís, December 30, 1893; San José Mountains, August 8, 1893; October 2 and 3, 1892; San Luís Mountains on the boundary, October 1, 1893 (U. S. Nat. Mus.).<sup>38</sup>

*EMPIDONAX DIFFICILIS HELLMAYRI* BRODKORB

HELLMAYR FLYCATCHER

*Empidonax difficilis hellmayri* Brodkorb, Occ. Papers Mus. Zool. Univ. Mich., 306, Jan. 30, 1935, 1 (Boot Spring, Chisos Mountains, Texas).

*Empidonax difficilis difficilis* (not *Empidonax difficilis* Baird) van Rossem, 1931 c, 263, part (Saric, part).

*Empidonax bairdi* (not of Sclater) Salvin and Godman, 1889, 74, part (Yecora).

Summer visitant, probably, throughout higher mountains in the northern and eastern parts of the State. This conjecture is based in large part on the summer distribution in immediately adjacent portions of Arizona and Chihuahua. Specific records are from the San José Mountains August 8 and 10, 1893, and October 6, 1892 (4 specimens in U. S. Nat. Mus.); Rancho La Arizona, August 15 to September 18, 1929 (4 specimens in Dickey coll.); Yécora, April 15, 1888 (Brit. Mus.).

*EMPIDONAX DIFFICILIS CULIACANI* MOORE

CULIACÁN FLYCATCHER

*Empidonax difficilis culiacani* Moore, Auk, 57, July, 1940, 370 (Culiacán, Sinaloa, México); *ibid.*, in text (Chinobampo; Guirocoba).

*Empidonax difficilis difficilis* (not *Empidonax difficilis* Baird) van Rossem, 1931 c, 263, part (Guirocoba; Chinobampo; Tesia, part).—Bent, 1942, 252, part, in text (Chinobampo).

<sup>38</sup> The "breeding" record for Saric [=Rancho La Arizona] is erroneous, Moore (1940) having been misled by my previous statement (1931 c) to that effect. It would indeed be remarkable if a breeding population of *difficilis* existed within twenty miles of the breeding grounds of "*immodulatus*" [*hellmayri*] and at the same time be isolated from *difficilis* of California by 300 miles of desert. The evidence at this time, supported by personal observation, is that the summer *difficilis* found in Sonora are chiefly young, non-breeding individuals of the previous year which have remained on their wintering grounds instead of migrating northward.

Resident, in the same sense as *difficilis*, in the foothills and lower mountains in the extreme southeast. Dates of occurrence (specimens chiefly in Dickey coll.) are as follows: Guirocoba, January 15, 1930 and June 4, 1937; Chinobampo, February 26 to March 5, 1929; San Francisco Cañon, May 30, 1937; Rancho Santa Bárbara, June 12, 1937; Tesia, December 15 and 29, 1930. Not one of the summer birds (personally collected) showed the slightest trace of breeding activity and the nesting territory of *culiacani* is still hypothetical.

*EMPIDONAX FULVIFRONS PYGMAEUS* COUES

BUFF-BREASTED FLYCATCHER

*Empidonax pygmaeus* Coues, Ibis, n. s. [=ser. 2], Oct., 1865, 537 (Fort Whipple, Arizona).

*Empidonax fulvifrons pygmaeus* Ridgway, 1907, 589 (Alamos; Nacozari).—van Rossem, 1931 c, 265 (Tesia); 1934 d, 450 (Alamos; Nacozari).—Moore, 1940, 383 (Guirocoba).—Bent, 1942, 259, in text (Tesia, Guirocoba).

Uncommon winter visitant in the Tropical zone foothills and lowlands in the extreme southern part of the State. The few records to date are Alamos, February 6, 1900 (Biological Surv. coll.); February 9, 13, and March 12, 1888 (Mus. Comp. Zoöl.); Guirocoba, September 25 and January 27 [year not stated] (Moore coll.); Tesia, December 28, 1930 (Dickey coll.). There is one record for the northeast, Nacozari, March 24, 1887 (Mus. Comp. Zoöl.), which probably pertains to a migrant. While there is every reason to expect this species to be a common summer visitant in the Transition zone of the eastern mountain area, it has not so far been detected.

*MITREPHANES PHAEOCERCUS TENUIROSTRIS* BREWSTER

BREWSTER TUFTED FLYCATCHER

*Mitrephanes phaeocercus tenuirostris* Brewster, Auk, 5, April, 1888, 137 (Oposura [=Sierra de Oposura], Sonora, México).—Ridgway, 1907, 500 (Oposura; Mina Abundancia; Alamos).—Hellmayr, 1927, 227 (Sonora).—Bangs, 1930, 273 (type).—van Rossem, 1934 d, 450 (Alamos; Mina Abundancia; Oposura).—Sutton and Burleigh, 1940, 30 (Sonora).

*Mitrephanes phaeocercus* (not *Mitrephorus phaeocercus* Sclater) Salvin and Godman, 1889, 66, part (Oposura).

Status uncertain; known to have been rather common in the winter and spring of 1888, when Frazar took fifteen specimens at Alamos between February 2 and March 8, and seven at Mina Abundancia April 7 and 21. The original specimen, the type of the subspecies *tenuirostris*, was

taken in the Sierra de Oposura by Cahoon on June 7, 1887. Since that time, over 50 years ago, the only occasion when the species has been found in Sonora was when Sheffler encountered it at Guirocoba between November 13 and 20, 1944 ("common"; specimen taken November 15; Sheffler notes).

*CAMPTOSTOMA IMBERBE RIDGWAYI* (BREWSTER)

WESTERN BEARDLESS FLYCATCHER

*Ornithion imberbe ridgwayi* Brewster, Bull. Nuttall Orn. Club, 7, October 1882, 208 (Tucson, Arizona).

*Camptostoma imberbe ridgwayi* van Rossem, 1930 b, 129 (Sonora; crit.); 1931 c, 266 (San Javier; Saric; Chinobampo; Guirocoba); 1934 d, 451 (Alamos; Hacienda de San Rafael; crit.).—A.O.U. Comm., 1944, 452 (Sonora).

*Camptostoma imberbe* (not of Sclater) Ridgway, 1907, 414, part (Alamos; Hacienda de San Rafael).—Griscom, 1934, 384, part (Sonora; crit.).—Bent, 1942, 308, part (San Javier; Saric; Alamos).

Fairly common summer visitant to Lower Sonoran and Tropical zones over most of the State except the northwestern desert region. Northerly, the westernmost locality of record is Rancho La Arizona ("Saric"); the easternmost is Pilares. Occurrences at Alamos, February 6, and Chinobampo, March 4, indicate residence in the Tropical zone in the extreme south. For northern localities there are no data by which to estimate arrival and departure, since May 9 and August 27 (both from Rancho La Arizona) are the earliest and latest dates of record. Unpublished stations are Pilares, June 19 and 22, 1935 (Univ. Mich.), and Tesia, June 21, 1937 (Dickey coll.).

Family ALAUDIDAE Larks

*EREMOPHILA ALPESTRIS LEUCOLAEMA* COUES

DESERT HORNED LARK

*Eremophila alpestris* var. *leucolaema* Coues, Birds Northwest, 1874, 38, 39 (Fort Randall [South Dakota]).

*Otocoris alpestris leucolaema* Oberholser, 1902, 820 (Animas Valley).—Ridgway, 1907, 309 (Sonora).—A.O.U. Comm., 1910, 219 (Sonora); 1931, 213 (Sonora).—Bailey, 1928, 448 (Sonora).—Huey, 1935, 254 (Punta Peñascosa).

*Chionophilos alpestris leucolaema* Hellmayr, 1935, 4 (Sonora).

Winter visitant, seemingly in limited numbers, in the extreme north. Recorded so far from but two localities, respectively at the northeast and northwest corners of the State; Animas Valley, October 2, 1893, and Punta Peñascosa, February 3 and 28, 1934.

*EREMOPHILA ALPESTRIS OCCIDENTALIS* (McCALL)

## MONTEZUMA HORNED LARK

*Otocoris ? occidentalis* McCall, Proc. Acad. Nat. Sci. Phila., 5, No. 9, May-June [Dec. 31], 1851, 218 (Near Santa Fé, New Mexico).

*Otocoris alpestris occidentalis* Oberholser, 1902, 855 (La Noria; San Luis Spring, Animas Valley, "Chihuahua").—Ridgway, 1907, 324 (La Noria).—A.O.U. Comm., 1903, 344 (Sonora); 1931, 214 (Sonora).—Bailey, 1928, 452 (northern Sonora).—Behle, 1942, 285 (Sonora).

Winter visitant. There are two records actually within Sonora territory: La Noria, in the extreme northcentral part of the State, October 19, 1893, and San Luis Spring, "Chihuahua," September 3, 1893 (U. S. Nat. Mus.). The numerous fall and winter records from localities immediately adjacent to or actually on the boundary (La Ventana Ranch; Buenos Aires; Lochiel; San Pedro River) are indicative of equally common occurrence on the Sonora side.

*EREMOPHILA ALPESTRIS ADUSTA* (DWIGHT)

## SCORCHED HORNED LARK

*Otocoris alpestris adusta* Dwight, Auk, 7, No. 2, April, 1890, 148 (Fort Huachuca, Arizona).—Oberholser, 1902, 858 (Santa Cruz River; San Pedro River on the boundary).—Ridgway, 1907, 325 (Santa Cruz River).—A.O.U. Comm., 1931, 214 (Sonora).—van Rossem, 1931c, 266 (15 miles S.W. of Nogales); 1936d, 139 (Nogales).—Behle, 1942, 282 (boundary locs.).

*Chionophilos alpestris adustus* Hellmayr, 1935, 8 (Sonora).

Common resident of Sonoran zone plains and foothills from the Sásabe Valley eastward across the extreme northern part of the State. While there are numerous boundary records for all seasons, these are with few exceptions from the Arizona side. The southward limit in the vicinity of Nogales appears to be about 10 miles south of the boundary; the southward limits in other areas remain to be determined. So far as is known at present, no resident race of Horned Lark occurs along the boundary between the ranges of *adusta* and *leucansiptila*, a distance of some 150 miles.

*EREMOPHILA ALPESTRIS AMMOPHILA* (OBERHOLSER)

## MOHAVE HORNED LARK

*Otocoris alpestris ammophila* Oberholser, Proc. U. S. Nat. Mus., 24, No. 1271, June 9, 1902, 849 (Coso Valley, [Inyo County], California).—Huey, 1935, 254 (Punta Peñascosa).

Apparently a fairly common winter visitant to the northwestern portion of the Colorado desert region. Although there is but one locality

of record, Punta Peñascosa, the fact that nine specimens were taken between February 8 and 28, 1934, indicates rather frequent winter occurrence in the region.

*EREMOPHILA ALPESTRIS LEUCANSIPTILA* (OBERHOLSER)

SONORA HORNED LARK

*Otocoris alpestris leucansiptila* Oberholser, Proc. U. S. Nat. Mus., 24, No. 1271, June 9, 1902, 864 (Yuma, Arizona); *ibid.*, in text, (Colorado River at Monument 204).—Grinnell, 1928, 145 (re. status of "*pallida*").—Huey, 1935, 254 (Punta Peñascosa; crit.).

*Otocoris alpestris pallida* (not *Phileremos pallidus* Brehm) Dwight, 1890, 154 (Lower California and Sonora—Direction Hill, between Adair Bay and mouth of Rio Colorado, northwestern Sonora, Mexico).—Townsend, 1890, 138 (Direction Hill).—A.O.U. Comm., 1891, 85, part (Sonora); 1897, 127, part (auth.); 1910, 220, part (Direction Hill); 1931, 215 ("Mexican"—Sonora).—Bendire, 1895, 247, part (western Sonora).—Oberholser, 1902, 863 (Direction Hill; crit.).—Ridgway, 1907, 326 (Direction Hill).—Grinnell, 1928, 146, in text (crit.).—Behle, 1942, 277, in text (re. type).

*Chionophilos alpestris dwayghti* Stresemann, 1922, 88 (new name for *pallida* Dwight).—Hellmayr, 1935, 9 (northwestern Sonora).

*Otocoris alpestris arenicola* ? (not of Henshaw) Price, 1899, 92 (lower Colorado River).

Common resident of the lower Colorado River valley from the Arizona boundary south around the head of the Gulf to Punta Peñascosa.<sup>39</sup>

Family HIRUNDINIDAE Swallows

*PROGNE SUBIS HESPERIA* BREWSTER

WESTERN MARTIN

*Progne subis hesperia* Brewster, Auk, 6, No. 2, April, 1889, 92 [separates published January 31] (Sierra de La Laguna, Baja California, México).—van Rossem, 1931c, 269 (Sarc; Tobarí Bay; El Alamo; Tiburón Island; crit.); 1932, 137 (Tiburón Island).—Hellmayr, 1935, 13 (Sonora; crit.).

*Progne subis* (not *Hirundo subis* Linnaeus) Stephens, 1885, 228 (Altar).

Common summer visitant to western Lower Sonoran and Tropical zone deserts the full length of the State, including Tiburón Island. In the absence of suitable nesting sites (almost exclusively giant cactus) there are no breeding, or even transient, records for the extreme northwest. Ex-

<sup>39</sup> The status of the Horned Larks resident on the coast of extreme northwestern Sonora would appear to be settled by the series collected by Huey at Punta Peñascosa. Incidentally, Oberholser (1902) cites Monument 204 as in Baja California, an error repeated by Grinnell (1928). It is on the Arizona-Sonora boundary about three miles east of the Colorado River.

trème dates are April 26 (Tóbari Bay) and August 13 (Altar). Additional localities are Rancho Carrizo, July 2, 1931 (Bishop coll.); Magdalena, May 12 to 15, 1925 (Dawson notes).<sup>40</sup>

*PETROCHELIDON PYRRHONOTA PYRRHONOTA* (VIEILLOT)

AMERICAN CLIFF SWALLOW

*Hirundo pyrrhonota* Vieillot, Nouv. Dict. Hist. Nat., nouv. éd., 14, 1817, 519 (Paraguay).

*Petrochelidon albifrons albifrons* van Rossem, 1931c, 269 (Tesia).

Known only as a spring migrant. The single Sonora specimen collected to date was taken by J. T. Wright at Tesia in the lower Mayo River valley on March 14, 1930. Recorded by Huey (1942, 368) as "abundant" and possibly breeding at Quitovaquita and Gray's Ranch on the boundary (Arizona side) in late April and early May, 1939.

*PETROCHELIDON PYRRHONOTA MINIMA* VAN ROSSEM AND HACHISUKA

LEAST CLIFF SWALLOW

*Petrochelidon albifrons minima* van Rossem and Hachisuka, Trans. San Diego Soc. Nat. Hist., 9, No. 2, Nov. 21, 1938, 5 ("Pichicuate"=Cucujaqui River, 7 miles E. of Álamos, Sonora, México).

*Petrochelidon melanogaster* (not *Hirundo melanogaster* Swainson) Mearns, 1901, 178, in text (San Bernardino River; Santa Cruz River); 1920a, 73, footnote (San Luis Mountains to Nogales).

*Petrochelidon lunifrons melanogaster* Ridgway, 1904, 51, part (Sonora).—A.O.U. Comm., 1910, 292, part (Sonora).

*Petrochelidon albifrons melanogaster* A.O.U. Comm., 1931, 218, part (Sonora).—van Rossem, 1934d, 452 (Granados).

*Petrochelidon pyrrhonota melanogaster* Hellmayr, 1935, 32, part (San Luis Mts. to Nogales).—Van Tyne and Sutton, 1937, 59 (Pilares).

*Petrochelidon lunifrons* (not *Hirundo lunifrons* Say) Evermann and Jenkins, 1888, 68 (Magdalena).

Common, though irregularly distributed, summer visitant from the Pajaritos Mountains eastward to the San Luis Mountains, and southward

<sup>40</sup> All Sonora specimens taken to date, save for a single exception, seem to be indistinguishable from Baja California *bespevia* in both size and color. The exception is a male in breeding condition taken at Agiabampo, May 18, 1937 (Dickey coll.), which perhaps offers evidence of intergradation with *sinloae*. Although apparently fully adult, the extremely small size (wing, 137; tail, 71) is combined with conspicuously white-margined under tail coverts and an occasional concealed white feather on the abdominal region. Incidentally, the nominate race, *subis*, may be expected in the higher zones of the eastern mountains since it occurs in contiguous parts of Arizona and Chihuahua.

seemingly throughout the State. Unpublished records are Rancho La Arizona; Magdalena, May 13, 1925 (Dawson notes); Hermosillo, June 19, 1922 (Univ. Mich.); Cajón Bonito Creek and Guadalupe Cañon, early July, 1892 (Mearns notes). There are no migration data.<sup>41</sup>

*STELGIDOPTERYX RUFICOLLIS SERRIPENNIS* (AUDUBON)

NORTHERN ROUGH-WINGED SWALLOW

*Hirundo serripennis* Audubon, Orn. Biog., 4, 1838, 593 (Charleston, South Carolina).

*Stelgidopteryx ruficollis serripennis* van Rossem, 1931c, 268, part (Tesia, part).—Brodkorb, 1942a, 214 (Tesia).

One record, that of a spring migrant taken at Tesia, March 14, 1930.

*STELGIDOPTERYX RUFICOLLIS PSAMMOCHROUS* GRISCOM

DESERT ROUGH-WINGED SWALLOW

*Stelgidopteryx ruficollis psammochrous* Griscom, Proc. New England Zool. Club, 11, Dec. 14, 1929, 72 (near Oposura, Sonora, México); *ibid.*, in text (Alamos; Hacienda de San Rafael).—Bangs, 1930, 292 (re. type).—Oberholser, 1932, 5 (Sonora; crit.).—Wetmore, 1939a, 202 (Sonora; crit.).—Brodkorb, 1942a, 215 (Sonora; crit.).

*Stelgidopteryx ruficollis serripennis* (not *Hirundo serripennis* Audubon) Thayer and Bangs, 1906, 21 (Opodepe).—van Rossem, 1931c, 268 part (Tesia, part; Saric; Guaymas; San Jose de Guaymas; crit.).—Hellmayr, 1935, 47 (Sonora; crit.).—Huey, 1942, 358 (Gray's Well; Sonoita River).—Bent, 1942, 424, part (Alamos).

? *Clivicola riparia* (not *Hirundo riparia* Linnaeus) Evermann and Jenkins, 1888, 68 (Magdalena).

Common summer visitant throughout the Tropical, Sonoran and, locally, even in the lower fringes of the Transition zones. There is but one winter record, Alamos, February 23, 1888; however, the species winters occasionally in Arizona and southern California and may be expected to do so rather regularly in Sonora. The earliest spring record is March 14 (Tesia). There are no data as to fall departure, save September 8 (Cajón Bonito Creek). Additional records are Camoa, June 7, 1931 (Bishop

<sup>41</sup> The Rancho La Arizona record is not conclusive, though extremely probable. This colony was not occupied on May 7, 1937, but the ranch owner insisted that the birds which irregularly used the many nests were definitely not white on the forehead. In company with Van Tyne and Sutton (1937), I am far from convinced that the common and Mexican Cliff Swallows are conspecific.

coll.) ; Pílares, June 24, 1935 (Univ. Mich.) ; San Bernardino Ranch on the boundary, August 1, 1892 (U. S. Nat. Mus.) ; Magdalena, May 15, 1925 (Dawson notes) ; Rancho Santa Bárbara, 5,500 feet, June 11, 1937 (Dickey coll.) ; Hermosillo; Agiabampo, breeding May 13; Guirocoba, breeding, May and June, 1937 (van Rossem notes) ; Cajón Bonito Creek, July 31, 1892 and September 8, 1893 (Mearns notes).

*HIRUNDO RUSTICA ERYTHROGASTER* BODDAERT

BARN SWALLOW

*Hirundo erythrogaster* Boddaert, Tab. Pl. Enl., 1783, 45 (Cayenne).—van Rossem, 1931c, 268 (Guaymas; Tobarí Bay).—Huey, 1942, 368 (Gray's Ranch; Quitovaquita [Arizona side of boundary]).

*Chelidon erythrogaster* Evermann and Jenkins, 1888, 68 (Magdalena).

*Hirundo erythrogastra* Thayer and Bangs, 1906, 21 (Opodepe).

