

MISCELLANEOUS PUBLICATIONS NO. 37  
MUSEUM OF ZOOLOGY  
UNIVERSITY OF MICHIGAN

THE BIRDS OF  
BREWSTER COUNTY, TEXAS

BY  
JOSSELYN VAN TYNE  
AND  
GEORGE MIKSCH SUTTON

ANN ARBOR  
UNIVERSITY OF MICHIGAN PRESS

AUGUST 24, 1937

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FREDERICK M. GAIGE,  
Director of the Museum of Zoology





FUERTES' RED-TAILED HAWK

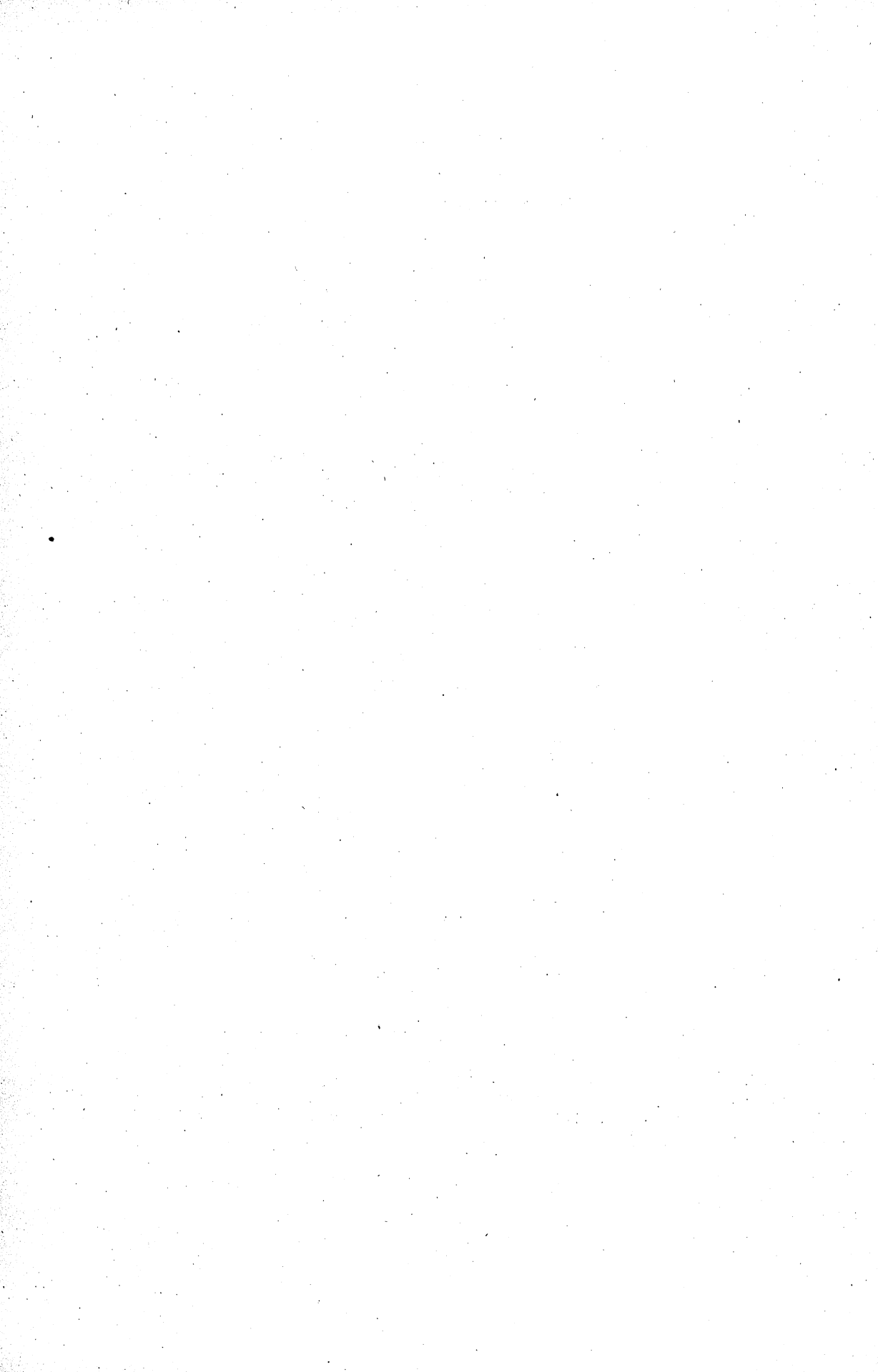
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## THE BIRDS OF BREWSTER COUNTY, TEXAS

This study of the birds of Brewster County, Texas, was begun at the suggestion of Mr. Frederick M. Gaige that the Big Bend region and especially the Chisos Mountains had been little explored biologically and merited further investigation.

The first expedition was supported by Mr. William G. Fargo. The party, consisting of Frederick M. Gaige, leader and entomologist, Helen T. Gaige, herpetologist, and Josselyn Van Tyne, ornithologist, arrived at Alpine on June 8, 1928, and four days later moved to Marathon. On June 14 headquarters were shifted to Glenn Spring, where there was a Texas Ranger station and the post office for the southeastern part of the county. On June 29 and July 31 the party made one-day trips to Upper Juniper Spring in the Chisos Mountains, and from July 5 to 23 camped there and collected in many parts of the mountains, even reaching the top of Emory Peak. During the rest of the period from June 14 to August 7 the W. D. Burnham ranch at Glenn Spring was used as a base, and explorations were made by car, mainly in the area between Chilicotal Spring and Glenn Spring on the north and San Vicente, Hot Springs, and Boquillas on the south and southeast (about fifty man-days devoted to birds).

In 1932 Mr. Fargo sent to Brewster County a second party whose primary objective was the discovery of the nest and eggs of the Colima Warbler. This expedition was led by Van Tyne who was assisted by Dr. Max M. Peet of the University of Michigan Medical School and Edouard C. Jacot of Prescott, Arizona. Its members met in Marathon on April 26 and two days later drove south to San Vicente, finding headquarters with Mr. Thomas J. Miller. On April 30 they moved to Upper Juniper Spring and the next day established camp at Boot Spring where they worked until May 27, when they came down from the mountains to Glenn Spring, and Dr. Peet left for the East. Van Tyne ended his field work on June 1, but Jacot continued collecting from Glenn Spring until June 22 (about ninety-eight man-days).

In the spring of 1933 John B. Semple, Albert C. Lloyd, and George Miksch Sutton visited Brewster County for a little over a month. Arriving April 28, they established headquarters at Marathon and, using an automobile, worked the surrounding country for ten days. The places most frequently visited were Peña Creek, four miles southwest; Maravillas Creek, fifteen miles southwest; Ridge Spring and Garden Springs, respectively twelve and thirteen miles south; and the open grasslands three to five miles directly north. May 8 they drove south to Hot Springs for a two weeks' stay and from there visited Pine Canyon in the Chisos Mountains on several days and made a day's reconnaissance of Juniper Canyon. Much of their work was done around

Boquillas, at San Vicente, and at interlying points along the Rio Grande. May 22 they returned to Marathon and centered their attention upon the Glass Mountains (fifteen to twenty miles northeast), the Santiago range (seventeen to twenty-two miles southwest), and the grassy plains several miles north and west of town during the remainder of their sojourn (to June 6). They made one trip to Iron Mountain, to the north, and one trip to Alpine and Mount Ord. The Combs range (twelve to fifteen miles south), the Roberts ranch (twelve miles southwest), and the Hess and McGonagill ranches in the Glass Mountains were other favorite collecting grounds (about a hundred and seventeen man-days).

In 1935 both Van Tyne and Sutton visited Brewster County, the former in February and March and the latter in April and May. Josselyn Van Tyne and Helen B. Van Tyne made their base at Alpine from January 27 until April 6. During that time they made almost daily trips by automobile, covering the area north to Jeff Davis County, west to Presidio County, south to Elephant Mountain, and east beyond Marathon. On February 24 and 25 Van Tyne accompanied Messrs A. F. Ahrens and James O. Stevenson of the National Park Service on a trip to Marathon, the Chisos Mountains CCC Camp, Boquillas, Castalon, Johnson ranch, Terlingua, and back to Alpine. The period from March 18 to 24 he spent at the Chisos Mountains CCC Camp. On account of uncertain health he was not able to carry on a normally strenuous field campaign but did accomplish about sixty man-days of work.

Sutton's party, composed of J. B. Semple and himself, established headquarters at Marathon on April 10, working principally along Peña and Maravillas creeks, at Garden Springs and Ridge Spring, on the Combs and Roberts ranches, in the Glass Mountains, in the foothills of the Santiagos, and for one day in the Peña Blanca Mountains, some twenty miles east. The weather was unpleasantly dry and hot. Dust storms made field work difficult. The drought was said by cattlemen to be the worst the country had ever experienced. April 26 Sutton and Semple motored southward to the Chisos Mountains where they established a new base at the CCC Camp in the Basin, journeying from that point afoot and by car to Green Gulch, the Burnham ranch, Casa Grande, Laguna, Blue Creek Canyon, and once to Boot Spring. May 4 they drove west to Terlingua, from which base they reached Castalon, Lajitas, various points along Terlingua Creek, and, once, the mouth of the Grand Canyon of the Rio Grande. For eight days they collected in the Terlingua region, then traveling eastward on May 12, visited the Johnson ranch for two days, and continued to Hot Springs, where they remained until May 22. During this eight-day period they revisited Boquillas and San Vicente, the Graham ranch, west of Boquillas, the country about Hot Springs, and the north bank of the Rio Grande for several miles to the west of San Vicente. May 22 they returned to Marathon and collected on familiar

grounds until the end of their season (May 30). On May 27 and 30 they drove to Alpine, Paisano Peak, Paradise Canyon, and other points in the extreme northwestern corner of the county. They collected in the Altuda region only cursorily on two days. They were in the field every day (about one hundred man-days).

The total of our expeditions was about four hundred and twenty-five man-days.

The following indicates the ornithological field work by others in the county: In 1890 Mr. William Lloyd collected a few birds for the United States Department of Agriculture in the vicinity of Paisano, and in April and May, 1895, Mr. John K. Strecker of Baylor University made a visit to the same locality. The first extensive work was done in May, June, and July, 1901, by Messrs. Vernon Bailey and Harry C. Oberholser of the United States Department of Agriculture, accompanied by Louis Agassiz Fuertes. The birds in the Fuertes collection, now at Cornell University, and some of the Department of Agriculture specimens taken on that expedition have been available to us in the preparation of this paper. In 1904 Mr. Thomas H. Montgomery, Jr., of the University of Texas joined a state mineralogical survey party and spent the period of June 13 to July 6 on a trip from Alpine to Marathon and south to the Chisos Mountains. He apparently collected specimens of most of the forty-seven "breeding birds" concerning which he published an account the following year. It is unfortunate that we have not succeeded in tracing these specimens, for there are in his list of species several obvious errors of identification which could be corrected if only the original specimens could be re-examined. The following year J. K. Strecker, assisted by E. T. Prade and William Baines, made a second trip to the county in April and May and traveled "in a mountain hack drawn by four horses" south as far as Terlingua and the Chisos Mountains. In 1913 Mr. Frank B. Armstrong collected in Brewster County for Colonel John E. Thayer for at least the period of May 1 to 19. The specimens are labeled only "Brewster County," and we do not know what areas his work covered. The birds taken are of desert and lowland forms. In 1914 Thayer sent Armstrong to the Chisos Mountains to collect. We have little information in regard to this trip, but Armstrong's work in the mountains, as far as we have been able to trace it, was done between January 14 and February 12. Most of the specimens he took are now in the Museum of Comparative Zoology. For several weeks during the summer of 1916 Mr. George E. Maxon of the Texas National Guard was stationed successively at Boquillas, Terlingua, and Lajitas, and he published in *The Oologist* two informal accounts of his experiences.

As already described, the field work carried on by us and our companions was done during 1928, 1932, 1933, and 1935. The specimens collected by

Van Tyne and his assistants are preserved in the University of Michigan Museum of Zoology, while those taken by Sutton and his collaborators have been apportioned between Carnegie Museum and Cornell University. Dr. George B. Saunders spent part of November 4 and 5, 1932, in the northern section of the county and collected a few specimens. Mr. R. W. Quillin of San Antonio visited Alpine, Marathon, San Vicente, the Johnson ranch, and the lower parts of the Chisos Mountains from May 15 to 24, 1934. He spent about six days in actual field work and devoted his attention largely to nests and eggs. With the development of plans for a "Big Bend National Park" the National Park Service began to send its Wild Life Technicians to study the area. Mr. James O. Stevenson spent several days in late February and the period of August 1 to 9, 1935, in the county and in company with Mr. Walter A. Weber, worked there from July 6 to 11, 1935. In 1936 Mr. Tarleton F. Smith studied the birds of the county from June 11 to September 12 but also gave much attention to the mammals, reptiles, and amphibians. A fourth representative of the National Park Service, Mr. A. E. Borell, worked in the county from July 15 to 18 and from October 16 to December 3, 1936.

The location of Brewster County on the southwest border of Texas is indicated on Map 1. It is the largest county in Texas, having an area of 5935 square miles, about equal to the combined areas of Connecticut and Rhode Island. The county extends 118 miles north and south and 102 miles east and west. It is characterized by very high relief. The highest point is Emory Peak, 7835 feet, and the lowest is 1350 feet on the Rio Grande at the easternmost point of the county, a 6485 foot range of altitude. In the following list we have endeavored to include all localities referred to in this paper. Immediately following each locality name we give in parenthesis the name of the United States Geological Survey topographic quadrangle on which it may be found. In many cases we also give the elevation above sea level, as taken from the above-mentioned maps, and other remarks or corrections. All Chisos Mountain localities are listed under that heading, since it was not possible to show them separately on Map 1.

Alpine (Alpine). 4485 feet.

Altuda (Altuda). 4650 feet. Spelled "Altudo" by T. H. Montgomery.

Boquillas (Chisos Mountains). 1850 feet. *Not* the locality shown on the U.S.G.S. map (1905 edition). The present Boquillas, Texas, is on the Rio Grande directly across from Boquillas, Mexico, and about seven and one-half miles southeast of the point marked "Boquillas" on the U.S.G.S. map.

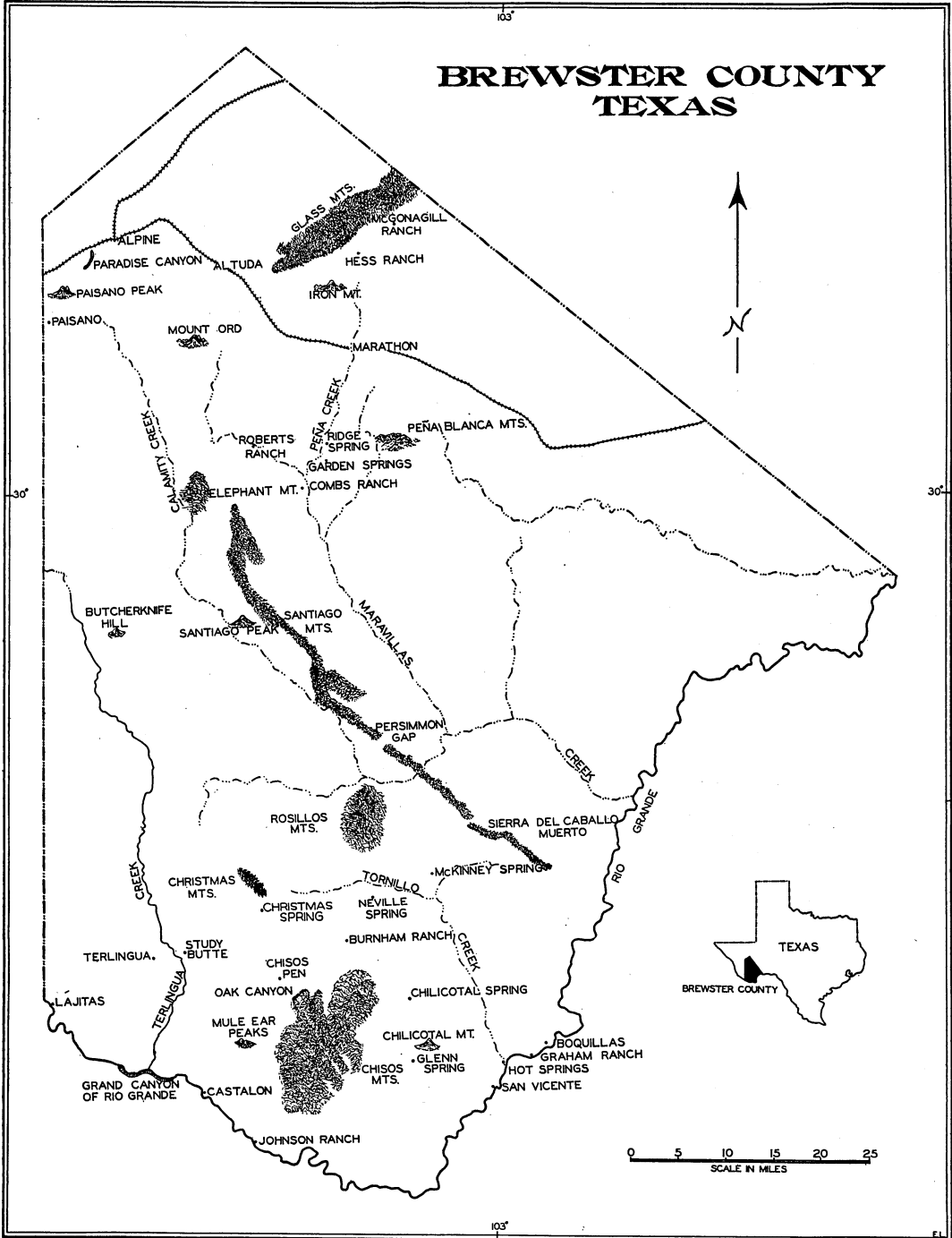
Butcherknife Hill (Buck Hill). 4050 feet. Called "Butcherknife Ridge" by J. K. Strecker.

Burnham ranch (Chisos Mountains). 3958 feet. Apparently the same as "Government Spring."

- Calamity Creek (Alpine).  
 Castalon. Not on U.S.G.S. map. 2100 feet. Also spelled "Castellan" and "Castelan."  
 Chilicotal Mountain (Chisos Mountains). 4104 feet.  
 Chilicotal Spring (Chisos Mountains). 2900 feet.  
 Christmas Mountains (Chisos Mountains). 5735 feet.  
 Christmas Spring (Chisos Mountains). 3400 feet.  
 Chisos Mountains (Chisos Mountains).  
   Basin. Incorrectly labeled "Green Gulch" on U.S.G.S. map.  
   Blue Creek Canyon.  
   Boot Spring.  
   Casa Grande. Not labeled on U.S.G.S. map. This mountain forms the end of the ridge which extends northeast from Emory Peak.  
   Emory Peak. 7835 feet. The highest point in the county.  
   Green Gulch. Not labeled on U.S.G.S. map. It is the canyon east of Pulliam Bluff.  
   Juniper Canyon.  
   Laguna. 6700 feet.  
   Moss Well. 4650 feet.  
   Pulliam Bluff.  
   Pine Canyon. Recently known as Wade Canyon.  
   Rock Spring. 3900 feet.  
   Upper Juniper Spring. 3900 feet.  
   Window. A defile at the lower end of the Basin.  
 Chisos Pen (Chisos Mountains). 3300 feet.  
 Combs ranch (Monument Spring).  
 Dubois Canyon. Not on U.S.G.S. map. A locality mentioned by J. K. Strecker; "between Twin Peaks and Paisano" (Alpine Quadrangle).  
 Elephant Mountain (Alpine). 6400 feet. Called "Elephant Mesa" by J. K. Strecker.  
 Garden Springs (Monument Spring). 3700 feet.  
 Glass Mountains (Altuda and Hess Canyon). Highest peak, 6286 feet.  
 Glenn Spring (Chisos Mountains). 2600 feet.  
 Government Spring. See Burnham ranch.  
 Graham ranch (Chisos Mountains). Not on U.S.G.S. map. On Rio Grande just west of Boquillas.  
 Grand Canyon of Rio Grande (Terlingua). Called Grand Canyon of Santa Helena on U.S.G.S. map.  
 Hess ranch (Hess Canyon).  
 Hot Springs (Chisos Mountains). 1850 feet. Not on U.S.G.S. map. Now a post office; on left bank of Tornillo Creek where it enters the Rio Grande.  
 Iron Mountain (Altuda). 5420 feet.  
 Johnson ranch (Chisos Mountains). 2000 feet. Not on U.S.G.S. map. On Rio Grande south of the Chisos Mountains.  
 Lajitas (Terlingua). 2400 feet. On the Rio Grande in the extreme southwest corner of the county.  
 McGonagill ranch (Hess Canyon). Apparently the equivalent of "Old Ward Ranch" on U.S.G.S. map.  
 McKinney Spring (Chisos Mountains). 2900 feet.  
 Marathon (Monument Spring and Marathon). 4045 feet.  
 Maravillas Creek (Hood Spring and Bone Spring).  
 Mariscal Mountain (Chisos Mountains). 3940 feet. Tip of Big Bend.  
 Marley's Wells. "4000 feet." A locality mentioned by T. H. Montgomery. Apparently on the road from Garden Springs to Chisos Pen. Not found on U.S.G.S. map.

- Miller's Wells. Data as for the preceding locality, but no elevation given.
- Mount Ord (Alpine). 6800 feet.
- Mule Ear Peaks (Chisos Mountains). 3880 feet. Familiarly known as "The Mule's Ears."
- Neville Spring (Chisos Mountains). 3293 feet.
- Nugent Mountain (Chisos Mountains). 4783 feet.
- Oak Canyon (Chisos Mountains). Flows from the Basin of the Chisos Mountains. Called Oak Spring Canyon by T. H. Montgomery.
- Paisano, Brewster County (Alpine). 5100 feet. Not shown on U.S.G.S. map. About one mile east of Paisano, Presidio County of U.S.G.S. map.
- Paradise Canyon (Alpine). Not labeled on U.S.G.S. map. Four miles west of Alpine.
- Peña Blanca Mountains (Marathon). 4520 feet.
- Peña Creek (Monument Spring). Labeled "Pena Colorada Creek" on U.S.G.S. map.
- Persimmon Gap (Bone Spring).
- Ridge Spring (Monument Spring). 3800 feet.
- Roberts ranch (Monument Spring).
- Rosillos Mountains (Bone Spring, Nine Point Mesa, and Chisos Mountains). 5420 feet.
- Santiago Mountains (Bone Spring and Santiago Peak).
- Santiago Peak (Santiago Peak). 6521 feet.
- San Vicente (Chisos Mountains). 1880 feet. On the Rio Grande.
- Sierra del Caballo Muerto (Bone Spring and Chisos Mountains). 4880 feet.
- Study Butte (Terlingua). 2835 feet.
- Terlingua (Terlingua). 2900 feet.
- Terlingua Creek (Terlingua).
- Tornillo Creek (Chisos Mountains).

For the identification of numerous difficult specimens and for advice on many obscure points we are greatly indebted to Dr. Harry C. Oberholser. We have also been generously assisted in problems of identification by Dr. Pierce Brodkorb, Dr. Joseph Grinnell, Dr. Alden H. Miller, Mr. James L. Peters, and Mr. W. E. Clyde Todd. We have had the privilege of borrowing specimens for comparison from: American Museum of Natural History, Baylor University Museum, Carnegie Museum, Chicago Academy of Science, Cornell University Museum, Field Museum of Natural History, Museum of Comparative Zoology, Museum of Vertebrate Zoology, Princeton Museum of Zoology, and Mr. Walter A. Weber. Our own field notes have been greatly supplemented by the specimens and manuscript notes lent to us by Mr. R. W. Quillin, and by the four National Park Service men, Messrs. James O. Stevenson, Walter A. Weber, Tarleton F. Smith, and A. E. Borell, to all of whom we express our appreciation. We also wish to thank Helen B. Van Tyne for much skillful editorial advice and assistance. Our own four principal expeditions to the Big Bend were made possible by the generous support of our friends William G. Fargo and John B. Semple. Without their interest and backing the study could not have been undertaken. In these days when State Game Commissions seem to be increasingly inclined to hamper or even prohibit field research in ornithology in their states, it is indeed



MAP 1

a pleasure to acknowledge the friendly co-operation and assistance we have received from Mr. William J. Tucker of the Texas Game, Fish, and Oyster Commission.

Color names, when capitalized, are from Robert Ridgway's *Color Standards And Color Nomenclature* (Washington, D. C., 1912).

This account of the birds of Brewster County includes two hundred and thirty-nine living forms, of which we have examined specimens of two hundred and nineteen. In the case of eighty-six of the forms listed satisfactory evidence of breeding is presented, and we may confidently assume that thirty-two additional forms breed in the county, making a total of one hundred and eighteen forms which quite certainly breed there. More will probably be found in time. Our own field work in the county has resulted in the discovery of four new forms (subspecies of *Buteo jamaicensis*, *Empidonax difficilis*, *Parus atricristatus*, and *Pipilo maculatus*), five additions to the known fauna of the United States (*Lampornis c. clemenciae*, *Colaptes cafer nanus*, *Phainopepla nitens nitens*, *Vermivora crissalis*, and *Icterus c. cucullatus*), and eleven other forms new to the fauna of Texas (*Butorides virescens anthonyi*, *Empidonax griseus*, *Myiarchus tuberculifer olivascens*, *Petrochelidon pyrrhonota melanogaster*, *Hylocichla guttata polionota*, *Hylocichla guttata slevini*, *Vireo vicinior*, *Dendroica occidentalis*, *Setophaga picta*, *Icterus cucullatus nelsoni*, and *Spizella atrogularis evura*).

#### ARDEA HERODIAS LINNAEUS. GREAT BLUE HERON

On June 15, 1932, Jacot saw a single Great Blue Heron on the Rio Grande two miles above San Vicente. In 1933 Sutton and Semple noted the species along Maravillas Creek, fifteen miles southwest of Marathon, on May 4 and 5; and near Boquillas, along the Rio Grande, on May 10 and 15 (a single bird on each occasion). In 1935 Sutton and Semple saw a single bird almost daily from April 10 to 23 along the Peña, four miles southwest of Marathon; a single immature bird on the Combs ranch, thirteen miles south of Marathon, April 19; two adult birds repeatedly from May 5 to 9 along the Rio Grande at Castalon; a single bird at Lajitas, May 8; a single bird at Hot Springs, May 15; a single bird on the Graham ranch just west of Boquillas, May 16; three individuals at San Vicente, May 20; and several birds, both adult and immature, in the vicinity of Boquillas, May 21.

#### CASMERODIUS ALBUS EGRETTA (GMELIN). AMERICAN EGRET

A large white heron which was seen flying down the Rio Grande near Hot Springs on the evening of May 9, 1933, was probably an American Egret, but we had no opportunity to ascertain the color of the bill and feet. A white heron seen along the Rio Grande on the Graham ranch just west of Boquillas on May 16, 1933, and another such heron seen near San Vicente



four days later were certainly of this species. In both of these individuals the feet were wholly black and the bill largely yellow.

The American Egret has apparently been absent in the past from west Texas and from New Mexico but is perhaps now moving up the Rio Grande into that area. The sight records listed above are the first for west Texas, and the recent occurrence of this species in New Mexico was also in the Rio Grande Valley, fifteen miles east of Las Cruces.<sup>1</sup>

*LEUCOPHOYX THULA BREWSTERI* (THAYER AND BANGS). BREWSTER'S EGRET  
1937: 1 ♂, Rio Grande, 1 mile below Johnson ranch, April 18.

While making a two-day visit to the Johnson ranch in April, 1937, Van Tyne saw a couple of egrets flying down the river and collected one which proved to be an adult male in breeding plumage, the first record of the species in Brewster County. The specimen measures (in mm.) wing, 264; tail, 91; culmen, 84; and tarsus, 102. It was fat, weighing 564 grams. The testes were considerably enlarged (18 × 11 mm.). Although rather intermediate in measurements between the small eastern egret and the large western form, this specimen seems to have the "heavy" legs characteristic of the latter.

*BUTORIDES VIRESCENS ANTHONYI* (MEARNS). ANTHONY'S GREEN HERON  
1933: 1 ♀, Combs ranch, 15 miles S. of Marathon, June 1.  
1935: 1 ♂, 1 ♀, May 9-11, Castalon.

This is the first record of the occurrence of this western subspecies in Texas, where it is apparently confined to the Big Bend region. In his revision of the Green Herons Dr. Harry C. Oberholser<sup>2</sup> lists breeding specimens of typical *virescens* from Pecos and Fort Stockton. Our three Brewster County specimens are decidedly too large for the eastern race.

A Green Heron flushed from the willows along the Rio Grande at Boquillas on June 1, 1932, was doubtless nesting, for it flew about squawking in alarm as long as we stayed in the vicinity.

During 1933 we encountered the species twice: along the Rio Grande about two miles west of Boquillas, where a single bird was seen May 10; and on the Combs ranch, fourteen miles south of Marathon, where the above-listed female, which was in egg-laying condition, was collected from a large willow tree that grew along Maravillas Creek.

In 1935 we found the species at Castalon and along Peña Creek, four miles south of Marathon. At the former place we saw two birds flying westward along the Rio Grande on May 7, saw two birds, obtained a male, and collected a set of four fresh eggs from a nest built twelve feet from the

<sup>1</sup> Elbert L. Little, "American Egrets at the Jornada Experimental Range, New Mexico," *Condor*, 36, 1934: 247.

<sup>2</sup> "A Revision of the Subspecies of the Green Heron (*Butorides virescens* [Linnaeus])," *Proc. U. S. Nat. Mus.*, 42, 1912: 539.

ground in a mesquite that stood not far from the river on May 9, and collected an incubating female on May 11. At the latter place we saw a single adult on May 29.

*NYCTICORAX NYCTICORAX HOACTLI* (GMELIN)  
BLACK-CROWNED NIGHT HERON

1933: 1 adult ♀, Peña Creek, 4 miles SW. of Marathon, May 23.

1935: 1 immature ♂, 12 miles SW. of Marathon, Roberts ranch, April 23.

Our sight records of adult Black-crowned Night Herons follow: August 3, 1928, at Boquillas, a single bird (Van Tyne); May 23, 1933, along Peña Creek, four miles southwest of Marathon, an adult female collected, and an immature bird seen (Semple); May 19 and 20, 1935, near Hot Springs, a flock of five birds seen repeatedly (Sutton and Semple); and May 24, along Maravillas Creek, Combs ranch, thirteen miles south of Marathon, a single bird (Sutton and Semple).

Immature Night Herons, presumably of this species, were noted on May 5, 1933, along Maravillas Creek, fifteen miles southwest of Marathon, on May 23, 1933, along Peña Creek, as noted in the preceding paragraph, on April 23, 1935, immature male collected, Roberts ranch, twelve miles southwest of Marathon, and on May 16, 1935, three birds seen along the Rio Grande about two miles west of Boquillas.

Eyes of the adult female taken May 23, 1933, were bright carmine; of the immature male taken April 23, 1935, brick red. The latter specimen is in what appears to be an early stage of a prenuptial molt.

*BOTAURUS LENTIGINOSUS* (MONTAGU). AMERICAN BITTERN

In 1935 we saw this species on April 29, one at Roberts ranch, twelve miles southwest of Marathon; and on May 15, two along the Rio Grande not far from Hot Springs.

*ANAS PLATYRHYNCHOS PLATYRHYNCHOS* LINNAEUS. MALLARD

On February 28, 1935, we saw three pairs of Mallards at Peña Creek, four miles southwest of Marathon.

*ANAS*<sup>3</sup> *ACUTA TZITZIHOA* VIEILLOT. PINTAIL

We recorded this species twice: on May 5, 1933, when a flock of five were seen along Maravillas Creek, fifteen miles southwest of Marathon; and on April 12, 1935, when a male and two females were seen on a cattle pond seventeen miles northeast of Marathon.

<sup>3</sup> We follow J. L. Peters (also Ernst Hartert and John C. Phillips) in forming our concept of the genus *Anas* Linnaeus. This necessitates our deserting the sequence of the A. O. U. *Check-List* in so far as the genus *Mareca* is concerned. See, in this connection, J. L. Peters, *Check-List of the Birds of the World* (Cambridge: Harvard Univ. Press, 1931), 1: 158.

*ANAS CAROLINENSIS* GMELIN. GREEN-WINGED TEAL

We encountered this species several times in 1935: on February 17, along Calamity Creek, twenty-two miles south of Alpine, a single male; on February 28, on Peña Creek, four miles southwest of Marathon, a flock of seven males; on March 11, at a cattle pond seventeen miles northeast of Marathon, a flock of thirteen birds; on April 10, along the Maravillas Creek, about fifteen miles southwest of Marathon, a single male; on April 18, a flock of fifteen on the "tank" seventeen miles northeast of Marathon, males and females about equally divided; on April 19, three males and two females, along Maravillas Creek on the Combs ranch, thirteen miles south of Marathon; and on May 10, two mated pairs, along the Rio Grande at Lajitas.

*ANAS DISCORS* LINNAEUS. BLUE-WINGED TEAL

We noted the Blue-winged Teal repeatedly. In 1933 we saw it first on April 29, three on Peña Creek, four miles southwest of Marathon; again on May 5, a pair on Maravillas Creek, fifteen miles southwest of Marathon; on May 8, four males and several females resting on a mud bar along the Rio Grande near Hot Springs; and on May 22, a pair in a large wooden water tank about thirty miles south of Marathon.

In 1935 we recorded it first on April 13, flock of four, Peña Creek, four miles southwest of Marathon; again on April 19, three mated pairs, Maravillas Creek, Combs ranch, thirteen miles south of Marathon; on April 26, a pair on a cattle pond near Persimmon Gap; on May 7, three pairs in a flock, along the Rio Grande, Castalon; on May 8 and 10, several mated pairs going about in flocks with mated Shovellers, Lajitas; on May 13, several mated pairs in flocks, Johnson ranch; on May 14, a pair, Hot Springs; and on May 20, three pairs, along the Rio Grande, San Vicente.

*ANAS CYANOPTERA CYANOPTERA* VIEILLOT. CINNAMON TEAL

1933: 1 ♂, 1 ♀, 2 miles W. of Boquillas, May 15.

1935: 2 ♂, 1 ♀, cattle pond just W. of Maravillas Creek, 16 miles SW. of Marathon, April 16.

We noted this species several times: at a small cattle pond three miles north of Glenn Spring, June 21, 1928, a single male; on the Rio Grande at San Vicente, June 9, 1932, a single male; on the Rio Grande about a mile below Hot Springs, May 8, 1933, a male bird in company with a flock of Blue-winged Teal and a female Shoveller; on the Rio Grande a short way above Boquillas, May 15, 1933, a flock of about twenty teal, most of them of the present species; at a cattle pond near Maravillas Creek, sixteen miles southwest of Marathon, April 16, 1933, three pairs seen and three of the above-mentioned birds taken; along the Rio Grande at Lajitas, May 8, 1933, a pair; on the Graham ranch, a mile west of Boquillas, May 17, 1933, several small flocks; and again in the vicinity of San Vicente, May 20, 1933, two pairs. Gonads of the specimens collected were not greatly enlarged.

*SPATULA CLYPEATA* (LINNAEUS). SHOVELLER

In 1933 we noted this species but once, a single female with a flock of several Blue-winged Teal and one Cinnamon Teal along the Rio Grande not far below Hot Springs, May 8.

During 1935 we recorded it on several occasions, notably a flock of nine, including several adult males, at a tank seventeen miles northeast of Marathon, on March 11; a single male at this same tank on April 4; three males along Peña Creek, four miles southwest of Marathon, on April 13; two pairs along the Rio Grande at Castalon, on May 7; a flock composed of six mated pairs at Lajitas, on May 8; a fair-sized flock along the Rio Grande on the Johnson ranch on May 13 and 14; and several mated pairs at San Vicente on May 20.

*MARECA AMERICANA* (GMELIN). BALDPATE

We noted Baldpates on several occasions. In 1933 we recorded them on May 5, two males and a female along Maravillas Creek, fifteen miles southwest of Marathon; and on May 16, three males on the Rio Grande, near Boquillas. In 1935 we recorded them first on April 10, four females at a cattle pond seventeen miles northeast of Marathon; again on April 11, a pair at remarkably close range on Peña Creek, four miles southwest of Marathon; again on April 17, two males and a female, Peña Creek, four miles southwest of Marathon; and finally on May 10, a solitary female on the Rio Grande, Lajitas.

*BUCEPHALA*<sup>4</sup> *ALBEOLA* (LINNAEUS). BUFFLEHEAD

1935: 1 ♂, 15 miles S. of Marathon, Combs ranch, April 15.

This male bird was accompanied by three females. The flock was noted several times along Maravillas Creek on April 15, 1935.

*CATHARTES AURA AURA* (LINNAEUS). TURKEY VULTURE

1932: 1 ♀, Chisos Mountains, S. of Boot Spring, 7000 feet, May 20.

Dr. Herbert Friedmann<sup>5</sup> in his recent revision of the forms of the Turkey Vulture includes west Texas in the range of *C. a. teter*, but our one specimen must be identified as *C. a. aura*, a form not known to occur in the United States until Mr. Herbert W. Brandt<sup>6</sup> recently recorded its occurrence at Brownsville, Texas. Its measurements (in mm.) are: wing (chord), 481; tail, 237; culmen from cere, 24; tarsus, 63. The wing and tail are somewhat worn, but not sufficiently so to cast any doubt on the subspecific identification.

<sup>4</sup> *Bucephala* Baird antedates *Charitonetta* Stejneger. See, in this connection, J. L. Peters, *op. cit.*, p. 177.

<sup>5</sup> "Critical Notes on American Vultures," *Proc. Biol. Soc. Wash.*, 46, 1933: 188.

<sup>6</sup> "Mexican Turkey Vulture (*Cathartes aura aura*) at Brownsville, Texas," *Auk*, 53, 1936: 325.

The Turkey Vulture was seen regularly, though usually in small numbers, throughout the Big Bend region. Occasionally we encountered large flocks that had gathered to feed upon dead sheep or cattle.

On May 3, 1933, we frightened several vultures from a cave high on a rocky hillside about six miles southwest of Marathon. We were not able to explore this cave, but believe the birds must have been nesting there. Large companies of vultures roosted and sunned themselves in thick clumps of woodland along Maravillas Creek in May and early June, 1933.

No Turkey Vultures were seen during the winter in Brewster County, the first one to appear in 1935 being a single bird seen at Alpine on March 14. The next one was seen at Marathon on March 18, and thereafter individuals appeared regularly in increasing numbers. Mr. A. E. Borell reports that he saw none during his trips about the county from October 16 to December 3, 1936.

On the night of April 18, 1935, at Peña Creek, southwest of Marathon, we saw several vultures circling above the cottonwoods. There was a bright moon and a high wind. The birds apparently were disturbed by the rattling and tossing of the branches. From May 4 to 8 we noted many vultures roosting in crevices in the cliffs not far southwest of Terlingua.

*CORAGYPS ATRATUS* (BECHSTEIN).<sup>7</sup> BLACK VULTURE

1935: 1 ♀, 2 miles W. of Boquillas, May 17.<sup>8</sup>

We noted this species only in the southern part of the county along the Rio Grande. In 1933 we saw a single bird near Hot Springs on May 10, two near San Vicente on May 14, several about the Graham ranch between Hot Springs and Boquillas on May 15, and a considerable flock that had gathered with Turkey Vultures and Ravens to feed on a dead mule near Hot Springs on May 20.

During 1935 we noted a flock of fourteen at Castalon on February 25, a dead one near the carcass of a cow at the same place on May 6, three at the Johnson ranch on May 13, several near Boquillas from May 16 to 21, and one at San Vicente on May 20; we collected the female specimen listed above from a flock of forty or more birds that had gathered to feed on catfish that were killed and washed ashore during a flooding of Tornillo Creek.

A notable feature of the specimen taken is the pronounced squareness of the tail. Upon close examination we find this to be the result of wear. These vultures characteristically use their tails as props while feeding, and the "chopped-off" condition results.

<sup>7</sup> See Friedmann, *op. cit.*, p. 187.

<sup>8</sup> Figured by Sutton, *Birds in the Wilderness* (New York: Macmillan, 1936), opposite p. 128.

[*GYMNOGYPS CALIFORNIANUS* (SHAW). CALIFORNIA CONDOR

Alexander Wetmore and Herbert Friedmann<sup>9</sup> have recorded twenty-seven bones and fragments of bones of this species found by F. M. Setzler among prehistoric human cultural remains in a cave on the south peak of Mule's Ear Peaks.

The age of the deposit is estimated from the archaeological remains at from 1500 to 3000 years. . . . The abundance of the bones clearly indicates that the species was no mere incidental visitor in the big bend region of Texas a couple of thousand years ago. . . . One metatarsus is from a young bird barely old enough to fly—indication that condors nested in this vicinity.]

