

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, 1888.⁵⁵

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.

⁵⁵Although 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

VERMIVORA CELATA ORESTERA OBERHOLSER

ROCKY MOUNTAIN ORANGE-CROWNED WARBLER

Vermivora celata orestera Oberholser, Auk, 22, No. 2, April, 1905, 243 (Willis, New Mexico).—van Rossem, 1931c; 282 (Tesia; Tecoripa; San Javier); 1934d, 468 (Oposura; Nacozari; Granados).

Winter visitant in the southern part of the State. Detected as a transient at but one northern point,—Nacozari, March 29, 1887. However, distribution during migrations is probably general, particularly in the central and eastern areas. Two additional stations are Kino Bay, December 28, 1931 (Dickey coll.), and Camoa, February 16 and 18, 1931 (Bishop coll.). There are no records for fall; the latest spring record is May 6 (Oposura).

VERMIVORA CELATA LUTESCENS (RIDGWAY)

LUTESCENT WARBLER

Helminthophaga celata var. *lutescens* Ridgway, Amer. Journ. Sci., ser. 3, 4, No. 23, Nov. [Dec.], 1872, 457 (Pacific Coast from Kadiak to Cape San Lucas =Fort Kenai, Alaska).

Vermivora celata lutescens van Rossem, 1931c, 282 (Tecoripa; San Javier; Saric; Obregon; Tesia; Chinobampo); 1932, 142 (Tiburón Island); 1934d, 486 (Guaymas; Alamos; Nacozari).—Huey, 1935, 256 (Punta Peñascosa).

Common winter visitant from near the head of the Gulf (Punta Peñascosa) southward, though apparently most numerous in the Tropical zone lowlands. During migrations it occurs generally over most of the State. Additional records are from Kino Bay, February 18, 1935 (Nat. Hist. Mus.); 2 miles south of Magdalena, March 26, 1936; Tiburón Island, April 3, 1936 (Mus. Vert. Zool.); San Pedro River on the boundary, October 11, 1892 (U. S. Nat. Mus.). Extreme dates are September 16 (Rancho La Arizona) and April 16 (Oposura).⁵⁶

May 31 were definitely (*vide* Wright) in this category. In view of the endorsement of *Vireo gilvus leucopolius* (Oberholser) by Sibley (Condor, 1940, pp. 255-258), Miller (Condor, 1942, pp. 262-264), and most recently by the A.O.U. Committee (1944), I have re-examined all the material in local collections in an attempt to distinguish this proposed race and to identify the Sonora transients accordingly. Great Basin birds in summer plumage perhaps average very slightly paler, but there is so much variation that attempts to identify individual migrant specimens are not (to me) feasible.

⁵⁶These three races of the Orange-crowned Warbler seemingly occur in much the same manner and proportionate numbers as on the Baja California peninsula. Of the three, *lutescens* is by far the commonest and approximates *orestera* and *celata* combined, the number of each examined being 30, 19, and 13, respectively.

VERMIVORA RUFICAPILLA RIDGWAYI VAN ROSSEM

CALAVERAS WARBLER

Vermivora ruficapilla ridgwayi van Rossem, Proc. Biol. Soc. Wash., 42, June 25, 1929, 179 [new name for *V. r. gutturalis* (Ridgway), pre-occupied] (East Humboldt Mountains, Nevada); 1931c, 281 (San Javier; Saric; Chinobampo); 1934d, 469 (Nacozeni; Alamos; Oposura).

Fairly common migrant through the central and eastern foothills. Fall dates range from August 17 to September 16 (Rancho La Arizona): detected more frequently in spring, at which season extreme dates are March 10 (Alamos) and May 13 (Oposura). There is one winter record, possibly that of an early migrant, from Chinobampo in the southern part of the State, February 19, 1930 (Dickey coll.).

VERMIVORA VIRGINIAE (BAIRD)

VIRGINIA WARBLER

Helminthophaga virginiae Baird, Birds No. Amer., Atlas, 1860, vii, note, pl. 79, fig. 1 (Fort Burgwyn, New Mexico).

Vermivora virginiae van Rossem, 1931c, 281 (Guircoba); 1934d, 469 (Oposura).

Detected as a decidedly uncommon migrant through the eastern foothills. The three localities of record are Guadalupe Cañon, August 31, 1893 (U. S. Nat. Mus.); Oposura, four specimens April 12 to May 10, 1887 (Mus. Comp. Zoöl); Guircoba, May 7, 1930 (Dickey coll.).

VERMIVORA LUCIAE (COOPER)

LUCY WARBLER

Helminthophaga luciae J. G. Cooper, Proc. Calif. Acad. Sci., 2, sig. 8 [before Dec.], 1861, 120 (near Fort Mojave, in the Colorado Valley, [Arizona]).—A.O.U. Comm., 1895, 270 (Sonora).

Helminthophila luciae Jones, 1900, 49 (Sonora).—Ridgway, 1902, 473 (Sonora).

H. [elminthophila] luciae Ridgway, 1887d, 490 (Sonora).—Coues, 1903, 313 (Sonora).

Vermivora luciae Sharpe, 1909, 99 (Sonora).—van Rossem, 1931c, 281 (Saric; Tecoripa; Tesia); 1934d, 469 (Alamos; Nacozeni; Oposura).—Huey, 1942, 370 (Gray's Ranch on the boundary [Arizona side]).

Common summer visitant in the Lower Sonoran zone in the northern part of the State, south at least to latitude 29° 45' in the Moctezuma River valley; also occurs as a transient through more southerly localities. Some unpublished records are Magdalena, March 26, 1936 (Mus. Vert.

Zoöl.); Colorado River at Monument 204, March 14, 1894 (U. S. Nat. Mus.); Guadalupe Cañon at Monument 72, August 26, 1893 (Mearns' notes), the two last being, probably, the basis of earlier citations for Sonora. The earliest arrival date is March 10 (Álamos); the latest fall date is August 29 (Rancho La Arizona).

VERMIVORA SUPERCILIOSA PALLIATA VAN ROSSEM

JALISCO WARBLER

Vermivora superciliosa palliata van Rossem, Proc. Biol. Soc. Wash., 52, February 4, 1939, 12 (Sierra Nevada de Colima, Jalisco, México).

Vermivora superciliosa mexicana (not *Parula mexicana* Bonaparte or *Compsothlypis mexicana* Cabanis) van Rossem, 1934d, 469 (Mina Abundancia; crit.).

Known from a single specimen taken by Frazar at Mina Abundancia on April 9, 1888. The species is common in the Transition zone in Chihuahua at various localities very close to the Sonora boundary.

PARULA PITIAYUMI PULCHRA (BREWSTER)

NORTHERN OLIVE-BACKED WARBLER

Compsothlypis pulchra Brewster, Auk, 6, No. 2, April, 1889 [separates issued Jan. 31], 93 (Hacienda de San Rafael, Chihuahua [=Sonora], México).

Compsothlypis pitayumi pulchra Ridgway, 1902, 491 (Hacienda de San Rafael).—Thayer and Bangs, 1906, 21 (La Chumata).—Chapman, 1925, 198 (Sonora).—van Rossem, 1931c, 282 (Guirocoba); 1934d, 470 (Hacienda de San Rafael; Mina Abundancia).—Hellmayr, 1935, 350 (Hacienda de San Rafael).

Common summer visitant in the foothills and mountains in the extreme southeast. Also occurs, apparently as an isolated colony, in the Sierra de San Antonio in the northcentral part of the State. An oak association rather than zonal considerations seems to be the factor governing distribution, at least in the southeast. Altitudinal limits so far determined are 1,500 feet (near Guirocoba) and 5,500 feet at Rancho Santa Bárbara. The earliest spring date is April 20 (Guirocoba and San Rafael). There are no fall departure data for Sonora, nor even for adjacent localities in Chihuahua.⁵⁷

⁵⁷The presence of this warbler at a spot so distant from the normal range as the Sierra de San Antonio seems extraordinary and perhaps is a case of isolation paralleling those of *Platyptaris aglaiae* and *Tyrannus crassirostris*. It is to be remarked that Cahoon did not encounter the species in his extensive work in all zones about "Oposura," nor did Lloyd in his route through the southeast from latitude 28° 30' southward. The single specimen collected by Brown at La Chumata (May 26, 1905) is not typical of *pulchra* and probably is representative of an undescribed race.

PEUCEDRAMUS OLIVACEUS ARIZONAE MILLER AND GRISCOM

ARIZONA OLIVE WARBLER

Peucedramus olivaceus arizonae Miller and Griscom, Amer. Mus. Novitates, No. 183, July 18, 1925, 10 (Paradise, Chiricahua Mts., Arizona).—van Rossem, 1934d, 470 (Mina Abundancia).

Presumably resident in the Transition zone of the mountains along the eastern boundary. The few specimens taken within Sonora limits, however, represent only April and June. Three taken by Frazar at Mina Abundancia, April 18 and 23, 1888; one taken by Lloyd at Yécora, "8500 ft.," April 16, 1888; one taken by van Rossem (not preserved) at Rancho Santa Bárbara, 5,500 feet, June 9 (others seen June 7 and 16), 1937, are the only records.

DENDROICA AESTIVA RUBIGINOSA (PALLAS)

ALASKA YELLOW WARBLER

Motacilla rubiginosa Pallas, Zoogr. Rosso-Asiatica, 1, 1811, 496 (Kodiak Island [Alaska]).

Dendroica aestiva rubiginosa van Rossem, 1931c, 282 (Guaymas; San Jose de Guaymas); 1934d, 470 (Mina Abundancia).—Hellmayr, 1935, 365 (Guaymas).

Probably a fairly common transient at lower levels throughout the State, although the scattered records to date are all for the spring migration. Further specimens have been examined from Gray's Well on the boundary May 12, 1939 (Nat. Hist. Mus.); Masocari Island, May 15, 1937; Agiabampo, May 18, 1937 (Dickey coll.); Guirocoba, June 8, 1941 (Sheffler coll.), and June 30, 1931 (Bishop coll.). The last seems an extremely late date but there is no doubt as to the identity. Extreme dates are April 16 (Mina Abundancia) and June 30 (Guirocoba).

DENDROICA AESTIVA MORCOMI COALE

WESTERN YELLOW WARBLER

Dendroica aestiva morcomi Coale, Bull. Ridgway Orn. Club, No. 2, April, 1887, 82 (Fort Bridger, Wyoming).—Brewster, 1888b, 139, in text (Sonora).—van Rossem, 1931c, 283 (Saric; Guirocoba; San Jose de Guaymas); 1934d, 470 (Oposura).

Fairly common transient, probably generally distributed since the four localities of record are widely scattered geographically. Spring dates are from April 30 (Oposura) to May 25 (Rancho La Arizona ["Saric"]). Fall dates are from July 31 to September 9 (Rancho La Arizona).

DENDROICA AESTIVA BREWSTERI GRINNELL

CALIFORNIA YELLOW WARBLER

Dendroica aestiva brewsteri Grinnell, Condor, 5, No. 3, May 14, 1903, 72 (Palo Alto, California).—van Rossem, 1931c, 283 (Guirocoba).—Hellmayr, 1935, 366 (Guirocoba).

Detected only as a spring transient at Guirocoba, May 7 and 9, 1930.

DENDROICA AESTIVA SONORANA BREWSTER

SONORA YELLOW WARBLER

Dendroica aestiva sonorana Brewster, Auk, 5, No. 2, April, 1888, [separates published Feb. 10], 137 (Oposura, Sonora, México); 1902, 180 (Alamos).—Chapman, 1888, 400 (Sonora).—Ridgway, 1896, 608 (Sonora); 1902, 512 (Oposura).—A.O.U. Comm., 1910, 311 (Sonora); 1931, 286 (Sonora).—Dawson, 1923, 460 (Sonora).—Bailey, 1928, 614 (Sonora).—Kuroda, 1930, 121, in text (Sonora).—van Rossem, 1931c, 283 (Saric; Tesia); 1934d, 470 (Alamos; Nacozari; Oposura).—Hellmayr, 1935, 366 (Sonora).

Dendroica sonorana Sharpe, 1909, 102 (Sonora).

D. [endroeca] ae.[stiva] sonorana Coues, 1903, 319 (Sonora).

Dendroica [sic] *aestiva sonorana* Bangs, 1930, 357 (Oposura; type).

Dendroica petechia sonorana Aldrich, 1942, 449 (nomencl.).

Fairly common summer visitant in suitable Sonoran zone localities (chiefly willow-cottonwood association) across the State northerly. Southern breeding limits at present known are the Colorado River delta in the extreme west, Magdalena centrally, and Oposura in the east. Occurs as a transient in more southern localities. Further specimens have been examined from Cajón Bonito Creek, July 3, 1892; San Bernardino Ranch on the boundary, August 21, 1892 and August 23, 1893 (U. S. Nat. Mus.); Guaymas, March 10, 1905 (Mus. Comp. Zoöl.); Pílares, June 24 and July 11, 1935 (Univ. Mich.). Found breeding at Colonia Independencia, May 3, 1937 (van Rossem), and at Magdalena, May 6, 1925 (Dawson notes). The earliest arrival date is March 9 (Alamos); the latest for fall is August 24 (Rancho La Arizona).

DENDROICA ERITHACHORIDES RHIZOPHORAE VAN ROSSEM

SONORA MANGROVE WARBLER

Dendroica erithachorides rhizophorae van Rossem, Trans. San Diego Soc. Nat. Hist., 8, No. 10, Aug. 24, 1935, 67 (Tóbari Bay, Sonora, México); *ibid.*, in text (Tepopa Bay; Kino Bay; Guaymas; Agiabampo).

Dendroica erithachorides castaneiceps (not *Dendroica bryanti castaneiceps* Ridgway) van Rossem, 1931, 282 (Tobari Bay; Guaymas; Kino Bay; Tepopa Bay).

Dendroica petechia castaneiceps Hellmayr, 1935, 380, part (Tobari Bay, etc.).

Common summer visitant to the Tropical zone coast from the Sinaloa boundary north of Tepopa Bay. Here, as elsewhere, the range of this warbler is rigidly confined to the mangrove association and therefore stops abruptly at Tepopa Bay, the northern limit of mangroves on the Sonora coast. Additional specimens have been examined from Agiabampo and Masocari Island, where breeding commonly May 14 to 16, 1937 (Dickey coll.). There are no winter records in spite of extensive collecting at that season from Guaymas northward. Permanent residence at more southerly points is to be assumed but is not yet demonstrated.

DENDROICA MAGNOLIA (WILSON)

MAGNOLIA WARBLER

Sylvia magnolia Wilson, Amer. Orn., 3, 1811, 63, pl. 23, fig. 2 (Fort Adams, Mississippi).

Dendroica magnolia van Rossem, 1934d, 470 (Alamos).

One record, that of a specimen taken by Frazar at Alamos on February 27, 1888, and now in the Museum of Comparative Zoölogy.

DENDROICA CORONATA HOOVERI MCGREGOR

ALASKA MYRTLE WARBLER

Dendroica coronata hooveri McGregor, Bull. Cooper Orn. Club, 1, No. 2, March, 1899, 32 (Palo Alto, California).—van Rossem, 1931c, 283 (El Doctor; Tecoripa).

Winter visitant in the Lower Sonoran zone; probably not uncommon in spite of the scarcity of records. One specimen taken by Wright at El Doctor in the Colorado delta, February 3, 1929, and two taken by the same collector at Tecoripa on March 30, 1929, are the only certain occurrences. Lamb (notes) observed the species as "common" at San José de Guaymas on January 10, 1933, but took no specimens.⁵⁸

⁵⁸The race *hooveri* appears to me to be easily recognized. In winter plumage it is decidedly grayer dorsally; ventrally it is much whiter and lacks much of the yellowish or pale buffy suffusion of *coronata*. In fact *hooveri* is so close to *auduboni* at this season that some specimens can be distinguished from the whiter throated examples of the latter species only with difficulty. The specific character of the number of tail spots is not infallible, for *hooveri* frequently has traces of a fourth spot and *auduboni* occasionally has only three. The supposed slightly larger size of *hooveri* as compared with *coronata* is evident in series but is not reliable for determining individual specimens. The above remarks concerning the *auduboni-hooveri* similarity in the general coloration of the winter plumages are not to be construed as an argument of specific identity; they concern solely the subspecific distinctness of *hooveri* as compared with *coronata*.

DENDROICA AUDUBONI AUDUBONI (TOWNSEND)

AUDUBON WARBLER

Sylvia Auduboni J. K. Townsend, Journ. Acad. Nat. Sci. Phila., 7, Pt. 2, [Nov. 21, 1837], 191 (forests of the Columbia River=Fort Vancouver, Washington).

Dendroica auduboni Brewer, 1874, 229, part, in text (Sonora).—Allen, 1893a, 40 (Los Cuevas; Oputo).—Price, 1899, 93 (lower Colorado River).—Stone and Rhoads, 1905, 685 (Colony).

Dendroica auduboni auduboni Oberholser, 1921, 240 (Sonoyta; Guaymas; Taronato Creek).—van Rossem, 1931c, 283 (El Doctor, part; Tecoripa, part; Obregon, part; Tesia, part; Chinobampo, part; 15 miles S. of Nogales); 1934d, 471 (Alamos; Mina Abundancia; Nacozeni; Oposura).—Huey, 1935, 256 (Punta Peñascosa).

Dendroica audubonii Baird, 1858, 273, part (San Bernardino); 1859, 10, part (San Bernardino).

A common winter visitant nearly everywhere in Sonoran and Tropical zones, although, oddly enough, not yet reported from any of the islands. The earliest fall date is September 3 (Las Cuevas); the latest departure date is May 23 (Oposura). Three record stations not cited above from which specimens have been examined are Kino Bay, February 18, 1935; Agiabampo, May 16, 1937 (Dickey coll.); Camoa, February, 1930 (Bishop coll.).

DENDROICA AUDUBONI MEMORABILIS OBERHOLSER

ROCKY MOUNTAIN WARBLER

Dendroica auduboni memorabilis Oberholser, Ohio Journ. Sci., 21, No. 7, June 6, 1921, 243 (Ward, Boulder County, Colorado); *ibid.*, in text (mouth of Colorado River; Mon. 89).—van Rossem, 1931c, 284 (San Javier); 1934d, 471 (Guaymas; Alamos; Oposura).

Dendroica auduboni auduboni (not *Sylvia auduboni* Townsend) van Rossem, 1931c, 283, part (El Doctor, part; Tecoripa, part; Pesqueira; Obregon, part; Tesia, part; Chinobampo, part).

Common winter visitant throughout the Sonoran and Tropical zones, in much the same manner and numbers as the nominate race. The earliest fall record is September 24 (Monument 89). The latest date in spring is May 23 (Oposura).⁵⁹

⁵⁹A re-appraisal of the series in the Dickey and other collections previously recorded as *auduboni* shows that approximately half are *memorabilis*. It is not unlikely that some, at least, of the specimens listed by other authors are *memorabilis*, but it has not been practicable to examine every individual so recorded. However, the lapse is not vitally important since the two races occur commonly and in approximately equal numbers over the same local territory.

DENDROICA NIGRESCENS (TOWNSEND)

BLACK-THROATED GRAY WARBLER

Sylvia nigrescens J. K. Townsend, Journ. Acad. Nat. Sci. Phila., 7, Pt. 2, [Nov. 21, 1837], 191 (Vicinity of the Columbia River—near Fort William [Portland], Oregon).

Dendroica nigrescens Bailey, 1928, 622 (San Luis Mountains); van Rossem, 1931c, 284 (San Javier; Tesia; Saric; Chinobampo; Guirocoba); 1934d, 471 (Alamos; Mina Abundancia; Nacozeni; Oposura).—Hellmayr, 1935, 392 (Sonora).

Summer visitant in the San Luis Mountains in the extreme northeast and a common migrant through the foothill region in the eastern half of the State. Winters sparingly in the Tropical zone in the extreme south; Tesia in the Mayo River valley, December 4 and 9, 1929, and Alamos, February 4, 1888. Fall data are limited to the San José Mountains, August 9, 1893 (U. S. Nat. Mus.); Cajón Bonito Creek, September 8, 1892 (Mearns notes); Rancho La Arizona, August 28 to September 13, 1929. Spring occurrences are much more common, the earliest being March 3 at Chinobampo, the latest May 17 at Magdalena where also observed rather frequently by Dawson (notes) in late April and early May, 1925. It is obvious that the main migration route avoids the northwestern desert region, although contributory data from adjacent areas in Baja California and Arizona suggest that limited numbers almost certainly occur there.⁶⁰

DENDROICA TOWNSENDI (TOWNSEND)

TOWNSEND WARBLER

Sylvia Townsendi "Nuttall" J. K. Townsend, Journ. Acad. Nat. Sci. Phila., 7, Pt. 2 [Nov. 21, 1837], 191 (forests of the Columbia River—Fort Vancouver, Washington).

Dendroica townsendi van Rossem, 1931c, 284 (San Javier; San José de Guaymas); 1934d, 471 (Mina Abundancia; Oposura).

Detected only as a rather uncommon spring migrant. Frazar took eight specimens at Mina Abundancia between April 11 and 27, 1888; Wright, three at San Javier, April 23 to 25, 1929; Bancroft, two at San José de Guaymas, May 8, 1930; Cahoon, one at Oposura, May 31, 1881. There are no fall records, and it is possible that the main flight at that

⁶⁰After careful consideration, I am unable to endorse Oberholser's (1930b, 101) proposal to restrict the name *nigrescens* to the northwest coast, and therefore follow Hellmayr (1935, 392) and others in rejecting *balseii* as a recognizable race.

season (perhaps in the spring also) passes along the higher mountains. This is indicated by the fact that Frazar collected forty-six specimens at Jesus María, Chihuahua, between August 31 and September 12.

DENDROICA OCCIDENTALIS (TOWNSEND)

HERMIT WARBLER

Sylvia occidentalis J. K. Townsend, Journ. Acad. Nat. Sci. Phila., 7, Pt. 2 [Nov. 21, 1837], 190 (forests of the Columbia=Fort Vancouver, Washington).

Dendroica occidentalis van Rossem, 1931c, 284 (Saric; San Javier); 1934d, 472 (Mina Abundancia).

Apparently a rather uncommon spring migrant through the central and eastern foothills. Detected in but three localities: eleven specimens taken by Frazar at Mina Abundancia between April 9 and 27, 1888; one taken by Wright at San Javier, April 21, 1929; one taken by Wright at Rancho La Arizona, May 8, 1929. As in the case of *Dendroica townsendi* there are no records for the fall migration, and again, as in that species, the vast majority probably travel south along the higher mountains. Frazar, for example, collected forty-nine at Jesus María, Chihuahua, between August 23 and September 8. An Arizona record from the boundary at Gray's Ranch, May 13, 1939 (Huey, 1942, p. 371), indicates that casuals may be expected almost anywhere.

DENDROICA GRACIAE GRACIAE BAIRD

GRACE WARBLER

Dendroica graciae "Coues MSS." Baird, Rev. Am. Birds, April, 1865, 210 (Fort Whipple, Arizona).—Jouy, 1894, 777 (32 miles S. of Nogales).—A.O.U. Comm., 1895, 278, part (Sonora).—Bailey, 1928, 621 (Sonora).—Dawson, 1923, 2098 (Sonora).

Dendroica graciae graciae Ridgway, 1902, 584 (32 miles S. of Nogales).—A.O.U. Comm., 1931, 291 (Sonora).—van Rossem, 1934d, 472 (Mina Abundancia; Oposura).—Hellmayr, 1935, 400 (Sonora).

Summer visitant from the Pajaritos Mountains (Sierra de Huacomea) eastward, and south along the eastern ranges the full length of the State. Further stations are the San José Mountains, August 7, 1882, and August 9, 1893 (Mearns notes); Trinidad, April 17, 1888 (Brit. Mus.); Rancho Santa Bárbara, June 9, 1937 (Dickey coll.). The earliest arrival date is April 11 (Mina Abundancia).

SEIURUS MOTACILLA (VIEILLOT)

LOUISIANA WATER-THRUSH

Turdus motacilla Vieillot, Ois. Amer. Sept., 2, 1807 [1808?], 9, pl. 65 (Kentucky).

Seiurus motacilla van Rossem, 1933b, 199 (Guirocoba); 1934d, 472 (Alamos).

Uncommon in winter and early spring in the Tropical zone foothills in the extreme southeast. Four records: three taken by Frazar at Alamos, February 7, March 8 and 28, 1888 (Mus. Comp. Zool.); one taken by Wright at Guirocoba, March 23, 1931 (Bishop coll.).

SEIURUS NOVEBORACENSIS NOTABILIS RIDGWAY

GRINNELL WATER-THRUSH

Siurus [sic] *naevius notabilis* Ridgway, Proc. U. S. Nat. Mus., 3, March 27, 1880, 12 (Black Hills [=shores of Como Lake, Carbon Co.], Wyoming).

Seiurus noveboracensis notabilis van Rossem, 1931c, 284 (Tobari Bay).—McCabe and Miller, 1933, 197 (San Bernardino River).

Spring and fall migrant of uncertain abundance. One specimen was taken at Tóbari Bay, April 26, 1930; several others, however, were seen the same day (Dickey coll.; van Rossem notes). The single fall record is that of three specimens taken by Mearns and Holzner on the San Bernardino River, September 4, 1892.⁶¹

OPORORNIS FORMOSUS (WILSON)

KENTUCKY WARBLER

Sylvia formosa Wilson, Amer. Orn., 3, 1811, 85, pl. 25, fig. 3 (Kentucky).

