

A DISTRIBUTIONAL SURVEY OF THE BIRDS SONORA, MEXICO*

INTRODUCTION

HISTORICAL RÉSUMÉ

CHRONOLOGICALLY, the history of Sonora ornithology began approximately with that of Baja California. In brief comparison, P. E. Botta, on the "Heros," was the first naturalist of record to visit Baja California where, in the Cape region, he observed a number of birds in October and November, 1826. His vessel arrived at the Cape directly from Mazatlán and never, so far as can be ascertained, put in at Guaymas or any other port in Sonora. The first bird known to have been collected in Baja California was a hummingbird taken at Magdalena Bay by Dr. Neboux of the "Venus" in 1837, which Bourcier two years later named *Ornismya Costae*.

Just when the first bird to reach taxonomic hands was taken in Sonora seems to be indeterminable. However, in 1835, Lafresnaye described a Cactus Wren, *Picolaptes brunneicapillus*, which he obtained from a dealer who, in turn, had acquired it from a ship's captain whose vessel had visited "California and Peru." The characters of the specimen (now in the Museum of Comparative Zoölogy) would seem beyond question to fix the place of capture as southern Sonora or northern Sinaloa, but whether this was Guaymas or Agiabampo in Sonora, or Topolobampo in Sinaloa, all early ports of call within the range of the subspecies, cannot be ascertained. The first-named has been assumed to be the most likely and the type locality so fixed. To the identity of the person who collected the specimen there is no clue whatever. In this connection I am most grateful to Mr. Henry Dwyer, United States Consul at Guaymas, for his efforts to locate the (seemingly now non-existent) port records of Guaymas previous to 1835, on the possibility that the name of some foreign vessel might provide a lead.

John Woodhouse Audubon mentioned a number of birds (informally) in his narrative account of the journey across the State from the Sierra Madre to Altar and Sonoyta in August and September, 1849. Any specimens he may have collected were later "lost or destroyed," so that the first

* Contribution from the Department of Zoology, University of California, Los Angeles.

birds *known* to have been collected in Sonora are an Eared Grebe and a Ring-billed Gull (now in the British Museum), taken by, or for, Captain Sir Henry Kellett and Gervase Mathew, R. N., respectively, when H.M.S. "Herald" was at Guaymas in late December, 1849. Dr. A. L. Heermann visited Guaymas briefly in April, 1851, at which time he noted a few species (at least one incorrectly), but apparently collected no specimens. Dr. C. B. Kennerly, attached to Major Emory's boundary survey party, collected casual specimens in "June," 1855, at Nogales ("Los Nogales") and Guadalupe Cañon, among them, at the former place, the type of *Peucaea aestivalis*, var. *arizonae*, the first bird to be described with a type locality specifically in Sonora. A. J. Grayson is also known to have visited southern Sonora, probably some time in the sixties, and the few observations he made at that time were later recorded by Lawrence. The next visit of records which was productive of specimens, was that of Dr. Thomas Streets in April, 1875, on the surveying steamer "Narragansett," but only some four or five birds seem to have been collected within Sonora limits. Lyman Belding was at Guaymas in December, 1882 and April, 1883, and later published a nominal list of 46 species of birds seen or collected there. Although this list contained little of importance it was the first for any Sonora locality. Dr. Edward Palmer, engaged almost entirely with botanical collecting, was at several points from Guaymas northward along the coast to the Colorado delta in the seventies, eighties, and early nineties but the very few bird skins he prepared are of little interest except for the discovery of the Large-billed Sparrow on what later proved to be its breeding grounds at the mouth of the Colorado River. Thus in the fifty years following the visit of the unknown collector of the type of the Cactus Wren practically all that was known concerning the ornithology of Sonora centered at Guaymas and one or two places along the northern boundary, and consisted of an occasional specimen or casual observations by ships' officers or transient naturalists.