*ACCIPITER STRIATUS VELOX* (WILSON).<sup>10</sup> SHARP-SHINNED HAWK

1935: 1 adult ♂, Chisos Mountains, Laguna, 6800 feet, March 23.

We noted the Sharp-shinned Hawk but once in 1933, a small (probably male) bird, along Peña Creek, four miles southwest of Marathon, May 5.

In 1935 the species was noted several times: a single bird near a spring at 6500 feet in the Chisos Mountains on the northwest side of Casa Grande on March 21; a single bird in the Glass Mountains, twenty miles northeast of Marathon, and another single bird along Maravillas Creek, fifteen miles southwest of Marathon, on April 10; a single male which was seen to capture an Audubon's Warbler on the Combs ranch, thirteen miles south of Marathon, on April 15; a brown-colored bird, thought to be a female, in the Basin in the Chisos Mountains on April 20; and a male along the Rio Grande at Castalon on May 4.

The male specimen listed above was very fat. Although the stomach was empty the bird weighed 100 grams.

*ACCIPITER COOPERII* (BONAPARTE). COOPER'S HAWK

1901: 1 ♂, 1 ♀, Alpine, May 7 (L. A. Fuertes collection).

1935: 1 ♂, Paisano Peak (foothills), May 27.

We noted this species twice during 1933: a single bird on the Combs ranch, thirteen miles south of Marathon, on June 2; and another single bird at Boquillas on May 15.

During 1935 Sutton and Semple recorded it several times: April 11, an adult male, at Garden Springs; April 19, a large-sized, brown-colored bird, probably a female, that was feeding on a cottontail rabbit, near Altuda; May 4, a single bird at Castalon; May 27, a mated pair (the male collected), just west of Paisano Peak, and a pair and their nest (three eggs) in Paradise Canyon about four miles west of Alpine; and May 30, another pair and their nest in Paradise Canyon about five miles west of Alpine. Both nests were

<sup>9</sup> "The California Condor in Texas," *Condor*, 35, 1933: 37-38.

<sup>10</sup> We follow Peters (*op. cit.*, p. 221) in regarding the Sharp-shinned Hawk a subspecies of *A. striatus*.

about twenty feet from the ground, in live-oak trees. Three eggs collected May 30 (found May 27) were not heavily incubated. The stomach of the male collected May 27 was empty. The eyes of this bird, and of its mate, were yellow, *not red*.

According to our experience, the Cooper's Hawk nests only in the extreme northwestern corner of Brewster County. We did not record it in the Chisos, Santiago, or Glass Mountains, but Mr. A. E. Borell reports one seen in the Basin, Chisos Mountains, on October 28, 1936.

*BUTEO JAMAICENSIS FUERTESI* SUTTON AND VAN TYNE

FUERTES' RED-TAILED HAWK (FRONTISPIECE)

1928: 2 immature ♂, Glenn Spring, July 3 and August 5.

1933: 1 adult ♂, 4 miles S. of Marathon, May 6; 2 adult ♂, 10 and 12 miles S. of Marathon, May 23 and May 4; 1 adult ♂, Hot Springs, May 8.

1935: 1 adult ♂, Paisano Peak, 5000 feet, February 6; 1 adult ♂, 12 miles E. of Alpine, 4500 feet, March 31; 1 adult ♀ (type), 22 miles S. of Alpine, Calamity Creek bridge, 4500 feet, March 8; 1 adult ♂, 15 miles SW. of Marathon, Maravillas Creek, 3690 feet, February 28; 1 adult ♂, 4 miles SW. of Marathon, Peña Creek, April 13; 1 adult ♀, 13 miles S. of Marathon, Combs ranch, April 17; 1 adult ♀, Santiago Mountains, Persimmon Gap, May 22.

The Fuertes' Red-tailed Hawk, which is a relatively nonmigratory bird, is fairly common in Brewster County at all seasons. In winter a few transient Western Red-tailed Hawks, *Buteo jamaicensis calurus* Cassin, put in an appearance, but *calurus* apparently is never so common as *fuertesi*. In the original description *fuertesi* is compared with *calurus* as follows:

Similar to the light phase of *Buteo jamaicensis calurus* Cassin, but underparts, including underside of wing, much paler. Band of dark streaks across the lower breast and flanks greatly reduced, the streaks being much attenuated or even reduced to a mere hair line along the shaft of the feather. Thighs pale, immaculate, or but slightly barred with buff. Chin and throat usually sharply demarked from the breast. Barring on the tail and upper tail coverts much reduced. Crown more uniform in coloration. Less rufous on upper back and nape. Apparently there is in this new subspecies no dark phase such as occurs regularly in the range of *calurus*.<sup>11</sup>

Under favorable conditions Fuertes' Red-tailed Hawk may be readily distinguished from the Western Red-tailed Hawk in life by its less barred tail and nearly immaculate underparts.

Since the publication of the description of *fuertesi*, Dr. Louis B. Bishop has kindly lent us from his collection two specimens of this form taken at Kerrville, Texas, by F. B. Armstrong. They are male and female and were taken February 9 and March 22, 1915, respectively. Later Dr. Frank M.

<sup>11</sup> George Miksch Sutton and Josselyn Van Tyne, "A New Red-tailed Hawk from Texas," *Occ. Papers Mus. Zool. Univ. Mich.*, 321, 1935: 1-6. The type locality of this subspecies is shown in the background of the Frontispiece and in Plate II, Figure 1, of the present paper.

Chapman<sup>12</sup> called our attention to the peculiar breeding female Red-tailed Hawk he collected near Corpus Christi on April 23, 1891. We have examined this specimen and find that it is a typical example of *fuertesi*, thus extending considerably eastward the known range of this subspecies. We can also record here another additional locality, Langtry, Valverde County, where Louis A. Fuertes collected an adult female of this form on April 27, 1901. The specimen is now preserved in the Fuertes collection at Cornell University.

Plate I, Figure 1, shows the complete series of Brewster County adults on which the description of *fuertesi* was based. On the extreme right is the type specimen. In the photograph the brown elements show as black and make the specimens appear rather darker and less distinct from *calurus* than they do to the eye. For comparison we also give (Pl. I, Fig. 2) a photograph of a representative series of *calurus* from widely scattered parts of its range. The Arizona specimen (on extreme right) is from a region near the range of *fuertesi*, the influence of which is definitely indicated.

The following weights were recorded: males, 947, 866 grams; females, 1282, 1418 grams.

As noted in the account of the following subspecies, a male *fuertesi*, apparently mated with a female *calurus*, was found on February 28, 1935, at a nest fifteen miles southwest of Marathon. Other breeding *fuertesi* located in 1935 include a pair about two old nests in the cottonwoods at Garden Springs, February 3; a pair at Persimmon Gap, February 24; and a pair in the Chisos Mountains, Basin, 5500 feet, March 21 to 22.

A male collected February 28 and a female collected March 8, 1935, had each eaten a small rodent.

*BUTEO JAMAICENSIS CALURUS* CASSIN. WESTERN RED-TAILED HAWK  
1901: 1 immature ♀, Marathon, May 18 (L. A. Fuertes collection).  
1935: 1 adult ♀, 15 miles SW. of Marathon, Maravillas Creek, February 28.

According to our field observations, *calurus* is an uncommon winter bird in the county, presumably a visitant from the north. Our latest record, other than the specimens listed above, is February 4, 1935, when we saw a very dark *calurus* five miles south of Alpine.

The first specimen recorded above is an extremely black, immature bird which, we may frankly say, is listed here only tentatively. Perhaps it should be considered a representative of the local resident race, *fuertesi*. Since no one, however, has shown any satisfactory way of distinguishing taxonomically these immature melanistic individuals of the *Buteo jamaicensis-harlani* complex, we list this specimen as *calurus*, a form which occurs in the region and is known to produce black individuals frequently.

<sup>12</sup> "On the Birds Observed near Corpus Christi, Texas, During Parts of March and April, 1891," *Bull. Amer. Mus. Nat. Hist.*, 3, 1891: 322.



The circumstances surrounding the capture of our 1935 specimen are interesting. While driving near Maravillas Creek, fifteen miles southwest of Marathon, at two o'clock in the afternoon of February 28, we discovered a pair of hawks sitting together beside a nest located near the top of a small tree. When we stopped opposite the nest the female left her perch and came circling low over us and we were thus able to collect her. The male then flew a short distance away but returned almost immediately, and we collected him as he perched again by the nest. We climbed to the nest which was about eighteen feet from the ground and found that, although apparently recently completed or rebuilt, it did not contain eggs. We interpret this as a case of a winter visitant *calurus* which stopped south of its usual breeding range and mated with a resident *fuertesii*. It would be most interesting in this connection if we knew which sex in Red-tailed Hawks selects the nesting territory.

The Maravillas Creek female had just eaten a Roadrunner (*Geococcyx californianus*). The specimen was very fat and weighed 1271 grams (plus 62 grams crop contents). In approaching the nest we flushed a covey of Scaled Quail which had been feeding on the ground almost immediately below the leafless tree in which the two hawks were perched.

In Plate I, Figure 2, this Brewster County specimen of *calurus* is the first one on the left and its mate occupies the similar position in Plate I, Figure 1.

*BUTEO SWAINSONI* BONAPARTE. SWAINSON'S HAWK

1932: 2 embryos nearly ready to hatch, from a nest in a small yucca 6 miles S. of Marathon, June 26.

1933: 1 immature ♂, 5 miles E. of Marathon, May 23; 1 ♀, 8 miles S. of Marathon, June 2; 1 ♂, 1 ♀, 12 miles SW. of Marathon, May 30; 1 ♀, 15 miles SW. of Marathon, Roberts ranch, May 31.

Jacot noted this species near San Vicente on June 14, 17, and 18, 1932. In 1933 we found two nests about a mile south of Marathon on April 28. These appeared to be ready for eggs. On May 22 we took a set of three eggs, about to hatch, from a nest built in the top of a yucca, thirty miles south of Marathon on the road to Persimmon Gap. On May 25 a set of two comparatively fresh eggs was collected four miles south of Marathon. On May 27 a set of three heavily incubated eggs was secured fifteen miles northeast of Marathon. On May 29 two young birds just out of the nest were noted. On May 30 a nest with three half-grown young was discovered on the Roberts ranch, about twelve miles southwest of Marathon. No Swainson's Hawks were seen during the winter.

In 1935 the species was first observed on March 13 when an individual was found eating a dead rabbit beside the highway five miles west of Marathon. During April and May, 1935, we noted the species in the Marathon

region, in the Peña Blanca Mountains, at Persimmon Gap, at Terlingua, Castalon, the Johnson ranch, and Boquillas. Two pairs nested in the open country just north of Ridge Spring, in the Marathon region.

*BUTEO ALBONOTATUS* KAUP. ZONE-TAILED HAWK

1901: 1 ♂, Hot Springs, May 27 (L. A. Fuertes collection).

1933: 1 ♀, 2 miles W. of Boquillas, May 15 (A. C. Lloyd).

1935: 1 ♂, 1½ miles W. of Boquillas, May 17 (J. B. Semple).

We took the only individual of this species seen in 1933. Sutton made a sketch of the head of this bird one-half hour after it had been shot. This sketch shows the iris to be very dark brown, almost black; the eyelids and cutaneous covering of the supraorbital shield dull neutral gray *without any hint of yellow*; the bill dull blue-gray at the base, shading into blackish gray at the tip; the cere and corners of the mouth pale yellow, slightly buffy above the nostril, and lessening in intensity at the base of the lower mandible.

In 1935 we noted the species on four occasions: May 14, a breeding pair perched on dead willow branches along the Rio Grande, on the Johnson ranch; May 15, a breeding pair circling high and screaming feebly, about two miles west of Hot Springs; May 17, a male specimen taken (listed above) and another individual seen in the cottonwoods on the Graham ranch about two miles west of Boquillas; and May 24, a male bird perched above a woodland pool on the Combs ranch, thirteen miles south of Marathon.

Mr. Vernon Bailey<sup>13</sup> has described Louis Fuertes' capture of a Zone-tailed Hawk near the mouth of Tornillo Creek (now Hot Springs).

Our specimens measure (in mm.): wing, male, 384, female, 431; tail, male, 200, female, 229. On the basis of the evidence at hand there appears to be no justification for maintaining two subspecies of Zone-tailed Hawk. If the characters used by H. Kirke Swann<sup>14</sup> are to be relied upon, the male listed above would have to be assigned to the South American race and the female to the North American race.

*BUTEO REGALIS* (GRAY). FERRUGINOUS ROUGH-LEG

1935: 1 ♂, 5 miles S. of Alpine, February 5.

We recorded this species only three times: the male specimen listed above, which was thin, weighing but 744 grams; a single bird seen five miles north of Alpine, February 9, 1935; and a single bird observed February 16, 1935, in Alpine.

Mr. Jack Hayes found an injured Ferruginous Rough-leg at Alpine on November 8, 1931. The bird bore United States Biological Survey band No. A709881, with which it had been marked as a nestling at Rosebud, Alberta,

<sup>13</sup> Florence Merriam Bailey, *Birds of New Mexico* (Washington, D. C.: New Mexico Department of Game and Fish. . . , 1928): 166-167.

<sup>14</sup> *A Monograph of the Birds of Prey (Order Accipitres)* (London: Wheldon & Wesley, Ltd., 1924-1930), 1: 406-408.

on July 1, 1931, by Mr. W. Raymond Salt.<sup>15</sup> The point of banding is about seventy miles east-northeast of Calgary and about seventeen hundred miles north of Alpine.

*BUTEOGALLUS*<sup>16</sup> *ANTHRACINUS ANTHRACINUS* (LICHTENSTEIN)

MEXICAN BLACK HAWK

1935: 1 ♂, 2 miles W. of Castalon, May 9 (Sutton).

The plumage of this specimen had, until the skinning process was finished, the appearance of being covered with a whitish bloom. According to a note on the label the eyes were "dark brown; cere and corners of mouth bright yellow; eyelids gray with a touch of yellow below; feet straw yellow, brightest on toes." The inner webs of the secondaries are considerably mottled with rusty or buffy brown, this gives the under surface of the wing an appearance somewhat different from that of the Zone-tailed Hawk, the lining of whose wings is whitish or creamy. The stomach of the specimen listed above contained the remains of several beetles, a crayfish, and a rabbit (probably a young jack rabbit).

*AQUILA CHRYSAËTOS CANADENSIS* (LINNAEUS). GOLDEN EAGLE

The Golden Eagle is found throughout Brewster County and in many places is surprisingly common. Usually only one or two were observed at one time, but on March 26, 1935, we saw six perched near one another in some low trees west of Mount Ord. Because of alleged depredations against sheep and other live stock, the local ranchers kill these splendid birds at every opportunity and hang the carcasses from the roadside fences as "scare-crows" or as evidence of their own prowess.

Pairs of eagles that seemed to be established and nesting were noted northwest of Alpine, at Mount Ord, in the Glass Mountains, in the Santiago Mountains, and in the Chisos Mountains. Mr. and Mrs. Leo T. Murray<sup>17</sup> have reported on the food habits of a pair which nested "in a low oak tree" on a small hill at Alpine in 1922. The nest was under construction in the first week of February.

*CIRCUS HUDSONIUS* (LINNAEUS). MARSH HAWK

1935: 1 immature ♂, 6 miles E. of Hot Springs, May 17.

During 1933 we noted the Marsh Hawk several times in the vicinity of Marathon from May 1 to June 2, especially along Maravillas Creek, twelve to fifteen miles southwest of town. The most southerly point at which we recorded it that season was twenty miles south of Marathon on the road to Hot Springs, May 22.

<sup>15</sup> Frederick C. Lincoln, "A Decade of Bird Banding in America: A Review," *Ann. Rept. Smithsonian Inst.*, 1932, 1933: 348.

<sup>16</sup> For the use of *Buteogallus* in place of *Urubitinga* see J. L. Peters, *op. cit.*, p. 244.

<sup>17</sup> "Notes on the Food Habits of the Golden Eagle," *Auk*, 51, 1934: 371.

In 1935 an adult male was observed five miles south of Alpine on January 30, and on February 5, 8, and 15. An adult male, which may have been the same individual, was seen at Alpine on February 12 and again, three miles north of Alpine, on February 20. On April 1 we watched a female at Mount Ord. From April 10 to late May we noted the species almost daily, recording it at Ridge Spring, a male, April 12; in the Glass Mountains, twenty-five miles northeast of Marathon, a male, April 18; at Castalon, single birds on May 6, 7, and 9; at Lajitas, a female, May 10; on the Johnson ranch, a male, May 13; and at Boquillas, a female on May 17 and again on May 21. Our latest record was of a female seen on May 28 in the Glass Mountains about fifteen miles north of Marathon. Mr. Tarleton F. Smith reports that his earliest fall record is that of an immature bird seen at Burnham ranch on August 29, 1936.

*PANDION HALIAËTUS CAROLINENSIS* (GMELIN). OSPREY

We noted the Osprey once in 1933, a single bird circling above Maravillas Creek, fifteen miles southwest of Marathon, May 4. During 1935 we saw a single bird daily from April 13 to 18 along the Peña, four miles southwest of Marathon; a single bird along the Rio Grande at Castalon on May 11; two birds on the Graham ranch just west of Boquillas on May 16; and a single bird along Maravillas Creek, fifteen miles southwest of Marathon, on May 29.

[*POLYBORUS CHERIWAY AUDUBONI* CASSIN. AUDUBON'S CARACARA

It is a curious fact that we did not once record this species in the Big Bend country though there can be little doubt that the bird occurs there occasionally. We did see it northeast of the Big Bend, in 1933, however, notably in the vicinity of Fort Stockton, Pecos County, where we found the remains of two, not long dead, along the highway.

Mrs. John R. Whitaker, of Hot Springs, informs us that the Caracara is only infrequently seen along the Rio Grande in the vicinity of the mouth of Tornillo Creek.

Alexander Wetmore and Herbert Friedmann<sup>18</sup> report a broken humerus of this species among bird bones found by F. M. Setzler with prehistoric human cultural remains in a cave on the south peak of Mule's Ear Peaks, south of the Chisos Mountains.]

*FALCO MEXICANUS* SCHLEGEL. PRAIRIE FALCON

1935: 1 (skeleton), 4 miles W. of Alpine, found March 25.

On January 29, 1935, we encountered a Prairie Falcon perched on a roadside fence post seven miles east of Alpine. It was repeatedly driven from the fence by the passing of cars, but each time, after flying about very low over the adjacent desert and occasionally alighting on a bush, it returned to

<sup>18</sup> *Loc. cit.*

one of the more satisfactory perches afforded by the fence. We saw the species again March 2, five miles south of Alpine, and on March 25 found one dead beside the highway west of Alpine. The bird had been shot not more than two weeks before. At Lajitas on May 10 we saw a single bird flying upstream along the Rio Grande.

*FALCO PEREGRINUS ANATUM* BONAPARTE. DUCK HAWK

On June 16, 1932, Jacot saw a Duck Hawk perched above the Cliff Swallow colony on the Rio Grande "eight miles southeast of Glenn Spring." On February 25, 1935, Mr. James O. Stevenson had a close view of an adult at Castalon, along the Rio Grande. On April 27, 1935, Sutton saw what he thought to be a mated pair flying about the western face of Casa Grande, in the Chisos Mountains. One of these birds, which perched on a rock close enough to permit of inspection with the glass, had distinctly *blue-gray* upperparts. The other bird did not fly close by, but its underparts appeared to be streaked.

*FALCO FUSCO-COERULESCENS* VIEILLOT. APLOMADO FALCON

According to J. K. Strecker<sup>19</sup> this species must at one time have ranged through the Rio Grande valley "westward to El Paso," though this author apparently recorded the bird in Brewster County "only in the flat desert region from Butcherknife Ridge to Elephant Mesa."<sup>20</sup> We found it exceedingly rare, observing it but once, on May 13, 1935, along the Rio Grande on the Johnson ranch about a mile downstream from the house. The bird had been perching on a cliff. It suddenly dived toward the water, circled rapidly two or three times, then mounted in steady spirals, the black and red-brown of its underparts showing distinctly.

*FALCO COLUMBARIUS BENDIREI* SWANN. WESTERN PIGEON HAWK

1935: 1 adult ♂, 15 miles N. of Marathon, Glass Mountains, 5000 feet, April 20 (Sutton).

On February 18, 1935, Van Tyne saw an adult Pigeon Hawk perched on a roadside fence six miles north of Alpine.

The Pigeon Hawk listed above was seen to capture a Desert Sparrow. The hawk glided swiftly from some oak trees far on the mountainside and did not once beat its wings while approaching its prey. Frightening the sparrow from the ground, the hawk snatched it in midair on an upward swoop. Sutton and Semple noted a Pigeon Hawk again on April 26, 1935, near Garden Springs. This bird was apparently an immature female. It captured a sparrow while itself being pursued. Upon being shot at, it

<sup>19</sup> "The Birds of Texas, An Annotated Check-list," *Baylor Univ. Bull.*, 15, (No. 1), 1912: 28.

<sup>20</sup> J. K. Strecker, "Field Notes on Western Texas Birds (Part One)," *Contrib. Baylor Univ. Mus.*, No. 22, 1930: 7.

dropped its prey but returned with a rush, intent upon snatching the falling carcass from the air.

Mr. A. E. Borell saw a Pigeon Hawk at close range at Laguna, Chisos Mountains, on October 31, 1936.

*FALCO SPARVERIUS SPARVERIUS* LINNAEUS. EASTERN SPARROW HAWK

1933: 1 ♂, 1 ♀, 12 and 13 miles S. of Marathon, May 6 and 7; 1 juvenile ♂, 20 miles S. of Marathon, May 30; 1 ♂, Chisos Mountains, Pine Canyon, May 13.

1935: 1 ♀, Garden Springs, April 11; 1 ♂, 3 miles E. of Hot Springs, May 21.

Measurements of the adult specimens (in mm.): males, wing, 182.5, 190, 186; tail, 117, 123, 126; females, wing, 193, 195; tail, 125, 132.

Although the Sparrow Hawk is not a common bird in Brewster County in summer, it is one of the few species that is to be seen regularly in the more barren stretches of desert on the road from Persimmon Gap to Hot Springs. During the spring of 1933 a pair reared their young at Garden Springs. The nest was in a cavity in a large cottonwood tree.

During January and February, 1935, single birds were seen regularly in the Alpine region, and southward to Elephant Mountain.

*CALLIPEPLA SQUAMATA PALLIDA* BREWSTER. ARIZONA SCALED QUAIL

1901, 1928, 1933, 1935: 12 ♂ (1 juvenile), 8 ♀ (1 juvenile), from: 4 miles S. of Marathon, 15 miles SW. of Marathon, Santiago Mountains, Glenn Spring, Terlingua, and other localities.

The Scaled Quail is common and widely distributed everywhere in the desert below 5000 feet, south of the Marathon grasslands; it occurs locally about Marathon and Alpine also, but its presence definitely depends upon some sort of cover other than grass. It is especially fond of mesquite thickets. Here the males are given to perching, sometimes several feet from the ground, while they give their earnest, though not very musical, cry.

On February 28, 1935, fifteen miles southwest of Marathon, we encountered a small flock feeding on the ground directly beneath a leafless tree in which (at a height of about eighteen feet) a Red-tailed Hawk's nest was situated. And the parent hawks were perching close by their nest!

During 1935 we noted that most of the Scaled Quail were going about in flocks as late as April 19, though what appeared to be mated pairs were observed as early as April 13 (Hess ranch, six miles north of Marathon). A large flock seen on the Roberts ranch, twelve miles southwest of Marathon, on April 19, ran across the road in front of us, were separated for a time, then called to each other using a sharp note that reminded us of the syllable "chick" or "jick."

A young bird collected June 26, 1928, was already beginning to show the "scaled" feathers of the adult on the upper breast.

An adult male (not fat) collected in February weighed 177 grams.

*CYRTONYX MONTEZUMA MEARNSI* NELSON. MEARN'S' QUAIL

1932: 2 ♂, Chisos Mountains, Boot Spring, 6500 feet, May 7 and 19.

1933: 2 ♂, 2 ♀, 15 miles NE. of Marathon, Glass Mountains, May 25-26; 1 ♂, 1 ♀, 10 miles NE. of Marathon, Glass Mountains, May 26.

1935: 1 ♀, 4 miles W. of Alpine, March 25.

In 1932 Mearns' Quail were occasionally heard and their dusting places noted in the oak woods about Boot Spring in the Chisos Mountains, but the birds were so secretive that our party of three, living there a month, saw the species only five times. The two individuals collected had their crops filled with acorns, many of them whole.

In 1933 we recorded the species in the Chisos Mountains but once, a single male seen May 20. In the Glass Mountains, however, we were so fortunate as to observe it on several occasions, to hear its queer cries, and to collect a small series. All the females taken were laying eggs, and all had extensive brood-patches. A pair observed by Sutton on May 25 had sought shelter from a hailstorm along a rough gully that led through the scrub-oak thickets of their chosen nesting ground. The specimen taken in 1935 was found by Helen B. Van Tyne. It had apparently been struck by a speeding car as it attempted to cross the main highway. It was in good condition but not fat and weighed 155 grams.

It is interesting to recall that Fuertes'<sup>21</sup> famous illustrated account of Mearns' Quail and its habits was based on his first meeting with this species in the Chisos Mountains in June, 1901. The Fuertes' color-plate in Mrs. Bailey's *Birds of New Mexico*<sup>22</sup> represents this species in the Chisos Mountains.

J. K. Strecker<sup>23</sup> tells us of a nest of this quail "containing twelve white eggs" found "in the mountains not far from Alpine." This nest, he continues, "was concealed in a depression under the edge of a large round cactus commonly known as the 'devil's pincushion.'"

Local hunters and ranchers testified unanimously to the great decrease in the number of this quail in recent years in even the most remote areas. No adequate explanation of this decrease was offered but surely the severe overgrazing which now prevails in nearly every part of the county must be an important contributing factor.

*GRUS CANADENSIS TABIDA* (PETERS). SANDHILL CRANE

On March 8, 1935, Van Tyne saw two circling in the air over Calamity Creek twenty-three miles south of Alpine. Keeping close together the pair gradually rose higher and higher as they circled until they finally disappeared

<sup>21</sup> "With the Mearns Quail in Southwestern Texas," *Condor*, 5, 1903: 113-116, 1 pl, 3 text figs.

<sup>22</sup> *Op. cit.*, p. Pl. 20.

<sup>23</sup> *Op. cit.*, p. 4.

to the northward. Because of their very large size it was thought that they probably belonged to this subspecies. At the Johnson ranch we were informed that Sandhill Cranes were occasionally seen in spring and fall along the Rio Grande in that vicinity.

*FULICA AMERICANA AMERICANA* GMELIN. AMERICAN COOT

1935: 1 ♀, 1 ♂ (downy young), 4 miles SW. of Marathon, Peña Creek, April 18.

We noted this species several times in 1935, principally along Peña Creek, four miles southwest of Marathon, where among the cattails that grew along the cool stream we found two nests, saw several adult birds from April 11 to 18, collected the adult and downy young listed above, and found on April 15 the remains of a freshly killed adult, possibly the victim of a Marsh Hawk. We recorded the species also at Lajitas, a single bird along the Rio Grande on May 8.

*EUPODA MONTANA* (J. K. TOWNSEND). MOUNTAIN PLOVER

1933: 2 ♂, 2 ♀ (breeding pairs), 1 downy young, about 10 miles N. of Marathon, almost at the foot of the Glass Mountains, May 24-31.

1935: 1 ♀, 11 miles W. of Marathon, March 13.

We found the Mountain Plover only in the high, grassy country north and west of Marathon, where a few pairs probably nest regularly. The birds frequented the damp ground about a water tank on the Hess ranch at which hundreds of sheep and cattle gathered to drink. A mated pair collected on May 24, 1933, both had well-defined brood-patches, and the female was laying eggs. May 26, 1933, the date the downy young was collected, appears to be the earliest date thus far reported for young of this species. This record also extends southward the definitely known breeding range of the Mountain Plover, although Mr. J. K. Strecker<sup>24</sup> tells us that the species is "tolerably common in summer in the Trans-Pecos country."

The White-rumped Shrike must be numbered among the natural enemies of this quiet, not very noticeable bird. On April 13, 1935, Sutton and Semple found the remains of a Mountain Plover impaled on a sharply pointed yucca leaf not far from the road leading from Marathon to the Glass Mountains.

The female collected in March was fat and weighed 81.5 grams.

*CHARADRIUS VOCIFERUS VOCIFERUS*<sup>25</sup> LINNAEUS. KILLDEER

1928: 1 ♀, Glenn Spring, June 17.

1935: 1 ♂, 13 miles S. of Marathon, Combs ranch, April 15.

During our 1928 and 1932 visits one or two pairs of Killdeer were always to be seen about the water at Glenn Spring, where they doubtless nested.

In 1933 the species was noted at Marathon, two, April 28; one, April 29;

<sup>24</sup> "The Birds of Texas, an Annotated Check-List," p. 23.

<sup>25</sup> It seems hardly justifiable to maintain the monotypic genus *Oxyechus* for this species. See J. L. Peters, *op. cit.*, 2: 246, 252.



parents and half-grown young, April 30; at the Roberts ranch, twelve miles southwest of Marathon, one, April 29; along Maravillas Creek, twelve to fifteen miles southwest of Marathon, a great many, May 23 and thereabouts; and at Hot Springs, one, May 8.

In 1935 we noted Kildeer at several points throughout the county: at Garden Springs on February 3, one; at Garden Springs and at Marathon on February 24, one at each place; at Peña Creek, four miles southwest of Marathon, on February 28, four; and thereafter at Hot Springs, Boquillas, Terlingua, Castalon, San Vicente, and in the foothills of the Santiago and Glass Mountains. Courtship behavior was first noted on March 16. A nest with four eggs was found along Terlingua Creek about three miles southeast of Terlingua on May 4. A young bird about a week old was seen at a cattle pond on the Hess ranch six miles north of Marathon on May 28. A pair nested along a ditch within the village limits of Marathon late in May. On May 30 we saw about twenty birds, both young and old, in the vicinity of Alpine.

*PLUVIALIS DOMINICA* (MÜLLER). GOLDEN PLOVER

On April 4, 1935, Van Tyne saw a solitary Golden Plover near a small cattle pond seventeen miles northeast of Marathon.

*CAPELLA DELICATA* (ORD.) WILSON'S SNIBE

The Wilson's Snipe apparently winters in small numbers in Brewster County. We noted it on two occasions in February, 1935, at Garden Springs; on the twenty-third, one bird, and on the twenty-fourth, three birds. On February 3 one bird was seen also at Ridge Spring.

Later records for 1935 may be of transient rather than of wintering individuals. One was noted at a tank seventeen miles northeast of Marathon on March 11; one at Calamity Creek, twenty-two miles south of Alpine, on March 16; another at the same place on March 29; one at the tank seventeen miles northeast of Marathon again on April 10; one at the same place on April 12; and one at Garden Springs on April 14.

*NUMENIUS AMERICANUS* BECHSTEIN. LONG-BILLED CURLEW

Solitary Long-billed Curlews were noted upon three occasions in 1933: on the outskirts of Marathon, April 29; on an open plain four miles north of Marathon, April 30; and along the edge of the Glass Mountains, ten miles north of Marathon, May 27.

*ACTITIS MACULARIA* (LINNAEUS). SPOTTED SANDPIPER

1935: 2 ♂, Castalon, May 9-11.

Spotted Sandpipers were noted several times in 1933: at Peña Creek, four miles southwest of Marathon, a single bird, April 29; along Maravillas Creek,

fifteen miles southwest of Marathon, two birds (thought to be a mated pair), May 4, and three birds, May 5; and on the Rio Grande, not far from Hot Springs, a single bird, May 8.

In 1935 we found it common along the Rio Grande, observing it repeatedly at Castalon, May 4 to 11; at Lajitas; at the Johnson ranch; at Hot Springs; and at Boquillas. We did not record it in the Marathon region, however, perhaps because of the dryness of the season.

*CATOPTROPHORUS SEMIPALMATUS* (GMELIN). WILLET

A flock of seven Willets were seen at a shallow pool on the Roberts ranch, twelve miles southwest of Marathon on April 29, 1933. These presumably were of the western subspecies, *C. s. inornatus* (Brewster), though no specimen was taken.

*TRINGA SOLITARIA CINNAMOMEA* (BREWSTER)  
WESTERN SOLITARY SANDPIPER

1935: 1 ♂, 4 miles SW. of Marathon, Peña Creek, April 18; 1 ♂, 15 miles SW. of Marathon, Maravillas Creek, April 10.

Solitary Sandpipers were observed three times in 1933, a single bird on each date: April 30, along Peña Creek, four miles southwest of Marathon; May 3, along Maravillas Creek, twelve miles southwest of Marathon; and May 6, at Garden Springs.

In 1935 Sutton and Semple noted the species several times: three birds, April 10, along Maravillas Creek, fifteen miles southwest of Marathon; single birds along Peña Creek, four miles southwest of Marathon, April 11 and 13; a single bird, April 15, at a pool on the Combs ranch, fourteen miles south of Marathon; a single bird collected, April 18, along the Peña, four miles southwest of Marathon; and a single bird seen, May 6, along the Rio Grande at Castalon.

Marbling of the inner vane of the outer primaries is present in one of our specimens, not in the other;<sup>26</sup> but both are decidedly too large for eastern *T. s. solitaria* Wilson.

*TRINGA*<sup>27</sup> *FLAVIPES* (GMELIN). LESSER YELLOW-LEGS

1933: 1 ♀, 15 miles SW. of Marathon, Maravillas Creek, May 4.

1935: 1 ♀, 13 miles S. of Marathon, Combs ranch, April 19.

In addition to the above-listed records may be mentioned a single bird seen at a cattle pond seventeen miles northeast of Marathon, April 18, 1935.

*PISOBIA BAIRDII* (COUES). BAIRD'S SANDPIPER

1935: 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 18; 1 ♂, 13 miles S. of Marathon, Combs ranch, April 15; 1 ♂, Lajitas, May 10.

<sup>26</sup> See in this connection Percy A. Taverner and George Miksch Sutton, "The Birds of Churchill, Manitoba," *Ann. Carnegie Mus.*, 23, 1934: 38-39.

<sup>27</sup> We follow J. L. Peters, *op. cit.*, 2: 264 and 266, in including this species in the genus *Tringa*.

We recorded this species only in April and May, 1935, observing it first on April 13, at a cattle pond on the Hess ranch, six miles north of Marathon, on which date two Baird's Sandpipers were seen in company with a small flock of Western Sandpipers and Killdeers.

*PISOBIA MINUTILLA* (VIEILLOT). LEAST SANDPIPER

1935: 1 ♂, 17 miles NE. of Marathon, April 18; 1 ♂, 6 miles N. of Marathon, Hess ranch, April 20.

In 1933 we recorded the Least Sandpiper along Maravillas Creek, fifteen miles southwest of Marathon, a single bird on May 4, a single bird on May 5, and two birds on May 6. On May 6 we collected a specimen by way of checking sight identification. During 1935 we observed the species only twice, collecting the individuals listed above.

*EREUNETES MAURII* CABANIS. WESTERN SANDPIPER

1935: 2 ♂, 2 ♀, 6 miles N. of Marathon, Hess ranch, April 13-25; 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 11.

We recorded this species only in 1935, noting it first on April 10, when we found three birds at a small cattle pond seventeen miles northeast of Marathon. We also observed a flock of five birds on the Hess ranch, six miles north of Marathon on April 13, and collected two birds (listed above) on the Hess ranch on April 25. We saw the species last on May 10, when three birds were observed feeding along the Rio Grande at Lajitas.

*RECURVIROSTRA AMERICANA* GMELIN. AVOCET

1935: 3 ♂, 3 ♀, Castalon, May 11.

We recorded the Avocet only in 1935, in the vicinity of Castalon, where on May 7 a single bird was seen flying up the Rio Grande, and where on May 11 we encountered a flock of forty-one of the handsome creatures basking on a gravel bar, their beaks pointed into the wind, or tucked under their scapular feathers. The six specimens obtained were exceedingly fat.

*STEGANOPUS TRICOLOR* VIEILLOT. WILSON'S PHALAROPE

1905: 1 ♀, Alpine, May 20 (Baylor University Museum).

1935: 3 ♂, Hot Springs, May 15.

In 1935 Sutton saw Wilson's Phalaropes several times along the Rio Grande. On May 10 he noted one male bird at Lajitas. He collected the three male specimens listed above at Hot Springs on May 15, and observed another flock of three male birds at the entrance to a short gorge of the Rio Grande a little west of Boquillas on May 16. The fact that no female birds were seen at this relatively late date suggests the possibility that the females move northward, reach their nesting grounds, and select their nesting territories before their mates arrive.

*COLUMBA FASCIATA FASCIATA* SAY. BAND-TAILED PIGEON

1901, 1928, 1932, 1935: 8 ♂ (1 skeleton), 4 ♀ (1 immature), Chisos Mountains, 5000 feet and above.

We found Band-tailed Pigeons to be fairly common in the Chisos Mountains. During our 1928 and 1932 visits they frequently came to Boot Spring and Upper Juniper Spring to drink, especially at sunset. On July 31, 1928, when the acorns had begun to ripen at lower altitudes, they were actually abundant at Upper Juniper Spring. A nest found at Boot Spring (6500 feet) on May 15, 1932, contained one highly incubated egg. The nest was on a horizontal limb of an oak twenty feet above a dry stream bed.

In 1933 we observed the species only in Pine Canyon. On May 17, 18, and 20, we heard the birds booming from the pine trees high on the mountainside, and on May 20 we saw a pair come to drink at a tiny spring just at nightfall.

In 1935 we noted Band-tails on several occasions. On February 24 we saw two pairs come at sunset to drink at the spring (5100 feet) below the CCC encampment in the Basin. Officers of the camp reported that these birds had been frequenting the spot all winter. We saw pigeons at various springs in the Basin from March 21 to 23, and again from April 26 to May 3. We collected a highly incubated egg and the brooding female on April 30, and a rather well-developed squab (wing, 127 mm.) on May 1 at Pulliam Bluff Spring. May 27 we were surprised to find a few pairs of Band-tails nesting in the oaks in Paradise Canyon, five miles west of Alpine.

On June 30, 1936, Mr. Tarleton F. Smith found a nest in the Basin at an altitude of 5200 feet. It was about twenty feet from the ground in an oak tree and contained an egg.

The fleshy parts of an adult male taken July 7 were colored as follows: eyelids, Dragon's blood red; iris, Cream Buff surrounded by Alizarene Pink; bill, Deep Chrome with terminal third black; feet, Cadmium Yellow.

A field sketch of an adult male Band-tailed Pigeon collected by Sutton on Vancouver Island, British Columbia, on April 28, 1934, shows the eyelids to be red immediately about the iris, but *light purplish blue* elsewhere, this shade being apparent above and below the eye, but not in front of nor behind it.

*ZENAIDURA MACROURA MARGINELLA* (WOODHOUSE)  
WESTERN MOURNING DOVE

1928: 1 ♂, 1 ♀, Glenn Spring, June 28.

1933: 1 ♂, 3 miles S. of Marathon, June 3.

1935: 1 ♂, 5 miles S. of Alpine, February 15.

Although the western form of the Mourning Dove is almost universally known by the name *marginella*, this general acceptance seems to be based more on the antiquity of the separation than on the distinctness of the birds.

E. A. Mearns<sup>28</sup> proposed its separation, calling it simply "a pallid western form" ranging "from the Pacific Ocean . . . to the Mississippi Valley," and employing Woodhouse's name *marginella* as the earliest available name for the race. In 1912 the A.O.U. Committee<sup>29</sup> accepted this form without comment. Four years later Robert Ridgway<sup>30</sup> added the diagnosis "averaging slightly paler, upper parts slightly grayer, size slightly larger." Ridgway's own figures show, however, that the wing length averages only 2.2 mm. greater and the tail-length 3.9 mm. shorter. The color differences are very slight and are only average. For example, we cannot separate the Marathon specimen listed above from some Michigan specimens at hand, at least not by means of the characters used by Ridgway.

The Mourning Dove is common in Brewster County. We recorded it everywhere save in the higher parts of the Chisos Mountains, Upper Juniper Spring (5000 feet) and the Basin (5300 feet) being the highest points at which it was noted. It was most common along the Rio Grande, Maravillas Creek, and elsewhere in the vicinity of water. During February, 1935, we sometimes saw flocks of twenty or more in the Alpine region. In early April, 1935, large flocks came to drink at nightfall at a cattle pond on the Hess ranch, six miles north of Marathon.