One casual record, that of a non-breeding male of the previous year taken by van Rossem at Rancho Santa Bárbara on June 12, 1937 (Dickey coll.).

OPORORNIS TOLMIEI (TOWNSEND)

MACGILLIVRAY WARBLER

Sylvia tolmiei J. K. Townsend, Narr. Journ. Rocky Mts., April, 1839, 343 (Columbia River=Fort Vancouver, Washington).

Oporornis tolmiei van Rossem, 1931c, 284 (San Javier; Satic; Chinobampo; Guirocoba; Guaymas); 1934d, 472 (Alamos; Mina Abundancia; Nacozeni; Oposura).—Huey, 1942, 371 (Dowling Well).

⁶¹It is probable that the earliest name for this race is *Seiurus tenuirostris* Swainson. While the original description (Philos. Mag., n. s., 1, 1827: 360) is

Common, rather generally distributed migrant. Winters, apparently rarely, in the southern part of the State. Additional records are from Cerro Gallardo, August 14, 1893; Cajón Bonito Creek, September 8 and 28, 1893; San Luis Mountains, September 6 and 25, 1893 (Mearns notes). Fall migration dates extend from August 14 (Cerro Gallardo) to September 28 (Cajón Bonito Creek). Extreme spring dates are March 7 (Chinobampo) and May 22 (Rancho La Arizona). The only two winter records are from Álamos, February 7, 1888, and San José de Guaymas, January 9, 1933 (Lamb notes).

GEOTHLYPIS TRICHAS OCCIDENTALIS BREWSTER

WESTERN YELLOW-THROAT

Geothlypis trichas occidentalis Brewster, Bull. Nuttall Orn. Club, 8, No. 3, July, 1883, 159 (Truckee River, Nevada).—van Rossem, 1931c, 285 (Tecoripa; Tesia; Guirocoba); 1934d, 472 (Guaymas; Alamos; Hacienda de San Rafael; Nacozeni; Oposura; Granados).

Geothlypis trichas modesta (not of Nelson) Ridgway, 1902, 672, part (Ortiz [fide J. W. Aldrich]).

Geothlypis trichas arizela Brewster, 1902, 186, part (Oposura; Guaymas).

Common migrant and winter visitant to Sonoran and Tropical zones throughout the State. Recorded from many localities, to which may be added Rancho La Arizona, May 9, 1937 (Dickey coll.); Nuri, April 28, 1888 (Brit. Mus.); San Bernardino Ranch, August 26 to September 8, 1892; San Pedro River, October 7 to 15, 1892 (U. S. Nat. Mus.); Quitovaquita on the boundary (Arizona side), April 28 to 30, 1929 (Huey, 1942, p. 371). Extreme dates of arrival and departure as so far detected are August 26 (San Pedro River) and May 10 (Ortiz). Some kind of yellow-throat was observed in winter in the Colorado delta by Price (1899, p. 93) but the subspecies (recorded as *occidentalis*) is in doubt.

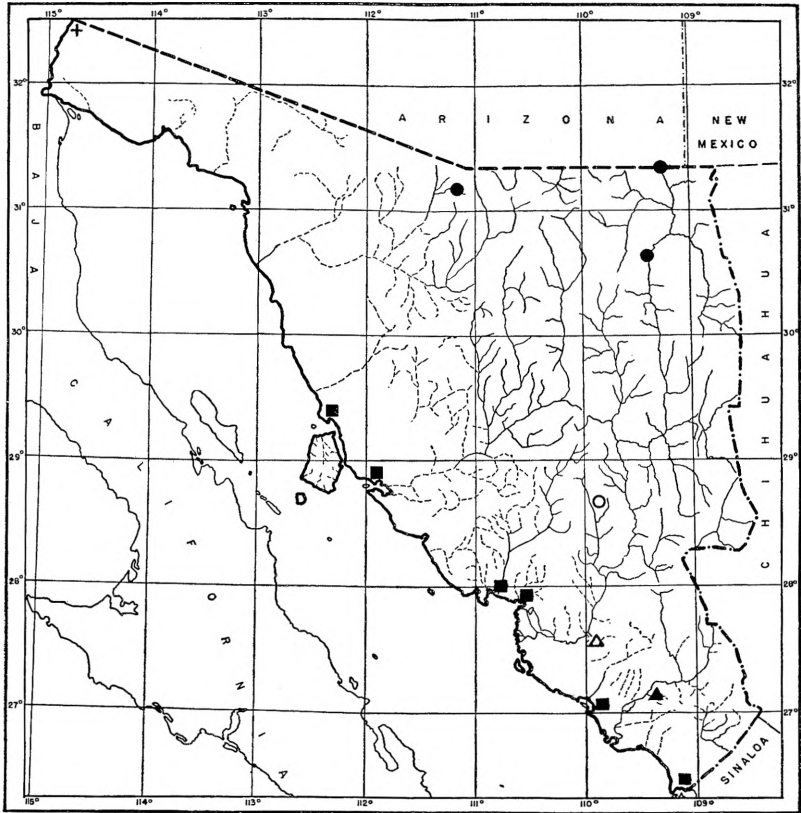
GEOTHLYPIS TRICHAS SCIRPICOLA GRINNELL

TULE YELLOW-THROAT

Geothlypis trichas scirpicola Grinnell, Condor, 3, No. 3, May 15, 1901, 65 (El Monte, Los Angeles County, California).

Probably a resident in suitable localities along the Colorado River, where not uncommon on the Baja California side of the stream. The only

not identifiable as to subspecies, Swainson in a later publication (Fauna Bor.-Am., 2, 229) affirms the identity of his Mexican and Carleton House specimens and at the same time calls attention to the pale coloration of the under parts as compared with the description of Wilson's *aquaticus*.



MAP 20. Distribution of *Geothlypis trichas*. Circles, *G. t. chryseola*; cross, *G. t. scirpicola*; squares, *G. t. modesta*; triangles, *G. t. riparia*; hollow figures, winter stations outside established breeding ranges.

specimen collected on the Sonora side seems to be one taken by Mearns and Holzner at Monument 204, March 25, 1894. It is now in the collection of the U. S. National Museum, where examined in July, 1938.

GEOTHYLPIS TRICHAS CHRYSEOLA VAN ROSSEM

GOLDEN YELLOW-THROAT

Geothlypis trichas chryseola van Rossem, Condor, 32, No. 6, Nov. 22, 1930, 298 (Saric [=Rancho La Arizona], Sonora, México); *ibid.*, in text, (Tecoripa); 1931c, 285 (Saric; Tecoripa); 1936, 142 (Sonora); 1941d, 291 (San Bernardino Ranch; Pilares; range).—Hellmayr, 1935, 430 (northcentral Sonora).—A.O.U. Comm., 1944, 459 (Saric).

Geothlypis trichas occidentalis (not of Brewster) Evermann and Jenkins, 1888, 68 (Magdalena).

Geothlypis trichas scirpicola (not of Grinnell) Dawson, 1923, 505, part (northern Sonora).

Evidently a fairly common resident in suitable localities along fresh water streams from the vicinity of Rancho La Arizona (and very probably from the Altar River valley) eastward across the northern part of the State nearly or quite to the Chihuahua boundary. The southernmost breeding station known at the present time is Pilares in the Bavispe River valley. Yellow-throats seen by Evermann and Jenkins (1888) at Magdalena in June, 1887, most probably were of this subspecies. One specimen taken at Tecoripa, March 3, 1929, (van Rossem, 1931c) indicates a seasonal movement by part, at least, of the population.

GEOTHLYPIS TRICHAS RIPARIA VAN ROSSEM

MAYO YELLOW-THROAT

Geothlypis trichas riparia van Rossem, Condor, 43, No. 6, Nov. 17, 1941, 292 (Tesia, Mayo River, Sonora, México); *ibid.*, in text (Yaqui River valley).

Geothlypis trichas modesta (not of Nelson) van Rossem, 1931c, 285, part (Tesia; Obregon).

Resident of fresh-water marsh associations in the lower Mayo River valley (Tropical zone) in the extreme southern end of the State; occurs in winter in the lower Yaqui River valley (Ciudad Obregón, November 12, 1929), where also probably resident.

GEOTHLYPIS TRICHAS MODESTA NELSON

SAN BLAS YELLOW-THROAT

Geothlypis trichas modestus Nelson, Auk, 17, July, 1900, 269 (San Blas, Tepic [=Nayarit], México).

Geothlypis trichas modesta van Rossem, 1930g, 289, in text (Agiabampo; Empalme; crit.); 1931c, 285, part (Guasimas Lagoon; Empalme; Tobarí Bay; Agiabampo); 1941d, 292, in text (Kino Bay; Tepopa Bay; range).—Hellmayr, 1935, 431 (Guaymas).

Geothlypis modesta Sharpe, 1909, 114 (Sonora).

Resident in the narrow strip of Tropical zone salt water associations from the Sinaloa boundary north to Tepopa Bay. Additional specimens have been examined from Agiabampo, April, 1933 (Lamb coll.); Kino Bay, December 27, 1931; Tepopa Bay, January 2, 1932 (Dickey coll.).

What yellow-throat, if any, breeds in tide-marsh associations at the mouth of the Colorado River is unknown.

ICTERIA VIRENS AURICOLLIS (LICHTENSTEIN)

LONG-TAILED CHAT

Tanagra auricollis Lichtenstein, Preis-Verz. der . . . Vögel . . . Mexico . . . , Sept. 1, 1830, 2 (México=City of México).

Icteria virens auricollis van Rossem, 1939d, 156, in text (northern Sonora; Guaymas).

Icteria virens longicauda Renardo, 1886, 118 (Guaymas).—Evermann and Jenkins, 1888, 68 (Magdalena).—van Rossem, 1931c, 285, part (Tecoripa; Guaymas; Saric).

Common summer visitant in Sonoran zone riparian associations in the northern part of the State, south to Guaymas coastwise and at least to Magdalena in the interior. Distribution is, of course, extremely local and largely dependent upon the presence of summer streams. Probably rather generally distributed during migrations, although there is but one southerly record,—Tecoripa, March 28, 1929. Further localities are San Luís and Colonia Independencia in the Colorado delta, May 3, 1937 (van Rossem notes); San Bernardino Ranch, September 4, 1892; San Pedro River, October 15, 1892 (U. S. Nat. Mus. catl.); Cajón Bonito Creek, July 1, 1892 ("breeding"; Mearns notes). Arrival and departure dates are March 28 (Tecoripa) and October 15 (San Pedro River).

ICTERIA VIRENS TROPICALIS VAN ROSSEM

SONORA CHAT

Icteria virens tropicalis van Rossem, Wilson Bull., 51, No. 3, Sept., 1939, 156 (Tesia, Sonora, México); *ibid.*, in text (Agiabampo; Pilares; Mayo River valley [Camoá]).

Icteria virens longicauda (not *Icteria longicauda* Lawrence) van Rossem, 1931c, 285, part (Agiabampo).

[?] *Icteria virens auricollis* (not *Tanagra auricollis* Lichtenstein) van Rossem, 1934d, 472 (Hacienda de San Rafael).

Fairly common summer visitant along permanent streams in the Tropical zone, north in the Moctezuma and Bavispe valleys to Moctezuma and Pilares, and probably to the lower Yaqui River coastwise. Additional specimens have been examined from Moctezuma, September 24 and 26, 1887; Quiriego, April 28, 1888; Río Mayo [near Agua Caliente], May 5, 1888 (Brit. Mus.). This race is possibly resident, although existing dates extend only from April 28 to September 26.

WILSONIA PUSILLA PUSILLA (WILSON)

WILSON WARBLER

Muscicapa pusilla Wilson, Amer. Orn., 3, 1811, 103, pl. 26, fig. 4 (Southern New Jersey).

Wilsonia pusilla pusilla van Rossem, 1934d, 473 (Oposura).

A spring migrant. Five specimens taken by Cahoon at Oposura between the dates of April 28 and May 27, 1887, would seem to place this warbler somewhat out of the casual class. No other examples of *pusilla* have since been collected in Sonora, in spite of the accumulation of large series of the two western races, though there is a recent record (Oberholser, 1930b, p. 100) for southeastern Arizona.

WILSONIA PUSILLA PILEOLATA (PALLAS)

NORTHERN PILEOLATED WARBLER

Motacilla pileolata Pallas, Zoogr. Rosso-Asiatica, 1, 1811, 497 (In insula Kadiak=Kodiak Island, Alaska).

Wilsonia pusilla pileolata van Rossem, 1931c, 286 (Tecoripa; San Javier; Saric; Guirocoba); 1934d, 473 (Alamos; Mina Abundancia; Nacoziari; Oposura).

Fairly common spring and fall transient through the mountainous eastern part of the State. Fall dates are August 16 (Rancho La Arizona) to September 5 (San Bernardino Ranch) [U. S. Nat. Mus.]. Spring dates are March 28 (Alamos and Tecoripa) to May 25 (Rancho La Arizona).

WILSONIA PUSILLA CHRYSSEOLA RIDGWAY

GOLDEN PILEOLATED WARBLER

Wilsonia pusilla chryseola Ridgway, Bull. U. S. Nat. Mus., 50, Pt. 2, 1902, 714 (Pacific Coast district=Red Bluff, California); *ibid.*, in text (San Jose Mts.).—Cooke, 1904, 129 (Sonora).—Chapman, 1907, 279 (San Jose Mts.).—A.O.U. Comm., 1910, 325 (Sonora); 1931, 299 (Sonora).—Dawson, 1923, 514 (Sonora).—van Rossem, 1931c, 286 (Tecoripa; San Javier; Saric; Tesia; Chinobampo; Guirocoba); 1934d, 473 (Alamos; Mina Abundancia; Nacoziari; Oposura).—Hellmayr, 1935, 454 (Sonora).

Common transient through the central and eastern foothills and lower mountains. Western desert records are lacking, though this is probably not significant. Winters in small numbers in the Tropical zone at the extreme southern part of the State from where there are three records: Alamos, February 4, 1888; Tesia, November 30, 1929; Chinobampo, March 2, 1930. Fall migration dates extend from August 21 (Rancho

La Arizona) to October 25 (San José Mountains). Spring dates are from March 15 (Tecoripa [possibly a wintering individual]) to April 24 (San Javier).

CARDELLINA RUBRIFRONS (GIRAUD)

RED-FACED WARBLER

Muscicapa rubrifrons Giraud, Sixteen Species Texas Birds, 1841, [15], pl. vii, fig. 1 (Texas=México).

Cardellina rubrifrons Ridgway, 1902, 720 (Sonora).

Status uncertain, although in all probability a summer visitant in the Transition zone in the eastern mountains. The basis of Ridgway's inclusion of Sonora in the range of the Red-faced Warbler is most likely the three specimens in the U. S. National Museum which were taken by Mearns in the San José Mountains on August 7 and 11, 1892. The dates would suggest these individuals to have been summer visitants in the locality. The same comment applies to a specimen in the University of Michigan, taken by Campbell in El Tigre Mountains on July 28, 1935.

SETOPHAGA RUTICILLA (LINNAEUS)

AMERICAN REDSTART

Motacilla Ruticilla Linnaeus, Syst. Nat. ed. 10, 1, 1758, 186 (in America=Virginia).

Setophaga ruticilla van Rossem, 1931c, 286 (Tobari Bay).

Spring transient, perhaps more than casual. The only specimen taken to date is one from Tóbari Bay, April 27, 1930; however, at least one other was seen in the same locality on April 26 (van Rossem notes). A supplementary record is San Bernardino Ranch on the boundary ("Arizona," Mearns notes), August 31, 1892.

SETOPHAGA PICTA PICTA (SWAINSON)

PAINTED REDSTART

Setophaga picta Swainson, Zool. Illust., ser. 2, 1, 1829, pl. 3 and text (Real del Monte [Hidalgo], México).—Allen, 1893a, 40 (Huerachi).—Bailey, 1928, 634, part (San Luis Mountains).

Setophaga picta picta Ridgway, 1902, 738 (Huerachi).—Thayer and Bangs, 1906, 21 (La Chumata).—van Rossem, 1934d, 473 (Alamos; Mina Abundancia; Nacozeni; Oposura).

Common summer visitant to high Upper Sonoran and Transition zones throughout the mountainous eastern portion of the State, west to the Pajaritos Mountains and the Sierra de San Antonio. Winters, apparently in some numbers, in Tropical zone foothills and occasionally further north (Huerachi, at about $29^{\circ} 30'$). Unpublished localities are San José Mountains, September 26 and October 6, 1892, and August 9 and 19, 1893 (Mearns notes); El Tigre Mountains, August 3, 1935 (Univ. Mich.); Rancho Santa Bárbara, June 10, 1937 (Dickey coll.); Guirocoba, December 8, 1941 ("abundant"); Pajaritos Mountains, May, 1942 ("breeding near boundary fence"; Sheffler notes).

MYIOBORUS MINIATUS MINIATUS (SWAINSON)

RED-BELLIED REDSTART

Setophaga miniata Swainson, Philos. Mag., n. ser., 1, No. 5, May, 1827, 368 (Valladolid, México).

Myioborus miniatus miniatus van Rossem, 1931c, 286 (Chinobampo).—Hellmayr, 1935, 459 (Chinobampo).

A winter visitant in the Tropical zone foothills in the extreme south. Two specimens have so far been taken, both at Chinobampo on February 12, 1930 (Dickey coll.), and March 9, 1931 (Bishop coll.). Although very common in the Transition zone in adjacent Chihuahua localities in summer, none have so far been detected in Sonora at that season.

EUTHLYPIS LACHRYMOSA (BONAPARTE)

FAN-TAILED WARBLER

Basileuterus lachrymosa "Licht." Bonaparte, Consp. Gen. Avium, 1, 1850, [Feb. 3, 1851] 314 (México=Lagunas [Oaxaca]).

Euthlypis lachrymosa van Rossem, 1934d, 474 (Hacienda de San Rafael; crit.).

Euthlypis lachrymosa tephra Ridgway, 1902, 738 (Hacienda de San Rafael).—Dickey and van Rossem, 1926, 270 (Hacienda de San Rafael).—van Rossem, 1931c, 286 (Guirocoba).—Hellmayr, 1935, 473 (Hacienda de San Rafael; crit.).

Rather common summer visitant to the Tropical zone foothills in the extreme southeast. The first date of arrival is May 4 (Guirocoba); the departure date is unknown.⁶²

⁶²My reasons for not recognising *tephra* have been summarized (1934d) previously, and additional freshly collected material examined tends to confirm the views then expressed. Some, perhaps the majority, of the northwestern birds attain a degree of pallor apparently never seen in the south and southeast; on the other hand the darker northwestern individuals are indistinguishable from southern specimens by any means I can devise.

BASILEUTERUS RUFIFRONS CAUDATUS NELSON

NELSON WARBLER

Basileuterus rufifrons caudatus Nelson, Proc. Biol. Soc. Wash., 13, May 29, 1899, 29 (Álamos, Sonora, México).—Ridgway, 1902, 748 (Alamos; Napolera).—van Rossem, 1931c, 287 (Guero-coba); 1934d, 475 (Alamos; Mina Abundancia; Hacienda de San Rafael; Oposura).—Hellmayr, 1935, 510 (Sonora).

Idiotes rufifrons caudatus Todd, 1929, 94, (Oposura; Alamos; Napolera).

Basileuterus caudatus Sharpe, 1909, 126 (Sonora).

Basileuterus rufifrons (not *Setophaga rufifrons* Swainson) Allen, 1893a, 41 (Napolera).

Rather uncommon resident of the eastern foothill and lower mountain region, north nearly to latitude 30°. Environment (shrubbery along mountain streams) rather than life zones seems to govern the distribution of this warbler. Record stations range from 1,200 to about 4,000 feet in altitude. An additional locality is San Francisco Cañon (Dickey coll.).

Family PLOCEIDAE Weaver-finches

PASSER DOMESTICUS DOMESTICUS LINNAEUS

ENGLISH SPARROW

Fringilla domestica Linnaeus, Syst. Nat., ed. 10, 1, 1758, 183 (in Europa=Sweden).

Passer domesticus domesticus van Rossem, 1931c, 287 (Guaymas; Saric).

Apparently well established in towns and about ranches from Nogales and San Luís in the extreme north, south to the Sinaloa boundary. Has been observed to date at Nogales, Rancho La Arizona, San Luís, Santa Ana, Hermosillo, Guaymas, Navojoa, Álamos, Tesia, Agiabampo (van Rossem), and Rancho Costa Rica (Lamb notes).

Family ICTERIDAE Blackbirds and Troupials

CASSICULUS MELANICTERUS (BONAPARTE)

MEXICAN CACIQUE

Icterus melanicterus Bonaparte, Journ. Acad. Nat. Sci. Phila., 4, May, 1825, 389 (México=Temascáltepec).

Known to have nested near Álamos in the summer of 1931, but not found in the State before or since that time. In early September of that year W. J. Sheffler photographed this (then abandoned) colony which contained over thirty nests in a single tree. With native "sling-shot"

assistance he secured one bird, apparently a fully grown male of the year, which is now in his collection.

TANGAVIUS AENEUS MILLERI VAN ROSSEM

BRONZED COWBIRD

Tangavius aeneus milleri van Rossem, Trans. San Diego Soc. Nat. Hist., 7, No. 30, May 31, 1934, 355 (Tucson, Arizona); *ibid.*, in text, (Sonora); 1934d, 476, (Hacienda de San Rafael).—Hellmayr, 1937, 51 (Sonora).

Tangavius aeneus aeneus (not *Psarocolius aeneus* Wagler) Thayer and Bangs, 1906, 21 (Opodepe).—Friedmann, 1927, 507 (Sonora); 1929, 320 (Hermosillo; Opodepe); 1933a, 190 (Guero-coba; Guaymas; El Alamo).

Callothrus aeneus aeneus Ridgway, 1902, 203 (Hermosillo).

Common, sometimes abundant, summer visitant to Sonoran, Tropical and, locally, Transition zones from the longitude of El Alamo and Guaymas eastward throughout the State. Resident in seemingly limited numbers in the Tropical zone from the lower Yaqui River southward. Local concentration is usually evident about ranches and other inhabited areas. Further stations are Agiabampo, May 15 and 16, 1937; Rancho Santa Bárbara to 5,500 feet in June, 1937 (Dickey coll.; van Rossem notes); Pílares, July, 1935 (Univ. Mich.); Isleta, May 17, 1888 (Brit. Mus.). Dates of arrival and departure for northern localities are inconclusive. They are May 7 ("abundant") and August 18, both from Rancho La Arizona. Huey (1942, p. 371) reports Bronzed Cowbirds May 14, 1939, from Gray's Ranch, a boundary locality far to the west of the (present) normal range, but technically, this is "50 yards" within Arizona territory.

MOLOTHRUS ATER ARTEMISIAE GRINNELL

NEVADA COWBIRD

Molothrus ater artemisiae Grinnell, Univ. Calif. Pub. Zool., 5, No. 5, Dec. 31, 1909, 276 (Quinn River Crossing, Humbolt Co., Nevada).—van Rossem, 1931c, 290 (Seric).

Detected only as a fall migrant at Rancho La Arizona in the extreme northcentral part of the State on August 10, 1929.

MOLOTHRUS ATER OBSCURUS (GMELIN)

DWARF COWBIRD

Sturnus obscurus Gmelin, Syst. Nat., 1, pt. 2, 1789, 804 (In Nova Hispania = México).

Molothrus ater obscurus Belding, 1883, 343 (Guaymas); 1890, 118 (Guaymas).—Evermann and Jenkins, 1888, 68 (Magdalena).—Ridgway, 1902, 210, part (Guaymas).—Stone and Rhoads, 1905, 683 (Colony).—Thayer and Bangs, 1906,

21 (Opodepe; La Chumata).—van Rossem, 1931c, 290 (Saric; Tesia; Obregon; Guirocoba; Guaymas); 1934d, 476 (Hacienda de San Rafael; Oposura; Granados).—Friedmann, 1934, 107 (Guaymas).

Molothrus pecoris (not *Fringilla pecoris* Gmelin) Baird, 1858, 524, part (Los Nogales); 1859, 18, part (Los Nogales).—Salvin and Godman, 1887, 450, part (Los Nogales).

Common, locally abundant, resident almost anywhere below the Transition zone, though most numerous about ranches and cultivated areas at low altitudes. Further stations are Hermosillo, October and November; Quiriego, April (Brit. Mus.); Pilaes, July (Univ. Mich.); Rancho Santa Bárbara to 5,000 feet, June; Agiabampo; Navojoa; Alamos, May and June; Kino Bay, December (van Rossem notes); Quitovaquita on the boundary [Arizona side], April (Huey, 1942, p. 371); Sonoyta, January (Mearns notes).

CASSIDIX MEXICANUS NELSONI (RIDGWAY)

SONORA BOAT-TAILED GRACKLE

Scaphidurus major nelsoni Ridgway, Proc. Wash. Acad. Sci., 3, April 15, 1901, 151 (Alamos, Sonora, México).

Megaquiscalus major nelsoni Ridgway, 1902, 242 (Alamos; Camoa; Guaymas).