In August, 1884, Frank Stephens, the pioneer naturalist and collector of southwestern birds and mammals, crossed the desert from Sásabe on the Arizona boundary to Puerto Lobos on the Gulf. The number of birds found was not great, only some twenty-five species, but among them was the then almost mythical Masked Bob-white, the type of which he collected about 18 miles southwest of Sásabe. It may be said that this individual bird was the "spark plug" which set off intensive collecting in Sonora, a phase of activity motivated in large part by search for the Masked Bob-white. This is just as true, perhaps more so, today as it was when Brewster

sent Cahoon into northeastern Sonora in 1887. Similarly, though in lesser degree, it might be said that the Eared Trogon and Imperial Ivory-bill led to the opening up of the southern part of the State; for it was on his way to the mountains of Chihuahua in search of those rarities that Frazar, in 1888, made his historic collections at Alamos, Mina Abundancia, and Hacienda de San Rafael. Primarily on the same mission, William Lloyd, in the interests of Salvin and Godman, traveled through the southeast in the same year. N. S. Goss, in 1888 also, visited San Pedro Mártir Island in the Gulf and attracted widespread interest to those waters by his discovery of two supposed new species of boobies there. The exploration of the high mountains in the northeast by the Lumholtz party in the fall and winter of 1890 provided the first indication of the avifauna of that area, although the specimens taken were disappointingly few in number.

Dr. Edgar A. Mearns, medical officer and naturalist attached to the International Boundary Commission, introduced the study of avian distribution into the local field; and this in spite of the fact that his great mammal collection formed the chief basis for the delineations of his several "faunal areas." Large collections of birds made along the whole of the northern boundary in the years 1892, 1893, and 1894, undoubtedly influenced, equally with the mammals, his concepts of the problems involved. Unfortunately he did not live to finish his final report on the mammals and his bird papers are short and few in number, but the specimens collected have been of inestimable value to later workers. Unfortunately, too, by no means all of the material reached the United States National Museum, for his field books contain many entries of specimens which are not now in that institution nor were ever catalogued there. A study of his field books and the (now) fragmentary notes which accompany them provide a refreshing contrast in discrimination when compared to the activities of some of the collectors who preceded, and also followed, him. Subsequent to 1894, there has been intermittent activity by numerous collectors and observers among whom may be mentioned E. A. Goldman (1898-1899), W. W. Brown, Jr. (1905), A. J. van Rossem (1925-1937), J. T. Wright (1929-1933), L. M. Huey, (1934-1939), and Seth Benson (1935-1942). The relative amount of field work done by every person of whom I can find record is given in the following list. The number of type specimens of Sonora birds collected by a person is indicated in parentheses.

Abbott, Clinton G. Observations on sea birds in the vicinity of Guaymas in April, 1940.

Anonymous. (1). The collector of Lafresnaye's type of the Cactus Wren (see *antea*).

Anthony, Alfred W. Coastal and insular observations in December, 1930.

Ashcraft, Grenville. Naturalist on the Hancock yacht "Valero III." A few specimens were collected at San Estéban Island and other Gulf points in January, 1940.

Audubon, John Woodhouse. In charge of a party during the gold rush, Audubon crossed the Sierra Madre and traversed Sonora by way of Trinidad, Santa Rosa, Soyopa, Ures, Altar, and Sonoyta in August and September, 1849. However, preoccupation with the difficulties of travel was his main concern and his journal contains disappointingly little in relation to birds observed.

Bailey, Bernard. A few birds collected in November, 1932, between Nogales and the vicinity of Hermosillo are now in the Museum of Comparative Zoölogy and Fish and Wildlife Service collections.

Bancroft, Griffing. Egg collecting activities at various insular and mainland points from April, 1925, to July, 1930. Several hundred skins collected by his assistant, J. Elton Green, are now widely scattered in museum and private collections.

Belding, Lyman. While en route to and from Baja California in December, 1882, and April, 1883, observed at Guaymas 46 species, a few of which were collected. These are now chiefly or entirely in the United States National Museum.

Benson, Lieutenant H. C. (1). Collected a few specimens in the vicinity of Cumpas in February, 1887, including the type series of the Benson Quail. Brewster's collector, J. C. Cahoon, apparently accompanied this military party on his first short trip into Sonora.

Benson, Seth B. Collected, more or less incidentally to mammals, some 200-300 birds at several localities south to Guirocoba between 1935 and 1942. Of chief interest are the collections from Tiburón Island and the Sierra Seri. The specimens are now in the Museum of Vertebrate Zoology.

Brown, Herbert. Observed turkeys and Masked Bob-whites somewhere in north central Sonora but localities and dates not specified,—probably in the seventies.

Brown, Wilmot W., Jr. (3). Collected during most of 1905 in the central and southern parts of the range of the Masked Bob-white. His most interesting collection was made in the Sierra de San Antonio. The several hundred birds taken are now mostly in the Museum of Comparative Zoölogy.

Bruner, Stephen S. Minor observations at Tubutama in May, 1925.