On May 29, 1932, Van Tyne noted a nest with two full-grown young on the bare gravel of the desert near Glenn Spring. On May 25, 1933, Sutton found two nests, each holding two somewhat incubated eggs, on the ground in the Glass Mountains (5500 feet), about twelve miles north of Marathon. On May 29, 1935, Sutton and Semple discovered several nests, most of them with small young, along Maravillas Creek, in the Marathon region; and one nest, with two fresh eggs, at the foot of Paisano Peak, on the following day.

*ZENAIDA*<sup>31</sup> *ASIATICA MEARNSI* (RIDGWAY)  
WESTERN WHITE-WINGED DOVE

1928: 1 recently hatched nestling, Chilicotal Spring, July 1; 2 ♂ (1 a skeleton), Boquillas, August 3.

1933: 1 ♂, 3 ♀, Chisos Mountains, near Rock Spring (4000 feet), May 9-13.

1935: 1 ♂, Rio Grande, Johnson ranch, May 13.

In 1932 we noted the White-winged Dove occasionally at Upper Juniper Spring (5000 feet), at Chilicotal Spring, and at various points along the Rio Grande.

<sup>28</sup> "Note on Two Unrecognized Forms of North American Birds," *Auk*, 28, 1911: 489-490.

<sup>29</sup> "Sixteenth Supplement to the American Ornithologists' Union Check-List of North American Birds," *Auk*, 29, 1912: 381.

<sup>30</sup> "Birds of North and Middle America," *U. S. Nat. Mus. Bull.*, 50, Pt. 7, 1916: 347.

<sup>31</sup> For inclusion of the genus *Melopelia* in the genus *Zenaida*, see J. L. Peters, "The Classification of Some American Pigeons," *Condor*, 36, 1934: 213-215.

During 1933 we recorded the species also in the Marathon region, a single bird along Maravillas Creek, on May 6, and a single bird on the Combs ranch, on June 2. On May 11 Semple collected a set of two comparatively fresh eggs from a nest built about eight feet from the ground in a scrubby tree near Rock Spring in the Chisos Mountains.

During 1935 we observed the species first on February 25, when we noted several at Boquillas and at Castalon. From March 20 to 23 we frequently saw a pair about a spring at 5100 feet in the Basin in the Chisos Mountains. From April 26 to 30 we saw the species repeatedly in the Basin, but discovered no evidence that it was nesting at that time. On May 5 we noted one at the Subbitt ranch house, along the Rio Grande, not far from the entrance to the Grand Canyon. On May 10 we saw a few at Lajitas. The male bird taken at the Johnson ranch on May 13 must have been breeding, for the gonads were greatly enlarged. On May 22 we observed a single bird twenty miles north of Hot Springs.

Apparently this species ranges only up to about 5000 feet, and is to be found only where there is a constant water supply.

*COLUMBIGALLINA PASSERINA PALLESCENS* (BAIRD)

MEXICAN GROUND DOVE

1935: 1 ♂, 6 miles E. of Hot Springs, May 16 (Sutton).

The Ground Dove was noted three times in 1935, as follows: a single bird feeding at the edge of a cultivated field not far from an irrigation canal at Castalon, May 9; a single bird which flew across the Rio Grande into Mexico at Lajitas, May 10; and the single male bird collected on the Graham ranch, six miles east of Hot Springs, as noted above, on May 16. It is our belief that the species is to be found also on the Johnson ranch, where we were told of small doves *with short tails* that fed about the gardens.

*SCARDAFELLA INCA INCA* (LESSON). INCA DOVE

1935: 1 ♂, 1 ♀, Boquillas, February 25: 4 ♂ (1 immature), Castalon, May 6-9.

We recorded this interesting dove only along the Rio Grande and only in 1935. On February 25 Van Tyne encountered a flock of nine birds at Boquillas and another flock of about the same size at Castalon. Both flocks were extremely tame. The two specimens taken at Boquillas were very fat; they weighed 53.5 and 51 grams, respectively.

From May 4 to 11 we noted the species almost daily at Castalon, where we found it inhabiting the mesquite thickets bordering the cultivated fields. Here, on May 6, Sutton collected a set of two fresh eggs from a nest that had been built about fifteen feet from the ground in the framework of a windmill. The incubating bird proved, upon collection, to be the male. On May 9 a male in full juvenal feather was taken. The irises of this individual were gray or gray-brown, whereas the irises of all adults collected were orange-red.

At the Johnson ranch we found the species much less common than at Castalon, observing two nesting pairs on May 14.

On July 8, 1935, James O. Stevenson and Walter A. Weber noted a male courting its mate and found a nest of another pair at Boquillas. One of the parent birds was sitting on the nest which was about fifteen feet from the ground in the fork of a willow tree.

During the summer of 1936 Tarleton F. Smith found the species "rather common" at Boquillas.

*COCYZUS AMERICANUS AMERICANUS* (LINNAEUS)

YELLOW-BILLED CUCKOO

- 1901: 1 ♀, Grand Canyon of Rio Grande, S. of Terlingua, June 28 (L. A. Fuertes collection).  
 1928: 1 ♂, Chisos Mountains, Upper Juniper Spring, 5000 feet, July 15; 1 ♀, Boquillas, August 3.  
 1932: 1 ♀, 2 miles E. of Glenn Spring, June 5.  
 1933: 3 ♂, 1 ♀, 12 and 15 miles N. of Marathon, Glass Mountains, May 26; 4 ♂, 1 ♀, 12 and 15 miles S. of Marathon, Combs ranch, May 23 to June 1; 1 ♂, 1 ♀, Boquillas, May 16.  
 1935: 1 ♂, 13 miles S. of Marathon, Combs ranch, May 24; 3 ♂, Rio Grande, Johnson ranch, May 13 and 14.

These specimens measure (in mm.): males, wing, 138, 139, 139, 141, 138, 147, 139, 141, 144, 140, 143, 143, 138; tail, 136, 146, 139, 147, 140, 147, 145, 149, 148.5, 137, 142, 142, —; females, wing, 141, 144, 147, 151, 145, 146; tail, 142, 142, 147, 147, 150, 146.

The commonly accepted range of *Coccyzus americanus occidentalis* includes the western half of Texas<sup>32</sup> but we fail to find any characters by which to separate our series from typical *americanus*. In fact, we seriously question the value of maintaining the form *occidentalis* at all.

In June, 1932, Jacot saw Yellow-billed Cuckoos a number of times near Glenn Spring and San Vicente, always in thick mesquite. In 1933 we noted the species first in the Marathon region on May 8. The male and female taken at Boquillas on May 16 were a mated pair, apparently breeding. On June 2 a nest containing one egg was found on the Combs ranch twelve miles south of Marathon. In 1935 we recorded the species first on May 13 on the Johnson ranch along the Rio Grande.

*GEOCOCCYX CALIFORNIANUS* (LESSON). ROADRUNNER

- 1901, 1928, 1932, 1933, 1935: 6 ♂, 11 ♀ (1 immature); 6 miles NE. of Marathon, Hess ranch; 10 and 12 miles S. of Marathon, Combs ranch; 22 miles S. of Alpine, Calamity Creek bridge; Glenn Spring; Hot Springs; Lajitas; and other localities.

We noted this species everywhere in the desert. It was less common in the grasslands about Marathon and was not encountered above 5200 feet in

<sup>32</sup> *Check-List of North American Birds* (Lancaster, Pa., A.O.U., 1931), 1, 1931: 159-160.

the Chisos Mountains. On May 30, 1932, we collected a "laying" female at Chilicotal Spring and found a nest with six eggs three miles north of Glenn Spring. In 1933 we found a nest with five fresh eggs near Peña Creek, four miles southwest of Marathon, on May 1. We also found a nest with seven somewhat incubated eggs in the same region on May 4 and collected a "laying" female on May 5. On May 16, at Boquillas, Sutton had the unusual experience of touching a brooding female before she leaped from her nest into the thorny tangle close by. In this nest were five young birds, one with a rather large mouse in its crop.

In Brewster County, Roadrunners are believed to prey on young quail and other birds and are shot by some hunters as "vermin." The only indication we have of other enemies of the Roadrunner was the finding of one in the crop of a female Red-tailed Hawk collected February 28, 1935, on Maravillas Creek, fifteen miles southwest of Marathon. A Roadrunner collected at the Calamity Creek bridge on March 8, 1935, had swallowed whole a wren (*Thryomanes bewicki*). The stomachs of the other specimens contained only insects.

A male specimen collected March 8, 1935, weighed 271 grams. It was not fat.

*TYTO ALBA PRATINCOLA* (BONAPARTE). AMERICAN BARN OWL

We noted this species several times, a single bird on each occasion. In 1933 we saw it May 1 in the cottonwoods along the Peña, four miles southwest of Marathon, and June 1 at the Combs ranch, fourteen miles south of Marathon. In 1935 we saw it April 17, 19, and 23 on the Combs ranch, among cottonwoods about twelve miles south of Marathon, and May 13 along the Rio Grande on the Johnson ranch. On May 27, at a point about three miles east of Alpine, we observed one flying above the open plain in the full morning sunlight.

*OTUS ASIO CINERACEUS* (RIDGWAY). MEXICAN SCREECH OWL

1932: 4 ♂, 1 ♀, Chisos Mountains, Boot Spring Valley, 6500 to 6900 feet, May 4-25.

These owls had been eating only moths, caterpillars, beetles, and other insects.

On May 25 Jacot found a nest south of Boot Spring (6900 feet) in a cavity of a deciduous oak and collected the incubating female and three eggs. The nest cavity was fifteen feet from the ground and four feet below the entrance hole. The nest itself was composed of old burlap sacking, well shredded. The three eggs, which were in quite different stages of incubation, measure 34.5 × 29 mm. to 35 × 30 mm.

*OTUS FLAMMEOLUS* (KAUP). FLAMMULATED SCREECH OWL

1932: 1 ♂, Chisos Mountains, Boot Spring, 6500 feet, May 19.



We owe our capture of this rare owl to the skill and industry of Jacot, who hunted many hours at night, following the shy bird by its odd, froglike call note. After a number of risky night trips over the precipitous sides of the mountain he finally heard the owl call near our camp, and he succeeded in collecting it within the very light of our camp fire.

*BUBO VIRGINIANUS PALLESCENS* STONE. WESTERN HORNED OWL

1901: 1 ♂, Marathon, May 12 (L. A. Fuertes collection).

1932: 1 ♂ (immature), San Vicente, June 21.

1933: 1 ♂, 12 miles N. of Marathon, Glass Mountains, May 26; 1 ♀, 15 miles SW. of Marathon, Combs ranch, June 2; 1 ♀, 6 miles E. of Hot Springs, Graham ranch, May 12.

1935: 1 ♂, 1 ♀, 5 miles S. of Marathon, February 4 and 18; 1 ♂, Mount Ord, 6300 feet, April 1; 1 ♂, Hot Springs, May 16.

Adult birds of our series measure (in mm.): males, wing, 338, 343, 333, 339; tail, 182, 198, 200, 195; females, wing, 367, 350, 366; tail, 220, 212, 217. Weights: male, February 4, 963 grams (not fat); male, April 1, 900 grams (fat); female, February 18, 1307 grams (fat).

This series of Horned Owls is rather uniform in coloration, allowing for the faded condition of those taken late in the season. The feet of all eight specimens are immaculate, or nearly so. Oberholser,<sup>33</sup> in his revision of the Great Horned Owls, lists a specimen of this race from Marathon.

In 1932 Jacot heard Horned Owls hooting about Glenn Spring at night from June 16 to 18; in 1933 Sutton and Semple heard a pair hooting among the cliffs near Hot Springs, notably on the night of May 21; and in 1935 the species was heard near Marathon on April 23, and at the Johnson ranch on May 13 and 14. The female taken at Graham's ranch on May 12 had been sitting on eggs or brooding young. The juvenile bird taken at San Vicente was well able to fly. It had eaten a young rabbit. The adult male taken in the Glass Mountains had eaten only insects. On February 24, 1935, James O. Stevenson and Van Tyne saw a Horned Owl roosting in a small tree in a ravine sixteen miles south of Marathon. A male was found roosting in a live-oak grove five miles south of Alpine on February 4, 1935. It was collected, and on February 8 another owl was occupying the same roost. Later two were noted there regularly, and when one of them was collected on February 18, it proved to be a female. A number of fairly fresh pellets were collected beneath this roost and when analyzed yielded bones of two small ground squirrels (*Citellus*), three wood rats (*Neotoma*), two pocket gophers (*Cratogeomys castanops*), one pocket mouse (*Perognathus*), one kangaroo rat (*Dipodomys*), three jack rabbits (*Lepus*), three cottontails (*Sylvilagus*), one rattlesnake (presumably *Crotalus*), and an unidentified sparrow. We are indebted to Dr. William H. Burt for the identification of the mammal remains.

<sup>33</sup> "A Revision of the American Great Horned Owls," *Proc. U. S. Nat. Mus.*, 27, 1904: 183.

*MICROPALLAS WHITNEYI WHITNEYI* (COOPER). WHITNEY'S ELF OWL

1934: 1 ♀, Burnham ranch, N. of Chisos Mountains, May 21 (R. W. Quillin).

1935: 1 ♀, Chisos Mountains, Basin, 5300 feet, April 28 (Sutton).<sup>34</sup>

The first of the above-listed specimens was captured by Mr. Quillin in the deserted nest of a Texas Woodpecker. R. W. Quillin and A. H. Wright, of Cornell University, had been watching the woodpeckers which were frequenting the corral-posts at the Burnham ranch house, located on the plain immediately north of the Chisos Mountains. In the course of their examination of several holes they found the owl, which they photographed and kept in captivity for several days. R. W. Quillin<sup>35</sup> inadvertently recorded the locality at which this specimen was taken as "Lower Juniper Canyon," the southeast canyon "of the Chisos Mountains," and has asked us to make this correction.

In 1935 we encountered the Elf Owl only in the Basin in the Chisos Mountains, though we looked assiduously for it elsewhere. We noted it first on April 26, when two birds were heard along the oak-bordered stream bed near the CCC encampment just at nightfall. The cries were short, exceedingly mellow whistles, so low they were at times scarcely audible. In their plainness they reminded us of the familiar cry of the Screech Owl (*Otus asio*) of the East, but they were not in the least quavering, and they were much less loud. The birds also gave a two-syllabled chuckle, and a series of grating cries that were rather loud in comparison with their usual call notes.

We searched a long time before we found the above-listed female in a dead maguey stalk in a deserted woodpecker hole about nine feet from the ground. In the oviduct of the bird was a fully formed but soft-shelled egg.

It is our belief that at least two pairs of Elf Owls were nesting in the Basin, for on the evening of May 2 three birds were clearly heard.

Oberholser has examined both of the specimens listed above and finds that they are examples of *M. w. whitneyi*, a form not previously recorded east of southwestern New Mexico.

*SPEOTYTO CUNICULARIA HYPUGAEA* (BONAPARTE)

## WESTERN BURROWING OWL

1901: 1 ♀, Alpine, May 4 (L. A. Fuertes collection).

1928: 1 ♂, 30 miles N. of Glenn Spring, June 27.

1932: 1 ♀, 20 miles S. of Marathon, April 28.

1935: 1 ♂, 5 miles W. of Marathon, March 13; 1 ♀, 2 miles W. of Castalon, May 9.

No Burrowing Owls were seen in winter. Our earliest date is March 13 when we found one sitting beside a small culvert on the main Marathon-Alpine highway. We have no records for Brewster County other than those listed above. One of our male specimens weighed 119.5 grams.

<sup>34</sup> Figured by Sutton, *op. cit.*, opposite page 144.

<sup>35</sup> "New Bird Records from Texas," *Auk*, 52, 1935: 324-325.

*ASIO WILSONIANUS* (LESSON). LONG-EARED OWL

1935: 1 ♀, 18 miles SW. of Marathon, Santiago Mountains, April 16.

1936: 1 ♂, Neville Spring, 3290 feet, November 29 (A. E. Borell).

The ovary of the female specimen noted above was somewhat enlarged, and the stomach contained the remains of an adult rat of the genus *Neotoma*. We noted the Long-eared Owl on only one other occasion, a single bird in some willows along the Rio Grande at San Vicente, on May 10, 1933.

*ANTROSTOMUS VOCIFERUS ARIZONAE* BREWSTER  
STEPHEN'S WHIP-POOR-WILL

1932: 7 ♂ (one skeleton), 4 ♀, Chisos Mountains, Boot Spring, 6500 feet, May 4-20.

This interesting bird is apparently found only in the Chisos Mountains. We heard it once or twice in 1933 in Pine Canyon, but did not see it that year.

On May 4, 1932, at nine o'clock in the evening, Jacot found a nest with two eggs, about one-third incubated, near Boot Spring. He collected the incubating bird, which proved to be the male. The nest was on the ground between two rocks at the base of a tree. The eggs are pure white and measure  $29.5 \times 21$  and  $30.5 \times 21$  mm. The larger egg is quite glossy. A female collected on May 10 at another locality near Boot Spring was about to lay eggs.

*PHALAELOPTILUS NUTTALLII NUTTALLII* (AUDUBON). POOR-WILL

1932: 1 ♂, Chisos Mountains, SE. of Boot Spring, 7000 feet, May 21.

1933: 2 ♂ (1 immature), 15 miles N. of Marathon, Glass Mountains, May 25 and 26; 1 ♀, 3 miles S. of Marathon, May 3; 1 ♀, 4 miles SW. of Marathon, Peña Creek, May 5; 1 ♀, 8 miles SW. of Marathon, May 30.

1935: 1 ♀, 15 miles NE. of Marathon, Glass Mountains, May 25; 1 ♂, 4 miles SW. of Marathon, Peña Creek, May 25; 1 ♂, 5 miles SW. of Marathon, Roberts ranch, May 23.

1936: 1 ♀, Chisos Mountains, Green Gulch, 5300 feet, November 9 (A. E. Borell).

Poor-wills are not common in the Big Bend country. Thomas H. Montgomery<sup>36</sup> reported their occurrence in 1904 (June 14-July 5) at Altuda, Garden Springs, and "Marley's Wells." In 1932 we heard them calling in the Chisos Mountains on only a few occasions. A pair may have nested near Glenn Spring, for Jacot frequently heard them there between June 4 and 19. In 1933 we found a few of them in the Glass Mountains, and in Pine Canyon in the Chisos Mountains, where we heard them late in the evening and early in the morning, but failed to collect a specimen. Elsewhere we encountered them principally along the dusty, unfrequented roads after dark. The female taken May 5, 1933, was killed by our automobile. In 1935 we did not encounter the species until April 26, on which date we heard three at nightfall in the Basin, not far from the CCC encampment in the

<sup>36</sup> "Summer Resident Birds of Brewster County, Texas," *Auk*, 22, 1905: 14.

Chisos Mountains. We are inclined not to regard this as an arrival date, for the weather had been so disagreeable that such birds as Poor-wills were probably not very demonstrative. In addition to the specimens listed above, we heard one bird or more almost every evening during our sojourn in the Basin, heard a single bird calling early in the morning on May 14 at the Johnson ranch on the Rio Grande, saw one on the Graham ranch about two miles west of Boquillas on May 16, and heard one on the evening of May 20 just east of Hot Springs.

The stomach of a male taken at Peña Creek on May 25 was packed with four large June beetles (*Phyllophaga* sp.) and a large army ant (male, *Eciton* sp.). We are indebted to Mr. F. M. Gaike for the identification of these insects.

Our meager data indicate that this species nests early. The female taken May 3, 1933, was ready to lay eggs, and the young male taken in the Glass Mountains on May 25, 1933, was so well developed as to evince an even earlier date of egg deposition.

This young male bird is in the midst of the post-juvinal molt. The flight feathers are about like those of the breeding male, but the rest of the plumage is less striking throughout, the tertials and scapulars being much less sharply marked with black. The crown is uniform gray, without any suggestion of a dark central patch, the feathers being only lightly speckled with black. The jugulum is buffy instead of white, and is very sparsely feathered. The chest lacks entirely the black patch and band, the feathers being lightly and indistinctly tipped with tawny and whitish. The belly region is covered almost wholly with juvenal plumage—loose, puffy feathers that are rather coarsely barred. The molting of the belly plumage appears to be progressing from the margins of the median apterium outward. The juvenal under tail coverts are very short and of loose texture.

*CHORDEILES MINOR HOWELLI* OBERHOLSER. HOWELL'S NIGHTHAWK

1933: 2 ♂, 4 miles N. of Marathon, Hess ranch, May 27; 1 ♂, 12 miles S. of Marathon, Combs ranch, May 5; 1 ♂, 15 miles SW. of Marathon, Maravillas Creek, May 23.

Oberholser has checked our identification of the four above-listed specimens. *Chordeiles minor* reaches Brewster County a month later in spring than *C. acutipennis*, the latter species arriving in April, the former as a rule about May 20. Most of the *minor* present during the period of the spring migration are, of course, transient birds, some individuals of the subspecies *henryi* remaining to nest, all of the *howelli* moving on to more northerly nesting grounds. On May 5, 1933, near Marathon, we took a male *Chordeiles minor howelli* from a loose flock of *C. acutipennis*. Since we did not again note any form of *minor* that season until May 22, we must regard the record as exceptional.

*CHORDEILES MINOR HENRYI* CASSIN. WESTERN NIGHTHAWK

1890: 1 ♂, 1 ♀, Paisano, July 14 (William Lloyd).<sup>37</sup>

1901: 2 ♂, 35 miles S. of Alpine, July 2 (L. A. Fuertes collection).

1933: 1 ♂, 10 miles S. of Marathon, May 23; 1 ♂, 20 miles S. of Marathon, May 30.

1935: 1 ♀, 15 miles NE. of Marathon, May 28; 1 ♂, 13 miles S. of Marathon, Combs ranch, May 24.

Both *howelli* and *henryi* specimens which we collected in Brewster County are brightly marked above, but all of the specimens of *henryi* are readily separable from the others by the richness of the buffy markings below, especially those of the upper breast. Oberholser has kindly examined five of the above-listed specimens for us. The specimens taken at Paisano in 1890 we have not seen but list from Dr. Oberholser's paper.

This subspecies is the breeding form of *Chordeiles minor* in Brewster County. The female bird collected May 28, 1935, in the foothills of the Glass Mountains was in breeding condition, one of the ova measuring almost four millimeters in diameter.

*CHORDEILES ACUTIPENNIS TEXENSIS* LAWRENCE. TEXAS NIGHTHAWK

1901, 1928, 1932, 1933, 1935: 20 ♂, 15 ♀ (1 skeleton), from vicinity of Marathon, Glenn Spring, Hot Springs, Terlingua, and other points.

The Texas Nighthawk is common throughout the lower parts of the Big Bend. We noted it even in the Chisos Mountains, in the Basin, at 5300 feet (April 26 to May 2, 1935), where it obviously was preparing to nest. The species must arrive from the south about the middle of April, for we did not note it in 1935 until April 18, when four birds, all thought to be males, were seen and one specimen collected along Peña Creek, four miles southwest of Marathon.

In 1933 we encountered Texas Nighthawks first on the evening of April 29, when, along the Peña, we collected seven specimens from a loose flock that made its way silently back and forth capturing insects not far from the ground. Though we must have seen as many as thirty birds of both sexes, we noted no sign of mating activity.

On the following day, however, queer hootings and trillings were heard from the mesquite-dotted lowlands, and male birds were seen everywhere, beating slowly about in wide, low circles, sometimes setting their wings stiffly downward for a short sail. We concluded that most of the trilling sounds, similar to certain screech-owl calls we had heard in the East, were made by the females, which were usually on the ground, whereas the hooting sounds were made by the flying males. All these courtship activities were carried on during the heat of mid-day and, to our surprise, they usually ceased by evening. The behavior of the birds was very different from that of "bull-

<sup>37</sup> H. C. Oberholser, "A Monograph of the Genus *Chordeiles* Swainson, Type of a New Family of Goatsuckers," *U. S. Nat. Mus. Bull.*, 86, 1914: 70.

bats" in the East. These *acutipennis* were creatures of the ground. They perched low. Usually they fed near the ground. Their courting customs included no plunge from the clouds, no roaring of set wings. Their call notes never resembled the sturdy "pee-ee" we had heard so frequently on sultry evenings about our eastern towns.

At Hot Springs we watched the Texas Nighthawks come each evening to the Rio Grande for a half-hour's quiet feeding and drinking. A little after sunset the birds began to appear, making their way swiftly over the parched hilltops, skimming the bold cliffs that lined the river, then coasting down to the water for a dainty sip. Hundreds of the birds came thus each evening, making no sound whatever, and as swiftly and quietly at nightfall made their way back to their nesting territories on the desert.

A female specimen taken May 31, 1932, at Glenn Spring, is marked "ready to lay."

Our series of specimens is quite uniform in coloration with the exception of a single male (1933) which appears to represent the "ochraceous or tawny phase" described by Oberholser<sup>38</sup> in his revision of the genus *Chordeiles*.

*AERONAUTES SAXATALIS SAXATALIS* (WOODHOUSE)  
WHITE-THROATED SWIFT

1901: 1 ♀, McKinney Spring, May 21; 1 ♀, Chisos Mountains, 8000 feet, June 14; 1 ♂, Canyon of Rio Grande, June 27 (L. A. Fuertes collection).  
1932, 1933: 12 ♂ (one skeleton), 1 ♀, Chisos Mountains, 7000 to 7835 feet.

We found the White-throated Swifts only in the Chisos Mountains region where, about certain favorite cliffs, they nested in considerable numbers. Our earliest date is March 23, 1935, when we saw about a dozen over Laguna. Occasionally they strayed some distance from the mountains. On April 29 and May 30, 1932, we noted individuals over Chilicotal Spring five miles from the mountains; and on March 31, 1935, we saw several over the desert eight miles northeast of the mountains.

This swift is a hardy, fearless bird, not to be frightened by shooting nor to be brought down by anything less than a complete *coup de grace*. It is so completely a creature of the air that even when wounded it always flies higher and farther out over the abyss instead of taking refuge in its roosting or nesting holes in the cliffs.

As many as a dozen swifts could frequently be seen at once about a nesting colony in a cliff at 7300 feet on the south side of Emory Peak, but their movements were so rapid that this number probably represented only a small fraction of the colony's population. As late as May 24 (1932) the swifts of this colony were often seen mating, and fierce aerial battles (between rival males?) sometimes persisted until the combatants struck the talus slope below and rolled down the steep declivity, still locked in bitter struggle.

<sup>38</sup> *Ibid.*, p. 105.

On May 20, 1933, we saw a great flock of these swifts hurl themselves into a deep fissure along the north side of Pine Canyon during a sudden storm. Here they kept up a loud and incessant clamor that rose above the roar of the rain.

*CALOTHORAX LUCIFER* (SWAINSON). LUCIFER HUMMINGBIRD

1901: 1 ♂, 1 ♀, Chisos Mountains, May 7 (L. A. Fuertes collection).

1933: 1 ♂, Chisos Mountains, Juniper Canyon, 5500 feet, May 17.

1935: 1 ♂, Rio Grande, 3 miles W. of Boquillas, May 17.

The first of these specimens taken by our party was collected by Semple as it was feeding about a tall, flowering agave. The second specimen, collected by Sutton on the very bank of the Rio Grande, was consorting with several Black-chinned Hummingbirds which were feeding about some broad-leaved, flowering trees. The gonads of both specimens were much enlarged.

The only other definite published records for this species in Texas refer to the experience of the United States Department of Agriculture party in the Chisos Mountains in 1901. Oberholser<sup>39</sup> reported it as "taken in the Chisos Mountains," and Ridgway,<sup>40</sup> presumably on the basis of the same material, listed the species as "breeding" there. Mrs. F. M. Bailey<sup>41</sup> also writes that "in the Chisos Mountains in Western Texas Mr. Bailey found the Lucifer hummer with several other species common in June [1901] about the big agaves, which were then in full flower."

The nest has not yet been found in this region.

*ARCHILOCHUS ALEXANDRI* (BOURCIER AND MULSANT)  
BLACK-CHINNED HUMMINGBIRD

1901, 1928, 1932, 1933, 1935: 11 ♂, 10 ♀, 2 immature ♂, from Paradise Canyon; 15 miles NE. of Marathon, Glass Mountains; 16 miles SE. of Marathon; Chisos Mountains, Upper Juniper Spring (5000 feet) and Basin (5300 feet); Glenn Spring; 4 miles E. of Hot Springs; and other localities.

We found the Black-chinned Hummingbird wherever we went except above 5500 feet in the Chisos Mountains. It was most common among the flowering trees along the Rio Grande near Hot Springs, San Vicente, and Boquillas. In the Basin in the Chisos Mountains it was rare, but a few pairs were nesting there in the canyon above "the Window."

During 1935 Sutton and Semple obtained interesting data upon the early nesting of this species. On April 11 they took a female with a fully formed egg in the oviduct at Garden Springs. On April 17, at the Combs ranch thirteen miles south of Marathon, they observed a female as she gathered material for her nest, and they found another nest with two eggs which were at the point of hatching. The first of these nests was about twenty feet from

<sup>39</sup> "Some Notes from Western Texas," *Auk*, 19, 1902: 300.

<sup>40</sup> *Op. cit.*, Pt. 5, 1911: 653.

<sup>41</sup> *Handbook of Birds of the Western United States* (Boston: Houghton Mifflin, 1921): 243.

the ground on a slender willow branch, the second was ten feet from the ground on a dead cottonwood twig. On April 19 they discovered a nest fully thirty feet from the ground in a gigantic cottonwood on the Combs ranch. The next day they collected a nest and two fresh eggs in the Glass Mountains (about 5500 feet), fifteen miles north of Marathon. The female led them to this nest by darting at a pair of Black-crested Titmice that happened to be passing. The nest was only six feet from the ground in a small oak.

On April 30 Sutton observed a courting male at "the Window" of the Basin in the Chisos Mountains. The bird flew straight up, then down, then back and forth, while its tiny wings produced a deep roar, the intensity of which was probably increased by the closeness of the rocky walls of the canyon.

At Castalon, on May 6, young just out of the nest and barely able to fly were observed. On May 18 a nest with well-developed young was found at Hot Springs.

*CALYPTE ANNA* (LESSON). ANNA'S HUMMINGBIRD  
1936: 1 ♂, Chisos Mountains, Basin, 5400 feet, October 23 (A. E. Borell).

The capture of a specimen of this Californian species is one of the most interesting results secured by Mr. A. E. Borell of the National Park Service during the autumn of 1936. The species is known as a rare migrant in September and October in the Santa Catalina and Huachuca Mountains of Arizona but is not known to occur regularly east of that region. It has not been recorded before from Texas.

*SELASPHORUS PLATYCERCUS PLATYCERCUS* (SWAINSON)  
BROAD-TAILED HUMMINGBIRD  
1901, 1928, 1932, 1935: 12 ♂ (one a skeleton), 3 ♀, Chisos Mountains, 4900 to 7700 feet.

The Broad-tailed Hummingbird we found only in the Chisos Mountains, where it is by far the commonest hummingbird. It was particularly abundant at Laguna, in Boot Spring Valley, and about the higher slopes of Emory Peak. Our earliest date is March 23, 1935, when we collected two males at Laguna.

On May 3, 1935, at Laguna, Sutton observed a female building a nest on a slender pine branch about fifteen feet from the ground. The bird gathered down and webs from the thick *madroña* and *agarita* bushes that covered the more open slopes at the edge of the pine woods, flying back and forth in a surprisingly direct and incautious way. She was unattended by any male bird. The males were preoccupied in chasing each other. Each male had chosen certain perches from which to guard what appeared to be his personal nesting or feeding territory. He sat quietly, preening his plumage or turning his head from side to side while looking for a passing rival. These periods of perching were often interrupted by brief battles with trespassing males.



Two slightly fat males collected March 23 weighed 3.3 and 3.4 grams.

*SELASPHORUS RUFUS* (GMELIN). RUFIOUS HUMMINGBIRD

1928: 1 adult ♂, Glenn Spring, July 29.

The Rufous Hummingbird has not been recorded before from Brewster County.

*LAMPORNIS CLEMENCIAE CLEMENCIAE* (LESSON)

BLUE-THROATED HUMMINGBIRD

1901, 1928, 1932, 1933, 1935: 14 ♂, 5 ♀, Chisos Mountains, 5000 to 7300 feet, May 2 to July 14.

This handsome hummingbird is widely distributed through the forested parts of the Chisos Mountains, but it is common only in circumscribed areas near water.

As reported in an earlier paper,<sup>42</sup> the Blue-throated Hummingbird of the Chisos Mountains is *Lampornis c. clemenciae* rather than *L. c. bessophilus* (Oberholser) of New Mexico, Arizona, and the Sierra Madre of Mexico.

There is considerable variation in the color of the throats of the males in our series. Those taken early in the season are rather pale blue; those taken later are a much richer, more purplish blue. The throat of a female collected on May 2, 1935, is mottled with iridescent feathers of a pale lavender color.

*CYANTHUS LATIROSTRIS* SWAINSON. BROAD-BILLED HUMMINGBIRD

The only record of this species in Brewster County is R. W. Quillin's<sup>43</sup> interesting report of a nest and two eggs found May 17, 1934, at the Johnson ranch on the Rio Grande. Both parent birds were studied carefully at close range but were not collected.

*MEGACERYLE ALCYON ALCYON* (LINNAEUS). BELTED KINGFISHER

1935: 1 ♂, 22 miles S. of Alpine, Calamity Creek, March 8.

In 1933 the kingfisher was noted but once: a single bird, along the Rio Grande about eight miles east of Hot Springs on May 10. On February 28, 1935, one was seen on Peña Creek four miles southwest of Marathon.

The specimen collected was fat and weighed 147.7 grams.

*COLAPTES CAFER CANESCENS* BRODKORB<sup>44</sup>. RED-SHAFTED FLICKER

1935: 1 ♂,<sup>45</sup> 5 miles S. of Alpine, February 13; 1 ♂, 22 miles S. of Alpine, Calamity Creek, March 29; 1 ♂, Chisos Mountains, Basin, 5100 feet, March 22; 1 ♂, Boquillas, February 25.

<sup>42</sup> J. Van Tyne, "Notes on Some Birds of the Chisos Mountains of Texas," *Auk*, 46, 1929: 205.

<sup>43</sup> *Op. cit.*, p. 325.

<sup>44</sup> Pierce Brodkorb, "Two New Subspecies of the Red-shafted Flicker," *Occ. Papers Mus. Zool. Univ. Mich.*, 314, 1935: 1-3. The breeding range of this recently described form is given as "Great Basin, central Rocky Mountains, and western portion of Great Plains. . . ." south to Kendall and Kerr counties, Texas.

<sup>45</sup> Intermediate between *Colaptes cafer canescens* and *chihuahuae*.

Flickers were noted regularly during the winter and early spring of 1935 in all parts of the county visited, from Paisano Peak to Boquillas. Usually they were seen singly, but sometimes three or four were found together. Every effort was made to collect specimens in order to learn the status of the Dwarf Red-shafted Flicker, but the birds were very wary, and only four specimens were secured, all of them of the larger form. In most of the twenty-seven deserted Verdin nests that we examined in 1935 we found some, often many, feathers of the Red-shafted Flicker. These Verdin nests were found throughout the county, and the flicker feathers presumably were from wintering individuals of the present form.

The four males collected weighed, respectively, 139.7, 149, 171, and 141.7 grams. All but the first one were fat.

*COLAPTES CAFER NANUS* GRISCOM<sup>46</sup>. DWARF RED-SHAFTED FLICKER

1933: 1 ♂, 1 ♀, 4 miles S. of Marathon, May 1; 1 ♂, 15 miles S. of Marathon, Combs ranch, June 1 (Sutton).

All of these birds were breeding. The female was laying eggs, and both males had been incubating.

James L. Peters has kindly compared our three specimens with the type series of *nanus* and agrees with us that they must be assigned to this dwarf form recently described by Ludlow Griscom from San Luis Potosí and southern Tamaulipas. Our specimens, though but slightly worn, measure even less in wing length than the four Mexican specimens of *nanus*. The measurements (in mm.) of our specimens are: male, wing, 144 and 141; tail, 100 and 101; female, wing, 140, tail, 96.5. The slender, attenuate bill seems to be another very good distinguishing characteristic of this form. It has not been recorded before from the United States.

The Red-shafted Flicker is rather uncommon and local in distribution in the Big Bend region, and this southern subspecies is probably confined to the area south of Marathon.

*CENTURUS AURIFRONS AURIFRONS* (WAGLER)  
GOLDEN-FRONTED WOODPECKER

1933: 5 ♂, 5 ♀, in the region 10 to 15 miles S. of Marathon, May 4 to June 2.

1935: 2 ♂, 22 miles S. of Alpine, Calamity Creek, March 4 and 29; 1 ♂, 15 miles SW. of Marathon, Maravillas Creek, April 10.

We were surprised to find this handsome species nesting in considerable numbers in the clumps of cottonwoods not far south of Marathon. It was especially common on the Combs ranch where, on June 1 and 2, 1933, we encountered several pairs, found four nests high in the cottonwoods, and collected six adult specimens. In 1935 we found several pairs near the

<sup>46</sup> "The Ornithology of Guerrero, Mexico," *Bull. Mus. Comp. Zool.*, 75, 1934: 381.

Calamity Creek bridge south of Alpine. They frequented the live-oak grove there as well as the cottonwoods a half-mile southeast of the bridge.

Two March males weigh 79 and 78.8 grams.

*BALANOSPHYRA FORMICIVORA FORMICIVORA* (SWAINSON)  
ANT-EATING WOODPECKER

1901, 1928, 1932, 1933, 1935: 18 ♂ (2 skeletons), 11 ♀ (1 skeleton), 3 nestlings, all parts of the Chisos Mountains above the lower limits of trees.

The Ant-eating Woodpecker is common throughout the forested parts of the Chisos Mountains from about 5000 feet to the top of Emory Peak.

In the Chisos Mountains these woodpeckers were frequently seen flying about and clinging to the sheer rock cliffs, often at some distance from any trees. They appeared to be securing there some sort of food the nature of which we were never able to learn.

A nest with four eggs was found six feet from the ground in an old oak tree at 6900 feet, above Boot Spring. One egg proved to be infertile, but the remaining eggs hatched May 18, 1932. On May 2, 1935, Semple found a nest in a tree that stood near the road leading up to the Basin. The nest was about twenty feet from the ground.

*BALANOSPHYRA FORMICIVORA ACULEATA* (MEARNS)  
MEARN'S WOODPECKER

1905: 1 ♂, Paisano, April 30 (Baylor Univ. Mus.).

1935: 1 ♂, foot of Paisano Peak, May 27 (Sutton).

Oberholser has compared these specimens with the series in Washington and identifies them as *aculeata*, which ranges "from northern Brewster County north to the Davis Mountains and westward."

*ASYNDESMUS LEWIS* GRAY. LEWIS'S WOODPECKER

1935: 1 ♀, Chisos Mountains, Boot Spring, 7400 feet, May 1 (Sutton).

This species has been taken but a few times in Texas. Our specimen apparently was not accompanied by a mate, but the ovary was somewhat enlarged. The bird was very fat.

*SPHYRAPICUS VARIUS NUCHALIS* BAIRD. RED-NAPED SAPSUCKER

1914: 2 ♂, Chisos Mountains, January 21-27.

1935: 1 ♀, 5 miles S. of Alpine, 5000 feet, February 8; 1 ♂, 1 ♀, 13 miles S. of Marathon, Combs ranch, April 15 and 17.

1936: 1 immature ♂, Chisos Mountains, Basin, 5000 feet, October 27 (A. E. Borell).

The Red-naped Sapsucker was recorded also on March 6, 1935, when a single bird was noted three miles west of Elephant Mountain. Three individuals were seen among willow trees along Maravillas Creek on the Combs ranch, thirteen miles south of Marathon, on April 15, 1935. All three speci-

mens taken in 1935 were extremely fat. A female collected near Alpine weighed 63 grams. Specimens taken February 8 and April 17 were in the prenuptial molt.

*DRYOBATES SCALARIS CACTOPHILUS* OBERHOLSER. CACTUS WOODPECKER

1901, 1928, 1932, 1933, 1935: 15 ♂, 8 ♀, 2 immature, from all parts of the Big Bend, including the Chisos Mountains, Glass Mountains, Chilitotal Spring, Boquillas, Hot Springs, Marathon, and Alpine.

The Cactus Woodpecker is one of the most widely distributed birds of the Big Bend country. We found it nesting on the very banks of the Rio Grande, at Glenn Spring, in Pine Canyon in the Chisos Mountains, in the Marathon region, and in the Glass Mountains twenty miles north of Marathon. It nests early. On April 30, 1933, Sutton found a nest with half-grown young in a fence-post along the Marathon-Hot Springs highway, about three miles south of Marathon. Other nests with young were discovered on May 3 and 4, 1933, in the Marathon region; and a nest with young practically ready to leave was found in the Glass Mountains, about eighteen miles north of Marathon on May 23, 1935. This nest cavity had been excavated about three and one-half feet from the ground in a dead maguey stalk.