Breeds in the northcentral foothill region south at least to Magdalena and Opodepe, and possibly to Hermosillo. Occurs as a common migrant, probably at lower elevations throughout the State, although recorded from but a few, widely-scattered points. Additional records are Nogales to Hermosillo, May 11; Magdalena to Nogales, June 24, 1937 (van Rossem notes) ; Magdalena, April 20 to May 15, 1925 (Dawson notes) ; San Pedro River, October 10 to 13, 1892 (U. S. Nat. Mus.) ; San Bernardino Ranch, September 8, 1892. Extreme dates are April 20 (Magdalena) and October 13 (San Pedro River).

*IRIDOPROCNE BICOLOR* (VIEILLOT)

TREE SWALLOW

*Hirundo bicolor* Vieillot, Ois. Amér. Sept., 1, 1807, [1808], 61, pl. 31 (Centre des États-Unis = New York).

*Tachycineta bicolor* Belding, 1883, 343 (Guaymas).—Sharpe and Wyatt, 1889, 155 (Guaymas).

*Iridoprocne bicolor* van Rossem, 1931c, 268 (El Doctor).—Huey, 1935, 254 (Punta Peñascosa).

Probably rather generally distributed as a migrant and winter visitant in the lowlands; however, specific records are all from the northwest coastal region. These are Guaymas, "April"; Kino Bay, February [16?], 1935 (Nat. Hist. Mus.) ; and El Doctor, February 10, 1929. Records from the Arizona side of the boundary, such as San Bernardino Ranch, August 2, 1892 (U. S. Nat. Mus.), and Quitovaquita, March 6, 1939 (Huey, 1942, p. 368), indicate, as above stated, a much wider dispersal.

*IRIDOPROCNE ALBILINEA RHIZOPHORAE* VAN ROSSEM

NORTHERN MANGROVE SWALLOW

*Iridoprocne albilinea rhizophorae* van Rossem, Proc. Biol. Soc. Wash., 52, Oct. 11, 1939, 155 (Tóbari Bay, Sonora, México); *ibid.* in text, (Guasimas; Lobos Island; Agiabampo).

*Iridoprocne albilinea* (not *Petrochelidon albilinea* Lawrence) van Rossem, 1931c, 268 (locs. cited above).

*Iridoprocne albilinea albilinea* Hellmayr, 1935, 69, part (Sonora).

Fairly common summer visitant from Guásimas Lagoon (Lat. 27° 50') southward. To date the species has been found only in the Tropical zone mangrove association during the months of April, May, and June.

*TACHYCNETA THALASSINA LEPIDA* MEARNS

WESTERN VIOLET-GREEN SWALLOW

*Tachycineta lepida* Mearns, Proc. Biol. Soc. Wash., 15, March 5, 1902, 31 (Campbell's Ranch, Laguna Mountains, San Diego County, California).

*Tachycineta thalassina lepida* van Rossem, 1931c, 267 (El Doctor; Tesia; Tecoripa; Guirocoba); 1934d, 452 (Oposura; Nacozeni).—Hellmayr, 1935, 79 (Sonora).

*Tachycineta thalassina* (not *Hirundo thalassinus* Swainson) Allen, 1893a, 40 (San Pedro).—Stone and Rhoads, 1905, 690 (lower Colorado River).

Summer visitant in the eastern mountains. Occurs widely and commonly as a migrant; less commonly as a winter visitant in the Colorado delta, and probably elsewhere. Probable breeding localities are Cajón Bonito Creek, July 23, 1892 (Mearns notes), and Oposura, May 26, 1887. Specimens from this latter point suggest intergradation with the Tropical zone race *brachyptera*. Additional records are from Guaymas, March 5 and 12, 1905 (Mus. Comp. Zoöl.); San Bernardino River on the boundary, October 15, 1892 (U. S. Nat. Mus.); Cajón Bonito Creek, September 28, 1893; San Pedro River, October 11, 1892 (Mearns notes); Magdalena, May 12 to 15, 1925 (Dawson notes).

*TACHYCNETA THALASSINA THALASSINA* (SWAINSON)

MEXICAN VIOLET-GREEN SWALLOW

*Hirundo thalassinus* Swainson, Philos. Mag., n. s. 1, May, 1827, 366 (Table land. Real del Monte [Hidalgo, México]).

*Tachycineta thalassina thalassina* van Rossem, 1931c, 266 (Tesia; Tecoripa; crit.).—Hellmayr, 1935, 78 (Sonora; crit.).

Occurs in early spring in the Tropical zone lowlands. Stations of record are Tesia, March 16, 1930, and Tecoripa, March 26, 1929. It

seems likely that these individuals represent a seasonal descent from certain parts of the high mountains to the eastward.

*TACHYCINETA THALASSINA BRACHYPTERA* BREWSTER

TROPICAL VIOLET-GREEN SWALLOW

*Tachycineta thalassina brachyptera* Brewster, Bull. Mus. Comp. Zool., 41, No. 1, Sept., 1902, 167 (Sierra de La Laguna, Baja California, México).—van Rossem, 1931c, 267 (Tesia; Guaymas).—Hellmayr, 1935, 79 (Guaymas).

Present as a rather common summer visitant in the vicinity of Guaymas (breeding) and very probably at other points southward over the coastal plain. Additional to the two published occurrences, individuals (presumably of this race) were seen at Tesia on June 21, 1937 (van Rossem notes); two specimens taken at San Carlos Bay, April 7, 1939 (Mus. Vert. Zool.). That *brachyptera* is resident in southern Sonora, as in Baja California, is to be supposed; however, no winter specimens have been taken.

Family CORVIDAE Crows and Jays

*CORVUS CORAX SINUATUS* WAGLER

MEXICAN RAVEN

*Corvus sinuatus* Wagler, Isis von Oken, 22. Heft 7 (July), col. 748 (México=Ixmiquilpán, Hidalgo).

*Corvus corax sinuatus* Ridgway, 1904, 263 (Sonora).—Thayer and Bangs, 1907, 79, in text (Sonora).—Oberholser, 1918b, 219 (Guaymas).—Bruner, 1926, 235 (Tubatama).—van Rossem, 1931c, 271, part (Tesia; Tecoripa; Guaymas; Chino-bampo; Guirocoba; San Javier, Obregon); 1934d, 454 (Guaymas; Oposura); Hellmayr, 1934, 2 (Cerro Blanco).—Huey, 1935, 254 (Punta Peñascosa).

*Corvus corax carnivorus* Belding, 1883, 343 (Guaymas).

Common, sometimes in fall and winter extremely common, resident throughout the State from sea level to at least 6,000 feet, except that during the breeding season there is a withdrawal from the plains to the mountains in the region from Nogales eastward. Some of the many unpublished localities where the Raven has been taken or observed are Camoa, February (Bishop coll.); San Marcial, November (Mus. Comp. Zool.); many boundary localities from the San Luís Mountains across the State to the Colorado delta, in fall, winter, and spring (Mearns notes and spec. in U. S. Nat. Mus.); Magdalena, April (Dawson notes); Rancho La Arizona; Rancho Santa Bárbara; Nogales south to Agiabampo in May and June, 1937 (van Rossem notes).

*CORVUS CORAX CLARIONENSIS* ROTHSCHILD AND HARTERT

## WESTERN RAVEN

*Corvus corax clarionensis* Rothschild and Hartert, Novit, Zool., 9, July 25, 1902, 381 (Clarion Island, Revillagigedo Group, México).—van Rossem, 1932, 137 (Tiburón Island; San Esteban Island).

*Corvus corax sinuatus* (not *Corvus sinuatus* Wagler) Goss, 1888, 241 (San Pedro Martir Isle).—Townsend, 1923, 18 (Tiburón Island).—Mailliard, 1923, 455 (San Esteban Island; San Pedro Nolasco Island).—van Rossem, 1931c, 271, part (San Pedro Martir, San Pedro Nolasco, and San Esteban Islands).

Common resident of islands in the Gulf. It is possible that the Tiburón Island Ravens should be referred to *sinuatus* but to date no specimens from that locality have been collected and the records are assigned provisionally.<sup>42</sup>

*CORVUS CRYPTOLEUCUS* COUCH

## WHITE-NECKED RAVEN

*Corvus cryptoleucus* Couch, Proc. Acad. Nat. Sci. Phila., 7, No. 2, March-April [May 20], 1854, 66 (State of Tamaulipas [Charco Escondido], México).—Allen, 1893a, 37 (San Pedro).—Clark, 1899, 78 (El Plomo).—Bruner, 1926, 235 (Tubutama).—van Rossem, 1931c, 271 (15 miles S. W. of Nogales; Saric).—Sheffler, 1931a, 138 (Imuris).—Vorhies, 1934, 119 (between Magdalena and Hermosillo).

Common resident of Sonoran zone deserts and plains in the northern part of the State from about longitude 112° eastward to the Chihuahua boundary. The southern limits of the range are indefinite but in the western desert region extend about to Hermosillo. It seems likely that there is a marked recession from more northerly localities during the winter months. Unpublished records are San Pedro River on the boundary, October 12 and 13 (U. S. Nat. Mus. catl.); Cajón Bonito Creek, "July," 1892 (Mearns notes); numerous at many points between Nogales and Hermosillo in May and June, 1937 (van Rossem notes).

*CORVUS BRACHYRHYNCHOS HESPERIS* RIDGWAY

## WESTERN CROW

*Corvus americanus hesperis* Ridgway, Man. No. Amer. Birds, 1887, 362 (Western United States [etc.] = Fort Klamath, Oregon).

<sup>42</sup> Thayer and Bangs (1907) believe that Sonora mainland Ravens are more or less intermediate toward *clarionensis* and in this I am inclined to concur, with the stipulation, however, that they are distinctly closer to *sinuatus*. For measurements of the few available island birds see van Rossem, 1932, p. 138, and for size averages of western Ravens from critical areas see particularly Willett, Auk, 1941, pp. 246-249.

Known from a single specimen taken by Mearns and Holzner at Monument 204 on the lower Colorado River on March 14, 1894 (U. S. Nat. Mus.). The Crow may be more than a casual in the region since Rhoads (1905, p. 690) believed that he saw some in the delta in February.

*CORVUS IMPARATUS* PETERS

MEXICAN CROW

*Corvus imparatus* Peters, Proc. Biol. Soc. Wash., 25, 1929, 123 (Río La Cruz, Tamaulipas, México).—van Rossem, 1931c, 270 (Tesia; Guirocoba; Chinobampo; Agiabampo); 1934d, 454 (Alamos).

*Corvus ossifragus imparatus* Hellmayr, 1934, 5 (Tesia; Agiabampo).

*Corvus mexicanus* (not of Gmelin) Ridgway, 1904, 275 (Alamos; Camoa).—Sharpe, 1909, 598 (Sonora).

*Corvus mexicanus mexicanus* Meinertzhagen, 1926, 87 (Sonora).—Meise, 1928, 26 (Camoá).

Common, locally abundant, resident of the Tropical zone from the lower Yaqui River valley southward. Distribution tends to be concentrated in river valleys and farming districts, with avoidance of deserts and maritime associations. Unpublished localities are Agua Caliente, May 7, 1888 (Brit. Mus.); Navjoa and Ciudad Obregón, May and June, 1937 (van Rossem notes).

*CALOCITTA COLLIEI ARGUTA* VAN ROSSEM

FRAZAR MAGPIE-JAY

*Calocitta colliei arguta* van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 33, Feb. 17, 1942, 379 (Chinobampo, Sonora, México).

*Calocitta colliei* (not *Pica colliei* Vigors) Ridgway, 1904, 294, part (Alamos; Camoa; Plomosas; "etc.").—Sharpe, 1909, 610, part (Sonora).

*Calocitta* [sic] *colliei* van Rossem, 1931c, 270 (San Javier; Guirocoba; Chinobampo); 1934d, 454 (Alamos).

*Calocitta formosa colliei* Hellmayr, 1934, 11, part (southern Sonora).

Common resident of deciduous woods and riparian timber in the southeastern Tropical zone foothills, north at least to San Javier at about 28° 30'. Apparently rather definitely confined (in Sonora) to altitudes between 300 and 2,000 feet, and therefore not reaching the coast, nor, save locally, the Upper Sonoran zone. Noted at frequent intervals between Álamos and Guirocoba, between Guirocoba and San Francisco Cañon, and between Guirocoba and Rancho Santa Bárbara (below 2,000 feet) in May and June, 1937 (Dickey coll.; van Rossem notes); Agua Marín, May 5, 1939 (Mus. Vert. Zool.).

*CISSILOPHA BEECHEII* (VIGORS)

## BEECHEY JAY

*Pica Beecheii* Vigors, Zool. Journ., 4, Jan., 1829, 353 (Montereale=Mazatlán, Sinaloa, or San Blas, Nayarit, México).

*Cissilopha beecheii* Ridgway, 1904, 316 (southern Sonora; Alamos; crit.).—van Rossem, 1931c, 270 (Chinobampo; Guirocoba; crit.); 1934d, 454 (Alamos).—Hellmayr, 1934, 38 (Alamos).

*Cissilopha beecheyi* Sharpe, 1909, 622 (southern Sonora).

Fairly common resident in the Tropical zone foothills in the southeast. All known Sonora specimens have been taken at altitudes between 300 and 1,500 feet in a limited area bounded roughly by Chinobampo, Alamos, Agua Marín (Mus. Vert. Zool.) and Guirocoba. It has not been observed beyond these limits by any of the several collectors who have worked in this region. An isolated colony thus is indicated, although not as yet conclusively demonstrated.

*APHELOCOMA CALIFORNICA WOODHOUSEII* (BAIRD)

## WOODHOUSE JAY

*Cyanocitta woodhouseii* Baird, Rep. Expl. and Surv. R. R. Pac., 9, 1858, 584, 585, [*woodhousii* p. "xli"=xlili, nomen nudem], (central Rocky Mountains=Fort Thorn, New Mexico).

Probably a not uncommon resident of the Upper Sonoran zone of the northeastern mountains. There are two definite records; two specimens taken by Mearns (field book) in the San José Mountains, October 4 and 7, 1892, the first of which (*fide* Friedmann) is still in the National Museum collection; "several seen" at Cajón Bonito Creek in early July [dates not definite], 1892 (Mearns notes).

*APHELOCOMA ULTRAMARINA ARIZONAE* (BAIRD AND RIDGWAY)

## ARIZONA JAY

*Cyanocitta ultramarina* var. *arizonae* Baird and Ridgway, Bull. Essex Inst., 5, No. 12, Dec., 1873, 199 (Ft. Buchanan and Copper Mines=Old Fort Buchanan, near Crittenden, Pima Co., Arizona).

*Aphelocoma sieberii arizonae* Bendire, 1895, 380 (Sonora).—A.O.U. Comm., 1895, 198 (Sonora).—Ridgway, 1904, 340 (northern Sonora).—Thayer and Bangs, 1906, 20 (La Chumata).—van Rossem, 1931c, 269 (Seric; Nogales); 1934d, 454 (Nacozari; Oposura).

*Aphelocoma sieberii arizonae* Allen, 1893a, 37 (Cachuta; Bavispee River).—A.O.U. Comm., 1910, 225 (Sonora); 1931, 224 (Sonora).—Bailey, 1928, 479 (Sonora).

*A.[phelocoma] sieberii arizonae* Coues, 1903, 499 (Sonora).

*Aphelocoma siberii* [sic] *arizonae* Evermann and Jenkins, 1888, 69 (Nogales).

*Aphelocoma sordida arizonae* Hellmayr, 1934, 55 (northern Sonora).

Common resident in the Upper Sonoran zone (chiefly oak associations) from the Pajaritos Mountains eastward; south in the western mountains to the Sierra de San Antonio and in the east to the Sierra de Oposura. Intergradation between *arizonae* and *wollweberi* doubtless occurs between latitudes 28° and 29° 30', an area from which no specimens have been examined. Additional stations are Cibuta (Bishop coll.); San José Mountains; Guadalupe Cañon (U. S. Nat. Mus.); Cajón Bonito Creek; San Luís Mountains; San Pedro River on the boundary (Mearns notes)

*APHELOCOMA ULTRAMARINA WOLLWEBERI KAUP*

ZACATECAS JAY

*Aphelocoma Wollweberi* Kaup, Journ. für Orn., 2, Erinnerungsschrift Jahresvers. 1855, LV, footnote (Zacatecas, México).

*Aphelocoma sieberii wollweberi* van Rossem, 1934d, 453 (Mina Abundancia).

Fairly common resident of high Upper Sonoran oak associations in the extreme southeast. There are but two localities of record, Mina Abundancia on the Chihuahua boundary (April 9 to 25, 1888) and Rancho Santa Bárbara, where fairly common in June, 1937 (Dickey and Sheffler colls.; van Rossem notes).

*CYANOCITTA STELLERI MACROLOPHA BAIRD*

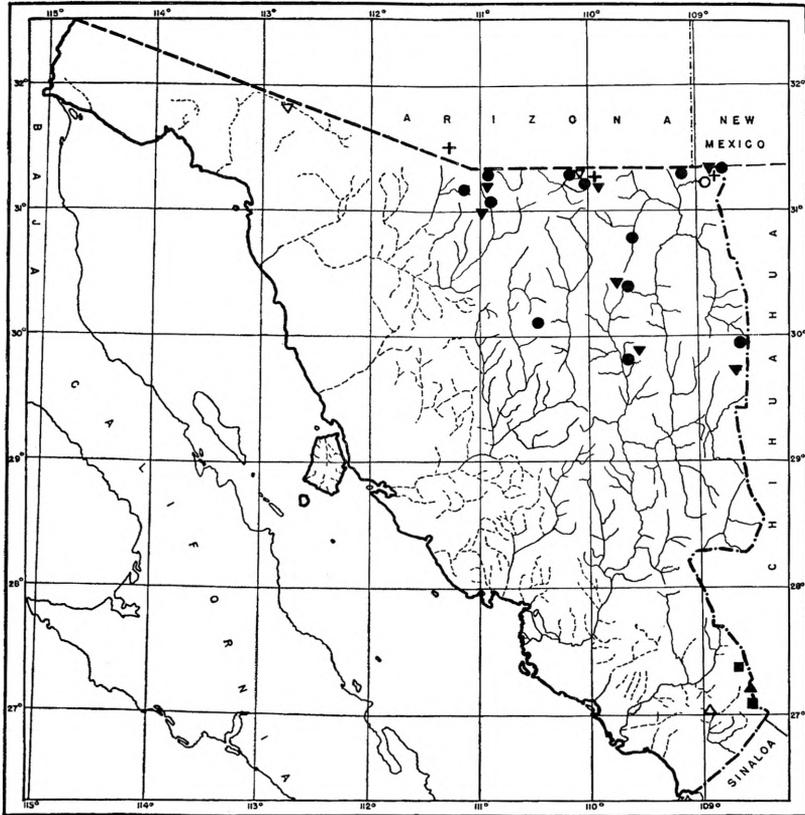
LONG-CRESTED JAY

*Cyanocitta macrolopha* Baird, Proc. Acad. Nat. Sci. Phila., 7, No. 3, May-June, [July 3], 1854, 118 (100 miles west of Albuquerque, New Mexico).

*Cyanocitta stelleri macrolopha* Allen, 1893a, 37 (El Pinita).—Jouy, 1894, 781 (mountains 32 miles S. of Nogales).—van Rossem, 1934d, 453 (Nacozari; Oposura).

*Cyanocitta stelleri diademata* (not *Cyanogarrulus diadematus* Bonaparte) Ridgway, 1904, 558, part ([northern] Sonora).—A.O.U. Comm., 1910, 223, part ([northern] Sonora).—van Rossem, 1931c, 269 (Saric; 15 miles S. of Nogales).—Hellmayr, 1934, 63, part ([northern] Sonora).

Resident of high Upper Sonoran and Transition zones from the Pajaritos Mountains (Sierra de Huacomea) eastward to the Chihuahua boundary, and south along the Sierra Madre and adjacent ranges at least to the Sierra de Oposura. Casuals occur in winter in the Lower Sonoran deserts to the west and probably at other points. Additional localities are the San José Mountains, October 3, 1892, and August 11, 1893; Sonoyta, January 18, 1894 (U. S. Nat. Mus. catl.; Mearns notes); San Luís Mountains, July 19, 1892; San Pedro River, October 15, 1892 (Mearns notes).



MAP 12. Distribution of the genera *Appelocoma* and *Cyanocitta*. Crosses, *A. californica woodhouseii*; circles, *A. ultramariana arizonae*; squares, *A. u. wollweberi*; inverted triangles, *C. stelleri macrolopha*; triangles, *C. s. diademata*; hollow figures, winter stations outside breeding range.