Caboon, John C. (7). Made extremely important collections for William Brewster in 1887. His first trip, January 31 to February 8, south as far as Cumpas, was evidently made in company with Lieutenant Benson; the second, from March 11 to June 18 was to "Oposura" (Moctezuma) and the "Mountains near Oposura" (Sierra de Oposura), with one short visit to Granados early in May. The specimens collected are now chiefly in the Museum of Comparative Zoölogy, although a small proportion have been scattered by exchange.

Campbell, Berry. Perhaps 50 specimens, now in the Max M. Peet and University of Michigan Museum of Zoology collections, were taken at Pilares and El Tigre Mine in July, 1935.

Canterbury, Robert. Assistant to W. Leon Dawson at Guaymas and Magdalena in the spring of 1925. The few birds taken are in the Dickey collection.

Clark, Josiah. In the nineties made nesting notes on a few species near El Plomo.

Dawson, W. Leon. Collected eggs and made many notes at Magdalena and Guaymas in the spring of 1925. The few skins collected (by Canterbury) now in the Dickey collection.

Dickey, Donald R. A few ducks (skeletons) taken in the Colorado delta in December, 1925. Noted a few species on and about Tiburón Island in June, 1928.

Evermann, Barton W. Observed (with O. P. Jenkins) numerous species between Nogales and Guaymas in July, 1887.

Ferrari-Perez, Fernando. (1). Presumably in charge of collecting for the Geographical and Exploring Commission of the Republic of México which, from September to December, 1887, worked at Hermosillo and Moctezuma. A number of the skins taken are in the British museum; the whereabouts of the rest are (to me) unknown.

Field, Clyde. Assistant to Griffing Bancroft in 1925.

Frazar, M. Abbott. (21). Working in the interests of William Brewster, Frazar collected at Guaymas from January 13 to 21, 1887, while awaiting a boat to Baja California. Specimens collected on these dates are *not* wrongly dated as stated by Griscom (1933). On his return from Baja California in 1888, he collected at Guaymas from January 17 to 27, at Álamos (Hacienda Mercedes) from February 2 to March 30, at Mina Abundancia from April 7 to 30, and at Hacienda de San Rafael from May 1 to 22. Almost all of the great collections made are in the Museum of Comparative Zoölogy. An uncertain number of specimens (probably very few) are not listed in the Brewster catalogue (van Rossem, 1934d) but

were sent to the British Museum, and perhaps other places, before the entries were made. Except for the much later collections by J. T. Wright, Frazar's collections are by far the most valuable ever to come out of Sonora. Unfortunately, their usefulness is now greatly impaired by excessive post-mortem color change induced, presumably, by the preservative used in their preparation.

Gallegos, José. Prior to his death a few years ago, Gallegos was a collector and observer for the Departamento de Forestal y de Caza y Pesca, with headquarters in the City of México. The only evidence of activity in Sonora is a Least Cliff Swallow taken at Hermosillo, June 19, 1922, and now in the University of Michigan Museum of Zoology.

Goldman, Edward A. (11). Made general and well-selected, though not extensive, collections in the southeast (mostly at Alamos and Camoa) in October, November, and December, 1898, and January, 1899. Specimens collected are in the Fish and Wildlife Service (Biological Survey) collection.

Goldman, Luther J. Collected for the Bureau of Biological Survey in the delta of the Colorado in May, 1915. His most important discovery there was the long-sought breeding ground of the Large-billed Sparrow.

Gorsuch, David M. Extensive and careful ecological studies of Masked Bob-white and other quail south as far as Tecoripa in October, 1931.

Goss, Nathaniel S. (2). Visited San Pedro Mártir Island in March, 1888. Observed and collected a few species including the types of *Sula gossi* and *Sula brewsteri*. Locations of specimens unknown to me.

Grayson, Andrew J. Casual observations (as recorded by Lawrence, 1874) in southern Sonora, presumably in the sixties or early seventies.

Green, J. Elton. As assistant to Griffing Bancroft, collected about 500 birds, mostly from coastal localities, in 1928, 1929, and 1930.

Hannum, Robert. (15 [van Rossem and Hannum]). Assistant to van Rossem in May and June, 1937.

Heermann, Adolphus L. Visited Guaymas in April, 1851, when he noted the Cactus Wren, House Finch, and "Purple-throated Hummingbird" nesting commonly in the cactus desert near the town.

Holzner, Frank X. Assistant to Edgar A. Mearns, 1892 to 1894.

Huey, Laurence M. Coastal observations at Punta Peñascosa in February, 1934, and south to Puerto Libertad and Kino Bay in January and February, 1935. Boundary work in the northwestern desert from the vicinity of Quitovaquito eastward in the spring and winter of 1939. Specimens taken are in the Huey and San Diego Natural History Museum collections.