Two immature birds with the whole crown sprinkled with red were taken at Glenn Spring on June 25 and at Upper Juniper Spring on July 8, respectively, in 1932.

Two males taken in February weighed 36.8 and 34.2 grams.

*TYRANNUS VERTICALIS* SAY. ARKANSAS KINGBIRD

1901: 1 ♀, 10 miles S. of Marathon, May 17 (L. A. Fuertes collection).

1933: 2 ♂, 12 and 13 miles S. of Marathon, May 8 and 23; 1 ♂, 1 ♀, 64 miles S. of Marathon, May 8; 1 ♀, 2 miles W. of Boquillas, May 16.

The male and female taken May 8, 1933, sixty-four miles south of Marathon, were obviously a mated pair, but we did not find the nest. The birds were frequenting the scrubby trees along a dry stream bed.

In 1935 we did not note this species until April 24, when a single bird was seen at Garden Springs. The species did not become common until about a month later. On May 25 we saw a large number of kingbirds of both western species in the cottonwoods along Peña Creek, four miles southwest of Marathon. On May 30 we discovered two mated pairs within the city limits of Alpine. Their nests were situated on telegraph poles.

*TYRANNUS VOCIFERANS* SWAINSON. CASSIN'S KINGBIRD

1901: 1 ♂, Alpine, May 4 (L. A. Fuertes collection).

1933: 2 ♂, 1 ♀, Glass Mountains, 12 and 15 miles N. of Marathon, May 26 and 31; 2 ♂, 2 ♀, 12 and 15 miles S. of Marathon, May 6-June 2; 1 ♂, 6 miles E. of Hot Springs, May 15; 1 ♂, 2 miles W. of Boquillas, May 16.

In 1935 we did not note the Cassin's Kingbird in the Marathon region until April 18, on which date we saw a single bird along a fence not far from Peña Creek. Single birds were recorded again on April 19 and 22. Thereafter the species became more numerous. On May 24 and 25 a pronounced migratory wave was observed in the Marathon region.

From the behavior of what appeared to be mated pairs, it seems probable that this species must nest in the Glass Mountains and perhaps elsewhere in the Big Bend. Both in 1933 and 1935 we repeatedly observed Cassin's Kingbirds in the oak woods in the Glass Mountains in late May. We did not, however, find a nest.

*MUSCIVORA FORFICATA* (GMELIN). SCISSOR-TAILED FLYCATCHER

1928, 1933, 1935: 6 ♂, 3 ♀, 16 miles SW. of Marathon, Garden Springs, and other localities.

The Scissor-tailed Flycatcher apparently is restricted to the more northerly parts of the county during summer, for as a rule we encountered it only in the grasslands about Marathon and Alpine. A single individual was noted, however, at Hot Springs on May 12, 1933; and on May 29 of the same year several were seen and one collected at the foot of Mount Ord. The species is not found in the higher country as a rule, though we noted a mated pair in the Peña Blanca Mountains, twenty miles east of Marathon on April 24, 1935; and we saw a few birds in the lower foothills of the Glass Mountains during 1933 and 1935.

In 1935 the first migrant was noted on April 4 six miles west of Marathon.

Nesting operations probably begin in mid-May. A nest just ready for eggs, and made almost entirely of wool, was found in a mesquite at the roadside about two miles south of Marathon on May 29, 1935; and a nest with four fresh eggs was found in a cottonwood at Garden Springs on May 23, 1933.

*MYIARCHUS CINERASCENS CINERASCENS* (LAWRENCE)  
ASH-THROATED FLYCATCHER

1928, 1932, 1933, 1935: 21 ♂, 14 ♀, 1 immature ♂, Glass Mountains, 15 miles NE. of Marathon; 20 miles S. of Marathon; Pine Canyon and south rimrock of Chisos Mountains (7000 feet); Hot Springs; San Vicente; and other localities.

The Ash-throated Flycatcher was found in all parts of the county but was much less common in the higher parts of the Chisos Mountains. In 1935 the species arrived from the south the last of March. A male was collected at Calamity Creek, twenty-three miles south of Alpine on March 29, and one was seen at Peña Creek four miles southwest of Marathon on March 31.

Females which had been laying eggs were collected four miles south of Marathon (May 1, 1933), in Pine Canyon (May 11, 1933), and near Boot Spring (May 14, 1932); and on May 22, 1935, Semple found a nest with two

fresh eggs in an old woodpecker hole in a dead yucca stalk about four feet from the ground. The yucca stalk stood not far from the highway, about thirty miles north of Hot Springs.

An adult female collected by Semple west of Boquillas on May 15, 1933, has two outer tail feathers on one side and three on the other side tipped for several millimeters with yellowish white.

A male collected on March 29 weighed 33.7 grams.

*MYIARCHUS TUBERCULIFER OLIVASCENS* RIDGWAY  
OLIVACEOUS FLYCATCHER

1932: 1 adult ♂, 9 miles SE. of Glenn Spring, 1900 feet, June 17.

This specimen, collected by Jacot, is the first one recorded from Texas.

*SAYORNIS NIGRICANS NIGRICANS* (SWAINSON). BLACK PHOEBE

1901: 1 immature ♀, Hot Springs, May 23 (L. A. Fuertes collection).

1933: 1 ♀, 4 miles S. of Marathon, May 7; 1 ♀, 12 miles S. of Marathon, May 6; 1 ♀, 15 miles SE. of Marathon, Combs ranch, June 2; 1 immature ♀, Hot Springs, May 18.

1935: 1 ♀, Peña Creek, 5 miles SW. of Marathon, February 28; 1 ♀, 22 miles S. of Alpine, Calamity Creek, March 16; 1 ♂, Combs ranch, 13 miles S. of Marathon, April 15.

Although the Black Phoebe is less common than Say's Phoebe in Brewster County, it is apparently rather widely distributed. It is much more closely confined to the vicinity of water than is Say's Phoebe. Several were seen in winter, a pair at a pool in a wooded canyon three miles west of Elephant Mountain on February 17, and a pair at Peña Creek four miles southwest of Marathon on February 28, 1935. We noted the species but once in the Chisos Mountains, a solitary individual in Pine Canyon on May 20, 1933.

In 1933 we discovered a nest with two fresh eggs (incomplete set) under a bridge at Peña Creek, south of Marathon on April 30; and in a low cavern not far from Maravillas Creek, fifteen miles southwest of Marathon, we examined a nest with three small young on May 6.

Several nests were found by Sutton and Semple in 1935: one partly built, on April 11, on a beam of the bridge crossing the Peña, about four miles southwest of Marathon; one partly built, on April 15, in a small building on the Combs ranch about thirteen miles south of Marathon; one with four heavily incubated eggs, on May 9, on a beam inside a barn at Castalon; and one with four small young, on May 14, in a shed on the Johnson ranch, along the Rio Grande. We watched one bird building the nest found on the Combs ranch on April 15. Mouthfuls of mud and grass were brought some distance from a pool along the creek bed. In bringing this material the bird flew high in air, as if afraid of being attacked from below.

A. J. van Rossem<sup>47</sup> contends that the Black Phoebe of the United States

<sup>47</sup> "Report on a Collection of Land Birds from Sonora, Mexico," *Trans. San Diego Soc. Nat. Hist.*, 6, 1931: 263.

and northwestern Mexico should be known as *Sayornis nigricans semiatra* (Vigors), but we have been unable to examine any specimens from the "table land of Mexico," the birds to which he would apply the name *S. n. nigricans*.

*SAYORNIS SAYA SAYA* (BONAPARTE). SAY'S PHOEBE

1928, 1932, 1933, 1935: 5 ♂, 6 ♀ (4 juvenile), Hot Springs, San Vicente, and points noted below.

Say's Phoebe is widely distributed through the Big Bend region, though it is apparently commoner in more southerly parts. Along the cliffs of the Rio Grande and about the settlements of San Vicente, Glenn Spring, Castalon, and Terlingua several nesting pairs were noted; within the town of Marathon two nesting pairs were observed. In Juniper and Pine Canyons in the Chisos Mountains the species was found only up to 5000 feet, but on the hot, south slopes of the mountains we collected specimens at 7000 feet at the tops of the cliffs bordering the plateau south of Boot Spring; at the foot of Casa Grande at an elevation of about 6000 feet we encountered what we supposed to be nesting pairs.

From February 3 to 25, 1935, single birds were seen at Garden Springs, a ranch five miles south of Alpine, Calamity Creek Bridge, twenty-two miles south of Alpine, Basin (5200 feet), Boquillas, and Terlingua.

We found several nests during the course of our work; on May 4, 1933, one with four fresh eggs at Marathon; on April 13, 1935, one in the process of construction at Marathon; on May 8, 1935, one with four heavily incubated eggs at Terlingua; and on May 13, one with small young on the Johnson ranch, along the Rio Grande. Mr. Johnson informed us that the Say's Phoebes and Barn Swallows always fought over nesting sites about his ranch buildings.

On May 16, 1933, fully fledged young were collected near Boquillas. On June 1, 1933, two family groups were noted about the village of Marathon.

*EMPIDONAX TRAILLII BREWSTERI* OBERHOLSER. LITTLE FLYCATCHER

1901: 1 ♂, Marathon, May 14 (L. A. Fuertes collection).

1928: 2 ♂, Glenn Spring, August 6.

1932: 1 ♀, 9 miles SE. of Glenn Spring, June 17.

1933: 1 ♂, 7 miles E. of Hot Springs, May 12.

1935: 1 ♂, 13 miles S. of Marathon, May 24; 1 ♂, 1 ♀, Boquillas, May 18-21; 1 ♂, San Vicente, May 20.

Oberholser<sup>48</sup> has listed specimens of this form from Brewster County (May 19, 1913), Marathon (May 14, 16, 17, and 19, 1901), and the mouth of Tornillo Creek (May 24, 1901). The female specimen collected June 17, 1932, is intermediate between *brewsteri* and *traillii*.

<sup>48</sup> "New Light on the Status of *Empidonax traillii* (Audubon)," *Ohio Journ. Sci.*, 18, 1918: 85-98.

*EMPIDONAX TRAILLII TRAILLII* (AUDUBON). ALDER FLYCATCHER

1933: 1 ♂, 15 miles S. of Marathon, Combs ranch, June 1.

1935: 1 ♂, 1 ♀, 16 miles SW. of Marathon, May 29; 1 ♂, 1 mile W. of Boquillas, May 18;  
2 ♂, 6 miles E. of Hot Springs, May 16.

A single specimen of this form from Brewster County (May 8, 1913) is listed in Oberholser's paper<sup>49</sup> on *Empidonax traillii*.

For the identification of our specimens of this species we are indebted to Pierce Brødkorb, who has just completed a revision of the genus *Empidonax*.

*EMPIDONAX HAMMONDI* (XANTUS). HAMMOND'S FLYCATCHER

1932: 2 ♂, Chisos Mountains, Boot Spring, May 6-7.

1933: 1 ♂, 2 ♀, Chisos Mountains, Pine Canyon, May 9-13.

1935: 1 ♂, Chisos Mountains, SE. side of Pulliam Bluff, 5500 feet, March 24; 2 ♀, 13 miles S. of Marathon, Combs ranch, April 17; 1 ♂, Chisos Mountains, Laguna, May 3.

A male collected March 24 was very fat and weighed 11.6 grams.

*EMPIDONAX WRIGHTII* BAIRD. WRIGHT'S FLYCATCHER

1901: 1 ♀, Marathon, May 16; 1 ♀, Chisos Mountains, June 6 (L. A. Fuertes collection).  
1905: 1 ♂, 1 ♀, [E. of Paisano Peak], DuBois Canyon, May 12 (Baylor University Museum).

1932: 3 ♂, 7 ♀, Chisos Mountains, 6500 to 7800 feet, May 5-23.

1933: 1 ♀, 4 miles S. of Marathon, May 5; 1 ♂, 1 ♀, 12 miles S. of Marathon, May 4;  
1 ♂, 2 ♀, Chisos Mountains, Pine Canyon, May 11-13.

1935: 5 ♂, 4 ♀, 15 miles NE. of Marathon, Glass Mountains, April 13-May 25; 1 ♂, 15 miles E. of Marathon, Peña Blanca Mountains, April 24; 1 ♂, 1 ♀, 13 miles S. of Marathon, May 24; 1 ♂ (?), Chisos Mountains, Basin, 5300 feet, April 27.

We obtained no proof that this species breeds in the Chisos Mountains, although a female taken May 9 is marked "ovary enlarged."

*EMPIDONAX GRISEUS* BREWSTER. GRAY FLYCATCHER

1932: 1 ♂, 3 miles W. of Marathon, April 27 (Peet).

1933: 1 ♂, 12 miles N. of Marathon, Glass Mountains, May 31; 3 ♂, 1 ♀, 4 miles S. of Marathon, May 2-3; 1 ♂, 1 ♀, 12 miles S. of Marathon, April 29-May 4; 1 ♀, Chisos Mountains, Pine Canyon, May 1.

1935: 1 ♂, 15 miles NE. of Marathon, Glass Mountains, April 22; 3 ♂, 15 miles E. of Marathon, Peña Blanca Mountains, April 24; 1 ♂, 16 miles SE. of Marathon, April 11; 1 ♂, 13 miles S. of Marathon, Combs ranch, April 19; 1 ♂, Chisos Mountains, Basin, 5700 feet, April 26.

As has been suggested several times, this little-known flycatcher may well prove to be a subspecies of *Empidonax wrightii*, from which it differs only slightly in appearance. No one seems to have reported any variation in habits except those implied in their different geographical and life-zone distribution. H. S. Swarth<sup>50</sup> states that the call notes of *wrightii* and

<sup>49</sup> *Ibid.*

<sup>50</sup> "Birds of the Huachuca Mountains, Arizona," *Pac. Coast Avifauna*, No. 4, 1904: 26.



*griseus* are "exactly the same," but that the call note of *hammondi* is quite another note.

During April and May, 1935, we made a considerable search for this species and found it to occur in comparatively low growth along Maravillas Creek and in the scrub oak of the Glass Mountains, but not in clumps of cottonwood trees. The call note that we most frequently heard from the bird we thought to be *griseus* was a low "whit."

We are indebted to Oberholser and to Brodkorb for their opinions on some of our more obscure specimens of *Empidonax*.

*Empidonax griseus* has not heretofore been recorded from Texas. It is so very similar to *wrightii* in appearance, however, that it would not surprise us to find that specimens taken prior to 1932 have been identified as *wrightii*.

- EMPIDONAX DIFFICILIS HELLMAYRI* BRODKORB.<sup>51</sup> WESTERN FLYCATCHER  
 1901: 3 ♂, 2 ♀, Chisos Mountains, 7000 feet, June 9-14 (U. S. Biol Surv. and L. A. Fuertes collections).  
 1928: 2 ♂ (including type), Chisos Mountains, Boot Spring, 6500-6800 feet, July 19-21.  
 1932: 4 ♂, 1 ♀, Chisos Mountains, Boot Spring Canyon, 6600 feet, May 3-25.  
 1933: 1 ♀, Chisos Mountains, Pine Canyon, 6500 feet, May 19.  
 1935: 1 ♂, Chisos Mountains, Boot Spring, 7400 feet, May 1.

The Western Flycatcher is quite common in Boot Spring Valley.

*MYIOCHANES RICHARDSONI RICHARDSONI* (SWAINSON)  
 WESTERN WOOD PEWEE

- 1901: 1 ♂, 1 ♀, Marathon, May 14-15 (L. A. Fuertes collection).  
 1932: 1 ♂, 3 miles W. of Marathon, April 27; 2 ♂, 2 ♀, Chisos Mountains, Boot Spring Canyon, 6500-7000 feet, May 6-23; 1 ♂, San Vicente, April 28.  
 1933: 1 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, May 31; 4 ♂, 2 ♀, 4 miles SW. of Marathon, Peña Creek, April 29-May 1; 1 ♂, 12 miles S. of Marathon, Combs ranch, May 6; 2 ♀, 15 miles SW. of Marathon, Maravillas Creek, June 1; 1 ♂, 20 miles S. of Marathon, May 30; 1 ♂, Mount Ord, May 29.  
 1935: 1 ♂, Chisos Mountains, Laguna, 7300 feet, April 30.

In 1935 we looked for this species constantly during April, but did not encounter it until the twenty-ninth, on which date we noted one at Laguna. The species evidently arrived from the south somewhat earlier in 1932, for a male was taken near Marathon, as noted above, on April 27.

The species is very deliberate in undertaking the duties of nest-building and brood-rearing. A male bird taken near Boot Spring on May 23, 1932, had "enlarged" testes. From May 13, 1935, we thought we observed mated birds, but the first tangible evidence of breeding we obtained on May 28, when a half-finished nest was found in a small oak tree on the McGonagill ranch in the Glass Mountains fifteen miles northeast of Marathon. We watched the nest for some time, and determined that but one bird, presum-

<sup>51</sup> Pierce Brodkorb, "A New Flycatcher from Texas," *Occ. Papers, Mus. Zool. Univ. Mich.*, 306, 1935: 1-3.

ably the female, was building it. It was about six feet from the ground, on a slender, living branch that overhung the edge of the ranch road.

*NUTTALLORNIS BOREALIS BOREALIS* (SWAINSON)  
WESTERN OLIVE-SIDED FLYCATCHER

1932: 2 ♂, 2 ♀, Chisos Mountains, Boot Spring Valley, 6500 to 7800 feet, May 7-24.  
1933: 1 ♂, 4 miles S. of Marathon, May 1; 2 ♂, 1 ♀, 12 miles S. of Marathon, May 4-5;  
1 ♂, 15 miles S. of Marathon, May 27; 1 ♂, 1 ♀, Chisos Mountains, Pine Canyon,  
May 11-29.

Measurements (in mm.): males, wing, 113, 108.5, 108.5, 108.5, 108.5; tail, 74, 73, 74.5, 72.5, 73.5; females, wing, 103, 100.5; tail, 72, 70.

A. J. van Rossem<sup>52</sup> has recently shown that Lichtenstein's *Muscicapa mesoleuca* was not an Olive-sided Flycatcher and after examining Swainson's type of *Tyrannus borealis* he reports that it belongs to the large western race.

*NUTTALLORNIS BOREALIS COOPERI* (NUTTALL)  
EASTERN OLIVE-SIDED FLYCATCHER

1901: 1 ♂, 1 ♀, Chisos Mountains, June 3 (L. A. Fuertes collection).  
1932: 3 ♂, Chisos Mountains, Boot Spring Valley, 6500 to 7000 feet, May 4-22.  
1933: 1 ♂, 15 miles SE. of Marathon, Combs ranch, June 2.

Measurements (in mm.): males, wing, 106, 107.5, 104, 106, 104.5; tail, 71, 69, 71, 67.5, 71; females, wing, 98; tail, 68.

In these two series the color of the throat and mid-ventral stripe ranges from nearly white to Naphthalene Yellow, apparently independently of subspecies or sex.

A male taken May 27, 1933, fifteen miles south of Marathon, and two females taken May 24 and 30, 1935, at Garden Springs, are intermediate in measurements (in mm.): male, wing, 108.5; tail, 71; female, wing, 101.5, 100; tail, 68, 68.

Vernon Bailey<sup>53</sup> has suggested that the Olive-sided Flycatchers which he saw in the Chisos Mountains in June, 1901, "were probably breeding there," but the nesting of this species in Brewster County has not yet been demonstrated.

*PYROCEPHALUS RUBINUS FLAMMEUS* VAN ROSSEM<sup>54</sup>  
VERMILION FLYCATCHER

1901: 1 ♂, Terlingua Creek, June 27; 1 juvenile, Terlingua Creek, June 26 (L. A. Fuertes collection).  
1932: 1 ♂, San Vicente, April 28.  
1933: 1 ♀, 12 miles S. of Marathon, May 4; 1 ♂, 1 ♀, 15 miles S. of Marathon, June 2;  
2 ♂, 6 miles E. of Hot Springs, May 12, 15; 1 ♀, Boquillas, May 16.

<sup>52</sup> "Notes on Some Types of North American Birds," *Trans. San Diego Soc. Nat. Hist.*, 7, 1934: 350-352.

<sup>53</sup> "Biological Survey of Texas," *N. Amer. Fauna*, No. 25, 1905: 37, 38.

<sup>54</sup> *Op. cit.*, p. 353.

1935: 1 ♂, 23 miles S. of Alpine, Calamity Creek, March 29; 1 ♂, Garden Springs, April 12; 1 ♂, Rio Grande, Johnson ranch, May 13; 3 ♂, 2 ♀, 1 juvenile ♀, Castalon, May 4-7.

The above adult males measure (in mm.), respectively: wing, 81.5, 81, 83, 81.5, 79.5, 82, 81, 81.5, 84, 81.5, 83; tail, 62, 58, 61.5, 62, 58.5, 60, 59, 60.5, 62.5, 62, 60.5. With the single exception of the specimen taken in March, these adult males are very pale, even as compared with Arizona and Sonora specimens, and are tinted with orange below and on the crown. The March specimen was the earliest migrant seen and may well have been bound for some more northern or northeastern point.

In one of the two breeding females taken at Castalon the belly and under tail coverts are strongly pink, in the other yellow. In spite of the number of writers who have remarked on the plumages of this beautiful bird, we still know remarkably little of its actual plumage sequences and variations.

In 1935 Sutton and Semple obtained interesting data on the nesting of this species. A male taken at Garden Springs, thirteen miles south of Marathon, on April 12 was in breeding condition. A female collected along the Rio Grande at Castalon on May 4 had been incubating eggs, and male birds observed on that date were indulging in prolonged flight songs. On May 6 several mating pairs were noted, the flight song was observed several times, and the characteristic call note, a high "zeep!" was heard. On May 7 two nests were found at Castalon, both on rather large, horizontal willow boughs and both about fifteen feet from the ground. One held three eggs that were at the point of hatching, and in the other were three young about ready to leave the nest. On May 13 two nests were found on the Johnson ranch, near the Rio Grande. These each contained three highly incubated eggs. On May 16 a nest and three eggs also well incubated were collected on the Graham ranch two miles west of Boquillas. This nest, which was characteristically shallow and thin-floored, was placed on a horizontal mesquite branch about ten feet from the ground.

*OTOCORIS ALPESTRIS LEUCOLAEMA* (COUES). DESERT HORNED LARK

1901: 1 ♀, Alpine, May 4 (L. A. Fuertes collection).

1932: 2 ♂, 1 ♀, Alpine, April 26; 1 ♀, 10 miles W. of Marathon, April 26.

1933: 1 ♀, 4 miles N. of Marathon, May 27; 6 ♂, 2 ♀, 2 juvenile ♀, 10 miles W. of Marathon, May 22-23; 1 ♀, 2 miles S. of Marathon, June 3.

1935: 3 ♂, 5 and 6 miles N. of Alpine, February 14 to March 26; 3 ♂, 5 miles S. of Alpine, January 30-February 23; 1 ♂, Altuda, April 3; 1 ♀, 17 miles NE. of Marathon, March 11.

We found Horned Larks only in the open, thinly-grassed country west and north of Marathon, between Marathon and Alpine, and about Alpine. The species was rarely seen in the grasslands that were the favorite haunt of the two species of meadowlark. During January and February, 1935,

flocks of eight to thirty Horned Larks were frequently seen in the Alpine region.

On April 13, 1935, we found the remains of a Desert Horned Lark clinging to the spiked leaves of a low-growing yucca, where the carcass evidently had been impaled by a shrike. The larks appeared not to be in pairs at this time.

Young birds, well able to fly, were taken May 22 and 23, 1933.

Males taken in late winter and early spring weighed from 28.2 grams (not fat) to 34 grams (very fat); one female weighed 27 grams (fat).

*TACHYCINETA THALASSINA LEPIDA* MEARNS  
NORTHERN VIOLET-GREEN SWALLOW

1932: 3 ♂, Chisos Mountains, Boot Spring Valley, 7000 to 7800 feet, May 7-16.

During our sojourn in the Chisos Mountains in 1932 we found the Violet-green Swallow common about some of the higher pinnacles as late as May 19, and noted that the gonads of specimens collected were enlarged.

In 1933 we encountered transient individuals only, observing a loose flock of fifty or more individuals along Maravillas Creek about fifteen miles southwest of Marathon on May 4.

In 1935 we saw three birds at Laguna (6700 feet) in the Chisos Mountains on March 23; what seemed to be a mated pair, flying about the face of Casa Grande and above the Basin on April 27; and a single bird at Laguna on April 29.

*RIPARIA RIPARIA RIPARIA* (LINNAEUS). BANK SWALLOW

1933: 1 ♀, 15 miles SW. of Marathon, Maravillas Creek, May 6.

This species we recorded but twice: on May 6, 1933, when a loose flock of transient swallows was seen and the above-listed female collected along Maravillas Creek, southwest of Marathon; and on May 20, 1935, when a fair-sized flock of apparently resident birds was seen along the Rio Grande at San Vicente.

*STELGIDOPTERYX RUFICOLLIS APHRACTUS* OBERHOLSER<sup>55</sup>  
WESTERN ROUGH-WINGED SWALLOW

1901: 1 ♀, Tornillo Creek, May 24 (L. A. Fuertes collection).

1935: 1 ♂, Lajitas, May 10.

We encountered this species in 1933 and 1935, noting it at several points in the southern part of the county, from May 4 to 15 during the former year, principally in the vicinity of Hot Springs and Boquillas, along the Rio Grande; and observing it about Marathon, Study Butte, Terlingua, Castalon, Lajitas, the Johnson ranch, and Boquillas during 1935. The Rough-winged Swallow probably nests at all these localities, but nests were actually found

<sup>55</sup> "Descriptions of New Birds from Oregon, Chiefly from the Warner Valley Region," *Sci. Publ. Cleveland Mus. Nat. Hist.*, 4, No. 1, 1932: 5.

only at Lajitas where, on May 10, Sutton followed several birds to their burrows in sand banks some distance back from the river, and watched the feeding of almost full-fledged young.

Oberholser identified these specimens as examples of the Western Rough-winged Swallow he has recently described.

*HIRUNDO ERYTHROGASTER* BODDAERT. BARN SWALLOW

1935: 1 ♂, Castalon, May 6.

In 1933 we noted the Barn Swallow upon several occasions: a flock of about ten birds, seemingly transients, not far south of Marathon on May 4; a flock of six birds, along Maravillas Creek, fifteen miles southwest of Marathon on May 6; a breeding pair, with nest under the roof of the front porch of a ranch house, near the eastern base of the Chisos Mountains on May 9; and a single bird at Hot Springs on May 12.

In 1935 we saw the species almost daily while we were in the southern part of the county, observing it first on April 13 (a single bird, along Peña Creek, four miles southwest of Marathon). We noted breeding pairs at Combs ranch, thirteen miles south of Marathon; Study Butte; Terlingua; Castalon; Lajitas; the Johnson ranch; Hot Springs; San Vicente; and Boquillas. At least three pairs had nests in the outbuildings of the Johnson ranch on May 13.

During our stay at Terlingua, a flock of about a dozen Barn Swallows gathered with the Texas Nighthawks each evening to feed upon small flies that rose in a cloud from a pile of dry cedar sticks not far from our quarters.

*PETROCHELIDON PYRRHONOTA PYRRHONOTA* (VIEILLOT)<sup>56</sup>

NORTHERN CLIFF SWALLOW

1933: 3 ♀, Marathon, May 4.

1935: 1 ♀, 13 miles S. of Marathon, Combs ranch, April 17; 1 ♀, 15 miles SW. of Marathon, Maravillas Creek, April 10.

These specimens measure (in mm.), respectively: wing, 107.5, 110, 108, 104.5, 107.5; tail, 50, 50, 51.5, 48, 52. They all have the large size and rich chestnut throat of the Northern Cliff Swallow, but in paleness of the rump they approach slightly the subspecies *tachina*, which we know to nest in at least the southern part of the county.

We are not certain that any race of Cliff Swallow breeds in the Marathon region, for we failed to find nests there, but we noted fair-sized flocks of the birds on the Combs ranch and about pools along Maravillas Creek on May 24, 1935. On May 30, 1935, we saw a large flock at the foot of Paisano Peak also, but did not collect a specimen there.

T. H. Montgomery<sup>57</sup> saw "a considerable number at Alpine," pre-

<sup>56</sup> C. E. Hellmayr, "Catalogue of Birds of the Americas," *Field Mus. Nat. Hist.*, Zool. Ser., 13, Pt. 8, 1935: 29.

<sup>57</sup> *Op. cit.*, p. 15.

sumably on June 13, 1904, "collecting mud for their nests," but he apparently did not collect any specimens, and the record cannot be allocated subspecifically.

*PETROCHELIDON PYRRHONOTA TACHINA* OBERHOLSER  
LESSER CLIFF SWALLOW

1932, 1933, 1935: 14 ♂, 15 ♀, 1 immature ♂, 1 immature ♀, Rio Grande from Boquillas to Castalon; also 1 ♂ from Combs ranch, 13 miles S. of Marathon, April 19, 1935; 1 ♂, 22 miles S. of Alpine, Calamity Creek, March 15, 1935.

Measurements (in mm.) of the adults listed above: male, wing, 100 (two), 101 (two), 101.5, 103 (two), 104 (four), 104.5, 105 (two), 106; female, wing, 97, 99, 100, 100.5, 101 (four), 102, 103 (two), 104 (two), 104.5, 105.5; male, tail, 43.5 (two), 44.5 (two), 45, 45.5, 46 (three), 46.5, 47 (three), 47.5, 49.5; female, tail, 44 (two), 45, 45.5, 46 (four), 47 (two), 47.5, 48 (two), 49 (two).

This series is variable in several respects. The black throat patch ranges in size from a very small spot formed by the black tips of a few feathers to a large, almost solid area of black covering the whole chin and throat. The forehead ranges in color from Cinnamon to Pale Ochraceous-Salmon; the rump from about Cinnamon to Light Ochraceous-Buff; and the under tail coverts from practically white to Pinkish Buff.

Our earliest spring record for the Cliff Swallow is of a male of the present subspecies collected on March 15, 1935, at Calamity Creek bridge south of Alpine. A few days later the species was common there.

In 1932 a colony of about twenty-five pairs nested on the Mexican side of the river a mile below Hot Springs and another of about the same size nested farther up the Rio Grande on the Texas side at a point eight miles southeast of Glenn Spring. Jacot observed some interesting actions of the swallows in the latter colony on June 16, 1932. When he approached the colony that morning it seemed to be deserted. Presently a Duck Hawk flew to a perch above and a little to one side of the swallows' nests. Jacot fired twice at the hawk without effect. The swallows, instead of flying from their nests at the sound of the gun as they usually did, remained concealed and did not emerge until about fifteen minutes after the hawk had departed.

On March 6, 1935, we noted a group of about forty last season's nests on an overhanging cliff three miles west of Elephant Mountain.

Two fully-fledged juveniles were shot on the wing on June 15, 1932, eight miles southeast of Glenn Spring.

A very fat male collected in March weighed 23.3 grams.

*PETROCHELIDON PYRRHONOTA MELANOGASTER* (SWAINSON)  
MEXICAN CLIFF SWALLOW

1932: 1 ♂, Hot Springs, June 10; 1 ♂, 8 miles SE. of Glenn Spring, Rio Grande, June 22.

1933: 1 ♂, Hot Springs, May 18.

1935: 1 ♂, 1 mile W. of Boquillas, May 18.

James L. Peters, who has kindly examined for us the 1932 and 1933 specimens listed above, states that he cannot tell them from Mexican specimens of *melanogaster*. Since then we have been able to compare our series with six breeding specimens from Pilares, Sonora. The forehead color of three of our specimens closely approximates the Hazel of Ridgway's *Color Standards*, and in the fourth one it is Sayal Brown.

These measure as follows (in mm.): wing, 100.5, 98.5, 99, 102; tail, 46.5, 44.5, 47, 46.5.

All of these specimens were breeding birds collected from nesting colonies, and their presence in breeding colonies of *tachina* is hard to explain if *tachina* and *melanogaster* are indeed geographical races of one species, as is commonly accepted. We cannot avoid the conclusion that the specimens listed above are actually representatives of *melanogaster*. A single specimen might be called a stray or an individual of aberrant plumage; but when four out of thirty-one adult specimens of the resident bird are indistinguishable from western Mexican specimens of *melanogaster*, no such explanation is satisfactory; nor will the answer to this puzzling problem be forthcoming until a detailed study can be made of the Brewster County colonies and perhaps also of colonies in the region to the west and southwest.

*PROGNE SUBIS SUBIS* (LINNAEUS). PURPLE MARTIN

1933: 1 ♂, 4 miles SW. of Marathon, Peña Creek, May 4.

1935: 1 ♂, San Vicente, May 20.

A single martin, also a male, was noted along Maravillas Creek, about sixteen miles southwest of Marathon, on May 3, 1933. The wing, in our above-listed specimens, measures 149 and 151 millimeters.

*APHELOCOMA COERULESCENS WOODHOUSEI* (BAIRD). WOODHOUSE'S JAY

1901: 1 ♂, Alpine, May 6 (L. A. Fuertes collection).

1933: 1 ♂, 1 ♀, 12 miles N. of Marathon, Glass Mountains, May 24-31; 1 ♂, 20 miles S. of Marathon, Santiago Mountains, May 30.

1935: 1 ♂, 5 miles S. of Alpine, February 13; 1 ♂, 3 ♀, 4 miles W. of Alpine, Paradise Canyon, April 5-May 27; 3 ♂, Paisano Peak (foothills), May 27; 2 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, May 25-28.

Weight: February male, not fat, 84.2 grams; April female, some fat, "about to lay," 87 grams.

*Aphelocoma coerulescens texana* is the form listed from this county by C. E. Hellmayr,<sup>58</sup> but Oberholser has compared a series of our specimens with the Washington collections, which include the types of both forms. He reports that our specimens are *woodhousei*, although "somewhat intermediate toward *texana*."

As a rule we found these jays to be exceedingly wary. At Mount Ord, where we discovered a loose flock in the pines on May 29, 1933, we spent con-

<sup>58</sup> *Op. cit.*, Pt. 7, 1934: 54.

siderable time in vain pursuit. The birds made their way stealthily up the mountainside, giving us little more than an occasional flash of blue from their long tails. They called only infrequently, and their cries were low and furtive.

At Paisano Peak, in Paradise Canyon, and about Alpine they were much more approachable. In the live-oak groves five to ten miles south and west of Alpine we found them fairly common. In the Glass Mountains we found them most abundant in the oak woods in the southwestern part of the range and less so in the coniferous woodlands along the highway between Fort Stockton and Marathon.

J. K. Strecker<sup>59</sup> has described two nests of this species (for which he used the name *Aphelocoma texana*) containing five eggs each, found on May 10 and 12, 1905, in Dubois Canyon, northeast of Paisano Peak.

A female collected April 5, five miles west of Alpine, was laying eggs. On May 27, 1935, Semple found one egg in a nest about seven feet from the ground on a horizontal oak branch at the foot of Paisano Peak. There was a full set of four eggs in this nest on May 30, and we were able to touch the incubating female before she left the nest. We found a nest with three partly-fledged young in a scrub cedar in the Glass Mountains on May 28, 1935.

*APHELOCOMA SORDIDA COUCHII* (BAIRD). COUCH'S JAY

1901, 1928, 1932, 1933, 1935: 28 adult ♂, 15 adult ♀, 4 juvenile ♂, 6 juvenile ♀, 2 skeletons, Chisos Mountains, common everywhere above the lower limit of trees (about 5000 feet). Also: 1 adult ♀, 5 miles W. of Alpine, 5300 feet, March 25, 1935 (Van Tyne).

Measurements (in mm.): 20 adult males, wing, 140-162 (155.3), tail, 125-140 (133.6); 12 adult females, wing, 140-155 (148.6); tail, 125-138 (130.6). Weight (March; little or no fat): male, 102, 106.6, 98.5 grams; female, 94.7, 99.5, 91 grams.

One of the surprises of our 1935 field season was the collecting of the above-listed specimen near Alpine, the only record for Couch's Jay in the United States outside of the Chisos Mountains. It was collected in a live-oak grove where Woodhouse's Jays were common, and its identity was not recognized until after its capture.

Since the published descriptions of this subspecies provide no very satisfactory comparison between *couchii* and *arizonae* we offer the following comments: *couchii* is brighter, richer blue above than *arizonae*, especially on the head, rump, wings, and tail; in *couchii* the gray-brown of the back is darker and more contrasted with the blue of the head and neck than in *arizonae*; in *couchii* the throat is white in rather sharp contrast with the gray of the breast, while in *arizonae* the throat is gray, shading gradually into the gray

<sup>59</sup> "Field Notes on Western Texas Birds (Part One)," p. 10.



of the breast; the thighs of *couchii* are gray or blue-gray but in *arizonae* they are practically concolor with the flanks; the bill of young *arizonae* is mottled with yellowish, and this often persists for at least a year, but in *couchii* the bill becomes entirely black soon after the young bird leaves the nest. Our series of *couchii* is quite uniform in coloration.

Comparison of our notes with H. S. Swarth's<sup>60</sup> excellent account of *Aphelocoma s. arizonae* of the Huachuca Mountains reveals certain interesting differences. For example, Swarth states that the adult *arizonae* begins to molt about the first of August whereas *couchii* of the Chisos is molting heavily at least a month earlier; also we found Couch's Jay often very tame, rather than "wary and cunning."

On April 27, 1935, Semple found a nest and four eggs in a willow oak that stood along a dry stream bed at the lower margin of the Basin, in the Chisos Mountains, at about 5000 feet. The nest, which was compactly built, was about fifteen feet from the ground on a bough that extended over the stream bed. The eggs were fresh. The parent birds were noisy in defense of their nest. We noted that the beating of their wings produced a considerable sound. The eggs are Pale Nile Blue speckled and blotched with pale brownish markings, ranging from mere specks to blotches one and two millimeters in diameter. The markings tend to be concentrated more about the large end, and on one egg there is a distinct wreath of marks about that end. These eggs measure (in mm.):  $30 \times 23.5$ ,  $29.5 \times 23.5$ ,  $29 \times 24$ ,  $26 \times 22$ . Roy W. Quillin, who has also collected eggs of Couch's Jay in the Chisos Mountains, calls our attention to the fact that the eggs of the closely related *Aphelocoma sordida arizonae* are quite unlike those of *couchii* in being entirely unspotted.

On May 1, 1935, Sutton found two nests, the first, in the process of construction, in a pine tree not far from the trail to Laguna at an elevation of 6000 feet; the second with two eggs, an incomplete set, in an oak near Boot Spring. Both nests were well built, with an ample cup which was neatly lined with rootlets.

On May 17, 1932, Peet found a nest with three well-fledged young ten feet from the ground in a small oak tree near Boot Spring. Young just out of the nest were taken May 26, 1932, at the head of Blue Creek Canyon.

*CORVUS CORAX SINUATUS* WAGLER. AMERICAN RAVEN

1933: 1 ♂, 2 miles N. of Hot Springs, May 21 (A. C. Lloyd).

During 1933 and 1935 we found this raven along the Rio Grande at Hot Springs, Boquillas, San Vicente, the Johnson ranch, and Castalon. We also observed it several times in the Chisos Mountains and in a canyon west of Elephant Mountain. It is not a common bird, however, and but two nests

<sup>60</sup> *Op. cit.*, p. 30-32.

were found. One of these was situated on the northern wall of a gorge of the Rio Grande about a mile and a half below Hot Springs. The other was in an inaccessible niche on a cliff three miles west of Elephant Mountain. Here, on February 17 and again on March 6, 1935, a solitary bird was seen.

The male specimen taken by Lloyd (listed above) was shot as it flew from the carcass of a mule where several Turkey Vultures and another raven were feeding. Measurements of this specimen (in mm.) are: wing, 428; tail, 230; bill from base, 77; height of bill at nostril, 26; gape, 79; and tarsus, 73.

*CORVUS CRYPTOLEUCUS* COUCH. WHITE-NECKED RAVEN

1928, 1933, 1935: 4 ♂, 7 ♀, 2 sex not determined: 6 miles N. of Marathon, foothills of the Glass Mountains; 6 miles S. of Marathon; Glenn Spring; and other localities.

The White-necked Raven occurs throughout Brewster County, but it is common only locally, and we did not find it in the higher parts of the Chisos Mountains nor on Mount Ord. We saw none in winter in the northern part of the county. A pair observed February 24, 1935, at the Burnham ranch immediately north of the Chisos Mountains were said to have been there all winter. The following day a flock of about fifteen was sighted southeast of Chilicotal Mountain flying low over the desert into a rising dust storm. Numbers of ravens noticed March 13, 1935, at several points between Marathon and Alpine constituted our first record for the year in that area. Thereafter the species was seen regularly.