Cassidix mexicanus nelsoni van Rossem, 1931c, 289 (Obregon; Tesia; San Jose de Guaymas; Tobarí Bay; Guirocoba; Guaymas); 1934d, 476 (Alamos).—Hellmayr, 1937, 88 (coast of Sonora).—A. Phillips, 1940, 117 (Guaymas).

Quiscalus palustris (not *Scaphidurus palustris* Swainson) Belding, 1883, 343 (Guaymas).

Common resident of the Tropical zone coastal plain, with concentrations about towns, ranches, and cultivated areas. Locally, there is penetration into the southeastern foothills as at Alamos and Guirocoba. The northermost Sonora station to date is Rancho Costa Rica, where observed as common by Lamb in December, 1932. Some unpublished localities are Camoa, Navojoa, and Agiabampo (Dickey coll.; van Rossem notes).⁶³

EUPHAGUS CYANOCEPHALUS (WAGLER)

BREWER BLACKBIRD

Psarocolius cyanocephalus Wagler, Isis von Oken, 22, Heft 7 [July], 1829, col. 758 (Mexico=Temascaltepec, México).

⁶³This race varies in measurements far beyond the limits set by Ridgway (1902), and in addition the tail is frequently decidedly longer than the wing. Certain large individuals (tails of adult males approximately 180 mm.) taken in midwinter had been thought to represent some other race until the same size variability was subsequently found among breeding birds. The most diagnostic character seems to be the pallid coloration of the females.

Scolecophagus cyanocephalus Belding, 1883, 343 (Guaymas).—Allen, 1893a, 38 (San Pedro; Cachuta).—Price, 1899, 92 (lower Colorado River).—Thayer and Bangs, 1906, 21 (Opodepe).

Euphagus cyanocephalus Ridgway, 1902, 248 (Guaymas).

Euphagus cyanocephalus cyanocephalus van Rossem, 1931c, 290 (El Doctor; Tesia; Tecoripa; 12 mi. W. of Magdalena).—Moore, 1938a, 26 (Soyopa).

A common, even abundant, winter visitant to lower level river valleys and cultivated areas everywhere. Additional localities are Camoa, February 16, 1931 (Bishop coll.); Ures, "abundant in flocks," January 31, 1933 (Lamb notes); La Noria, November 30, 1892; San Pedro River, October 22, 1892; Sonoyta, January 20, 1894 (U. S. Nat. Mus. catl.). Extreme dates are September 15 (San Pedro) and the "very end of April" (Opodepe).

ICTERUS BULLOCKII BULLOCKII (SWAINSON)

BULLOCK ORIOLE

Xanthornus Bullockii Swainson, Philos. Mag., n. s., 1, No. 6, June, 1827, 436 (Tableland [of México]—Temascáltepec).

Icterus bullockii Baird, 1858, 549, part (Guadalupe Cañon); 1859, 20, part (Guadalupe Cañon).—Ridgway, 1902, 314, part (Sonora).

Icterus bullockii bullockii van Rossem, 1931c, 289, part (San Javier, part; Guaymas; Saric; Guirocoba, part); 1934d, 476 (Nacoziari).—Hellmayr, 1937, 104, part (Sonora).

Icterus bullocki Brewer, in Baird, Brewer, and Ridgway, 1874, (2), 199, part (Guadalupe Cañon).—A.O.U. Comm., 1910, 238, part (Sonora); 1931, 307, part (Sonora).—Huey, 1942, 371 (Quitovaquita, Gray's Ranch, and Dowling Well on the boundary).

Icterus bullocki bullocki Bailey, 1928, 654, part (Sonora).

Rather common summer visitant in suitable localities (chiefly cottonwood and willow associations) across the extreme northern part of the State from about longitude 113° eastward. Has been found breeding at various other points east to Pilares (July 2, 1935; Univ. Mich.), which is the southernmost as well as the easternmost definite breeding locality of record. Occurs widely and commonly as a migrant. Spring migration dates are from March 22 (Nacoziari) to May 12 (Guirocoba; possibly breeding). The only available fall date is that from Rancho La Arizona, September 8.

ICTERUS BULLOCKII PARVUS VAN ROSSEM

RIDGWAY ORIOLE

Icterus bullockii bullockii (not *Xanthornus bullockii* Swainson) van Rossem, 1931c, 289, part (San Javier, part; Guirocoba, part; Tesia).

Detected only a spring migrant in the southern part of the State. Record stations to date are Tesia, March 19, 1930; San Javier, April 13 and 15, 1929; Guirocoba, April 25, 1930. Observed breeding (almost certainly this race) at San Luís and Colonia Independencia in the Colorado River delta, May 3, 1937 (van Rossem).⁶⁴

⁶⁴ *Icterus bullockii parvus* new subspecies. Type, fully adult male, number J-464, Dickey collection; Jacumba, San Diego County, California, April 1, 1921; collected by May Canfield.

Subspecific characters.—Similar in color to *Icterus bullockii bullockii* (Swainson) of western North America in general. Size distinctly smaller. Measurements of the type are: wing, 97; tail, 76; culmen, 18.4; tarsus, 23.2; middle toe minus claw, 16.7. The corresponding measurements of Swainson's type of *Xanthornus bullockii* (examined at Cambridge, England, in 1933, and again on July 4, 1938), are 105, 83, 20.0, 24.5, and 17.8 mm.

Range.—Coastal slope of California from the San Francisco Bay region south to northern Baja California, and eastward in the extreme southern part of the range to the lower Colorado River valley. Winter range undetermined but occurs in southeastern Arizona and southern Sonora in migration.

Remarks.—Swainson's type of *Xanthornus bullockii* is a fully adult male collected by Bullock but with no locality other than "Mexico" indicated on the label. The present designation of "Real del Monte" in the 1931 edition of the A.O.U. Check-list cannot stand, for Bullock, so far as can be determined, was never at the Real del Monte mines. Swainson's "Tableland" is indefinite and I therefore substitute Temascaltepec as the most likely place where the type might have been collected.

More than forty years ago Ridgway (1902, p. 316, footnote), on the basis of twelve specimens from each area, stated that "specimens from California are smaller than those from the interior" but seemingly no one has been inclined to follow up the matter with adequate series of breeding birds. My own interest was stimulated by the Sonora series which fell into two size groups. In the present investigation I have assembled 130 specimens from the range of the species (no Canadian specimens examined), 74 of which are adult males, 23 one-year-old males, and the remainder females of uncertain age or specimens of uncertain sex. About 20 additional adult males, too worn to be of value for measurement purposes, have been examined for variations in color and markings.

Purely on the basis of size it is apparent that the nominate race breeds south at least to southern Oregon on the coast, to the southern end of the San Joaquin Valley in California, to extreme southern Nevada (save possibly in the Nevada portion of the lower Colorado River Valley), to southeastern and eastern Arizona, and to northcentral and northeastern Sonora. It occurs commonly in migration over the whole range of *parvus*, a circumstance naturally to be expected but which probably is in large part responsible for previous failure to recognize that race.

Not the least interesting part of the present study has been the observation of the individual variation in color and markings among adult males. In fact it may be truly said that no two of the nearly 100 specimens of that age examined are exactly alike in all respects. George Sutton (Auk, 55, 1938: 1-6) has recently pictured some plumage variations in specimens taken in western Oklahoma, a region where the breeding ranges of *bullockii* and *galbula* meet. Figure 6 of his plate illustrates what he considers to represent "typical *bullockii*." In this figure the yellow superciliary stripe is confluent with the yellow of the side of head, a

condition perhaps usual in the eastern parts of the range but relatively rare in the west where the superciliary is normally shorter and completely isolated by a prominent, black, post-ocular stripe (of a maximum width of 5 mm.) which is confluent with the black of the nape. Some specimens have the feathers of the nape so broadly yellow sub-basally that moderate abrasion, or no abrasion at all, results in a mottled yellow and black collar (in one case completely yellow) around the normally black nape. Lesser wing coverts vary from black with gray bases to yellow with a few minute flecks of black posteriorly. Greater coverts are normally pure white on the outer webs but occasionally there are indications of black streaking as in Sutton's Figure 5. Tail markings vary from as shown in Figure 3, or between 2 and 3, to Figure 6. Coloration of the under parts varies a good deal, and although summer specimens average yellower and fresh ones more orange, individual variation includes the color range regardless of season.

It is evident that *bullockii* is far less stabilized in characters than the intimately related *galbula* and *abeillei*, and that although the above noted plumage variations are at present co-extensive with the range of the species there are tendencies for some of them to be emphasized in certain geographic areas. It is not at all difficult to visualize the eventual emergence of a fourth "species" of the *galbula-bullockii-abeillei* complex in Sonora, characterized by yellow lesser coverts, a yellow collar around the hindneck, lemon-yellow under parts, and a relatively long slender bill, and in the northwest of another with wholly black lesser coverts, a short superciliary stripe, extensively black-tipped lateral rectrices, and a thicker bill.

The following comparative measurements are based chiefly on males. Young females (like young males) are considerably smaller than adults but I cannot devise any reasonably certain means of separating the ages of most specimens of that sex.

COMPARATIVE MEASUREMENTS

	<i>wing</i>	<i>tail</i>	<i>culmen</i>
26 adult male <i>bullockii</i>	99-105 (101.2)	77-83 (80.3)	19.1-22.0 (21.0)
42 adult male <i>parvus</i>	94-99 (96.3)	72-79 (75.5)	17.3-20.4 (19.5)
16 one-year-old <i>bullockii</i>	95-101 (97.0)	76-81 (78.2)	20.3-22.0 (21.1)
7 one-year-old <i>parvus</i>	88-92 (90.8)	70-75 (72.5)	18.2-20.8 (19.5)
14 female <i>bullockii</i>	90-95 (93.7)	73-79 (77.3)	18.7-21.0 (19.2)
15 female <i>parvus</i>	85-93 (90.6)	68-76 (72.6)	17.6-19.0 (18.3)

ICTERUS PARISORUM BONAPARTE

SCOTT ORIOLE

Icterus parisorum Bonaparte, Proc. Zool. Soc. Lond., 1837 [June, 1838], 110 (México).—Thayer and Bangs, 1906, 21 (La Chumata).—Townsend, 1923, 18 (Tiburón Island).—Bailey, 1928, 649 (Sonora).—van Rossem, 1932, 142 (Tiburón Island); 1934d, 476 (Mina Abundancia; Nacozeni; Oposura).

Seemingly a fairly common summer visitant to Upper Sonoran oak regions in the central and eastern foothills. Known or probable breeding localities are Nogales (July); Cibuta, July (Bishop coll.); Sierra de Oposura, May; La Chumata, June; Cajón Bonito Creek, July (Mearns notes); Rancho Santa Bárbara, June (Dickey coll.). A few individuals winter in the Tropical zone lowlands, known occurrences at that season being San José de Guaymas, January 14 and 15, 1933 (Dickey coll.; Lamb notes) and Camoa, January 20, 1899 (Biol. Surv.). Lowland appearances during migrations are also to be expected, as on Tiburón Island, April 11, 1911.

ICTERUS WAGLERI CASTANEOPECTUS BREWSTER

CHESTNUT-BREASTED ORIOLE

Icterus wagleri castaneopectus Brewster, Auk, 5, No. 1, January, 1888, 91 ([Sierra de] Oposura, Sonora, México).—Bangs, 1930, 419 (re type).—van Rossem, 1931c, 288 (San Javier; Chinobampo; Guirocoba; Agiabampo); 1934d, 475 (Alamos; Mina Abundancia; Hacienda de San Rafael; Oposura).—Griscom, 1932a, 393, in text (Sonora; crit.).—Hellmayr, 1937, 122 (Sonora).

Pendulinus Wagleri Var. *Castaneopectus* Dubois, 1901, 557 (mountains of Sonora).

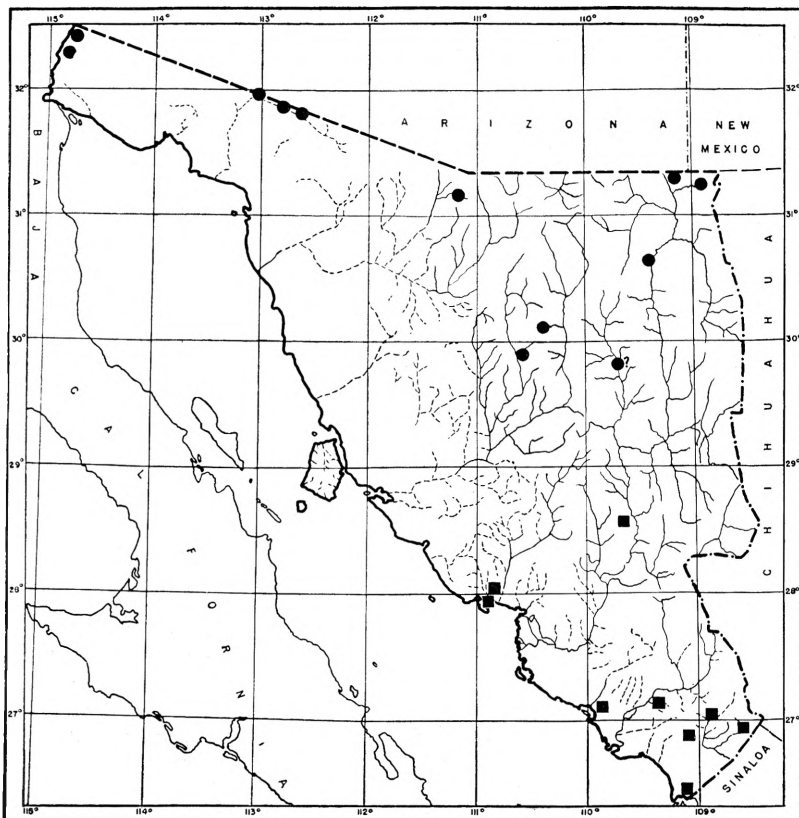
Icterus wagleri (not of Sclater) Ridgway, 1902, 267, part (Alamos; Oposura).—Thayer and Bangs, 1906, 21 (Opodepe).

Common resident of the foothills and lower mountains in the southern part of the State. north in the interior to Opodepe and Moctezuma. Although found breeding on two occasions at Agiabampo (July, 1930, and May, 1937), this seacoast locality appears to be exceptional. Records include the Tropical, Sonoran, and the lower fringe of the Transition zones to at least 5,500 feet, where found to be breeding commonly in the oak-pine association at Rancho Santa Bárbara in June, 1937 (van Rossem notes; Dickey coll.).

ICTERUS CUCULLATUS NELSONI RIDGWAY

ARIZONA HOODED ORIOLE

Icterus cucullatus nelsoni Ridgway, Proc. U. S. Nat. Mus., 8, No. 2, "April 20" [May 6], 1885, 19 (Tucson, Arizona); 1902, 290, part (Sonora, part).—



MAP 21. Distribution of *Icterus cucullatus*. Circles, *I. c. nelsoni*; squares, *I. c. restrictus*.

Thayer and Bangs, 1906, 21 (Opodepe; La Chumata).—van Rossem, 1931c, 289, part (San Javier, part; Saric; Tesia, part; Guirocoba, part).

Icterus cucullatus californicus (not *Pendulinus californicus* Lesson) van Rossem, 1934d, 475, part (Nacoazari; Oposura).—Hellmayr, 1937, 150, part (northern locs.).—Huey, 1942, 371 (Gray's Ranch; Dowling Well; Quitovaquita [Arizona]).

Common summer visitant, chiefly in the Lower Sonoran zone, in the northern part of the State south to Opodepe and [probably to] Moctezuma. Occurs as a transient elsewhere in the spring (Tesia (3), March 21 and 25; Guirocoba, April 20, May 20; San Javier, April 21), and doubtless in the fall, although there are no records for this latter season. Additional breeding localities are San Luís and Colonia Independencia, May 3, 1937 (van Rossem notes); Pilares, June 21 to July 24, 1935

(Univ. Mich.); Guadalupe Cañon, "early July," 1892; Cajoñ Bonito Creek, July 1 to 4, 1892 (Mearns notes). The earliest spring record for northern localities is March 23 (Gray's Ranch), the latest for fall is October 4 (Guadalupe Cañon; Mearns notes). An individual seen at Hermosillo, December 22, 1932 (Lamb notes) possibly belonged to this race. If so, it is the only mid-winter record.⁶⁵

ICTERUS CUCULLATUS RESTRICTUS VAN ROSSEM

SONORA HOODED ORIOLE

Icterus cucullatus (not of Swainson) Belding, 1883, 343 (Guaymas).

Icterus cucullatus nelsoni (not of Ridgway) van Rossem, 1931c, 289, part (San Javier, part; Tesia, part; Chinobampo; Guirocoba, part; Guaymas; 6 miles N. of Guaymas; Tobarí Bay; Agiabampo).

Icterus cucullatus californicus (not *Pendulinus californicus* Lesson) van Rossem, 1943d, 475, part (Alamos).—Hellmayr, 1937, 150, part (southern Sonora locs.).

Common resident in the Tropical zone from the Sinaloa boundary north to about 28° (Guaymas) coastwise, and to at least 28° 30' (San Javier) in the interior.⁶⁶

⁶⁵ The status of the breeding birds from Oposura [Moctezuma] remains in doubt, since they have not been re-examined in the present connection. It is likely that some of them, regardless of the identity of the breeding race, are migratory *nelsoni*.

⁶⁶ *Icterus cucullatus restrictus* new subspecies. Type, breeding male adult, number 31,998 Dickey collection; Agiabampo, extreme southern Sonora, México, May 19, 1937; collected by A. J. van Rossem and Robert Hannum.

Subspecific characters.—Not distinguishable in general coloration from *Icterus cucullatus nelsoni* of southern Arizona but black throat patch of fully adult males more restricted laterally and with its posterior outline reaching only to the anterior half of the lower eyelid instead of to the posterior corner of the eye. Size slightly smaller.

Measurements.—10 *restrictus* from Sonora: wing, 84-88 (86.3); tail, 82-90 (88.2). 21 *nelsoni* from Arizona: wing, 86-91 (89.4); tail, 88-95 (92.0).

Remarks.—It is evident that the old "Arizona Hooded Oriole" was in reality a composite of four races which occupy as many distinct geographic and faunal areas. In brief, these races are *Icterus cucullatus californicus* (Lesson) of southern California and northwestern Baja California, *Icterus cucullatus trochiloides* Grinnell of southern Baja California, *Icterus cucullatus nelsoni* Ridgway of extreme south-eastern California, southeastern Nevada, and southwestern Utah, eastward to south-western New Mexico, and south into northern Sonora and northwestern Chihuahua, and *Icterus cucullatus restrictus* van Rossem of southern Sonora and (in all probability) Sinaloa. I have not recently examined west-Mexican specimens from south of the Sonora-Sinaloa boundary, however.

In the matter of coloration, both *nelsoni* and *restrictus* are lighter colored than *californicus* and *trochiloides*, the adult males are brighter and more golden (less greenish or ochraceous) yellow. The females and young males are paler and more

ICTERUS PUSTULATUS MICROSTICTUS GRISCOM

NORTHERN SCARLET-HEADED ORIOLE

Icterus pustulatus microstictus Griscom, Bull. Mus. Comp. Zoöl., 75, No. 30, Jan., 1934, 408 (Guaymas, Sonora, México).—van Rossem, 1934d, 476 (Alamos; Oposura).—Hellmayr, 1937, 134 (Sonora).—Peters, 1943, 103 (re. type).

Icterus pustulatus (not *Psarocolius pustulatus* Wagler) Ridgway, 1902, 295, part (Alamos).—van Rossem, 1927, 76, in text (Sonora); 1931c, 289 (Tecoripa; San Javier; Tesia; Chinobampo; Guaymas; San Jose de Guaymas; Guirocoba).—Huey, 1931b, 606 (north to Tecoripa).—Friedmann, 1933a, 190 (Guaymas).

Common resident of wooded areas throughout the Tropical zone, north in interior river valleys at least to Hermosillo and Moctezuma. Localities previously unpublished are Hermosillo, December 8, 1887; Moctezuma, September 27 and December 18, 1887 (Brit. Mus.); Navojoa, May and June; Agiabampo, May; Ciudad Obregón, May and June, 1937. Marked daily fluctuation in numbers noted at Guaymas during late April, 1930, suggests that part of the population is migratory (van Rossem notes).

AGELAIUS PHOENICEUS SONORIENSIS RIDGWAY

SONORA RED-WING

A.[gelaius] phoeniceus sonoriensis Ridgway, Man. N. Amer. Birds, 1887, 370 (Northwestern Mexico . . . and Arizona; south to Mazatlán=Camp Grant, Arizona).

Agelaius phoeniceus sonoriensis Allen, 1893a, 37 (Nacory).—Ridgway, 1902, 337, part (Sonora, part).—A.O.U. Comm., 1910, 223, part (Sonora); 1931, 305,

grayish (less olive) on the interscapular region, lighter and more yellowish green elsewhere, and the one-year-old males rarely possess the solidly black throat so frequently seen in *californicus* and *trochiloides* at that age. A great many, perhaps all, males of this species require three years to attain full maturity. One-year-old birds are of course immediately recognizable by their greenish plumage. The second stage resembles the adult but the plumage is usually duller, the tail shorter, the outermost rectrices possess varying amounts of greenish mottling, and the black throat mask is more restricted and reaches only to the center or the anterior part of the lower eyelid. In the third year the longer, immaculate black (except for edgings) tail and full throat mask is acquired, the outline of which reaches to the posterior corner of the eye in *californicus*, *trochiloides*, and *nelsoni*, but which reaches only to the center of the lower eyelid in *restrictus*.

I can appreciate no significant size differences between *californicus*, *trochiloides*, and *nelsoni*. *Restrictus* compares with the last named in wing and tail length as recorded. The measurements are for fully adult males and excessively abraded birds are not included.

In conclusion it may be observed that among the many specimens examined from Arizona and northwestern México not one can be assigned to *californicus* and I can only conclude, therefore, that the main winter range of that race is in Baja California.

part (Sonora).—van Rossem, 1926b, 226, part (Sonora); 1931c, 288 (Tecoripa; Obregon; Tesia).—Hellmayr, 1937, 163, part (Cerro Blanco).

Agelaius phoeniceus nevadensis (not of Grinnell) van Rossem, 1934d, 475 (Alamos).

Common migrant and winter visitant to suitable lowland localities almost everywhere except in the Colorado delta region. Further specimens have been examined from Ures, January 31 and February 4, 1933 ("common in flocks," Lamb notes); Guaymas, February 24 to March 11, 1905 (Mus. Comp. Zoöl.); Quitovaquita and Gray's Ranch on the boundary, March 4 and May 1, 1939 (Nat. Hist. Mus., not breeding); Hermosillo, October 22 to November 15, 1887 (Brit. Mus.). Dates extend from October 22 (Hermosillo) to April 5 (Tesia) [May 1 at Quitovaquita].⁶⁷

AGELAIUS PHOENICEUS THERMOPHILUS VAN ROSSEM

COLORADO RIVER RED-WING

Agelaius phoeniceus thermophilus van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 33, Feb. 17, 1942, 383 (3 miles N. of Calexico, Imperial Co., California); *ibid.*, in text (Colorado River valley in Sonora).

Agelaius phoeniceus sonoriensis (not of Ridgway, 1887) Ridgway, 1902, 337, part (lower Colorado Valley).—Stone and Rhoads, 1905, 683 (Colony).—van Rossem, 1926b, 226, part (lower Colorado Valley); 1934d, 475 (Oposura).—Hellmayr, 1937, 163, part (lower Colorado Valley).

Agelaius phoeniceus longirostris (not *Agelaius longirostris* Salvadori) Price, 1899, 92 (lower Colorado River).

Common, locally abundant, resident of marshes and cultivated areas along the Colorado River. Specimens have been examined from San Luís and Colonia Independencia (Dickey coll.), May 3, 1937; Colorado River opposite mouth of the Hardy, March 26, 1894; Colorado River at Monument 204, March 14, 1894 (U. S. Nat. Mus.). While this race is essentially resident, non-breeding casuals may be expected to occur in localities outside of the established breeding range. In this category, apparently, are three specimens from Oposura, April 4 and 5, 1887 (Mus. Comp. Zoöl.); Quitovaquita and Gray's Ranch on the boundary [Arizona side], in late April and early May, 1939 (Huey, 1942, p. 371; spec. exam.).

⁶⁷ This race breeds at several points in southeastern Arizona from the Altar Valley eastward, and although there is every probability that colonies exist on the Sonora side of the boundary, none have been noted to date.

XANTHOCEPHALUS XANTHOCEPHALUS (BONAPARTE)

YELLOW-HEADED BLACKBIRD

Icterus xanthocephalus Bonaparte, Journ. Acad. Nat. Sci. Phila., 5, [Feb., 1826], 223 (Pawnee villages on the river Platte=Nebraska).

Xanthocephalus xanthocephalus Allen, 1893a, 37 (San Pedro).—van Rossem, 1931c, 288 (Obregon).—1934d, 475 (Fronteriza).—Hellmayr, 1937, 186 (Sonora).

Xanthocephalus icterocephalus Baird, 1859, 19, in text (Santa Cruz).—Brewer, 1874, (1), 167, in text (Santa Cruz).