Jenkins, O. P. Observations (with B. W. Evermann) of birds seen between Nogales and Guaymas in July, 1887.

Kellett, Captain Sir Henry. In command of H.M.S. "Herald" at Guaymas from December 25, 1849, to February 1, 1850. During this time the only birds collected were apparently an Eared Grebe and a Ring-billed Gull. These, the first birds known certainly to have been obtained in Sonora, are in the British Museum.

Kennerly, Caleb B. R. (1). Dr. Kennerly, medical officer and naturalist attached to various early western surveys, collected a few birds at Nogales ("Los Nogales") and Guadalupe Cañon in June, 1855. Among these was the type of *Peucaea aestivalis*, var. *arizonae*. All specimens are, or were, in the United States National Museum.

Kenyon, Karl W. Observation of Pigeon Hawks near Nogales in February, 1942.

Lamb, Chester C. From December, 1932, to April, 1933, collected about 200 birds at El Álamo, Hermosillo, Rancho Costa Rica, San José de Guaymas, Ures, and Agiabampo. All except those from Agiabampo (Moore collection) are in the Dickey collection.

Lloyd, William. (1). Traveled from the high mountains in the east-central part of the State, southward down the Río Cedros to the Sierra de Álamos and thence into Sinaloa in April and May, 1888. His specimens went to Salvin and Godman and are now in the British Museum. Some are listed in the "Biologia Centrali-Americana" but without dates. From specimens examined at the British Museum his itinerary appears to be as follows. Since many of his specimens were migrants the dates are of some importance.

- April 2 Tutuaca (in Chihuahua) "9500 feet."
- April 4 Yepachíc (now in Chihuahua).
- April 11-16 Yecaera [= Yécora] "8500 ft."
- April 17 Trinidad. "6000 ft."
- April 18 Santa Ana.
- April 19 Guadalupe and Realito.
- April 20-23 Nuri.
- April 25 (?) Santa Rosa.
- April 26 Cedros.
- April 27 La Cobriza.
- April 28-30 Quiriego.
- May 4 and 5 Río Mayo (near junction of Cedros and Mayo Rivers).
- May 5-9. Agua Caliente.
- May 10-14 Álamos.
- May 15-19 Ysleta [= Isleta].
- May 23-25 Sierra de Álamos.

Loring, J. Alden. A few birds, incidental to mammal work, taken at Ortiz in May, 1892. Biological Survey collection.

Lumboltz, Carl. Chief of an archaeological expedition through the mountains of the northeast from September 9, 1890 to January 1, 1891.

He observed the Imperial Ivory-bill east of Nácori but all specimens were collected by Robinette (*q.v.*).

Mathew, Gervase. Presumably a ship's officer on the "Herald"; at any rate he collected a Ring-billed Gull at Guaymas in December, 1849, when that vessel was at anchor there.

Mearns, Edgar A. Medical officer and naturalist with the International Boundary Commission. For comment on his historic collections made along the northern boundary see introductory remarks.

Moore, Robert T. (2). Collected about Guirocoba and the mountains to the eastward in May, 1933, and May, 1934. Presumably all specimens are in his collection, although only a few have been recorded and none (except a few specifically mentioned) have been examined in the preparation of this report.

Osburn, Pingree I. (1). Assistant on the "Albatross" expedition to the Gulf in March and April 1911. Collected on several islands including San Estéban and Tiburón. His specimens are in the American Museum of Natural History.

Owen, Vergil. Assistant on the California Academy of Sciences expedition to the Gulf in April, May and June, 1921. The eggs and the four or five skins collected are in the Academy collection.

Palmer, Edward. This famous botanist was at several mainland and insular points in Sonora at various times in the seventies, eighties, and nineties but the very few birds he collected scarcely warrant the time necessary to work out his exact dates. However, he was at Guaymas several times, at San Pedro Mártir Island in 1887, and in the Colorado delta at Colonia Lerdo in 1889. His specimens are in the United States National Museum.

Phillips, Allan C. Observation trip from Sásabe to Puerto Libertad in February, 1932.

Price, William W. Observed many species in the delta of the Colorado in November and December, 1898. The whereabouts of the specimens taken (if any) is unknown.

Renardo, Juan. Minor observations at Guaymas some time prior to 1886.