In latter May, 1935, a flock of White-necked Ravens roosted in a large cottonwood that stood near the Marathon railway station. The birds flew in at nightfall, seeking their perches with scarcely a sound, but in the morning they made a great outcry, much to the disturbance of the neighborhood. When these birds were frightened at night they flew out with considerable fluttering, then, after soaring about for a time, alighted once more in the tree.

In the vicinity of Marathon, the White-necked Raven breeds in considerable numbers, building its nests in yucca, mesquite, and hackberry rather than in cottonwood trees. We were surprised that eggs should be laid so late. In 1933 we failed to find eggs before May 24 (on which date a set of six fresh eggs was collected four miles north of Marathon), though we found nests that were apparently ready for eggs as early as May 2. Mated pairs selected and guarded their territories for weeks before beginning to build, driving off Red-tailed Hawks that chanced to fly by, and spending much of their time sitting together quietly. In 1935 we found a pair building their nest as early as April 20 at the Hess ranch, six miles north of Marathon, but did not discover any eggs until over a month later (a nest with one fresh egg, near Garden Springs, May 30). Somewhat incubated sets of five and six eggs were collected near Marathon respectively on May 27 and 29, 1933.

Vernon Bailey<sup>61</sup> has published a photograph and description of a nest found near Marathon on May 12, 1901. This nest was situated twelve feet from the ground in the top of a yucca and contained five eggs.

*GYMNORHINUS CYANOCEPHALUS CASSINII* (McCALL).<sup>62</sup> PIÑON JAY  
1935: 2 ♂, 16 miles NE. of Marathon, Glass Mountains, May 23.

A flock of over thirty Piñon Jays were seen on the McGonagill ranch in the Glass Mountains, sixteen miles north of Marathon, on the day the two specimens noted above were collected. According to Mr. D. Alex McGonagill, with whom we talked at some length concerning the birds, they are a characteristic species of the region in winter, but are practically never seen in summer. The two males which we took were not breeding birds, of course. The stomachs and crops of these individuals were filled with seeds of the scrub pine that we found to be fairly common in the region.

The Piñon Jay has not been previously recorded as far east as this in Texas.

*PARUS ATRICRISTATUS* SUBSP. BLACK-CRESTED TITMOUSE

1901: 1 ♂, Alpine, May 7 (L. A. Fuertes collection).

1928: 3 ♂, 3 ♀, 2 immature, Chisos Mountains, June 29–July 19.

1932: 5 ♂, 4 ♀, Chisos Mountains, May 5–June 19.

1933: 1 ♂, 20 miles S. of Marathon, Santiago Mountains, May 30; 8 ♂, 3 ♀, Chisos Mountains, May 9–20.

1935: 2 ♂, 2 ♀, 5 miles S. of Alpine, February 5–15; 1 ♀ (skeleton), 3 miles W. of Elephant Mountain, March 6; 3 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, April 13–25; 1 ♀, Chisos Mountains, March 20.

Specimens taken in February weighed: male, 17.2, 18.4 grams; female, 16.4, 17.4 grams (fat).

Brewster County specimens of the Black-crested Titmouse cannot be referred to *P. a. sennetti*, from which they differ in having a much more extensive and blacker cap, a darker and grayer, less olive, back, and darker and more extensive chestnut on the flanks; nor can they be referred to *P. a. atricristatus*, from which they differ in being larger, in having the crown duller, less glossy black, and in having the back more gray, less olive.

Throughout the forested parts of the Chisos Mountains the Black-crested Titmouse is the most common, or at least the most noisy and conspicuous species of bird. It apparently is resident also in the groves of live oaks in the northern part of the county, in the Santiago Mountains, the Glass Mountains, at Mount Ord, west of Elephant Mountain, and five miles south and west of Alpine.

At Upper Juniper Spring in the Chisos Mountains on May 1, 1932, we watched a pair carrying feathers into a nest-hole twelve feet from the ground

<sup>61</sup> "The White-necked Raven," *Condor*, 5, 1903: 88–89.

<sup>62</sup> Pierce Brodtkorb, "Geographical Variation in the Piñon Jay," *Occ. Papers Mus. Zool. Univ. Mich.*, 332, 1936: 2.

in a dead oak tree. As late as the middle of July, in 1928, we noted full-grown young in the Chisos Mountains following their parents about and being fed.

*AURIPARUS FLAVICEPS ORNATUS* (LAWRENCE). VERDIN

1901, 1928, 1932, 1933, 1935: 17 adult, 6 immature, 4, 12, and 15 miles S. of Marathon; Glenn Spring; Boquillas; San Vicente; Lajitas; Upper Juniper Spring (5000 feet), Chisos Mountains; and other localities.

The Verdin we noted everywhere in the desert, especially about mesquite. In 1932 a short-tailed juvenile was collected at Chilicotol Spring on May 30. In 1933 a nest with six fresh eggs was found near Marathon on May 2, two nests just ready for eggs were found on the Roberts ranch southwest of Marathon on May 3, and on the same day a nest with four almost fully-fledged young was discovered not far from Peña Creek about four miles south of Marathon. Along Maravillas Creek and at San Vicente several nests were found subsequently, but these were not examined.

In 1935 we observed one at Garden Springs on February 3. We collected a nest and four fresh eggs at Garden Springs on April 12, and on April 14 discovered a partly finished nest and a nest containing a mummified adult bird near Ridge Spring. On April 16 we observed a pair building their nest not far from the highway in the foothills of the Santiago Range, and on April 23 discovered a nest with three somewhat incubated eggs on the Roberts ranch about six miles southwest of Marathon. On April 24 we saw many mated pairs in the Peña Blanca Mountains, fifteen miles east of Marathon. We noted young birds just out of the nest at the Johnson ranch along the Rio Grande on May 13, and somewhat older juveniles on the Graham ranch just west of Boquillas on May 16. We collected a set of three fresh eggs at Garden Springs on May 29, and the next day we found a nest with four half-grown young there. The call notes we heard reminded us of the whistles of the Solitary Sandpiper.

A. J. van Rossem,<sup>63</sup> in his recent revision of the species lists a specimen of this race from Boquillas.

*PSALTRIPARUS MINIMUS PLUMBEUS* (BAIRD). LEAD-COLORED BUSH-TIT

1901: 1 ♂, Alpine, May 8; 1 immature ♀, Chisos Mountains, July 2 (L. A. Fuertes collection).

1928: 1 ♀, Chisos Mountains, Upper Juniper Spring, 5000 feet, July 11.

1932: 5 ♀, Chisos Mountains, Boot Spring, 6500 to 7000 feet, May 5-17.

1933: 1 ♂, 15 miles N. of Marathon, Glass Mountains, May 25; 1 ♂, 1 ♀, 1 immature, Chisos Mountains, Pine Canyon, May 13-19.

1935: 2 ♂, 5 miles S. of Alpine, 5000 feet, February 13; 1 ♂ (skeleton), 3 miles W. of Elephant Mountain, 4400 feet, March 6; 2 ♂, 1 ♀, 15-16 miles NE. of Marathon, Glass Mountains, April 13 to May 23; 1 ♂, 15 miles N. of Marathon, Glass Mountains,

<sup>63</sup> "The Races of *Auriparus flaviceps* (Sundevall)," *Trans. San Diego Soc. Nat. Hist.*, 6, 1930: 199-202.

5000 feet, April 20; 1 ♂, 2 ♀, 18 miles SW. of Marathon, Santiago Mountains, April 16.

Between January 28 and February 20, 1935, we encountered several flocks of twenty to thirty-five Lead-colored Bush-tits in the Alpine region (5000 to 5500 feet), and on March 6 a smaller flock three miles west of Elephant Mountain (4400 feet). These flocks usually fed among the live oaks, but sometimes they wandered far out into the desert where there were only a few small bushes for cover.

In all specimens in which eye color was recorded (six males and nine females) the eyes of males of this species were dark brown, of females "whitish" to "light straw yellow." A. J. van Rossem's<sup>64</sup> field experience with this and two other subspecies of *P. minimus* agrees with ours in that he found the eyes of the males "dark" and those of the females "light."

Females which had been laying eggs were collected May 5 and 17, 1932, in the Chisos Mountains (6500 to 7000 feet) and April 16, 1935, in the Santiago Mountains. F. M. Bailey<sup>65</sup> has described a nest found in the Chisos Mountains in 1901 "12 to 15 feet from the ground in a nut pine, a greenish bag 6 or 8 inches long, made of lichens, oak flowers, and catkins, woven with cocoon silk. Eggs: 4, white."

Two February males weighed 5.5 (fat) and 5.2 grams.

From the fact that our Brewster County specimens of *minimus* number ten males to eleven females, we may judge that the two sexes in this species are about equally numerous. In *P. melanotis* males apparently outnumber the females considerably.

*PSALTRIPARUS MELANOTIS LLOYDI* SENNETT. LLOYD'S BUSH-TIT

1901: 1 ♀, Chisos Mountains, June 5 (L. A. Fuertes collection).

1914: 2 ♂, Chisos Mountains, January 30-31 (F. B. Armstrong, Thayer collection).

1928: 2 ♂, 2 ♀, Chisos Mountains, Boot Spring, 6500 feet, July 15-21; 2 ♂, Chisos Mountains, Upper Juniper Spring, 5000 feet, July 11 and 23.

1932: 5 ♂, Chisos Mountains, Boot Spring Canyon and Emory Peak, 6500 to 7000 feet, May 5-22.

1933: 3 juvenile ♂, 1 juvenile ♀, 12 miles N. of Marathon Glass Mountains, May 25;

1 ♂, Mount Ord, May 29; 3 ♂, Chisos Mountains, Pine Canyon, 6000 feet, May 9-19.

1935: 2 ♂, Chisos Mountains, Basin, 5600-5700 feet, March 21 and 23.

As indicated by the above list of specimens, this species is confined to the higher altitudes in Brewster County. None were seen outside the regions where specimens were collected.

The best characters for distinguishing this species from *Psaltriparus minimus* are: black on the sides of the nape and on the auricular region, gray crown contrasting strongly with the more olivaceous back, throat usually much whiter than the rest of the under parts, strong vinaceous wash on sides

<sup>64</sup> "A Note on the Color of the Eye of the Bush-tit," *Condor*, 37, 1935: 254.

<sup>65</sup> *Handbook of Birds of the Western United States*, p. 462.

and flanks. In addition the "face" is not Drab or Light Drab as in *plumbeus*, but is Hair Brown (in males this brown is usually suffused or mottled with black in varying degree). A dozen of our Brewster County males can be arranged in a series to show perfect gradation from a face that is nearly pure Hair Brown to one that is practically black. Many of the intermediates show a curious mottling of black on a brown background. We were at first inclined to consider that the more brown-faced specimens were immature, but three juvenal-plumaged males collected by A. C. Lloyd on May 25, 1933, are among the most black-faced of the whole series. In these juvenile birds the vinaceous wash on the flanks is almost imperceptible. The black-faced juveniles make it obvious that the description by Ridgway,<sup>66</sup> which characterizes the young males of *lloydi* as having only black ear coverts, is inadequate. Apparently Sennett<sup>67</sup> was correct in stating that the young are "similar to adults." Of the three adult females examined, one (June 5) has a Hair Brown face, well-marked auricular region, and a strong vinaceous wash below; the other two, more worn females (July 21), are separable from *plumbeus* only by grayer faces and by blackish auricular feathers.

In all of the male *P. m. lloydi* in which the eye color was noted (seven specimens), the iris was dark brown. We do not know the eye color of the females. A. F. Skutch<sup>68</sup> found in Guatemala that the males of *melanotis* have dark brown eyes and that the females have yellow eyes.

We do not agree with Hellmayr's<sup>69</sup> concept of *lloydi* (which he had not examined) as a race of *P. minimus*. All of the forty-three Brewster County specimens we have examined are without exception clearly *melanotis* or *minimus*. In this region *melanotis* is confined to higher altitudes more definitely than is *minimus* but the breeding ranges of the two forms overlap widely and their relations seem to be those of two distinct species. The only bit of contrary evidence we noted was the fact that on May 5, 1932, Dr. Peet collected at Boot Spring an adult male *melanotis* in company with a breeding female *minimus*. The two birds seemed to be traveling together, and no other Bush-tits were seen about at the time. The whole problem of the relation between these two forms is a fascinating one which calls for more study in this critical region.

Two March males which were but slightly fat weighed 5.9 grams each.

There is probably a very unequal sex ratio in this species. A. F. Skutch<sup>70</sup> found that the males of this species in the mountains of Guatemala out-

<sup>66</sup> *Op. cit.*, Pt. 3: 429-430.

<sup>67</sup> "Descriptions of a Species and Two New Subspecies of Birds from Texas," *Auk*, 5, 1888: 43.

<sup>68</sup> "Helpers at the Nest," *Auk*, 52, 1935: 265-268.

<sup>69</sup> *Op. cit.*, Pt. 7, 1934: 90-91.

<sup>70</sup> *Loc. cit.*

number the females "by four or six to one," and the Brewster County specimens listed here show a ratio of twenty males to four females. We were not conscious of selecting males in the collecting which produced this series. Indeed these Bush-tits usually come and go so quickly that the collector must shoot quickly and ordinarily cannot do any choosing.

*SITTA CAROLINENSIS NELSONI* MEARNS. ROCKY MOUNTAIN NUTHATCH  
1928, 1932, 1935, 1936: 11 ♂, 8 ♀, 1 immature, sex not determined: Blue Creek Canyon, Boot Spring, Laguna, and other points in the Chisos Mountains above 6500 feet.

The Rocky Mountain Nuthatch is fairly common in the more heavily forested parts of the Chisos Mountains, especially in Boot Spring Canyon. We did not find it below 6500 feet.

A male and a female collected March 23 weighed 15.5 and 16 grams respectively.

*CERTHIA FAMILIARIS AMERICANA* BONAPARTE. BROWN CREEPER  
1936: 1 ♂, Hot Springs, November 9 (A. E. Borell).

In addition to the specimen collected at Hot Springs, Mr. Borell saw a Brown Creeper October 31 and again on November 1, 1936, at Laguna, Chisos Mountains. Brewster County is far southwest of the previously known winter range of the eastern Brown Creeper.

*TROGLODYTES DOMESTICUS PARKMANII* AUDUBON. WESTERN HOUSE WREN  
1901: 1 ♂, Alpine, May 6 (L. A. Fuertes collection).  
1933: 1 ♂, 4 miles S. of Marathon, May 2; 1 ♀, 6 miles S. of Marathon, May 4; 1 ♀, Chisos Mountains, Pine Canyon, May 9.

*THRYOMANES BEWICKII EREMOPHILUS* OBERHOLSER. BAIRD'S WREN  
1901: 1 ♂, Chisos Mountains, June 8 (Biol. Survey); 1 ♂, Terlingua, June 29 (L. A. Fuertes collection).  
1928: 1 ♂, Chisos Mountains, Upper Juniper Spring, 5100 feet, July 7.  
1932: 6 ♂, 3 ♀, Chisos Mountains: Boot Spring, Blue Creek Canyon, Emory Peak, at 6500-7500 feet, May 3-18.  
1933: 2 ♂, Glass Mountains, 12 and 15 miles N. of Marathon, May 26 and 25; 3 ♂, 1 ♀, Chisos Mountains, Pine Canyon, May 17 and 19.  
1935: 2 ♀, 25 miles NE. of Marathon, Glass Mountains, April 18; 1 ♀, 15 miles NE. of Marathon, Glass Mountains, April 13; 1 ♂, 15 miles N. of Marathon, Glass Mountains, 5500 feet, April 20; 1 ♂, 2 ♀, 15 miles E. of Marathon, Peña Blanca Mountains, April 24; 1 ♂, Peña Creek, 4 miles SW. of Marathon, February 28; 1 ♂, 1 ♀, 22 miles S. of Alpine, Calamity Creek, 4500 feet, March 15 and 16; 2 ♂, Chisos Mountains, Casa Grande (5700 feet) and Laguna (7086 feet), April 29 and 27.

Measurements (in mm.): male, wing, 54-60; tail, 55.5-59; female, wing, 53.5-56, tail, 48-57.5. Two males (February 28 and March 15) weighed 10.4 and 10.7 grams. One female (March 16) weighed 10.4 grams. All three had some fat.

H. S. Swarth<sup>71</sup> states that in *eremophilus* the tail is longer than the wing, but this is not true of all of the Brewster County series. In about half of our series the wing is longer than the tail.

On March 15, 1935, we found a male in full song at the Calamity Creek bridge (4500 feet), south of Alpine, and between March 19 and 23 we found males singing in the Chisos Basin (5200-6500 feet). Females collected in Boot Spring Valley May 3 and 9, 1932, were about to lay. During that month we located many singing males in the higher parts of the Chisos Mountains, and came to consider the species fairly common there. On April 25, 1935, Semple found a deserted nest in the Glass Mountains in a dead yucca stalk, in a cavity about eighteen inches from the ground. One Baird's Wren was found in the stomach of a Roadrunner, as noted under that species.

Examination of this series of twenty-nine adults from Brewster County, all but two taken between February 28 and May 26, shows that we have here two well-marked color phases, a gray and a brown one. Chancing to get only gray-phase specimens in 1932, we thought that we were dealing with a very distinct new subspecies which was much more gray than *eremophilus*. Later collections, however, yielded largely brown-phase specimens and that phase is now somewhat in the majority in our series. We cannot distinguish brown-phase Brewster County specimens from comparable Arizona and New Mexico specimens. Seven of the males in our series are of the gray type and twelve are brown. It should perhaps be emphasized that fading and wear have nothing to do with the color phases. For example, brown-phase males in our series were collected on many dates ranging from February 28 to July.

*HELEODYTES BRUNNEICAPILLUS COUESI* (SHARPE). CACTUS WREN

1928, 1932, 1933, 1935: 9 ♂, 6 ♀, 6 juvenile, from 8 miles SE. of Marathon, 12 and 16 miles SW. of Marathon, Juniper Canyon, Glenn Spring, Terlingua, Lajitas, and other localities.

Cactus Wrens were fairly common in the desert, especially in the draws where the brush was dense, but they were always shy and hard to approach. In the Chisos Mountains they were noted up to 5000 feet in Juniper Canyon and to 5100 feet in the Basin. Our winter records are of one seen fourteen miles south of Alpine on January 30, one eight miles east of Alpine on February 3, 1935, and a male collected ten miles east of Alpine on November 5, 1932 (George B. Saunders).

In 1933 a nest with four fresh eggs was discovered on April 29, four miles south of Marathon, and a young bird not long out of the nest was collected the same day. On May 30 a nest with four somewhat incubated eggs was found at the northern base of the Santiago Mountains. On June 2

<sup>71</sup> "The Pacific Coast Races of the Bewick Wren," *Proc. Calif. Acad. Sci.*, 4th Ser., 6, 1916: 80.



a nest was found eighteen feet from the ground in a large cottonwood tree not far from Peña Creek, south of Marathon.

In 1935 we found a nest just ready for eggs at Garden Springs, on April 14; two partly finished nests in the Basin in the Chisos Mountains on April 28, four young birds just out of the nest at Lajitas on May 10, a nest with one young bird and four eggs at the point of hatching, not far from Marathon on May 29, and a nest (contents unknown) that was built about twenty feet from the ground in a walnut tree, in the foothills of the Santiago range about eighteen miles southwest of Marathon, also on May 29.

*CISTOTHORUS*<sup>72</sup> *PALUSTRIS PLESIUS* OBERHOLSER

WESTERN LONG-BILLED MARSH WREN

1935: 1 ♂, 4 ♀, 4 miles SW. of Marathon, Peña Creek, April 16-23; 3 ♀, Castalon, May 4-7.

Oberholser examined the above series and made the identification for us.

We encountered the Western Long-billed Marsh Wren only in mid-April and early May of 1935, and only in the vicinity of Marathon and Castalon. On April 12 we noted a single bird in a small stand of cattails at a cattle pond seventeen miles northeast of Marathon. From April 13 to 22 we saw from one to six birds daily among cattails that grew along Peña Creek, about four miles southwest of Marathon. On April 22 we collected specimens there and found the remains of two nests that had the appearance of having been used the season before. All individuals collected were very fat and, judging from the development of their gonads, were transients rather than summer residents.

On May 4 we took two nonbreeding females from grass-grown willow thickets near the Rio Grande at Castalon.

When we returned to the Marathon region in late May, we found the stands of cattail in which these wrens had been living completely destroyed by the half-starved cattle.

*CATHERPES MEXICANUS ALBIFRONS* (GIRAUD)

WHITE-THROATED CANYON WREN

1901: 1 ♀, Chisos Mountains, June 1 (L. A. Fuertes collection).

1914: 2 ♂, Chisos Mountains, January 9-February 9 (F. B. Armstrong, Thayer collection).

1928: 1 ♂, 1 ♀, Chisos Mountains, Juniper Canyon, 5000 to 6000 feet, July 6-12; 1 ♀, 1 immature (sex not known), Glenn Spring, July 2.

1932: 1 ♂, Chisos Mountains, Boot Spring, 6500 feet, May 5; 1 ♂, 8 miles SE. of Glenn Spring, 1900 feet, June 6.

1933: 1 ♀, Chisos Mountains, Juniper Canyon, May 17.

1935: 1 ♂, Chisos Mountains, Casa Grande, 6000 feet, April 27.

Adults in the above series measure (in mm.): males, wing, 64, 66, 65, 66; tail, —, 55, 52.5, 57; females, wing, 61, 59, 61, 59; tail, 51, —, 52.5, 51, 54.

<sup>72</sup> See C. E. Hellmayr, *op. cit.*, Pt. 7, 1934: 114.

J. Grinnell and W. H. Behle<sup>73</sup> have shown that only two subspecies of the Canyon Wren, *albifrons* and *conspersus*, can be recognized within the United States. As may be seen by the above measurements, all of our specimens are larger than the largest of the considerable series of *conspersus* examined by Grinnell and Behle.

The Canyon Wren was noted as common on the cliffs along the Rio Grande at Boquillas, Hot Springs, and eight miles southeast of Glenn Spring; also at many points in the Chisos Mountains, including Emory Peak, Boot Spring, Casa Grande, Pulliam Bluff, Upper Juniper Spring, and the south rimrock.

On February 17 and March 6, 1935, several were seen in a sheltered canyon, three miles west of Elephant Mountain.

Frederick M. Gaige collected one in juvenal plumage at Glenn Spring on July 2, 1928.

*SALPINCTES OBSOLETUS OBSOLETUS* (SAY). ROCK WREN

1932, 1933, 1935: 11 ♂, 6 ♀, 1 juvenile ♂, 1 juvenile ♀, Glass Mountains north of Marathon; 4 miles S. of Marathon; 22 miles S. of Alpine, Calamity Creek; 18 miles SW. of Marathon, Santiago Mountains; several points in Chisos Mountains; and other localities.

The Rock Wren was seen at many widely scattered points throughout the county but rarely within the forested parts of the Chisos Mountains.

During February, 1935, the species was noted south of Alpine, near Marathon, and at the north edge of the Chisos Mountains.

A female collected March 16, 1935, was carrying sticks into a hole in a cliff twenty feet above Calamity Creek near the bridge twenty-two miles south of Alpine. An incubating female was taken May 22, 1932, on the south rimrock of the Chisos Mountains at 7000 feet. Juveniles which had left the nest were collected at Glenn Spring (May 31, 1932) and at Hot Springs (May 18, 1933).

On May 10, 1935, a nest containing five well-developed young was found in an inaccessible hole in a high clay bank not far from the Rio Grande near Lajitas. The parent birds were exceedingly busy feeding these young, which called loudly whenever any sort of bird flew past their nest. On May 25, 1935, several young just out of the nest were observed in the Glass Mountains about fifteen miles northeast of Marathon.

*MIMUS POLYGLOTTOS LEUCOPTERUS* (VIGORS). WESTERN MOCKINGBIRD

1928, 1932, 1933, 1935: 11 ♂, 2 ♀, 2 immature ♂, 2 immature ♀, from Glass Mountains, 25 miles NE. of Marathon; Mount Ord, 4 miles S. of Marathon; Glenn Spring; San Vicente; and other localities.

The Mockingbird was common throughout the region except in the higher, forested parts of the Chisos Mountains. On the hot, south slope of the Chisos

<sup>73</sup> "Comments upon the Subspecies of *Catherpes mexicanus*," *Condor*, 37, 1935: 247-251.

Mountains we collected specimens as high as the south rimrock at 7000 feet (May 19-21, 1932). We saw none in winter in the northern part of the county, but on February 24, 1935, noted one at Moss Well (4500 feet) on the north side of the Chisos Mountains. A male collected along Calamity Creek, twenty-two miles south of Alpine on March 8, 1935, is our earliest record that far north in the county, and April 3, 1935, was the earliest date we recorded for the latitude of Alpine (one seen ten miles east).

We found several nests during late May, 1935, the first of these with three fresh eggs, at Garden Springs on May 24; the second and third, with two and three eggs respectively, along Maravillas Creek about fifteen miles southwest of Marathon on May 29; and the fourth, with four somewhat incubated eggs, at the foot of Paisano Peak on May 30.

*TOXOSTOMA CURVIROSTRE CURVIROSTRE* (SWAINSON)

CURVE-BILLED THRASHER

1901: 1 ♀, 25 miles S. of Alpine, July 3 (L. A. Fuertes collection).

1932: 1 ♂, 1 ♀ (breeding pair), 1 nestling, 1½ miles SE. of Glenn Spring, May 29.

1933: 1 ♂, 1 ♀ (breeding pair), 15 miles NE. of Marathon, Glass Mountains, May 24; 1 ♂, 1 ♀ (breeding pair), 12 miles SW. of Marathon, Maravillas Creek, May 3; 1 ♀, Garden Springs, May 8; 1 ♂, 17 miles SW. of Marathon, foothills of Santiago Mountains, May 27; 1 ♂, 12 miles SW. of Marathon, Roberts ranch, May 31; 2 ♂, about 20 miles SW. of Marathon, road through Santiago Mountains, May 22.

1935: 1 ♂, 1 ♀, 5 miles S. of Alpine, February 8 and March 12; 1 ♂, 20 miles S. of Marathon, May 22; 1 ♂, 15 miles SW. of Marathon, Maravillas Creek, April 10; 1 ♂, 18 miles N. of Hot Springs, along highway to Marathon, May 22.

The above adult specimens measure (in mm.): male, wing, 104, 114, 113, 105, 112, 111, 114, 115, 119, 116; tail, 105, 118, 115, 109, 112, 110, 114, 119, 115, 116; female, wing, 104, 106, 108, 104, 109, 109, 113; tail, 108, 105, 111, 107, 113, 113, 110. Bearing in mind the nonuniformity of these measurements we feel that our series cannot be identified as *T. c. oberholseri* Law; furthermore we seriously doubt the advisability of recognizing such a form as *oberholseri*, which differs from the typical race only in "mass average" of "length of wing and tail" and in no other way.

During 1932 Van Tyne found a nest with an egg and a young bird in a small yucca a mile and a half southeast of Glenn Spring on May 29. The down of the nestling was Chaetura Drab above and whitish on the chin and ventral tracts, the lining of the mouth was Yellow Ocher.

In 1933 we found the species at several points in the southern part of the county: at Maravillas Creek, twelve miles southwest of Marathon, where a breeding pair were taken on May 3; at Garden Springs, where an incubating female was collected May 8; at several points along the Marathon-Hot Springs highway on May 22; in the Glass Mountains, fifteen miles northeast of Marathon, where a mated pair were taken on May 23; in the Mount Ord region where several were seen on May 29; and on the Roberts ranch, twelve

miles southwest of Marathon, where a male that had eaten a full-grown blind-worm<sup>74</sup> was collected May 30.

In 1935 the species was seen throughout February in the vicinity of Alpine. The birds seemed to stay together in the manner of mated pairs. The species is probably a permanent resident in Brewster County. A pair found March 21 at one of the CCC encampments in the Chisos Mountains (5200 feet) marked the highest point at which *curvirostre* was found. The Carnegie-Cornell party recorded the species at several points in 1935, notably in the Glass Mountains, twenty-five miles northeast of Marathon in a cedar-studded country; at Garden Springs, on the Combs ranch, thirteen or fourteen miles south of Marathon; in the foothills of the Santiago range; and at the base of the Chisos Mountains about eighteen miles north of Hot Springs where on May 22 a breeding male was taken.

The iris of our specimens was Cadmium Yellow or Orange, not "red," as are the eyes of New Mexican birds, according to Mrs. Bailey.<sup>75</sup> This is evinced by notations on the labels of specimens collected by Van Tyne as well as by a sketch of a freshly-killed bird made by Sutton on May 22, 1933. The sketch shows a narrow ring of clear yellow about the pupil, which ring rather abruptly shades into orange.

Two of our breeding specimens are considerably worn below, as if by slipping through rough twigs in going to and from the nest. The belly plumage of a female bird taken near Garden Springs on May 8, 1933, is so badly worn that only the shafts with a few barbs and barbules remain.

*TOXOSTOMA DORSALE DORSALE* HENRY. CRISSAL THRASHER

1928: 1 immature bird, Chisos Mountains, Juniper Canyon, 5500 feet, July 17.

1932: 1 ♂, Glenn Spring, June 4.

1933: 1 ♂, 1 ♀, 4 miles SW. of Marathon, Peña Creek, May 3; 2 ♂ (1 immature), 15 miles SW. of Marathon, Maravillas Creek, May 3-6; 1 ♂, 1 ♀ (both juvenile), 17 miles SW. of Marathon, foothills of the Santiago Mountains, May 23-27; 1 ♀ (juvenile), 12 miles S. of Marathon, Combs ranch, June 1; 1 ♂, 2 miles W. of Boquillas, May 16.

1935: 1 ♀, 15 miles NE. of Marathon, Glass Mountains, May 28; 2 ♂, Garden Springs, May 22-30; 1 ♂, 1 ♀, 13 miles S. of Marathon, Combs ranch, April 17; 1 ♂, Lajitas, May 8.

These nimble-footed thrashers, which we found surprisingly difficult to observe or to collect, are fairly common in the brush-covered lowlands of Brewster County, and locally so in the Glass Mountains, in the Chisos Mountains (Basin), and about the lower slopes of Mount Ord and Paisano Peak.

We found two nests in 1935, the first with three somewhat incubated eggs, on May 28, in the Glass Mountains (about 5500 feet), 15 miles northeast of

<sup>74</sup> This "blind-worm" is a small species of snake. The specimen, preserved in the Cornell University collection, was identified by Dr. A. H. Wright as *Leptotyphlops myopica* (Garman). It is about 200 mm. in length.

<sup>75</sup> *The Birds of New Mexico*, p. 557.

Marathon; the second with three fresh eggs, on May 30, at the foot of Paisano Peak. The first of these nests was about three feet from the ground in a leafless, scrub-oak thicket; the second was about six feet from the ground in a thorny tree at the edge of a woodland. Both the male and female incubate, for a female was collected at the nest found May 28, and on May 30 a male with a well-defined brood-patch was taken.

The eye of this species is interesting in that the grayish brown iris is much lighter, almost a golden color, about the pupil than at the periphery, and the outer portion is somewhat clouded or marbled in appearance. This gives the face of the bird an alert, staring, almost reptilian expression.

On July 2, 1936, Tarleton F. Smith found a nest with three well-grown young in the Basin at an altitude of 5200 feet.

*OREOSOPTES MONTANUS* (TOWNSEND). SAGE THRASHER

1935: 1 ♀, 15 miles N. of Marathon, Glass Mountains, 5000 feet, April 20.

On February 27, 1935, we observed a Sage Thrasher in the open country about a mile south of Alpine. The female specimen listed above is in the molt, a few of the flight feathers being only partly grown.

*TURDUS MIGRATORIUS PROPINQUUS* RIDGWAY. WESTERN ROBIN

1933: 1 ♀, 12 miles S. of Marathon, May 6.

1935: 2 ♂, 22 miles S. of Alpine, Calamity Creek, March 15.

Robins were seen several times in 1933, never more than one individual at a time: Marathon, May 1, 2, and 5; Maravillas Creek, fifteen miles southwest of Marathon, May 6; Pine Canyon, Chisos Mountains, May 9; and Hot Springs, May 21.

On February 17, 1935, we saw three in a wooded canyon three miles west of Elephant Mountain and one near the Calamity Creek bridge, twenty-two miles south of Alpine. In the latter locality we saw two on March 4; and by March 15 at least eighteen had gathered there to feed on the large yellow berries which still hung in abundance on some small trees. By March 29 the number of robins in this favorable locality had increased to more than seventy-five. Those collected were quite fat. They weighed 83.5 and 95.5 grams.

On November 28, 1936, Mr. A. E. Borell saw three in the Basin, Chisos Mountains.

*HYLOCICHLA GUTTATA GUTTATA* (PALLAS). ALASKA HERMIT THRUSH

1914: 1 ♂, Chisos Mountains, January 25 (Mus. Comp. Zool.).

1933: 1 ♀, Chisos Mountains, Pine Canyon, May 11 (A. C. Lloyd).

1936: 1 ♂, Chisos Mountains, Green Gulch, 5000 feet, November 14 (A. E. Borell).

*HYLOCICHLA GUTTATA SLEVINI* GRINNELL. MONTEREY HERMIT THRUSH

1932: 1 ♀, Chisos Mountains, Boot Spring Canyon, 7300 feet, May 5 (Peet).

*HYLOCICHLA GUTTATA SEQUIIENSIS* (BELDING). SIERRA HERMIT THRUSH  
1901: 1 ♂, Alpine, May 4 (L. A. Fuertes collection).

*HYLOCICHLA GUTTATA POLIONOTA* GRINNELL. MONO HERMIT THRUSH  
1932: 1 ♂, 1 ♀, Chisos Mountains, Boot Spring Canyon, 6900-7000 feet, May 12-16.  
1933: 1 ♀, Chisos Mountains, Pine Canyon, May 9.  
1935: 1 ♂, Chisos Mountains, Basin, 5700 feet, April 27.

All of our Hermit Thrush specimens were identified for us by Oberholser. The 1932 specimens listed above were also compared at the Museum of Vertebrate Zoology by Joseph Grinnell, who concurs in this surprising identification.

*HYLOCICHLA GUTTATA AUDUBONI* (BAIRD). AUDUBON'S HERMIT THRUSH  
1932: 3 ♂, 2 ♀, 1 sex not known, Chisos Mountains, Boot Spring Canyon, 6500-7000 feet, May 5-22.  
1933: 3 ♂, 1 ♀ (?), Chisos Mountains, Pine Canyon, May 9-19.  
1935: 3 ♂, 2 ♀, 16 miles NE. of Marathon, Glass Mountains, April 25-May 23; 1 ♀, 6 miles E. of Hot Springs, May 17.

There is no evidence of the Hermit Thrush remaining to breed in Brewster County, although Sutton and Semple noted it as late as May 30, 1935, on which date one was seen at nightfall along the dry stream bed in Paradise Canyon, four miles west of Alpine. On May 25, 1935, several were seen in the Glass Mountains about fifteen miles north of Marathon.

*HYLOCICHLA GUTTATA OROMELA* OBERHOLSER.<sup>76</sup> CASCADE HERMIT THRUSH  
1914: 2 ♂, Chisos Mountains, January 22-February 13 (Mus. of Comp. Zool.).  
1933: 3 ♀, Chisos Mountains, Pine Canyon, May 13.  
1935: 2 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, April 13-20; 1 ♂, 18 miles SW. of Marathon, Santiago Mountains, April 16; 1 ♂, 2 ♀, Chisos Mountains, Green Gulch and Basin, 5500 to 5700 feet, March 21-May 2; 1 ♀, Terlingua, May 6.

*HYLOCICHLA USTULATA ALMAE* OBERHOLSER.<sup>77</sup> OLIVE-BACKED THRUSH  
1932: 1 ♀, Chisos Mountains, Boot Spring, 6900 feet, May 20 (Peet).

We are indebted to Oberholser for the identification of this specimen.

*SIALIA MEXICANA BAIRDI* RIDGWAY. CHESTNUT-BACKED BLUEBIRD  
1935: 2 ♂, 5 miles S. of Alpine, February 13-March 14.

The Chestnut-backed Bluebird is fairly common in winter in at least the northern part of the county. In 1935 we saw small flocks of as many as fifteen birds at Peña Creek, four miles southwest of Marathon; Paisano Peak; Calamity Creek, twenty-two miles south of Alpine; and at many intermediate points. Within this area the species frequented the same habitats as the Mountain Bluebird, which was only slightly less common;

<sup>76</sup> "Descriptions of New Birds from Oregon, Chiefly from the Warner Valley Region," p. 8.

<sup>77</sup> "Description of a New North American Thrush," *Auk*, 15, 1898: 303-306.

but the two species were never noted in the same flock. The Chestnut-backed Bluebird was not seen after the middle of March.

The two specimens collected weighed respectively 20.3 and 30.3 grams. The first was very thin, but the second one taken was fat.

*SIALIA CURRUCOIDES* (BECHSTEIN). MOUNTAIN BLUEBIRD

1935: 1 ♂, Alpine, March 13; 1 ♀, Castalon, May 6.

In 1935 the Mountain Bluebird was seen regularly in winter, especially in the grasslands about Marathon and Alpine, and in the piñon area south of Alpine. Flocks of as many as thirty birds were counted. On March 21 and 24, 1935, small flocks were seen at 6000 feet on the north side of Casa Grande in the Chisos Mountains. The female bird taken at Castalon on May 6 (listed above) was not accompanied by a mate. Our latest date is that of a male seen at 6000 feet in Pine Canyon in the Chisos Mountains on May 9, 1933.

The March specimen was fat and weighed 31.4 grams.

*MYADESTES TOWNSENDI* (AUDUBON). TOWNSEND'S SOLITAIRE

1933: 3 ♀, Chisos Mountains, Pine Canyon, May 9-13.

1935: 1 ♀, 5 miles W. of Alpine, 5300 feet, March 25; 1 ♀, 13 miles S. of Marathon, Combs ranch, April 19.

In addition to the above, we have four records for 1935: a single bird April 26, Garden Springs; a single bird April 28, in the Basin, Chisos Mountains, at about 5600 feet; two birds May 1 at Boot Spring, Chisos Mountains, at 6500 feet; and two birds May 3 in the Basin, Chisos Mountains, at about 5300 feet. The two last-named birds were frequent visitors at the CCC encampment, where they came to feed and to drink, notably on May 3.

The female collected in March weighed 31.2 grams.

*POLIOPTILA CAERULEA AMOENISSIMA* GRINNELL

WESTERN BLUE-GRAY GNATCATCHER

1901: 1 ♀, Alpine, May 4 (L. A. Fuertes collection).

1928: 1 ♂, 2 ♀, 1 immature ♀, 1 immature sex unknown, Chisos Mountains, Upper Juniper Spring, July 8-18; 1 ♀, Boquillas, August 3.

1932: 3 ♂, 4 ♀ (2 skeleton), Chisos Mountains, Boot Spring Canyon, 6500-7000 feet, May 2-25; 1 ♀, 3 miles W. of Marathon, April 27.

1933: 3 ♂, Chisos Mountains, Pine Canyon, May 11-19; 1 ♂, 1 ♀, Chisos Mountains, Juniper Canyon, May 17.

1935: 1 ♂, Garden Springs, April 12; 1 ♀, Chisos Mountains, Basin, 5300 feet, April 27.

The Western Blue-gray Gnatcatcher is rather common in the Glass Mountains, the Peña Blancas, the Santiagos, and in the Chisos from about 5000 to 7000 feet.

On March 23, 1935, in the Chisos Mountains (Basin, 5600 feet) a male was noted courting very actively—intense singing and display ending in impetuous and sustained pursuit. On April 27, 1935, a "laying" female

was collected, and a nest just ready for eggs was found a few feet from the ground in a small oak, a short distance below the base of the cliffs at about 6000 feet, at Casa Grande. Another "laying" female was collected May 9, 1932, at Boot Spring, 6500 feet. At the same place on May 16, 1932, a male was constructing a nest in a multiple crotch about fifteen feet from the ground.

Tarleton F. Smith reports finding a nest with four eggs in the Basin (5200 feet) on July 3, 1936.

*POLIOPTILA MELANURA MELANURA* LAWRENCE. PLUMBEOUS GNATCATCHER

1901: 1 ♂, Terlingua, June 29 (L. A. Fuertes collection).

1928: 1 ♂, Chilicotal Spring, June 21; 1 immature ♂, 1 immature ♀, Glenn Spring, June 20 and July 28.

1932: 2 ♂, Glenn Spring, May 31-June 4; 2 ♂, 1 ♀, 1 immature sex not known, San Vicente, May 29-June 18.

1933: 2 ♂, 12 miles S. of Marathon, May 3 and 5; 1 ♂, 6 miles E. of Hot Springs, May 15.

1935: 1 ♀, Boquillas, February 25; 1 ♂, Garden Springs, April 14; 1 ♂, Peña Blanca Mountains, April 24; 1 ♂, 15 miles SW. of Marathon, Maravillas Creek, April 10.