*CYANOCITTA STELLERI DIADEMATA* (BONAPARTE)

SIERRA MADRE JAY

*C.[yanogarrulus] diadematus* Bonaparte, Consp. Gen. Avium, 1, sig. 48, May 6, 1850, [Feb. 3, 1851], 377 (Ex Mexico mer. Zacatecas=Zacatecas, México).  
*Cyanocitta stelleri diademata* Ridgway, 1904, 558, part ([southern] Sonora).—van Rossem, 1934d, 453 (Alamos; Mina Abundancia; crit.).—Hellmayr, 1934, 63, part ([southern] Sonora).

Probably a rather common resident of the Transition zone in the southeastern mountains. The northern limits have not as yet been precisely ascertained; however, distribution in closely adjacent Chihuahua localities

indicates approximately latitude 29°. Four specimens from Álamos taken by Frazer March 6 to 14, 1888 (Mus. Comp. Zoöl.) were undoubtedly seasonal visitors in the locality.

### Family PARIDAE Titmice, Verdins, and Bush-Tits

#### *PARUS SCLATERI EIDOS* (PETERS)

#### NORTHERN MEXICAN CHICKADEE

*Penthestes sclateri eidos* Peters, Proc. New Eng. Zoöl. Club, 9, June 24, 1927, 113 (Chiricahua Mountains, Arizona).

Known certainly only from the San Luís Mountains, where resident and apparently rather common in the Transition zone. Mearns' specimens came from various parts of the range on both sides of the international boundary. Those taken on July 19, 1892, are listed in his field book as "on the boundary"; those from "Chihuahua," September 4, 1892, are certainly from the west slope in Sonora, as are those taken on the west slope September 29, 1893, since he was on Cajón Bonito Creek well within Sonora territory on September 28. Numerous records from Chihuahua localities very close to the Sonora boundary indicate a Sonora range extending far south of the San Luís Mountains; however, no further specimens have been collected to date.

#### *PARUS WOLLWEBERI ANNEXUS* CASSIN

#### WESTERN BRIDLED TITMOUSE

*Parus annexus* Cassin, Proc. Acad. Nat. Sci. Philadelphia, 5, 1850, 103 (Texas, upon the Río Grande=southern Arizona).

*Parus wollweberi annexus* Hellmayr, 1911, 28 (Sonora); 1934, 85 (Providencia Mines).

*Baeolophus wollweberi annexus* Ridgway, 1904, 393 (Oposura; Hacienda de San Rafael; Mina Abundancia; Napolera; Puerto de Los Pinitos).—Thayer and Bangs, 1906, 20 (La Chumata).—Oberholser, 1917, 323 (Sonora).—Bailey, 1928, 513 (Sonora).—A.O.U. Comm., 1931, 325 (Sonora).—van Rossem, 1931c, 271 (Sarıc; 15 miles S. W. of Nogales); 1934d, 454 (Mina Abundancia; Hacienda de San Rafael; Oposura; crit.).

*Lophophanes wollweberi* (not of Bonaparte) Coues, 1866, 79, part (Sonora).

*Parus wollweberi* Jouy, 1894, 766 (32 miles S. of Nogales).—Allen, 1893a, 41 (Puerto de Los Pinitos; Napolera).

Common resident of the oak and oak-pine associations in the Upper Sonoran and lower parts of the Transition zones of mountainous regions throughout the State. It has been recorded from various points along the western slope of the Sierra Madre and less frequently from lower ranges

in the interior. Some western stations are Cibuta (Bishop coll.), Rancho La Arizona, and Opodepe. Localities not previously published are Rancho Santa Bárbara (Dickey coll.); San José Mountains and Nogales (U. S. Nat. Mus. catl.); San Pedro River on the boundary; Terrenate Creek; west side of San Luis Mountains; Cajón Bonito Creek; Guadalupe Cañon (Mearns notes). This species is apparently strictly resident and very seldom descends below the oak belt, even in midwinter.

*AURIPARUS FLAVICEPS ORNATUS* (LAWRENCE)

TEXAS VERDIN

*Conirostrum ornatum* Lawrence, Ann. Lyc. Nat. Hist. New York, 5, 1852, 112, pl. 5, fig 1 (Río Grande, Texas).

*Auriparus flaviceps ornatus* van Rossem, 1930d, 201 (Saric; Pesqueira); 1931c, 271 (Saric; Pesqueira); 1936d, 139 (Saric; crit.).—Hellmayr, 1934, 88 (Sonora).

*Auriparus flaviceps* (not *Aegithalus flaviceps* Sundevall) Evermann and Jenkins, 1888, 68 (Querobabi; Carbo).—Sheffler, 1931b, 165 (between Magdalena and Santa Ana).

*Auriparus flaviceps flaviceps* Ridgway, 1904, 420, part (Sonora).—Thayer and Bangs, 1906, 20 (Opodepe).—A.O.U. Comm., 1910, 354, part (northern Sonora); 1931, 235, part (northern Sonora).—Dawson, 1923, 623, part (northern Sonora).—Bailey, 1928, 514, part (northern Sonora).

Resident in Sonoran zones (chiefly in mesquite associations) from the western foothills of the Pajaritos Mountains eastward across the State, and south in the central interior to about latitude 29°. An extreme northeastern station is San Bernardino Ranch on the boundry (U. S. Nat. Mus.).

*AURIPARUS FLAVICEPS ACACIARUM* GRINNELL

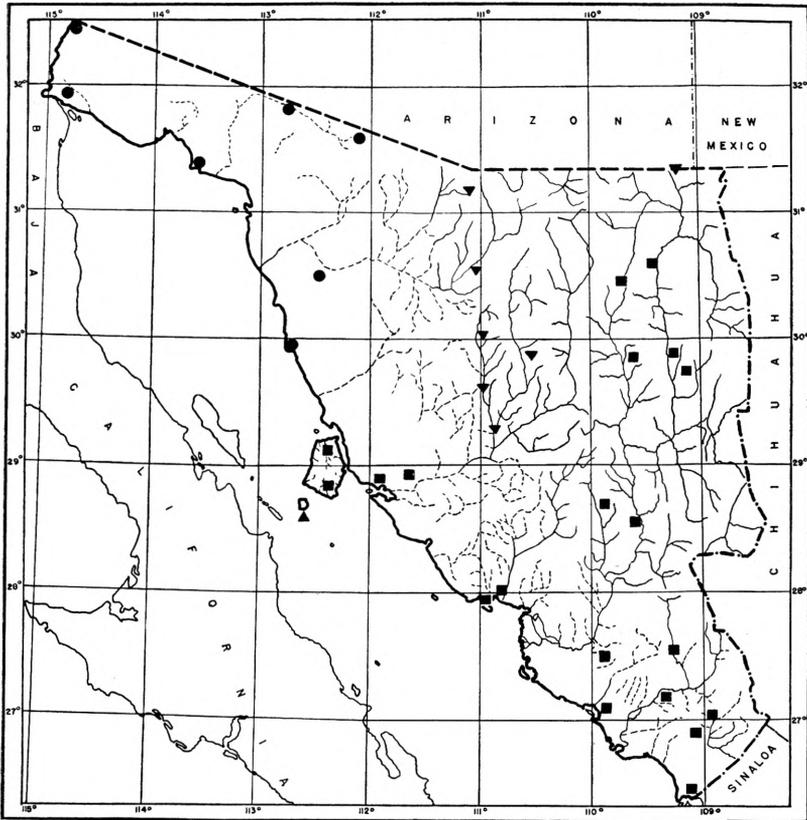
CALIFORNIA VERDIN

*Auriparus flaviceps acaciarum* Grinnell, Condor, 33, No. 4, 1931, 168 (Palm Springs, Riverside County, California).—Hellmayr, 1934, 87 (northwestern Sonora).—Huey, 1935, 254 (Punta Peñascosa).

*Auriparus flaviceps* (not *Aegithalus flaviceps* Sundevall) Stephens, 1885, 229 (San Felix Mine).—Price, 1899, 93 (lower Colorado River).

*Auriparus flaviceps flaviceps* Ridgway, 1904, 420, part (northwestern locs.; crit.).—A.O.U. Comm., 1910, 354, part (northern Sonora); 1931, 235, part (northern Sonora).—van Rossem, 1930d, 200 (El Doctor; San Felix Mine); 1931c, 271 (same locs.).

Rather common resident of the northwestern deserts from the Colorado River eastward, and south at least to Puerto Libertad. Intergradation with *ornatus* occurs rather abruptly at about longitude 111° 30', and with *fraterculus* in more gradual fashion between latitudes 28° 30' and 29° 30' coastwise. Additional record stations are Puerto Libertad (Nat. Hist. Mus.); Sonoyta; Pozo de Luis (U. S. Nat. Mus.).



MAP 13. Distribution of *Auriparus flaviceps*. Circles, *A. f. aciacarum*; inverted triangles, *A. f. ornatus*; squares, *A. f. fraterculus*; triangle, *A. f. flaviceps*.

### *AURIPARUS FLAVICEPS FLAVICEPS* (SUNDEVALL)

#### BAJA CALIFORNIA VERDIN

*Aegithalus flaviceps* Sundevall, Öfv. Vet.—Akad. Förh., 7, 1850, 129, note (e Sitka in America bor. occid. vel e California=Loreto, central Baja California).

*Auriparus flaviceps flaviceps* van Rossem, 1942g, 184 (San Esteban Island).

*Auriparus flaviceps fraterculus* (not of van Rossem, p. 201) van Rossem, 1930d, 202, in text (San Esteban Island; crit.); 1931c, 272, part (San Esteban Island); 1932, 138, part (San Esteban Island).

Common resident on San Estéban Island.

*AURIPARUS FLAVICEPS FRATERCULUS* VAN ROSSEM

SONORA VERDIN

*Auriparus flaviceps fraterculus* van Rossem, Trans. San Diego Soc. Nat. Hist., 6, No. 9, August 30, 1930, 201 (Chinobampo, Sonora, México); 1931c, 272 part (Tecoripa; San Javier; Tesia; Chinobampo; Obregon; Guaymas; Tobarí Bay; Tiburon Island); 1932, 138 (Tiburon Island); 1934d, 455 (Guaymas; Alamos; Oposura; Nacozari; Granados).—Hellmayr, 1934, 87 (central and southern Sonora).

*Auriparus flaviceps* (not *Aegithalus flaviceps* Sundevall) Belding, 1883, 343 (Guaymas).—Salvin and Godman, 1889b, 236, part (Quiriego).—Allen, 1893a, 41, part (Granados; Bacadehuachy).

*Auriparus flaviceps lamprocephalus* (not of Oberholser) Ridgway, 1904, 422, part (Guaymas; Alamos; Batamotal).—A.O.U. Comm., 1910, 354, part (southern Sonora); 1931, 235, part (southern Sonora).—Hellmayr, 1911, 64, part (Guaymas; Alamos).—Townsend, 1923, 24, part (Tiburon Island).

Common resident of Tropical zone valleys and foothills north, coastwise, to Kino Bay and Tiburón Island, and in the Yaqui River valley and its tributaries to about 30° 30'. Specimens from the northern part of the range, coastwise, are intermediate toward *acaciarium*; those from the northern interior toward *ornatus*. Additional stations are Camoa (Bishop coll.); San José de Guaymas; Kino Bay; Agiabampo (Dickey coll.); Rancho Costa Rica [presumably this form] (Lamb notes); Pílares [perhaps nearer *ornatus*] (Univ. Mich.).

*PSALTRIPARUS MINIMUS PLUMBEUS* (BAIRD)

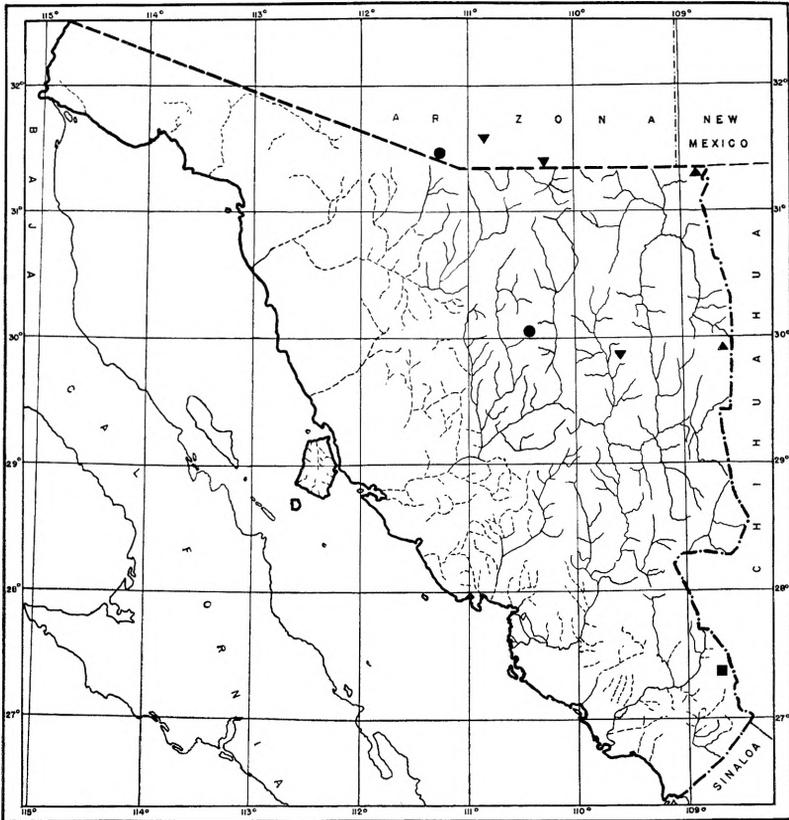
LEAD-COLORED BUSH-TIT

*Psaltria plumbea* Baird, Proc. Acad. Nat. Sci. Phila., 7, No. 3, May-June [July 3], 1854, 118 (Little Colorado, N. M. [near long. 111°W., Arizona]).

*Psaltriparus plumbeus* Ridgway, 1904, 430, part (Oposura).—A.O.U. Comm., 1910, 353, part (northern Sonora).—Bailey, 1928, 517, part (northern Sonora).—

*Psaltriparus minimus plumbeus* A.O.U. Comm., 1931, 236, part (northern Sonora).—van Rossem, 1934d, 455 (Oposura; crit.).

Probably a resident of the Upper Sonoran zone from the Patagonia Mountains eastward across the northern portion of the State and south in the eastern mountains to the Sierra de Oposura. This distribution is hypothecated by the known distribution along the Arizona side of the boundary. The ranges of the four races of Bush-tits which occur in Sonora cannot be more than vaguely outlined at this time. Such data as there are may be found on the accompanying map (Figure 14).



MAP 14. Distribution of *Psaltriparus minimus*. Circles, *P. m. cecaumenorum*; inverted triangles, *P. m. plumbeus*; triangles, *P. m. lloydi*; squares, *P. m. dimorpbicus*.

*PSALTRIPARUS MINIMUS CECAUMENORUM* THAYER AND BANGS

ASHY BUSH-TIT

*Psaltriparus plumbeus cecaumenorum* Thayer and Bangs, Proc. Biol. Soc. Wash., 19, Feb. 26, 1906, 20 (La Chumata Mine [Sierra de San Antonio], north central Sonora, México, 4500 feet altitude).—Hellmayr 1911, 55 (Sierra de Antonez).

*Psaltriparus minimus ceceaumenorum* Hellmayr, 1934, 91 (Sierra de Antonez).—van Rossem, 1934d, 455 (central Sonora); 1936a, 85 (Sonora; crit.); 1936b, 37 (Sonora).—Arvey, 1941, 74 (Sonora; crit.).

Probably resident in the Upper Sonoran and low Transition zones in the northcentral part of the State from the Sierra de San Antonio north-

west to the Pajaritos Mountains, at which latter locality it has been taken just over the boundary in Arizona (Dickey coll.).

*PSALTRIPARUS MINIMUS LLOYDI* SENNETT

LLOYD BUSH-TIT

*Psaltriparus lloydi* Sennett, Auk, 5, No. 1, Jan., 1888, 43 (Limpia Cañon, near Fort Davis, Presidio [=Jeff Davis] Co., Texas).—Allen, 1893a, 41 (Bavispee River).—A.O.U. Comm., 1895, 312 (eastern Sonora).—Coues, 1905, 275 (Sonora).

*Psaltriparus melanotis lloydi* Ridgway, 1904, 429, part (Puerto de Los Pinitos [error]; Bavispe River).—A.O.U. Comm., 1910, 353 (Sonora).—Hellmayr, 1911, 54 (northern Sonora).—Bailey, 1928, 520 (northern Sonora).

*Psaltriparus minimus lloydi* A.O.U. Comm., 1931, 236 (Sonora).—Hellmayr, 1934, 91, (northeastern Sonora).

Resident in the higher mountains in the northeast. Known at present only from the San Luís Mountains (specimen in the U. S. Nat. Mus. exam.) and from the headwaters of the Bavispe River near the Chihuahua boundary at about latitude 30° (5 spec. in Amer. Mus. exam.).

*PSALTRIPARUS MINIMUS DIMORPHICUS* VAN ROSSEM AND HACHISUKA

BI-COLORED BUSH-TIT

*Psaltriparus minimus dimorphicus* van Rossem and Hachisuka, Trans. San Diego Soc. Nat. Hist., 9, Nov. 21, 1938, 8 (Rancho Santa Bárbara, alt. 5500 feet, southeastern Sonora, México).

Common in summer (probably resident) in the high Upper Sonoran and Transition zones (oak-pine association) in the vicinity of Rancho Santa Bárbara. This race is seemingly confined to the western drainage but its north-south limits cannot be defined at this time.

Family SITTIDAE Nuthatches

*SITTA CAROLINENSIS NELSONI* MEARNS

ROCKY MOUNTAIN NUTHATCH

*Sitta carolinensis nelsoni* Mearns, Proc. U. S. Nat. Mus., 24, No. 1274, June 2, 1902, 923 (Huachuca Mountains, Arizona); *ibid.*, in text (San Jose Mountains; Santa Cruz River at Monument 118).—A.O.U. Comm., 1903, 357 (Sonora); 1910, 346, part (Sonora).—Ridgway, 1904, 447, part (Sonora).—Thayer and Bangs, 1906, 20 (La Chumata).—Hellmayr, 1903, 188 (Sonora); 1911, 11 (Sonora); 1934, 94, part (Sonora).—Bailey, 1928, 521, part (Sonora).—van Rossem, 1931c, 272 (15 mi. S.W. of Nogales); 1934d, 456 (Oposura).—Aldrich, 1944, 597 (central-northern Sonora; monog.).

*Sitta nelsoni* Sharpe, 1903, 349 (northern Sonora).—Pycraft, 1915, 769 (Sonora).

*Sitta carolinensis aculeata* (not *Sitta aculeata* Cassin) Allen, 1893a, 41, part (Napolera).—Jouy, 1894, 776 (mountains 32 miles S. of Nogales).

Apparently a rather uncommon resident of Upper Sonoran and Transition zones (chiefly oak and pine associations) from the Pajaritos Mountains eastward across the State, and south in the ranges west of the Sierra Madre proper to the Sierra de San Antonio and Sierra de Oposura. Two additional stations are Cibuta, July 17, 1931 (Bishop coll.) and Rancho La Arizona, May 7, 1937 (van Rossem notes). Individuals of transient or winter status, which resemble Rocky Mountain rather than southern Arizona *nelsoni*, are occasionally encountered. One such is a specimen taken by the Lumholtz expedition at Nopalera on November "21" [Nov. 27], 1890.

#### SITTA CAROLINENSIS UMBROSA VAN ROSSEM

##### SIERRA MADRE NUTHATCH

*Sitta carolinensis umbrosa* van Rossem, Proc. Biol. Soc. Wash., 52, Feb. 4, 1939, 4 (Sierra Madre, near Guadalupe y Calvo, Chihuahua, México); *ibid.*, in text (Mina Abundancia).—Aldrich, 1944, 598 (central Sonora; monog.).

*Sitta carolinensis mexicana* (not of Nelson and Palmer) van Rossem, 1934d, 456 (Mina Abundancia).

*Sitta carolinensis aculeata* (not *Sitta aculeata* Cassin) Allen, 1893a, 41, part (El Pinita; Bavispee River).