Common migrant and winter visitant in Sonoran and Tropical zones, with occasional non-breeding individuals possibly remaining through the summer. Probably breeds in the Colorado delta, where noted on May 3, 1937 (van Rossem notes; see also Grinnell, 1928, p. 149). Further occurrences are San Bernardino Ranch on the boundary, August 17 to September 4, 1892 (U. S. Nat. Mus. catl.); Ures, January 28, 1933 (Lamb notes); Hermosillo, October 22 to 25, 1887 (Brit. Mus.) and February 27, 1929 (Wright notes); Cerro Blanco, April 16 and 17, 1903 (Field Mus.); Guaymas, March 11 to 21, 1905 (Mus. Comp. Zoöl.); Guirocoba, May 10, 1931 (not breeding; Bishop coll.); Quito-vaquita on the boundary [Arizona side], April 28, 1939 (Huey, 1942, p. 371). Extreme dates are August 17 (San Bernardino Ranch) and May 10 (Guirocoba).

STURNELLA MAGNA LILIANAE OBERHOLSER

ARIZONA MEADOWLARK

Sturnella magna lilianae Oberholser, Sci. Pub. Cleveland Mus. Nat. Hist., 1, no. 4, Dec. 31, 1930, 103, pl. xviii (Huachuca Mountains, Arizona); *ibid.*, in text (Sonora).—Saunders, 1934, 42 (Sonora; crit.)—Hellmayr, 1937, 211 (northern Sonora).—A.O.U. Comm., 1944, 459 (northern Sonora).

Sturnella magna hoopesi (not of Stone) Ridgway, 1902, 361, part (San Pedro; Cachuta; Nacory; Santa Cruz River).—A.O.U. Comm., 1910, 235, part (Sonora); 1931, 302, part (Sonora).—Bailey, 1928, 638, part (Sonora).

Sturnella hoopesi Sharpe, 1909, 497, part (Sonora).

Sturnella magna mexicana (not *Sturnella mexicana* Sclater) Allen, 1893a, 37 (San Pedro; Cachuta; Nacory).

Probably a fairly common resident of the northern plains and river valleys from about the vicinity of Sásabe eastward to the Chihuahua boundary and south, in winter at least, to the Mayo River valley. The extreme western limit of the range is hypothecated by the known distribution in Arizona. A specimen taken at Gray's Ranch on the boundary [Arizona side], March 21, 1939 (Huey, 1942, p. 371), seems to be

that of a casual. The southern limits of the breeding range are not known, since all specimens from south of the boundary have been taken in fall and winter. Specimens have been examined as follows: nine from San Bernardino Ranch on the boundary, August 3 to 24; one from the San Pedro River, October 14; four from the Santa Cruz River, November 8 to 12, 1892 (U. S. Nat. Mus.); Llano, December 2, 1932 (Mus. Comp. Zoöl.); Camoa, February 20, 1931 (Bishop coll.).

STURNELLA NEGLECTA AUDUBON

WESTERN MEADOWLARK

Sturnella neglecta Audubon, Birds Amer., oct. ed., 7, 1843, 339, pl. 489 (Missouri River above Fort Croghan=Old Fort Union, North Dakota).—van Rossem, 1931c, 287 (El Doctor; Pesqueira; Tecoripa; Tesia; 12 miles W. of Magdalena; 15 miles E. of Nogales; Sasabe Valley; crit.); 1934d, 475 (Alamos; Cumpas; Oposura); 1936c, 49 (El Doctor; crit).—Huey, 1935, 256 (Punta Peñascosa).

Common resident along the lower Colorado River and, without much doubt, at many points along the northern boundary. However, the only definite breeding record is that from San Luís. Common, sometimes abundant, migrant and winter visitant in Sonoran and Tropical zones throughout the state, except that there are no island records. Extreme dates are October 20 (Hermosillo) and April 4 (Oposura). Specimens have been examined from localities, other than those published, as follows: Camoa, February 4 (Bishop coll.); San José de Guaymas, January 22; San Luís, May 3, breeding (Dickey coll.); Hermosillo, October 20 and December 4 (Brit. Mus.); San Marcial and other southcentral localities, many dates in October and November (Mus. Comp. Zoöl.); Sonoyta, January 18; Colorado River near the Gulf, March 27 (U. S. Nat. Mus.); Quitovaquita and Gray's Ranch on the boundary, November and March (Huey, 1942, p. 371).

Family THRAUPIDAE Tanagers

TANAGRA ELEGANTISSIMA RILEYI VAN ROSSEM

RILEY EUPHONIA

Tanagra elegantissima viscivora van Rossem, Occ. Papers Mus. Zool. Univ. Mich., No. 449, Oct. 9, 1941, 1 (San Francisco Cañon, extreme southeastern Sonora, México); *ibid.* in text (Rancho Santa Barbara).

Tanagra elegantissima rileyi van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 33, Feb. 17, 1942, 384 (new name for *Tanagra elegantissima viscivora*, pre-occupied).

Known only as a spring and summer visitant to the foothills and mountains in the extreme southeast. As elsewhere, the movements of this euphonia are probably erratic and governed in part by the supply of mistletoe berries. However, the oak-pine association in the higher mountains is obviously the preferred zonal level,—in other words, high Upper Sonoran and Transition. An additional record station is Álamos, April 24, 1939 (Mus. Vert. Zool.).

TANAGRA GODMANI (BREWSTER)

GODMAN EUPHONIA

Euphonia godmani Brewster, Auk, 6, No. 2, April [separates publ. Jan. 31], 1889, 90 (Mazatlán, Sinaloa, México); *ibid.*, in text (Alamos).—Ridgway, 1902, 24 (Alamos).—Berlepsch, 1911, 1016 (Alamos).

Tanagra godmani van Rossem, 1934d, 477 (Alamos).—Hellmayr, 1936, 34 (Alamos; crit.).

The single record from Sonora was collected by Frazar at Álamos on March 16, 1888. Extensive search by several experienced collectors has failed to produce any further data.

PIRANGA RUBRA RUBRA (LINNAEUS)

SUMMER TANAGER

Fringilla rubra Linnaeus, Syst. Nat., ed. 10, 1, 1758, 181 (in America=South Carolina).

Piranga rubra cooperi (not *Pyrranga cooperi* Ridgway) van Rossem, 1931c, 291 part (Saric, part).

Casual migrant. Known from a single specimen taken by J. T. Wright at Rancho La Arizona, May 23, 1929 and now in the Dickey collection. Two other specimens from the same locality (May 9 and 11) are intermediate in characters between *rubra* and *cooperi*.

PIRANGA RUBRA COOPERI RIDGWAY

COOPER TANAGER

Pyrranga cooperi Ridgway, Proc. Acad. Nat. Sci. Phila., [21], 1869, No. 2, Apr.-July [July 30], 130 (Los Pinos, New Mexico).

Piranga rubra cooperi Berlepsch, 1911, 1063 (Sonora).

Piranga rubra cooperi Evermann and Jenkins, 1888, 68 (Magdalena).—Allen, 1893a, 40 (Fronteras).—Ridgway, 1902, 776, part (Fronteras).—Thayer and Bangs, 1906, 21 (Opodepe; La Chumata).—van Rossem, 1931c, 291, part (Guircoba; Saric; part); 1934d, 477 (Oposura; Granados; 1938f, 13, in text (central and eastern Sonora).—Friedmann, 1933, 190 (Saric); Moore, 1938a, 27 (Guircoba).

Common summer visitant in the foothills and mountains from the Pajaritos Mountains eastward, and south to the Sinaloa boundary. Occurs in Tropical, Sonoran, and even in low Transition zones, but tends, though, to localize in riparian growth between about 1,400 and 5,500 feet altitude. Additional localities are Pilares, July 19, 1935 (Univ. Mich.); Magdalena, April 19; Nogales, May 10, 1925 (Dawson notes); Guadalupe Cañon, August 31; San Pedro River, July 29, 1893 (U. S. Nat. Mus. catl.); Rancho Santa Bárbara, June, 1937, breeding to 5,500 feet; San Francisco Cañon, May 30, 1937 (Dickey coll.; van Rossem notes); Cajón Bonito Creek and Guadalupe Cañon ("breeding"), early July, 1892; San Pedro River, October 5, 1893 (Mearns notes). Extreme dates are April 19 (Magdalena) and October 5 (San Pedro River).

PIRANGA FLAVA ZIMMERI VAN ROSSEM

ZIMMER TANAGER

Piranga flava zimmeri van Rossem, Auk, 59, No. 1, Jan., 1942, 87 (Chinobampo, southern Sonora, México).

Piranga hepatica (not *Pyrranga hepatica* Swainson), Allen, 1893a, 40 (El Pinita).—Thayer and Bangs, 1906, 21 (La Chumata).

Piranga flava hepatica Zimmer, 1929, 213 part (Alamos).—A.O.U. Comm., 1931, 311, part (Sonora).—Hellmayr, 1936, 283, part (Sonora).

Piranga hepatica oreophasma (not of Oberholser, p. 74) Oberholser, 1919a, 78, in text (Alamos).

Piranga flava oreophasma Oberholser, 1930b, 105 (Sonora).—van Rossem, 1931c, 290 (San Javier; Saric; Chinobampo); 1934d, 477 (Alamos; Mina Abundancia; Nacozeni; Oposura).—Griscom, 1934, 409, part (Sonora).

Fairly common summer visitant in the oak-pine association (high Upper Sonoran and Transition zones) in the mountains of the north-central and eastern part of the State, from the Arizona boundary southward. Occurs in winter in the Tropical zone lowlands and foothills (and probably at higher elevations also) from Guaymas southward. Additional record stations are San José de Guaymas, January 14 and 15, 1933 (Dickey coll.; Lamb notes); Camoa, February 16, 1931 (Bishop coll.); Rancho Santa Bárbara, June, 1937 (common; breeding; Dickey coll.; van Rossem notes); Cajón Bonito Creek, early July, 1892 ("breeding"); San Luis Mountains, July 13, 1892 and September 4, 1893 (Mearns notes).

PIRANGA LUDOVICIANA (WILSON)

WESTERN TANAGER

Tanager Ludoviciana Wilson, Amer. Orn., 3, 1811, 27, pl. 20, fig. 1 (Prairies of the Missouri = mouth of Lolo Creek Fork of Clearwater River, Idaho).

Piranga ludoviciana van Rossem, 1931c, 290 (Saric; San Jose de Guaymas; Guirocoba); 1934d, 477 (Alamos; Hacienda de San Rafael; Oposura).—Huey, 1942, 372 ("April 21 to May 14" [=Quitovaquita; Gray's Ranch; Dowling Well]).

Summer visitant to Upper Sonoran and Transition zones in the mountains along the northern boundary. Definite breeding localities are the Pajaritos Mountains (Rancho La Arizona) and Cajón Bonito Creek, and possibly also the San José Mountains. Occurs as a transient throughout the State. Unpublished localities are San Bernardino Ranch, August 28, 1892; San José Mountains, August 11, 1893; San Luís Mountains, September 6, 1893; Guadalupe Cañon, October 4, 1893; Cajón Bonito Creek, breeding early July, 1892 (Mearns notes); Agua Marín, May 5, 1939 (Mus. Vert. Zool); Magdalena, May 12 to 14, 1925 (Dawson notes). Fall migration dates are August 28 (San Bernardino Ranch) to October 4 (Guadalupe Cañon). Spring dates are from March 30 (Álamos) to May 18 (Hacienda de San Rafael).

PIRANGA BIDENTATA BIDENTATA SWAINSON

SWAINSON Tanager

Piranga bidentata Swainson, Philos. Mag., new ser., 1, No. 6, June, 1827, 438 (Temascáltepec, México).

Piranga bidentata bidentata van Rossem, 1934d, 477 (Alamos).

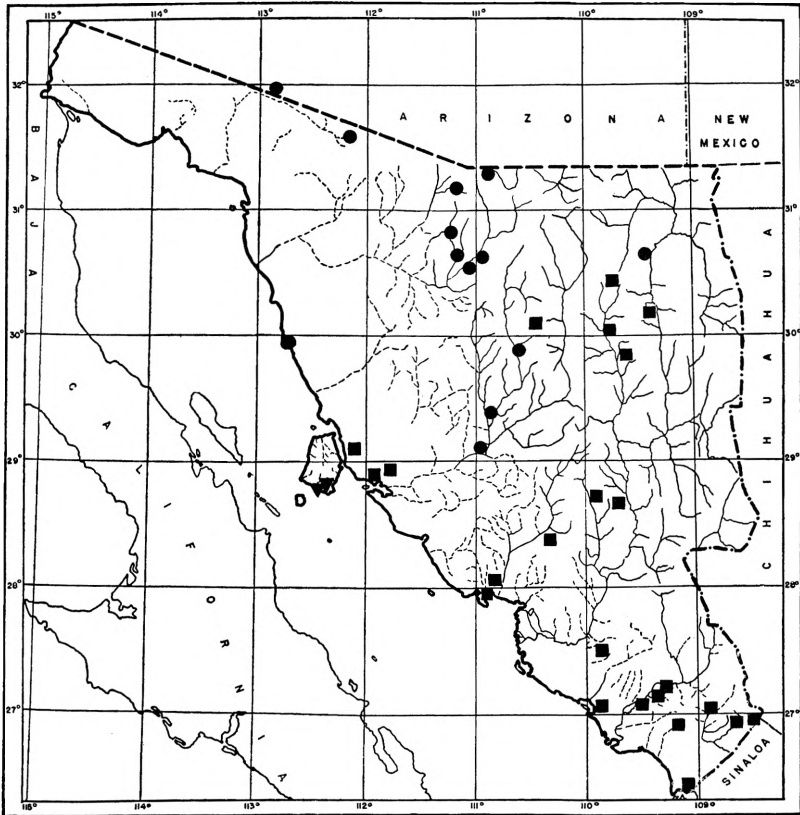
Known from Sonora only by a specimen taken by Frazar at Álamos on March 30, 1888.

PIRANGA ERYTHROCEPHALA CANDIDA GRISCOM

NORTHERN RED-HEADED Tanager

Piranga erythrocephala candida Griscom, Bull. Mus. Comp. Zoöl., 75, No. 10, Jan., 1934, 410 (Hacienda de San Rafael, Chihuahua [=Sonora], México).—van Rossem, 1934d, 477 (Hacienda de San Rafael).—Hellmayr, 1936, 295 (Hacienda de San Rafael).—Peters, 1934, 102 (re type).

Seemingly a rare resident in the lower mountains in the extreme southeast. The only Sonora records are those of four birds taken by Frazar at Hacienda de San Rafael between May 8 and 15, 1888, but midwinter records from adjacent Chihuahua localities indicate, in part at least, permanent residence in the region.



MAP 22. Distribution of *Richmondena cardinalis*. Circles, *R. c. superba*; squares, *R. c. affinis*; triangles, *R. c. townsendi*.

Family FRINGILLIDAE Grosbeaks, Finches, Buntings

RICHMONDENA CARDINALIS SUPERBA (RIDGWAY)

ARIZONA CARDINAL

Cardinalis cardinalis superbus Ridgway, Auk, 2, No. 4, Oct., 1885, 344 (Fuller's Ranch, a few miles east of Camp Lowell, Arizona); 1901, 645, part (Magdalena).—Evermann and Jenkins, 1888, 68 (Magdalena).—Brewster, 1902, 156, in text (northern Sonora).—A.O.U. Comm., 1910, 282 (northern Sonora).—Sheffler, 1931a, 137 (Magdalena Valley; Alamos [=El Alamo]); 1931b, 165 (between Magdalena and Santa Ana).

Richmondena cardinalis superbus Bailey, 1928, 670 (northern Sonora).

Richmondena cardinalis superba A.O.U. Comm., 1931, 313 (northern Sonora).—

van Rossem, 1931c, 291 (Saric; Pesqueira; 15 miles S.W. of Nogales; 12 miles W. of Magdalena).—Hellmayr, 1938, 71 (northern Sonora).

Cardinalis cardinalis affinis (not of Nelson) Thayer and Bangs, 1906, 22, part (Opodepe).

Cardinalis virginianus, var. *igneus* (not *Cardinalis igneus* Baird) Baird, Brewer, and Ridgway, 1874, 2, 103, part (Sonora).

Fairly common resident of Sonoran deserts (chiefly mesquite and riparian associations) from about longitude 113° eastward along the Arizona boundary; southward coastwise at least to latitude 30°, in the central interior to about 29°, and in the northeast to about 30° 30'. Some unpublished stations are Puerto Libertad (Nat. Hist. Mus.); Pílares; Hermosillo (Univ. Mich.); Nogales (Dawson notes); Pozo de Luís ("common," Mearns notes). Intergradation between this race and *affinis* seems to be relatively abrupt where their respective ranges come into contact.

RICHMONDENA CARDINALIS TOWNSENDI VAN ROSSEM

TIBURÓN ISLAND CARDINAL

Richmondena cardinalis townsendi van Rossem, Trans. San Diego Soc. Nat. Hist., 7, No. 12, July 28, 1932, 142 (Tiburón Island, Sonora, México).—Hellmayr, 1938, 72 (Tiburón Island).

Cardinalis cardinalis affinis (not of Nelson) Townsend, 1923, 21 (Tiburón Island; crit.).

Apparently a rather uncommon resident on Tiburón Island.

RICHMONDENA CARDINALIS AFFINIS (NELSON)

ÁLAMOS CARDINAL

Cardinalis cardinalis affinis Nelson, Proc. Biol. Soc. Wash., 13, May 29, 1899, 28 (Álamos, Sonora, México).—Ridgway, 1901, 648 (Álamos; Ortiz; Batamotal; Guaymas; "etc.").—Brewster, 1902, 156, in text (southern Sonora).—Thayer and Bangs, 1906, 22, part (La Chumata).

Cardinalis affinis Sharpe, 1909, 220 (coast of southern Sonora).

Richmondena cardinalis affinis van Rossem, 1931c, 291 (Tecoripa; San Javier; Obregon; Tesia; Chinobampo; Guirocoba; Guaymas; Tobarí Bay; Kino Bay); 1932, 142, in text (southern Sonora); 1934d, 478 (Guaymas; Álamos; Oposura; Nacozeri; Cumpas).—Hellmayr, 1938, 72 (range in Sonora).

Cardinalis igneus (not of Baird) Salvin and Godman, 1884, 341, part (Guaymas).

Cardinalis virginianus var. *igneus* Baird, Brewer, and Ridgway, 1874, (2), 103, part (Sonora).

Cardinalis virginianus igneus Belding, 1883, 343 (Guaymas).

Cardinalis cardinalis superbus (not of Ridgway) Allen, 1893a, 39 (Opoto).—Ridgway, 1901, 645, part (Opoto).

Common resident of the Tropical zone from the Sinaloa boundary, north, coastwise, at least to Kino Bay and the Sierra Seri, and in the eastern interior to somewhat north of latitude 30°. Further stations in the general range are Camoa (Bishop coll.); Agiabampo; Navojoa; San Francisco Cañon (van Rossem notes); Sierra Seri (Mus. Vert. Zool.); Ures; Rancho Costa Rica (Lamb notes).

PYRRHULOXIA SINUATA FULVESCENS VAN ROSSEM

ARIZONA PYRRHULOXIA

Pyrrhuloxia sinuata fulvescens van Rossem, Trans. San Diego Soc. Nat. Hist., 7, No. 30, May 31, 1934, 356 (Fort Lowell, Arizona); 1934d, 478 (Guaymas; Alamos; Oposura).—Hellmayr, 1938, 76 (Sonora; crit.).

Pyrrhuloxia sinuata (not *Cardinalis sinuatus* Bonaparte) Belding, 1883, 343 (Guaymas).—Salvin and Godman, 1884, 343, part (Guaymas).—Stephens, 1885, 228 (Sasabe).—Sheffer, 1931a, 138 (Imuris; Rancho Los Alamos); 1931b, 165 (between Magdalena and Santa Ana).

Pyrrhuloxia sinuata sinuata Ridgway, 1901, 625, part (Sonora).—Thayer and Bangs, 1906, 22 (Opodepe).—van Rossem, 1931c, 292 (Tecoripa; San Javier; Saric; Tesia; Chinobampo; Guaymas; Tobarí Bay; Guirocoba; Sasabe).—Friedmann, 1934, 107 (Guaymas).

Pyrrhuloxia sinuata beckhami (not of Ridgway) Allen, 1893a, 40 (Granados).

Common resident of Sonoran and Tropical zones from Sásabe (probably from about longitude 113°) east to the San Bernardino River valley and south throughout the State. Further stations of occurrence are 35 miles W. of Magdalena; Ures; San Carlos Bay; San Pedro Bay; Masocari Island (Dickey coll.); Hermosillo (Lamb notes); Pílares (Univ. Mich.); Dutch Charley's Ranch at Monument 88 (Mearns notes); San Bernardino Ranch (U. S. Nat. Mus. catl.); Agua Caliente (Brit. Mus.).

PHEUCTICUS CHRYSOPEPLUS DILUTUS VAN ROSSEM

SONORA YELLOW GROSBEAK

Pheucticus chrysopeplus dilutus van Rossem, Bull. Mus. Comp. Zoöl., 77, No. 7, Dec., 1934, 479 (La Trompa, Chihuahua, México); *ibid.*, in text (Hacienda de San Rafael; Alamos; Guirocoba; Ysleta).—Hellmayr, 1938, 77 (Sonora).—Meise, 1938, 4 (southern Sonora; crit.).

Pheucticus [sic] *chrysopeplus* (not *Coccothraustes chrysopeplus* Vigors) van Rossem, 1931c, 293 (Guirocoba).

Common summer visitant to Tropical zone foothills in the extreme southwest, where practically all records fall between about 1,200 and 2,000 feet altitude. The association most favored is larger growth along

streams. An additional station is San Francisco Cañon, where observed commonly May 30 and 31, 1937 (van Rossem notes). The earliest known date of arrival is April 30 (Guirocoba). There are no data as to fall departure.⁶⁸

PHEUCTICUS MELANOCEPHALUS MELANOCEPHALUS (SWAINSON)

ROCKY MOUNTAIN GROSBEAK

Guiraca melanocephala Swainson, Philos. Mag., n. s., 1, No. 6, June, 1827, 438 (Table land. Temiscaltipec=Temascáltepec, México).

Zamelodia melanocephala Brewster, 1902, 158 (Álamos).—Thayer and Bangs, 1906, 22, part (La Chumata).

Zamelodia melanocephala melanocephala van Rossem, 1931c, 292 (Tecoripa; San Javier; Chinobampo; Guirocoba).

Hedymeles melanocephalus melanocephalus Griscom, 1934, 411, in text (Alamos; mountains of northern Sonora).—van Rossem, 1934d, 478 (Alamos; Mina Abundancia; Oposura; La Chumata).

Hedymeles melanocephalus papago Oberholser, 1919c, 412 (La Chumata; west side of San Luis Mountains on Mexican boundary line; Patagone Mountains [Arizona side]).

Probably a fairly common summer visitant to Upper Sonoran and Transition zones in the northeastern mountainous area. What appear to be definite breeding localities are the Patagonia Mountains (Arizona side of the boundary), the Sierra de San Antonio, the San Luis Mountains and (Mearns notes) Guadalupe Cañon and Cajón Bonito Creek. A specimen taken at Oposura (more probably the Sierra de Oposura) on May 13, 1887, was possibly a belated migrant. No form of the Black-headed Grosbeak has been found in summer in the Transition (or any other) zone in southeastern Sonora, although the present race occurs at some closely adjacent localities in the higher mountains of Chihuahua. Three specimens respectively from Chinobampo, February 12 and 25, 1930, and Álamos, February 13, 1888, indicate that a limited number of individuals winter in the Tropical zone in the extreme southern part of the State. Spring migration records extend from March 4 (Tecoripa) to May 2 (Guirocoba) or even May 13 (Oposura).

⁶⁸ It is evident that this species is migratory, at least in the northern part of the range. None of the experienced collectors who have visited southern Sonora in winter have encountered it at that season, and so common and conspicuous a bird could hardly have escaped notice. At Guirocoba in May, 1937, none were seen before the 20th, after which date it became common. Winter taken specimens from localities south of Sonora should be carefully determined.

PHEUCTICUS MELANOCEPHALUS MACULATUS (AUDUBON)

BLACK-HEADED GROSBEAK

Fringilla maculata Audubon, Birds Amer., folio, 4, 1837, pl. 373, figs. 2, 3, 4 (Columbia River, Oregon).

Zamelodia melanocephala maculata van Rossem, 1931c, 292 (Saric; Tecoripa; San Javier; Tesia; Chinobampo; Guaymas; Guirocoba).

Hedymeles melanocephalus maculatus Griscom, 1934, 410 (Oposura; Alamos; Opodepe; crit.).—van Rossem, 1934d, 478 (Alamos; Oposura; Saric; crit.).—Hellmayr, 1938, 87, footnote (Sonora).

[?] *Habia melanocephala* (not *Guiraca melanocephala* Swainson) Evermann and Jenkins, 1888, 68 (Magdalena).

Zamelodia melanocephala Thayer and Bangs, 1906, 22, part (Opodepe).

Hedymeles melanocephalus melanocephalus Oberholser, 1919c, 408 (Opodepe).