Both the present species and the Western Blue-gray Gnatcatcher are common in the county, but the Plumbeous is a bird of the river banks and low country, while the Western Blue-gray is a bird of the mountains. We found the Plumbeous especially abundant in the dense thickets of mesquite in the ravines and along the Rio Grande in the vicinity of San Vicente, along the Maravillas near Marathon, and in the foothills of the Peña Blanca Mountains.

On April 14, 1935, we collected a nest, four heavily incubated eggs, and the male parent at Garden Springs. The nest was situated about three feet from the ground in a thickly-leaved thorn bush that was growing under a huge cottonwood. On May 4, 1935, a pair and their four well-fledged young were encountered in an arid valley not far from Terlingua. On May 13 and 16, 1935, fully-fledged young were seen respectively at the Johnson ranch, along the Rio Grande, and near Hot Springs. On May 29, 1932, a female that had been laying eggs was secured near San Vicente. On May 29, 1935, a nest and four fresh eggs were taken along Maravillas Creek, about fifteen miles southwest of Marathon. Tarleton F. Smith found a nest with three eggs southwest of Neville Spring on August 6, 1936.

The female taken in February weighed 5.2 grams.

*REGULUS CALENDULA CALENDULA* (LINNAEUS)  
EASTERN RUBY-CROWNED KINGLET

1932: 1 ♂, Marathon, April 27.

1935: 1 ♀, 5 miles S. of Alpine, February 5; 1 ♀, Santiago Mountains, April 16; 2 ♀, Chisos Mountains, Basin, 5300 and 5500 feet, April 30 and May 3; 1 ♀, Castalon, May 7.



During February, March, and April, 1935, Ruby-crowned Kinglets were seen regularly at nearly every point visited where there were any trees. In addition to the collecting stations listed above we noted the species at Garden Springs, three miles west of Elephant Mountain, and Boquillas. The last individual recorded was collected at Castalon on May 7.

*ANTHUS RUBESCENS RUBESCENS* (TUNSTALL). EASTERN PIPIT

1935: 1 immature ♂, 17 miles NE. of Marathon, March 11; 1 ♂, 4 miles SW. of Marathon, Peña Creek, April 11.

The specimen taken March 11 is in the brown, heavily streaked plumage of the first winter. Too little is known about the immature plumages of the several forms of this pipit to enable us to determine the specimen subspecifically, but we list it here provisionally.

*ANTHUS RUBESCENS ALTICOLA* TODD.<sup>78</sup> ROCKY MOUNTAIN PIPIT

1935: 1 ♂, 17 miles NE. of Marathon, April 12; 1 ♀, Lajitas, May 10.

We recorded the Pipit (whether of the present race or *A. r. rubescens* we cannot say) but once during 1933, namely two birds seen along the Rio Grande near Hot Springs on May 16.

In 1935 we noted it first along Calamity Creek, twenty-two miles south of Alpine, a single bird on March 16; again on April 10, along Maravillas Creek, fifteen miles southwest of Marathon, when a male in the midst of the prenuptial molt was collected (not saved). Other sight records were: April 11, three along Peña Creek, four miles south of Marathon; April 13, one at a tank on the Hess ranch, six miles north of Marathon; April 15, three on the Combs ranch, about thirteen miles south of Marathon; April 16, two at a tank just west of Maravillas Creek, eighteen miles from Marathon; April 17, two on the Combs ranch; April 18, several in the Marathon region; April 20 and 22, two on the Hess ranch north of Marathon; April 28, one flying about Casa Grande, in the Chisos Mountains; May 4, a flock of ten birds along Terlingua Creek between Study Butte and Terlingua; May 6, a fair-sized flock at Castalon; May 8, several along the banks of the Rio Grande at Lajitas; May 10, several at Lajitas; May 13, several at the Johnson ranch; and May 17 and 18, several along the Rio Grande on the Graham ranch just west of Boquillas.

We are indebted to Mr. W. E. Clyde Todd, who has just revised the forms of this species, for the identification of our specimens.

*BOMBYCILLA CEDRORUM* VIEILLOT. CEDAR WAXWING

1935: 1 ♀, 13 miles S. of Marathon, Combs ranch, April 17.

We noted the Cedar Waxwing several times in 1933: a single bird on May 8 at Garden Springs; a flock of about twenty on May 15 at Boquillas;

<sup>78</sup> W. E. Clyde Todd, "Geographical Variation in the American Titlark," *Proc. Biol. Soc. Wash.*, 48, 1935: 63-65.

two birds, thought to be a mated pair, on May 22 at the Combs ranch, thirteen miles south of Marathon; and a large, loose flock along Maravillas Creek, seventeen miles southwest of Marathon on May 27.

On April 17, 1935, a female was collected and several others seen at the Combs ranch, thirteen miles south of Marathon. On April 26 a large flock was seen perching in the dead top of a cottonwood tree at Garden Springs. On May 9 a flock of about forty birds was observed feeding about the willow trees along the Rio Grande at Castalon. A single bird was seen in the mesquite a mile west of Boquillas on May 18.

On November 20, 1936, A. E. Borell saw four Cedar Waxwings in the Basin, Chisos Mountains.

*PHAINOPEPLA NITENS NITENS* (SWAINSON). MEXICAN PHAINOPEPLA

1905: 1 ♀, Paisano, April 28 (Baylor Univ. Mus.).

1933: 1 ♂, Santiago Mountains, May 28; 2 ♂, 2 miles W. of Boquillas, May 15.

1935: 1 ♂, Garden Springs, April 24; 1 ♀, 2 miles W. of Terlingua, May 10.

The above-listed specimens measure (in mm.): males, wing, 98, 98, 99, 97; tail, 97.5, 102, 100.5, 101; females, wing, 98, 98; tail, 98, 95.5.

One of the most interesting of the Carnegie-Cornell expeditions' achievements was the addition of this Mexican form to the known fauna of the United States. During 1933 Phainopeplas were encountered at Boquillas, along Maravillas Creek, in the foothills of the Santiago Mountains, at Mount Ord, and once along Peña Creek, four miles southwest of Marathon, where three individuals were noted on May 30. None of the specimens taken in 1933 showed signs of breeding activity, but we found what we thought to be an old nest of a *Phainopepla* not far from the highway in the Santiago Mountains.

On April 24, 1935, we saw two male birds at Garden Springs, and on May 8 one in the vicinity of Terlingua and two at Lajitas. A female with her nest and two heavily incubated eggs were collected May 10 two miles west of Terlingua. On May 27 we noted several males in oak woods not far from the highway in Paradise Canyon about four miles west of Alpine.

The nest found near Terlingua on May 10 was a compact, shallow structure saddled on a horizontal yucca leaf about eight feet from the ground. The bird slipped off as we approached, apparently not much agitated by our presence, and returned to her eggs promptly after we had stepped a short distance to one side. There was no stream nor spring closer than the pipeline at Terlingua, two miles away.

*PHAINOPEPLA NITENS LEPIDA* VAN TYNE. NORTHERN PHAINOPEPLA

1933: 1 ♀, 15 miles S. of Marathon, May 27; 1 young ♂, 3 miles E. of Hot Springs, May 15.

1935: 1 ♂, 1 ♀, 22 miles S. of Alpine, Calamity Creek, February 28 and March 15.

These specimens measure (in mm.): males, wing, 85, 94; tail, 83, 95; females, wing, 90, 91; tail, 87, 91. The young male still retained its worn juvenal flight feathers and hence, for lack of suitable material for comparison, little confidence can be placed in its subspecific identification. The male and female collected in 1935 were very fat and weighed, respectively, 27.8 and 28.2 grams.

Our one additional winter sight record is of a male seen February 17, 1935, in a wooded canyon three miles west of Elephant Mountain. A male was also seen with the female which was collected on March 15. All four of the 1935 birds listed under this subspecies were feeding on mistletoe berries, and the two collected were very fat.

The presence of this northern form of *Phainopepla* in Brewster County where typical *nitens* breeds is another of the many ornithological problems which call for additional field work in this interesting region. Until further information is obtained we are obliged to consider this form a transient and winter visitant which departs northwestward to breed.

*LANIUS LUDOVICIANUS SONORIENSIS* A. H. MILLER >  
*EXCUBITORIDES* SWAINSON. SONORAN SHRIKE

1928, 1932, 1933, 1935: 17 ♂, 6 ♀, 5 juveniles, from the Alpine region, the Marathon region, Glenn Spring, Hot Springs, Terlingua, and other localities, February 1–July 30.

Alden H. Miller, who recently published a systematic revision of this species,<sup>79</sup> has kindly examined for us the first nineteen specimens we collected and writes that they are "of extreme interest because they represent a critical population between the ranges of *sonoriensis* and *excubitorides*." He adds:

This group of birds shows characters predominantly of the *sonoriensis* type, but, as is so often the case, the characters of these races do not intergrade simultaneously. Thus the wing and tail measurements average the same as in typical *sonoriensis*, with only two individuals falling below the range of measurements for this form. Typical measurements for *sonoriensis* were derived from populations in southeastern California and southern Arizona. The amount of white on the tail averages almost precisely halfway between *sonoriensis* and *excubitorides*. The figures for white on the outer tail feather of *sonoriensis* is 34.5; for your birds, 37.3; for *excubitorides*, 42.1. Likewise bill size and development of the hook is almost precisely intermediate. Average bill length in *sonoriensis* is 12.3; in your birds, 11.7; in *excubitorides*, 11.3. The coloration of your birds is in no respect different from *sonoriensis*.

Two of these specimens he considers nearer *excubitorides* and the rest nearer *sonoriensis*.

We found Shrikes in small numbers throughout the county except in the mountains. In the Alpine region they seemed to be almost as numerous in

<sup>79</sup> "Systematic Revision and Natural History of the American Shrikes (*Lanius*)," *Univ. Calif. Public. Zool.*, 38, 1931: 11–242, 65 text figs.

late January and in February as later in the season. Those seen in winter were always solitary.

The earliest juvenile out of the nest was collected April 29, 1933, four miles south of Marathon. A nest with four fresh eggs was discovered on the Roberts ranch, about eight miles southwest of Marathon, on the same day. In 1935 a partly finished nest was found in a willow tree near Peña Creek, four miles southwest of Marathon, on April 11. A set of five fresh eggs was taken from this nest on April 24. In the plains country north of Marathon, where Shrikes were common, we found the remains of a Cassin's Sparrow and of a Mountain Plover impaled on the sharp leaves of a yucca.

*VIREO ATRICAPILLUS* WOODHOUSE. BLACK-CAPPED VIREO

1935: 1 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, 5500 feet, April 25 (Sutton).

Sutton heard Black-capped Vireos in the Glass Mountains in 1933, but did not see them clearly enough to identify them. On April 23, 1935, we heard them again, but failed to catch more than a fleeting glimpse of them. Two days later, April 25, we collected a pair that obviously were preparing to nest. The occurrence of the Black-capped Vireo in Brewster County is most interesting, for this is far west of its previously known range.

These vireos were inhabiting the steep, shrub-lined slopes of canyon-heads. They were exceedingly active, inclined to be restless and suspicious, and difficult to observe. The males sang intermittently all day—a wheezy, sometimes rather low, and somewhat conversational song. The birds were given to dropping from one perch to a lower perch, letting their bodies swing downward while still holding tightly with their feet, then suddenly letting go. The eyes of both males and females were a striking shade of light, clear, reddish brown—this shade in sharp contrast to the whiteness of the eye ring and blackness of the cap.

*VIREO HUTTONI STEPHENSI* BREWSTER. STEPHENS' VIREO

1901, 1928, 1932, 1933, 1935: 23 adult ♂, 8 adult ♀ (1 skeleton), 1 juvenile, Chisos Mountains.

We found the Stephens' Vireo fairly common in the Chisos Mountains above 6400 feet. A female taken May 19 above Boot Spring was incubating. A male in juvenal plumage, collected there on July 18, is paler and browner above than the adult, with broad edgings of bright yellowish green on the outer webs of the flight feathers. The throat is much like that of the adult, but the belly is whiter in the center and more buffy on the sides. On April 29, 1935, we discovered a pair at work on their nest not far from the trail leading from the Basin to Laguna, at an elevation of about 6700 feet. The nest was swung from a clump of mistletoe which grew in an oak, and was about twelve feet from the ground.

*VIREO BELLI MEDIUS* OBERHOLSER. TEXAS VIREO

1901, 1928, 1932, 1933: 34 ♂, 6 ♀, 4 miles S. of Marathon, Peña Creek; 12 miles S. of Marathon, Maravillas Creek; 20 miles SW. of Marathon, edge of the Santiago Mountains; Chilicotal Spring, 2900 feet; Glenn Spring, 2600 feet; Hot Springs, San Vicente; Boquillas; Castalon; and other localities.

The vociferous Texas Vireos were common in the thick tangles of mesquite and willow along the desert draws and about springs and cattle ponds. Occasionally a few were found at a distance from surface water, but they were always much more numerous where water was available.

Since the male usually sings when an intruder approaches, a fairly accurate estimate of their abundance could be made. The Texas Vireo is unquestionably one of the most common inhabitants of the mesquite thickets of the region.

In 1933 two nests were found: one containing three fresh eggs, on May 6, not far from Maravillas Creek, twelve miles southwest of Marathon; and one that was partly built, on May 10 near San Vicente. In 1935 we noted much singing of males at the time of our sojourn in Marathon in mid-April. We did not find a nest until May 4, however, when in the vicinity of Castalon, we located two in willow trees along the Rio Grande, one with two slightly incubated eggs, and one newly made and ready for eggs. On May 11 we found a nest four feet from the ground with four young about five days old in a mesquite bush.

*VIREO VICINIOR* COUES. GRAY VIREO

1935: 1 ♂, 1 ♀, 15 miles E. of Marathon, Peña Blanca Mountains, April 24; 1 ♂, Chisos Mountains, Basin, 5300 feet, May 2 (Sutton).

The above-listed specimens are the only individuals of this interesting vireo noted by us in the county. The male and female taken April 24, in the Peña Blanca Mountains, were obviously mated, and appeared to be preparing to nest in a clump of small cedars that grew on a sheltered slope. The gonads of both specimens were considerably enlarged. The male was singing loudly, and almost constantly, a rather rapid, unmusical, many-phrased song. The male bird taken in the Chisos Mountains was also singing volubly. We observed in all three birds the habit of flicking the long tail nervously as the gnatcatcher does.

If the Gray Vireo nests in Brewster County, we shall have to revise our concept of the bird's summer range, which is said to include southern California, southern Nevada, southwestern Colorado, and "northwestern Lower California, Sonora, and Durango."<sup>80</sup> The fact that we took three specimens during the course of one spring's field work furnishes proof that the bird is not a mere straggler. It has not been recorded before from Texas.

<sup>80</sup> *Chek-List of North American Birds* (Lancaster, Pa., A.O.U., 1931): 276.

*VIREO SOLITARIUS PLUMBEUS* COUES. PLUMBEOUS VIREO

1932: 2 ♂, Chisos Mountains, Boot Springs, 6800 feet, May 4 and 18.

1933: 1 ♂, Mount Ord, May 29; 1 ♂, 1 ♀, 4 miles SW. of Marathon, Peña Creek, May 1;

1 ♂, 12 miles S. of Marathon, Combs ranch, May 6.

1935: 1 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, May 25 and April 25; 1 ♂, 1 ♀, Paradise Canyon, May 27.

We looked for this vireo carefully during April, 1935, and are confident that it did not arrive from the South before the twenty-fifth. On this date a female (listed above) which was not accompanied by a male was taken in the Glass Mountains about fifteen miles north of Marathon. Nowhere did we find the species common, though in Paradise Canyon, four miles west of Alpine, on May 27, we found two pairs preparing to nest in the oak woods that bordered the dry stream-bed. The birds moved deliberately through the branches in their search for food, the males singing in a rich throaty voice. An abandoned vireo nest found in these woods was probably of this species. It was suspended from the tip of a live-oak branch about seven feet from the ground.

*VIREO SOLITARIUS CASSINI* XANTUS. CASSIN'S VIREO

1933: 1 ♀, Chisos Mountains, Pine Canyon, 6000 feet, May 11.

1935: 1 ♂, N. edge of Chisos Mountains, Moss Well, 4500 feet, February 24; 1 ♂, 15 miles NE. of Marathon, Glass Mountains, April 25; 1 ♂, 1 ♀, 13 miles S. of Marathon, Combs ranch, April 17-19; 1 ♂, 1 ♀, Chisos Mountains, Basin, 5300 feet, April 27-May 3.

Cassin's Vireo, which is sometimes common as a transient, apparently sings only rarely while in Brewster County. On more than one occasion we encountered both *cassini* and *plumbeus* in the same woodlands, but only the latter form was singing.

*VIREO GILVUS SWAINSONII* BAIRD. WESTERN WARBLING VIREO

1928: 1 ♂, Glenn Spring, August 2.

1932: 1 ♂, Chisos Mountains, S. of Boot Spring, 6800 feet, May 16.

1935: 1 ♂, Paradise Canyon, May 27; 1 ♀, Graham ranch, May 18; 1 ♂, Rio Grande, Johnson ranch, May 13.

The Warbling Vireo is rare as a summer resident in Brewster County, somewhat more common as a transient. We heard it singing only once—on the Johnson ranch, along the Rio Grande, on May 13, 1935.

*MNIOTILTA VARIA* (LINNAEUS). BLACK AND WHITE WARBLER

1932: 1 ♂, Chisos Mountains, above Boot Spring, 6800 feet, May 15 (Jacot).

The gonads of this individual were somewhat enlarged, measuring about  $4 \times 2.5$  mm. The throat is much lighter than in most spring males examined, being largely white somewhat streaked medially with black.

On April 10, 1935, we saw a female among the cottonwoods along Peña Creek, four miles southwest of Marathon.

There appear to be no other records of the occurrence of this species in Trans-Pecos Texas.

*VERMIVORA CELATA CELATA* (SAY). ORANGE-CROWNED WARBLER

1935: 1 ♂, 13 miles S. of Marathon, Combs ranch, April 17; 1 ♂, 1 ♀, Chisos Mountains, Basin, 5300 feet, May 3.

The Orange-crowned Warbler is not common as a spring transient in Brewster County. We looked for it assiduously in 1933, but found it only on May 24 in the Glass Mountains, about fifteen miles northeast of Marathon. In 1935 we noted what we thought to be Orange-crowned Warblers several times in the Basin of the Chisos Mountains, but are positive only of the individuals collected May 3.

*VERMIVORA RUFICAPILLA RUFICAPILLA* (WILSON). NASHVILLE WARBLER

1933: 1 ♀, Chisos Mountains, Pine Canyon, 6500 feet, May 13.

1935: 1 ♂, 13 miles S. of Marathon, Combs ranch, April 17.

Oberholser has identified for us the above listed specimens.

*VERMIVORA VIRGINIAE* (BAIRD). VIRGINIA'S WARBLER

1905: 1 ♂, Paisano, April 30 (Baylor Univ. Mus.).

1933: 2 ♂, Peña Creek, 4 miles SW. of Marathon, May 1; 1 ♀, 1 mile W. of Boquillas, May 12.

1935: 1 ♂, Glass Mountains, 15 miles NE. of Marathon, 5500 feet, April 25; 2 ♀, Chisos Mountains, Basin, 5300 feet, April 30-May 3; 1 ♀, Rio Grande, Johnson ranch, May 13.

Virginia's Warbler may nest rarely in Brewster County. The female specimens taken at Boquillas and the Johnson ranch are in worn plumage. Male birds taken near Marathon on May 1, 1933, were fitting about the brushy desert at some distance from water. Several male birds seen in the Glass Mountains about fifteen miles northeast of Marathon on April 25, 1935, were probably transients.

*VERMIVORA CRISSALIS* (SALVIN AND GODMAN). COLIMA WARBLER

1928, 1932, 1933, 1935: series from the Chisos Mountain forests from 6000-7000 feet.

Van Tyne<sup>81</sup> has already reported in detail upon the nest and habits of this rare warbler, a study of which was the principal objective of the University of Michigan's 1932 expedition.

In 1933 Sutton encountered the species only in Pine Canyon, in the Chisos Range, where, at an elevation of about 6600 feet, he recorded it on three occasions. On May 9 he collected a singing male from a tall pine. On May 13 he took another singing male among the small oaks at the base of the pinnacle crowning the southern slope of the canyon. On May 20 in almost exactly the same place he collected a mated pair with their nest and

<sup>81</sup> "The Discovery of the Nest of the Colima Warbler (*Vermivora crissalis*)," *Univ. Mich. Mus. Zool. Misc. Publications*, 33, 1936: 1-11, colored frontispiece, Pls. I-III, 1 map.

four highly incubated eggs. The nest was situated on the ground among dry oak leaves, a foot or so from the base of a slender oak sapling, a few yards from the edge of a vast rock-slide, and a few rods below the base of the cliff. The slope was covered with small oaks interspersed with a few large yellow pines. The nest was neatly made, the lining being of dry grass blades and the foundation material of leaves and bits of moss. It was not very well hidden, though there was a partial canopy of leaves. The eggs would have hatched within a very short time. The nest was discovered somewhat by accident. A small, dull-colored bird was seen to flit along the ground, to retrace its flight suddenly, and to disappear. A hasty reconnaissance of that section of the slope forced the bird to fly from its nest. It did not feign injury, but flew slowly, perched with plumage fluffed out and wings somewhat outspread, and upon being left to its own devices, promptly returned to its nest. The bird was flushed once more, then collected. The male, which was taken a few minutes later, obviously had not been sharing the duties of incubation, for there was no sign of brood-patch on his belly.

In 1935 Sutton again encountered the species in the Chisos Mountains, this time in the Boot Spring region where, on May 1, he saw and heard many singing males, observed copulation twice, and collected six specimens—four males and two females. The oak leaves were about half-developed on this date. The birds were feeding about the leaves. They were rather deliberate, even vireo-like in their movements. Their songs could be heard far and near. On the whole they were unsuspecting and could be approached without difficulty. The gonads of all six specimens collected were much enlarged, but the females showed no sign of incubating eggs.

*DENDROICA AESTIVA MORCOMI* (COALE)

ROCKY MOUNTAIN YELLOW WARBLER

1933: 1 ♀, 15 miles N. of Marathon, Glass Mountains, May 25; 1 ♂, 4 miles SW. of Marathon, May 23; 1 ♀, 15 miles S. of Marathon, May 27; 1 ♀, Boquillas, May 16.  
1935: 3 ♀, 13 miles S. of Marathon, Combs ranch, May 24; 1 ♀, Rio Grande, Johnson ranch, May 13; 1 ♀, Graham ranch, 3 miles E. of Hot Springs, May 16.

A. J. van Rossem<sup>82</sup> has recently called attention to the fact that the Rocky Mountain race of Yellow Warbler is worthy of recognition. It is our belief that this race does not nest in Brewster County, but that it is sometimes common as a transient. None of the three females taken on the Combs ranch, south of Marathon, on May 24, 1935, had a considerably developed ovary, and such male Yellow Warblers as were heard singing in this same region on that date were of the race *sonorana*.

*DENDROICA AESTIVA RUBIGINOSA* (PALLAS). ALASKA YELLOW WARBLER

1935: 1 ♂, Castalon, May 7.

Oberholser considers this specimen an example of the subspecies *rubi-*

<sup>82</sup> "Report on a Collection of Land Birds from Sonora, Mexico," p. 283.



*ginosa*, although he comments that its characters are not entirely typical of that form.

*DENDROICA AESTIVA SONORANA* BREWSTER. SONORA YELLOW WARBLER

- 1933: 3 ♂, 4 miles S. of Marathon, May 1-27; 1 ♂, 6 miles E. of Hot Springs, May 12; 1 ♂, Hot Springs, May 8.  
 1935: 1 ♂, 13 miles S. of Marathon, Combs ranch, April 17; 1 ♂, Graham ranch, 3 miles E. of Hot Springs, May 17; 2 ♀, Rio Grande, Johnson ranch, May 13; 3 ♂, 2 ♀, Castalon, May 6-11; 1 ♀, Lajitas, May 8.

We found the Sonora Yellow Warbler nests common along the Rio Grande in the vicinity of Castalon, San Vicente, Hot Springs, and Boquillas. We took several specimens in the vicinity of Marathon also, but did not actually find a nest. It is our belief that the Yellow Warbler does not nest anywhere in the mountains of Brewster County, and that such individuals as were taken in the Glass Mountains were transients.

The present race is well marked. The male is instantly recognizable in the hand by the chestnut streaking of the back and crown. There is a considerable and somewhat puzzling variation among female specimens.

*DENDROICA MAGNOLIA* (WILSON). MAGNOLIA WARBLER

- 1935: 1 ♀, 13 miles S. of Marathon, Combs ranch, May 24.

This individual closely accompanied a female Yellow Warbler (*D. a. morcomi*) as long as we watched it. The two birds were fitting about low mesquite brush not far from Maravillas Creek.

*DENDROICA CORONATA* (LINNAEUS). MYRTLE WARBLER

- 1935: 1 immature ♂, 22 miles S. of Alpine, Calamity Creek, March 15.

This specimen measures (in mm.): wing, 76, tail 59.

*DENDROICA AUDUBONI AUDUBONI* (TOWNSEND). AUDUBON'S WARBLER

- 1901: 1 ♂, Alpine, May 8 (L. A. Fuertes collection).  
 1935: 1 ♀, 22 miles S. of Alpine, March 29; 1 ♂, 18 miles SW. of Marathon, Santiago Mountains, April 16; 1 ♂, Chisos Mountains, Basin, 5300 feet, April 30; 1 ♂, Rio Grande, Johnson ranch, May 13.

*DENDROICA AUDUBONI MEMORABILIS* OBERHOLSER<sup>83</sup>

ROCKY MOUNTAIN AUDUBON'S WARBLER

- 1901: 1 —, Marathon, May 15 (U. S. Biol. Surv.).  
 1932: 2 ♂, 3 ♀, Chisos Mountains, Boot Spring Canyon and Emory Peak, 6500-7000 feet, May 3-19.  
 1933: 2 ♂, 4 miles S. of Marathon, April 29-May 1; 1 ♀, Chisos Mountains, Pine Canyon, May 13; 1 ♀, 2 miles W. of Boquillas, May 16.  
 1935: 3 ♂, Chisos Mountains, Basin, 5600 feet, April 26-29.

In addition to the specimens listed above we have two which are intermediate in character. These are:

<sup>83</sup> "A Revision of the Races of *Dendroica auduboni*," *Ohio Journ. Sci.*, 21, 1921: 243.

A. C. Lloyd, No. 1030. Adult ♀, Chisos Mountains, Pine Canyon, May 19, 1933; wing, 73; tail, 57 mm.

G. M. Sutton, No. 6011. Immature ♀, Garden Spring, April 12, 1935; wing, 72; tail, 56 mm.

The seven adult males of this series show the more extensive black on the breast and sides which Oberholser ascribes to *memorabilis*.

It was, of course, impossible to differentiate in the field between *auduboni* and *memorabilis*. The species was noted regularly in the higher parts of the Chisos Mountains throughout May, 1932, but the principal migration flight apparently occurred between May 16 and 24, for the species was very common during that period, flocks of as many as twenty being seen at one time.

In 1935 James O. Stevenson saw an Audubon's Warbler at Boquillas on February 25 and on March 8 we saw three on Calamity Creek, twenty-two miles south of Alpine. The species became fairly common on April 13, when several males were noted in the cottonwoods along Peña Creek near Marathon; more common on April 18, when many of both sexes were seen in the Marathon region; and abundant on May 1 when, in the Chisos Mountains, males and females were observed everywhere.

A female specimen taken April 12, 1935, near Marathon and a male taken April 16, 1935, in the Santiago Mountains, were in the prenuptial molt.

*DENDROICA NIGRESCENS* (TOWNSEND). BLACK-THROATED GRAY WARBLER

1936: 2 ♂, Chisos Mountains, Pine Canyon, 5900 and 5200 feet, September 2 and 7 (Tarleton, F. Smith).

These specimens constitute the first record of the species in Texas. The sex of these individuals was not determined by the collector, but from their plumage we judge them to be males. They measure (in mm.), wing, 63.5, 65.5; tail, 51.5, 54.5.

*DENDROICA TOWNSENDI* (TOWNSEND). TOWNSEND'S WARBLER

1932: 4 ♂, 4 ♀, Chisos Mountains, Boot Spring, 6500 feet, May 4-15.

1933: 4 ♀, Chisos Mountains, Pine Canyon, 6500 feet, May 9-13.

1935: 2 ♂, Chisos Mountains, Basin, 5300 feet, April 27-30; 1 ♀, Chisos Mountains, Laguna, 7086 feet, April 29; 2 ♀, Chisos Mountains, Green Gulch, May 2.

We did not note Townsend's Warbler anywhere in low country, though in the mountains we found it among oaks as well as among coniferous trees. On May 1, 1935, we saw a large transient flock at Boot Spring in the Chisos Mountains. Our latest spring record is of one seen May 16, 1932, at Boot Spring.

*DENDROICA OCCIDENTALIS* (TOWNSEND). HERMIT WARBLER

1935: 1 adult ♂, Chisos Mountains, Basin, 5300 feet, May 3 (Sutton).

This interesting specimen constitutes the first record of this far western

species in Texas. The bird was fitting about the oak trees in company with Audubon's and Orange-crowned Warblers.

*SEIURUS NOVEBORACENSIS NOTABILIS* RIDGWAY  
GRINNELL'S WATER-THRUSH

1901: 1 ♂, Marathon, May 15 (L. A. Fuertes collection).

1935: 1 ♀, Rio Grande, Johnson ranch, May 14.

We saw an individual of this species along the Rio Grande near Boquillas on May 15, 1933, but failed to collect it.

*OPORORNIS TOLMIEI* (TOWNSEND). MACGILLIVRAY'S WARBLER

1901, 1933, 1935: 12 ♂, 5 ♀, from all parts of Brewster County, most of them from the Marathon region, one from Alpine, one from Hot Springs, two from the Chisos Mountains (Pine Canyon and Pulliam Bluff Spring), and two from Lajitas. April 25-May 28.

This warbler is apparently to be found throughout the county during the spring migration. We noted it several times in the Chisos, Santiago, and Glass Mountains and in the dreary Terlingua country, recording it as early as April 22, 1935, fifteen miles northeast of Marathon, Glass Mountains, and as late as June 1, 1933, Combs ranch, thirteen miles south of Marathon. Occasionally we heard male birds singing, notably at the Johnson ranch, on the Rio Grande, on May 13, 1935.

In comparing our female specimens we find one to be in remarkably fresh, unworn plumage. This bird differs from the others in having a clearer gray (less buffy) chin, throat, and chest, and may be a two-year-old individual in which a prenuptial molt has just been completed.

*GEOTHLYPIS TRICHAS OCCIDENTALIS* BREWSTER  
WESTERN YELLOW-THROAT

1901: 1 ♂, 1 ♀, Marathon, May 10-11 (L. A. Fuertes collection).

1933: 1 ♂, 4 miles SW. of Marathon, May 1; 3 ♂, 4 ♀, 3 miles E. of Hot Springs, Graham ranch, May 12-15; 1 ♂, 1 ♀, 3 miles W. of San Vicente, May 10.

1935: 1 ♂, 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 18-23; 1 ♀, 3 miles E. of Hot Springs, Graham ranch, May 16; 1 ♂, San Vicente, May 20; 1 ♀, Rio Grande, Johnson ranch, May 14; 2 ♂, 1 ♀, Lajitas, May 8-10.

These specimens are referred to the subspecies *occidentalis* until breeding specimens can be secured from Brewster County and an adequate study made of this and adjacent forms. In 1935 we last recorded the species at Boquillas on May 21 when we saw a single male bird.

*ICTERIA VIRENS AURICOLLIS* BONAPARTE.<sup>84</sup> LONG-TAILED CHAT

1928: 2 ♂, Boquillas, August 3.

1932: 1 ♂, 8 miles SE. of Glenn Spring, 1900 feet, June 16; 1 ♂, San Vicente, June 9.

1933: 2 ♂, 12 miles S. of Marathon, May 5; 1 ♂, 15 miles S. of Marathon, May 27; 3 ♂,

<sup>84</sup> C. E. Hellmayr, *op. cit.*, Pt. 8, 1935: 447.

3 miles W. of San Vicente, May 10; 1 ♂, 1 ♀, 3 miles E. of Hot Springs, Graham ranch, May 16; 1 ♂, 6 miles E. of Hot Springs, May 12.

1935: 1 ♂, 16 miles SW. of Marathon, May 29; 2 ♂, Hot Springs, May 15 and 17; 2 ♂, Castalon, May 6.

The above-listed specimens measure (in mm.): males, wing, 77.5-84, tail, 77-87; the female, wing, 77, tail, 78. In fifteen out of the seventeen males the tail is longer than the wing.

Chats were rather common in the thick mesquite, willows, and cane-brake along the Rio Grande and Maravillas Creek where they could be heard singing and calling, but it often required much patience to catch even a glimpse of the birds themselves. We found them to be especially numerous at Castalon and San Vicente, less common at Lajitas. On May 29, 1935, Sutton collected a nest and two heavily incubated eggs not far from Maravillas Creek, about fifteen miles southwest of Marathon. The nest was two feet from the ground in a dense tangle of mesquite and mimosa. The female parent was so bold that she hopped about only a few feet from the nest while the eggs were being packed for carrying.

In 1935 we did not note the species prior to May 6 (Castalon) on which date two were seen. Thereafter we noted many Chats, the males all in full song.

*WILSONIA PUSILLA PUSILLA* (WILSON). WILSON'S WARBLER

1932: 1 ♂, Chisos Mountains, Boot Spring, 6500 feet, May 6.

The comparatively small size and dull coloration of this individual sets it apart from the fair sized series at hand as eastern *pusilla*. Oberholser, who has seen the specimen, agrees with our identification.

*WILSONIA PUSILLA PILEOLATA* (PALLAS). PILEOLATED WARBLER

1901, 1905, 1932, 1933, 1935: 14 ♂, 12 ♀, from Glass Mountains, Alpine, Marathon, Garden Springs, Chilicotal Spring, 6 miles E. of Hot Springs, 3 miles W. of San Vicente, and other localities, April 21-May 31.

The Pileolated Warbler is abundant as a transient in spring throughout the Big Bend region. According to our observations it is usually somewhat more common in the lower country than in the mountains. During the latter part of May in 1933 and 1935 we noted the species every day. Our earliest date is April 10, 1935, (a male seen along Maravillas Creek, fifteen miles southwest of Marathon); and our latest date is June 1, 1933, Combs ranch, thirteen miles south of Marathon.

One male bird in our series (Sutton, No. 6329), taken at Lajitas on May 10, 1935, while noticeably dull in coloration both above and below, is nevertheless too large for *W. p. pusilla*, the wing measuring 59 mm.

*SETOPHAGA RUTICILLA* (LINNAEUS). AMERICAN REDSTART

1933: 1 ♂, in mottled first breeding plumage, Chisos Mountains, Pine Canyon, 6500 feet, May 19.

1935: 1 ♀, Rio Grande, Johnson ranch, May 14; 1 ♀, Castalon, May 9.

On May 3, 1935, in the Basin, Chisos Mountains, at an elevation of about 5600 feet we saw but did not collect a female Redstart that was flitting about the oaks with other transient warblers.

Tarleton F. Smith collected a male on August 29, 1936, near Wilson's ranch-house on lower Oak Creek at the west base of the Chisos Mountains.

*SETOPHAGA PICTA PICTA* SWAINSON. PAINTED REDSTART

1928: 1 adult ♂, 1 adult ♀, 1 immature ♂, Chisos Mountains, Boot Spring, 6500 feet, July 19-21.

Great fluctuations in the numbers of a species of bird in an apparently unchanged habitat are difficult to explain. The case of this species in the Chisos Mountains is especially interesting. In 1901 Bailey, Fuertes, and Oberholser saw no Painted Redstarts during their three weeks' exploration of these mountains. In 1928 Van Tyne and Gaige found the species fairly numerous at Boot Spring, and yet Van Tyne, Peet, and Jacot spent the whole of May at the same locality four years later without getting more than an unsatisfactory glimpse of one; and the Carnegie Museum party, in 1933 and 1935, did not record the species at all. On June 24, 1936, however, Tarleton Smith saw an adult male at the head of Blue Creek Canyon.

The young male specimen taken July 19 had begun the post-juvinal molt, for spots of red were already appearing in the ventral feather tracts.

The 1928 records noted above constitute the first known occurrence of this species in Texas.

*PASSER DOMESTICUS DOMESTICUS* (LINNAEUS). ENGLISH SPARROW

1928: 1 immature ♂, Glenn Spring, July 26.

The English Sparrow occurs in numbers about the towns and some of the ranches of the Big Bend country. As early as 1904, T. H. Montgomery<sup>85</sup> found it "common" in Alpine. A roost of several hundred English Sparrows occupied a small clump of leafless trees in the center of Alpine during February and early March, 1935. In winter their domed, straw nests were conspicuous in the bare shade trees of the town. On January 28 we noticed the sparrows in Alpine beginning to carry bunches of straws and other nesting materials.

The English Sparrow and the House Finch were the commonest birds at Terlingua. About the house where we slept and prepared our specimens (May 4-12, 1935) both these species were nesting, the latter much the more noisy and noticeable as a rule, but the former more aggressive and tenacious. A House Finch's nest and four eggs were destroyed by English Sparrows on May 6. We found the dishevelled remains on the porch after hearing, for some time, the sounds of continued fighting.

<sup>85</sup> "Summer Resident Birds of Brewster County, Texas," p. 14.

*STURNELLA MAGNA LILIANAE* OBERHOLSER.<sup>86</sup> LILIAN'S MEADOW LARK

1901: 1 ♂, Marathon, May 12 (L. A. Fuertes collection).

1932: 1 ♂, Chisos Mountains, south rimrock, 7000 feet, May 20.

1933: 2 ♀, 12 miles N. of Marathon, foot of the Glass Mountains, May 26; 3 ♂, 3 miles N. of Marathon, May 28-June 2; 1 ♂, 1 ♀, 3 miles S. of Marathon, June 3; 2 ♂, near Peña Creek, 4 miles S. of Marathon, May 2-3; 1 ♂, 1 ♀, 6 miles S. of Marathon, May 31.

1935: 2 ♂, Altuda, April 3.

All birds taken in 1933 were breeding. The nesting territories of certain pairs observed by us closely adjoined those of pairs of Western Meadowlarks. So far as we could determine the two species were about equally common. Individual male birds were noisy and vigorous in laying claim to favorite song perches, and presumably in defending certain definite territories.

The two males collected at Altuda weighed 97 and 112 grams.

*STURNELLA NEGLECTA* AUDUBON. WESTERN MEADOW LARK

1933: 5 ♂, 3 ♀, Marathon grasslands, April 29-June 3.

1935: 2 ♂, 1 ♀, Boquillas, February 25; 1 ♀, 4 miles S. of Terlingua, May 4.

Single individuals and small groups of meadowlarks, sometimes as many as ten or fifteen birds in a flock, were frequently seen in the Alpine region during January and February, 1935, and a few were noted near Marathon and Terlingua at about the same time. Those in town were very tame, but birds encountered elsewhere were too wary to approach within collecting range, and it was not until February 25, when three were collected from a flock of fifteen at Boquillas, that we were able to determine the specific identification of any meadowlarks seen in winter.

Two species of meadowlarks summer in the Marathon grasslands. According to information at hand the two species nest practically side by side. We took the present species also in a grassy valley among the foothills of the Glass Mountains, at about 5400 feet (a male, May 26); and near Terlingua (a female, May 4). A female collected two miles south of Marathon on June 3, 1933, was laying eggs.

Our meadowlark specimens all were identified by Dr. George B. Saunders, who finds that none of our series show any definite indication of hybridization between *magna* and *neglecta*.

The specimens collected at Boquillas weighed: males, 115.5, 124.8 (fat) grams; female, 84.7 grams. A male taken in 1933 has a malformed beak. The length exceeds considerably the normal range (culmen, 41.5 mm.), and the tips are crossed.

*XANTHOCEPHALUS XANTHOCEPHALUS* (BONAPARTE)

## YELLOW-HEADED BLACKBIRD

1933: 1 ♂, Maravillas Creek, 15 miles SW. of Marathon, May 3.

<sup>86</sup> "Notes on a Collection of Birds from Arizona and New Mexico," *Sci. Publ. Cleveland Mus. Nat. Hist.*, 1, No. 4, Dec. 31, 1930: 103-104, Pl. 18.

1935: 1 ♀, 1 mile W. of Boquillas, May 21.

Van Tyne saw five adult male Yellow-headed Blackbirds at Glenn Spring on July 25, 1928. Sutton and Lloyd saw two males along the Rio Grande near Boquillas, on May 15, 1933.