Uncommon resident in the Transition zone in the extreme southeast, north along the Sierra Madre to at least latitude 29° 30', and probably to somewhat above latitude 30°. This race appears to be restricted to the main cordillera and immediately adjacent spurs; hence the Sonora distribution is necessarily interrupted. Sonora records to date are Rancho Santa Bárbara (Dickey coll.); Mina Abundancia (Mus. Comp. Zool.), and the Bavispee River near its headwaters (Amer. Mus.). A specimen from Los Pinitos ["El Pinita"], "Sept. 10" (October 12), 1890 (Amer. Mus.) is very close to *umbrosa* but may well be a fall wanderer and not a representative of the breeding population of that locality.

#### SITTA PYGMAEA MELANOTIS VAN ROSSEM

##### BLACK-EARED NUTHATCH

*Sitta pygmaea melanotis* van Rossem, Proc. Biol. Soc. Wash., 42 June 25, 1929, 176 (Chiricahua Mountains, Arizona).

*Sitta pygmaea pygmaea* (not *Sitta pygmaea* Vigors) Ridgway, 1904, 456, part (northern Sonora).

Probably a not uncommon resident in the Transition zone in the north-eastern mountains. To date, however, the only specimens taken in Sonora seem to be five in the U. S. National Museum from the San José Mountains, collected by Mearns between August 7 and 11, 1893. These appear to be typical of the Rocky Mountain race. Mearns' field book lists a specimen as taken on the San Pedro River on the boundary line, October 15, 1892, but this cannot now be located. If there is no error, the locality is, zonally speaking, an abnormal one.

*SITTA PYGMAEA CHIHUAHUAE* VAN ROSSEM

CHIHUAHUA NUTHATCH

*Sitta pygmaea chihuahuanae* van Rossem, Proc. Biol. Soc. Wash., 42, June 25, 1929, 177 (Mound Valley, Chihuahua, México).—Hellmayr, 1934, 99, part (crit.).

*Sitta pygmaea* (not of Vigors) Allen, 1893a, 41 (Bavispee River).

*Sitta pygmaea pygmaea* Ridgway, 1904, 456, part (Bavispee River).

Known from a single specimen taken by the Lumholtz expedition on the upper Bavispe River, "Jan. 15" [=December 15], 1890, and now in the American Museum of Natural History. The distribution of this race in Chihuahua strongly indicates that it should also occur in the Transition zone on the Sonora side of the boundary from about latitude 30° southward.

Family CERTHIIDAE Creepers

*CERTHIA FAMILIARIS ALBESCENS* BERLEPSCH

SIERRA MADRE CREEPER

*Certhia mexicana albescens* Berlepsch, Auk, 5, No. 4, Oct., 1888, 450 (Ciudad, Durango, México).

*Certhia familiaris albescens* Oberholser, 1896, 315 (Nopalera).—Ridgway, 1904, 472 (32 mi. S. of Nogales).—Miller and Griscom, 1925, 7 (Sonora).—van Rossem, 1934d, 456 (Mina Abundancia; [Sierra de] Oposura).

*Certhia brachydactyla albescens* Hellmayr, 1911, 8 (Sonora).

*Certhia americana albescens* Hellmayr, 1934, 102 (Oposura).

*Certhia familiaris mexicana* (not *Certhia mexicana* Gloger) Allen, 1893a, 41 (Napolera).—Jouy, 1894, 766 (mountains 32 mi. S. of Nogales).

Fairly common resident in the Transition zone from the Pajaritos Mountains (Sierra de Huacomea) eastward, and south along the higher eastern ranges the full length of the State. Further stations are El Tigre Mountains (Univ. Mich.); San José Mountains (U. S. Nat. Mus.); San Luís Mountains on the boundary (Mearns notes); Rancho Santa Bárbara (Dickey coll.).

## Family TROGLODYTIDAE Wrens

*TELMATODYTES PALUSTRIS PLESIVS* (OBERHOLSER)

## WESTERN MARSH WREN

*Cistothorus palustris plesius* Oberholser, Auk, 14, April, 1897, 188 (Fort Wingate, New Mexico); *ibid.*, in text (Sonoita; San Bernardino River at Monument 77; La Noria).

*Telmatodytes palustris plesius* Ridgway, 1904, 494, part (Sonoita; Santa Cruz River; San Bernardino River).—van Rossem, 1934d, 458 (Nacozari).

Migrant and winter visitant. Fall and winter specimens examined are as follows, all taken by Mearns and Holzner in 1892: San Bernardino River, October 7; Santa Cruz River (4), November 6 and 7; Sonoita, January 13, 1894 (U. S. Nat. Mus.). The single spring record was taken by Cahoon at Nacozari on March 23, 1887. The winter range of *plesius* extends to Sinaloa (A.O.U. Comm., 1931, p. 249), and it is also common at that season in the Colorado River valley in California and Arizona. It may, therefore, be expected in many suitable localities in Sonora; however, all records to date are from the northern interior.

*TELMATODYTES PALUSTRIS PALUDICOLA* (BAIRD)

## TULE WREN

*Cistothorus palustris*, var. *paludicola* Baird, Rev. Amer. Birds, Sept., 1864, 148 (Shoalwater Bay, Washington).

*Telmatodytes palustris paludicola* Mailliard, 1923, 455 (Patos Island).

*Telmatodytes palustris aestuarinus* (not of Swarth) van Rossem, 1931c, 273 (El Doctor).

*Cistothorus palustris aestuarinus* Hellmayr, 1934, 127, part (El Doctor).

Rare, perhaps only casual, in winter and spring in the desert region northwesterly. Two records: El Doctor on January 27, 1929, and Patos Island, April 23, 1921. This latter specimen (Calif. Acad. Sci.) has been verified as to previous identification by James Moffitt and R. T. Orr.

*TELMATODYTES PALUSTRIS AESTUARINUS* SWARTH

## SUISUN MARSH WREN

*Telmatodytes palustris aestuarinus* Swarth, Auk, 34, July [June 30], 1917, 310 (Grizzly Island, Solano County, California.).

*Cistothorus palustris paludicola* (not of Baird) Oberholser, 1897, 193, part (Colorado River, opposite mouth of Rio Hardy).—Hellmayr, 1934, 127, part (northwestern Sonora).

*Telmatodytes palustris paludicola* Ridgway, 1904, 496, part (mouth of Colorado River).—A.O.U. Comm., 1910, 343 (northwestern Sonora); 1931, 249, part (northwestern Sonora).—Dawson, 1923, 657, part (Sonora).

Presumably a resident of marshes along the Colorado River. The only three specimens actually collected in Sonora seem to be those taken by Mearns and Holzner opposite the mouth of the Hardy on March 25 and 26, 1894. These are now in the United States National Museum, where they have been personally examined and identified as *aestuarinus*.<sup>43</sup>

CAMPYLORHYNCHUS BRUNNEICAPILLUS COUESI SHARPE

NORTHERN CACTUS WREN

*Campylorhynchus couesi* Sharpe, Catl. Birds Brit. Mus., 6, 1881, 196 [New name for *Picolaptes brunneicapillus* of Lawrence and other American authors, but not of Lafresnaye] (Ringgold Barracks, near Rio Grande, Texas).

*Heleodytes brunneicapillus couesi* van Rossem, 1931c, 273, part (Saric; 12 miles W. of Magdalena; Sasabe Valley; San Felix Mine).—Hellmayr, 1934, 147 (Sonora).—Huey, 1935, 254 (Punta Peñascosa).

*Campylorhynchus brunneicapillus* (not *Picolaptes brunneicapillus* Lafresnaye) Stephens, 1885, 229 (San Felix mine).

*Heleodytes brunneicapillus* Anthony, 1894, 211 (Sonora).—Nelson, 1898a, 58, part (Sonora).—Price, 1899, 93 (lower Colorado River).

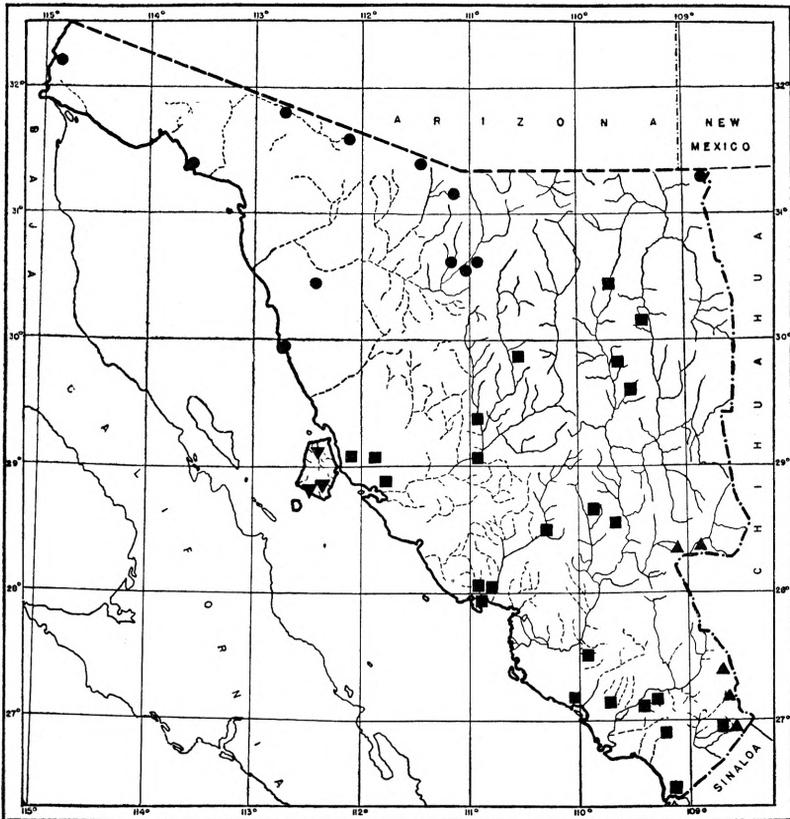
*Heleodytes brunneicapillus anthonyi* Mearns, 1902b, 143, part (northern Sonora).—Sheffler, 1931b, 165 (between Magdalena and Santa Ana).

*Heleodytes anthonyi* Sharpe, 1903, 75 (Sonora).

Common resident of Lower Sonoran cactus and mesquite deserts south at least to Puerto Libertad coastwise, to about lat. 30° 30' in the central interior, and to an undetermined point in the northeast. Intergradation with *brunneicapillus* takes place over a relatively broad belt and individual specimens from within this belt may closely resemble either race. Larger series may very possibly alter somewhat the range outlines as drawn here.<sup>44</sup>

<sup>43</sup> It seems remarkable that *aestuarinus* should occur as the breeding form in two such isolated and climatically diverse areas as central interior California and the lower Colorado River valley (see also Grinnell, 1928, p. 219), but such is the case. A series of seven definitely breeding males from the Salton Sea (Dickey coll.), seven from Bard, California, taken in the breeding season (Natural History Museum), and an adult and juvenile from St. Thomas, Clark County, Nevada (Dickey coll.), are apparently inseparable from topotypical *aestuarinus*. The Colorado Valley colony breeds very early, for complete sets of eggs were found at Salton Sea on March 24.

<sup>44</sup> John T. Zimmer agrees with me that Sharpe simply proposed a new name for the *Picolaptes brunneicapillus* of Lawrence and other early American authors (but not of Lafresnaye, which Sharpe mistakenly applied to *affinis*) and that he did not intend to describe a new species. The authorities he cites make the name an inclusive one for all Cactus Wrens of this species except the Cape San Lucas *affinis*. Even his description is a composite of a specimen of unstated locality in the Salvin and Godman collection, plus quotations from Coues. In order to prevent



MAP 15. Distribution of the genus *Campylorhynchus*. Circles, *C. brunneicapillus conesi*; squares, *C. b. brunneicapillus*; inverted triangles, *C. b. seri*; triangles, *C. gularis*.

*CAMPYLORHYNCHUS BRUNNEICAPILLUS BRUNNEICAPILLUS* (LAFRESNAYE)

GUAYMAS CACTUS WREN

*Picolaptes brunneicapillus* Lafresnaye, Mag. de Zool., 5, 1835, [61], pl. 47 (Californie ou Perou = Guaymas, Sonora, México).—Heermann, 1853, 263 (Guaymas).—Cassin, 1856, 156, part (Guaymas).

*Campylorhynchus brunneicapillus* Brewer, 1874 (1), 132, part (Guaymas).—Coues, 1878, 156, part (Guaymas).—Salvin and Godman, 1880, 67, part (Guay-

the possibility of future name shifting, I suggest that the locality first cited by an American author, "on the Rio Grande in Texas," or more specifically Ringgold Barracks, be accepted as the type locality (Lawrence, Ann. Lyc. Nat. Hist. New York, 5, 1852: 114).

mas).—Belding, 1883, 343, part (Guaymas).—Herrera, 1898, 228, part (Guaymas; hot regions of Sonora).—Allen, 1893a, (Oputo).

*C.[ampylorhynchus] brunneicapillus* Ridgway, 1887d, 547, part (Guaymas).—

*Heleodytes brunneicapillus* Ridgway, 1896, 547, part (Guaymas).—Sharpe, 1903, 74, part (Sonora).

*H.[eleodytes] brunneicapillus* Anthony, 1894, 214, in text (Guaymas).

*Heleodytes brunneicapillus brunneicapillus* Mearns, 1902b, 141 (type loc.; crit.).—Ridgway, 1904, 518 (Alamos; Batamotal; Camoa; Guaymas; type loc.; crit.).—Thayer and Bangs, 1906, 19 (Opodepe).—Bangs, 1930, 313 (re. type).—van Rossem, 1931c, 273, part (many locs.); 1934d, 457 (Guaymas; Alamos; Nacozari; Oposura).—Grinnell, 1932, 321 (re. type and type loc.).—Hellmayr, 1934, 148 (coastal district of southern Sonora).

*Heleodytes brunneicapillus couesi* (not *Campylorhynchus couesi* Sharpe) Ridgway, 1904, 522, part (Hermosillo; Oposura).—van Rossem, 1931c, 273, part (Pesqueira).

Common resident of Tropical and Lower Sonoran desert and semi-desert areas from the Sinaloa boundary north to the Sierra Seri coastwise, to Opodepe in the central interior, and in the Bavispe and Moctezuma river valleys to about latitude 30° 30'. Specimens from north of about latitude 29° are variously intermediate toward *couesi*. Some unpublished localities are San Marcial (Mus. Comp. Zool.); Moctezuma (Brit. Mus.); Kino Bay (Dickey and Nat. Hist. Mus.); Pilares (Univ. Mich.); Cerro Blanco (Chicago Nat. Hist. Mus.); Guirocoba (Dickey coll.); Sierra Seri and Rancho San José (Mus. Vert. Zool.).

#### CAMPYLORHYNCHUS BRUNNEICAPILLUS SERI (VAN ROSSEM)

##### TIBURÓN ISLAND CACTUS WREN

*Heleodytes brunneicapillus seri* van Rossem, Trans. San Diego Soc. Nat. Hist., 7, No. 19, July 28, 1932, 138 (Tiburón Island, Sonora, México).—Hellmayr, 1934, 149 (Tiburón Island).

*Heleodytes brunneicapillus brunneicapillus* (not *Picolaptes brunneicapillus* Lafresnaye) Townsend, 1923, 24 (Tiburón Island).—van Rossem, 1931c, 273, part (Tiburón Island; crit.).

Common resident of cactus and chaparral associations on Tiburón Island.<sup>45</sup>

#### CAMPYLORHYNCHUS GULARIS SCLATER

##### SPOTTED CACTUS WREN

*Campylorhynchus gularis* Sclater, Proc. Zool. Soc. Lond., 1860, 462 (México=Bolaños, Jalisco).—Salvin and Godman, 1889b., 235 (western slope of Sierra Madre in Sonora [=Yecora and Santa Ana]).

<sup>45</sup> Some form of Cactus Wren occurs on San Estéban Island, as attested by the presence of nests. However, in two visits to that island I failed to see any birds.

*Heleodytes gularis* Ridgway, 1904, 527 (w. slope of Sierra Madre; Mina Abundancia).—van Rossem, 1931c, 273 (Guirocoba); 1938d, 11 (sp. char.; crit.).

*Heleodytes capistratus gularis* van Rossem, 1934d, 457 (Mina Aundancia).

*Heleodytes jocosus gularis* Hellmayr, 1934, 151 (Guirocoba).

*Heleodytes stridulus* Nelson, 1899c, 30 (Sonora).—Sharpe, 1903, 74 (Sonora).

Uncommon resident of undergrowth in mountain cañons between the altitudes of 1,400 and 5,500 feet in the southeastern part of the State. The northernmost records are from Yécora and Santa Ana at about latitude 28° 15'. Found at Rancho Santa Bárbara in June, 1937 (undergrowth in Upper Sonoran oak association). The only winter record is from Guirocoba in early December, 1941 (Sheffler notes). This wren has been recorded between 1,450 (Tropical) and 5,500 feet (high Upper Sonoran or Transition), but apparently there is no contact with the Guaymas Cactus Wren even though both species may occur in the same general locality, as at Guirocoba.

#### THRYOTHORUS SINALOA CINEREUS (BREWSTER)

##### ASHY WREN

*Thryophilus sinaloa cinereus* Brewster, Auk, 6, April, 1889, 96 (Álamos, Sonora, México).—Ridgway, 1904, 636 (Alamos; Hacienda de San Rafael; Ysleta).—Bangs, 1930, 316 (location of co-types).

*Thryophilus cinereus* Sharpe, 1903, 79 (Sonora).

*Pheugopedius sinaloa cinereus* van Rossem, 1931c, 272 (San Javier; Guirocoba); 1934d, 457 (Alamos; Hacienda de San Rafael).

*Thryothorus sinaloa cinereus* Hellmayr, 1934, 171 (Ysleta).

*Thryophilus sinaloa* Var. *Cinerea* Dubois, 1901, 422 (Sonora).

Rather common resident of Tropical zone foothills in the southeast, north, perhaps rarely, to San Javier. From available data this wren is normally found in a rather narrow altitudinal belt of from about 1,000 to 2,000 feet, and tends further to localize in shrubbery along small streams. Besides the recorded localities there is a specimen in the Dickey collection from San Francisco Cañon.

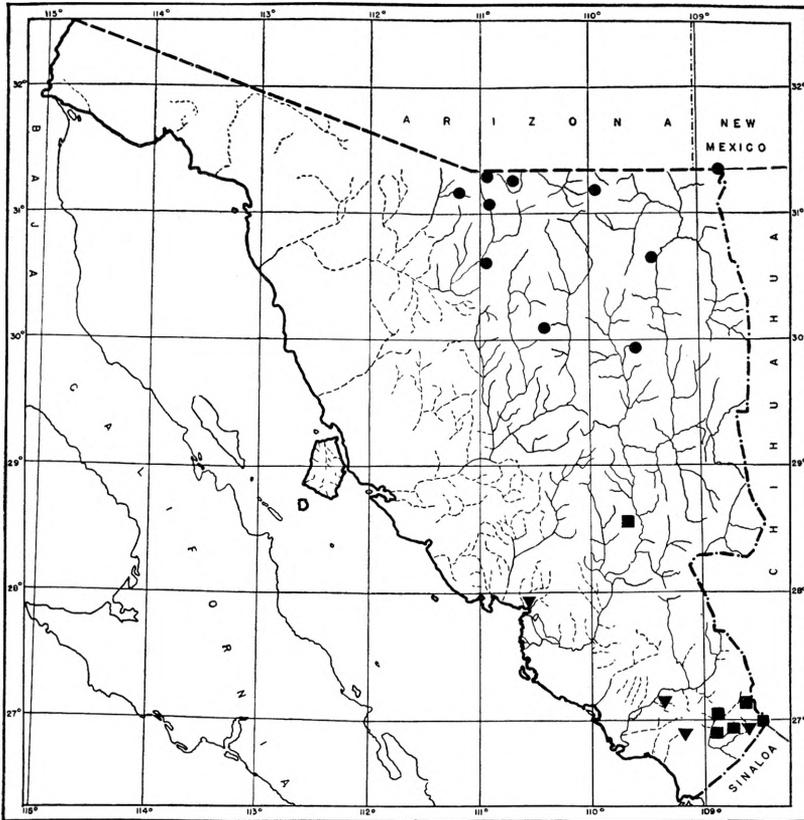
#### THRYOTHORUS FELIX SONORAE (VAN ROSSEM)

##### SONORA WREN

*Pheugopedius felix sonorae* van Rossem, Trans. San Diego Soc. Nat. Hist., 6, No. 11, Sept. 30, 1930, 208 (Guirocoba, Sonora, México); 1931c, 272 (Chinobampo; Guirocoba).