Occurs widely and commonly as a migrant and, apparently very rarely, as a winter visitant in the south (Tesia, December 17). The breeding range is at present obscure, but present evidence indicates a lower level (Lower Sonoran) than that of *melanocephalus*. Known breeding localities are Rancho La Arizona (Saric) at the edge of the western desert and Moctezuma (Oposura) at about 1,800 feet altitude. The July record of Evermann and Jenkins for Magdalena most likely belongs here. March 3 (Chinobampo) and March 9 (Tecoripa) are possibly dates for early migrants rather than for winter visitants.⁶⁹

GUIRACA CAERULEA INTERFUSA DWIGHT AND GRISCOM

ARIZONA BLUE GROSBEAK

Guiraca caerulea interfusa Dwight and Griscom, Amer. Mus. Novit., 257, March 14, 1927, 4 (Fort Lowell, Arizona).—Bailey, 1928, 677 (southern Sonora). van Rossem, 1931c, 293 (Saric; El Alamo; Guirocoba); 1934d, 480 (Alamos; Hacienda de San Rafael; Oposura).

⁶⁹ An intensive search in Tropical, Sonoran, and Transition zone localities in southeastern Sonora in late May and June, 1937, failed to disclose the presence of any race of the Black-headed Grosbeak and all records for that region may safely be considered those of winter visitants or transients. This region (below 2,000 feet) is occupied in summer by considerable numbers of the closely related yellow and black grosbeak, a circumstance which may prohibit the presence of *melanocephalus*. Incidentally, I do not see how *Hedymeles* can possibly be maintained as a genus distinct from *Pheucticus* in view of the intimate relationship shown in almost every particular. The bill characters given by Ridgway (1901) to distinguish the two genera break down completely through individual variation in the largest-billed examples of *melanocephalus*, though they are maintained as an average. A sub-generic rank seems more than sufficient to cover the situation. It may further be remarked that the songs of *melanocephalus* and *cbrysopeplus* are remarkably similar, as are also the alarm notes, and differ chiefly in the vastly greater volume of the latter species.

Guiraca caerulea deltarhyncha (not of van Rossem!) van Rossem, 1938c, 133, part (Guircoba).

Guiraca caerulea lazula (not *Pitylus lazulus* Lesson) Brewster, 1902, 159, part (Alamos, part; Oposura).

Guiraca caerulea (not *Loxia caerulea* Linnaeus) Baird, 1858, 499, part (Los Nogales); 1859, 16, part (Los Nogales).—Evermann and Jenkins, 1888, 68 (Magdalena).

Fairly common summer visitant in Tropical and Sonoran zones almost throughout the State, though there are no records for the extreme northwest, nor from the coastal plain except in migration. There are no winter records, and it seems likely that the winter range lies south of Sonora. Further localities are Pilares, July 11 and 20, 1935 (Univ. Mich.); San Bernardino Ranch on the boundary, August 26 to 31, 1892 (U. S. Nat. Mus. catl.); Quitovaquita on the boundary (Arizona side), April 30 (Huey, 1942, p. 372); boundary south of Bisbee (Monument 90), September 20, 1892 (Mearns notes); Guaymas, March 9, 1905 (Mus. Comp. Zoöl.); Rancho Santa Bárbara, June 9 to 12, 1937 (Dickey and Shefler coll.). Extreme dates are March 9 (Guaymas) and September 24 (Rancho La Arizona).⁷⁰

GUIRACA CAERULEA SALICARIA GRINNELL

CALIFORNIA BLUE GROSBEAK

Guiraca caerulea salicarius Grinnell, Proc. Biol. Soc. Wash., 24, June 16, 1911, 163 (near Colton, Riverside County, California).—van Rossem, 1934d, 480 (Alamos).

Guiraca caerulea salicaria van Rossem, 1931c, 293 (Obregon; Tesia).—

Guiraca caerulea lazula (not *Pitylus lazulus* Lesson) Brewster, 1902, 159, part (Alamos).

Apparently a rather common winter visitant in the Tropical zone lowlands and foothills from the lower Yaqui River southward. Further specimens have been examined from Camoa, February 18, and Guiro-

⁷⁰ Breeding Blue Grosbeaks from the tropical zone of southern Sonora in some respects are not typical of *interfusa*. The posterior wing bar is slightly darker and the bills wider and deeper at the base. Two of the seven, however, seem to be exactly like Arizona birds in these respects, and all are similar to *interfusa* in general coloration. Presumably the differences mentioned are in the direction of *deltarhyncha* of westcentral Mexico; indeed I once erroneously listed the largest-billed Guircoba specimen as that race before adequate material was available. Four breeding specimens taken at altitudes of 5,000 to 5,500 feet in undergrowth in the oak-pine association at Rancho Santa Bárbara, June 9 to 12, 1937 (a strange environment surely for *Guiraca!*), are typical *interfusa*.

coba, April 6, 1931 (Bishop coll.). Extreme dates are November 19 (Ciudad Obregón) and April 6 (Guircoba).⁷¹

PASSERINA AMOENA (SAY)

LAZULI BUNTING

Emberiza amoena Say, in Long, Exped. Rocky Mts., 2, 1823, 47, note (Rocky Mts., source of the Arkansas=Cañon City, Colorado).

Passerina amoena Townsend, 1923, 21 (Tiburón Island).—van Rossem, 1931c, 294 (Tecoripa; San Javier; Saric; Tesia; Chinobampo; Guircoba); 1934d, 480 (Alamos; Mina Abundancia; Nacozeni; Oposura; Granados).—Hellmayr, 1938, 108 (northern Sonora).

Common spring and fall transient at Sonoran and Tropical zone levels nearly everywhere, and a winter visitant in the Tropical zone southerly. Summer residence in the north is indicated, but not proven, by the presence of full grown juveniles at Rancho La Arizona in late summer (August 23), and by the presence of apparently resident pairs in the same locality May 9 (van Rossem notes); however, actual breeding records are lacking. Additional stations are Magdalena, April 20 to May 12, 1925 (Dawson notes); Quitovaquita on the boundary [Arizona side], April 30, 1939 (Huey, 1942, p. 372); San Bernardino Ranch on the boundary, August 9 and 30, 1892 (Mearns notes); extreme dates are August 9 (San Bernardino Ranch) and May 12 (Oposura and Magdalena).

PASSERINA VERSICOLOR VERSICOLOR (BONAPARTE)

EASTERN VARIED BUNTING

Spiza versicolor Bonaparte, Proc. Zool. Soc. Lond., 5, 1837, No. 59 [June 14, 1838], 120 (near Temascáltepec [México]).

Passerina versicolor versicolor van Rossem, 1934b, 370, in text (Chinobampo).—Hellmayr, 1938, 108 (Chinobampo).

Passerina versicolor pulchra (not of Ridgway) van Rossem, 1931c, 293, part (Chinobampo, part).

Occasional midwinter visitant to the Tropical zone in the extreme south. The two specimens (adult male and female) known to date were taken by Wright at Chinobampo, February 14 and 15, 1930, and are now in the Dickey collection. Southern Sonora offers numerous examples of seasonal intrusion from eastern and interior areas and the present case, while interesting, is not extraordinary.

⁷¹ This race of the Blue Grosbeak almost certainly breeds in Sonora along the Colorado River, since it does so on the Baja California side (Grinnell, 1928, p. 185, under "*interfusa*"), and also in the adjacent part of Arizona.

PASSERINA VERSICOLOR PULCHRA RIDGWAY

BAJA CALIFORNIA VARIED BUNTING

Passerina versicolor pulchra Ridgway, Man. N. A. Birds, 1887, 448 (Miraflores, Baja California, México).—van Rossem, 1931c, 293, part (Chinobampo, part; 1934b, 370 (Chinobampo).—Hellmayr, 1938, 109 (Chinobampo).

Winter visitant to the Tropical zone; probably not uncommon, though only four specimens have been taken to date. These individuals (all females) which are seemingly typical of *pulchra*, were taken by Wright at Chinobampo on March 2, 4, and 9, 1930. It is probable that some of the numerous adult males taken in Sonora in winter and included under the resident race *dickeyae* are actually *pulchra*, but since there seems to be no reasonably certain method of distinguishing adult males of the two races, all are included under the former name.

PASSERINA VERSICOLOR DICKEYAE VAN ROSSEM

SONORA VARIED BUNTING

Passerina versicolor dickeyae van Rossem, Trans. San Diego Soc. Nat. Hist., 7, No. 33, May 31, 1934, 369 (Chinobampo, Sonora, México); 1934d, 480 (Alamos; Hacienda de San Rafael; Oposura).—Hellmayr, 1938, 109 (Sonora).—A.O.U. Comm., 1944, 460 (northern Sonora).

Passerina versicolor pulchra (not of Ridgway) van Rossem, 1931c, 293, part (Sarıc; Tesia; Guirocoba; Chinobampo, part).

Cyanospiza versicolor pulchra Brewster, 1902, 161, part (Alamos; Oposura).

Cyanospiza versicolor (not *Spiza versicolor* Bonaparte) Cooper, 1870, 234, part (Sonora).

Fairly common summer visitant to Sonoran and Tropical zones from the vicinity of the Pajaritos Mountains eastward, and south along the eastern foothills the full length of the State. Apparently resident in the Tropical zone, where also found on the coastal plain in winter. Additional stations from which specimens have been examined are El Tigre Mountains, July 11, 1935 (Univ. Mich.); Quiriego, April 30; Guadalupe, April 19; Nuri, April 21, 1888 (Brit. Mus.); San Francisco Cañon, May 29 and 30, 1937 (Dickey coll.).

SPIZA AMERICANA (GMELIN)

DICKISSEL

Emberiza americana Gmelin, Syst. Nat., 1, pt. 2, 1789, 872 (in Noveboraco=New York).

Apparently, in former years, a sporadic late summer and fall visitant in the extreme northeast. Mearns' notes record an individual (appar-

ently not preserved) carried by a Richardson Pigeon Hawk when the latter was collected on the San Pedro River "on the boundary," October 10, 1892. Other specimens were collected at the San Bernardino Ranch on July 18 and 24, and August 27, 1892, but these appear, from Mearns' field book, to have been taken on the Arizona side of the line. The last cited specimen seems to have disappeared from the National Museum collection.

CARPODACUS MEXICANUS FRONTALIS (SAY)

NORTHERN HOUSE FINCH

Fringilla frontalis Say, in Long, Exped. Rocky Mts., 2, 1823, 40, note (Arkansas River near the mountains—near Pueblo, Colorado).

Carpodacus frontalis Sharpe, 1909, 265 (northern Sonora).

Carpodacus mexicanus frontalis Evermann and Jenkins, 1888, 67, 69 (Nogales; Magdalena).—Allen, 1893a, 38 (Oputo; Granados; Nacory).—Price, 1899, 92 (lower Colorado River).—Ridgway, 1901, 137 (northern Sonora).—A.O.U. Comm., 1910, 244 (Sonora); 1931, 321 (northern Sonora).—Townsend, 1923, 18, part (Tiburon Island).—van Rossem, 1931c, 295, part (many locs., excl., San Esteban Island); 1932, 142 (Tiburon Island); 1934d, 481 (Guaymas; Ranken's Ranch; Nacozari; Oposura; crit.).—Moore, 1936, 203 (northern and central locs.; crit.); 1939e, 188 (Sonora).—Hellmayr, 1938, 153 (northern Sonora).

Carpodacus mexicanus solitudinis Moore, 1939b, 107 (El Doctor; Saric); 1939e, 191 (N.W. Sonora).

Carpodacus mexicanus ruberrimus (not of Ridgway) Maillard, 1923, 455, part (San Pedro Martir Island).

Common resident from the Arizona boundary south, coastwise, to Kino Bay, Tiburón and San Pedro Mártir Islands, and in the eastern interior to about latitude 29°. Winter dispersal extends southward over the range of *sonoriensis*, specific localities being Guaymas, San Carlos Bay, Ciudad Obregón, San Estéban Island, Tesia, and Chinobampo between the dates of November 9 and February 19.

CARPODACUS MEXICANUS SONORIENSIS RIDGWAY

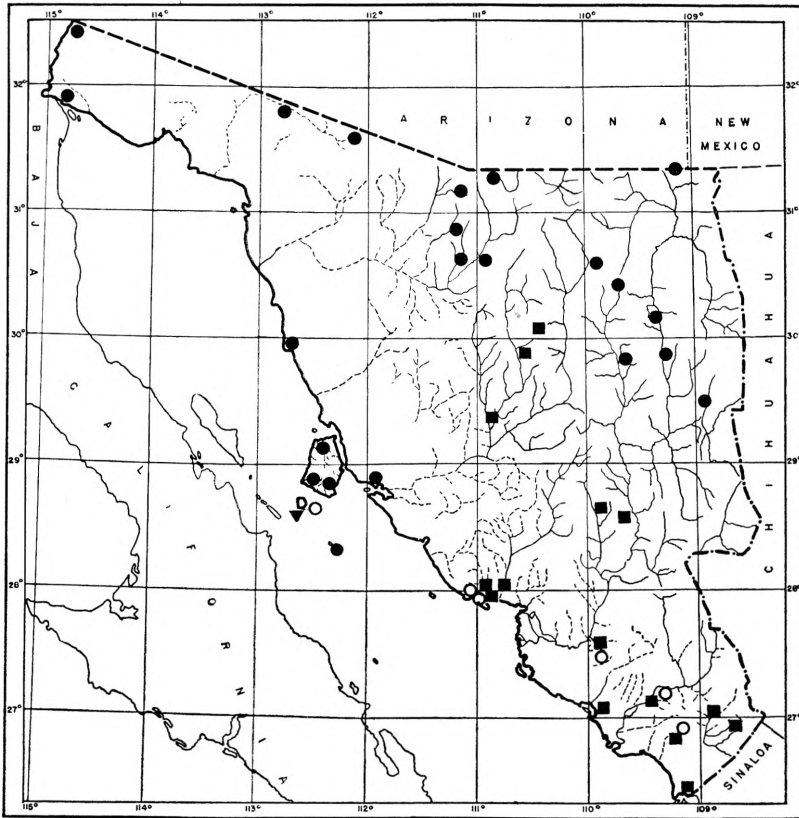
SONORA HOUSE FINCH

Carpodacus mexicanus sonoriensis Ridgway, Bull. U. S. Nat. Mus., 50, Pt. 1, 1901, 135 (southern Sonora north to Guaymas—Alamos, Sonora, México); *ibid.*, in text (Batamotal).—van Rossem, 1931c, 294 (locs. north to Guaymas, Pesqueira, and Tecoripa); 1934d, 481 (Guaymas; Alamos); 1937a, 38 (Sonora; nomen.).—Moore, 1936, 203-208, in text (southern Sonora; crit.); 1937b, 205, in text (re type).—Hellmayr, 1938, 157 (Sonora; crit.).

Carpodacus sonoriensis Sharpe, 1909, 265 (southern Sonora).

Erythrina mexicana sonoriensis Kuroda, 1930, 117 (southern Sonora).

Carpodacus familiaris (not of McCall) Heermann, 1853, 267, part (Guaymas.—Cassin, 1856, 73, part (Guaymas)).



MAP 23. Distribution of *Carpodacus mexicanus*. Circles, *C. m. frontalis*; squares, *C. m. sonoriensis*; inverted triangles, *C. m. ruberrimus*; hollow figures, winter stations outside established breeding ranges.

Carpodacus frontalis (not *Fringilla frontalis* Say) Salvin and Godman, 1886, 421, part (Guaymas).

Carpodacus mexicanus frontalis Evermann and Jenkins, 1888, 69 (Guaymas).
Carpodacus mexicanus rhodocolpus (not *Carpodacus rhodocolpus* Cabanis) Belding, 1883, 343 (Guaymas).

Carpodacus mexicanus ruberrimus (not of Ridgway) A.O.U. Comm., 1895, 214, part (Guaymas).—Brewster, 1902, 133, part (Alamos; Guaymas; crit.).—Thayer and Bangs, 1906, 21 (Opodepe; La Chumata; crit.).—Moore, 1937d, 205-206, in text (Sonora; crit.); 1939e, 199, part (southern Sonora; monog.).

Common resident of the Tropical zone from the Sinaloa boundary north, coastwise, to about latitude 28° and in the central interior to about latitude 30° . Most of the specimens from localities north of the lower

Yaqui River valley are variously intermediate toward *frontalis* with resultant characters which closely approximate the Lower California race *ruberrimus*.⁷²

CARPODACUS MEXICANUS RUBERRIMUS RIDGWAY

SAN LUCAS HOUSE FINCH

Carpodacus mexicanus ruberrimus Ridgway, Manual No. Amer. Birds, 1887, 391, note (Cape San Lucas = La Paz, Baja California, México).

Carpodacus mexicanus frontalis (not *Fringilla frontalis* Say) Townsend, 1923, 18, part (San Esteban Island).—van Rossem, 1931c, 295, part (San Esteban Island).

Fairly common resident on San Estéban Island.⁷³

VOLATINIA JACARINA DILUTA VAN ROSSEM

WESTERN BLUE-BLACK GRASSQUIT

Volatinia jacarini diluta van Rossem, Bull. Brit. Orn. Club, 58, July, 1938, 130 (San Blas, Nayarit, México).

Volatinia jacarini atronitens (not of Todd) Moore, 1938a, 27 (Guirocoba; Baromicon).

Known only from two specimens in the Moore collection, taken at Guirocoba on August 2 and 3, 1933, and one seen at Baromicon on May 17, 1933. The two localities are, respectively, in the Tropical and Transition zones.

SPINUS PINUS PINUS (WILSON)

NORTHERN PINE SISKIN

Fringilla pinus Wilson, Amer. Orn., 2, 1810, 133, pl. 17, fig. 1 (Bush Hill near Philadelphia, Pennsylvania).

Spinus pinus pinus van Rossem, 1934d, 481 (Nacozari; Oposura).—Hellmayr, 1938, 270 (northern Sonora).

⁷² It has been urged that *sonoriensis* is synonymous with *ruberrimus*, initially by Brewster (1902), later by Bangs (1906), and finally by Moore (1936 *et seq.*) chiefly, in the first two cases, because of the appearance of specimens from such areas (occupied by *frontalis-sonoriensis* intergrades) as Guaymas, Opodepe, and La Chumata. However, House Finches from the lower Yaqui River southward are distinct from *ruberrimus* in certain color details, the slight Sinaloa accentuation of which, and a wing length averaging 2.6 mm. shorter, has been named *rhodopnus*.

⁷³ Although the single male is paler in coloration than Cape San Lucas *ruberrimus*, the five females are quite typical. All six San Estéban specimens are equally small and exhibit very strongly the tendency of larger and more swollen bills frequently seen in this race. An additional factor to be considered in this determination (although not in itself conclusive) is the presence of other Baja California races on San Estéban Island.

Status uncertain. Four specimens in the Museum of Comparative Zoölogy, taken by Cahoon at Nacozari, March 25, 1887, and at Oposura [more probably the Sierra de Oposura], May 9 and June 2, 1887, are certainly to be referred only to *pinus*. Whether the Oposura birds were resident or vagrants in the locality is unknown. Dawson (notes) observed numbers of Pine Siskins at Magdalena between May 7 and 15, 1925, and collected a specimen, the whereabouts of which is unknown and the subspecies therefore in doubt.

SPINUS PINUS MACROPTERUS (DU BUS)

MEXICAN PINE SISKIN

Chrysomitris macropterus Du Bus, Esq. Orn., livr., 5, 1849, pl. 23, (no locality = Jalapa, Vera Cruz, México).

Spinus pinus macropterus van Rossem, 1931c, 295 (Saric).—Hellmayr, 1938, 271 (Saric).

Known only from eleven specimens shot from a vagrant flock at Rancho La Arizona ("Saric") on May 15, 1929. Certain minor peculiarities in coloration suggest the San Pedro Mártir Mountains in Baja California as the locality of origin, rather than the Mexican plateau.

SPINUS NOTATUS FORRERI (SALVIN AND GODMAN)

FORRER SISKIN

Chrysomitris forreri Salvin and Godman, Biol. Centr.-Am., Aves, 1, Nov. 1886, 429 (Ciudad, Durango, México).

Spinus notatus forreri van Rossem, 1934d, 482 (Mina Abundancia); 1938c, 136, in text (Sonora; crit.).—Hellmayr, 1938, 288 (northeastern [=southeastern] Sonora).

Common in spring and summer in the Transition zone in the mountains of the southeast, where breeding and probably resident. In addition to the single published Sonora locality (Mina Abundancia), there are specimens in the Dickey and Sheffler collections from Rancho Santa Bárbara taken between June 6 and 13, 1937.

SPINUS PSALTRIA HESPEROPHILUS (OBERHOLSER)

GREEN-BACKED GOLDFINCH

Astragalinus psaltria hesperophilus Oberholser, Proc. Biol. Soc. Wash., 16, Sept. 30, 1903, 116 (San Bernardino, California).—Thayer and Bangs, 1906, 21 (Opo-depe; La Chumata).—A.O.U. Comm., 1910, 249 (Sonora).—Dawson, 1923, 191 (Sonora).

Spinus psaltria hesperophilus Bailey, 1928, 704 (Sonora).—A.O.U. Comm., 1931, 327 (Sonora).—van Rossem, 1931c, 296 (El Doctor; Pesqueira; San Javier; Saric; Chinobampo; Guirocoba; 15 miles S.W. of Nogales); 1934d, 482 (Hacienda de San Rafael; Nacozari; Oposura).—Hellmayr, 1938, 297 (northern Sonora).

Astragalinus arizonae (not *Chrysomitris mexicanus* Var. *arizonae* Coues) Sharpe, 1909, 234 (Sonora).

Astragalinus psaltria arizonae Ridgway, 1901, 115, part (Sonora).

Spinus psaltria arizonae Evermann and Jenkins, 1888, 68 (Magdalena).

Spinus psaltria (not *Fringilla psaltria* Say) A.O.U. Comm., 1886, 261, part (Sonora).—Allen, 1893a, 38 (Los Cuevos).

S.[pinus] psaltria Ridgway, 1887d, 399, part (Sonora).

Chrysomitris psaltria, var. *psaltria* Baird, Brewer, and Ridgway, 1874 (1), 474, part (Arispe).

Astragalinus [sic] *psaltria mexicanus* (not *Carduelis mexicana* Swainson) Sheffler, 1931a, 137 (27 mi. S. of Nogales).

Common resident of Sonoran zone levels from the Pajaritos Mountains eastward, and south through the central and eastern foothills the full length of the State. Also occurs generally over western deserts and lowlands in winter. Additional specimens have been examined from Guirocoba, May 1, 1931 (Bishop coll.); Guaymas, March 6 to 14, 1905 (Mus. Comp. Zool.); Guadalupe Cañon, early July, 1892; Cajón Bonito Creek, September 8, 1893 (Mearns notes).

SPINUS LAWRENCEI (CASSIN)

LAWRENCE GOLDFINCH

Carduelis Lawrencei Cassin, Proc. Acad. Nat. Sci. Phila., 5, No. 5, Sept.-Oct. [Dec. 7], 1850, 105, pl. v (Sonoma and San Diego, California=Sonoma, Sonoma Co.).

Astragalinus lawrencei Price, 1899, 92 (lower Colorado River).

Spinus lawrencei van Rossem, 1931c, 296 (Tecoripa; 12 miles west of Magdalena).—Hellmayr, 1938, 301 (Sonora).

Winter visitant, probably appearing sporadically south at least as far as Tecoripa (lat. 28° 40'). Although Price (1899) observed "immense flocks" in the Colorado delta in December, he is not specific as to which side of the river he refers.

CHLORURA CHLORURA (AUDUBON)

GREEN-TAILED TOWHEE

Fringilla chlorura Audubon, Orn. Biog., 5, 1839, 336 (Ross Creek=about 20 miles southwest of Blackfoot, Idaho).

Oreospiza chlorura Townsend, 1923, 20 (Tiburon Island).—Sheffler, 1931a, 138 (Imuris); 1931b, 164 (Between Magdalena and Santa Ana).

Oberholseria chlorura van Rossem, 1931c, 296 (Pesqueira; Tecoripa; Saric Obregon; Tesia; Chinobampo; Guaymas); 1932, 144 (Tiburón Island); 1934d 482 (Alamos; Cumpas; Nacozari; Oposura).—Hellmayr, 1938, 451 (southern Sonora).

Pipilo chlorurus Allen, 1893a, 39 (Fronteras; Bacadelhuachy).

Oberholseria chlorura zapolia Oberholser, 1932, 10 (southern Sonora).

Common, sometimes abundant, state-wide winter visitant almost everywhere below Transition levels. Some additional stations are Camoa, February 6 to 9 (Bishop coll.); El Álamo, December 5; Costa Rica, December 11; Ures, January 29 (Dickey coll.; Lamb notes); Kino Bay, February 19 (Nat. Hist. Mus.); Sonoyta, January 15 to 22; Colorado River at Monument 204, March 17 to 24 (U. S. Nat. Mus.); Magdalena, April 16 to May 12 (Dawson notes); San Luís Mountains, September 26; Cajón Bonito Creek, September 24; Boundary at Monument 90, September 14 (Mearns notes); Extreme dates are September 14 (Boundary at Mon. 90) and May 12 (Oposura and Magdalena).

PIPILO MACULATUS MONTANUS SWARTH

SPURRED TOWHEE

Pipilo maculatus montanus Swarth, Condor, 7, No. 6, November 22, 1905, 172 (Miller Cañon, Huachuca Mountains, Arizona).—A.O.U. Comm., 1910, 280 (Sonora).—Bailey, 1928, 712 (Sonora).—van Rossem, 1931c, 296 (15 miles S. [W.] of Nogales=Rancho La Arizona); 1934d, 482 (Nacozari).—Hellmayr, 1938, 455 (Sonora).