Rhoads, Samuel N. Collected 258 specimens and noted numerous additional species (some of the latter highly questionable) in the Colorado delta in February, 1905. The specimens are presumably in the Academy of Natural Sciences of Philadelphia.

Robinette, F. Zoological collector for the Lumboltz expedition which was in Sonora territory from September 9, 1890, to January 1, 1891. Of the roughly 1000 birds collected, perhaps half were taken in Sonora. Unfortunately, all were poorly prepared, many are carelessly labeled, and

a few are not labeled at all. The greater part, perhaps all, are now in the American Museum of Natural History.

Rowley, John. Collected perhaps 25 skins in April and May, 1903, at Cerro Blanco and the Providencia Mines in the central part of the State. They are now in the Chicago Natural History Museum.

Rowley, J. Stuart. A few specimens taken at Punta Peñascosa, January 21-23, 1930, are now in his collection.

Schofield, John. About 25 specimens taken at Hermosillo and Guaymas in June and July, 1932, are in the Max M. Peet and University of Michigan Museum of Zoology collections.

Sheffler, William J. Has collected perhaps 200 skins at Punta Peñascosa, El Alamo, and Magdalena, south to Guirocoba and Álamos from 1930 to 1944. They are in his collection.

Sheldon, Charles. Collected the Sahuaro Screech Owl in the Sierra Seri, January 1, 1922.

Sibley, Charles G. Co-collector with Seth Benson.

Slevin, Joseph R. Made notes on many species of birds during the California Academy of Sciences expedition to the Gulf in April, May, and June, 1921 (see Mailliard, 1923).

Smith, [initials unknown]. Made a small collection of birds somewhere in the mountains of northeastern Sonora (exact locality unknown) in April, 1909. The specimens are in the Museum of Comparative Zoölogy.

Stephens, Frank. (1). Collected or noted 25 species of birds between Sásabe and Puerto Lobos in August, 1884. Most of the specimens are in the San Diego Natural History Museum. At least one, the type of *Colinus ridgwayi*, is in the British Museum.

Streets, Thomas. Medical officer and naturalist on the "Narragansett." Visited Tiburón Island, the mouth of the Río San Ignacio, and the mouth of the Colorado in April, 1875. The four or five bird skins taken are in the United States National Museum.

Townsend, Charles H. (1). Naturalist on the "Albatross." In March, 1899, collected in Gulf waters, on George Island, and at one or two Sonora mainland points. Among the few birds taken (now in the United States National Museum) is the type of *Otocoris alpestris pallida*. In March and April, 1911, visited San Pedro Mártir, San Estéban and Tiburón Islands, at which time the type of *Pipilo fuscus jamesi* was taken (by Osburn). Specimens from this latter expedition seem to be wholly or at least in large part in the American Museum of Natural History.

van Rossem, A. J. (33 [15 with Hannum]). Gulf islands south to San Pedro Mártir in April, 1925. San Estéban and San Pedro Nolasco Islands

and mainland coast from Guaymas south to Tóbari Bay in April, May, and June, 1930. Coast and islands from Guaymas north to Tepopa Bay and Tiburón Island in December, 1931, and January, 1932. Colorado River delta and the Pajaritos Mountains south to Agiabampo and east in the extreme south to the Chihuahua and Sinaloa boundaries in May and June, 1937. The several hundred specimens collected, except for a few dispersed through exchange, are in the Dickey collection.

Vorbies, Charles T. Short reconnaissance trips in the early thirties south as far as Hermosillo and Puerto Libertad.

Wakefield, E. S. Collected a specimen of the Green-backed Goldfinch (in the National Museum) at Arispe some time before 1874.

Woods, Ralph A. Co-collector with W. J. Sheffler.

Wright, John T. (24). From early January, 1929, to the summer of 1933, collected in the Colorado River delta and in the central and south-eastern parts of the State south to the Guirocoba region. His collections totaling, probably, between 3000-4000 skins are widely dispersed. Most of them taken up to the fall of 1931 are in the Dickey collection; those taken subsequent to that time were disposed of to the Bishop, Conover, Moore, and Peet collections, the San Diego Natural History Museum, the Chicago Natural History Museum, and probably to various other destinations which I have not been able to determine. On the whole, the material undoubtedly outweighs in importance that collected by Frazar in 1888.

To date there have been 111 species and subspecies of birds described from within the limits of Sonora. This is truly a surprising number when it is remembered that the avian make-up of the State is largely a conglomerate of elements common to extra-territorial areas which have received a good deal of attention at the hands of systematists. Of these 111 forms, one is believed to be a hybrid, and 10 are considered to be synonyms because they are not distinguishable from other species or races. These forms have been originally described by 19 persons, as follows. The type localities and the collectors of the type specimens are included.