*Thryothorus felix sonorae* Hellmayr, 1934, 200 (southern Sonora).

Uncommon resident of Tropical zone foothills and coastal plain, north to the delta of the Yaqui River. The seven specimens known to date were



MAP 16. Distribution of the genera *Thryothorus* and *Thryomanes*. Squares, *Thryothorus sinaloa cinereus*; inverted triangles, *T. felix sonorae*; circles, *Thryomanes bewickii eremophilus*.

taken at Chinobampo, February 10, 1930; Guirocoba, May 3, 1930; Tesia, June 20, 1937 (Dickey and Sheffler colls.); Guásimas, April 13, 1939 (Mus. Vert. Zool.). The preferred habitat seems to be dense riparian shrubbery.

*THRYOMANES BEWICKII EREMOPHILUS* OBERHOLSER

DESERT WREN

*Thryomanes bewickii eremophilus* Oberholser, Proc. U. S. Nat. Mus., 21, Nov. 19, 1898, 427 (Big Hatchet Mts., New Mexico); *ibid.*, in text (San Jose Mts.; Patagone Mts.; Los Nogales; San Luis Mountains); 1920, 20 (central Sonora).—Thayer and Bangs, 1906, 20 (La Chumata).—van Rossem, 1931c, 272 (Saric; 15 mi. S. of Nogales); 1934d, 457 (Oposura).

*Trothorus bewickii* (not *Troglodytes bewickii* Audubon) Baird, 1858, 363, part (Los Nogales).

*Tbryothorus bewickii* Baird, 1859, 13 (Los Nogales).

*Tbryothorus bewickii bairdi* (not *Tbryothorus bairdi* Salvin and Godman). Evermann and Jenkins, 1888, 68 (Magdalena).

*Tbryomanes bewickii bairdi* A.O.U. Comm. 1910, 399, part (Sonora).

*Tbryothorus bewickii*, var. *spilurus* (not *Troglodytes spilurus* Vigors) Baird, 1864, 126, part (Los Nogales).

A rather common resident of Sonoran zones in the northcentral and northeastern foothills. There are no records for the northwestern deserts (the westernmost being Rancho La Arizona), nor from south of Moctezuma and La Chumata. Besides the localities cited above, specimens have been examined from Cibuta (Bishop coll.) and Pilares (Univ. Mich.).

#### TROGLODYTES AËDON PARKMANII AUDUBON

##### WESTERN HOUSE WREN

*Troglodytes Parkmanii* Audubon, Orn. Biog., 5, 1839, 310 (Columbia River [near Fort Vancouver, Washington]).

*Troglodytes aëdon parkmanii* van Rossem, 1931c, 272 (Tecoripa; Obregon; Tesia; Chinobampo); 1932, 138 (Tiburon Island).

*Troglodytes domesticus parkmanii* Oberholser, 1934, 96 (Alamos).—van Rossem, 1934d, 456 (Alamos; Mina Abundancia; Nacozeni; Oposura).

*Troglodytes aëdon aztecus* Allen, 1893a, 41 (Bavispee River; El Puerto).

Common migrant and winter visitant everywhere. Records include the mountains (6,300 feet at El Puerto), seacoast (Puerto Libertad and Tiburón Island), and all zones from Transition downward. The earliest fall date is October 6 (San José Mts.); the latest in spring, April 20 (Mina Abundancia). Even though the House Wren is known to breed in the mountains of southeastern Arizona very close to the boundary, there are no known instances of breeding within Sonora borders. Specimens examined or noted in addition to those recorded are from Puerto Libertad, January 30, 1935 (Nat. Hist. Mus.); San José Mountains, October 6, 1892; Sonoyta, January 12 and 22, 1894; Colorado River at Monument 204, March 21, 1894 (U. S. Nat. Mus.).

#### TROGLODYTES BRUNNEICOLLIS CAHOONI BREWSTER

##### CAHOON WREN

*Troglodytes cahooni* Brewster, Auk, 5, No. 1, Jan., 1888, 94 (Mountains near Oposura, [=Sierra de Oposura] Sonora, México).

*Troglodytes brunneicollis cahooni* Oberholser, 1904, 200 (Sonora).—Ridgway, 1904, 588 (Oposura).—Bangs, 1930, 318 (re. cotypes).—Griscom, 1934, 395,

in text (Sonora; crit.).—Hellmayr, 1934, 243 (Sonora).—van Rossem, 1934d, 457 (Oposura); 1938d, 14, in text (Sonora).

*Hemiura cabooni* Sharpe, 1903, 94 (Sonora).

Known only as a summer visitant in the Sierra de Oposura in the east central part of the State. Existing records from adjacent areas in Chihuahua indicate that this is a high Transition zone species; therefore it is unlikely to occur in Sonora except locally in limited areas near the eastern boundary.

### *SALPINCTES OBSOLETUS OBSOLETUS* (SAY)

#### NORTHERN ROCK WREN

*Troglodytes obsoleta* Say, in Long, Exped. Rocky Mts., 2, 1823, 4, note (Northern part of Douglas Co., Colorado near junction of Plum Creek with South Platte River).

*Salpinctes obsoletus* Belding, 1883, 343 (Guaymas).—Renardo, 1886, 118 (Guaymas).—Allen, 1893a, 41 (Fronteras; Bavispee River).

*Salpinctes obsoletus obsoletus* Ridgway, 1904, 645 (middle Sonora).—A.O.U. Comm., 1910, 336 (central Sonora).—van Rossem, 1931c, 274 (El Doctor; 15 miles S.W. of Nogales); 1932, 139 (Tiburon Island); 1934d, 459 (Guaymas; Alamos; Miller Ranch; Nacozeni).—Hellmayr, 1934, 273 (Cerro Blanco).—Huey, 1935, 255 (Punta Peñascosa).—Moore, 1941a, 41, in text (Guirocoba).

*Salpinctes obsoletus notius* Ridgway, 1904, 648, part (Alamos).—Hellmayr, 1934, 274, part (Alamos).

Common, widely distributed resident of desert and rupestrine associations nearly everywhere, including all rocky islands in the Gulf. There are, however, no records for the Tropical zone coastal plain south of Guaymas. Some unpublished localities are San Estéban, George, and San Pedro Mártir Islands; Rancho Santa Bárbara (van Rossem notes); Puerto Libertad; Kino Bay (Nat. Hist. Mus.); Nogales; Sonoyta; Pozo de Luís (U. S. Nat. Mus. catl.); Magdalena (Dawson notes); Cajón Bonito Creek; Guadalupe Cañon; Toronato Creek (Mearns notes).

### *CATHERPES MEXICANUS CONSPERSUS* RIDGWAY

#### WESTERN CAÑON WREN

*Catherpes Mexicanus* var. *conspersus* Ridgway, Amer. Nat., 7, No. 10, Oct., 1873, 603 (Fort Churchill [Washoe Mountains], Nevada).

*Catherpes mexicanus conspersus* Belding, 1883, 343 (Guaymas).—A.O.U. Comm., 1910, 337 (Sonora).—Bailey, 1928, 545 (Sonora).—van Rossem, 1931c, 274 (San Javier); 1934d, 458 (Oposura).

*Catherpes* [sic] *mexicanus conspersus* Evermann and Jenkins, 1888, 67 (Nogales).

*Catherpes mexicanus polioptilus* Ridgway, 1904, 660, part (Oposura).—Thayer and Bangs, 1906, 20 (La Chumata).

Resident, locally, in broken or mountainous terrain in the northern part of the State, south to Guaymas coastwise and to about latitude  $28^{\circ} 30'$  in the eastern interior,—at which latter point intergradation with *mexicanus* occurs. There are no records for the western deserts north of Tiburón Island and west of the Pajaritos Mountains. Unpublished record stations are Rancho La Arizona, May 7, 1937, breeding (van Rossem notes); Tiburón Island, April 4, 1936 (Mus. Vert. Zool.); Hermosillo, December 27, 1932 (Lamb notes); Cajón Bonito Creek, early July, 1892 (Mearns notes).

*CATHERPES MEXICANUS MEXICANUS* (SWAINSON)

MEXICAN CAÑON WREN

*Thryothorus mexicanus* Swainson, Zool. Illustr., 2nd. ser., 1, 1829, pl. 11 (Real del Monte, Hidalgo, México).

*Catherpes mexicanus mexicanus* van Rossem, 1931c, 273 (Chinobampo); 1934d, 458 (Alamos; Mina Abundancia; Hacienda de San Rafael; crit.).

*Catherpes mexicanus polioptilus* Ridgway, 1904, 660, part (Alamos).

*Catherpes mexicanus meliphonus* Oberholser, 1930, 95 (Alamos).—Hellmayr, 1934, 277 (Sonora; crit.).

Rather uncommon resident in the southeastern foothills and mountains. Though known only from a relatively restricted area, the appearance of specimens from latitude  $28^{\circ} 30'$  (see under *conspersus*) indicates a distribution north nearly to that point. Additional stations are San Francisco Cañon, May 31; Guirocoba in May and June; Rancho Santa Bárbara, June, 1937 (Dickey coll.; van Rossem notes). Records include the Tropical, Sonoran, and Transition zones; however, there are no records for the coastal plain.<sup>46</sup>

Family MIMIDAE Mockingbirds and Thrashers

*TOXOSTOMA BENDIREI BENDIREI* (COUES)

BENDIRE THRASHER

*Harporhynchus Bendirei* Coues, Amer. Nat., 7, No. 6, June, 1873, 330 (Tucson, Arizona).

*Harporhynchus bendirei* Belding, 1883, 343 (Guaymas).—A.O.U. Comm., 1886, 323 (Guaymas); 1895, 293 (Guaymas).

<sup>46</sup>Although southern Sonora specimens average smaller and perhaps a little paler than typical *mexicanus* (in these respects showing an approach to *conspersus*), I cannot endorse their recognition under a distinctive name. Cañon Wrens vary individually far more than is generally appreciated and because of that circumstance various intermediate "races" which have been proposed seem to exist as transitional averages rather than as definable entities.

*H.[arporhynchus] bendirei* Ridgway, 1887d, 545 (Guaymas).—Coues, 1903, 287 (Sonora).

*Toxostoma bendirei* Sharpe, 1903, 107 (Sonora).—Ridgway, 1907, 197, part (Guaymas; Camoa; Alamos, part).—A.O.U. Comm., 1910, 333 (northern Sonora); 1931, 253 (northern Sonora).—Dawson, 1923, 697 (northern Sonora).—Bailey, 1928, 557 (northern Sonora).—Sheffler, 1931b, 164 (between Magdalena and Santa Ana).—van Rossem, 1931c, 276, part (Tesia, part; 12 miles W. of Magdalena); 1934d, 460, part (Guaymas).—Hellmayr, 1934, 298 (northern Sonora).

[*Toxostoma bendirei*] *bendirei* van Rossem, 1942c, 382, in text (Nogales; Mayo River valley; Alamos).

Fairly common winter visitant to desert associations from the Arizona boundary (centrally) southward over the State. The summer range has yet to be determined. Presumably it is this race which breeds as far south as Magdalena (Sheffler, 1931b) but until specimens have been collected the matter must remain in doubt.

#### *TOXOSTOMA BENDIREI CANDIDUM* VAN ROSSEM

##### GUAYMAS THRASHER

*Toxostoma bendirei candidum* van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 33, Feb. 17, 1942, 381 (10 miles north of Guaymas, Sonora, México).

*Toxostoma bendirei* (not *Harporhynchus bendirei* Coues).—van Rossem, 1931c, 276, part (Guaymas; 8 miles N. of Guaymas).

Rather uncommon resident in the Lower Sonoran desert in the vicinity of Guaymas. Specimens have been examined from Guaymas, San José de Guaymas, and 8 and 10 miles north of Guaymas. The range is extremely limited, for a specimen from Ortiz (Biol. Surv. coll., May 14, 1892), only about 25 miles north of Guaymas, seems to be exactly intermediate between *candidum* and *rubricatum*, and therefore not distinguishable from *bendirei*.

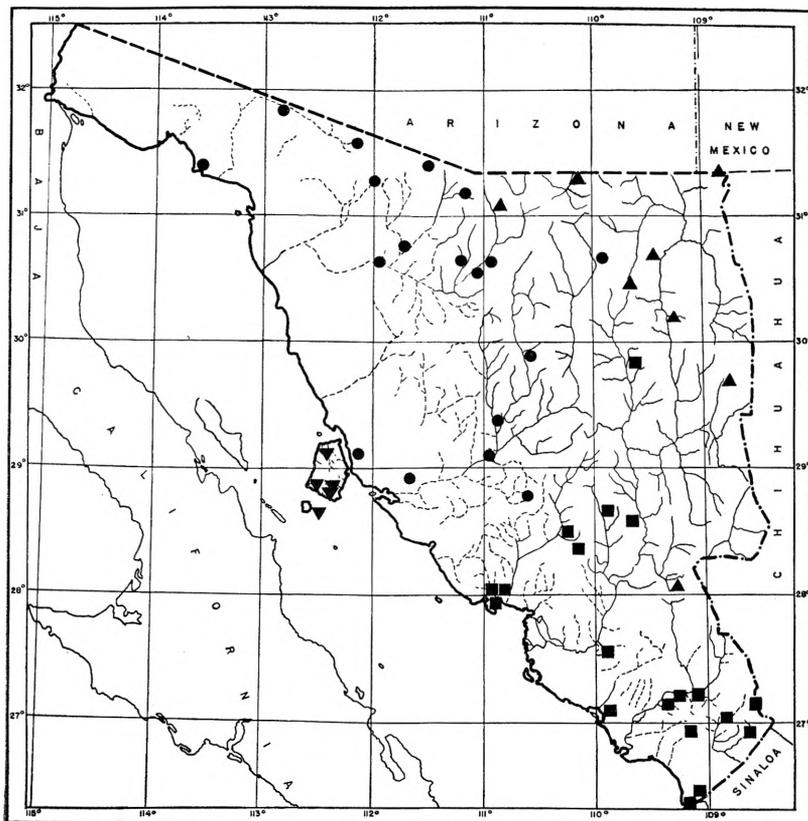
#### *TOXOSTOMA BENDIREI RUBRICATUM* VAN ROSSEM

##### RUSTY THRASHER

*Toxostoma bendirei rubricatum* van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 33, Feb. 17, 1942, 381 (Tecoripa, southeastern Sonora, México); *ibid.*, in text (Pesqueira; Tiburon Island; San Carlos Bay; San Pedro Bay; Hermosillo; Obregon; Tesia).

*Toxostoma bendirei* (not *Harporhynchus bendirei* Coues) Ridgway, 1907, 197, part (Ortiz; Alamos, part).—van Rossem, 1931c, 276, part (Pesqueira; Tecoripa; Obregon; Tesia, part); 1932, 139 (Tiburon Island); 1934d, 460, part (Alamos).

Occurs rather generally in winter (except in the Guaymas area) over southern and central deserts north to Tiburón Island, Pesqueira, and Tecoripa. Whether the race is resident over this range is uncertain at this time. At present Tecoripa is the only definite breeding locality.



MAP 17. Distribution of *Toxostoma curvirostre*. Circles, *T. c. palmeri*; squares, *T. c. maculatum*; triangles, *T. c. celsum*; inverted triangles, *T. c. insularum*.

*TOXOSTOMA CURVIROSTRE CELSUM* MOORE

UPLAND THRASHER

*Toxostoma curvirostre celsum* Moore, Proc. Biol. Soc. Wash., 54, Dec. 8, 1941, 212 (Laguna Juanota, southwestern Chihuahua, México).

*Harporhynchus curvirostris* (not *Orpheus curvirostris* Swainson) Allen, 1893a, 41 (Opoto; Nacori).

*Toxostoma curvirostre curvirostre* van Rossem, 1934d, 460 (Nacozari); 1936d, 142, map (range in northern Sonora).

Common resident along the northern boundary from about Nogales eastward, and south along the Sonoran levels of the eastern mountains to about latitude 28°. Specimens have been examined as follows: 32 klms.

south of Nogales (Mus. Comp. Zoöl.); Pilares (Univ. Mich.); Nacori; Oputo; Arroyo Hondo (Amer. Mus.); San Pedro River on the boundary (U. S. Nat. Mus.); Nuri (Brit. Mus.); west side of San Luís Mountains (Mearns notes).

*TOXOSTOMA CURVIROSTRE PALMERI* (COUES)

PALMER THRASHER

*Harporhynchus curvirostris* var. *palmeri* "Ridg. Ms." Coues, Key No. Amer. Birds, 1872, 351 (Tucson, Arizona).

*Harporhynchus curvirostris palmeri* Brewster, 1885, 196 (Altar).—Stephens, 1885, 228 (Altar).—Parker, 1887, 72 (Sonora).—Clark, 1898, 272 (El Plomo); 1904, 214 (El Plomo).

*Toxostoma curvirostre palmeri* Thayer and Bangs, 1906, 19, part (Opodepe; crit.).—Ridgway, 1907, 202, part (El Plomo; Magdalena; Poso de Luis; Sonoyta; Altar).—A.O.U. Comm., 1931, 333 (Sonora).—Dawson, 1923, 694 (Sonora).—van Rossem, 1931c, 275, part (Saric; 12 miles W. of Magdalena; 15 miles W. of Nogales; Sasabe Valley; Pesqueira; Altar; Pitiquito; crit.); 1934d, 460, part (Bacuachi); 1936, 140 (southwest of Nogales; range map in northern Sonora; crit.).—Sheffler, 1931b, 164 (between Magdalena and Santa Ana).—Hellmayr, 1934, 298 (northern Sonora).—Huey, 1935, 255 (Punta Peñascosa).—Moore, 1941b, 215, in text (Saric).

*Toxostoma palmeri* Sharpe, 1903, 107 (Sonora).

Common resident, chiefly of cactus and mesquite associations in the Lower Sonoran zone, from about Nogales westward; south to about latitude 28° 30', and east in the northcentral part of the State to about longitude 110°. Specimens from the northeastern part of the range are variously intermediate toward *celsum*, those from the south and southeast toward *maculatum*. Additional localities are Hermosillo (Univ. Mich.); Chivata (Mus. Comp. Zoöl.); Rancho Costa Rica (Lamb notes); Sierra Seri (Mus. Vert. Zool.).

*TOXOSTOMA CURVIROSTRE MACULATUM* NELSON

ÁLAMOS THRASHER

*Harporhynchus curvirostris maculatus* Nelson, Auk, 17, July, 1900, 269 (Álamos, Sonora, México).

*Toxostoma curvirostre maculatum* Ridgway, 1907, 202, part (Álamos; Guaymas; Camoa).—van Rossem, 1931c, 274 (Tecoripa; Obregon; Tesia; Chino-bampo; Tobarí Bay; Guirocoba; crit.); 1934, 460 (Álamos; Mina Abundancia; Oposura).—Hellmayr, 1934, 299 (southern Sonora).—Moore, 1941b, 215, in text (Tecoripa; Agiabampo; Guirocoba).

*Harporhynchus curvirostris palmeri* (not of Coues) Ridgway, 1887d, 545, part (Guaymas).—A.O.U. Comm., 1886, 323, part (Guaymas).

*Toxostoma curvirostre palmeri* Thayer and Bangs, 1906, 19, part (Guaymas);

crit.)—Ridgway, 1907, 202, part (Batamotal).—van Rossem, 1931 c, 275, part (San Javier; Guaymas; San Jose de Guaymas); 1934d, 460, part (Guaymas).

*Harporhynchus palmeri* Belding, 1883, 343 (Guaymas).

Common resident of Tropical zone lowlands and foothills from about Guaymas, coastwise, and Moctezuma in the interior, south to the Chihuahua and Sinaloa boundaries. Specimens from the foothill regions easterly often show tendencies toward *celsum*, while in the northwest many incline toward *palmeri*. Specimens from localities not recorded above have been examined from San Marcial; Las Chinchas (Mus. Comp. Zool.); Río Mayo; Agua Caliente (Brit. Mus.); Masocari Island (Dickey coll.).<sup>47</sup>

#### *TOXOSTOMA CURVIROSTRE INSULARUM* VAN ROSSEM

##### ISLAND THRASHER

*Toxostoma curvirostre insularum* van Rossem, Trans. San. Diego Soc. Nat. Hist., 6, Sept. 30, 1930, 207 (San Estéban Island, Sonora, México); *ibid.* in text, (Tiburón Island); 1931c, 275 (San Esteban Island; Tiburon Island); 1932, 140 (Tiburón Island; San Esteban Island).—Hellmayr, 1934, 300 (San Esteban Island; Tiburon Island).