Pipilo maculatus megalonyx (not *Pipilo megalonyx* Baird) Allen, 1893a, 39 (Los Pinitos).—Ridgway, 1901, 415, part (Sonora).

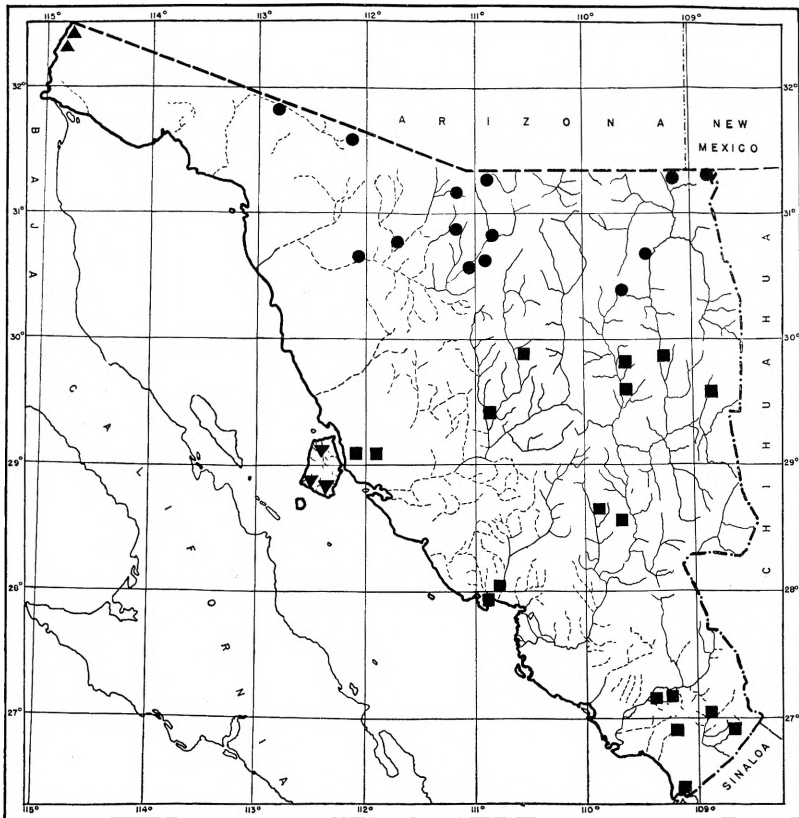
Resident in Upper Sonoran and probably the lower parts of the Transition zones from the Pajaritos Mountains east to the Chihuahua boundary. The southern limits have not been determined; the farthest south to date is Nacozari. Additional specimens have been examined from the San José Mountains, August 8, 1893; Nogales, October 26, 1893; San Luís Mountains on the boundary, July 19, 1892 (U. S. Nat. Mus.).⁷⁴

PIPILO MACULATUS CURTATUS GRINNELL

NEVADA TOWHEE

Pipilo maculatus curtatus Grinnell, Univ. Calif. Pub. Zool., 7, No. 8, Aug. 24, 1911, 309 (Big Creek Ranch, base of Pine Forest Mountains, Humboldt Co., Nevada).

⁷⁴ Present evidence is that the species *Pipilo maculatus* trends southeast from northeastern Sonora and does not occur in apparently suitable mountains in central and southern Sonora. At least it was not detected by Brown in the Sierra de San Antonio, by Cahoon in the Sierra de Oposura, by Frazar at Mina Abundancia, nor by van Rossem in the Upper Sonoran and Transition zones at Rancho Santa Bárbara.



MAP 24. Distribution of two species of *Pipilo*. Circles, *P. fuscus mesoleucus*; squares, *P. f. intermedius*; inverted triangles, *P. f. jamesi*; triangles, *P. alberti*.

Rare midwinter visitant in the extreme north. But one specimen has been examined,—that taken by Mearns and Holzner at Sonoyta, January 16, 1894, and now in the United States National Museum.

PIPILO FUSCUS MESOLEUCUS BAIRD

CAÑON TOWHEE

Pipilo mesoleucus Baird, Proc. Acad. Nat. Sci. Phila., 7, No. 3, June [July 3], 1854, 119 (Bill Williams Fork=Big Sandy, just south of lat. 35°, Arizona); 1858, 518 (Los Nogales); 1859, 18 (Los Nogales).—Sharpe, 1909, 320 (northeastern Sonora).

Pipilo fuscus, var. *mesoleucus* Baird, Brewer, and Ridgway, 1874, (2), 127, in text (Los Nogales).

Pipilo fuscus mesoleucus Stephens, 1885, 228 (Altar).—A.O.U. Comm., 1895, 247 (Sonora); 1910, 281 (northeastern Sonora); 1931, 333 (northeastern Sonora).—Coues, 1903, 461 (northern Sonora).—Bailey, 1928, 714 (northeastern Sonora).—van Rossem, 1931c, 297 (Saric; El Alamo; 15 miles S. W. of Nogales; Altar; Caborca); 1934d, 483 (Nacozari).—Sheffler, 1931a, 138 (Imuris); 1931b, 164 (between Magdalena and Santa Ana).—Hellmayr, 1938, 465, part (northern Sonora locs.).

Pipilo fuscus (not of Swainson) Salvin and Godman, 1886, 409, part (Los Nogales).

Pipilo fuscus intermedius (not of Nelson) Ridgway, 1901, 432, part (Magdalena).

Common resident of the Lower Sonoran zone (chiefly mesquite and stream-bed shrubbery associations), from about longitude 113° eastward along the northern boundary and south at least to latitude 30° 30'. Unpublished localities from which specimens have been examined are Pilares, July 11, 1935 (Univ. Mich.); Cajón Bonito Creek on the boundary, September 28, 1893; Guadalupe Cañon, July 28, 1892; Sonoyta, January 20, 1894; Pozo de Luís, January 1 and 3, 1894 (U. S. Nat. Mus.).

PIPILO FUSCUS JAMESI TOWNSEND

TIBURÓN ISLAND TOWHEE

Pipilo fuscus jamesi Townsend, Bull. Am. Mus. Nat. Hist., 48, March 9, 1923, 20 (Tiburón Island, Sonora, México).—van Rossem, 1932, 144 (Tiburón Island; crit.).—Hellmayr, 1938, 466 (Tiburón Island).

A fairly common resident of chaparral areas on Tiburón Island.

PIPILO FUSCUS INTERMEDIUS NELSON

ÁLAMOS TOWHEE

Pipilo fuscus intermedius Nelson, Proc. Biol. Soc. Wash., 13, May 29, 1899, 27 (Álamos, Sonora, México).—Ridgway, 1901, 432, part (Guaymas; Álamos; Batamotal).—Thayer and Bangs, 1906, 22 (Opodepe; Guaymas; crit.).—van Rossem, 1931c, 296 (Pesqueira; Tecoripa; San Javier; Tesia; Chinobampo; Guirocoba; Agiabampo); 1932, 143, 144, in text (Guaymas; Pesqueira); 1934d, 483 (Álamos; Oposura).—Hellmayr, 1938, 467 (Sonora locs.).—Moore, 1942, 47, in text (Guirocoba; crit.).

P.[ipilo] f.[uscus] intermedius Townsend, 1923, 20 (Guaymas).

Pipilo intermedius Sharpe, 1909, 319 (coast district of southern Sonora).

Pipilo fuscus (not of Swainson) Ridgway, 1886, 148, part (Guaymas).—Salvin and Godman, 1886, 409, part (Guaymas).

Pipilo fuscus mesoleucus (not *Pipilo mesoleucus* Baird) Belding, 1883, 343 (Guaymas).—Ridgway, 1886, 148, part, in text (Guaymas); 1901, 432, part (Granados; Nacory).—Allen, 1893a, 39, part (Nacory; Granados).—Hellmayr, 1938, 465, part (Cerro Blanco).

Common resident of the Tropical zone, north, coastwise, at least to latitude 29° 08' (Sierra Seri) and in interior valleys to about latitude 30°. Most specimens between latitudes 29° and 30°, particularly in the eastern part of the State, are varyingly intermediate toward *mesoleucus*. Although previously unknown to occur north of Guaymas along the coast, specimens have been collected by Benson and Sibley (Mus. Vert. Zool) in the Sierra Seri, November 15 to 17, 1941, and at Mina Los Afanes, January 19 and 20, 1942.

PIPILO ABERTI BAIRD

ABERT TOWHEE

Pipilo aberti Baird, in Stansbury, Rep. Exped. Utah, 1852, 325 (New Mexico).—Price, 1899, 93 (lower Colorado River).—A.O.U. Comm., 1910, 281 (northwestern Sonora).—1931, 333 (northwestern Sonora).—Bailey, 1928, 718 (Sonora).—Hellmayr, 1938, 468 (northwestern Sonora).

Common resident of the Colorado River delta, probably throughout its length though definitely known only from near the Arizona boundary. Noted as common at San Luis and Colonia Independencia on May 3, 1937 (van Rossem notes); specimens taken near the former locality by Mearns and Holzner between March 14 and 24, 1894 (U. S. Nat. Mus.).⁷⁵

MELOZONE KIENERI GRISIOR VAN ROSSEM

NORTHERN GROUND SPARROW

Melozone rubricatum grisior van Rossem, Trans: San Diego Soc. Nat. Hist., 7, No. 23, March 31, 1933, 283 (Hacienda de San Rafael, Sonora, México).—Peters, 1943, 94 (re. type).

Melozone kieneri grisior van Rossem, 1934d, 423, 484 (nomen.; Hacienda de San Rafael).—Hellmayr, 1938, 470 (Hacienda de San Rafael).

Melozone rubricatum xantusii (not *Pyrgisoma xantusii* Lawrence) Ridgway, 1901, 441, part (San Rafael).—Griscom, 1934, 421, part (Sonora; crit.).

Presumably resident in the Tropical zone foothills in the extreme southeast. Known, however, from but three localities, Hacienda de San Rafael, where Frazar took 28 specimens between May 3 and 19, 1888; San Fran-

⁷⁵ The notes of the late W. Leon Dawson contain specific references to the Abert Towhee at Nogales on May 10, and at Magdalena on May 15 and 17, 1925. This is a species with which Dawson was perfectly familiar and which he could scarcely have confused with *Pipilo fuscus* (which he frequently mentions also). Mearns (notes) believed he saw one at the San Bernardino Ranch in early July, 1892. In the absence of specimens it seems better for the present to accord these records hypothetical status.

cisco Cañon, where taken by van Rossem on May 30, 1937 (Dickey coll.); one seen at Guirocoba on June 3, 1937 (van Rossem notes).

ORITURUS SUPERCILIOSUS PALLIATUS (VAN ROSSEM)

NORTHERN STRIPED SPARROW

Plagiospiza superciliosa palliata van Rossem, Bull. Brit. Orn. Club, 58, July, 1938, 127 (Near Tutuaca, Chihuahua, México, alt. 9500 ft.); *ibid.*, in text (Bavispe River).

Aimophila superciliosa (not of Swainson) Allen, 1893a, 39 (Bavispe River).

Plagiospiza superciliosa Ridgway, 1901, 229, part (northeastern Sonora).—Hellmayr, 1938, 475 (northeastern Sonora).

The only record for Sonora is that by Allen of specimens (examined in Amer. Mus. N. H.) taken by Robinette of the Lumholtz Expedition on the upper Bavispe River, December 21 and 26, 1890. It appears probable, judging from the distribution in Chihuahua, that the Striped Sparrow will be found at other high Transition points in the Sierra Madre of eastern Sonora.⁷⁶

CALAMOSPIZA MELANOCORYS STEJNEGER

LARK BUNTING

Calamospiza melanocorys Stejneger, Auk, 2, No. 1, Jan., 1885, 49 [New name for *Fringilla bicolor* Townsend nec Linnaeus] (Plains of the Platte River [Nebraska]).—Allen, 1893a, 40 (Opoto).—Ridgway, 1901, 168 (Sonora).—Brewster, 1902, 163 (Guaymas).—A.O.U. Comm., 1910, 288 (Sonora).—Townsend, 1923, 48 (Tiburón Island).—Bailey, 1928, 719 (Sonora).—van Rossem, 1931c, 297 (Obregon; Tesia); 1932, 144 (Tiburón Island); 1934d, 484 (Guaymas; Bacuachi).—Huey, 1935, 256 (Punta Peñascosa).

Calamospiza bicolor (not *Fringilla bicolor* Linnaeus) Baird, 1858, 492 (Sonora).—Cooper, 1870, 225 (Sonora).—Baird, Brewer, and Ridgway, 1874 (2), 61 (Sonora).—Belding, 1883, 343 (Guaymas).—Salvin and Godman, 1886, 417 (Guaymas).

Common, often abundant, winter visitant to lowlands and foothills, probably throughout the State though not as yet recorded from the Colorado delta or south of the Mayo River valley. Additional localities are San Bernardino Ranch, August 6, 1892; Cerro Gallardo, August 14, 1893, "hundreds" (U. S. Nat. Mus.; Mearns' notes); between Altar and Caborca, February 2, 1932 (Phillips notes); Santa Ana, March 1, 1934 (Nat. Hist. Mus.); Kino Bay, December 27, 1931 (van Rossem notes).

⁷⁶ For change of generic name from *Plagiospiza* to *Oriturus*, see van Rossem, Auk, 39, 1942: 449.

Seasonally, the earliest date is August 6 (San Bernardino Ranch), the latest is April 12 or 13 (Tiburón Island).

PASSERCULUS SANDWICHENSIS ANTHINUS BONAPARTE

WESTERN SAVANNA SPARROW

Passerculus anthinus Bonaparte, Comptes Rendus Acad. Sci. (Paris), 37, No. 25, for Dec. 19, 1853, 920 (Kodiak=Kodiak Island, Alaska).

Passerculus sandwichensis alaudinus (not *Passerculus alaudinus* Bonaparte) van Rossem, 1931c, 298 (Tesia).—Huey, 1935, 256 (Punta Peñascosa).

Passerculus savanna alaudinus Streets, 1877, 9 (Rio San Ignacio).

Passerculus sandwichensis subsp. Hellmayr, 1938, 488, part (Tesia).

Probably not uncommon as a winter visitant, though but few specimens so far have been collected. Additional to the few published records are two specimens taken by Mearns and Holzner on the lower Colorado River, March 25, 1894 (examined at the U. S. National Museum). The relative abundance of *anthinus* and *nevadensis* in Sonora in winter is impossible to estimate at this time.

PASSERCULUS SANDWICHENSIS CRASSUS PETERS AND GRISCOM

NORTHWESTERN SAVANNA SPARROW

Passerculus sandwichensis crassus Peters and Griscom, Bull. Mus. Comp. Zool., 80, January, 1938, 459 (Sitka, Alaska).

Passerculus sandwichensis anthinus (not *Passerculus anthinus* Bonaparte) van Rossem, 1931c, 297 (Tesia).—Hellmayr, 1938, 485 (Tesia).

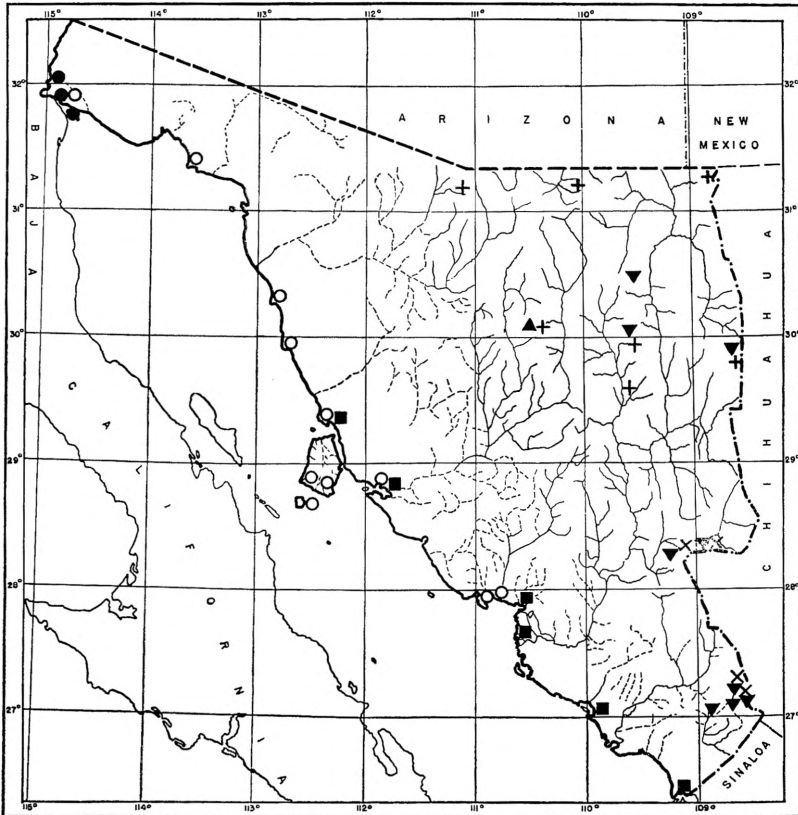
One midwinter record, possibly that of a casual, from Tesia in the lower Mayo River Valley, February 4, 1930, taken by J. T. Wright. Parenthetically, another record of this race from San Luis Island, Baja California (Grinnell, 1928, p. 161) suggests that the Gulf area may be part of the normal winter range.

PASSERCULUS SANDWICHENSIS NEVADENSIS GRINNELL

NEVADA SAVANNA SPARROW

Passerculus sandwichensis nevadensis Grinnell, Univ. Calif. Publ. Zool., 5, No. 9, Feb. 21, 1910, 312 (Soldier Meadows, Humboldt County, Nevada).—van Rossem, 1931c, 298 (Tesia).

Winter visitant, probably in some numbers, to grasslands and river valleys south at least to the Mayo River valley. Further specimens have been examined from Sulphur Spring Valley on the boundary, October 7, 1893; Santa Cruz River, November 6 and October 20, 1892; Sonoita, January 14 and 15, 1894 (U. S. Nat. Mus.); Quitovaquita on the boundary, November 29, 1939 (Huey, 1942, p. 372). Dates extend from October 7 (Santa Cruz River) to March 24 (Tesia).



MAP 25. Distribution of *Passerculus sandwichensis* and two species of *Aimophila*. Circles, *P. s. rostratus*; squares, *P. s. atratus*; inverted triangles, *A. rufescens mcleodii*; triangle, *A. r. antonensis*; vertical crosses, *A. ruficeps scottii*; diagonal crosses, *A. r. simulans*.

PASSERCULUS SANDWICHENSIS ROSTRATUS (CASSIN)

LARGE-BILLED SPARROW

Emberiza rostrata Cassin, Proc. Acad. Nat. Sci. Phila., 6, No. 5, Sept.-Oct. [Dec. 31], 1852, 184 (San Diego, California).

Ammodramus rostratus Belding, 1890, 145 (Guaymas).—Brewster, 1902, 138 (Guaymas).

A.[mmodramus] rostratus Ridgway, 1887d, 410 (Sonora).

Passerculus rostratus Baird, Brewer, and Ridgway, 1874, (1), 542 (mouth of Colorado River).—Belding, 1883, 343 (Guaymas).—Brewster, 1885, 198 (Port Lobos).—Stephens, 1885, 230 (Port Lobos).—Salvin and Godman, 1886, 382 (Guaymas).—Sharpe, 1909, 291 (Sonora s. to Guaymas).

Passerculus rostratus rostratus Ridgway, 1901, 199 (coast south to Guaymas).—Grinnell, 1905, 16 (Sonora); 1939, 119 (nomen.; crit.). A.O.U. Comm., 1910, 255 (coast s. to Guaymas); 1931, 335 (head of Gulf; So. Sonora in winter).—Oberholser, 1919b, 346 (Colorado River, opp. mouth of Hardy; Montague Island; Tiburon Island; Point Lobos; Guaymas).—Townsend, 1923, 19 (Tiburon Island).—Dawson, 1923, 259 (head of the Gulf).—Bancroft, 1927a, 56 (mouth of Colorado River; breeding).—Huey, 1930, 206 (Punta Lobos).

Passerculus sandwichensis rostratus van Rossem, 1930i, 215-219 (range in Sonora; crit.); 1931c, 298 (El Doctor; mouth of Colorado River; Port Lobos); 1932, 145 (Tiburon Island); 1934d, 484 (Guaymas).—Huey, 1935, 256 (Punta Peñas-cosa).—Peters and Griscom, 1938, 476 (range in Sonora; crit.).—Hellmayr, 1938, 493 range in Sonora; crit.).

Passerculus rostratus guttatus ? Price, 1899, 92 (mouth of Colorado River).

Abundant resident of tidewater marshes at the mouth of the Colorado River. Abundant and generally distributed along the coast in fall, winter, and spring south as far as Guaymas at least and on Tiburón Island. Specimens intermediate toward the Tropical coast race *atratus* occur in winter at Puerto Libertad, but whether these represent a breeding population in that locality is not known. Many additional winter or early spring specimens have been examined from San José de Guaymas, Kino Bay, Tepopa Bay (Dickey coll.); Puerto Libertad and Punta Peñascosa (Nat. Hist. Mus.); Colorado River, opposite mouth of the Hardy (U. S. Nat. Mus.); observed at San Estéban Island, January 12, 1932 (van Rossem.)⁷⁷

PASSERCULUS SANDWICHENSIS ATRATUS VAN ROSSEM

SONORA MARSH SPARROW

Passerculus sandwichensis atratus van Rossem, Trans. San Diego. Soc. Nat. Hist., 6, No. 14, Nov. 28, 1930, 218 (Tóbari Bay, Sonora, México); *ibid.*, in text (Guasimas Lagoon; Kino Bay; mainland opposite Tiburon Island); 1931c, 298 (same locs.).—Peters and Griscom, 1938, 476 (coast of central and southern Sonora).—Hellmayr, 1938, 494 (range in Sonora).

Passerculus rostratus atratus Grinnell, 1939, 119 (nomen.; crit.).

Common resident of tidewater marsh associations from the Sinaloa boundary north to Tepopa Bay. Specimens from extreme northern points

⁷⁷ As Peters and Griscom (1938) have remarked, a great deal of collecting is necessary in summer and early fall, prior to dispersal from the breeding grounds, before the status of the type of *Passerculus guttatus* Lawrence can be disposed of with any degree of finality. Indeed the great degree of individual variation apparent in several races may prevent any definite and final allocation of the type,—unless of course some as yet undiscovered breeding range solves the question. It is difficult to believe that the swarms of Large-billed Sparrows which occur over the extensive winter range are all, or even in major part, from the limited breeding grounds at the mouth of the Colorado.

(Kino and Tepopa Bays) are somewhat intermediate toward *rostratus*. Additional specimens have been examined from Agiabampo, May 18, 1937; Kino Bay, December 27, 1931 (Dickey coll.); Médano, May 10, 1939 (Mus. Vert. Zool.).

AMMODRAMUS SAVANNARUM PERPALLIDUS (COUES)

WESTERN GRASSHOPPER SPARROW

Coturniculus passerinus var. *perpallidus* "Ridgway" Coues, Key N. A. Birds, 1872, 137, in text (dry western regions = Antelope Island, Great Salt Lake, Utah).

Ammodramus savannarum perpallidus van Rossem, 1934d, 484 (Alamos).

Coturniculus savannarum bimaculatus (not *Ammodramus bimaculatus* Swainson) Mearns, 1902, 917, in text (Guadalupe Cañon).

Ammodramus savannarum bimaculatus van Rossem, 1931c, 298, part (Obregon; Tesia; part; Chinobampo; Guirocoba).

[?] *Coturniculus passerinus* (not *Fringilla passerina* Wilson) Baird, 1858, 450, part (Los Nogales); 1859, 15, part (Los Nogales).

Common winter visitant in Tropical zone valleys and grasslands. Occurs as a transient, and probably as a winter visitant also, at more northern points. Extreme dates of arrival and departure are October 4 (Guadalupe Cañon) and April 17 (Guirocoba). Possibly some race of the Grasshopper Sparrow breeds in the vicinity of Nogales, where taken in "June," 1855; however, Dr. Kennerly's appended remark (Baird, 1859) of "generally in small flocks of four or five" sounds, rather, as though the specimen taken might have been a belated migrant.

AMMODRAMUS SAVANNARUM AMMOLEGUS OBERHOLSER

ARIZONA GRASSHOPPER SPARROW

Ammodramus savannarum ammolegus Oberholser, Proc. Biol. Soc. Wash., 55, May 12, 1942, 15 (6 miles southeast of Fort Huachuca, Arizona, alt. 5000 ft.).

Ammodramus savannarum bimaculatus (not *Ammodramus bimaculatus* Swainson) van Rossem, 1931c, 298, part (Tesia, part).

A winter visitant and transient, probably at various suitable points south of the known breeding range in southeastern Arizona. There are two records, both from Tesia, December 27, 1929 and March 14, 1930, respectively. It is to be suspected that the breeding range of *ammolegus* includes northeastern Sonora; however, this remains to be demonstrated. It is obviously greatly outnumbered by *perpallidus* as a winter visitant and migrant.

AMMODRAMUS BAIRDII (AUDUBON)

BAIRD SPARROW

Emberiza Bairdii Audubon, Birds Amer., oct. ed., 7, 1844, 359, pl. 500 (Prairie of the upper Missouri—near Old Fort Union, North Dakota).