In 1935 the species was seen several times: a single male in company with a flock of Red-winged Blackbirds, near Peña Creek, four miles southwest of Marathon, April 18; a large flock, nearly all males, at Marathon, April 21; several males and females feeding about the barns at the Roberts ranch, twelve miles southwest of Marathon, April 23; a male and two females at the Graham ranch, three miles west of Boquillas, May 16; four females, also at the Graham ranch, May 18; the same flock of four females (one collected), at the Graham ranch, May 21; a flock of twelve females at Garden Springs, May 22; and a single female, Garden Springs, May 30. James O. Stevenson observed six along Terlingua Creek near Study Butte on August 6.

In 1936 Tarleton F. Smith saw five at Boquillas on July 15 and several at the Johnson ranch on July 16.

*AGELAIUS PHOENICEUS FORTIS* RIDGWAY. THICK-BILLED REDWING

1935: 5 ♀, 4 miles SW. of Marathon, Peña Creek, April 10-18.

Oberholser has kindly identified this series for us.

We saw very few Red-winged Blackbirds of any sort save in 1935. On February 25, 1935, we saw a flock of about thirty at Castalon and from April 10 to 18, we saw many large flocks composed entirely of female birds in the vicinity of Marathon. From these transient flocks the above series of *fortis* were collected. On the evening of April 18 huge flocks of female redwings went to roost in the clumps of cattail growing along Peña Creek. What forms were represented in these flocks, and what form predominated we cannot say.

*AGELAIUS PHOENICEUS* SUBSP.

1933: 1 ♀, 12 miles S. of Marathon, May 6; 3 ♀, 6 miles E. of Hot Springs, May 15.

1935: 5 ♀, 4 miles SW. of Marathon, Peña Creek, April 11-18.

We seriously doubt that the Red-winged Blackbird nests anywhere in Brewster County, for during the course of our several expeditions we failed to find what we knew to be nesting birds, did not come upon any extensive marshes or meadows such as would appear to be good Redwing habitats, and did not once see a male bird.

We are unable to identify this series. The specimens are quite dissimilar to the five *fortis* listed above. They are too small and have too thick and small a bill for *sonoriensis*, and they are too large and thick-billed for *megapotamus*. The form apparently is in need of a name, but we feel it should not be described until the breeding range is known and until male birds are obtained.

*ICTERUS SPURIUS* (LINNAEUS). ORCHARD ORIOLE

1932: 1 ♂, in first breeding plumage, San Vicente, June 14.

1933: 1 ♂, Maravillas Creek, 15 miles SW. of Marathon, May 4; 1 ♂, 13 miles S. of Marathon, Combs ranch, June 1.

1935: 1 ♀, Garden Springs, May 24; 1 ♀, 6 miles E. of Hot Springs, May 17; 1 ♂, in first breeding plumage, San Vicente, May 20; 1 ♂, fully adult, Castalon, May 6.

We noted this species principally in the Marathon region, at Castalon, and on the Graham ranch just west of Boquillas, but nowhere did we find it common.

On August 1, 1935, James O. Stevenson observed a pair feeding young at Garden Springs.

*ICTERUS CUCULLATUS CUCULLATUS* SWAINSON. HOODED ORIOLE

1935: 1 ♀, 13 miles S. of Marathon, Combs ranch, April 17 (Sutton).

The capture in Brewster County of this Mexican form, not previously recorded north of central Nuevo León, is one of the most surprising results of our survey of the region. Oberholser has examined this specimen and confirms our identification.

*ICTERUS CUCULLATUS NELSONI* RIDGWAY. ARIZONA HOODED ORIOLE

1935: 1 immature ♂, 1 mile W. of Boquillas, May 18 (Sutton).

We are indebted to Oberholser for the identification of this specimen, which is in the black-throated plumage of the yearling male. The bird was singing brilliantly in the cottonwood trees of the Graham ranch. The gonads were considerably enlarged.

This subspecies has not been recorded hitherto as far east as Texas.

*ICTERUS PARISORUM* BONAPARTE. SCOTT'S ORIOLE

1901, 1928, 1932, 1933, 1935: 18 ♂ (13 fully adult; 4 in first breeding plumage; 1 immature); 8 ♀ (2 immature), from Glass Mountains, 15 miles N. of Marathon; 4, 15, and 20 miles S. of Marathon; Glenn Spring; Chisos Mountains (Boot Spring, Upper Juniper Spring, and Pine Canyon); Hot Springs; and other localities.

We found Scott's Oriole to be widely distributed and fairly common in the rocky desert and hills from the Glass Mountains to the Rio Grande, except in the Marathon grasslands, where it was only occasionally encountered, and in the Chisos Mountains, the Santiago Mountains, and Mount Ord above the lower limit of trees.

In 1933 we saw young just out of the nest in the open desert north of Boquillas on May 16; observed a nest ready for eggs, eight feet from the ground in a small oak near the road in the Glass Mountains, twelve miles north of Marathon on May 25; and collected a set of four fresh eggs in the foothills of the Santiagos, about twenty miles southwest of Marathon on May 30. This nest was beautifully built among the flowers of a yucca that was



growing on a rocky slope. Sutton happened to see the female bird fly from the nest, otherwise it would never have been found.

On May 18, 1934, Roy W. Quillin discovered a nest near the log cabin at the upper end of Green Gulch in the Chisos Mountains. Both parent birds were working on the nearly completed nest, which was about eight feet from the ground in a small piñon tree.

We believe that the species arrived from the south on April 13, 1935. On that date we shot a male and a female (not mated) in the Glass Mountains, about seventeen miles north of Marathon. We thought mating had taken place by April 20, but observed no nest-building before April 24.

*ICTERUS BULLOCKI* (SWAINSON). BULLOCK'S ORIOLE

1933: 1 ♀, 4 miles SW. of Marathon, Peña Creek, May 5; 1 ♂, Maravillas Creek, 15 miles SW. of Marathon, May 27; 1 ♂, foothills of the Santiago Mountains, 20 miles SW. of Marathon, May 30; 1 ♂, Boquillas, May 16.  
1935: 1 ♂, 1 ♀, Garden Springs, May 22; 2 ♂, Castalon, May 6 and 7.

J. K. Strecker<sup>87</sup> found Bullock's Oriole "in the foothills of the Chisos Mountains" in 1905. In 1933 we found it decidedly rare, noting it first in the cottonwoods along Peña Creek, southwest of Marathon, on April 30, when a single brightly colored male was seen. Thereafter we noted it seven times, one or two birds being seen on each occasion. A pair seen at Boquillas on May 16, and another observed on the Combs ranch, thirteen miles south of Marathon on June 1, were thought to be breeding.

In 1935 the species was first seen on April 24 at Garden Springs. At this locality two or more pairs were noted on each subsequent visit. A partly finished nest was discovered in a cottonwood at Castalon on May 4; and a nest just ready for eggs was collected with the mated pair taken at Garden Springs on May 22. On May 24 two nesting pairs were observed on the Combs ranch, thirteen miles south of Marathon.

The male bird taken May 30, 1933, is in first breeding plumage. The male taken at Boquillas on May 16, 1933, is also in first breeding plumage, but black feathers of the second breeding plumage are appearing on the head and back.

*EUPHAGUS CAROLINUS* (MÜLLER). RUSTY BLACKBIRD

1935: 1 ♂, 22 miles S. of Alpine, Calamity Creek, March 4.

The specimen listed above was alone when collected and is the only record for this region, which is well west of the usual range of the species. This bird was very fat and weighed 59.5 grams.

*EUPHAGUS CYANOCEPHALUS* (WAGLER). BREWER'S BLACKBIRD

1901: 1 ♀, Marathon, May 12 (L. A. Fuertes collection).

1935: 2 ♂, Garden Springs, April 14 and 30; 1 ♀, Rio Grande, Johnson ranch, May 13.

<sup>87</sup> "Field Notes on Western Texas Birds (Part I)," p. 12.

We noted this species several times in 1933, principally in the vicinity of Marathon, from April 26 to May 12. On May 6 four small flocks were sighted when they passed overhead as if in migration. On May 8 flocks were seen feeding about the damp ground at Garden Springs and Ridge Spring. On May 12 a few were observed on the Graham ranch, about two miles west of Boquillas, drinking and bathing along the river edge.

In 1935 the species was first encountered on February 3, when a small flock was seen at Marathon. From April 11 to May 30 we noted it almost daily, observing that prior to May 10 males and females were about equally abundant, and that thereafter females were decidedly more common than males. On April 18 great flocks were seen about Peña Creek, four miles southwest of Marathon, roosting with Red-winged Blackbirds in the tall stands of cattail. Gonads of the male bird taken May 30 at Garden Springs were greatly enlarged.

*CASSIDIX MEXICANUS MEXICANUS* (GMELIN). GREAT-TAILED GRACKLE  
1935: 1 ♀, 4 miles SW. of Marathon, Peña Creek, May 29; 1 ♀, Castalon, May 7.

Sutton and Semple noted this species three times in 1935: a single male in company with a flock of Brewer's Blackbirds in a cultivated field near the Rio Grande at Castalon on May 6; a single female (listed above), in the same field on May 7; a male and female (apparently mated; the female listed above) in a pasture near Peña Creek, about four miles southwest of Marathon on May 29. The ovary of this latter female was considerably enlarged.

*MOLOTHRUS ATER ARTEMISIAE* GRINNELL. NEVADA COWBIRD  
1928: 4 ♂ (1 immature), 2 ♀, Glenn Spring, July 25–August 4.  
1935: 1 ♀, Garden Springs, April 12.

In 1928 a flock of twenty-five transient Nevada Cowbirds appeared at Glenn Spring on July 25, among them young birds (one collected August 4) partly in juvenal plumage. Specimens taken were immediately-separable from the local, breeding form by their fatness and the small size of their gonads.

These specimens measure respectively (in mm.): males, wing, 114, 109, 109, 110; tail, 77.5, 73, 74, 68; females, wing, 99, 103, 97; tail, 66, 65.5, 66.5.

*MOLOTHRUS ATER OBSCURUS* (GMELIN). DWARF COWBIRD  
1928, 1932, 1933, 1935: 11 ♂, 8 ♀: 15 miles NE. of Marathon, Glass Mountains; 4 miles S. of Marathon; Chilicotal Spring; Glenn Spring; Hot Springs; Johnson ranch; Castalon; and other localities. April 25–July 26.

The Dwarf Cowbird is the breeding form of the region. We found it generally distributed except in the mountains, though it was nowhere abundant. According to our experience in 1933 and 1935 the species most commonly parasitized by it are the Bell's Vireo, Long-tailed Chat, Cooper's Tanager, and Painted Bunting.

A female taken May 28, 1933 (Sutton, No. 5101) has a strange, irregular black blotching on the lower breast. The black feathers are confined to the left side, ending exactly at the median line as in a gynandromorph.

*PIRANGA LUDOVICIANA* (WILSON). WESTERN Tanager

1901: 1 ♂, Alpine, May 6 (L. A. Fuertes collection).

1928: 1 ♀, Chisos Mountains, Upper Juniper Spring, 5000 feet, July 18.

1932: 2 ♂, 1 ♀, Chisos Mountains, Boot Spring, 6500 feet, May 5-7; 1 ♂, 1 ♀, Chisos Mountains, south side of Emory Peak, 7300 feet, May 24.

1933: 1 ♂, 4 miles SW. of Marathon, Peña Creek, May 23; 3 ♂, 1 ♀, 15 miles SW. of Marathon, Maravillas Creek, May 6-22; 1 ♀, 15 miles S. of Marathon, June 1; 1 ♂, 1 ♀, Chisos Mountains, Juniper Canyon, 6000 feet, May 17.

1935: 1 ♂, 1 ♀, Chisos Mountains, Basin, 5300 feet, May 3 and April 30; 1 ♀, Boquillas, May 18.

The distribution of this species in the Big Bend country is interesting. Apparently the bird does not inhabit the Glass Mountains, although we found it in considerable numbers in the cottonwood groves in the country just south of Marathon, in the foothills of the Santiago range, in Paradise Canyon west of Alpine, and again in the higher parts of the Chisos Mountains. In 1932 we found the species most abundant above 6000 feet, in the Chisos Range. In 1933 we noted it occasionally in Pine and Juniper canyons (Chisos Mountains), but we thought it far more common in the lower country. An individual noted at Hot Springs, May 15, 1933, may have been a transient. In 1935 we observed mated pairs and singing males at Garden Springs, and in Paradise Canyon, four miles west of Alpine, as late as May 24 and May 30 respectively.

The male bird taken May 23, 1933, was in its first breeding plumage; the gonads were much enlarged, and the bird was in full song. One of the males taken May 22 in cottonwoods along Maravillas Creek was in the midst of what appears to be a considerable prenuptial molt. Three of the rectrices, all of the primaries, and most of the secondaries are old, frayed, and brown. The female taken at Upper Juniper Spring, July 18, 1928, was in the midst of the postnuptial molt.

The Western Tanager was recorded by Vernon Bailey<sup>88</sup> only from the Transition Zone of the Guadalupe and Davis Mountains. It was discovered in 1928<sup>89</sup> to be resident also in the Chisos Mountains, a southeastward extension of its known breeding range. Now it appears that this tanager, elsewhere breeding exclusively in the Transition and Canadian Zones, may not be confined to the mountains in the Big Bend region. Ornithologists should be on the alert for further information concerning the distribution of this species in western Texas in summer.

<sup>88</sup> "Biological Survey of Texas," p. 37.

<sup>89</sup> J. Van Tyne, "Notes on Some Birds of the Chisos Mountains of Texas," p. 206.

*PIRANGA FLAVA OREOPHASMA* OBERHOLSER. HEPATIC TANAGER

- 1901: 1 ♂, 1 ♀, Chisos Mountains, Pine Canyon, 6000 feet, June 3-7.<sup>90</sup> (U. S. Biol. Surv. collection.)  
 1932: 1 ♂, 1 ♀, Chisos Mountains, S. of Boot Spring, May 20; 1 ♂, S. side of Emory Peak, Chisos Mountains, 7300 feet, May 24.  
 1933: 1 ♂, Chisos Mountains, Pine Canyon, about 6500 feet, May 20; 1 ♂, 1 ♀, Mount Ord, May 29.  
 1935: 1 ♂, Chisos Mountains, Basin, 5300 feet, May 3; 1 ♂, Paradise Canyon, May 27.

The Hepatic Tanager is found in summer only in the higher parts of the Chisos Mountains, at Mount Ord, and presumably at other comparable high altitudes in the region. The male taken on May 20, 1933, was a breeding bird; the female also was seen, but not collected. The male and female taken at Mount Ord on May 29 were feeding young in the nest. Two other birds, singing males, were noted on this date.

An immature male taken on May 24, 1932, was in breeding condition. The plumage of this specimen is like that of the female except that it is slightly greener above and the tail is somewhat tinged with orange instead of greenish yellow.

Measurements (in mm.) of our eight specimens are: males, wing, 102, 105.5, 103, 104.5, 105.5, 100.5; tail, 85, 82, 84, 86, 85, 79 (very worn); females, wing, 101.5, 100; tail, 83, 83.5.

A. J. van Rossem<sup>91</sup> has recently pointed out that Zimmer was hardly justified in synonymizing *oreophasma* with *hepatica*.

*PIRANGA RUBRA COOPERI* RIDGWAY. COOPER'S TANAGER

- 1901: 2 immature ♂, 10 miles S. of Marathon, May 13-17; 1 ♂, Neville Spring, June 23; 2 ♂ (1 immature), Terlingua, May 28-June 30; 1 ♂, Boquillas, May 31 (L. A. Fuertes collection).  
 1928: 1 ♂, Hot Springs, June 28.  
 1932: 1 ♂ (in mixed plumage), Rio Grande, 9 miles SE. of Glenn Spring, June 17.  
 1933: 2 ♂, 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 29-May 1; 2 ♂ (1 in mixed plumage), 1 ♀, 15 miles SW. of Marathon, Maravillas Creek, May 5-6; 2 ♂ (1 in mixed plumage), 1 ♀, 17 miles SW. of Marathon, foothills of Santiago Mountains, May 27-28; 3 ♂, 2 miles W. of Boquillas, May 15-16; 1 ♀, 6 miles E. of Hot Springs, May 15.  
 1935: 2 ♂, 13 miles S. of Marathon, Combs ranch, April 15-17; 1 ♂, Chisos Mountains, Basin, 5300 feet, April 27; 1 ♂ (in first breeding plumage), 1 mile W. of Boquillas, May 18; 2 ♂ (1 in first breeding plumage), Rio Grande, Johnson ranch, May 13; 1 ♂, 1 ♀, Castalon, May 6-11.

Cooper's Tanager is common as a nesting species in Brewster County where there are cottonwood, mesquite, or willow trees. It is apparently not so fond of oaks, although singing males were noted more than once in oak woods in lower parts of the Chisos Mountains, notably in the Basin, and in

<sup>90</sup> H. C. Oberholser, "Description of a New Subspecies of *Piranga hepatica* Swainson," *Auk*, 36, 1919: 75-80.

<sup>91</sup> *Op. cit.*, p. 291.

Paradise Canyon, four miles west of Alpine. We did not record the species in higher parts of the Chisos, in the Peña Blancas, nor at Mount Ord, and we found it most common at Castalon, at Boquillas, and along Maravillas Creek, about fifteen miles southwest of Marathon. A nesting pair was observed daily, during both 1933 and 1935, near our quarters at Hot Springs. In the Glass Mountains we noted it but once, a male, April 22, 1935 (J. B. Semple).

During 1935 we did not find the species until April 15, on which date two males were heard at the Combs ranch, thirteen miles south of Marathon. On May 11 a nest with four fresh eggs and the female parent were collected at Castalon. The nest was about fifteen feet from the ground close against the trunk of a slender willow tree that stood not far from the Rio Grande. On May 29 a nest and four eggs were found on the Combs ranch, thirteen miles south of Marathon. This nest was built on a horizontal willow bough, about twenty feet above a stagnant pool along the Maravillas.

On May 13 at the Johnson ranch along the Rio Grande, Sutton observed an adult male that was singing and displaying before a parti-colored young male which also was singing fervently. In display, the adult male spread its wings and tail and stuck its bill straight up.

*RICHMONDENA CARDINALIS CANICAUDA* (CHAPMAN)

GRAY-TAILED CARDINAL

1933: 2 ♂, 15 miles SW. of Marathon, Maravillas Creek, May 4-5; 2 ♂, 17 miles SW. of Marathon, foothills of the Santiago Mountains, May 23-31; 1 ♂, Boquillas, May 16.  
1935: 1 ♂, Boquillas, February 25; 1 ♂, 6 miles E. of Hot Springs, May 17; 2 ♂, Castalon, May 9-11.

The above specimens measure respectively: wing, 97, 95.5, 94, 94.5, 89, 90, 91, 92, 91.5 mm.; tail, 106, 105, 108, 105.5, 103.5, —, —, 107.5, 105 mm. The shade of red on the underparts in our series does not perfectly match that of a large series of *canicauda* from the region of Brownsville, Texas, leaving us in some doubt as to the proper name to apply to our birds.

In 1932 we noted the cardinal once (May 30) at Chilicotal Spring and several times (April 28 to June 22) in the dense mesquite along the Rio Grande near San Vicente. In 1933 and 1935 we found it most common along Maravillas Creek, about fifteen miles southwest of Marathon, and along the Rio Grande in the vicinity of Boquillas, Hot Springs, San Vicente, the Johnson ranch, and Castalon.

The range of this species apparently is very scattered in Brewster County. As a rule the bird is not found anywhere in the mountains; and the fact that we did not once record it along the highway between Marathon and Hot Springs, nor at Glenn Spring, indicates that its distribution must be very irregular.

*PYRRHULOXIA SINUATA SINUATA* (BONAPARTE). TEXAS PYRRHULOXIA  
1901, 1928, 1932, 1933, 1935: 27 ♂, 7 ♀, 2 juveniles (sex not determined), 4 miles S. of  
Marathon; 15 miles SW. of Marathon; Glenn Spring; Boquillas; Hot Springs; San  
Vicente; Lajitas; and other localities.

We found the *Pyrrhuloxia* rather common in most parts of the county, especially where there were thickets of mesquite. The species was entirely absent only from the Glass Mountains and from the Chisos Mountains above 5000 feet.

On May 21, 1934, Roy W. Quillin found a nest in an open thorny bush about three miles northeast of the Burnham ranch house. The nest contained three eggs, apparently about ready to hatch. The female flushed from the nest, and both parent birds scolded from a short distance.

Two young, taken at Glenn Spring on June 4 and 5, 1932, had not been long out of the nest.

A. J. van Rossem<sup>92</sup> has recently shown that the name *sinuata* applies to the Texas *Pyrrhuloxia*.

*HEDYMELES MELANOCEPHALUS MELANOCEPHALUS* (SWAINSON)<sup>93</sup>  
ROCKY MOUNTAIN BLACK-HEADED GROSBEEK

1901: 2 ♂, Chisos Mountains, June 1-7 (L. A. Fuertes collection).

1928: 1 ♂, 1 ♀, Chisos Mountains, Upper Juniper Spring, July 11-20.

1932: 3 ♂, 2 ♀, Chisos Mountains, Boot Spring, May 9-25; 1 ♂, Chisos Mountains, Emory Peak, 7300 feet, May 23; 1 ♂, 1 ♀, Chisos Mountains, Laguna, May 20.

1933: 1 ♂, 1 ♀, Mount Ord, May 29; 2 ♂, 2 ♀, Chisos Mountains, Pine Canyon, 6500 feet, May 11-13.

1935: 1 ♂, 1 ♀, Chisos Mountains, Basin, 5300 feet, April 30 and May 3.

The Black-headed Grosbeak apparently may occur anywhere in the Big Bend during the period of migration, but as a summer resident it is restricted to the mountains. We encountered it in the Chisos and Santiago Mountains, at Mount Ord, and in the vicinity of Paisano Peak, but not in the Glass Mountains. A female taken at Laguna, in the Chisos Range, on May 20, 1932, was laying, for her oviduct contained a half-formed egg. The pair taken at Mount Ord on May 29, 1933, were breeding, the female having a well-defined brood-patch.

Three of the males in our series (all with enlarged gonads) are in what appears to be their first breeding plumage. This plumage is much like that of the full adult above; it is paler than the two-year-old breeding male below, however, having noticeable streaking on the flanks. The flight feathers are brownish gray rather than black, and the outer rectrices entirely lack white thumb marks.

<sup>92</sup> "Notes on Some Types of North American Birds," pp. 355-357.

<sup>93</sup> A. J. van Rossem, "The Type of the Black-headed Grosbeak," *Auk*, 49, 1932: 489. See also further confirmatory remarks by the same author, "Notes on Some Types of North American Birds," p. 357.

*GUIRACA CAERULEA INTERFUSA* DWIGHT AND GRISCOM  
WESTERN BLUE GROSBEAK

1901, 1932, 1933, 1935: 15 ♂, 7 ♀, from all parts of Brewster County, including the Glass, Santiago, and lower parts of the Chisos Mountains (Pine Canyon, 4500 feet).

The Blue Grosbeak is somewhat local in distribution in the Big Bend country. We found it especially common about Peña Creek, four miles southwest of Marathon; on the Graham ranch, just west of Boquillas; at San Vicente; at Castalon; and for a few days during the period of migration (May 23–28, 1935) in flat, desert country on the Hess ranch, in the foothills of the Glass Mountains, about nine miles north of Marathon. The species arrives from the south apparently about the end of April. In 1935 we first noted it on April 24, a single male, at Garden Springs.

Several birds observed appeared to be mated and to have selected a definite breeding territory, but we found no nest. A female taken in the Glass Mountains on May 26, 1933, had an enlarged ovary, but there was no brood-patch on the belly.

A male specimen taken on June 18, 1932, is parti-colored, most of the feathers being of the immature plumage. A similarly parti-colored male was taken in the Glass Mountains, north of Marathon on May 26, 1933.

The twelve adult males in our series measure (in mm.): wing, 89–94 (average 91.1); tail, 65.5–74 (average 70.2).

*PASSERINA VERSICOLOR VERSICOLOR* (BONAPARTE). VARIED BUNTING

1933: 7 ♂, 15 miles SW. of Marathon, Maravillas Creek, May 4–6; 1 ♂, 1 ♀, 13 miles S. of Marathon, Combs ranch, June 2; 1 ♀, 15 miles S. of Marathon, May 23; 1 ♀, 17 miles SW. of Marathon, foothills of the Santiago Range, May 27.

1935: 2 ♂, 1 ♀, 16 miles SW. of Marathon, Maravillas Creek, May 29; 1 ♂, Chisos Mountains, Basin, 5300 feet, April 29.

To our surprise we found this species much commoner along Maravillas Creek in the Marathon region than along the Rio Grande. We noted it three times at Hot Springs, however, May 9 and 10, 1933, and May 15, 1935, and found one or two breeding pairs on the Graham ranch, two miles west of Boquillas, in 1933 and 1935. From April 29 to May 3, 1935, we saw a few singing males at the Basin in the Chisos Mountains, where we are inclined to believe the species breeds at an elevation not exceeding 5300 feet.

A female specimen taken near Marathon on May 23, 1933, was about to lay eggs. A female taken on May 27 in the foothills of the Santiago Mountains, apparently had laid her full set of eggs, but the nest was not found. On May 29, 1935, Sutton found a nest ready for eggs in a dense tangle along Maravillas Creek, about sixteen miles southwest of Marathon. A male bird taken by Semple on the same date is in the first nuptial plumage, scarcely distinguishable from that of the female.

*PASSERINA CIRIS PALLIDIOR* MEARNS. TEXAS PAINTED BUNTING

1928, 1932, 1933, 1935: 23 ♂, 7 ♀, from localities throughout Brewster County save in the mountains.

We recorded the Painted Bunting at Marathon, Glenn Spring, Boquillas, Hot Springs, Castalon, San Vicente, and elsewhere in the low country; but we did not take nor record it in the Chisos, Santiago, nor Glass Mountains. In 1933 we first noted it on May 6, when four male birds were seen and two specimens collected in the Marathon region. The species probably arrives from the south during the first week of May, for in 1935 we first noted it on May 4, again a male bird (Castalon).

All our specimens are breeding birds, but seven of the males are in the dull, green plumage of the first year, and several males otherwise in full plumage are more or less spotted with greenish or yellow below.

It appears from our series of Brewster County specimens that the race *pallidior*,<sup>94</sup> although not recognized in the current A.O.U. *Check-List*, is a perfectly valid race. Our birds are larger than Florida or Georgia specimens at hand, and the shade of blue on the head of the male is noticeably lighter (less purplish) than in specimens from the eastern United States. Measurements (in mm.) of fifteen adult males from Brewster County are: wing, 69-74.5 (average 72.1); tail, 55-59.5 (average 56.8).

*CARPODACUS MEXICANUS FRONTALIS* (SAY). HOUSE FINCH

1901, 1928, 1932, 1933, 1935: 26 ♂ (1 a skeleton), 6 ♀, from 5 miles S. of Alpine; Mount Ord; Glenn Spring; Boquillas; San Vicente; Chisos Mountains, Laguna; and other localities.

The House Finch was common in winter in the Alpine region, especially about the groves of live oaks. At that time of year they were frequently found in flocks of thirty to forty or more. In spring and summer the species was much more widely scattered in the county and was especially common in the mesquite thickets near the Rio Grande. House Finches were not often seen in the higher parts of the Chisos Mountains except at the south rim-rock where they were noted and collected at 7000 feet.

Several female specimens taken showed signs of breeding activity. One taken May 31, 1932, was laying, and another May 30 was about to lay. Females taken May 4 and 26, 1933, were incubating eggs or brooding young. On May 12, 1933, a juvenile just out of the nest was seen at Hot Springs. On May 4, 1935, a nest and four fresh eggs were found at Terlingua. This nest was destroyed by English Sparrows, who scattered the eggs and built their own bulky nest on top of the small structure. The House Finch was the commonest nesting bird about the town of Terlingua.

*SPINUS PINUS PINUS* (WILSON). NORTHERN PINE SISKIN

1901: 1 ♂, Alpine, May 8 (L. A. Fuertes collection).

<sup>94</sup> Edgar A. Mearns, "Description of a New Subspecies of the Painted Bunting from the Interior of Texas," *Proc. Biol. Soc. Wash.*, 24, 1911: 217.



1914: 1 ♂, 1 ♀, Chisos Mountains, January 30-31 (F. B. Armstrong, Thayer collection).  
 1935: 1 ♂, San Vicente, May 20 (Semple).

These specimens measure, respectively (in mm.): wing, 72.5, 76, 76, 77; tail, 46, 47.5, 49.5, 50.

The male bird taken at San Vicente on May 20, 1935, was feeding in a small, weed-grown wheat field where Arkansas Goldfinches, Blue Grosbeaks, and Painted Buntings gathered in considerable numbers. The gonads of this specimen were considerably enlarged, measuring about 4 mm. in diameter.

A. E. Borell saw thirty Pine Siskins at Laguna, Chisos Mountains, on October 31, and forty above Smoky Spring (4000 feet, east of Mule Ear Peaks) on November 22, 1936.

*SPINUS TRISTIS TRISTIS* (LINNAEUS). EASTERN GOLDFINCH

1933: 1 ♀, 20 miles S. of Marathon, foothills of the Santiago Mountains, May 30.

Two Eastern Goldfinches were seen on May 30, 1933, both apparently females. The specimen taken was a nonbreeding individual with inactive ovary. On May 14, 1935, we saw what appeared to be a mated pair in willow trees along the Rio Grande, on the Johnson ranch. The male was singing brilliantly. There was a loose flock of Arkansas Goldfinches in the same trees.

*SPINUS PSALTRIA PSALTRIA* (SAY). ARKANSAS GOLDFINCH

1901: 2 ♂, Terlingua, June 28-30; 1 ♀, Marathon, May 12 (L. A. Fuertes collection).

1933: 1 ♂, 1 ♀, 15 miles N. of Marathon, Glass Mountains, May 31.

1935: 1 ♀, Chisos Mountains, Basin, 5300 feet, May 3; 2 ♀, Boquillas, May 18; 1 ♂, 4 miles E. of Hot Springs, May 16; 3 ♂, San Vicente, May 20-21; 1 ♂, Rio Grande, Johnson ranch, May 14.

We noted this species at several points in 1933: three birds on May 4, two miles south of Marathon; two small flocks on May 11, most of them apparently young birds, in Pine Canyon, Chisos Mountains; one singing male on May 19 in Pine Canyon; and a small flock on May 28 in the Santiago Mountains. One mated pair was collected and another pair seen on May 31.

During February, 1935, we saw a few in Alpine, and on March 20 we saw a flock of five in the Basin, Chisos Mountains (5100 feet). The female specimen taken May 3, listed above, was in the midst of the prenuptial molt. On May 7 we saw what we took to be a mated pair at Castalon. A male taken at Castalon on May 12 (not preserved) was in the molt. A flock of five birds was seen at the Johnson ranch on May 14. In the region of Boquillas and San Vicente the goldfinches were frequenting patches of orange-colored daisies, the seeds of which they were eating. Specimens taken later than May 16 were in beautiful plumage, the prenuptial molt having been completed. We did not see the Arkansas Goldfinch in the Glass Mountains nor in the Marathon region in 1935.

*LOXIA CURVIROSTRA STRICKLANDI* RIDGWAY. MEXICAN CROSSBILL

In a brief preliminary note<sup>95</sup> Oberholser reported that "a small flock was found by Vernon Bailey in the Chisos Mountains." In a more detailed report on the work of the United States Biological Survey in Texas, Bailey<sup>96</sup> listed this as one of four species which his party found in the Chisos Mountains and nowhere else in Texas and added that "*Loxia curvirostra stricklandi* seen in the Chisos Mountains in June [1901] were probably breeding there."

The subspecific name used by Oberholser and Bailey was based only on geographical probability, for no specimens were collected.

*OBERHOLSERIA CHLORURA* (AUDUBON). GREEN-TAILED TOWHEE

1901, 1932, 1933, 1935: 7 ♂, 11 ♀, from: Alpine; Marathon region and 12 miles S.; Chisos Mountains, Pine Canyon; San Vicente; Castalon; and other localities.

Oberholser<sup>97</sup> considers that six of the above specimens (Marathon region, April 27 to May 5) belong to the form he recently named *zapolia*. We found the Green-tailed Towhee fairly common wherever we went during the period of spring migration. In 1933 we noted it daily until May 17, when a few were seen in Juniper Canyon, Chisos Mountains; and in 1935 we saw it as late as May 30, on which date we observed one in the vicinity of Paisano Peak.

*PIPILO MACULATUS* GAIGEL, N. SUBSP.

TYPE.—Univ. Mich. Mus. Zool., No. 86309; breeding male; Texas, Chisos Mountains, southeast of Boot Spring, 6800 feet; May 22, 1932; collected by Josselyn Van Tyne.

CHARACTERS.—Adult male. Similar to *Pipilo maculatus montanus* Swarth<sup>98</sup> but cinnamon-rufous of sides paler and more extensive; white of upper parts, especially of tertials and wing coverts, reduced; breast, head, and back a clear, deep black; wing and tail, especially the former, averaging shorter. Adult female with head, breast, and back much blacker.

Similar to *Pipilo maculatus arcticus* (Swainson)<sup>99</sup> but white spotting above much reduced and lower back more extensively black in all plumages of both sexes; cinnamon-rufous of sides paler and more extensive; female much blacker above and on the throat and breast.

<sup>95</sup> "Some Notes from Western Texas," pp. 300-301.

<sup>96</sup> *Loc. cit.*

<sup>97</sup> "Descriptions of New Birds from Oregon, chiefly from the Warner Valley Region," p. 10.

<sup>98</sup> "Atratus versus Megalonyx," *Condor*, 7, Nov.-Dec., 1905: 171-174 (Miller Canyon, Huachuca Mountains, Arizona).

<sup>99</sup> *Fauna Boreali-Americana*, II, 1832: 260, Pls. 51, 52 (Carlton House, plains of Saskatchewan).

Similar to *Pipilo maculatus griseipygius* van Rossem,<sup>100</sup> but upper tail coverts of adult male black; sides paler; lower back and rump deeper and more extensively black; wing averaging shorter.

It cannot be emphasized too strongly that in comparing specimens of this species it is absolutely essential that the birds be of the same age, sex, and season. Specimens in excessively worn and faded plumage may be virtually impossible to identify. Swarth<sup>101</sup> pointed out long ago that this species does not reach its fully adult plumage until its second autumn, a fact which has been frequently overlooked since.

MEASUREMENTS.—Fully adult males from Brewster County measure (in mm.): wing, 87.5 (type), 84, 85, 90, 87, 89, 85, 91, 87, 87; tail, 96 (type), 97, 99, 107, 99, 110, 105, 98.5, 103. Adult females: wing, 81, 81, 86, 82, 84, 88; tail, 97, 98, 98, 101, 103.

RANGE.—Brewster and Jeff Davis (Davis Mountains) counties, Texas; San Miguel (Cabra Spring), Lincoln (Capitan), and Guadalupe (Santa Rosa) counties, New Mexico (and, presumably, the intervening counties). Brewster County specimens examined:

1901: 1 ♀, Marathon, May 15; 3 ♂, 1 ♀, Chisos Mountains, June 6–13 (L. A. Fuertes and U. S. Biological Survey collections).

1928: 1 ♂, 1 ♀, Chisos Mountains, July 20–23.

1932: 6 ♂, 4 ♀, Chisos Mountains, May 4–22.

1933: 1 ♂, 1 ♀, Mount Ord, May 29; 5 ♂, 2 ♀, Chisos Mountains, May 9–19.

1935: 1 ♂, 5 miles S. of Alpine, 5000 feet, February 11; 2 ♂, 15 miles NE. of Marathon, Glass Mountains, May 25; 1 ♂, 1 ♀, Chisos Mountains, April 27 and March 22.

The Spotted Towhee in Brewster County is most common in the Chisos Mountains, where we observed it throughout the forested areas. It is much more abundant above 6000 feet than at lower altitudes. We also found the species on Mount Ord and in the Peña Blanca and Glass Mountains. In winter there were a few in the live-oak groves of the region immediately south and west of Alpine. Specimens taken on April 27, 1935, in the Chisos Mountains were obviously breeding.

For the determination of the range of this form outside of Brewster County we are indebted to Oberholser for the loan of specimens from the United States Biological Survey collection.

This interesting new form is named in honor of our friend, Frederick M. Gaige, who recognized the great field for ornithological research offered by the Big Bend region and who, in 1928, led the first of the series of field parties on whose work this report is based.

*PIPILO MACULATUS MONTANUS* SWARTH. SPURRED TOWHEE

1935: 1 ♂, 1 ♀, 15 miles NE. of Marathon, Glass Mountains, April 13 (Cornell collection).

<sup>100</sup> "Critical Notes on Middle American Birds," *Bull. Mus. Comp. Zool.*, 77, Dec., 1934: 482 (Jesus María, Chihuahua).

<sup>101</sup> *Loc. cit.*

The gonads of these two specimens were not enlarged.

On April 25, 1935, Sutton noted a pronounced migratory wave of *P. maculatus* in the Marathon region, and it is probable that many of this subspecies passed through at that time.

*PIPILO FUSCUS TEXANUS* VAN ROSSEM.<sup>102</sup> TEXAS BROWN TOWHEE  
1901, 1928, 1933, 1935: 12 ♂, 8 ♀, from many points in Brewster County.

We found the Brown Towhee to be a rather widely distributed species, breeding specimens being taken along the southern margins of the Glass Mountains, at the foot of Iron Mountain near Marathon, along the road through and in the valleys of the Santiago Mountains, on the slopes of Mount Ord, near Glenn Spring, and at several points in the lower parts of the Chisos Mountains, notably at the entrance to Pine Canyon and at Upper Juniper Spring. Only once in the Chisos Mountains did we see it above the lower limit of trees (Basin, 5500 feet, March 21, 1935). In the Alpine region in winter it was perhaps the most common member of the sparrow family, being frequently seen in small flocks on the more rocky slopes.

Several nests were found in 1933: with two fresh eggs at the entrance to Pine Canyon on May 20; with three fresh eggs by the road through the Santiago Mountains on May 30; and with three eggs in the Glass Mountains, twelve miles north of Marathon, on May 31. Parent birds were seen feeding full-fledged but short-tailed young on May 2 and 4 near Peña Creek, four miles south of Marathon.

After the appearance of the description of *texanus*, we sent a dozen of our specimens to the Museum of Comparative Zoology, where James L. Peters compared them for us with the type series and reported that they should be so identified. Our specimens vary from typical *texanus* in that their tails average slightly longer.

*CALAMOSPIZA MELANOCORYS* STEJNEGER. LARK BUNTING  
1932: 1 ♂, Alpine, November 4 (George B. Saunders collection).  
1935: 1 ♂, Castalon, May 7; 1 ♀, Rio Grande, Johnson ranch, May 13.  
1936: 1 ♀, N. end of Christmas Mountains, Onion Flat, 3300 feet, November 3 (A. E. Borell).

We noted this species first in 1933, when we found it abundant, in the Marathon region from April 28 to May 6, great flocks frequenting the highways and congregating noisily about the fences. These transient flocks were composed wholly of molting birds, as far as we could see, and the few specimens that we took were in very poor plumage. Though molting, the males sang brilliantly and almost incessantly. No transient flocks were seen in the Hot Springs region in 1933, the only individual noted there being a

<sup>102</sup> "A Subspecies of the Brown Towhee from South-Central Texas," *Trans. San Diego Soc. Nat. Hist.*, 7, May 31, 1934: 371-372.

female collected, in order to make identification certain, two miles west of Boquillas on the Graham ranch on May 10. In returning northward to Marathon on May 22, we encountered Lark Buntings once along the highway—a group of three molting birds, apparently all females, about twenty miles south of Marathon.

In 1935 we saw no such flocks as we had observed in 1933. On March 4 we found a flock of about twenty-five at Alpine; on April 23, three molting males in the barnyard at the Roberts ranch, twelve miles southwest of Marathon; on April 26, two full-plumaged males, thirty-one miles south of Marathon; on May 4, a single male at Castalon; on May 5, two females in the cemetery at Terlingua; on May 7, several in the cultivated fields at Castalon; on May 8, a fair-sized flock at Lajitas; on May 11, a flock of twelve birds four miles south of Terlingua; on May 13, a solitary female collected along the Rio Grande at the Johnson ranch; from May 15 to 21, when the species was noted daily in the Hot Springs-Boquillas region, with females predominating; and on May 22, when a solitary male was seen at Persimmon Gap. James O. Stevenson observed a male sixteen miles south of Marathon on August 1 and six individuals at Marathon on August 9.

*PASSERCULUS SANDWICHENSIS ANTHINUS* BONAPARTE  
WESTERN SAVANNAH SPARROW

1933: 1 ♀, 12 miles S. of Marathon, April 29; 1 ♀, 2 miles W. of Boquillas, May 16.