*Toxostoma bendirei* (not *Harporhynchus bendirei* Coues) Townsend, 1923, 24 (Tiburón Island).

Uncommon resident, almost entirely of cactus associations, on San Estéban and Tiburón Islands. It is now possibly extinct on San Estéban, for suitable associations are of limited area and investigations subsequent to 1930 have failed to find it. Seven specimens are now known from Tiburón; in addition to the five recorded in the synonymy above, there are two in the collection of the Museum of Vertebrate Zoology, taken by Benson and Sibley, November 4 and 8, 1941.

<sup>47</sup> Intergradation between *maculatum*, *palmeri*, and *celsum* occurs over such broad bands and is so irregular in individual specimens that there was the inclination to discard the name *maculatum* altogether, and to consider birds from the range of that race as intergrades connecting *palmeri*, *celsum*, and *occidentale*. However, the combined series in the Moore and Dickey collections, both of which are of relatively recent origin and which retain the original color values, show that *maculatum* may be recognized. It is somewhat darker below, and has darker brown posterior under parts than any of the surrounding forms. Ventral spotting averages about intermediate between *palmeri* and *occidentale*. There is very little difference in size between *maculatum* and *palmeri*, the former having a very slightly shorter wing and slightly longer tail. Twenty-one *fully adult* males of *palmeri* from southern Arizona average: wing, 106.4; tail, 117.5. Fifteen *fully adult* male *maculatum* from southern Sonora average: wing, 105.0; tail, 119.1. One-year-old birds (distinguishable by the primary coverts) average considerably smaller, a fact not generally appreciated.

*TOXOSTOMA LECONTEI LECONTEI* LAWRENCE

## LECONTE THRASHER

*Toxostoma Le Contei* Lawrence, Ann. Lyc. Nat. Hist. New York, 1852 [pub. Sept., 1851], 121 (California, near the junction of the Gila and Colorado rivers=Fort Yuma, California).

*Toxostoma lecontei lecontei* Ridgway, 1907, 205 (south to "Cape" [=Point Lobos]).—Chapman, 1917, 39 (northern Sonora).—Dawson, 1923, 705 "Cape" Lobos).—van Rossem, 1931c, 276 (Port Lobos).—Hellmayr, 1934, 301 (Puerto de Lobos).—Huey, 1935, 255 (Punta Peñascosa).

*Harporhynchus lecontei* Stephens, 1885, 229 (Port Lobos and vicinity).—Mearns, 1886, 299 (15 miles inland from Point Lobos).—Merriam, 1895, 58, part ("Cape" Lobos).—A.O.U. Comm., 1895, 294, part (Lat. 30°, Sonora).—Anthony, 1897, 168 (15 miles inland from Point Lobos).

*H.* [*arporhynchus*] *lecontei* Ridgway, 1887d, 546, part (Sonora).—Coues, 1903, 288, part (N.W. Sonora).

*Harporhynchus lecontii* Brewster, 1885, 196 (Point Lobos).

Rather common in the sandy, Lower Sonoran coastwise deserts in the northwest, although reported to date only in February and August. Recorded as common at Port Lobos and inland for some "ten to twenty miles," in August, 1884, and as common and breeding at Punta Peñascosa in February, 1934. In all likelihood, the species is resident and of continuous distribution on the sandy deserts near the coast from about latitude 30° northward to the Colorado River region, where found commonly on the Baja California side.

*TOXOSTOMA DORSALE DORSALE* HENRY

## CRISSAL THRASHER

*Toxostoma dorsalis* Henry, Proc. Acad. Nat. Sci. Phila., [10], 1858, No. 7-9, April-May [after April 19], 117 (Fort Thorn [Donna Anna Co., New Mexico]).

*Toxostoma dorsale dorsale* A.O.U. Comm., 1931, 254 (Sonora).—Hellmayr, 1934, 302 (Sonora).

*Toxostoma crissale* Ridgway, 1907, 207, part (Senoyta).—A.O.U. Comm., 1910, 334, part (northern Sonora).—Chapman, 1917, 39, part (northern Sonora).—Dawson, 1923, 710, part (Sonora).—Bailey, 1928, 558, part (northern Sonora).

*Toxostoma crissale crissale* van Rossem, 1931c, 276 (Pesqueira; Guaymas).

*Toxostoma crissalis* Sheffler, 1931b, 164 (between Magdalena and Santa Ana).

*Harporhynchus crissalis* Mearns, 1886, 292, part (Sonora).

Fairly common resident of the Lower Sonoran zone across the State northerly, and south in the western deserts at least to Guaymas. Distribution is not general but tends to localize in areas of relatively dense cover such as watercourse shrubbery and mesquite thickets. Record stations additional to the above are Cienega Well, 25 miles south of Monu-

ment 205 on the Colorado River, March 23, 1894 ; San Bernardino Ranch, September 9, 1892 and October 7, 1893 (U. S. Nat. Mus. catl.) ; Guadalupe Cañon, in early July, 1892 (Mearns notes) ; Kino Bay, February 23, 1935 (Nat. Hist. Mus.) ; San José de Guaymas, January 19, 1933 (Dickey coll.) ; Magdalena, April 17 to May 23, 1925 (Dawson notes) ; Mina Los Afanes, January 19, 1942 (Mus. Vert. Zool.).

*MELANOTIS CAERULESCENS EFFUTICIUS* BANGS AND PENARD

WESTERN BLUE MOCKINGBIRD

*Melanotis caerulescens effuticius* Bangs and Penard, Proc. Biol. Soc. Wash., 34, June 30, 1921, 91 (Hacienda de San Rafael, "Chihuahua" [=Sonora], México); *ibid.*, in text (Alamos).—Bangs, 1930, 324 (location of type).—van Rossem, 1931c, 274 (Chinobampo); 1934d, 459 (Alamos; Hacienda de San Rafael).—Hellmayr, 1934, 303 (Sonora).

Probably a fairly common resident of brushy areas in the extreme southeastern Tropical zone foothills. Specimens have been taken at Álamos and Hacienda de San Rafael between February 16 and May 19, 1888 (Mus. Comp. Zoöl.), and at Chinobampo, February 28, 1930 (Dickey coll.): noted as present at Guirocoba in May and June and at San Francisco Cañon, May 30, 1937 (van Rossem notes).<sup>48</sup>

*MIMUS POLYGLOTTOS LEUCOPTERUS* (VIGORS)

WESTERN MOCKINGBIRD

*Orpheus leucopterus* Vigors, in Zool. Beechey's Voy., 1839, 17 (West coast of America=Monterey, California).

*Mimus polyglottos leucopterus* Thayer and Bangs, 1906, 19 (Opodepe).—Ridgway, 1907, 228 (Sonora).—Townsend, 1923, 23 (Tiburon Island).—van Rossem, 1931c, 274 (Pesqueira; Tecoripa; San Javier; Saric; Obregon; Tesia; Chinobampo; Guirocoba; El Alamo; Sasabe); 1934d, 459 (Guaymas; Alamos; Nacozari).—Huey, 1935, 255 (Punta Peñascosa).

*Mimus polyglottos* (not *Turdus polyglottos* Linn.) Evermann and Jenkins, 1888, 67 (Nogales; Magdalena; Guaymas).—Allen, 1893a, 41 (Oputo; Nacory).—Price, 1899, 93 (lower Colorado River).

*Mimus polyglottus* Belding, 1883, 343 (Guaymas).

<sup>48</sup>It is possible that the name *effuticius* is a synonym of *caerulescens* Swainson. Bangs and Penard evidently considered Swainson's name to apply to the eastern form, but this allocation is doubtful. The type of *caerulescens* was taken by Bullock at "Upper Themascaltepec," a village about four miles above Temascaltepec, and it will require new material to determine what race is present there. In case a shift of names becomes necessary, the first available one for the eastern bird is *Turdus melanotis* Temminck, the type of which I have examined at Leiden.

Common, generally distributed resident of Sonoran and Tropical zones, including some, and probably all, of the suitable islands. Records practically blanket the State, nor does there seem to be the concentration in cultivated areas as is the case further north. Some unpublished occurrences are Camoa, February (Bishop coll.); Rancho Costa Rica, December (Lamb notes); Puerto Libertad, January and February (Nat. Hist. Mus.); Agiabampo and Masocari Island, May; San Estéban Island, January (van Rossem notes); Pozo de Luís, December and January; lower Colorado River, March (U. S. Nat. Mus.).

#### OREOSOPTES MONTANUS (TOWNSEND)

##### SAGE THRASHER

*Orpheus montanus* J. K. Townsend, Journ. Acad. Nat. Sci. Phila., 7, Pt. 2, [Nov. 21, 1837], 192 (Plains of the Rocky Mountains=Sandy Creek, 42°N., 109° 30' W., Wyoming).

*Oroscoptes montanus* Price, 1899, 93 (lower Colorado River).—Ridgway, 1907, 259 (Sonora).—van Rossem, 1931c, 276 (El Doctor).

*Oroscoptes montanus* Huey, 1935, 255 (Punta Peñascosa); 1942, 269 (Gray's Ranch) [Arizona].

Evidently a not uncommon winter visitant to deserts and plains across the northern part of the State. Unpublished occurrences are Sonoyta, January 12, 1894 (U. S. Nat. Mus. catl.), and Johnson's Ranch [Arizona], at Monument 90, September 15, 1892 (Mearn's notes). Extreme dates are September 15 (Johnson's Ranch) and March 22 (Gray's Ranch).

#### Family TURDIDAE Thrushes

##### TURDUS MIGRATORIUS PROPINQUUS RIDGWAY

##### WESTERN ROBIN

*Turdus propinquus* Ridgway, Bull. Nuttall Orn. Club, 2, No. 1, Jan., 1877, 9 (Western region [etc.] = Laramie Peak, Wyoming).

*Turdus migratorius propinquus* van Rossem, 1931c, 277 (El Doctor; 15 miles W. of Nogales); 1934d, 460 (Alamos; Mina Abundancia; Hacienda de San Rafael; Oposura; crit.); 1936c, 41 (Colorado delta; crit.).

Summer visitant in the Transition zone in the Sierra de Oposura and probably at other points along the eastern boundary. Common and widespread at lower elevations in winter and during migrations, the majority of birds present at those seasons being most probably from regions north of México. Unpublished records are San José de Guaymas, January 15, 1933 (Lamb notes); San Pedro River on the boundary, October 15 and 26, 1892; Sonoyta, January 14 and 21, 1894; Colorado River at Monu-

ment 205, March 19, 1894; San Luis Mountains, September 4, 1893; Cajón Bonito Creek, September 8 to 27, 1893 (U. S. Nat. Mus.; Mearns notes).

*TURDUS RUFO-PALLIATUS GRISIOR* VAN ROSSEM

SONORA ROBIN

*Turdus rufopalliatus grisor* van Rossem, Bull. Mus. Comp. Zool., 77, No. 7, Dec., 1934, 461 (Guirocoba, Sonora, México); *ibid.*, in text (Alamos; Hacienda de San Rafael; Chinobampo).

*Turdus rufo-palliatus* (not of Lafresnaye) van Rossem, 1931c, 277 (Chinobampo; Guirocoba).

*Turdus rufo-palliatus rufo-palliatus* Hellmayr, 1934, 355, part (Sierra de Alamos; southern Sonora locs.).

*Turdus flavirostris* (not of Horsfield) Sharp, in Seebohm, 1899, 299, part (Sierra de Alamos).

Common resident in the southeastern foothills, where it is the Tropical zone representative of the genus. There seems to be little or no penetration into the Upper Sonoran and the range is apparently pretty well confined to riparian growth between the altitudes of 300 and 2,000 feet. Observed to be very common at Guirocoba, San Francisco Cañon, and intervening points in May and June, 1937 (Dickey coll.; van Rossem notes). The northernmost locality to date is Hacienda de San Rafael.

*TURDUS ASSIMILIS CALLIPHTHONGUS* MOORE

WHITE-THROATED ROBIN

*Turdus assimilis calliphthongus* Moore, Proc. Biol. Soc. Wash., 50, Nov. 30, 1937, 204 (Baromicon [=Baromico, extreme southeastern], Sonora, [México], alt. 3000 ft.); *ibid.*, in text (San Rafael; Hacienda de San Rafael; Guirojaqui).

*Turdus assimilis renominatus* (not of Miller and Griscom) van Rossem, 1934d, 461 (Hacienda de San Rafael; crit.).

Present in summer (May and June) in the Upper Sonoran and lower parts of the Transition zones in the mountains of the extreme southeast. Supplementing the little data available is the occurrence at Rancho Santa Bárbara, where observed as very rare in the oaks and pines at elevations of from 5,000 to 5,500 feet in mid-June, 1937 (van Rossem notes).

*MYADESTES TOWNSENDI* (AUDUBON)

TOWNSEND SOLITAIRE

*Ptilogony's* [sic] *Townsendi* Audubon, Birds Amer., (folio), 4, pl. 419, fig. 2, 1838 (Columbia River—near Astoria, Oregon).

*Myadestes townsendi* Ridgway, 1907, 163 (Sonora?).—van Rossem, 1931c, 278 (15 miles S.W. of Nogales).

*Myadestes townsendi* Salvin and Godman, 1889c, 381 (Sonora; crit.).

Detected to date only as an uncommon transient and winter visitant. The following seem to be the only records: two specimens taken by Mearns and Holzner in the San José Mountains, October 5 and 7, 1892 (U. S. Nat. Mus. catl.); specimen taken by Bancroft 15 miles southwest of Nogales, February 17, 1929 (Dickey coll.); specimen or specimens taken by Lloyd somewhere in southeastern Sonora between April 4 and May 25, 1888 (Salvin and Godman, 1889b). The first two records are from the Upper Sonoran (or higher) zone, the last is uncertain.

*MYADESTES OBSCURUS CINEREUS* NELSON

ASHY SOLITAIRE

*Myadestes obscurus cinereus* Nelson, Proc. Biol. Soc. Wash., 13, May 29, 1899, 30 (mountains near Alamos, Sonora, México).—Griscom, 1932, 303, in text (Sonora).—van Rossem, 1934d, 463 (Alamos; Mina Abundancia; Hacienda de San Rafael).

*Myadestes obscurus occidentalis* (not of Stejneger) Ridgway, 1907, 168, part (Alamos; Hacienda de San Rafael; Mina Abundancia).—Hellmayr, 1934, 435, part (Sonora).

Seemingly, in some years at least, a fairly common winter visitant in the Tropical zone foothills and lower mountains in the southeastern corner of the State. Dates range from January 3 to May 15. No specimens have been collected anywhere in Sonora during the midsummer months in spite of careful search in a variety of zones and associations ranging up to 5,500 feet. The breeding range apparently is in the Transition zone of the higher Sierras east of the Sonora-Chihuahua boundary.<sup>49</sup>

*HYLOCICHLA GUTTATA GUTTATA* (PALLAS)

ALASKA HERMIT THRUSH

*Muscicapa guttata* Pallas, Zoogr. Rosso-Asiatica, 1, 1811, 465 (in insulis . . . Kodiak=Kodiak Island, Alaska).

*Hylocichla guttata guttata* Ridgway, 1907, 39, part (Nacozari; Alamos):—A.O.U. Comm., 1910, 361 (Sonora); 1931, 258 (Sonora).—Bailey, 1928, 570 (Sonora).—van Rossem, 1931c, 277 (El Doctor; Tecoripa; Chinobampo); 1934d, 462 (Alamos; Nacozari).—Hellmayr, 1934, 453 (Sonora).

Winter visitant to Sonoran and Tropical zones. Probably generally distributed since the none-too-numerous records are scattered over most of the State. There is one additional record, Tepopa Bay, January 2, 1932 (Dickey coll.). The latest spring date is March 29 (Nacozari).

<sup>49</sup> I agree with Griscom (*l.c.*) that *cinereus* is an excellent race, with characters as originally described by Nelson, and cannot understand the reluctance of Ridgway and Hellmayr to recognise it.

This and other races of the Hermit Thrush are represented by such small series that estimates of relative abundance are not to be considered at this time.

*HYLOCICHLA GUTTATA SLEVINI* GRINNELL

MONTEREY HERMIT THRUSH

*Hylocichla aonalaschkae slevini* Grinnell, Auk, 18, No. 3 July, 1901, 258 (Vicinity of Point Sur, Monterey County, California).

*Hylocichla guttata slevini* A.O.U. Comm., 1910, 362 (Sonora); 1931, 258 (Sonora).—van Rossem, 1931c, 277 (Chinobampo); 1934d, 462 (Alamos).—Hellmayr, 1934, 454 (Sonora).

*Hylocichla guttata slevini* [sic] Ridgway, 1907, 44 ("Campos").

*Hylocichla guttata oromela* Bishop, 1933, 203 (Chinobampo).

A winter visitant, apparently in some numbers and chiefly in the southern part of the State. Specimens have been examined from San José de Guaymas, January 15, 1933 (Dickey coll.); Chinobampo, February 28, 1931 (Bishop coll.) and March 2 and 9, 1930 (Dickey coll.); Alamos, February 3 and 23; March 1, 1888; Cumpas, February 3, 1887 (Mus. Comp. Zoöl.).<sup>50</sup>

*HYLOCICHLA GUTTATA SEQUIOENSIS* (BELDING)

SIERRA HERMIT THRUSH

*Turdus sequoiensis* Belding, Proc. Calif. Acad. Sci., ser. 2, 2, June 11, 1889, 18 (Big Trees [Calaveras County, California]).

*Hylocichla guttata sequoiensis* Ridgway, 1907, 44 (Alamos).—Dawson, 1923, 748 (Sonora).—van Rossem, 1934d, 462 (Alamos).

*Turdus aonalaschkae* (not of Gmelin) Allen, 1893a, 42 (Bacadehuachy).

*Hylocichla guttata guttata* (not *Muscicapa guttata* Pallas) Ridgway, 1907, 39, part (Bacadehuachy).

Winter visitant in the eastern foothill region. Has been taken at Bacadehuachi, November 21, 1890 (not November 11 as published) and Alamos (four specimens), between February 4 and March 13, 1888.

*HYLOCICHLA GUTTATA POLIONOTA* GRINNELL

GREAT BASIN HERMIT THRUSH

*Hylocichla guttata polionota* Grinnell, Condor, 20, No. 2, March 20, 1918, 89 (White Mountains, Inyo County, California).—van Rossem, 1934d, 462 (Mina Abundancia).

<sup>50</sup>If the subspecies *oromela* is recognized, the Chinobampo specimen from the Bishop collection belongs there. According to Alden Miller (Condor, 1941, p. 262), *oromela* is an unstable intergrade in which three currently recognized forms are involved.

Spring migrant in the eastern mountains. There is but one record; taken by Frazar at Mina Abundancia, April 11, 1888, (Mus. Comp. Zoöl.).

*HYLOCICHLA GUTTATA AUDUBONI* (BAIRD)

AUDUBON HERMIT THRUSH

*Turdus auduboni* Baird, Review Amer. Birds, sig. 1, June, 1864, 16 (Ft. Bridger [Wyoming]).—Sharpe, in Seebohm, 1898, 197, part (Yecora).

*Turdus aonalaschkae auduboni* Allen, 1893a, 42 (Bavispee River).

*Hylocichla guttata auduboni* van Rossem, 1934d, 462 (Mina Abundancia).

Winter visitant, possibly only as a casual, and a transient in the eastern mountains. There is one fall record, that of a specimen taken by Mearns and Holzner in the San José Mountains, October 5, 1892 (U. S. Nat. Mus.). Spring records are from Mina Abundancia, April 11 to 20, 1888 (Mus. Comp. Zoöl.), and Yecora, "April" [between 11 and 16], 1888 (Brit. Mus.). The specimen recorded by Allen has also been examined. It was taken January 1, 1891 on the upper Bavispe near the Chihuahua boundary.

*HYLOCICHLA USTULATA USTULATA* (NUTTALL)

RUSSET-BACKED THRUSH

*Turdus cestulatus* [= *ustulatus*] Nuttall, Manual Orn. U. S. and Canada, 1, ed. 2, 1840, 400, 830; errata, p. vi (Forests of Oregon=Fort Vancouver, Washington).—Sharpe, in Seebohm, 1898, 175 (Ysleta).