[*Centronyx bairdii* Ridgway, 1901, 203 ("10 miles S. of Sasabe; Nuevencha Plain, etc.")]

[*Ammodramus bairdi* A.O.U. Comm., 1910, 256 (northern Sonora); 1931, 337 (northern Sonora).—Bailey, 1928, 723 (northern Sonora).]

The above records of the Baird Sparrow are erroneous. The Nuevencha Plain record goes back to Allen (1893a) and is from Chihuahua. That of Ridgway is a misquotation of Brewster's (1885) record which is from southern Arizona. However, there are two specimens in the U. S. National Museum (three in Mearns' field notes) taken by Mearns in the Ánimas Valley on the boundary, October 2, 1893, which may be considered sufficient ground for formal admission. There is obvious reason to suppose winter residence in some numbers on the grass plains of extreme northern Sonora.

POECETES GRAMINEUS CONFINIS BAIRD

WESTERN VESPER SPARROW

Poocetes gramineus var. *confinis* Baird, Rep. Expl. and Surv. R. R. Pac., 9, 1858, 448 (Western U. S.—Loup Fork of the Platte River, Nebraska).

Poecetes gramineus confinis Price, 1899, 92 (south of Yuma).—van Rossem, 1931c, 298 (Tecoripa; Tesia; Obregon; Chinobampo; Guirocoba; 12 mi. W. of Magdalena; Sasabe Valley; San Luis); 1934d, 485 (Alamos).

Poecetes gramineus definitus Oberholser, 1932, 11 (Alamos).

Common winter visitant and transient in Sonoran and Tropical zone valleys and deserts throughout the State. The earliest fall date is October 7 (Sulphur Spring Valley); the latest in spring is April 16 (Guirocoba). Some unpublished localities with dates between the above extremes are Camoa (Bishop coll.); Ures; El Álamo (Dickey coll.; Lamb notes); San Pedro River; Sulphur Spring Valley (October 7, 1893); Nogales; Colorado River at Monument 205 (U. S. Nat. Mus.); Quitovaquita and Grays' Ranch on the boundary (Huey, 1942, p. 373).

CHONDESTES GRAMMACUS STRIGATUS SWAINSON

WESTERN LARK SPARROW

Chondestes strigatus Swainson, Philos. Mag., n.s., 1, No. 6, June, 1827, 435 (Table land, Temiscaltepec.—Temascaltepec, México) —Salvin and Godman, 1886, 375 (Guaymas).

Chondestes grammacus strigatus Price, 1899, 92 (lower Colorado River).—Ridgway, 1901, 178 (northern Sonora).—Allen, 1893a, 38 (Nacory).—van Rossem, 1931c, 299 (Saric; Obregon; Tesia; 15 mi. S. W. of Nogales; Guirocoba); 1934d, 485 (Guaymas; Alamos; Bacuachi; Oposura; Granados).—Sheffler, 1931b, 165 (between Magdalena and Santa Ana).—Hellmayr, 1938, 515, footnote (Sonora; crit.).

Chondestes grammica strigata Belding, 1883, 343 (Guaymas).

Summer visitant to Sonoran zones in the northern part of the State, from about Quitovaquita eastward. Southern limits of the breeding range are indefinite since there is a tendency for some individuals to linger until late spring on the winter range. Probable breeding localities are Rancho La Arizona, Cibuta, Nogales, San Pedro River, Guadalupe Cañon; Cajón Bonito Creek, and San Bernardino Ranch. Common and widespread in fall, winter, and spring over deserts and river valleys practically everywhere, and exceptionally lingering as late as May 2 (Guirocoba) and May 10 (Oposura). Further occurrences are Camoa, February 4; Chinobampo, March 12; Cibuta, July 20, 1931 (Bishop coll.); El Alamo, December 2, 1932 (Lamb notes); Nogales, May 10, 1925 (Dawson notes); Sonoyta, January 15, 1894; Quitovaquita on the boundary (Arizona side), April, breeding (Huey, 1942, p. 373). San Bernardino Ranch, August 6, 1892; San Pedro River, July 29, 1893 (U. S. Nat. Mus. catl.); Cajón Bonito Creek and Guadalupe Cañon, early July, 1892 (Mearns notes).⁷⁸

AIMOPHILA QUINQUESTRIATA SEPTENTRIONALIS VAN ROSSEM

NORTHERN FIVE-STRIPED SPARROW

Aimophila quinquestriata septentrionalis van Rossem, Bull. Mus. Comp. Zool., 77, No. 7, Dec., 1934 485 (Hacienda de San Rafael, Sonora, México); *ibid.*, in text, (Oposura; Guirocoba; Nuri).—Hellmayr, 1938, 717 (Sonora).—Peters, 1934, 95 (re. type).

Aimophila quinquestriata (not *Zonotrichia quinquestriata* Sclater) Ridgway, 1901, 236, part (Hacienda de San Rafael; Alamos; Camoa; Oposura).—Thayer and Bangs, 1906, 22 (Opodepe).—van Rossem, 1931c, 300 (Guirocoba).

Ampispiza quinquestriata Salvin and Godman, 1889a, 238 (Nuri).

Common, though apparently rather local, resident of central and eastern foothills north to about latitude 30°. The life zones occupied are both

⁷⁸ After careful examination of large series of the Western Lark Sparrow, I am unable, in spite of a previous statement to the contrary (1934d), to make out more than one race. Not only are males grayer and females browner dorsally, but first year birds are slightly smaller and much browner than adults of comparable sex. These factors, combined with the not inconsiderable seasonal variation, have led to this conclusion.

Tropical and Sonoran, with all records except one falling between 1,400 and 2,000 feet altitude. Additional specimens have been examined from Nuri, April 22, 1888 (Brit. Mus.); Guirocoba, May 25, 1937 (Dickey col.); Alamos, December 26 and 30, 1898; Camoa, January 20, 1899 (Biol. Surv.). These last are doubtless the basis for Ridgway's (1901) citation of Alamos and Camoa. The only record for the coastal plain is that from Camoa (alt. 200 ft.); it may be seasonal in nature.

AIMOPHILA CARPALIS (COUES)

RUFIOUS-WINGED SPARROW

Peucaea carpalis Coues, Amer. Nat., 7, No. 6, June, 1873, 322, note (Tucson, Arizona).—Stephens, 1885, 228 (Altar).—Allen, 1893a, 39 (Granados).—A.O.U. Comm., 1895, 240 (Sonora).

Pencaea [sic] *carpalis* Evermann and Jenkins, 1888, 67 (Nogales).

Haemophila carpalis Sharpe, 1909, 296 (Sonora).

H.[*aemophila*] *carpalis* Coues., 1903, 427 (Sonora).

Aimophila carpalis Ridgway, 1901, 241 (Alamos; Ortiz; Granados).—Thayer and Bangs, 1906, 22 (Opodepe).—A.O.U. Comm., 1910, 271 (Sonora); 1931, 341 (Sonora).—van Rossem, 1931c, 299 (Saric; El Alamo; Tesia; Guirocoba, and many other locs.).

Aimophila carpalis carpalis Moore, 1932b, 233, in text (Saric; northern Sonora).—van Rossem, 1934d, 485 (Guaymas; Oposura).—Hellmayr, 1938, 521 (Sonora).

Spizella [!] *carpalis carpalis* van Rossem, 1936d, 144 (Sonora; habitat).

Aimophila carpalis bangsi Moore, 1932b, 232 (Guirocoba; central and southern locs.).—van Rossem, 1934d, 485 (Alamos).—Hellmayr, 1938, 521 (locs. in southern Sonora).

Present commonly in cactus, grass, and mesquite desert associations (Sonoran and Tropical zones) throughout the State except for the extreme northwestern and northeastern parts. Westernmost records to date are Sásabe and Altar at about longitude 111° 45' W. Present data strongly indicate that breeding is limited to the northern part of the range (juveniles from Altar in August and Rancho La Arizona in September) and that there is an extensive shift of population southward to the Tropical zone from late fall until early or even midsummer. Some additional localities are Hermosillo, December 21; Ures, January 31; San Carlos Bay, December 24 (Dickey coll.); Camoa, February 5 to 14 (Bishop coll.); Agiabampo, May 15 (van Rossem notes); Nuri, April 20; Santa Rosa, April 25 (Brit. Mus.); Buenos Aires, 13 miles N. W. of Navojoa, April 4 (Mus. Vert. Zool.).⁷⁹

⁷⁹ Further field experience and re-examination of most of the existing material convinces me that "*bangsi*" is simply *carpalis* on its winter range, and that the

AIMOPHILA RUFESCENS MCLEODII BREWSTER

MCLEOD RUSTY SPARROW

Aimophila mcleodii Brewster, Auk, No. 1, Jan., 1888, 92 (El Carmen, Chihuahua, México).—Ridgway, 1901, 246 (Oposura; Bavispe River; Puerto de Los Pinitos; Alamos; Mina Abundancia; Hacienda de San Rafael).

Aimophila rufescens mcleodii Bangs, 1930, 383, 384 (re. types of *A. mcleodii* and *A. cabooni*).—Griscom, 1934, 418, in text (crit.).—van Rossem, 1934d, 486 (Mina Abundancia; Hacienda de San Rafael; Oposura); 1942h, 435 (range; crit.).—Hellmayr, 1938, 522 (Sonora).

Aimophila mcleodi Allen, 1893a, 39 (Puerto de los Pinitos).

Haemophila macleodi Sharpe, 1909, 297 (Sonora).

Aimophila cabooni Brewster, 1888a, 93 (mountains near Oposura).—van Rossem, 1942h, 436, in text (crit.).

Peucaea megarhyncha Salvin and Godman, 1889b, 238 (Santa Ana).

Peucaea notosticta (not of Sclater and Salvin) Allen, 1893a, 39 (Bavispe River).

Fairly common resident in the Upper Sonoran zone (cañon oak association) of the Sierra Madre and closely adjacent ranges north at least to latitude 30° 30'. Additional stations are Yécora, April, 1888 (Brit. Mus.) and Rancho Santa Bárbara, June 6 to 10, 1937 (Dickey coll.).

AIMOPHILA RUFESCENS ANTONENSIS VAN ROSSEM

SAN ANTONIO RUSTY SPARROW

Aimophila rufescens antonensis van Rossem, Trans. San Diego Soc. Nat. Hist., 9, No. 36, Oct. 1, 1942, 436 (La Chumata Mine, alt. 4500 feet, Sierra de San Antonio, Sonora, México).—Peters, 1943, 96 (re. type).

Aimophila mcleodii (not of Brewster) Thayer and Bangs, 1906, 22 (La Chumata).

Apparently confined to the Upper Sonoran zone in the Sierra de San Antonio in the central part of the State.

AIMOPHILA RUFICEPS SCOTTII (SENNETT)

SCOTT SPARROW

Peucaea ruficeps scottii Sennett, Auk, 5, No. 1, Jan., 1888, 42 (Pinal County, Arizona).

Aimophila ruficeps scottii Ridgway, 1901, 248, part (Sonora).—Thayer and

chief character supposed to distinguish it (slightly smaller average size) results from a preponderance of first-year birds in the southern series. The species has never been shown to breed in southern Sonora, nor have streaked juveniles ever been taken within the supposed *bangsi* territory. Furthermore, there is a complete absence of southern records between June 22 (Tesia) and November 5 (San Marcial). In this connection it may be noted that specimens personally collected in southern Sonora between May 6 and June 22, 1937 showed only the beginning of sexual activity, none were paired, and all were in various stages of the complete prenuptial body and tail moult. The type of "*bangsi*" is in the midst of this moult.

Bangs, 1906, 22 (La Chumata).—van Rossem, 1931c, 299 (Saric); 1934, 486 (Oposura).—Hellmayr, 1938, 529 (Bavispe River; Oposura; Saric; Cerro Blanco Mines).

Aimophila ruficeps scotti A. O. U. Comm., 1910, 272, part (Sonora); 1931, 342, part (Sonora).—Bailey, 1928, 730, part (Sonora).

Haemophila scotti Sharpe, 1909, 297, part (Sonora).

Peucaea ruficeps boucardi (not *Zonotrichia boucardi* Sclater) Allen, 1893a, 39 (Bavispe River).

Common resident of the Upper Sonoran zone foothills and mountains in the eastern part of the State, south to about latitude 29°. The westernmost stations are Rancho La Arizona and La Chumata; the southernmost, Cerro Blanco Mines. Additional localities are the San José Mountains, August 7 and 10, 1893 (U. S. Nat. Mus.); San Luís Mountains, July 20, 1892 (Mearns notes).

AIMOPHILA RUFICEPS SIMULANS VAN ROSSEM

SIERRA MADRE RUFIOUS-CROWNED SPARROW

Aimophila ruficeps simulans van Rossem, Bull. Mus. Comp. Zoöl., 77, No. 7, Dec., 1934, 486 (Mina Abundancia, Sonora, México).—Hellmayr, 1938, 529 (Sonora).—Peters, 1943, 96 (re type).

Fairly common and presumably resident in the Upper Sonoran and lower parts of the Transition zones in the southeastern mountains north, probably, to about latitude 29°. All specimens examined from Sonora have been taken between early April and mid-June; however, all races of the Rufous-crowned Sparrow are essentially resident. In addition to the initial series from Mina Abundancia, specimens have been examined from Yécora, April 11, 1888; Santa Ana, April 18, 1888 (Lloyd in Brit. Mus.); Rancho Santa Bárbara, June 10 and 13, 1937 (Dickey coll.).

AIMOPHILA BOTTERII BOTTERII (SCLATER)

BOTTERI SPARROW

Zonotrichia botterii Sclater, Proc. Zool. Soc. Lond., 25, No. 311, 1857 [Jan. 12, 1858], 214 (Vic. of Orizaba, [Vera Cruz], in southern México).

Peucaea botterii Salvin and Godman, 1886, 389 (Los Nogales).—Harper, 1930, 177 (Los Nogales).

Aimophila botterii Hellmayr, 1938, 532 (Guirocoba).

Aimophila botterii botterii Ridgway, 1901, 257 (Los Nogales).—van Rossem, 1931c, 301 (Guirocoba).—Phillips, 1943, 243 (Guirocoba; crit.).

Peucaea aestivalis, var. *arizonae* Ridgway, 1873, 615 (Los Nogales); in Baird, Brewer, and Ridgway, 1874 (2), 41 (Los Nogales).

Peucaea aestivalis Subsp. b. *Peucaea arizonae* Sharpe, 1888, 710 (Sonora).

Peucaea arizonae A. O. U. Comm., 1886, 277 (Sonora); 1895, 239 (Sonora).—Chapman, 1888, 401 (Sonora; crit.).—Coues, 1903, 424 (Sonora).

Peucaea cassinii (not *Zonotrichia cassinii* Woodhouse) Baird, 1858, 485, part (Los Nogales); 1859, 16, part (Los Nogales).

[*Peucaea*] *aestivalis* Var. *cassinii* Coues, 1872, 140, part (Los Nogales).

(?) *Peucaea cassinii* Sclater and Salvin, 1868, 323, part (Sonora).

P.[Peucaea] mexicana Ridgway, 1887d, 594 (Sonora).

Common summer visitant in the southeastern Tropical zone foothills north, at least formerly, to the Arizona boundary. Except for boundary occurrences, all Sonora records to date center in the immediate vicinity of Guirocoba. Unpublished records are Guadalupe Cañon, October 4, 1893; Sulphur Springs Valley on the boundary, "October 17," [Oct. 7 in Mearns' notes], 1893 (U. S. Nat. Mus.); Guirocoba, May 27, 1931 (Bishop Coll.), and May 23 to June 17, 1937 (Dickey and Sheffler colls.; van Rossem notes). Dates of arrival and departure are May 8 (Guirocoba) and October 7 (Sulphur Springs Valley).⁸⁰

AIMOPHILA CASSINII (WOODHOUSE)

CASSIN SPARROW

Zonotrichia Cassinii Woodhouse, Proc. Acad. Nat. Sci. Phila., 6, No. 2, Mch.-April [June 9], 1852, 60 (Near San Antonio, [Texas]).

Aimophila cassinii Ridgway, 1901, 235, in key (Sonora).—van Rossem, 1931c, 300 (Sarc; Tesia).—Hellmayr, 1938, 535 (northern Sonora).

Aimophila cassinii A. O. U. Comm., 1931, 343 (northern Sonora).

Haemophila cassinii Sharpe, 1909, 298 (Sonora).

Peucaea cassinii A. O. U. Comm., 1910, 271 (Sonora).—Bailey, 1928, 731 (northern Sonora).

Detected certainly only as a spring and fall transient at northeastern boundary points and in the extreme south. Records are as follows: San Bernardino Ranch on the boundary, August 14, 1892 (also August 18 and 21 in Mearns' notes); Sulphur Spring Valley on the boundary, October 17, 1893 (U. S. Nat. Mus.); Rancho La Arizona, September 21, 1929; Tesia,

⁸⁰ This species appears definitely to be migratory, at least in the northwest part of its range in Sonora and Arizona. The arrival date probably varies from year to year depending on climatic conditions, for although Wright secured the first bird at Guirocoba on May 8, 1930, none was detected until the 23rd in 1937. Immediately after that date it became fairly common but even though pairs were the rule and sexual activity was strongly evident, no actual breeding was apparent at so late a date as June 17. The association strongly favored was waist-high, coarse grass through which were scattered low mesquites or small oaks. I suggest a reappraisal of the proposed subspecies *arizonae*, based on the premise that it is migratory and that some of the variation in winter-taken "*botteri*" may prove to be racial rather than individual.

March 2, 1930 (Dickey coll.); Guirocoba, March 27 and April 1, 1931 (Bishop coll.). The basis of the frequent inclusion of northern Sonora in the breeding range possibly is the old record of Baird (1858) who cites specimens of *botterii* from Nogales under the present species. Mearns lists several specimens as taken at Cerro Gallardo on August 14, 15, and 16, 1893, together with the notation "breeds—young on wing," but these may have been early transients.

AMPHISPIZA BILINEATA DESERTICOLA RIDGWAY

DESERT SPARROW

Amphispiza bilineata deserticola Ridgway, Auk, 15, July, 1898 [separates publ. May 13], 229 (Tucson, Arizona); 1901, 265, part (Sonora).—A. O. U. Comm., 1899, 119, part (Sonora); 1931, 344, part (Sonora).—Brewster, 1902, 148, part (Cumpas; Bacuachi; Guaymas).—Coues, 1903, 428, part (Sonora).—Thayer and Bangs, 1906, 22 (Opodepe).—Bailey, 1928, 732, part (Sonora).—van Rossem, 1930i, 221 (range in Sonora); 1931c, 300 (Saric; 12 miles W. of Magdalena).—1934d, 487 (Guaymas; Cumpas; Bacuachi).—Hellmayr, 1938, 539 (northern Sonora).

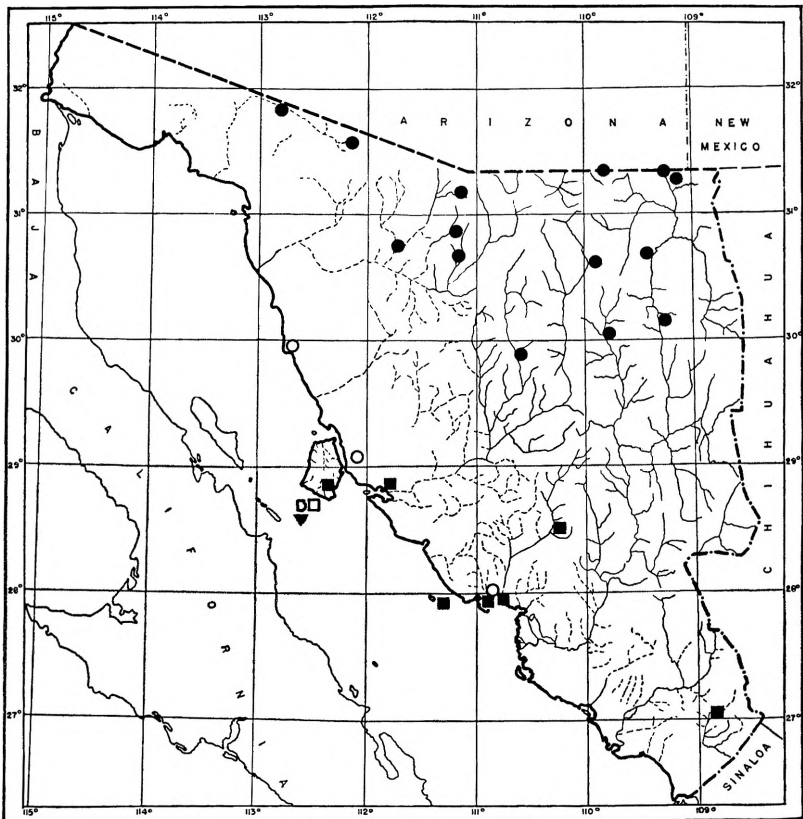
Amphispiza bilineata (not *Emberiza bilineata* Cassin) Stephens, 1885, 228 (Altar).—Allen, 1893a, 39 (Oputo).

Fairly common resident of Lower Sonora deserts from the Arizona boundary south to about latitude 30°. There are, however, no records from the extreme northwest in the Colorado River region. During the winter there is a southward movement as far as Guaymas, at which time it occurs in company with, and appears to outnumber, the resident *pacifica* in that area. Additional localities are San José de Guaymas, January 7, 1933 (Dickey coll.); El Alamo, December 2, 1932 (Lamb notes); Guaymas, March 17 and 18, 1905 (Mus. Comp. Zoöl.); Puerto Liberated, January 29 to February 9, 1935 (Nat. Hist. Mus.); Sierra Seri, November 16, 1941 (Mus. Vert. Zool.); Pílares, July 2 and 4, 1935 (Univ. Mich.); boundary south of Bisbee, September 25, 1892; San Bernardino Ranch, August 13 and 30, 1892; Pozo de Luís, January 1, 1894; Sonoyta, January 19, 1894 (U. S. Nat. Mus.); Guadalupe Cañon, early July, 1892 (Mearns notes).

AMPHISPIZA BILINEATA PACIFICA NELSON

SONORA BLACK-THROATED SPARROW

Amphispiza bilineata pacifica Nelson, Auk, 17, No. 3, July, 1900, 267 (Álamos, Sonora, México).—van Rossem, 1931i, 221 (range in Sonora; crit.); 1931c, 300 (Guaymas; 6 miles N. of Guaymas);—1932, 145 (Tiburón Island).—Hellmayr, 1938, 540 (range in Sonora).



MAP 26. Distribution of *Amphispiza bilineata*. Circles, *A. b. deserticola*; squares, *A. b. pacifica*; inverted triangle, *A. b. cana*; hollow figures, winter stations outside established breeding ranges.

Amphispiza bilineata (not *Emberiza bilineata* Cassin) Belding, 1883, 343 (Guaymas).—Salvin and Godman, 1886, 367, part (Guaymas).—Jouy, 1892, 779 (Guaymas).

Amphispiza bilineata deserticola (not of Ridgway, 1898) Ridgway, 1901, 265, part (Guaymas; Alamos).—Mailliard, 1923, 455, part (San Pedro Nolasco Island).

Fairly common resident of Tropical zone deserts and foothills from about latitude 29° coastwise and about 28° 30' in the interior south at least to Álamos and probably to the Sinaloa boundary, and on the islands of San Pedro Nolasco and Tiburón. This race is seemingly resident. Additional specimens have been examined as follows: Aranjuez, March 22,

1905; San Marcial, November 6, 1905 (intermediate toward *deserticola*; Mus. Comp. Zool.); Kino Bay, February, 1935 (10 breeding specimens intermediate toward *deserticola*; Nat. Hist. Mus.); Alamos, December 29 and 30, 1899 (Biol. Surv. coll.). An accidental (probably windblown) occurrence, definitely of this race, is San Estéban Island, February 5, 1940 (Hancock coll.; Univ. So. Calif.).

AMPHISPIZA BILINEATA CANA VAN ROSSEM

SAN ESTÉBAN BLACK-THROATED SPARROW

Amphispiza bilineata cana van Rossem, Trans. San Diego Soc. Nat. Hist., 6, No. 14, Nov., 1930, 223 (San Estéban Island, Sonora, México); 1931c, 300 (San Esteban Island); 1932, 145, in text (San Esteban Island).—Hellmayr, 1938, 541 (San Esteban Island).

Amphispiza bilineata deserticola (not of Ridgway) Townsend, 1923, 20, part (San Esteban Island).—Mailliard, 1923, 455, part (San Esteban Island).

Common resident on San Estéban Island where it is by far the commonest land bird.⁸¹

AMPHISPIZA BELLI NEVADENSIS RIDGWAY

NEVADA SAGE SPARROW

Poospiza Bellii var. *Nevadensis* Ridgway, Bull. Essex Inst., 5, No. 11, Nov., 1873, 182, 191 (Entire area of the Middle Province of the U. S. [etc.] = West Humboldt Mountains, Nevada).

Amphispiza belli nevadensis van Rossem, 1931c, 300 (El Doctor).—Hellmayr, 1938, 543 (northern Sonora).

Amphispiza nevadensis nevadensis Huey, 1935, 256 (Punta Peñascosa).