Sula gossi "Ridgway MS" Goss [= *Sula nebouxii* Milne-Edwards]. San Pedro Mártir Island by Goss.

Sula brewsteri Goss [= *Sula leucogaster brewsteri* Goss] San Pedro Mártir Island by Goss.

Phalacrocorax olivaceus chancho van Rossem and Hachisuka. Tesia by van Rossem and Hannum.

Heterocnus cabanist [sic] *fremitus* van Rossem and Hachisuka [= *Heterocnus mexicanus fremitus* van Rossem and Hachisuka]. Guirocoba by van Rossem and Hannum.

- Ixobrychus exilis pullus* van Rossem. Tóbari Bay by van Rossem.
- Buteo rufescens* Salvin and Godman [= *Buteo jamaicensis calurus* Cassin]. Hermosillo cotype by Ferrari-Perez.
- Asturina plagiata maxima* van Rossem [= *Buteo nitidus maximus* (van Rossem)]. San Javier by Wright.
- Geranospiza caerulescens livens* Bangs and Penard [= *Geranospiza nigra livens* Bangs and Penard]. Álamos by Frazar.
- Polyborus cheriway amphilus* van Rossem. Tesia by Wright.
- Falco albicularis petrophilus* van Rossem and Hachisuka. Guirocoba by van Rossem and Hannum.
- Ortalis wagleri griseiceps* van Rossem. Álamos by Frazar.
- Callipepla gambeli fulvipectus* Nelson [= *Lophortyx gambelii fulvipectus* (Nelson)]. Camoa by E. A. Goldman.
- Lophortyx gambelii pembertoni* van Rossem. Tiburón Island by van Rossem.
- Callipepla elegans bensoni* Ridgway [= *Lophortyx douglasii bensoni* (Ridgway)]. 18 miles N. of Cumpas by H. C. Benson.
- Colinus ridgwayi* Brewster [= *Colinus virginianus ridgwayi* Brewster]. 18 miles S.W. of Sásabe by Stephens.
- Cyrtonyx montezumae morio* van Rossem. Guirocoba by van Rossem.
- Rallus obsoletus rhizophorae* Dickey [= *Rallus elegans rhizophorae* Dickey]. Tóbari Bay by van Rossem.
- Sterna albifrons mexicanus* van Rossem and Hachisuka [= *Sterna albifrons mexicana* van Rossem and Hachisuka]. Tóbari Bay by van Rossem.
- Columba flavirostris restricta* van Rossem. Tecoripa by Wright.
- Leptotila verreauxi santiago* van Rossem and Hachisuka. Guirocoba by van Rossem and Hannum.
- Ara militaris sheffleri* van Rossem and Hachisuka. Guirocoba by van Rossem and Hannum.
- Aratinga holochlora brewsteri* Nelson. Hacienda de San Rafael by Frazar.
- Psittacula cyanopyga pallida* Brewster [= *Forpus cyanopygius pallidus* (Brewster)]. Álamos by Frazar.
- Amazona albifrons saltuensis* Nelson. Camoa by E. A. Goldman.
- Amazona finschi woodi* Moore. Guirocoba by Wright.
- Piaya cayana extima* van Rossem. Guirocoba by Wright.