*Hylocichla ustulata ustulata* van Rossem, 1931c, 277 (Saric; Guirocoba); 1934d, 462 (Hacienda de San Rafael; Mina Abundancia; Oposura).

Fairly common transient, chiefly through the easterly foothills. Fall dates are from San Bernardino River on the boundary, September 4, 1892; San José Mountains, October 6, 1892 (U. S. Nat. Mus.). Spring records are more numerous, the earliest being April 20 (Mina Abundancia) and the latest May 24 (Oposura). Further spring data are from Magdalena, May 13 to 15, 1925 (Dawson notes); Colonia Independencia in the Colorado delta, May 3, 1937 (van Rossem notes.).

*SIALIA SIALIS FULVA* BREWSTER

AZURE BLUEBIRD

*Sialia sialis fulva* Brewster, Auk, 2, Jan., 1885, 85 (Santa Rita Mountains, Arizona).—Ridgway, 1907, 146, part (Mina Abundancia; Bavispe River).—Griscom, 1932, 313, in text (Sonora; crit.).—van Rossem, 1934d, 463 (Mina Abundancia).

*Sialia sialis* (not *Motacilla sialis* Linn.) Allen, 1893a, 42 (Bavispee River).

*Sialia sialis azurea* (not *Sialia azurea* Swainson) Thayer and Bangs, 1906, 19 (La Chumata).—Ridgway, 1907, 887 (La Chumata).

Common in summer in the Upper Sonoran and Transition zones (oak-pine association) along the west slope of the Sierra Madre, although apparently in greatly decreasing numbers northerly. Occurs also in some, at least, of the northcentral ranges such as the Parjaritos Mountains (specimens from Arizona side in Miller coll.) and the Sierra de San Antonio. Observed so far at four points: Rancho Santa Bárbara, where common in June, 1937 (van Rossem notes); Mina Abundancia, apparently common in April, 1888 (series by Frazar in Mus. Comp. Zoöl.); La Chumata in May or June, 1905; Bavispe River, December 30, 1890. This last record indicates year-around residence, at least in part.

*SIALIA MEXICANA BAIRDI* RIDGWAY

CHESTNUT-BACKED BLUEBIRD

*Sialia mexicana bairdi* Ridgway, Auk, 11, No. 2, April, 1894, 148, in text (Camp 110, New Mexico=Cactus Pass, 20 miles east of Kingman, Mohave Co., Arizona); 1907, 152 (Alamos).—Bailey, 1928, 573 (Sonora).—van Rossem, 1931c, 277 (Nogales); 1934d, 463 (Alamos).—Moore, 1939d, 126 (Alamos).

*Sialia mexicana occidentalis* (not *Sialia occidentalis* Townsend) Ridgway, 1894b, 154 (Sonora).

*Sialia mexicana* (not of Swainson) Allen, 1893a, 42 (Nacory).

Seemingly breeds in the San Luís Mountains; elsewhere a winter visitant, when probably fairly common in spite of the scarcity of definite records. These are: Santa Cruz River on the boundary, November 6, 1892; west side of the San Luís Mountains, September 29, 1893 (Mearns notes); Nogales, February 17, 1929; Nácory, November 24, 1890; Alamos, February 8 to March 27, 1888. Bluebirds reported as seen commonly by Price (1899) and Rhoads (1905) in the Colorado delta may have belonged to any or all of three races. Lamb observed bluebirds near Hermosillo in December, 1932, but collected no specimens. Mearns' notes list a "♂ juv" taken on the west side of the San Luís Mountains on July 5, 1892, at which date he was on the Mexican side of the boundary.

*SIALIA CURRUROIDES* (BECHSTEIN)

MOUNTAIN BLUEBIRD

*Motacilla* s. *Sylvia Curruroides* "Borkh." Bechstein, in Latham, Allgem. Ueb. Vögel, 3, pt. ii, 1798, 546, pl. 121 (Virginien=Western America).

*Sialia curruroides* A.O.U. Comm., 1910, 367 (Sonora); 1931, 262 (Sonora).—Dawson, 1923, 781 (Sonora).—Bailey, 1928, 576 (Sonora).—van Rossem, 1931c, 278 (El Doctor; 12 miles W. of Magdalena; 15 miles W. of Nogales); 1934d, 463 (Alamos; Bacuachi).

*Sialia arctica* Allen, 1893a, 42 (Nacory).—Price, 1899, 93 (lower Colorado River).—Ridgway, 1907, 156 (Nacory).

Winter visitant in Sonoran and Tropical zones, though apparently in rather limited numbers and chiefly in the northern part of the State. Records extend from the Colorado delta in the northwest to Bacuachi in the northeast and south to Álamos. The earliest seasonal record is that of a specimen taken by Mearns and Holzner on the Santa Cruz River, November 7, 1892 (U. S. Nat. Mus. catl.); the latest is that of three specimens taken 12 miles west of Magdalena, February 25, 1929. Additional localities are Sonoyta, January 13, 1894 (U. S. Nat. Mus.); Pozo de Luís, December 29, 1893 to January 8, 1894 ("scarce," Mearns notes).

## Family SYLVIIDAE Old-World Warblers

### *POLIOPTILA CAERULEA AMOENISSIMA* GRINNELL

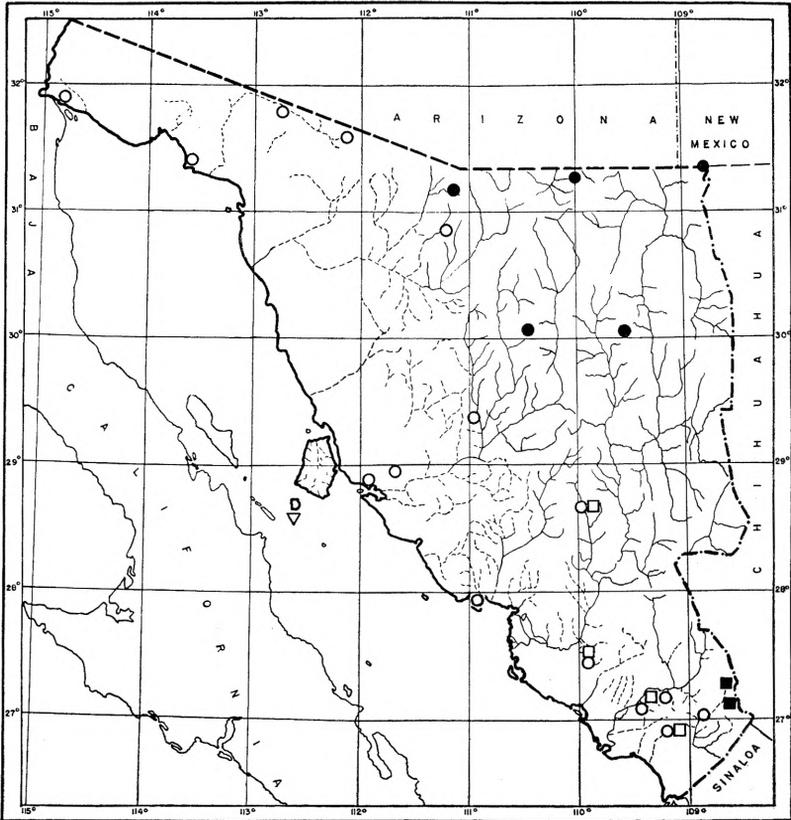
#### WESTERN GNATCATCHER

*Polioptila caerulea amoenissima* Grinnell, Proc. Calif. Acad. Sci., ser. 4, 15, No. 16, Sept. 15, 1926, 494 (Pleasant Valley, Mariposa Co., California).—A.O.U. Comm., 1931, 265 (Sonora).—van Rossem, 1931c, 278, part (El Doctor; Saric; Pesqueira; Tecoripa, part; Tesia, part; Chinobampo, part; Obregon, part); 1934d, 463, part (Guaymas; Alamos; Nacozari; Oposura).—Hellmayr, 1934, 487 (Sonora).—Huey, 1935, 255 (Punta Peñascosa).—van Rossem and Hachisuka, 1937d, 109 (La Chumata; "Opodepe" [=Oposura]).

*Polioptila caerulea obscura* (not of Ridgway) Allen, 1893a, 42 (Oputo; Bacadehuachy).—Jouy, 1894, 775 (Guaymas).—Ridgway, 1904, 720, part (Sonora).—Thayer and Bangs, 1906, 19 (La Chumata).—Hellmayr, 1911, 14 (Sonora).

*Polioptila caerulea* (not *Motacilla caerulea* Linnaeus) Belding, 1883, 343 (Guaymas).

Fairly common summer visitant in the Upper Sonoran zone (chiefly oak associations) from the Pajaritos Mountains eastward; south at least to latitude 30° (Sierra de Oposura and Sierra de San Antonio) and probably for some distance further in the eastern mountains. Occurs commonly in winter and as a transient over lowlands and foothills throughout the State, except that there are no winter records from the northeast. Additional stations are Camoa, February 8 (Bishop coll.); El Álamo, December 3 (Lamb notes); Kino Bay, February 17 (Nat. Hist. Mus.); San Pedro River, October 13; San José Mountains, August 8; Pozo de Luís, January 3; Sonoyta, January 14 (U. S. Nat. Mus.; Mearns notes); Colonia Independencia, May 3 (van Rossem notes).



MAP 18. Distribution of *Polioptila caerulea*. Circles, *P. c. amoenissima*; squares, *P. c. gracilis*; inverted triangle, *P. c. obscura*; hollow figures, winter stations outside established breeding ranges.

*POLIOPTILA CAERULEA GRACILIS* VAN ROSSEM AND HACHISUKA

SIERRA MADRE GNATCATCHER

*Polioptila caerulea gracilis* van Rossem and Hachisuka, Proc. Biol. Soc. Wash., 50, Aug. 7, 1937, 109 (Rancho Santa Bárbara, altitude 5000 feet, southeastern Sonora, México); *ibid.*, in text (Tesia).

*Polioptila caerulea amoenissima* (not of Grinnell) van Rossem, 1931c, 278, part (Tesia, part; Obregon, part; Chinobampo, part; Tecoripa, part); 1934d, 463, part (Mina Abundancia [?]).

Common summer visitant in the high Upper Sonoran zone (oak association at 4,500-5,000 feet) in the mountains in the extreme southeastern

part of the State. Although known in summer only from the general vicinity of the type locality, a more general distribution is to be supposed since it winters commonly in the Tropical zone lowlands west of the breeding area. Records for this latter region are Ciudad Obregón, November 3 to 11, 1929; Tesia, December 4 and 27, 1929, March 20, 1930; Chinobampo, February 18 and March 5, 1930; Tecoripa, March 10 and 23, 1929 (Dickey coll.).

*POLIOPTILA CAERULEA OBSCURA* RIDGWAY

SAN LUCAS GNATCATCHER

*Polioptila caerulea obscura* Ridgway, Proc. U. S. Nat. Mus., 5, 1882, 535, note (San José [del Cabo, Baja California, México]).

*Polioptila caerulea gracilis* (not of page 109!) van Rossem and Hachisuka, 1937d, 110, part (San Esteban Island).

Detected in midwinter on San Estéban Island (two specimens taken January 12, 1932) where probably resident. Gnatcatchers observed on April 17 and 18, 1930, were most likely of this race, but unfortunately no specimens were collected.<sup>51</sup>

*POLIOPTILA NIGRICEPS RESTRICTA* BREWSTER

BLACK-CROWNED GNATCATCHER

*Polioptila nigriceps restricta* Brewster, Auk, 6, No. 2, April, 1889 [separates issued January 31], 97 (Álamos, Sonora, México).—van Rossem, 1931a, 37 (Tecoripa; San Javier; crit.); 1931c, 278 (Tecoripa; San Javier; Tesia; Chinobampo; Obregon; Tobarí Bay; 10 miles N. of Guaymas; Guirocoba); 1934d, 464 (Álamos).—Hellmayr, 1901, 358 (southern Sonora); 1903, 25 (southern Sonora); 1934, 507 (Sonora).

*Polioptila restricta* Sharpe, 1901, 241 (Sonora).

*Polioptila nigriceps* (not of Baird) Ridgway, 1904, 729, part (Álamos).—Bangs, 1930, 242 (re. type).

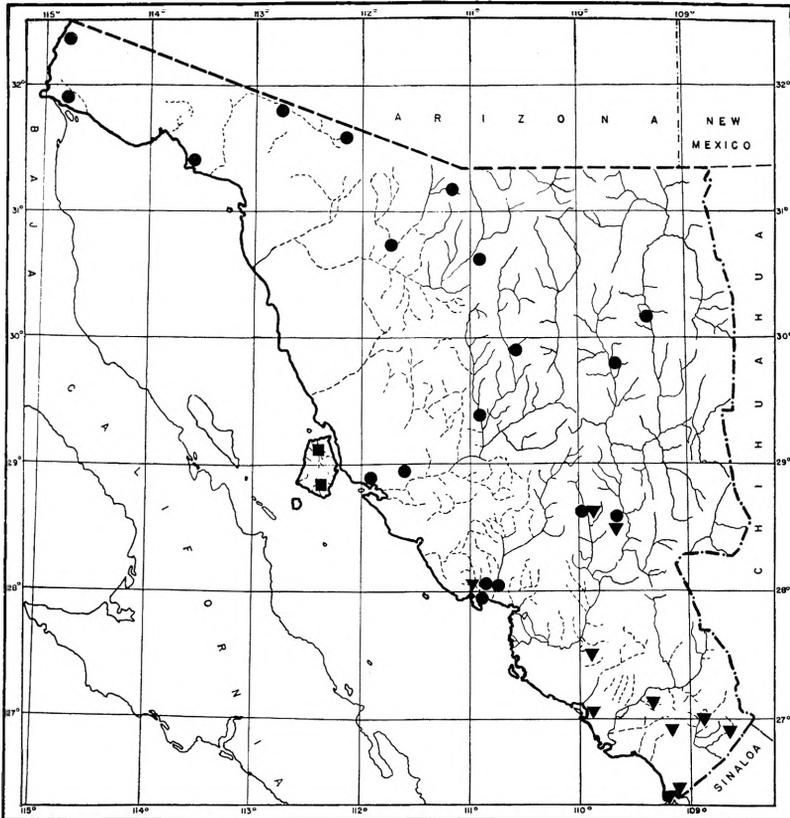
*Polioptila nigriceps nigriceps* Hellmayr, 1911, 17, part (Álamos).

*Polioptila bilineata albiloris* (not *Polioptila albiloris* Sclater and Salvin) Griscom, 1930, 7, part (Sonora).

Fairly common resident in the Tropical zone foothills and lowlands, north, coastwise, to about latitude 28°, and in interior river valleys to about 28° 40'. Additional stations are Agiabampo and Masocari Island.<sup>52</sup>

<sup>51</sup> Although I once stated that the San Estéban specimens were "unmistakably" *gracilis* they had not, at that time, been compared with *obscura*. The two races are of equally small size and while easily distinguishable in the case of summer males, winter specimens require closer discrimination. Dorsally, *gracilis* is paler and more ashy gray, and purer (less creamy) white below.

<sup>52</sup> The black summer cap of the males is sometimes, in specimens from ex-



MAP 19. Distribution of *Polioptila nigriceps* and *Polioptila melanura*. Triangles, *P. n. restricta*; circles, *P. m. lucida*; squares, *P. m. curtata*.

*POLIOPTILA MELANURA LUCIDA* VAN ROSSEM

PLUMBEOUS GNATCATCHER

*Polioptila melanura lucida* van Rossem, Condor, 33, No. 1, Jan., 1931, 36 (10 miles N. of Guaymas, Sonora, México); 1931c, 278 (El Doctor; Pesqueira; Tecoripa; San Javier; Saric; Guaymas); 1934d, 464 (Guaymas; Oposura).—Hellmayr, 1934, 508 (Sonora).—Huey, 1935, 255 (Punta Peñascosa).

*Polioptila plumbea* (not *Todus plumbeus* Gmelin) Belding, 1883, 343 (Guaymas).—Stephens, 1885, 228 (Altar).—Allen, 1893a, 42 (Oputo).—Price, 1899,

treme southern Sonora, almost as extensive as in *nigriceps*. The characters of restricted black cap, darker and less purely gray upper parts, and grayer, less purely white under parts are best accentuated in the northern part of the range. The differences in body coloration are slight and I had previously (1931a) overlooked them.

93 (south of Yuma).—Ridgway, 1904, 731, part (Batamotal; Senoyta).—Thayer and Bangs, 1906, 19 (Opodepe).—A.O.U. Comm., 1910, 358, part (Sonora).

*Polioptila plumbea plumbea* Hellmayr, 1911, 13, part (Sonora).—Bailey, 1928, 584, part (Sonora).

*Polioptila melanura melanura* (not *Polioptila melanura* Lawrence) A.O.U. Comm., 1931, 265, part (Sonora).—Friedmann, 1934, 33 (Guaymas).

Fairly common resident of Lower Sonoran and Tropical zone desert associations from the Arizona boundary southward to about latitude 28° coastwise and to about 28° 40' in the interior. Additional stations are Rancho Costa Rica (Lamb notes); Puerto Libertad (Nat. Hist. Mus.); near Magdalena (Mus. Vert. Zool.); Kino and Tepopa Bays (Dickey coll.); Pozo de Luís (Mearns' notes).

*POLIOPTILA MELANURA CURTATA* VAN ROSSEM

TIBURÓN ISLAND GNATCATCHER

*Polioptila melanura curtata* van Rossem, Trans. San. Diego Soc. Nat. Hist., 7, No. 12, July 28, 1932, 140 (Tiburón Island, Sonora, México).—Hellmayr, 1934, 508, footnote (Tiburón Island).

*Polioptila plumbea* (not *Todus plumbeus* Gmelin) Townsend, 1923, 25, part (Tiburón Island).

Fairly common resident of brushy areas on Tiburón Island.

Family REGULIDAE Kinglets

*REGULUS CALENDULA CALENDULA* (LINNAEUS)

EASTERN RUBY-CROWNED KINGLET

*Motacilla calendula* Linnacus, Syst. Nat., ed. 12, 1, 1766, 337 (in Pennsylvania=Philadelphia.)

*Corthylio calendula calendula* van Rossem, 1934d, 464 (Nacozari).

*Corthylio calendula cineraceus* (not *Regulus calendula cineraceus* Grinnell) van Rossem, 1931c, 279, part (El Doctor; Tesia, part).

A winter visitant, probably fairly common though greatly outnumbered by *cineraceus*. The four specimens recorded above (El Doctor, February 1, 1929; Tesia, March 18, 1930; Nacozari, March 21, 1887), seemingly are like eastern *calendula*. Whether they actually are that race or *grinnelli-cineraceus* intergrades is purely speculative.

*REGULUS CALENDULA CINERACEUS* GRINNELL

WESTERN RUBY-CROWNED KINGLET

*Regulus calendula cineraceus* Grinnell, Condor, 6, No. 1, Jan., 1904, 25 (Strain's Camp, Mount Wilson, Los Angeles Co., California).

*Corthylio calendula cineraceus* van Rossem, 1931 c, 279, part (Nogales; San

Javier; Pesqueira; Tesia, part); 1932, 141 (Tiburón Island); 1934d, 464 (Alamos; Mina Abundancia).

[?] *Regulus calendula* (not *Motacilla calendula* Linnaeus) Allen, 1893a, 41 (Los Cuevos; Bacadehuachy; Nacory; Napolera).—Price, 1899, 93 (lower Colorado River).—Stone and Rhoads, 1905, 686 (lower Colorado River).

*Regulus calendula calendula* Ridgway, 1904, 705, part (Sonora; crit.).

Common winter visitant throughout the State from sea level to at least the lower parts of the Transition zone. Further records are El Álamo, December 4, 1932 (Lamb notes); Guaymas, March 24 and 25, 1905 (Mus. Comp. Zool.); San José Mountains, October 2, 1892; Sonoyta, January 19, 1894; Colorado River at Monument 204, March 14, 1894 (U. S. Nat. Mus.). Extreme dates are September 15 (Los Cuevos) and April 13 (Mina Abundancia).

### Family MOTACILLIDAE Pipits

#### *ANTHUS SPINOLETTA PACIFICUS* TODD

##### WESTERN PIPIT

*Anthus rubescens pacificus* Todd, Proc. Biol. Wash., 48, May 3, 1935, 63 (Red Pass, 6000 feet, British Columbia).

*Anthus spinoletta rubescens* (not *Alauda rubescens* Tunstall) van Rossem, 1931c, 279 (El Doctor); 1934d, 464 (Alamos; Oposura; Granados).