1935: 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 17; 1 ♀, Rio Grande, Johnson ranch, May 14; 1 ♀, Lajitas, May 10.

During 1933 we recorded the Savannah Sparrow on only four dates, a single bird on April 29, a single bird on May 1, a small flock on May 2, and a single bird on May 16. During April and May, 1935, we noted it frequently, recording from two or three individuals to flocks of twenty-five or more daily from April 12 to 23 in the Marathon region, four at Lajitas on May 10, three along an irrigation ditch at Castalon on May 11, and three along the Rio Grande on the Johnson ranch on May 14; we collected one male, which proves to be of the race *nevadensis*, along the Rio Grande at San Vicente as late as May 20. Subspecific identification in the field was, of course, impossible; but our records show that there is considerable fluctuation in abundance from year to year, at least in the Marathon grasslands.

*PASSERCULUS SANDWICHENSIS NEVADENSIS* GRINNELL  
NEVADA SAVANNAH SPARROW

1933: 1 ♀, 2 miles S. of Marathon, May 1.

1935: 1 ♀, 17 miles NE. of Marathon, April 12; 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 17; 1 ♂, San Vicente, May 20.

No records of this species were secured in winter in Brewster County, but on February 2, 1935, we collected a male *nevadensis* in Musquiz Canyon,

ten miles northwest of Alpine and just outside the county. On April 4 we saw two at the pond seventeen miles northeast of Marathon where a specimen was collected eight days later.

For the identification of both forms of Savannah Sparrow listed above we are indebted to James L. Peters and Ludlow Griscom who have just completed a revision of this difficult group.

*AMMODRAMUS SAVANNARUM PERPALLIDUS* (COUES)

WESTERN GRASSHOPPER SPARROW

1933: 1 ♂, 3 miles S. of Marathon, in open pasture land, May 2.

This specimen is rustier and paler than any other *perpallidus* at hand, and the bill is smaller than in most eastern specimens. Wing (in mm.), 61.5; tail, 46.

A. J. van Rossem<sup>103</sup> has shown that the name *bimaculatus* Swainson applies to the southern Mexican form, hitherto known as *obscurus* Nelson, and that the oldest available name for the form here under consideration is *perpallidus* Coues.

*AMMODRAMUS BAIRDI* (AUDUBON). BAIRD'S SPARROW

1933: 1 ♀, 15 miles SW. of Marathon, Maravillas Creek, April 29.

1935: 1 ♀, 2 miles W. of Boquillas, May 21; 1 ♀, Rio Grande, Johnson ranch, May 14.

The above-listed specimens, all collected by Sutton, are the only Baird's Sparrows encountered by us during the course of our Brewster County field work. The species evidently is not common during the period of the spring migration, though it is said to winter "from central Texas to Chihuahua and northern Sonora."<sup>104</sup>

*POECCETES GRAMINEUS CONFINIS* BAIRD. WESTERN VESPER SPARROW

1932: 1 ♀, Chisos Mountains, Emory Peak, 7000 feet, May 9.

1933: 1 ♀, Boquillas, May 16.

1935: 1 ♂, 17 miles NE. of Marathon, April 12; 1 ♀, San Vicente, May 21.

During 1933 we saw this species but once, on May 16, as noted above. In 1935 we recorded it first on April 10, when one was seen in the Glass Mountains about twenty-five miles northeast of Marathon, and again on April 12, when the male listed above was collected. We also observed the species on the following dates: April 13, one at Peña Creek; April 17, one on the Combs ranch thirteen miles south of Marathon; April 18, one at a tank seventeen miles northeast of Marathon; April 20 and 22, a few birds in the Glass Mountains about fifteen miles north of Marathon; April 23, one on the Roberts ranch about twelve miles southwest of Marathon; May 6, one at Castalon; on May 13, one on the Johnson ranch along the Rio Grande; and May 18, one on the Graham ranch just west of Boquillas. We last

<sup>103</sup> "Notes on Some Types of North American Birds," pp. 359-360.

<sup>104</sup> *Check-list of North American Birds*, p. 337.

recorded it on May 21, when the female listed above was collected at San Vicente.

Vesper Sparrows were seen and a male collected February 20, 1935, near the Fort Davis road at Musquiz Canyon, Jeff Davis County, two miles from the Brewster County line, indicating that the species may be looked for in Brewster County in winter.

*CHONDESTES GRAMMACUS STRIGATUS* SWAINSON. WESTERN LARK SPARROW

1901: 1 ♂, Alpine, July 4 (L. A. Fuertes collection).

1928: 1 ♀, Glenn Spring, August 5.

1932: 1 ♂, 3 miles W. of Marathon, April 27; 1 ♀, 9 miles SE. of Glenn Spring, June 17.

1933: 1 ♀, Glass Mountains, 15 miles NE. of Marathon, May 26; 1 ♂, Mount Ord, May 29; 3 ♀, 6 miles E. of Hot Springs, May 15.

1935: 1 ♂, 7 miles W. of Marathon, April 4; 1 ♂, 17 miles NE. of Marathon, April 12.

The Lark Sparrow is apparently nowhere an abundant bird in summer in the Big Bend country. T. H. Montgomery<sup>105</sup> reports "a few found on the plains just west of Altuda," June 14 to 19, 1904. In mid-May, 1933, we found it fairly common in the vicinity of San Vicente and Boquillas, but most of these birds were thought to be transients. Subsequently, at Marathon, we observed several nesting pairs, and in the Glass Mountains we watched a female building a nest on May 25. On May 26 at Marathon we collected a female that was laying eggs, and at Mount Ord on May 29 we found a nest with three slightly incubated eggs on the ground under a small oak sapling.

In 1935 we saw the first Lark Sparrow on April 4 west of Marathon and recorded flocks of transients in the Glass Mountains about fifteen miles northeast of Marathon on April 20. Although we noted mated pairs almost daily during May, we saw no evidence of actual nesting until May 29, when a female was observed building her nest not far from Maravillas Creek, about sixteen miles southwest of Marathon.

*AIMOPHILA RUFICEPS EREMOECA* (BROWN). ROCK SPARROW

1901: 1 ♂, 2 ♀, Chisos Mountains, June 4-7 (L. A. Fuertes collection).

1914: 1 ♂, Chisos Mountains, January 13 (Mus. Comp. Zool.).

1928: 2 ♂, 1 ♀, 1 juvenile ♀, Chilicotal Mountain, 3500-4000 feet, June 24-July 3; 2 ♀, Chisos Mountains, Juniper Canyon, 5000-5700 feet, July 9-18; 1 ♂, 1 juvenile ♀, Chisos Mountains, Boot Spring, July 22.

1932: 4 ♂, 1 ♀, Chisos Mountains, Boot Spring Canyon, 6600-7000 feet, May 7-17.

1933: 1 ♂, 12 miles N. of Marathon, Glass Mountains, May 25; 1 ♀, 16 miles S. of Alpine, May 30; 1 ♂, Mount Ord, May 29; 7 ♂, 4 ♀, Chisos Mountains, Pine and Juniper Canyons, May 13-20.

1935: 1 ♂, 1 ♀, Mount Ord, 6200-6800 feet, April 1; 4 ♂, 1 ♀, 15-20 miles NE. of Marathon, Glass Mountains, April 18-May 28; 1 ♂, Chisos Mountains, Pulliam Bluff Spring, May 2; 1 ♂, Chisos Mountains, Laguna, 7086 feet, April 29.

1936: 1 ♂, 1 ♀, Chisos Mountains, Green Gulch, 5000 feet, November 14 (A. E. Borell).

<sup>105</sup> *Op. cit.*, p. 15.

In the fourth (1931) edition of the A.O.U. *Check-list* the range of *eremoeca* is incorrectly restricted to the region east of the Pecos River and "south-western Texas" is included in the range of *scotti*. Our series is clearly *eremoeca* and not *scotti*. We are at a loss to know what T. H. Montgomery<sup>106</sup> meant by reporting *scotti* at Altuda and *eremoeca* at Green Gulch. Unfortunately we have been unable to learn the present location of his specimens.

The Rock Sparrow is to be found in Brewster County wherever there are boulder-strewn hillsides such as furnish it an adequate feeding and nesting ground. In addition to the localities listed above we recorded it at Ridge Spring, south of Marathon; in the Peña Blanca Mountains; and at the foot of Paisano Peak.

In 1928 we saw females building nests in Juniper Canyon in the Chisos Mountains on July 9 and 18, and collected specimens in full juvenal plumage on July 3 and 22.

A male and female collected April 1 weighed 19.9 and 21.3 grams (fat) respectively.

*AIMOPHILA CASSINI* (WOODHOUSE). CASSIN'S SPARROW

1901: 1 ♂, Marathon, May 12 (L. A. Fuertes collection).

1928: 2 ♂, 1 ♀, Glenn Spring, July 27–August 4.

1933: 1 ♂, 4 miles N. of Marathon, May 27; 3 ♂, 2 ♀, 3 miles N. of Marathon, May 23–24; 4 ♂, 4 miles SW. of Marathon, Peña Creek, April 29–May 3; 1 ♂, 1 ♀, 18 miles SW. of Marathon, foothills of Santiago Mountains, May 28.

1935: 1 ♂, 15 miles NE. of Marathon, Glass Mountains, April 25; 1 ♀, 12 miles SW. of Marathon, Roberts ranch, April 23; 1 ♀, San Vicente, May 20.

Cassin's Sparrow is local in distribution, as a rule showing a marked preference for open, grassy country where concentration of singing males gives somewhat the effect of a colony, but occurring also in less open, more brushy sections. In 1933 and 1935 we found the species abundant in certain of the yucca-dotted grasslands to the north of Marathon.

On April 10, 1935, we heard several Cassin's Sparrows singing in the vicinity of Fort Stockton, north of Brewster County. In the Marathon region we did not record the species until April 17, however, when we heard two males singing on the Combs ranch, thirteen miles south of the village. Thereafter we noted it frequently, finding on April 22 the remains of one that had been killed and impaled on the tip of a yucca leaf by a shrike.

A female taken May 23, 1933, had a fully formed egg in the oviduct, and a female taken May 28 of the same year was incubating eggs or brooding young.

*AMPHISPIZA BILINEATA DESERTICOLA* RIDGWAY. DESERT SPARROW

1901, 1928, 1932, 1933, 1935: 19 ♂, 10 ♀, 4 juvenile ♂, 3 juvenile ♀, from: 5 miles S. of Alpine; 3 miles W. of Marathon; Peña Blanca Mountains; Glenn Spring; Boquillas;

<sup>106</sup> *Ibid.*, p. 15.



Lajitas; and other localities throughout the region, except in the higher parts of the mountains.

Our series of juvenile birds, when compared with three juvenile *bilineata* from Brownsville, shows no consistent difference in the coloration of the upper parts, but it does show marked reduction in the amount of white on the outer rectrices, as does the adult.

The Desert Sparrow is widely distributed in Brewster County and is generally common. In winter we noted it at several points in the Alpine region but much less commonly than in summer. In 1933 we found it common and nesting about Marathon at the time of our arrival on April 29, and a female taken on that date was incubating eggs. On April 30 a nest with two fresh eggs and another nest with four small young were found. On May 1 young just out of the nest were noted. On May 2 a nest with three fresh eggs and young just out of the nest were found. These data serve to indicate both the early date at which nesting activities commence in this region and the variability in the date on which the first brood appears. On May 23, 1933, fully-fledged young were very common about Marathon. Specimens taken June 15 were beginning to show the black throat of the adult.

On April 20, 1935, in the Glass Mountains, Sutton saw a Pigeon Hawk capture one of a flock of Desert Sparrows that were feeding about a clump of cactus in open country.

*JUNCO OREGANUS COUESI* DWIGHT.<sup>107</sup> COUES'S JUNCO

1935: 1 ♀, 5 miles S. of Alpine, February 4; 1 ♂, 7 miles SW. of Alpine, January 28; 1 ♀, 22 miles S. of Alpine, Calamity Creek, March 4.

Coues's Junco was about as common as the Pink-sided Junco in 1935 and was noted in the same localities, but it was not seen later than March 16, nor was it found at all in the Chisos Mountains.

We are indebted to Alden H. Miller for the identification of our specimens of this species.

The above-listed specimens weighed, respectively, 19.2, 18.7, and 16 grams.

*JUNCO MEARNSI* RIDGWAY. PINK-SIDED JUNCO

1935: 1 ♀, Paisano Peak, 5500 feet, January 28; 1 ♀, 5 miles S. of Alpine, 5000 feet, February 15; 1 ♀, 15 miles NE. of Marathon, Glass Mountains, 5000 feet, April 22. 1936: 1 (♀ ?), Chisos Mountains, Laguna, 6500 feet, November 1 (A. E. Borell).

The Pink-sided Junco was common in the live-oak groves of the Alpine region during February and March, 1935. It was noted also at Mount Ord on February 19; along Calamity Creek, twenty-two miles south of Alpine, on March 4, 16, and 29; in the Basin of the Chisos Mountains (5000 feet) on

<sup>107</sup> "The Geographical Distribution of Color and of Other Variable Characters in the Genus *Junco*: a New Aspect of Specific and Subspecific Values," *Bull. Amer. Mus. Nat. Hist.*, 38, 1918: 291, Pl. 13.

March 19; and in the Paradise Canyon region, five miles west of Alpine, on April 5.

Our latest record is of the female, listed above, taken in the Glass Mountains, about fifteen miles north of Marathon, on April 22. This bird was with a considerable company of Clay-colored and Chipping Sparrows and was the only junco seen on that date.

The two winter females collected weighed 17.8 and 20.8 grams.

*JUNCO CANICEPS* (WOODHOUSE). GRAY-HEADED JUNCO

- 1914: 1 ♀, Chisos Mountains, January 10 (F. B. Armstrong, Thayer collection, No. 20096).  
 1933: 1 ♀, Chisos Mountains, Pine Canyon, May 11 (Sutton).  
 1935: 2 ♀, Pulliam Bluff Spring, Chisos Mountains, May 1; 1 ♂, Chisos Mountains, Basin, 5560 feet, April 29 (J. B. Semple).  
 1936: 1 ♀, Chisos Mountains, Laguna, 6500 feet, November 1 (A. E. Borell).

H. C. Oberholser and A. H. Miller have both examined the Armstrong specimen, lent to us by the Museum of Comparative Zoology, and agree that it is clearly a hybrid *Junco caniceps* × *Junco mearnsi*.

The 1933 specimen is a typical example of *caniceps*, but, as Miller suggests, it must surely be a late transient and not a breeding bird. Our 1932 party spent the whole of May in the Chisos Mountains without noting a single junco of any sort.

*SPIZELLA PASSERINA ARIZONAE* COUES. WESTERN CHIPPING SPARROW

- 1901: 1 ♂, Alpine, May 7 (L. A. Fuertes collection).  
 1928: 1 ♂, 1 ♀, Glenn Spring, August 2-4.  
 1932: 1 ♀, 3 miles W. of Marathon, April 27; 1 ♀, Chisos Mountains, Blue Creek, 6900 feet, May 18; 1 ♀, Chisos Mountains, S. of Boot Spring, 7000 feet, May 16.  
 1933: 1 ♂, 18 miles N. of Marathon, Glass Mountains, May 31; 1 ♀, Mount Ord, May 29.  
 1935: 1 ♀ (from flock of 14), Mount Ord, April 1; 1 ♀, 15 miles NE. of Marathon, Glass Mountains, May 28; 2 ♂, 4 miles SW. of Marathon, Peña Creek, April 11; 1 ♂, 13 miles S. of Marathon, Combs ranch, April 15; 1 ♀, Chisos Mountains, Basin, 5300 feet, May 3; 1 ♀, 4 miles E. of Hot Springs, May 16; 1 ♀, Castalon, May 4; 1 ♀, Lajitas, May 8.  
 1936: 1 ♀, Chisos Mountains, Green Gulch, 5200 feet, November 15 (A. E. Borell).

As a transient, the Chipping Sparrow is likely to be noted anywhere in the Big Bend; as a summer resident it is decidedly local but is found at widely separated points. In 1933 we observed it first in the Marathon region on May 1, on which date several were seen. On May 9 we encountered a breeding pair in the Chisos Mountains, Pine Canyon, at about 6000 feet. On May 26 two males were heard singing in an oak woods at the foot of Iron Mountain north of Marathon. On May 29 several were seen and a nest with three fresh eggs discovered at the base of Mount Ord. In 1935 a flock of about a hundred was seen by the roadside north of Paisano Peak on February 6. On March 21 a pair was noted in the Chisos Mountains on Casa Grande (6300 feet). From April 10 to May 30, we recorded it almost daily. Speci-

mens taken in early April were in the midst of the prenuptial molt, having parti-colored crowns and a very untidy appearance. During late May several breeding pairs were seen on the McGonagill ranch in the Glass Mountains north of Marathon, but no nest was found.

*SPIZELLA PALLIDA* (SWAINSON). CLAY-COLORED SPARROW

1932: 1 ♂, 1 ♀, 3 miles W. of Marathon, April 27.

1933: 1 ♀, 4 miles S. of Marathon, May 3.

1935: 1 ♂, 1 ♀, 15 miles NE. of Marathon, April 22; 1 ♂, 15 miles E. of Marathon, Peña Blanca Mountains, April 24; 1 ♀, 13 miles S. of Marathon, Combs ranch, April 17; 1 ♀, 5 miles SW. of Terlingua, May 10; 3 ♀, Lajitas, May 8-10.

Clay-colored Sparrows were abundant about Marathon on April 29, 1933; they continued to be abundant in the region until May 3. On May 4 a few were seen. Thereafter that season we did not note any *Spizella* that we thought to be *pallida*, though *breweri* continued to be common for some time.

In 1935 we noted the species first on April 11, when a few were carefully identified at Peña Creek and Garden Springs, in the Marathon region. We encountered it thereafter at almost all the localities visited, seeing it in the Basin in the Chisos Mountains, but failing to find it at Laguna or at Boot Spring. A few individuals were noted almost daily until May 21, when a small flock, all thought to be females, was seen on the Graham ranch, two miles west of Boquillas. It is noteworthy that although we heard Brewer's Sparrow singing quite frequently, especially in the Boquillas region, we never once heard the easily recognizable song of the present species.

The female taken April 17, 1935, varies from the normal plumage of the Clay-colored Sparrow in the character of the crown which is narrowly streaked with black and almost lacks the median stripe of gray, precisely as in many specimens of *Spizella breweri*. In fact, on the basis of the color and pattern of the upper parts one would unhesitatingly place it in a series of *Spizella breweri* rather than among the other specimens of *Spizella pallida*.

*SPIZELLA BREWERI BREWERI* CASSIN. BREWER'S SPARROW

1901: 1 ♀, Marathon, May 12 (L. A. Fuertes collection).

1932: 1 ♀, 3 miles W. of Marathon, April 27.

1933: 1 ♂, 1 ♀, 8 miles SE. of Marathon; April 29; 1 ♂, 1 ♀, Maravillas Creek, 12 miles S. of Marathon, April 29-May 3; 2 ♀, 6 miles E. of Hot Springs, May 12.

1935: 1 ♀, Garden Springs, April 12; 1 ♀, Hot Springs, May 15; 1 ♂, 2 ♀, 4-6 miles E. of Hot Springs, May 16; 1 ♀, Castalon, May 6; 1 ♀, Lajitas, May 8.

1936: 1 (sex not determined), N. end of Christmas Mountains, Onion Flat, 3300 feet, November 3 (A. E. Borell).

Brewer's Sparrows were common about Marathon from April 29 to May 4 in 1933; a few were seen and heard singing at Hot Springs on May 8; and a few were observed at the Graham ranch on May 12.

In 1935 we noted the species first on April 12 when several were recorded and a female, listed above, taken at Garden Springs. Thereafter it was

noted almost daily in the Marathon region until April 26. On May 6, several were seen at Castalon. On May 8 a female bird, listed above, was taken near Lajitas. The species was last observed on May 24, when a few were seen not far from Marathon.

*SPIZELLA ATROGULARIS EVURA* COUES. BLACK-CHINNED SPARROW

1935: 1 ♀, Chisos Mountains, Basin, 5560 feet, April 29 (Semple).

1936: 1 immature ♀, Chisos Mountains, Basin, September 1 (Tarleton F. Smith).

Measurements (in mm.): wing, 60.5, 63; tail, 65, 72.

The above-noted specimens are our only records of this species in Brewster County. In fact, we find no previous definite record of the species in Texas, although W. W. Cooke<sup>108</sup> stated in 1888 that the species ranges "north to the valley of the Upper Rio Grande, in Texas." In his recent review of the forms of this species, A. J. van Rossem<sup>109</sup> remarks that the winter range of *evura* is not known. We are indebted to Oberholser for the identification of the adult specimen.

Semple saw the individual flying about with other sparrows of the genus *Spizella* and, noting its gray head, collected it. The ovary was only slightly enlarged.

*ZONOTRICHIA LEUCOPHRYS LEUCOPHRYS* (FORSTER)

WHITE-CROWNED SPARROW

1933: 1 ♂, 4 miles S. of Marathon, May 2; 1 ♂, Maravillas Creek, 12 miles S. of Marathon, May 4; 1 ♀, 2 miles W. of Boquillas, May 15; 1 ♀, 3 miles W. of San Vicente, May 10.

1935: 1 ♂, 1 ♀, Garden Springs, April 26 and May 24; 1 ♂, 1 mile W. of Boquillas, May 18; 1 ♂, 1 ♀, Hot Springs, May 17 and 15; 1 ♂, Castalon, May 9; 1 ♀, San Vicente, May 20; 1 ♂, Lajitas, May 8.

In 1933 we first noted the White-crowned Sparrow near Marathon on April 29, when one bird was seen. On the following day many were noted along Maravillas and Peña Creeks. The species was common about San Vicente, Hot Springs, and Boquillas from May 10 to 16. Thereafter we did not see it again until May 27 when, in the vicinity of Marathon, we noted a few individuals in the foothills of the Glass Mountains. Some of the White-crowns seen in 1933 were almost certainly *Zonotrichia gambelii*.

*ZONOTRICHIA GAMBELII* (NUTTALL). GAMBEL'S SPARROW

1933: 1 ♀, 12 miles S. of Marathon, May 6.

1935: 1 ♂, 22 miles S. of Alpine, Calamity Creek, March 4; 2 ♂, 3 ♀, Garden Springs, April 11-23.

1936: 1 ♀, Chisos Mountains, Green Gulch, 5000 feet, November 14 (A. E. Borell).

Birds which we identified as White-crowned Sparrows were noted in 1933 from April 29 to May 27 in the vicinity of Marathon, about San

<sup>108</sup> "Report on Bird Migration in the Mississippi Valley . . .," *U. S. Dept. Agric. Bull.*, No. 2, 1888: 203.

<sup>109</sup> "Notes on the Forms of *Spizella atrogularis*," *Condor*, 37, 1935: 282-284.

Vicente, near Hot Springs, and at Boquillas, but not in the Chisos Mountains. Among these, there were doubtless some Gambel's Sparrows, but the female specimen taken May 6, listed above, is the only one for that year about which we are certain. This bird was in full breeding plumage.

During February and March, 1935, "White-crowned Sparrows" were seen in Jeff Davis County, just northwest of Alpine; at Mount Ord; and along Calamity Creek, twenty-two miles south of Alpine. All that were collected or seen close enough for accurate identification proved to be Gambel's Sparrows. From April 11 to 25, 1935, we saw Gambel's Sparrows repeatedly in the Marathon region, notably at Garden Springs, and on the Combs and Roberts ranches. We took several specimens, all of which were in the prenuptial molt. Some of the young molting birds were much faded and worn in appearance, and difficult to prepare as specimens. All of them had decidedly yellow bills. The general condition and behavior of these birds led us to think they had spent the winter in the region. We did not note the species at all in the Chisos Mountains from April 26 to May 4.

*MELOSPIZA LINCOLNII LINCOLNII* (AUDUBON). LINCOLN'S SPARROW

1935: 1 ♂, 17 miles NE. of Marathon, April 18; 1 ♂, 3 ♀, 4 miles SW. of Marathon, Peña Creek, April 10-23; 1 ♂, 2 ♀ (May 24, "alticola"), 13 miles S. of Marathon, Combs ranch, April 15-May 24; 1 ♀ ("alticola"), 5 miles E. of Hot Springs, May 16; 1 ♀, Castalon, May 9.

We noted this species only in 1933 and 1935. During 1933 we recorded it twice: on April 29 when a single bird was found on the Combs ranch, thirteen miles south of Marathon; and on May 15, when three were seen in the vicinity of Boquillas, along the Rio Grande. One of these last was a singing male.

In 1935 we collected almost every Lincoln's Sparrow that we saw, encountering the species first on April 10 at a cattle pond seventeen miles northeast of Marathon, and on May 16 just west of Boquillas, on which date a female was taken.

H. C. Oberholser has examined this series and refers two of these specimens, as noted above, to the form *alticola* recently described by Alden H. Miller and T. T. McCabe<sup>110</sup> from the southern Rocky Mountains.

*MELOSPIZA MELODIA JUDDI* BISHOP. DAKOTA SONG SPARROW

1936: 2 ♂, Hot Springs, November 9 (A. E. Borell).

On February 25, 1935, James O. Stevenson saw a Song Sparrow in a little swamp at Boquillas.

*MELOSPIZA MELODIA FALLAX* (BAIRD). MOUNTAIN SONG SPARROW

1933: 1, sex not known, 14 miles SW. of Marathon, May 4.

<sup>110</sup> "Racial Differentiation in *Passerella* (*Melospiza*) *lincolni*," *Condor*, 37, 1935: 144-160.

1935: 1 ♀, 4 miles SW. of Marathon, Peña Creek, April 13.

We are indebted to H. C. Oberholser for the identification of the Peña Creek specimen.

*RHYNCHOPHANES MCCOWNI* (LAWRENCE). MCCOWN'S LONGSPUR

1935: 4 ♀, 17 miles NE. of Marathon, April 12.

We encountered this species only in 1935, recording it first on April 10 on our way southward to Marathon, when we found a fairly large flock associating with horned larks and pipits at a small cattle pond seventeen miles northeast of Marathon. On returning two days later we saw about a dozen longspurs, all of them supposedly of this species, and all of them thought to be females. Of these we collected the above-listed four specimens.

*CALCARIUS ORNATUS* (TOWNSEND). CHESTNUT-COLLARED LONGSPUR

1935: 3 ♀ (1 skeleton), 17 miles NE. of Marathon, April 4; 1 ♀, 12 miles SW. of Marathon, Roberts ranch, April 23.

On April 4, 1935, Van Tyne saw a flock of fifteen longspurs at a small cattle pond seventeen miles northeast of Marathon. These were all thought to be of the present species, and three specimens were collected. When Sutton and Semple visited this same cattle pond a week later, however, they noticed McCown's Longspur, four specimens of this latter species being collected. No Chestnut-collared Longspurs were positively identified or collected.

The flock of longspurs observed on April 4 appeared to be very thirsty. They returned repeatedly to drink at a little sandy beach at one side of the pond.

The three females collected April 4 were all fat and weighed 19.8, 21.4, and 21.9 grams.

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PLATE III

- FIG. 1. Nest of Swainson's Hawk south of Marathon, June, 1932.  
FIG. 2. Rio Grande above San Vicente.

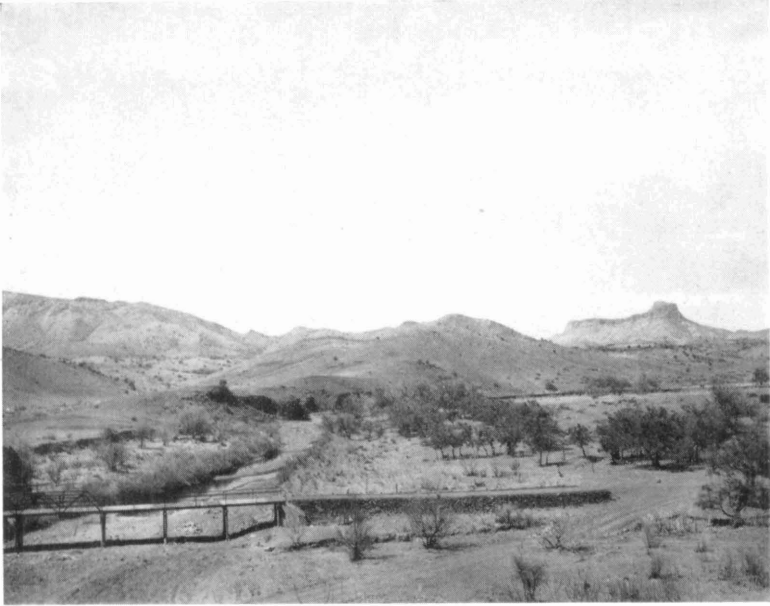


FIG. 1

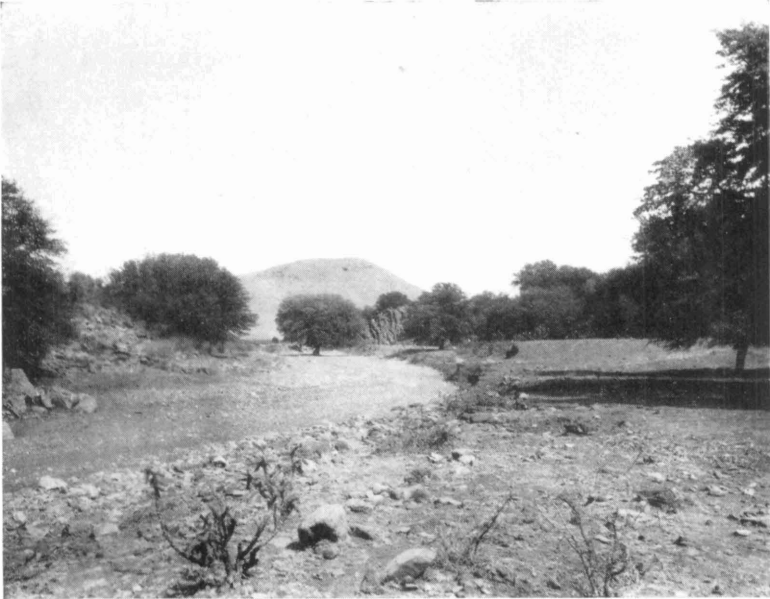


FIG. 2



PLATE II

FIG. 1. Calamity Creek, twenty-two miles south of Alpine.

FIG. 2. Live-oak grove near Alpine.

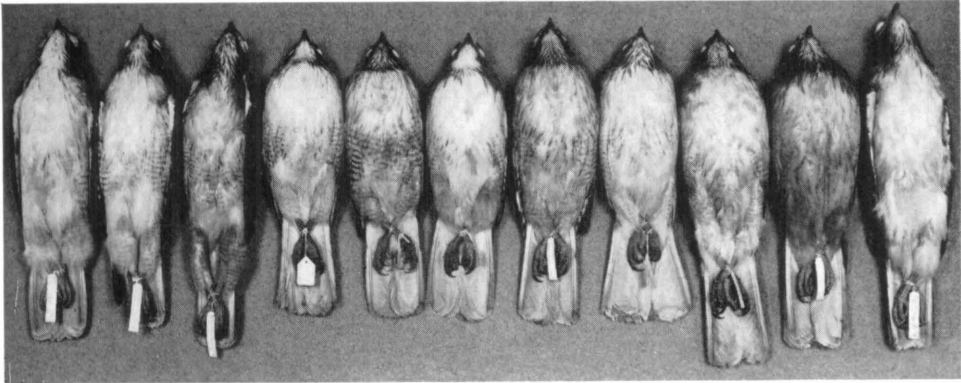


FIG. 1

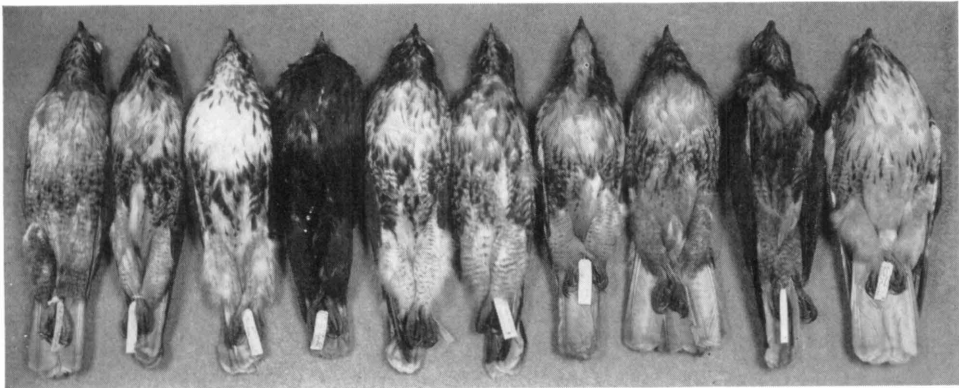


FIG. 2

PLATE I

FIG. 1. *Buteo jamaicensis fuertesi* (left to right) from Brewster County, Texas.

Univ. Mich. No.

86397—♂. Feb. 28, 1935, 15 miles SW. of Marathon.

86399—♂. Mar. 31, 1935, 12 miles E. of Alpine.

86396—♂. Feb. 6, 1935, Paisano Peak.

G.M.S. Field No.

5051—♂. May 23, 1933, 10 miles S. of Marathon.

5015—♂. May 8, 1933, Hot Springs.

4836—♂. May 4, 1933, 12 miles S. of Marathon.

6037—♂. Apr. 13, 1935, 4 miles SW. of Marathon, Peña Creek.

4876—♂. May 6, 1933, 4 miles S. of Marathon.

6440—♀. May 22, 1935, Santiago Mountains, Persimmon Gap.

6084—♀. Apr. 17, 1935, 13 miles S. of Marathon, Combs ranch.

Univ. Mich. No.

86400—♀. Mar. 8, 1935, 22 miles S. of Alpine, Calamity Creek bridge.

FIG. 2. *Buteo jamaicensis calurus* (left to right) from several states.

Univ. Mich. No.

83698—♀. Feb. 28, 1935, Brewster Co., Texas, 15 miles SW. of Marathon.

62213—♀. Apr. 13, 1926, Regent, Manitoba.

62187—♀. Oct. 1, 1923, Grafton, North Dakota.

62217—♀. Dec. 24, 1924, Pomona, California.

54859—♂. Oct. 14, 1923, Grafton, North Dakota.

54854—♀. Oct. 6, 1923, Grafton, North Dakota.

54842—♀. Apr. 12, 1924, Grafton, North Dakota.

56759—♀. Apr. 4, 1926, Hamilton, Montana.

62208—♂. Apr. 30, 1924, Genesee, Idaho.

62214—♀. Jan. 13, 1926, Prescott, Arizona.

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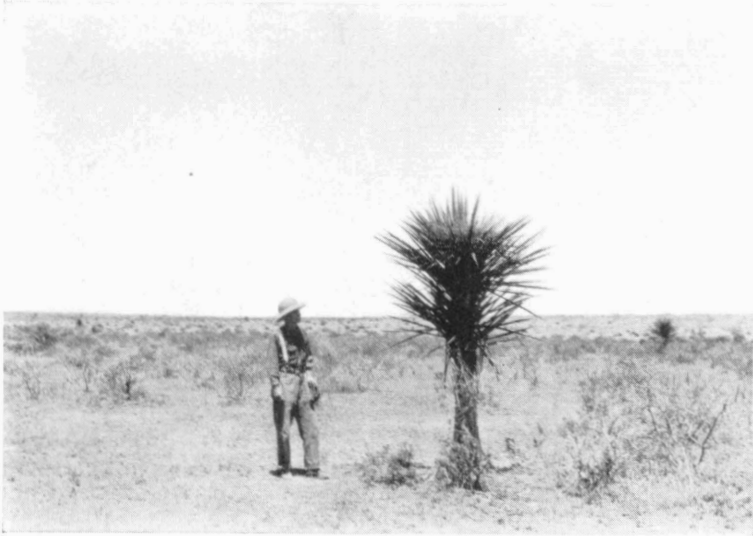


FIG. 1



FIG. 2

PLATE IV

- FIG. 1. Mariscal Mountain and creosote bush desert.  
FIG. 2. Nugent Mountain at east end of Chisos range.

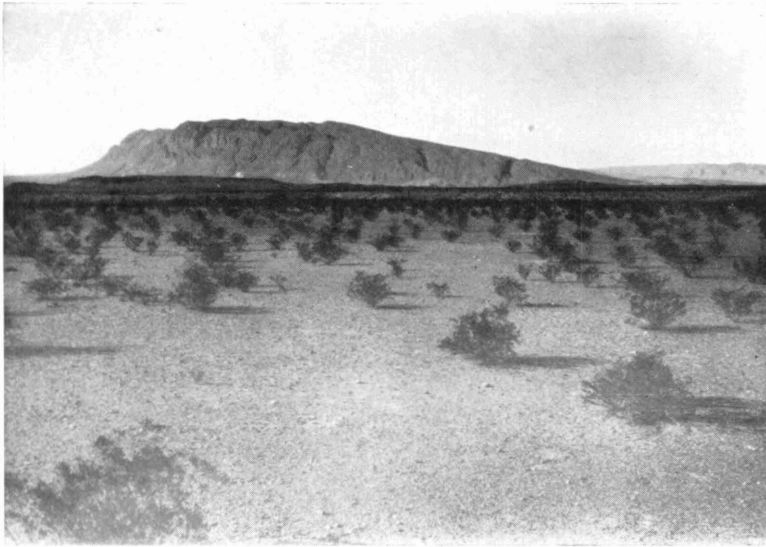


FIG. 1

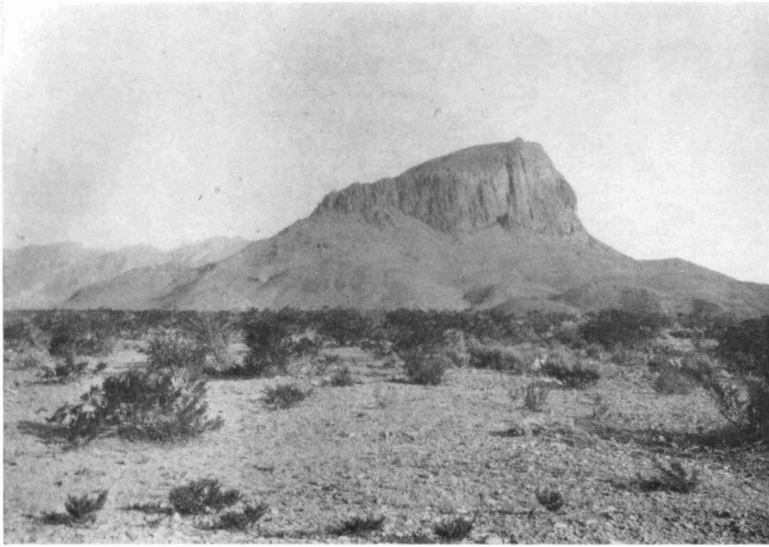


FIG. 2

PLATE V  
CHISOS MOUNTAINS

- FIG. 1. Juniper Canyon.
- FIG. 2. Mount Emory, seen from Laguna.
- FIG. 3. Forest near Boot Spring.
- FIG. 4. Arizona Cypress near Boot Spring.



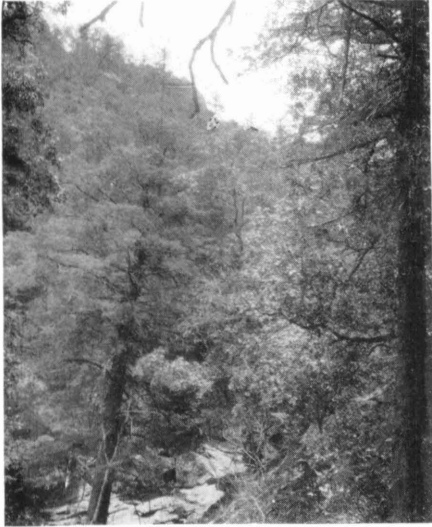


FIG. 1

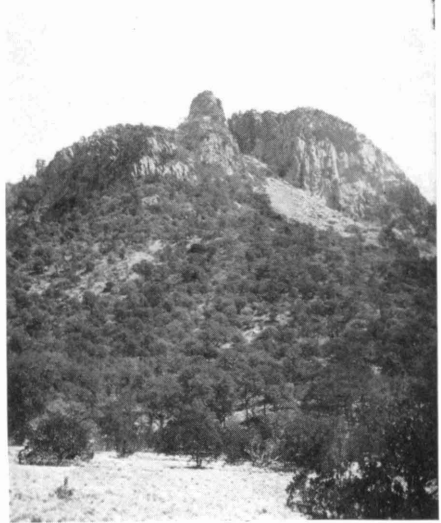


FIG. 2



FIG. 3



FIG. 4



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