- Geococcyx velox melanchima* Moore. Guirocoba by Wright.
- Glaucidium brasilianum cactorum* van Rossem. Between Guaymas and Empalme by van Rossem.
- Cyanomyia salvini* Brewster [=Hybrid. *Cyananthus latirostris magica* × *Amazilia violiceps conjuncta*]. Nacozeni by Cahoon.
- Amazilia violiceps conjuncta* Griscom. Alamos by Frazar.
- Amazilia florenceae* van Rossem and Hachisuka. Rancho Santa Bárbara by van Rossem and Hannum.
- Anthoscenus constantii surdus* van Rossem [= *Helimaster constantii surdus* (van Rossem)]. Alamos by Frazar.
- Trogon elegans canescens* van Rossem. San Javier by Wright.
- Chloroceryle americana leucosticta* van Rossem and Hachisuka [= *Chloroceryle americana hachisukai* Laubmann (new name)]. Rancho La Arizona by van Rossem and Hannum.
- Momotus mexicanus vanrossemi* Moore. Chinobampo by Wright.
- Colaptes chrysoides tenebrosus* van Rossem. Ciudad Obregón by Wright.
- Centurus uropygialis fuscescens* van Rossem. Chinobampo by Wright.
- Centurus uropygialis tiburonensis* van Rossem. Tiburón Island by van Rossem.
- Piculus auricularis sonoriensis* van Rossem and Hachisuka. Rancho Santa Bárbara by van Rossem and Hannum.
- Ceophloeus lineatus obsoletus* van Rossem [= *Hylatomus lineatus obsoletus* (van Rossem)]. Alamos by Frazar.
- Phloeocastus guatemalensis dorsofasciatus* Moore. Guirocoba by Wright.
- Dryobates scalaris agnus* Oberholser [= *Dendrocopos scalaris sinaloensis* (Ridgway)]. Camoa by E. A. Goldman.
- Xiphorhynchus flavigaster tardus* Bangs and Peters. Hacienda de San Rafael by Frazar.
- Lepidocolaptes leucogaster umbrosus* Moore. Between San José and Guirocoba by Moore.
- Tityra semifasciata hannumi* van Rossem and Hachisuka. San Francisco Cañon by van Rossem and Hannum.
- Platypsaris aglaiae richmondi* van Rossem. Rancho La Arizona by Wright.
- Tyrannus crassirostris sequestratus* van Rossem. Rancho La Arizona by Wright.

- Tyrannus crassirostris pompalis* Bangs and Peters. Alamos by Frazar.
- Myiozetetes similis primulus* van Rossem. Tesia by Wright.
- Pitangus sulfuratus* [sic] *palliatus* van Rossem [= *Pitangus sulphuratus palliatus* van Rossem]. Alamos by Frazar.
- Mitrephanes phaeocercus tenuirostris* Brewster. "Mountains near Oposura" by Cahoon.
- Otocoris alpestris pallida* Dwight [= *Chionophilos alpestris dwighti* Stresemann (new name); = *Eremophila alpestris leucansiptila* (Oberholser)]. Direction Hill by Townsend.
- Petrochelidon albifrons minima* van Rossem and Hachisuka. "Pichicuate" [error, = Cuchujaqui] River, 7 mi. E. of Alamos by van Rossem and Hannum.
- Stelgidopteryx ruficollis psammochrous* Griscom. Oposura by Cahoon.
- Iridoprocne albilinea rhizophorae* van Rossem. Tóbari Bay by van Rossem.
- Calocitta colliei arguta* van Rossem. Chinobampo by Wright.
- Auriparus flaviceps fraterculus* van Rossem. Chinobampo by Wright.
- Psaltriparus plumbeus cecaumenorum* Thayer and Bangs [= *Psaltriparus minimus cecaumenorum* Thayer and Bangs]. La Chumata Mine by Brown.
- Psaltriparus minimus dimorphicus* van Rossem and Hachisuka. Rancho Santa Bárbara by van Rossem and Hannum.
- Picolaptes brunneicapillus* Lafresnaye [= *Campylorhynchus brunneicapillus brunneicapillus* (Lafresnaye)]. Guaymas; collector unknown.
- Heleodytes brunneicapillus seri* van Rossem [= *Campylorhynchus brunneicapillus seri* (van Rossem)]. Tiburón Island by van Rossem.
- Thryophilus sinaloa cinereus* Brewster [= *Thryothorus sinaloa cinereus* (Brewster)]. Alamos by Frazar.
- Pheugopedius felix sonorae* van Rossem [= *Thryothorus felix sonorae* (van Rossem)]. Guirocoba by Wright.
- Troglodytes cahooni* Brewster [= *Troglodytes brunneicollis cahooni* Brewster]. "Mountains near Oposura" by Cahoon.
- Catherpes mexicanus meliphonus* Oberholser [= *Catherpes mexicanus mexicanus* (Swainson)]. Alamos by Frazar.
- Toxostoma bendirei candidum* van Rossem. 10 miles N. of Guaymas by van Rossem.
- Toxostoma bendirei rubricatum* van Rossem. Tecoripa by Wright.