A midwinter visitant, evidently in fair numbers, in the northwestern desert region south to Kino Bay. Has been recorded from El Doctor in the Colorado delta, January 22, 1931, and from Punta Peñascosa February 8 to 28, 1934, when reported as fairly common. Additional specimens have been examined from Puerto Libertad, January 31 to February 3, 1935 and Kino Bay, February 19, 1935 (Nat. Hist. Mus.) and from Kino Bay, December 28, 1931 (Dickey coll.); Quitovaquita on the Arizona side of the boundary, March 5, 1939 (Nat. Hist. Mus.). There is a record in the U. S. National Museum catalogue of a specimen taken by Mearns and Holzner at Sonoita on January 13, 1894.

⁸¹ There is in the Dickey collection a large series of midwinter specimens which fully substantiate the characters originally given for this race, namely, paler and more ashy gray coloration and smaller size as compared with *deserticola*.

JUNCO OREGANUS SHUFELDTI COALE

SHUFELDT JUNCO

Junco hyemalis shufeldti Coale, Auk, 4, Oct., 1887, 330 (Fort Wingate, New Mexico).

Junco oreganus shufeldti van Rossem, 1931c, 301, part (Saric).—Hellmayr, 1938, 547, part (Saric).

Known only from a single specimen (Dickey coll.) taken by J. T. Wright at "Saric" (Rancho La Arizona) on May 12, 1929.

JUNCO OREGANUS MEARNSI RIDGWAY

PINK-SIDED JUNCO

Junco mearnsi Ridgway, Auk, 14, Jan., 1897, 94 (Fort Bridger, Utah [=Wyoming]).—van Rossem, 1931c, 301 (Nogales; 15 miles s. w. of Nogales [=Rancho La Arizona]).

Junco (oreganus?) mearnsi Hellmayr, 1938, 551 (Sonora).

Junco oreganus mearnsi Miller, 1941, 238 (northern Sonora).

An apparently rare midwinter visitant to the Upper Sonoran zone (oak association) in the extreme north. The only two certain records seem to be from the vicinity of Nogales and Rancho La Arizona where collected January 13, 1928, and February 17, 1929, respectively. So far as can be determined, the many citations of *mearnsi* from Sonora, previous to 1931, were based on Allen (1893a) who, under the name of *Junco annectens*, records it from "Rancheria de Los Apaches." This locality is in the Sierra Madre of Chihuahua, although close to the Sonora boundary.

JUNCO CANICEPS CANICEPS (WOODHOUSE)

GRAY-HEADED JUNCO

Struthus caniceps Woodhouse, Proc. Acad. Nat. Sci. Phila., 6, No. 6, Dec. 28, 1852 [Feb. 7, 1853], 202 (San Francisco Mountain, Arizona).

Junco caniceps Allen, 1893a, 39 (Napolera; Bavispe River).—Ridgway, 1901, 295 (Napolera; Bavispe River; "etc.").—Sharpe, 1909, 305 (northeastern Sonora).—A. O. U. Comm., 1910, 268 (Sonora); 1931, 437 (Sonora).—Bailey, 1928, 742 (Sonora).—van Rossem, 1931c, 301 (Nogales).

Junco (oreganus?) caniceps Hellmayr, 1938, 551 (Sonora).

Junco caniceps caniceps Miller, 1941, 181 (Sonora).

Present, probably not uncommonly, in fall, winter, and spring, in the oak regions (chiefly Upper Sonoran zone) in the northeast. Verified records are as follows: Nogales, October 26, 1893 (U. S. Nat. Mus.); February 17, 1929 (Dickey coll.); Nopalera, December 12, 1890; Bavispe

River (on the upper course), December 22, 1890 (Amer. Mus.); "Sonora," April, 1909 (M.C.Z.). This last record is from a small collection made by "Smith" without specific locality. Other specimens in this collection would place it, almost to a certainty, in the mountains of the northeastern part of the State.

JUNCO PHAEONOTUS PALLIATUS RIDGWAY

ARIZONA JUNCO

Junco cinereus palliatus Ridgway, Auk, 2, Oct., 1885, 364 (Mt. Graham, Arizona).

Junco phaeonotus palliatus Ridgway, 1901, 301 (Sonora).—A. O. U. Comm., 1910, 268 (Sonora); 1931, 348 (mountains of Sonora).—Dwight, 1918, 300 (San Jose Mountains).—Bailey, 1928, 740 (Sonora).—Hellmayr, 1938, 553 (San Jose Mountains).—Miller, 1941, 211 (San Jose Mountains; San Luis Mts.; monog.).

Junco palliatus Sharpe, 1909, 305 (Sonora).

Known to occur as a resident in the San José and San Luis Mountains in the northeast corner of the State, but not as yet collected elsewhere within Sonora boundaries. It is common along the Sierra Madre in Chihuahua, very close to the Sonora line, and possibly occurs on the west slope at some points also. However, in spite of the number of high altitude species secured by Cahoon in the Sierra de Oposura, *palliatus* is not represented in the collection, nor was it secured by Frazar at Mina Abundancia, nor by the Lumbholtz party on the upper reaches of the Bavispe River.

SPIZELLA PASSERINA ARIZONAE COUES

WESTERN CHIPPING SPARROW

[*Spizella socialis*] var. *arizonae* Coues, Key No. Amer. Birds, 1872, 143 (Fort Whipple, Arizona).

Spizella socialis arizonae Allen, 1893a, 38 (Puerto de los Pinitos; Bacadehuachy; Nacori).

Spizella passerina arizonae Mailliard, 1923, 455 (San Pedro Nolasco Island).—van Rossem, 1931c, 301, part (Nogales; Tecoripa; San Javier; Chinobampo; 12 miles W. of Magdalena; Saric, part; Tesia, part); 1934d, 488 (Mina Abundancia; Nacozari).—Huey, 1935, 256 (Punta Peñascosa).—Moore, 1937f, 204, in text (Guirocoba; Camoa; Guirojaqui; Mina Abundancia); 1938a, 27 (Guirocoba; Camoa; Guirojaqui).—Hellmayr, 1938, 557 (Sonora locs. above).

Common summer visitant in the Transition zone of the southeastern mountains; north probably to the Arizona boundary although specific data are lacking except from closely adjacent localities in Chihuahua. It is possibly significant that Cahoon collected no specimens in the Sierra de Opo-

surra, nor did Brown in the Sierra de San Antonio. Very common and widespread at lower levels in Sonoran and Tropical zones in fall, winter, and spring, at which seasons the great majority are doubtless transients from the north. Further localities are Rancho Santa Bárbara, common in Transition zone where breeding in June, 1937 (Dickey coll.); San José Mountains, October 4 and 7, 1892; Colorado River opposite mouth of the Hardy, March 19, 1894; Cajón Bonito Creek, September 8 to 28; San Luis Mountains, September 26; Santa Cruz, October 22, 1893 (U. S. Nat. Mus.; Mearns notes); Magdalena, May 12, 1925 (Dawson notes). Extreme dates outside of the Transition zone breeding range are September 8 (Cajón Bonito Creek) and May 12 (Magdalena).⁸²

SPIZELLA PASSERINA STRIDULA GRINNELL

PACIFIC CHIPPING SPARROW

Spizella passerina stridula Grinnell, Condor, 29, No. 1, Jan. 15, 1927, 81 (Pasadena, Los Angeles County, California).

Spizella passerina arizonae (not *Spizella socialis* var. *arizonae* Coues) van Rossem, 1931c, 301, part (Saric, part; Tesia, part).

Casual migrant and winter visitant in Sonoran and Tropical zones. Two specimens, typical of this race, were taken by J. T. Wright at Rancho La Arizona, ["Saric"], September 16, 1929, and Tesia, November 30, 1929. A few other specimens which are variously intermediate between this race and *arizonae* are cited under the latter.

SPIZELLA PALLIDA (SWAINSON)

CLAY-COLORED SPARROW

Emberiza pallida Swainson, Fauna Bor.-Amer., 2, 1831 [1832], 251 (Carleton House on Saskatchewan River).

Spizella pallida Allen, 1893a, 38 (Opoto).—Miller, 1906, 174 (northern Sonora; crit.).—Thayer and Bangs, 1906, 22 (Opodepe)—van Rossem, 1931c, 301 (Saric; Obregon, Tesia; Chinobampo; Guirocoba); 1934d, 489 (Alamos).

Common transient and winter visitant in Sonoran and Tropical zones except for the northwestern desert region. Westernmost records are San Pedro Bay and Rancho La Arizona, both localities at about latitude 111° 15'. Additional occurrences are Guaymas, February 28 and March 19, 1905

⁸² The breeding birds from Rancho Santa Bárbara (like others examined from Pinos Altos and Colonia Pacheco in Chihuahua) differ from typical *arizonae* in slightly darker and richer coloration and wider dorsal streaking. These differences are evidently a tendency in the direction of the more southerly *mexicana*.

(Mus. Comp. Zoöl.) ; San Pedro Bay, December 25, 1931 (Dickey coll.) ; Camoa, April 19, 1939 (Mus. Vert. Zool.). Extreme dates are September 15 (Rancho La Arizona) and April 30 (Opodepe).

SPIZELLA BREWERI BREWERI CASSIN

BREWER SPARROW

Spizella Breweri Cassin, Proc. Acad. Nat. Sci. Phila., 8, No. 1, Jan.-Feb. [March 25], 1856, 40 (California and New Mexico).—Belding, 1883, 343 (Guaymas).—Salvin and Godman, 1886, 379 (Guaymas).—Townsend, 1890, 138 (Adair Bay).—Allen, 1893a, 38 (Granados).—Ridgway, 1901, 327 (Sonora). Brewster, 1902, 145 (Oposura).—Thayer and Bangs, 1906, 22 (Opodepe).—van Rossem, 1931c, 301 (Tecoripa; Obregon; Tesia; Guaymas; 15 miles S. W. of Nogales).—Huey, 1935, 256 (Punta Peñascosa).

Spizella breweri breweri van Rossem, 1932, 145 (Tiburon Island); 1934d, 489 (Guaymas; Oposura; Granados).

Common, locally abundant, transient and winter visitant in Lower Sonoran and Tropical zones throughout the State, including some, and probably all, of the islands. Some unpublished record stations are Colorado River at Monument 205; Pozo de Luís; Sonoyta (U. S. Nat. Mus.); San Pedro Bay; San Carlos Bay; San Estéban Island (Dickey coll.); Puerto Libertad; Kino Bay (Nat. Hist. Mus.); San Luís Mountains; San Bernardino Ranch (Mearns notes). Extreme dates are September 21 (San Luís Mountains) and May 6 (Granados).

SPIZELLA ATROGULARIS EVURA COUES

ARIZONA BLACK-CHINNED SPARROW

Spizella evura Coues, Acad. Nat. Sci. Phila., 18, 1866, No. 1, Jan.-Mch. [June 11], 87 (Fort Whipple, Arizona).

Spizella atrogularis evura van Rossem, 1935b, 282 (Oposura; crit.).—Hellmayr, 1938, 564 (Oposura).—A. O. U. Comm., 1944, 463 (northern Sonora).

Spizella atrogularis (not *Spinites atrogularis* Cabanis) Brewster, 1902, 146, part (Oposura).

Spizella atrogularis atrogularis van Rossem, 1934d, 489 (Oposura).

A summer visitant in the northeast. Known from a single specimen taken by Cahoon in the Sierra de Oposura on June 10, 1887.

ZONOTRICHIA LEUCOPHRY'S ORIANTHA OBERHOLSER

WESTERN WHITE-CROWNED SPARROW

Zonotrichia leucophrys oriantha Oberholser, Sci. Pub. Cleveland Mus. Nat. Hist., 4, No. 1, Sept. 19, 1932, 12 (Barley Camp, Warner Mountains, Oregon).—van Rossem, 1934d, 489 (Alamos; Cumpas; Nacozeni; Oposura).

Zonotrichia leucophrys (not *Emberiza leucophrys* Forster) van Rossem, 1931c, 302 (El Doctor; Tecoripa; Obregon; Tesia, Chinobampo; 12 miles W. of Magdalena).

Zonotrichia leucophrys leucophrys Thayer and Bangs, 1906, 22 (Opodepe [no date]).—Hellmayr, 1938, 566, part (locs. in Sonora).—Huey, 1942, 373 (Gray's Ranch on the boundary).

Common winter visitant and transient; much less numerous, though, than *Zonotrichia gambelii*, with which it occurs in company and over much the same territory. Additional localities are Camoa, February 20, 1931 (Bishop coll.); San Carlos Bay, September 24, 1931; Rancho La Arizona, May 9, 1937 (Dickey coll.); San Pedro River, October 15 and 17, 1892 (U. S. Nat. Mus.); Magdalena, May 14 and 15, 1925 (Dawson notes); Cajón Bonito Creek, September 8 to 28, 1893 (Mearns notes). Extreme dates are September 8 (Cajón Bonito Creek) and May 15 (Magdalena).⁸³

ZONOTRICHIA GAMBELII GAMBELII (NUTTALL)

GAMBEL SPARROW

Fringilla gambelii Nuttall, Man. Orn. U. S. and Canada, ed 2, 1, 1840, 556 (Near Fort Walla Walla, Washington).

Zonotrichia gambelii gambelii van Rossem, 1931c, 302 (El Doctor; Pesqueira; Tecoripa; San Javier; Obregon; Tesia; Guaymas); 1932, 145 (Tiburón Island); 1934d, 489 (Guaymas; Cumpas; Nacozari; Oposura).

Zonotrichia leucophrys gambelii Hellmayr, 1938, 567 (Cerro Blanco).

Zonotrichia leucophrys gambeli Huey, 1935, 256 (Punta Peñascosa).

Abundant winter visitant everywhere in Soñoran and Tropical zones; in midwinter probably the most abundant passerine bird in Sonora. A certain number in spring and fall probably are transients from, or to, more southerly points. Some additional localities where the Gambel Sparrow has been noted or specimens collected are Camoa; Chinobampo; Guirocoba; Kino Bay; Puerto Libertad; Santa Cruz River; San Pedro River; Nogales; Sonoyta; Cajón Bonito Creek. Extreme dates are September 8 (Cajón Bonito Creek; Mearns notes) and April 24 (Guaymas).

⁸³ I agree with Miller (Condor, 43, 1941: 262) that *oriantha* is a recognizable race, and that its range includes the Rocky Mountains (of the United States at least). Four specimens in the Dickey collection, from Tecoripa, March 1, 1929; Ciudad Obregón, November 8 and 30, 1929; and Tesia, March 21, 1930, might conceivably pass as the nominate race; however, until further evidence is forthcoming that *leucophrys* occasionally winters west of the Rockies they are listed under *oriantha*.

MELOSPIZA LINCOLNII LINCOLNII (AUDUBON)

NORTHERN LINCOLN SPARROW

Fringilla Lincolnii Audubon, Birds Amer. [folio], 2, pl. 193, 1834; Orn. Biog., 2, 1834, 539 ([Near mouth of Natashquan River] Labrador [Quebec]).

Melospiza lincolnii lincolnii van Rossem, 1931c, 303, part (El Doctor; Nogales; Tecoripa; Obregon; Tesia); 1932, 145 (Tiburón Island); 1934d, 498 (Alamos; Mina Abundancia; Oposura; Nacozari).

Passerella lincolnii lincolnii Miller and McCabe, 1935, 157, map (central and southern Sonora).

Melospiza lincolni Allen, 1893a, 39 (Fronteras; Napolera; Nacory; Bavispee River).

Melospiza lincolni lincolni Townsend, 1923, 20 (Tiburón Island).—Huey, 1935, 256 (Punta Peñascosa).

Melospiza lincolnii gracilis (not *Emberiza gracilis* Kittlitz) van Rossem, 1931c, 303, part (Tecoripa).

Common winter visitant and transient; appearing almost anywhere regardless of zonal or associational considerations. Some additional stations are the boundary south of Bisbee, September 25, 1892; San José Mountains, October 2, 1892; Sonoyta, January 13, 1894 (U. S. Nat. Mus.); Cajón Bonito Creek, September 27, 1893 (Mearns notes). It is possible that some of the specimens listed by van Rossem (1934d) belong under the subspecies *alticola*; however, it seems certain that *lincolnii* is the prevailing race that occurs at any season in Sonora. Extreme dates are September 25 (boundary south of Bisbee) and April 23 (Oposura).

MELOSPIZA LINCOLNII ALTICOLA (MILLER AND McCABE)

SOUTHERN LINCOLN SPARROW

Passerella lincolnii alticola Miller and McCabe, Condor, 37, No. 3, May, 1935, 156 (Bluff Lake, San Bernardino Mountains, California).

Melospiza lincolnii lincolnii (not *Fringilla lincolnii* Audubon) van Rossem, 1931c, 303, part (Tecoripa; Tesia; Chinobampo).

Winter visitant and transient, apparently in limited numbers as compared with the nominate race. Specimens exhibiting the characters of *alticola* have been examined from Tesia, December 7, 1929 and March 24, 1930; Chinobampo, March 3, 1930; Tecoripa, March 7, 1929 (Dickey coll.); Yécora, April 12, 1888 (Brit. Mus.).

MELOSPIZA LINCOLNII GRACILIS (KITTLITZ)

FORBUSH SPARROW

Emberiza (Zonotrichia) gracilis Kittlitz, Denkw. Reise russ. Amer., Mikr., und Kamtsch., 1, 1858, 199 (Sitka, Alaska).

Melospiza lincolnii gracilis van Rossem, 1931c, 303 (George Island); 1934d, 489 (Oposura; Nacozari).—Hellmayr, 1938, 594 (Sonora).

Detected only as a spring transient. Five specimens have been examined: George Island, April 20, 1925; Nacozari, March 22, 1887; Oposura, April 28 and May 30, 1887; Maicoba, April 7, 1888 (Brit. Mus.).

MELOSPIZA MELODIA MONTANA HENSHAW

MOUNTAIN SONG SPARROW

Melospiza fasciata montana Henshaw, Auk, 1, No. 3, July, 1884, 224 (Fort Bridger, Utah=Wyoming).—Allen, 1893a, 39 (Bavispee River).

Melospiza cinerea montana Ridgway, 1901, 328, part (Sonora).

Melospiza melodia montana A. O. U. Comm., 1910, 273, part (Sonora).

Melospiza melodia fallax (not *Zonotrichia fallax* Baird) Bailey, 1928, 756, part (Sonora).—van Rossem, 1934d, 490 (25 miles S. of San Pedro).—Hellmayr, 1938, 598, part (Sonora).

Winter visitant in the extreme north. Four specimens have been collected to date (all personally examined): Bavispe River near the headwaters, December 22 and 26, 1890 (Amer. Mus.); Sonoita, January 14, 1894 (U. S. Nat. Mus.); and 25 miles south of San Pedro, March 11, 1887 (Mus. Comp. Zool.). Ridgway (*l. c.*, in syn.) cites Scott's (1886) Arizona record from the San Pedro River as from northern Sonora, but seemingly in error.

MELOSPIZA MELODIA FALLAX (BAIRD)

BAIRD SONG SPARROW

Zonotrichia fallax Baird, Proc. Acad. Nat. Sci. Phila., 7, No. 3, May-June [July 3], 1854, 119 (Pueblo Creek [New Mexico]=Walnut Creek, north of Prescott, Arizona).

Melospiza melodia saltonis (not of Grinnell) A. O. U. Comm., 1931, 361, part (Sonora).—van Rossem, 1931c, 302 (Satic; Magdalena; Hermosillo; crit.); 1934d, 490 (Oposura; Granados; Moctezuma; crit.).—Hellmayr, 1938, 607, part ([eastern] Sonora).

Melospiza melodia bendirei Phillips, 1943, 247 (northeastern Sonora; crit.).

Fairly common resident of Sonoran riparian associations from the vicinity of the Pajaritos Mountains eastward, and south in the Sonora, Moctezuma, and Bavispe valleys to Hermosillo, Moctezuma, and Granados. An additional locality is Pilares in the Moctezuma River Valley (Univ. Mich.).⁸⁴

⁸⁴ The status of the Song Sparrows of northeastern Sonora and southeastern Arizona has been a source of speculation, most authors considering them nearer to *saltonis*. The studies of Marshall and Behle (Condor, 44, 1942: 122-124, and 233) have determined that the type of *fallax* was to be identified with their "*virginis*" which was described from southern Utah on characters similar to those shown by

MELOSPIZA MELODIA MERRILLI BREWSTER

MERRILL SONG SPARROW

Melospiza fasciata merrilli Brewster, Auk, 13, No. 1, Jan., 1896, 46 (Fort Sherman, Idaho).

Melospiza cinerea merrilli Ridgway, 1901, 361, and footnote, 362 (Bavispe River; crit.).

Melospiza melodia merrilli A. O. U. Comm., 1910, 274, part (Sonora).—Bailey, 1928, 758 (Sonora).

Melospiza merrilli Sharpe, 1909, 311 (Sonora).

Melospiza fasciata mexicana (not *Melospiza melodia* var. *mexicana* Ridgway) Allen, 1893a, 39 (Bavispe River).—Ridgway, 1894a, 66 (Bavispe River; crit.).

Midwinter visitant. Known to date from two specimens (Amer. Mus.) taken at "Camp 40" on the upper Bavispe River, December 21 and 26, 1890, by Robinette. A supplementary record which indicates wider distribution is from Quitovaquita on the Arizona side of the boundary, November 28, 1939 (Huey, 1942, p. 374; examined).

MELOSPIZA MELODIA SALTONIS GRINNELL

DESERT SONG SPARROW

Melospiza melodia saltonis Grinnell, Univ. Calif. Pub. Zool., 5, No. 3, April 9, 1909, 268 (Mecca [Riverside County], California).—A. O. U. Comm., 1931, 361, part ([northwestern] Sonora).—Hellmayr, 1938, 607, part ([northwestern] Sonora).—Phillips, 1943, 247, in text (Sonoyta).

Melospiza fasciata fallax (not *Zonotrichia fallax* Baird) Price, 1899, 93 (lower Colorado River).

Melospiza cinerea fallax Ridgway, 1901, 362, part ([northwestern] Sonora).—Stone and Rhoads, 1905, 685 (Colorado River delta).

Melospiza melodia fallax A. O. U. Comm., 1910, 273, part ([northwestern] Sonora).

Common, locally abundant, resident in suitable localities in the Colorado River delta. Occurs, in winter at least and perhaps only casually, eastward to the Sonoyta River. No Song Sparrows are known to occur during the breeding season anywhere along the international boundary between the Colorado delta and the Pajaritos Mountains, so that the ranges of *saltonis* and *fallax* are there separated by some 250 miles. Additional localities

the Song Sparrows of northeastern Sonora. Dr. Behle has kindly loaned me the initial series of "*virginis*" [= *fallax*] and I find them to be so very similar to Sonora birds (some appear identical) that any attempt to distinguish the latter by a separate name is not feasible. In view of the necessarily "spotty" distribution of Song Sparrows from southern Utah southeastward to northeastern Sonora, slight mass variations are normally to be expected in these isolated colonies. For this reason I cannot endorse the recent action of Phillips (*l. c.*) in proposing *Melospiza melodia bendirei*.

from which specimens have been examined are Monument 204 in the Colorado delta, March 14 and 29, 1894; Sonoyta, January 12 and 14, 1894 (U. S. Nat. Mus.); common at San Luís and Colonia Independencia, May, 1937 (van Rossem notes).

RHYNCHOPHANES MCCOWNII (LAWRENCE)

MCCOWN LONGSPUR

Plectrophanes McCownii Lawrence, Ann. Lyc. Nat. Hist. New York, 5, 1851, 122 (High prairies of western Texas).

Rhynchophanes mccownii Ridgway, 1901, 165 (northern Sonora).

Rhynchophanes mccowni A. O. U. Comm., 1910, 252 (northern Sonora); 1931, 361 (northern Sonora).—Sharpe, 1909, 288 (Sonora).

Rhynchophanes mccowni Bailey, 1928, 760 (northern Sonora).

A winter visitant, probably regularly, to grasslands and plains in the region of the boundary. Definite records are those of a specimen taken by Mearns and Holzner on the Santa Cruz River, October 20, 1893 (U. S. Nat. Mus.), and the statement in Mearns' notes that the species was observed (evidently not uncommonly) "on the plains both east and west" of Pozo de Luís between December 29, 1893 and January 8, 1894.

CALCARIUS ORNATUS (TOWNSEND)

CHESTNUT-COLLARED LONGSPUR

Plectrophanes ornata Townsend, Journ. Acad. Nat. Sci. Phila., 7, pt. 2, 1837 [Nov. 21], 189 (prairies of the Platte=forks of the Platte River, western Nebraska).

Calcarius ornatus Ridgway, 1901, 162 (Sonora).—Sharpe, 1909, 287 (Sonora).—A. O. U. Comm., 1910, 252 (Sonora).—Dawson, 1923, 230 (Sonora).—Bailey, 1928, 762 (Sonora).—Hellmayr, 1938, 642 (Sonora).

Four specimens taken by Mearns and Holzner on the San Pedro River on the boundary, October 26, 1892 (U. S. Nat. Mus.), are seemingly the basis for the inclusion of Sonora in the winter range of the Chestnut-collared Longspur. Also noted by Mearns as seen "on the plains both east and west" of Pozo de Luís between December 29, 1893 and January 8, 1894. In all probability the species is common at that season, at least in some years, wherever suitable plains occur along the northern boundary.