*Anthus pensilvanicus* (not *Alauda pensilvanica* Latham) Price, 1899, 93 (lower Colorado River).

Common winter visitant to river valleys throughout the State. Unpublished records are San Pedro River, October 17 and 21, 1892; Santa Cruz River, November 6 to 13, 1892; Sonoyta, January 12, 1894; Colorado River at Monument 205, March 19, 1894 (U. S. Nat. Mus.; Mearns notes). Extreme dates are October 17 (San Pedro River) and May 6 (Granados).

### Family BOMBYCILLIDAE Waxwings

#### *BOMBYCILLA CEDRORUM* VIEILLOT

##### CEDAR WAXWING

*Bombycilla cedrorum* Vieillot, Ois. Amér. Septen., 1, 1807 [1808], 80, pl. 57 (eastern North America).—van Rossem, 1931c, 279 (Saric; Guirocoba); 1934d, 464 (Oposura; Hacienda de San Rafael).

Common spring migrant, likely to appear almost anywhere at lower elevations though there are no records from the northwestern deserts. There is, however, the record of a vagrant from Quitovaquita on the Arizona side of the boundary, November 30, 1939 (Huey, 1942, p. 370).

Additional records are from Rancho La Arizona, where common in flocks from May 5 to 9, 1937 (van Rossem notes); Magdalena, in flocks between April 20 and May 12, 1925 (Dawson notes); Guaymas, March 1 and 19, 1905 (Mus. Comp. Zoöl.). Extreme dates are March 1 (Guaymas) and May 23 (Rancho La Arizona). Absence of fall and winter records are, in all probability, due simply to lack of observation at these seasons.

## Family PTILOGONATIDAE Silky Flycatchers

### *PHAINOPEPLA NITENS LEPIDA* VAN TYNE

#### NORTHERN PHAINOPEPLA

*Phainopepla nitens lepida* Van Tyne, Occ. Papers Bost. Soc. Nat. Hist., 5, May 22, 1925, 149 (Riverside, California); *ibid.*, in text (Sonora).—van Rossem, 1931c, 279 (Sarc; Obregon; Tesia; Chinobampo; El Alamo; 10 miles W. of Magdalena; 15 miles S.W. of Nogales; Guaymas); 1932, 141 (Tiburón Island); 1934d, 464 (Ranken's Ranch; Cumpas; Nacoziari; Oposura).—Hellmayr, 1935, 108 (Cerro Blanco).

*Phainopepla nitens* (not *Ptilogonys nitens* Swainson) Baird, 1859, 11 (Los Nogales).—Belding, 1883, 343 (Guaymas).—Stephens, 1885, 228 (Altar).—Allen, 1893a, 40 (Opoto; Nacory).—Stone and Rhoads, 1905, 685 (50 miles below Yuma).—Thayer and Bangs, 1906, 20 (Opodepe).—Townsend, 1923, 22 (Tiburón Island).—Sheffler, 1931a, 137 (25 miles S. of Nogales).

*Cichlopsis nitens* Baird, 1858, 320 (Los Nogales).

Common resident of Sonoran and Tropical zones throughout the State, with emphasis on mesquite associations in the Tropical and Lower Sonoran, and oak associations in the Upper Sonoran. Some additional localities are La Noria, December 4; Sulphur Spring Valley on the boundary, October 7; Sonoyta, January 14; San José Mountains, October 8 (U. S. Nat. Mus. catl.); Camoa, February 18 (Bishop coll.); Rancho Costa Rica, December 15 (Lamb notes); Agiabampo; Hermosillo; San Luís; Colonia Independencia; Guirocoba, all in early May (van Rossem notes).

## Family LANIIDAE Shrikes

### *LANIUS LUDOVICIANUS GAMBELI* RIDGWAY

#### CALIFORNIA SHRIKE

*Lanius ludovicianus gambeli* Ridgway, Man. No. Amer. Birds, 1887, 467 (California, especially coast district=Calaveras County); 1904, 250, part (Alamos).—Brewster, 1902, 172, part (Alamos).—van Rossem, 1931c, 280 (Obregon; Tesia; Tecoripa; 15 mi. S. of Nogales); 1934d, 465 (Alamos; Oposura).—Miller, 1931, 81 (Sonora distr. in winter; map).—Huey, 1935, 256 (Punta Peñascosa).—Hellmayr, 1935, 216 (Obregon, etc.).

*Lanius ludovicianus nevadensis* Miller, 1931, 74, part (Sonora; winter).

Common winter visitant to deserts and river valleys throughout the State; more numerous, however, westwardly. Additional stations are Camoa, February 14, 1931 (Bishop); San José de Guaymas, January 18, 1933; Kino Bay, December 28, 1931 (Dickey); and February 18, 1935 (Nat. Hist. Mus.). Extreme seasonal dates are October 31 (Ciudad Obregón) and April 9 (Oposura).

*LANIUS LUDOVICIANUS SONORIENSIS* MILLER

SONORA SHRIKE

*Lanius ludovicianus sonoriensis* A. H. Miller, Condor, 32, No. 3, May, 1930, 155 (White-tail Cañon, Chiricahua Mountains, Cochise County, Arizona); *ibid.* in text (Sonora); 1931, 67 (Sonora; many locs. on maps pp. 66 and 75).—van Rossem, 1931c, 279 (Tesia; Tecoripa; 12 mi. W. of Magdalena; San Luis; El Doctor; Saric; 15 mi. W. of Nogales); 1932, 141 (Tiburón Island); 1934d, 465 (Guaymas; Alamos; Bacuachi).—Huey, 1935, 256 (Punta Peñascosa).—Hellmayr, 1935, 215 (Sonora).

*Lanius ludovicianus excubitorides* (not *Lanius excubitorides* Swainson) Belding, 1883, 343 (Guaymas).—Townsend, 1890, 138 (near mouth of Rio Colorado).—Jouy, 1894, 778 (Nogales).—Brewster, 1902, 172, part (Guaymas; Alamos).—Ridgway, 1904, 246 (Sonora).—Thayer and Bangs, 1906, 20 (Opo-depe).

*Lanius ludovicianus excubitoroides* Allen, 1893a, 40 (Cachuta; San Pedro).

[?] *Lanius ludovicianus gambeli* (not of Ridgway) Townsend, 1923, 22, part (Tiburón Island).

*Lanius ludovicianus nevadensis* Miller, 1931, 74, part (Sonora; winter).

Fairly common resident of Sonoran and Tropical zone deserts and river valleys. Both summer and winter records of *sonoriensis* in typical form pretty well cover the State and the race is probably resident. During the winter the resident population is augmented by variously non-typical individuals, most likely seasonal visitants from north of the boundary. Additional stations are Guirocoba, April 5, 1931 (Bishop coll.); Ures, January 31, 1933 (Dickey coll.); Santa Cruz River, November 8 and 12, 1892; San Pedro River, October 12, 1892; Pozo de Luis, January 4, 1894 (U. S. Nat. Mus.).

Family VIREONIDAE VIREOS

*VIREO PALLENS PALUSTER* MOORE

MANGROVE VIREO

*Vireo pallens paluster* Moore, Proc. Biol. Soc. Wash., 51, May 19, 1938, 69 (Isla Las Tunas, Gulf coast of northwestern Sinaloa, México).

Rare summer visitant (possibly resident) in the Tropical zone mangrove association in the extreme southwest. There is one specimen of

record, taken by van Rossem (Dickey coll.) on Masocari Island, May 14, 1937. It is a male which was in full breeding condition.

*VIREO HUTTONI STEPHENSI* BREWSTER

STEPHENS VIREO

*Vireo huttoni stephensi* Brewster, Bull. Nuttall Orn. Club, 7, July, 1882, 142 (Chiricahua Mountains, Arizona).—Allen, 1893a, 40 (Bacadehuachy).—Rhoads, 1893, 241 (Bacadehuachu; Mina Abundancia).—Thayer and Bangs, 1906, 20 (La Chumata).—van Rossem, 1931c, 280 (15 miles S. W. of Nogales).—1934d, 465 (Mina Abundancia; Oposura).—Hellmayr, 1935, 120 (Cerro Blanco).

Resident in Upper Sonoran and Transition zones from the Pajaritos Mountains eastward; south to the Sierra de San Antonio in the west, and along the eastern ranges the full length of the State. Altitudes range from about 500 feet (Quiriego) to well over 6,000 feet (Yécora) but the distribution of this species here, as elsewhere, seems to be governed largely by oak associations rather than by climatic zones. Further specimens (taken by Lloyd in 1888) have been examined in the British Museum as follows: Yécora, April 11; Quiriego, May 1, 1888.

*VIREO HYPOCHRYSEUS NITIDUS* VAN ROSSEM

NORTHERN GOLDEN VIREO

*Vireo hypochryseus nitidus* van Rossem, Bull. Mus. Comp. Zool., 77, No. 7, Dec., 1934, 465 (Hacienda de San Rafael, Sonora, México).—Peters, 1943, 88 (re. type).

*Vireo hypochryseus hypochryseus* (not *Vireo hypochryseus* Sclater) Hellmayr, 1935, 122, part (Hacienda de San Rafael).

Evidently a rare summer visitant to the Tropical zone foothills in the extreme southeast. The only Sonora-taken specimen, aside from the original series of seven taken by Frazar at Hacienda de San Rafael between May 2 and 10, 1888, seems to be a male in breeding condition taken by van Rossem at San Francisco Cañon (willow-cottonwood association) on May 29, 1937.<sup>53</sup>

<sup>53</sup>The systematic position of this peculiar vireo is obscure. On the arbitrary basis of wing formula it must, of course, be placed in the subgenus *Vireo*. But the pattern of coloration (prominent superciliary stripe and obsolete wing bars) is so typically "*Vireosylva*" that one may easily suspect affinities in that direction.

*VIREO VICINIOR* COUES

## GRAY VIREO

*Vireo vicinior* Coues, Proc. Acad. Nat. Sci. Phila., [18], No. 1, Jan.-March [June 11], 1866, 75 (Fort Whipple, Arizona).—Belding, 1883, 343 (Guaymas); 1890, 204 (Guaymas).—Brewster, 1902, 177 (Guaymas).—Ridgway, 1904, 203 (Guaymas).—A.O.U. Comm., 1910, 303 (Sonora); 1931, 276 (Sonora).—Dawson, 1923, 583 (Sonora).—van Rossem, 1931c, 281 (Saric); 1932, 141 (Tiburón Island; San Esteban Island; San Carlos Bay); 1934d, 466 (Guaymas).—Hellmayr, 1935, 123 (Guaymas; Saric).

Fairly common winter visitant in a limited area from San Estéban and Tiburón Islands south to Guaymas. It has been detected also as a transient at Rancho La Arizona ["Saric"], September 15, 1929. Extreme dates are September 15 (Rancho La Arizona) and "April" (Guaymas).

*VIREO BELLII ARIZONAE* RIDGWAY

## ARIZONA VIREO

*Vireo bellii arizonae* Ridgway, Proc. Biol. Soc. Wash., 16, No. 28, Sept. 30, 1903, 108 (Tucson, Arizona); *ibid.*, 1904, 207 (Sonora).—Thayer and Bangs, 1906, 20 (Opodepe).—Oberholser, 1917, 322 (Sonora).—van Rossem, 1931c, 280 (San Javier; Saric; Obregon; Tesia; Chinobampo; Guaymas; Tobarí Bay); 1934d, 466 (Oposura; Guaymas).—Hellmayr, 1935, 124 (Sonora).—Huey, 1942, 370 (Dowling Well).

*Vireo belli arizonae* Bailey, 1928, 601 (Sonora).

*Vireo pusillus* (not of Coues) Belding, 1883, 343 (Guaymas).—Brewster, 1902, 176 (Oposura).

Summer visitant in Lower Sonoran and Tropical zones practically everywhere. The westernmost recorded northern locality is Dowling Well on the boundary May 10, 1939, although this is, technically, "50 yards" within Arizona territory. Resident in the Tropical zone in the southern part of the State, or even (casually?) as far north as Ures in the Sonora River valley (January 31, 1933; Dickey coll.). An unpublished summer locality in the northeast is Pilares, June 24 and July 1, 1935 (Univ. Mich.). Arrival and departure dates for northern localities are April 16 (Magdalena; Dawson notes) and September 16 (Rancho La Arizona).

*VIREO SOLITARIUS PLUMBEUS* COUES

## PLUMBEOUS VIREO

*Vireo plumbeus* Coues, Proc. Acad. Nat. Sci. Phila., 1866, 74 (Fort Whipple, Arizona).

*Vireo solitarius plumbeus* van Rossem, 1931c, 281 (Tesia; Chinobampo); 1934d, 467 (Alamos; Nacozeri).

In all probability a summer visitor to the Transition zone in the mountains of the northeastern part of the State. The single record for that season was taken in the San Luís Mountains by Mearns. Winter visitant, apparently not uncommon, on the Tropical zone coastal plain and adjacent foothills from the Mayo River valley southward. Detected but once as a transient north of the winter area; Nacozari, March 24, 1887, a circumstance which indicates the mountains rather than lower levels as the main migration route. Additional localities are Camoa, February 29; Chinobampo, March 4, 1931 (Bishop coll.); Agiabampo, April 20, 1933 (Lamb coll.); San Luís Mountains, July 5, 1892, on which date Mearns was definitely on the Mexican side of the boundary.

*VIREO SOLITARIUS PINICOLUS* VAN ROSSEM

SIERRA MADRE VIREO

*Vireo solitarius pinicolus* van Rossem, Bull. Mus. Comp. Zool., 77, No. 7, Dec., 1934, 467 (Mound Valley, Chihuahua, México); *ibid.*, in text (Mina Abundancia).

Common summer visitant in high Upper Sonoran and Transition zones in the southeastern mountains, north at least to latitude 28° 30'. In addition to the initial series from Mina Abundancia, specimens have been examined from Trinidad, April 17, 1888 (Brit Mus.), and Rancho Santa Bárbara, June 7 to 11, 1937, where breeding commonly in oak-pine-sycamore associations above 4,500 feet (Dickey coll.; van Rossem notes). Presumably this race is migratory; at any rate no fall or winter specimens have been collected in Sonora, nor in adjacent areas in Chihuahua after early September. The earliest spring record is April 13 (Mina Abundancia).

*VIREO SOLITARIUS CASSINII* XANTUS

CASSIN VIREO

*Vireo cassinii* Xantus, Proc. Acad. Nat. Sci. Phila., 1858, sig. 7-9, April-May [May 8], 117 (Fort Tejón, California).

*Vireo solitarius cassinii* van Rossem, 1931c, 281 (Tecoripa; Saric; Chinobampo); 1934d, 466 (Alamos; Mina Abundancia; Nacozari; Oposura).

*Vireo solitarius cassinii* Allen, 1893a, 40 (Cachuta).—Bailey, 1928, 602 (San Luis Mountains).

Common spring and fall transient through the eastern foothills and mountains; seemingly, also, a winter visitant in small numbers in the Tropical zone southerly. Additional stations are San Bernardino Ranch,

September 2, 1892; Cajón Bonito Creek, September 27, 1893 (Mearns' notes). Fall dates are from August 24 (Rancho La Arizona) to September 27 (Cajón Bonito Creek); spring dates are from March 9 (Camoá; Bishop coll.) to May 30 (Oposura), the latter almost certainly belated migrants. Winter dates, which probably come in that category rather than that of early migrants, are February 13 (Alamos) and February 21 (Chinobampo).

*VIREO OLIVACEUS HYPOLEUCUS* VAN ROSSEM AND HACHISUKA

NORTHERN YELLOW-GREEN VIREO

*Vireo virescens hypoleucus* van Rossem and Hachisuka, Proc. Biol. Soc. Wash., 50, Sept. 30, 1937, 159 (San Francisco Cañon, eastern boundary of Sonora at lat. 27° N., México); *ibid.*, in text (Oposura; Rancho Santa Barbara; Guirocoba; Tesia).

*Vireo olivaceus hypoleucus* Zimmer, 1941, 4 (crit.).

*Vireo flavoviridis hypoleucus* Wetmore, 1943, 308, in text (char.; crit.).

*Vireosylva flavoviridis flavoviridis* (not *Vireosylva flavoviridis* Cassin) Peters, 1931a, 576 (Sonora).

*Vireo olivaceus flavoviridis* van Rossem, 1934d, 467 (Oposura).—Moore, 1938a, Sonora; crit.).

Common summer visitant in Tropical, Sonoran, and even, locally, in lower parts of the Transition zones in the southern part of the State, north, perhaps only casually, to Oposura or the Sierra de Oposura. Although not uncommon to an altitude of 5,500 feet, the metropolis seems to be the Tropical zone foothills below about 1,500 feet. The earliest arrival date is May 29 (San Francisco Cañon). There are no fall departure data.<sup>54</sup>

*VIREO GILVUS SWAINSONII* BAIRD

WESTERN WARBLING VIREO

*Vireo swainsonii* Baird, Rep. Expl. and Surv. R. R. Pac., 9, 1858, xxxv [=xxxv], 336 (Petaluma, Cal.[ifornia]).

*Vireo gilvus swainsonii* van Rossem, 1931c, 228 (Tecoripa; Saric; San Javier; Tesia; Guirocoba; San Jose de Guaymas); 1934d, 467 (Alamos; Nacozari; Oposura).—Hellmayr, 1935, 151 (northern Sonora).

*Vireo gilvus swainsoni* A.O.U. Comm., 1931, 279 (northern Sonora).—Huey, 1942, 370 ("April 22 and May 14" [=Quitovaquito; Gray's Ranch; Dowling Well]).

<sup>54</sup>The late spring migration of *hypoleucus* takes it in *breeding condition* through the range of *flavoviridis*, a factor not generally appreciated. The differences between the two are considerable when *known* breeding series from Central America and Sonora are compared.

*Vireo gilva swainsoni* Bailey, 1928, 605 (northern Sonora).

*Vireosylva gilva swainsoni* A.O.U. Comm., 1910, 299 (northern Sonora).

Common migrant everywhere at lower levels. Winters, apparently rarely, in the extreme south. Some specimens or records not cited above are Guaymas, March 5 to 27, 1905 (Mus. Comp. Zoöl.); San José Mountains, August 9, 1893, and October 2, 1892 (U. S. Nat. Mus. catl.); boundary at Monument 90, September 14, 1892; Cajón Bonito Creek, September 8, 1893 (Mearns' notes); Agiabampo, May 18, 1937 (Dickey coll.). Extreme fall dates are August 9 and October 2 (San José Mountains). Spring extremes are March 5 (Guaymas) and June 11 (Oposura). The single winter record is from Álamos, February 9, 1888.<sup>55</sup>

*VIREO GILVUS BREWSTERI* (RIDGWAY)

CHIHUAHUA WARBLING VIREO

*Vireosylva gilva brewsteri* Ridgway, Proc. Biol. Soc. Wash., 16, Sept. 30, 1903, 108 (Bravo, Chihuahua, México); 1904, 158 (Mina Abundancia).

*Vireo gilvus brewsteri* van Rossem, 1934d, 468 (Mina Abundancia).

Summer visitant in the high Upper Sonoran and Transition zones in the southeastern mountains. The northern limits of the range are unknown; however, it extends north to 28° in adjacent Chihuahua (Bravo). Aside from Mina Abundancia, the only Sonora locality seems to be Rancho Santa Bárbara, where *brewsteri* was found to be breeding uncommonly in the oak-pine association above 5,000 feet in early June, 1937 (Dickey coll.; van Rossem notes). The earliest arrival date is April 9 (Mina Abundancia); there are no fall departure data for Sonora.

Family PARULIDAE Wood Warblers

*VERMIVORA CELATA CELATA* (SAY)

EASTERN ORANGE-CROWNED WARBLER

*Sylvia celata* Say, in Long, Exped. Rocky Mts., 1, 1823, 169, note (Engineer Cantonment near Council Bluff=Omaha, Nebraska).

*Vermivora celata celata* van Rossem, 1931c, 282 (San Javier; Obregon; Tesia; Chinobampo; Guirocoba); 1934d, 468 (Alamos; Oposura).

Fairly common winter visitant southerly; probably occurs generally as a transient. Dates range from November 7 to April 22.

<sup>55</sup>Although northern Sonora is generally considered to be within the breeding range of *swainsonii*, such may not be the case. June 11 seems a very late date for transients; however, specimens taken at Rancho La Arizona as late as