- Harporhynchus curvirostris maculatus* Nelson [= *Toxostoma curvirostre maculatum* (Nelson)]. Alamos by E. A. Goldman.
- Toxostoma curvirostre insularum* van Rossem. San Estéban Island by van Rossem.
- Melanotis caeruleascens effuticius* Bangs and Penard. Hacienda de San Rafael by Frazar.
- Turdus rufopalliatus grisor* van Rossem [= *Turdus rufo-palliatus grisor* van Rossem]. Guirocoba by Wright.
- Turdus assimilis calliphthongus* Moore. "Baromicon" [= Baromico] by Moore.
- Myadestes obscurus cinereus* Nelson. "Mountains near Alamos" by E. A. Goldman.
- Polioptila caerulea gracilis* van Rossem and Hachisuka. Rancho Santa Bárbara by van Rossem and Hannum.
- Polioptila nigriceps restricta* Brewster. Alamos by Frazar.
- Polioptila melanura lucida* van Rossem. 10 miles N. of Guaymas by van Rossem.
- Polioptila melanura curtata* van Rossem. Tiburón Island by van Rossem.
- Vireo hypochryseus nitidus* van Rossem. Hacienda de San Rafael by Frazar.
- Vireo virescens hypoleucus* van Rossem and Hachisuka [= *Vireo olivaceus hypoleucus* van Rossem and Hachisuka]. San Francisco Cañon by van Rossem and Hannum.
- Compsothlypis pulchra* Brewster [= *Parula pitiayumi pulchra* (Brewster)]. Hacienda de San Rafael by Frazar.
- Dendroica aestiva sonorana* Brewster [= *Dendroica aestiva sonorana* Brewster]. Oposura by Cahoon.
- Dendroica erithachorides rhizophorae* van Rossem. Tóbari Bay by van Rossem.
- Geothlypis trichas chryseola* van Rossem. Rancho La Arizona by Wright.
- Geothlypis trichas riparia* van Rossem. Tesia by van Rossem and Hannum.
- Icteria virens tropicalis* van Rossem. Tesia by van Rossem.
- Euthlypis lachrymosa tephra* Ridgway [= *Euthlypis lachrymosa* (Bonaparte)]. Hacienda de San Rafael by Frazar.
- Basileuterus rufifrons caudatus* Nelson. Alamos by E. A. Goldman.

- Scaphidurus major nelsoni* Ridgway [= *Cassidix mexicanus nelsoni* (Ridgway)]. Alamos by E. A. Goldman.
- Icterus wagleri castaneopectus* Brewster. "Mountains near Oposura" by Cahoon.
- Icterus cucullatus restrictus* van Rossem. Agiabampo by van Rossem and Hannum.
- Icterus pustulatus microstictus* Griscom. Guaymas by Brown.
- Tanagra elegantissima viscivora* van Rossem [= *Tanagra elegantissima rileyi* van Rossem (new name)]. San Francisco Cañon by van Rossem and Hannum.
- Piranga flava zimmeri* van Rossem. Chinobampo by Wright.
- Piranga erythrocephala candida* Griscom. Hacienda de San Rafael by Frazar.
- Richmondia cardinalis townsendi* van Rossem. Tiburón Island by van Rossem.
- Cardinalis cardinalis affinis* Nelson [= *Richmondia cardinalis affinis* (Nelson)]. Alamos by E. A. Goldman.
- Passerina versicolor dickeyae* van Rossem. Chinobampo by Wright.
- Carpodacus mexicanus sonoriensis* Ridgway. Alamos by E. A. Goldman.
- Pipilo fuscus jamesi* Townsend. Tiburón Island by Osburn.
- Pipilo fuscus intermedius* Nelson. Alamos by E. A. Goldman.
- Melospiza rubricatula grisor* van Rossem [= *Melospiza kieneri grisor* van Rossem]. Hacienda de San Rafael by Frazar.
- Passerculus sandwichensis atratus* van Rossem. Tóbari Bay by van Rossem.
- Aimophila quinquestriata septentrionalis* van Rossem. Hacienda de San Rafael by Frazar.
- Aimophila carpalis bangsi* Moore [= *Aimophila carpalis* (Coues)]. Guirocoba by Wright.
- Aimophila cahooni* Brewster [= *Aimophila rufescens mcleodii* Brewster]. "Mountains near Oposura" by Cahoon.
- Peucaea megarhyncha* Salvin and Godman [= *Aimophila rufescens mcleodii* Brewster]. Santa Ana by Lloyd.
- Aimophila rufescens antonensis* van Rossem. La Chumata Mine by Brown.
- Aimophila ruficeps simulans* van Rossem. Mina Abundancia by Frazar.
- Peucaea aestivalis*, var. *arizonae* Ridgway [= *Aimophila botterii botterii* Sclater)]. "Los Nogales" by Kennerly.
- Amphispiza bilineata pacifica* Nelson. Alamos by E. A. Goldman.
- Amphispiza bilineata cana* van Rossem. San Estéban Island by van Rossem.